

# STS-127/2JA

## FD 10 Execute Package



MSG	Page(s)	Title
086	1 - 18	<a href="#">FD10 Flight Plan Revision (pdf)</a>
087	19 - 20	<a href="#">FD10 Mission Summary (pdf)</a>
088	21 - 22	<a href="#">EVA4 Battery F Setup to Overnight Park (pdf)</a>
089	23 - 24	<a href="#">EVA 4 Battery Cribsheet (pdf)</a>
090	25 - 26	<a href="#">Lost and Found: Hitch Pin (pdf)</a>

A handwritten signature in black ink on a light yellow background, reading "T. Melroy".

**Approved by FAO:** T. Melroy

Last Updated: Jul 24 2009 8:29AM GMT

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

MSG 086 - FD10 FLIGHT PLAN REVISION

1 MSG INDEX

2

3 <u>MSG NO.</u>	3 <u>TITLE</u>
4 086	FD10 Flight Plan Revision
5 087	FD10 Mission Summary
6 088	EVA4 Battery F Setup to Overnight Park
7 089	EVA 4 Battery Cribsheet
8 090	Lost and Found: Hitch Pin

9

10

11

12 1. POST SLEEP CRYO CONFIG

13

14 For today's cryo config, O2 tanks 1, 3, and 4 and H2 tanks 1 and 5 will be active. We'll  
15 have an A to B Bus Tie to gain better power transfer while maintaining Fuel Cell 3 at a  
16 higher power level to prevent further Fuel Cell 3 Sustaining Heater cycles.

17

18 **R1 O2,H2 MANF VLV TK1 (two) - OP (tb-OP)**  
19 **O2 TK3 HTRS B – AUTO**  
20 **MN BUS TIE A - ON (tb-ON)**

21

22 **A11 CRYO TK4 HTRS O2 B - AUTO**

23

24 **A15 CRYO TK5 HTRS O2 A - OFF**

25

26 2. SSRMS EVA 4 CONTINGENCY PROCEDURE

27

28 For Doug and Julie: MSG 088 will only be required if all the battery R&Rs are not  
29 completed during EVA4. The procedure takes the SSRMS from the Batt F Setup  
30 position back to the Overnight Park position.

31

32 3. HITCH PIN

33

34 In the downlinked photos, we noticed there is a hitch pin in the lost and found bag and  
35 we think it may have come from the escape pole pip pin or the galley pip pin. Please  
36 verify that the starboard escape pole pip pin and the top aft galley pip pin each have a  
37 hitch pin in place. If one of the hitch pins is missing, please install the one from the  
38 lost and found bag. Use MSG 090 as a reference.

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END OF PAGE 1 OF 18, MSG 086

## MSG 086 - FD10 FLIGHT PLAN REVISION

### 4. EVA ITEMS

Have a great EVA 4! We have a couple last minute items for you:

1. Please let us know your plans for the J Bag, Camera, and LDTD Tethers. Reference MSG 085 (20-0572)
2. An updated version of the EVA 4 Battery Cribsheet can be found in MSG 089 (20-0574). As a result of getting approval to increase nominal release torques on H1 and H2, some of the original cribsheet steps have been moved to the nominal P6 Battery R&R procedure.

### 5. ACO TRANSFER STATUS

As a follow-up to last night's transfer brief, we agree that MF14O is a good location to stow the Post-flight Analysis Packets that were generated on FD08 (Return Item 725). Please note that two more packets (Return Item 726) will be generated today during the PWD Water Collect activity and can be stowed in MF14O as well. Please continue to reference the Transfer List electronic file, titled FD09\_Transfer\_List\_ST5127.xls, that has been uplinked to **C:\OCA-up\transfer** (KFX machine).

### 6. UPDATED ROBOTICS PROCEDURE

MSG 082 - 5.102 EVA4 P6 Battery R&R that was printed on board yesterday is a significantly updated procedure from procedure 5.102 EVA4 P6 Battery R&R that is in the Robotics Flight Supplement book. Do not use the copy of 5.102 from the flown Robotics Flight Supplement book.

### 7. REPLACE PAGES 2-32 THROUGH 2-37 AND 3-102 THROUGH 3-111.

END OF PAGE 2 OF 18, MSG 086

FD09

GMT 07/23/09 (204)

MET Day\_008

GMT	Day	00	01	02	03	04	05	06	07	08	09	10	11	12
CDR POLANSKY		PAO/PMC SA/G		PRE SLEEP			SLEEP							POST SLEEP
PLT HURLEY				PRE SLEEP			SLEEP							POST SLEEP
MS1 CASSIDY		PRE SLP		MASK PB/TOOL CONFIG			SLEEP							POST SLEEP
MS2 PAYETTE		CD PAO E L W		PRE SLEEP			SLEEP							POST SLEEP
MS3 MARSHBURN		PRE SLP		MASK PB/TOOL CONFIG			SLEEP							POST SLEEP
MS4 WOLF		MD PAOD K #		PRE SLEEP			SLEEP							POST SLEEP
DAY/NIGHT ORBIT		128	129	130	131	132	133	134	135					
TDRS W E Z														
ORB ATT SSRMS_POS														
NOTES														

ISS A/L CAMPOUT @ 10.2 psi  
 10.2 DPRS  
 14.7 RPRS

#STATUS CHECK  
 BIAS -XIV -ZVW  
 MBS PDGF3 @ WS8

REPLANNED  
FD10

FD09 GMT 07/23/09 (204) 008/00

MET Day 008 AVAIL

ISS	TDRS	00	01	02	03	04	05	06	07	08	09	10	11	12
D N	FE-2 WAKATA	PW DPC	PRE SLEEP				SLEEP							
E X P 1 9	ISS CDR PADALKA	PW DPC	PRE SLEEP				SLEEP							
	FE-1 BARRATT	PW DPC	PRE SLEEP				SLEEP							
U P 4	FE-2 EXP20 KOPRA	PS RL EE DPC E P	PRE SLEEP				SLEEP							
	FE-3 ROMANENKO	PW DPC	PRE SLEEP				SLEEP							
E X P 2 0	FE-4 THIRSK	PW DPC	PRE SLEEP				SLEEP							
	FE-5 DE WINNE	PW DPC	PRE SLEEP				SLEEP							
	DAY/NIGHT ORBIT													
	SSRMS POS													
	NOTES													

JURN CLCT

FLT PLN/127/FLIGHT

2-33

**NO UNISOLATED EXERCISE**  
[SSRMS AT EVA WS, P6 BATT INSTALL]

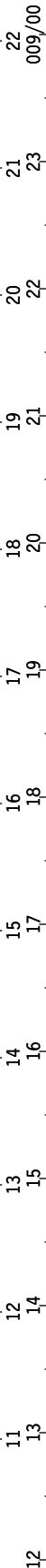
**NO EXERCISE**  
[DUAL ARM OPS]

**REPLANNED**

**FD10**

GMT 07/24/09 (205)

MET Day\_008



Activity	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00
<b>CDR POLANSKY</b>	POST SLEEP	EXERCISE	P/TV 07 EVA SUPT	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	RMS ICC BERTH
<b>PLT HURLEY</b>	POST SLEEP	EXERCISE	SSRMS EVA 4 SUPT	SSRMS EVA 4 SUPT	SSRMS EVA 4 SUPT	SSRMS EVA 4 SUPT	SSRMS EVA 4 SUPT	SSRMS EVA 4 SUPT	SSRMS EVA 4 SUPT	SSRMS EVA 4 SUPT	RMS ICC BERTH
<b>MS1 CASSIDY</b>	HYG BRK/PRBRTH	CAMP/OUT EVA PREP	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	POST EVA W/H20
<b>MS2 PAYETTE</b>	POST SLEEP	EXERCISE	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	PRE SLEEP
<b>MS3 MARSHBURN</b>	HYG BRK/PRBRTH	CAMP/OUT EVA PREP	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	POST EVA W/H20
<b>MS4 WOLF</b>	HYG BRK/PRBRTH	CAMP/OUT EVA PREP	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	EMU PREBREATHE	POST EVA W/H20
<b>DAY/NIGHT ORBIT</b>	135	136	137	138	139	140	141	142	143		
<b>TDRS</b>	W	E	Z								
<b>ORB ATT</b>											
<b>SSRMS POS</b>											
<b>NOTES</b>	*FILTER CK *COMPACT *STATUS CHECK #&DEACT BIAS -XIV -ZVW MBS PDGF3 @ WS8										

**REPLANNED**  
**FD10**  
 GMT 07/24/09 (205)

**NO UNISOLATED EXERCISE**  
 [SSRMS AT EVA WS, P6 BATT INSTALL]

**NO EXERCISE**  
 [DUAL ARM OPS]

ISS	TDRS	AVAIL	12	13	14	15	16	17	18	19	20	21	22	23	009/00										
D N	FE-2 WAKATA	POST SLEEP	L A B	DPC PW	PS I W V A O P T	G/T VLV INSUL INSTL	CGSE CLOSEOUT INSTAL	H D U E M T I A C H	B C D L C S U U T	EXERCISE ARED	MIDDAY-MEAL	FFQ	EXERCISE TVIS	ICC MVR H/O	S I S C R C M R S L S	DPC PW									
E X P	ISS CDR PADALKA	POST SLEEP		PW/DPC PW			EXERCISE TVIS	EXERCISE TVIS	TVIS HYG	BTK1 DSCT	EXERCISE CEVIS	MIDDAY-MEAL	IMS-EQUIP-INV3		COX MNT	IPM/DPC IMS									
1 9	FE-1 BARRATT	POST SLEEPS	T	PW	CAMPOUT EVA PREP		EMU PREBREATH	C LK DPRS		EXERCISE TVIS	EXERCISE ARED	FFQ	EXERCISE TVIS			R P EVA W/H20									
U P	FE-2 EXP20 KOPRA	POST SLEEP	HYG BRK/ SLEEP	CAMPOUT EVA PREP			EMU PREBREATH	C LK DPRS								P R POST EVA W/H20									
E X P	FE-3 ROMANENKO	POST SLEEP		PW/DPC PW			EXERCISE CEVIS	MBM 18 LUL PREP VFY	PEO	EXERCISE TVIS	EXERCISE TVIS	MIDDAY-MEAL	IMS-EQUIP-INV3			M P - 1									
E X P	FE-4 THIRSK	POST SLEEP		PW/DPC PW			EXERCISE ARED		A L T FFQ E A		ACC INST	MIDDAY-MEAL	PCS R12 HD PREP			DPC PW									
FE-5	DE WINNE	UCR INCLIN T	PS OL SEITE	PW	W R S	EHS-PWD WATER-CLCT	EXERCISE ARED			R U R N W C D C L C T I N S		MIDDAY-MEAL	EXERCISE CEVIS			X F U R N W C D C L C T I N S	DPC PW								
DAY/NIGHT ORBIT															135	136	137	138	139	140	141	142	143		
SSRMS POS																									
NOTES																									

FD10 GMT 07/24/09 (205) Day\_009 009/00 23 01 02 03 04 05 06 07 08 09 10 11 12

MET	009/00	23 01	02 03	04 05	06 07	08 09	10 11	12
CDR POLANSKY	RMS ICC BERTH	PRE SLEEP A/G	PRE SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	
PLT HURLEY	RMS ICC BERTH	PRE SLEEP	PRE SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	
MS1 CASSIDY	POST EVA W/H2O	PRE SLEEP	PRE SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	
MS2 PAYETTE	PRE SLEEP	PRE SLEEP	PRE SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	
MS3 MARSHBURN	POST EVA W/H2O	PRE SLEEP	PRE SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	
MS4 WOLF	POST EVA W/H2O	PRE SLEEP	PRE SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	
DAY/NIGHT ORBIT	143	144	145	146	147	148	149	150 151
TDRS W E Z								
ORB ATT								
SSRMS_POS								
NOTES								

S T S - 1 2 7

\*UPDATE &DEACT #STATUS CHECK

BIAS -XIV -ZVW  
MBS PDGF3 @ WS8



REPLANNED

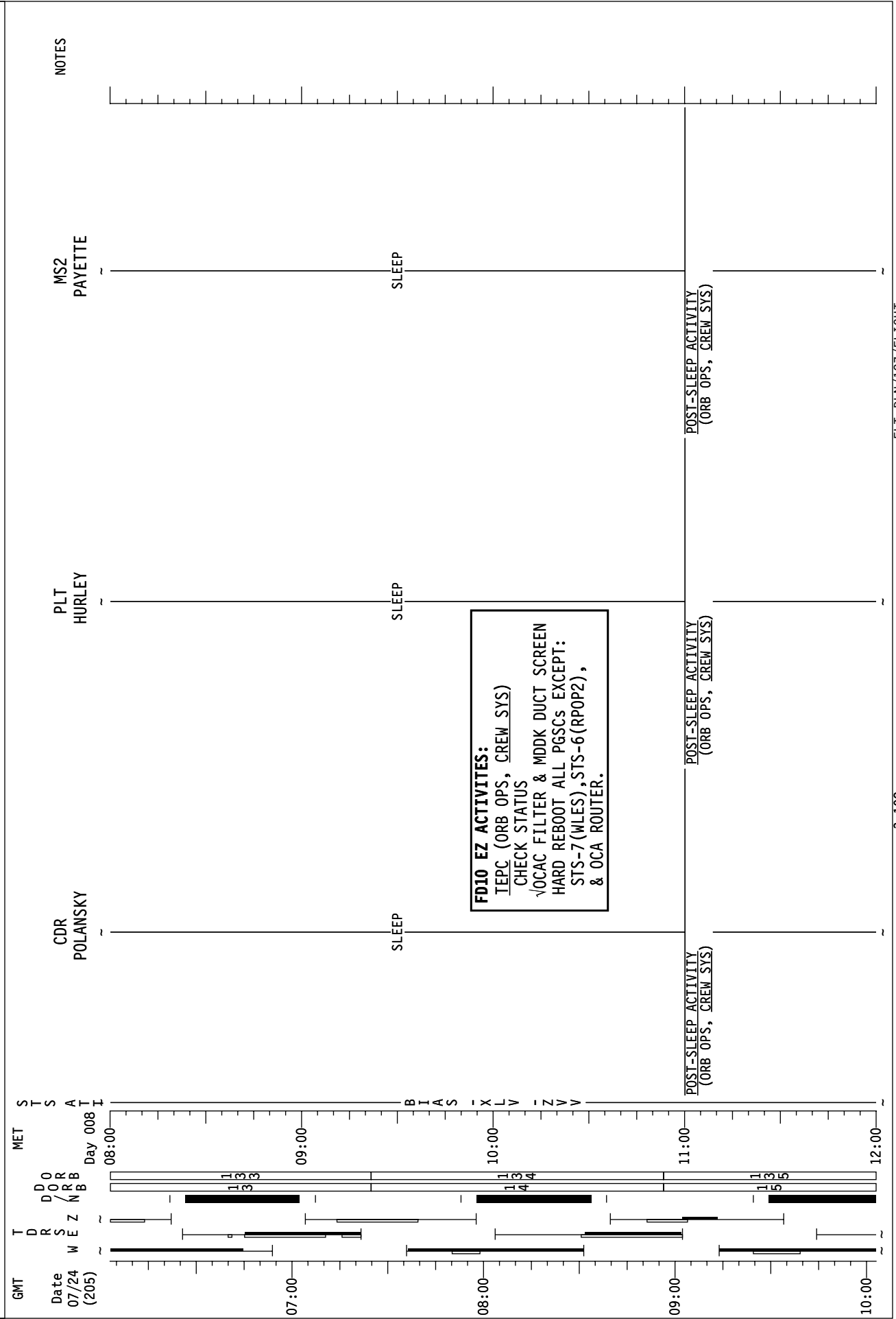
FD11

FD10 GMT 07/24/09 (205) 009/00 01 03 02 07/25 02 01 23 01 009/00

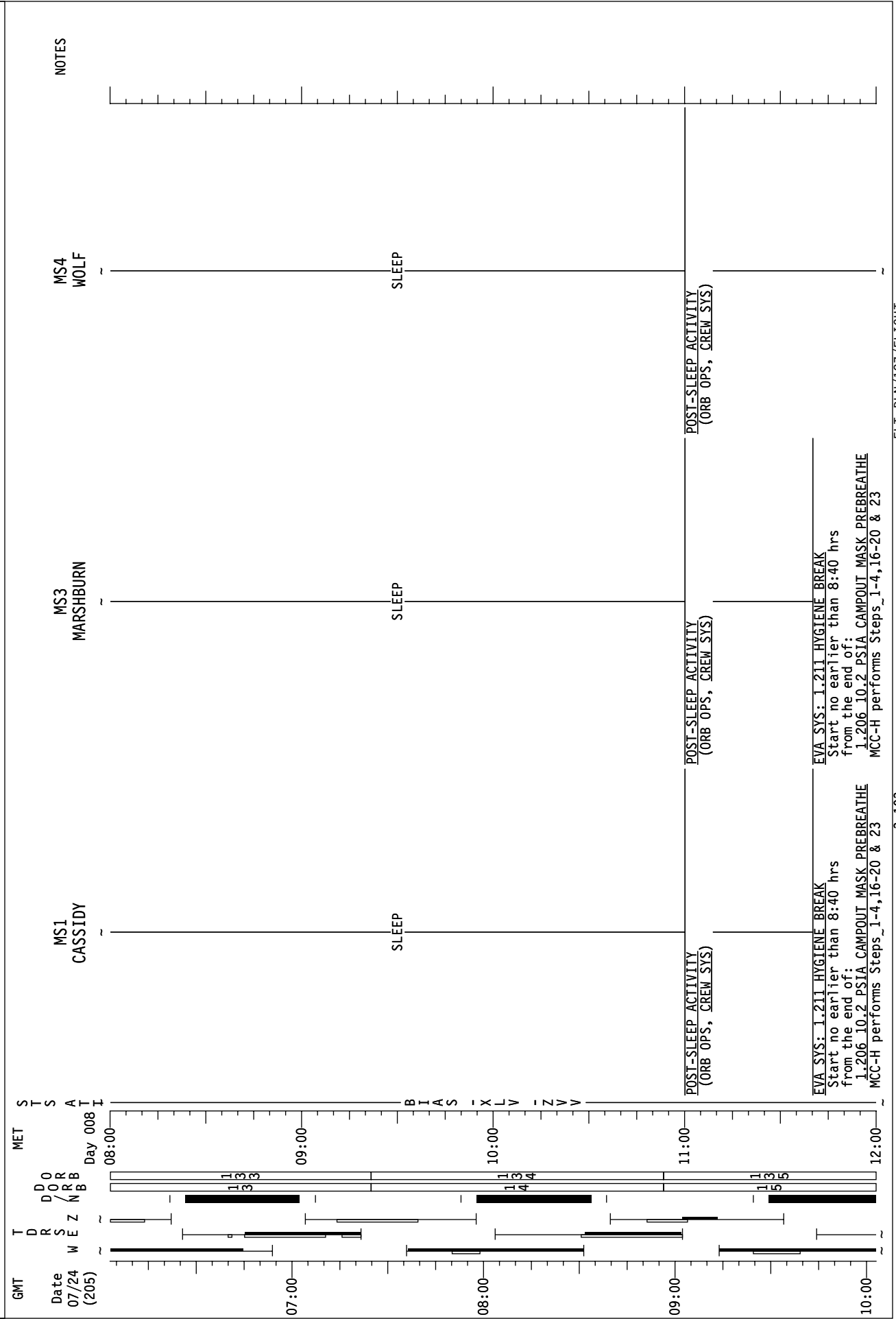
MET	ISS	TDRS	AVAIL	009/00	01	03	02	07/25	02	01	23	01	009/00	04	06	05	07	08	06	08	07	09	10	11	12
D N	FE-2 WAKATA		PRE SLEEP												SLEEP										POST SLEEP
E X P	ISS CDR PADALKA		PRE SLEEP												SLEEP										POST SLEEP
1 9	FE-1 BARRATT		PRE SLEEP												SLEEP										POST SLEEP
U P	FE-2 EXP20 KOPRA		PRE SLEEP												SLEEP										POST SLEEP
E X P	FE-3 ROMANENKO		PRE SLEEP												SLEEP										POST SLEEP
E X P	FE-4 THIRSK		PRE SLEEP												SLEEP										POST SLEEP
	FE-5 DE WINNE		PRE SLEEP												SLEEP										POST SLEEP
	DAY/NIGHT ORBIT																								
	SSRMS POS																								
	NOTES																								

\*NUTR-URINE-STOW

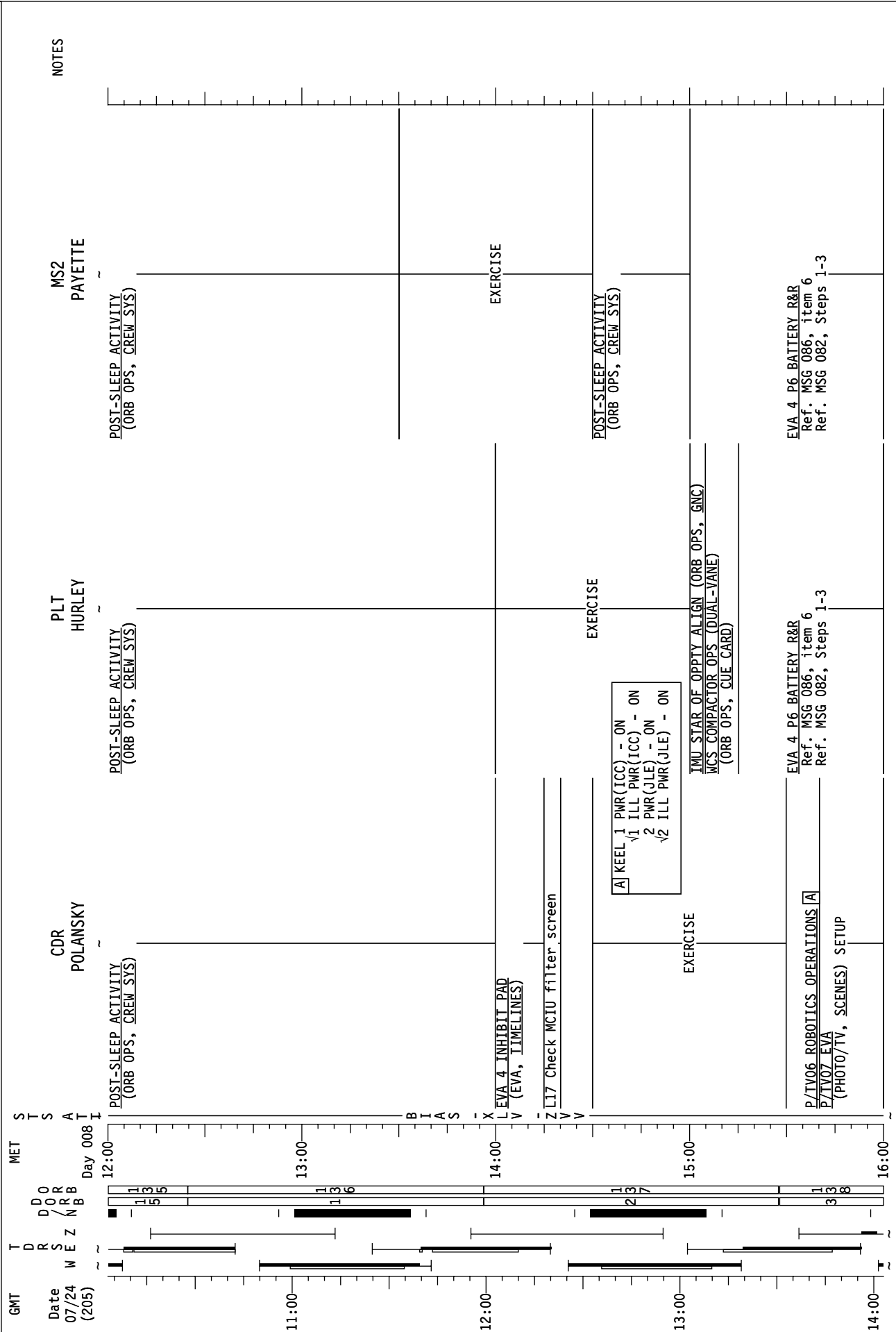
STS-127 FD (10)



STS-127 FD (10)



STS-127 FD (10)

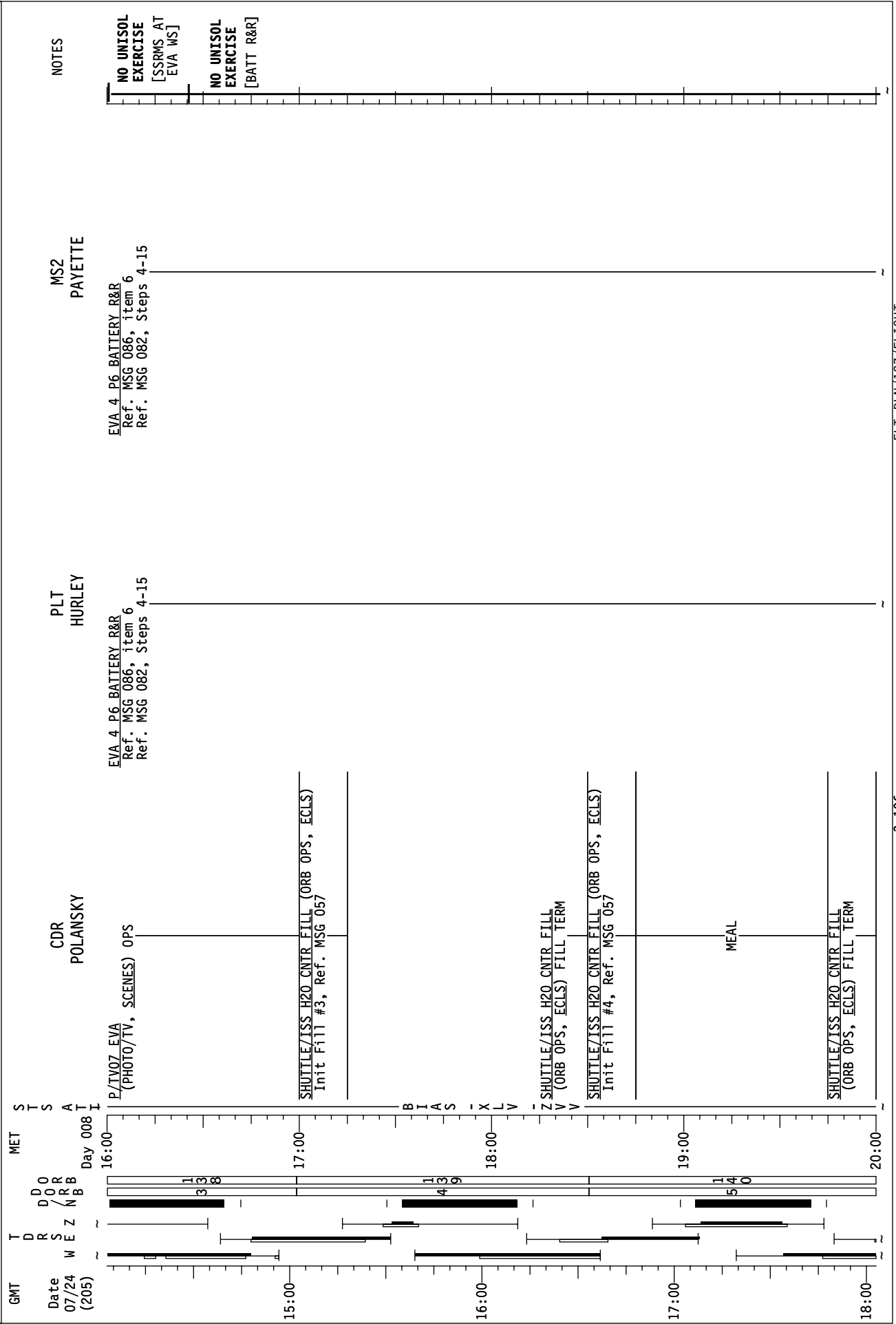


STS-127 FD (10)

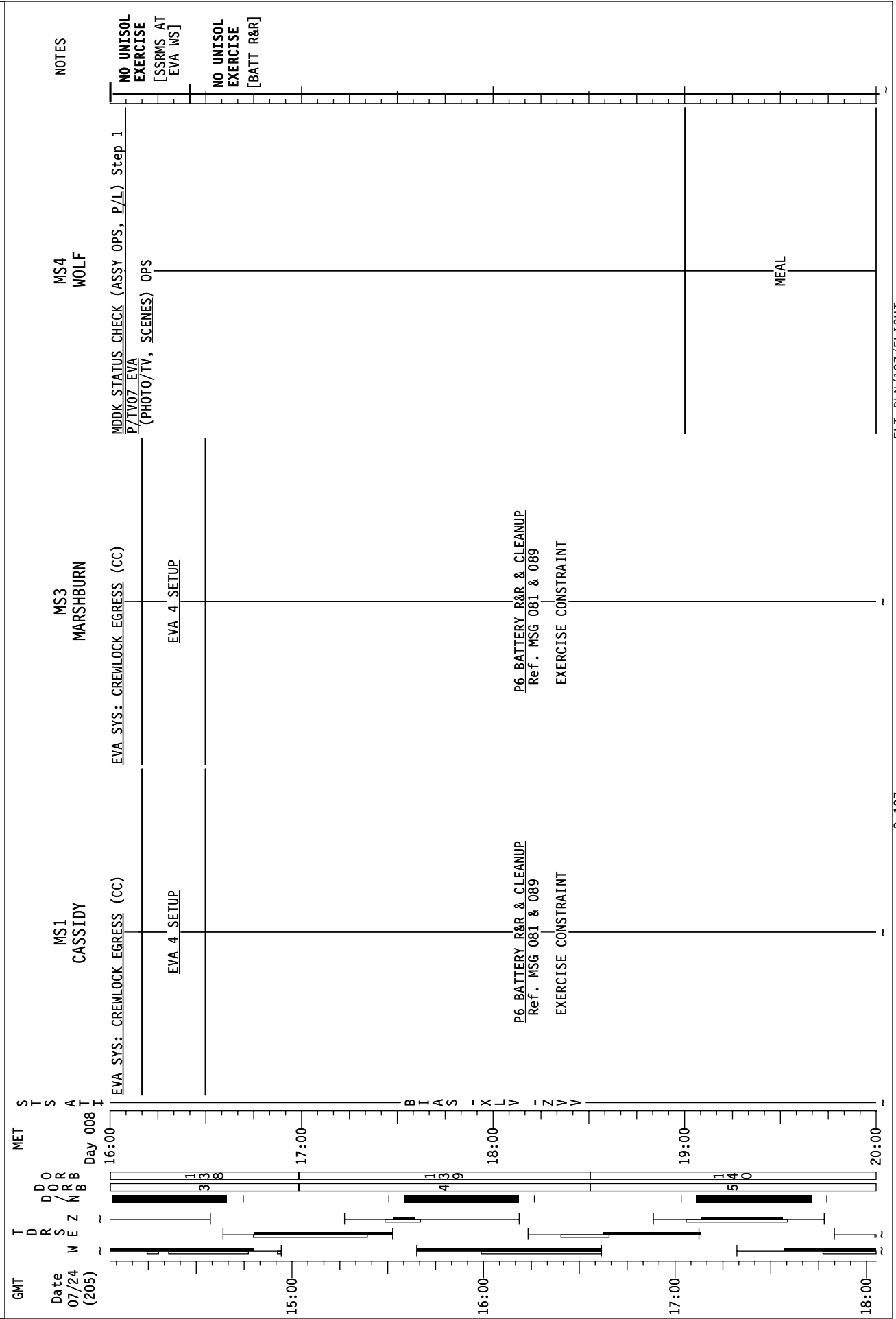
GMT	Date 07/24 (205)	Time W E Z	MS1 CASSIDY	MS3 MARSHBURN	MS4 WOLF	NOTES
11:00			EVA SYS: 1.216 EVA PREP	EVA SYS: 1.216 EVA PREP	EVA SYS: 1.216 EVA PREP	
12:00			EVA SYS: 1.211 HYGIENE BREAK Start no earlier than 8:40 hrs from the end of: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE MCC-H performs Steps 1-4,16-20 & 23	EVA SYS: 1.211 HYGIENE BREAK Start no earlier than 8:40 hrs from the end of: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE MCC-H performs Steps 1-4,16-20 & 23	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
13:00			EVA SYS: 1.220 EMU PURGE	EVA SYS: 1.220 EMU PURGE	EVA SYS: 1.220 EMU PURGE	
14:00			EVA SYS: 1.225 EMU PREBREATHE	EVA SYS: 1.225 EMU PREBREATHE	EVA SYS: 1.225 EMU PREBREATHE	
15:00			EVA SYS: CREWLOCK DEPRESS (CC)	EVA SYS: CREWLOCK DEPRESS (CC)	EVA SYS: CREWLOCK DEPRESS (CC)	
16:00			EVA SYS: CREWLOCK POST DEPRESS (CC)	EVA SYS: CREWLOCK POST DEPRESS (CC)	EVA SYS: CREWLOCK POST DEPRESS (CC)	

REPLANNED

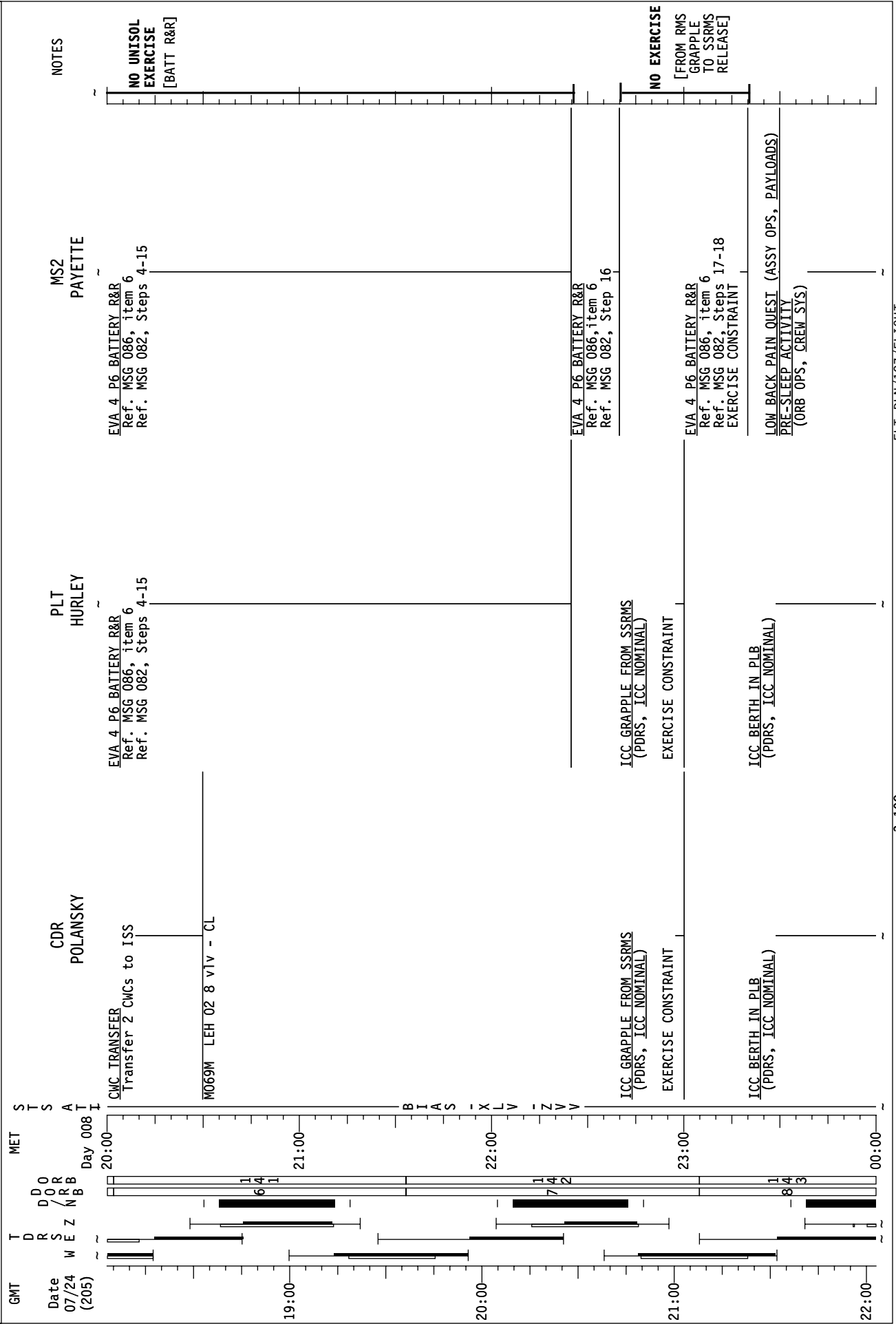
STS-127 FD (10)



STS-127 FD (10)

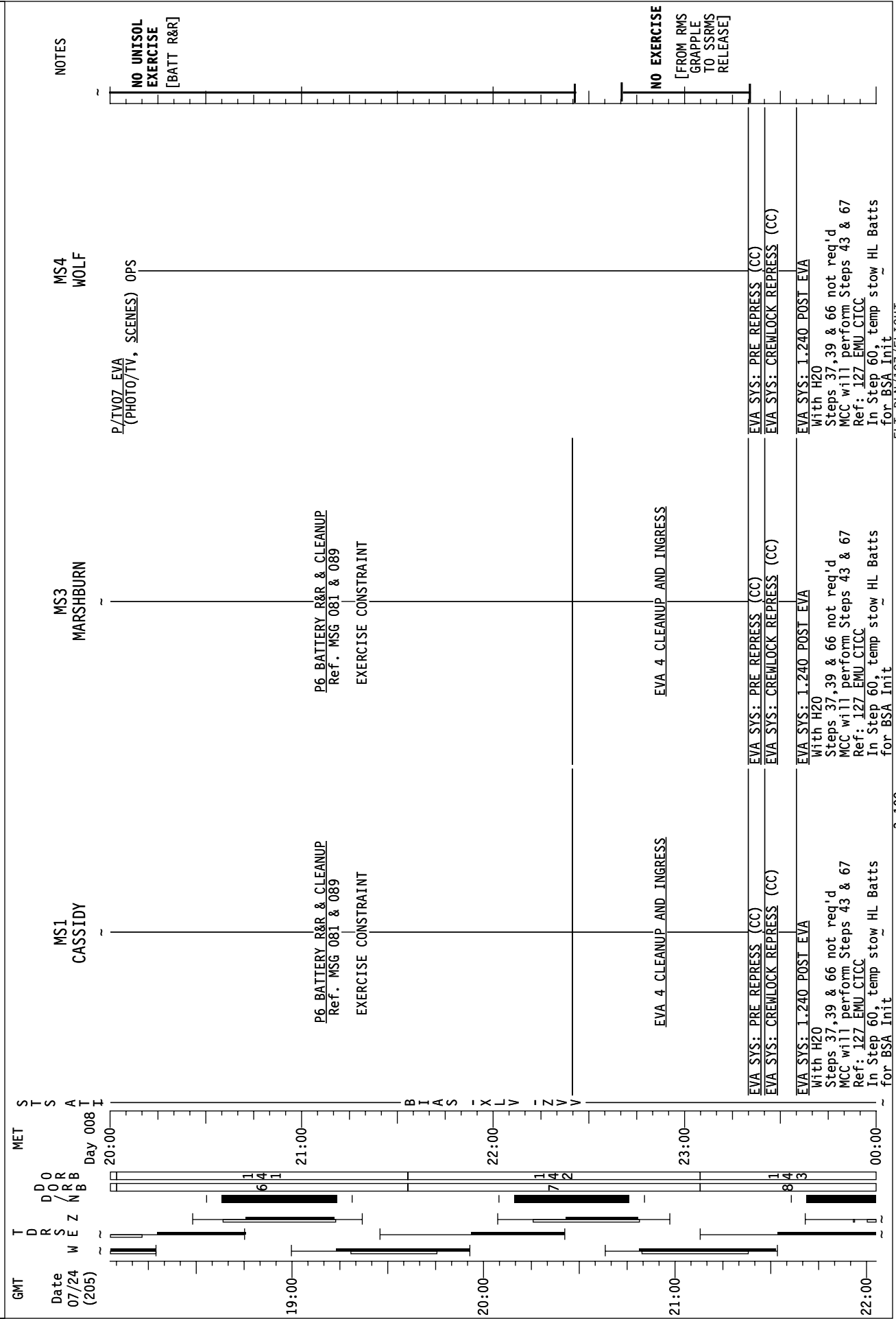


STS-127 FD (10)

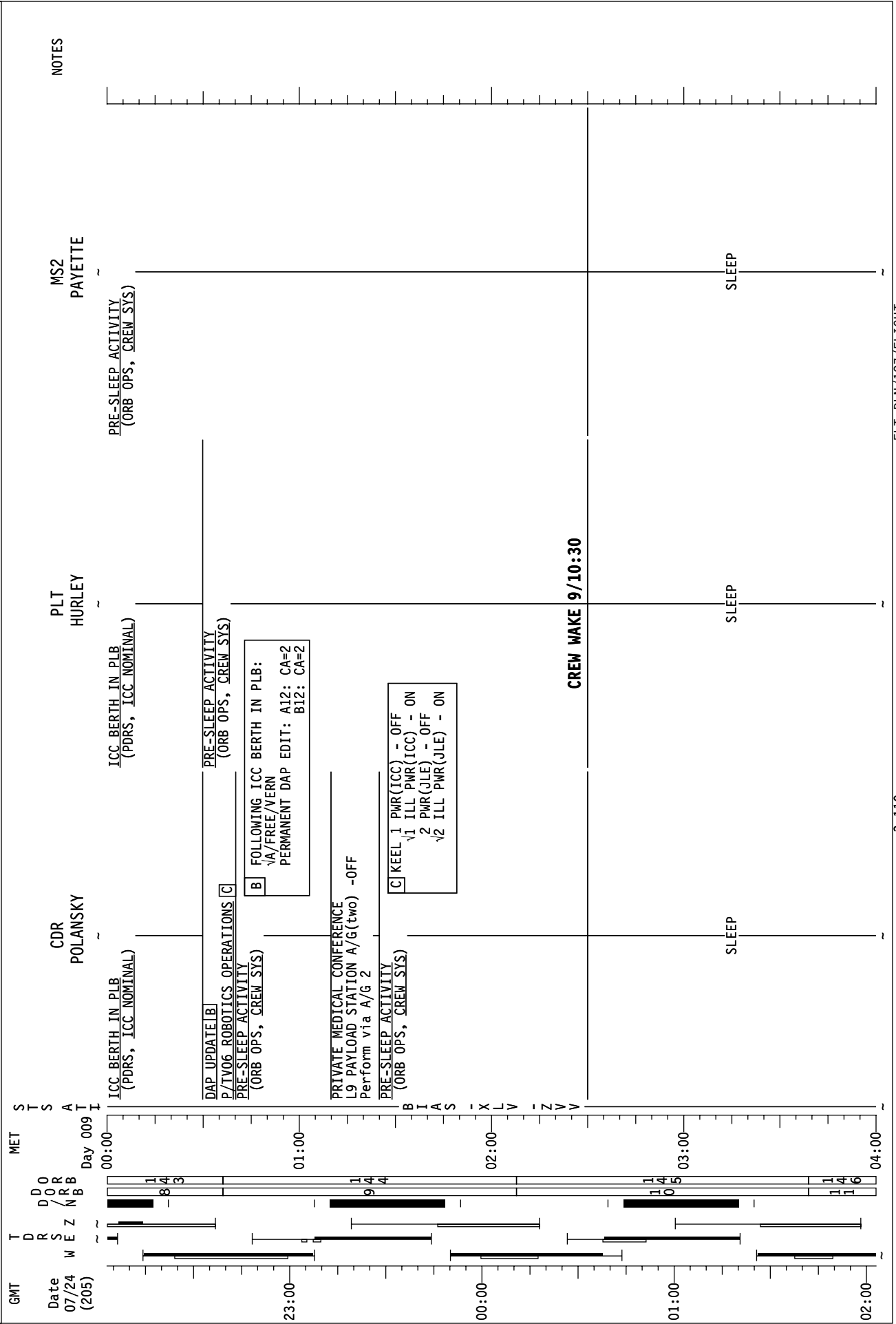




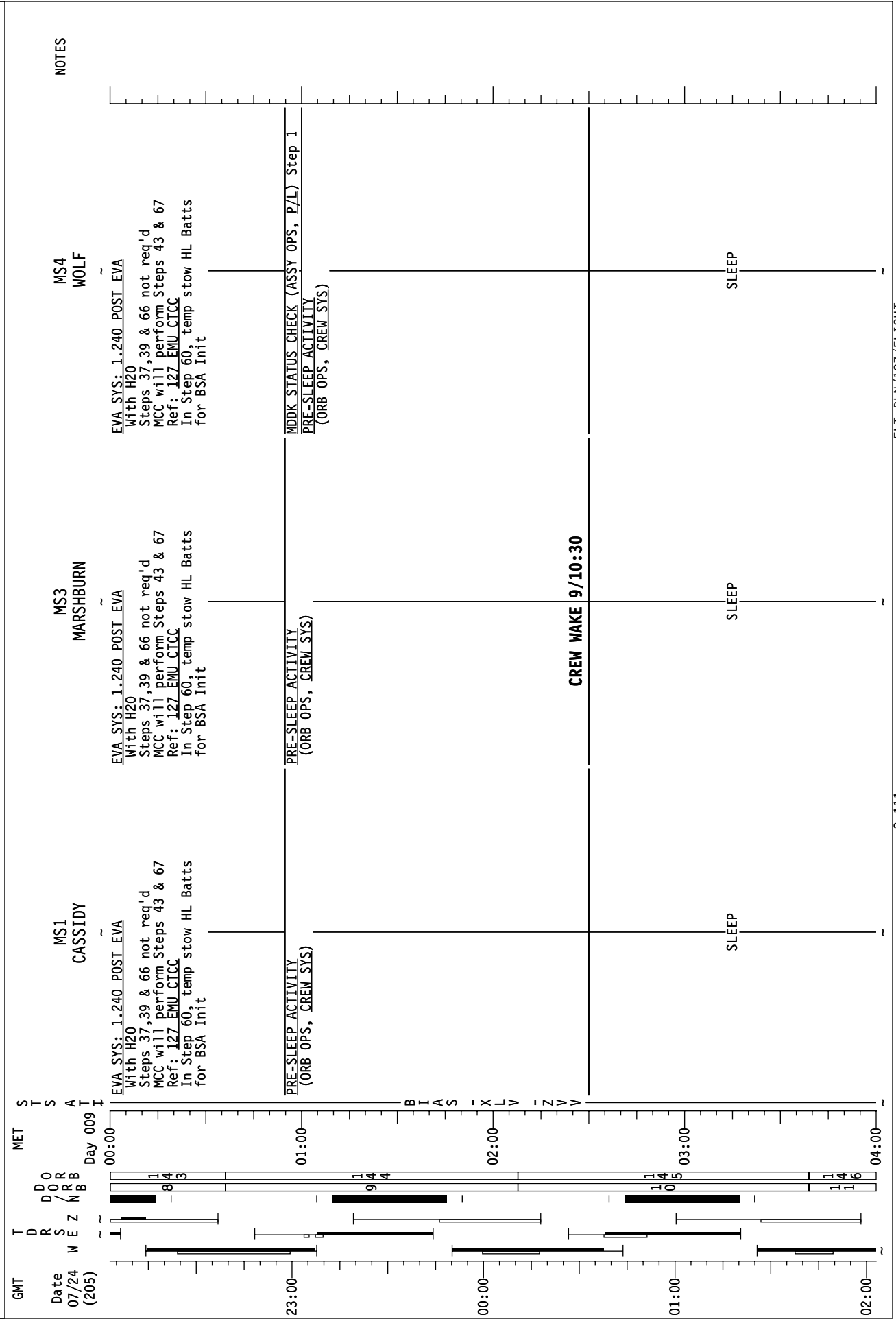
STS-127 FD (10)



STS-127 FD (10)



STS-127 FD (10)



MSG 087 - FD10 MISSION SUMMARY

1 Good morning, Endeavour!

2  
3 Thank you very much for all your hard work to make yesterday's operations successful!

4  
5 We really appreciate your willingness to sign up for today's "extended version" of EVA 4 and  
6 its robotic support. We wish you the all the best, and we'll be with you every step of the  
7 way!

8  
9  
10 YOUR CURRENT ORBIT IS: 188 X 186 NM

11 NOTAMS:

12 **NOTAMS – THREE CHANGES**

- 13  
14  
15  
16 EDW - EDW IN USE. EDT ELS DAY / VFR ONLY.  
17 EDW - LAKEBED RWY 15/33 - GREEN. RWY 18L - UNUSABLE.  
18 NOR - LAKEBED RUNWAYS GREEN.  
19 FMH - RWY 05/23 CLOSED.  
20 GUA - RWY 24R END LIGHTS OTS.  
21 GUA - RWY 06R/24L CLOSED.  
22 INN - CLOSED.  
23 AMB - CLOSED.  
24 IKF - NOT USABLE. NO AGREEMENT.  
25 BEN - NOT RECOMMENDED/NOT SUPPORTED.  
26 **ESN - RWY 03R/21L CLOSED.**  
27 ~~ILM - CLOSED.~~  
28 ~~KBO - RWY 14L/32R CLOSED.~~

29  
30 NEXT 2 PLS OPPORTUNITIES:

31  
32 EDW22 ORB 142 – 8/22:26 SCT150 SCT300 7 200/10P15 (ORB 143 220/14P24)  
33 NOR17 ORB 157 – 9/21:17 SCT250 7 200/06P10

34  
35 OMS TANK FAIL CAPABILITY:

36  
37 L OMS FAILS: NO  
38 R OMS FAILS: NO

39  
40 LEAKING OMS PRPLT BURN:

41  
42 L OMS LEAK: ALWAYS BURN RETROGRADE  
43 R OMS LEAK: ALWAYS BURN RETROGRADE

44  
45 OMS QUANTITIES(%)

46  
47 Subtract interconnect counter for current OMS quantities.

48  
49 L OMS OX = 39.5 R OMS OX = 39.7  
50 FU = 39.1 FU = 39.4

51  
END OF PAGE 1 OF 2, MSG 087

MSG 087 - FD10 MISSION SUMMARY

DELTA V AVAILABLE:

OMS	394 FPS
<u>ARCS (TOTAL ABOVE QTY1)</u>	<u>42 FPS</u>
TOTAL IN THE AFT	436 FPS
ARCS (TOTAL ABOVE QTY2)	74 FPS
FRCS (ABOVE QTY 1)	28 FPS
AFT QTY 1	81 %
AFT QTY 2	43 %

<u>SYSTEM</u>	<u>FAILURE</u>	<u>IMPACT</u>	<u>WORK AROUND</u>
EPS	FC3 Sustaining Heater remained powered for longer than expected.	Should the heater fail on permanently there will be a large margin impact and the Fuel Cell will not be considered usable as a last fuel cell.	The load on FC3 was increased by taking Main C Bus Tie - OFF, to preclude additional heater cycles and avoid another potential stuck on heater. This is also a margin hit but will be less of an impact than a stuck on heater. EGIL is working on a configuration that will minimize the impact to margins but keep Fuel Cell 3 warm enough to prevent future Sustaining Heater cycles.

END OF PAGE 2 OF 2, MSG 087

**20-0573 (MSG 088) EVA4 BATTERY F SETUP TO OVERNIGHT PARK**

Page 1 of 2 pages

**1. SINGLE JOINT MNVR TO CLEAR SAW 4A**

Configure Cameras and overlays as required.

Monitor 1	Monitor 2	Monitor 3	SSC 1 (MON 1)	SSC 2 (DTV)
07: P1 LOIB (-110, -10)	37: MBS Mast (0, 0)	51: JEM EXT A (-10, +10)	Camera B (-40, +10)	SRMS Elbow (+70, +40)
				SRMS EE

Verify EV Crew, tools, and tethers are clear

PCS MSS: SSRMS:

Enter Mode – Single (Verify blue)

<b>WARNING</b>
The active joint must be checked on the PCS before initiating motion. Failure to do so may result in movement of the wrong joint.

DCP JOINT SELECT → ELBOW PITCH (Verify EP – Selected on PCS)

THC Perform “+” Single Joint maneuver to EP: -30.0 (THC up).

Verify SSRMS at SAW 4A Clear position (within 20cm/5 deg).

SR	SY	SP	EP	WP	WY	WR
+72.1	+0.9	-57.2	-30.0	-105.8	-183.9	+144.4
X	Y	Z	Pitch	Yaw	Roll	
-67	+1380	-303	+26.0	-19.4	-2.8	
FOR	Loaded – VCC Mnvr, SY Held					
Disp	VCC>Battery R&R					

**2. JOCAS TO OVERNIGHT PARK POSN (9:05)**

RHC RATE → COARSE (Verify Coarse on PCS)

PCS MSS: SSRMS:

Enter Mode – Joint OCAS (Verify blue)

pick File ► EVA3 ► Overnight Park

**20-0573 (MSG 088) EVA4 BATTERY F SETUP TO OVERNIGHT PARK**

Page 2 of 2 pages

Verify 'Joint Angles' 'Destination' for Overnight Park position.

SR	SY	SP	EP	WP	WY	WR
+207.1	+35.5	-86.7	+74.9	-8.8	-141.8	+116.1

**cmd** Load (Verify Sequence Status – Confirm or Cancel)

MON

Verify joint angles and errors are correct on Joint Angle Position overlay.

	SR	SY	SP	EP	WP	WY	WR
(current)	+72.1	+0.9	-57.2	-30.0	-105.8	-183.9	+144.4
<b>TGT</b>	<b>+207.1</b>	<b>+35.5</b>	<b>-86.7</b>	<b>+74.9</b>	<b>-8.8</b>	<b>-141.8</b>	<b>+116.1</b>
<b>ERR</b>	-135.0	-34.6	+29.5	-104.9	-97.0	-42.1	+28.3

PCS

**cmd** Confirm (Verify Sequence Status – Auto Seq sw - Hot)

<u>NOTE</u> Expect singularity warning for EP between -15 and +15 degrees.
---

DCP

AUTO SEQ → PROC

PCS

MSS: SSRMS: SSRMS

Verify Posn Hold – orange

Verify SSRMS at Overnight Park position (within 5 cm/1 deg).

SR	SY	SP	EP	WP	WY	WR
+207.1	+35.5	-86.7	+74.9	-8.8	-141.8	+116.1
X	Y	Z	Pitch	Yaw	Roll	
+898	-207	+560	-65.9	-77.7	-171.6	
FOR	Loaded – VCC Mnvr, SY Held					
Disp	VCC>Battery R&R					

<u>NOTE</u> Expect the following message when safing is commanded: <b>'R3Z - MSS OCS SSRMS Prime(Redun) ACU SRT Cat-1 Brk Stat Fail'</b> (SCR 17495) This message should return to Norm.
---

DCP

SAFING → SAFE (Verify ON)

Notify **MCC-H** Go for Port SARJ and arrays autotrack.

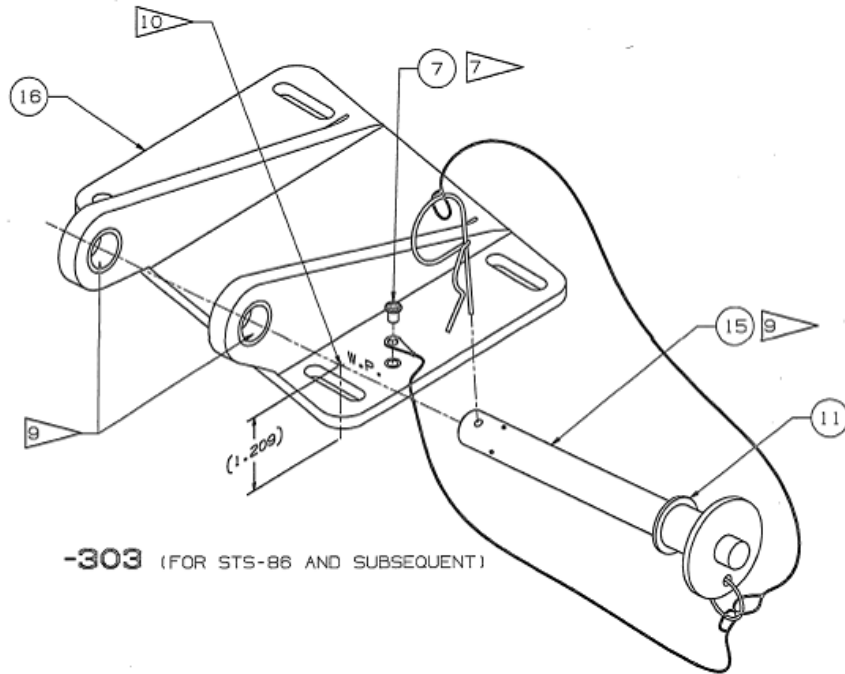
TASK	FAILURE	ACTION
<b>XV. BATTERY BOLTS</b>	A. IEA Bolt Removal: H1, H2	1. PGT: Manual ratchet 2. Check MCC-H for tie down plan
	B. IEA Bolt Installation: H1	1. Back out and reattempt installation 2. Increase PGT setting: <b>PGT: [B7 (25.5), CCW2, 30.5], 7/16 - 6-ext</b> If no joy: Check MCC-H for tie down plan
	C. IEA Bolt Installation: H2	1. Verify pushing while installing (to overcome antirotation device) 2. Verify relieving side loading; push down on H1 end of box 3. If high running torque, backout and reattempt installation 4. If still no joy; backout completely and inspect surfaces (IEA and battery) for FOD; reattempt installation 5. Increase PGT setting: <b>PGT: [B7 (25.5), CCW2, 30.5], 7/16 - 6-ext</b> 6. If still no joy: Check MCC-H
	D. ICC-VLD Removal: Torque Break H1  <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Once Torque Broken go to block F for bolt release </div>	1. If no joy releasing bolt, attempt to reinstall bolt using nominal settings; report torque and turns 2. If no joy reinstalling bolt: Check MCC-H for GO to break shear pin 3. Increase PGT setting (shear pin expected to fail): <b>PGT: [B2 (16.0), CCW2, 30.5], TM Rec 7/16;</b> <b>PGT: 1 turn at bolt (5 turns on PGT)</b> 4. If still no joy, check MCC-H 5. If shear pin breaks, remove TM <b>PGT: [A7 (9.2), CCW2, 30.5], 7/16-6ext;</b> <b>PGT: Expect 8-9 turns to remove insert</b> 6. Check MCC-H for tie down plan
	E. ICC-VLD Removal: Torque Break H2  <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Once Torque Broken go to block G for bolt release </div>	1. Verify relieving side loading; push down on H1 end of box 2. If no joy releasing bolt, attempt to reinstall bolt using nominal settings; report torque and turns 3. If H2 reinstalls, reinstall H1 using nominal settings; report torque and turns 4. If no joy reinstalling bolt: Check MCC-H for GO to break shear pin 5. Increase PGT setting (shear pin expected to fail): <b>PGT: [B2 (16.0), CCW2, 30.5], TM Rec 7/16</b> <b>PGT: 1 turn at bolt (5 turns on PGT)</b> 6. If still no joy, check MCC-H 7. If shear pin breaks, remove TM <b>PGT: [A7 (9.2), CCW2, 30.5], 7/16-6ext;</b> <b>PGT: Expect 8-9 turns to remove insert</b> 8. Check MCC-H for tie down plan
	F. ICC-VLD Removal: Bolt release H1	1. If no joy releasing bolt, attempt to reinstall bolt using nominal settings; report torque and turns 2. If no joy reinstalling bolt: Check MCC-H for GO to break shear pin 3. Retrieve torque multiplier 4. Increase PGT setting (shear pin expected to fail): <b>PGT: [B2 (16.0), CCW2, 30.5], TM Rec 7/16</b> <b>PGT: 1 turn at bolt (5 turns on PGT)</b> 5. If still no joy, check MCC-H 6. If shear pin breaks, remove TM <b>PGT: [A7 (9.2), CCW2, 30.5], 7/16-6ext;</b> <b>PGT: Expect 8-9 turns to remove insert</b> 7. Check MCC-H for tie down plan



TASK	FAILURE	ACTION
	G. ICC-VLD Removal: Bolt Release H2	<ol style="list-style-type: none"> <li>1. Verify relieving side loading; push down on H1 end of box</li> <li>2. If no joy releasing bolt, attempt to reinstall bolt using nominal settings; report torque and turns</li> <li>3. If H2 reinstalls, reinstall H1 using nominal settings; report torque and turns</li> <li>4. If no joy reinstalling bolt: Check MCC-H for GO to break shear pin</li> <li>5. Retrieve torque multiplier</li> <li>6. Increase PGT setting (shear pin expected to fail): <b>PGT: [B2 (16.0), CCW2, 30.5], TM Rec 7/16 PGT: 1 turn at bolt (5 turns on PGT)</b></li> <li>7. If still no joy, check MCC-H</li> <li>8. If shear pin breaks, remove TM <b>PGT: [A7 (9.2), CCW2, 30.5], 7/16-6ext; PGT: Expect 8-9 turns to remove insert</b></li> <li>9. Check MCC-H for tie down plan</li> </ol>
	H. ICC-VLD Installation: H2	<ol style="list-style-type: none"> <li>1. Verify pushing while installing (to overcome antirotation device)</li> <li>2. Verify relieving side loading; push down on H1 end of box</li> <li>3. If high running torque, backout and reattempt installation</li> <li>4. If still no joy; backout completely and inspect surfaces (ICC-VLD and battery) for FOD; reattempt installation</li> <li>5. Increase PGT setting: <b>PGT: [B7 (25.5), CCW2, 30.5], 7/16 - 6-ext</b></li> <li>6. If still no joy: Check MCC-H</li> </ol>
	I. ICC-VLD installation: H1	<ol style="list-style-type: none"> <li>1. Back out and reattempt installation</li> <li>2. Increase PGT setting: <b>PGT: [B7 (25.5), CCW2, 30.5], 7/16 - 6-ext</b></li> <li>3. If no joy: Check MCC-H for tie down plan</li> </ol>

MSG 090 – LOST AND FOUND: HITCH PIN

- 1 Illustration provided to help identify possible locations for lost and found hitch pin.



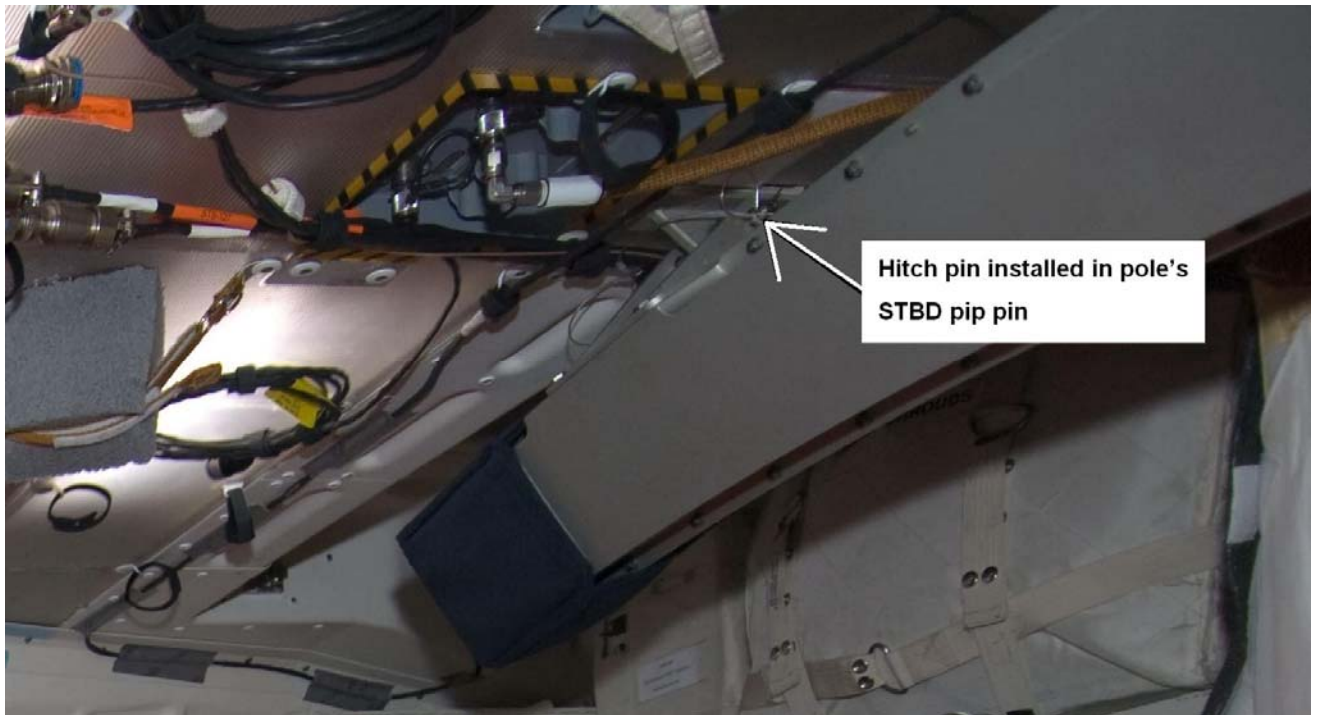
- 2
- 3 Escape Pole Hitch Pin above
- 4



- 5
- 6
- 7 Galley Hitch Pin
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

END OF PAGE 1 OF 2, MSG 090

MSG 090 – LOST AND FOUND: HITCH PIN



END OF PAGE 2 OF 2, MSG 090