

STS-126/ULF2

FD 10 Execute Package



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091	19	FD10 Crew Choice Video Downlink Options (pdf)
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Approved by FAO: T. Clancy

A handwritten signature in black ink, appearing to read 'T. Clancy', written over a horizontal line.

Last Updated: Nov 23 2008 1:29PM GMT
JEDI (Joint Execute package Development and Integration), v2.04.0003

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MSG 086 - FD10 FLIGHT PLAN REVISION

1 MSG INDEX

2

3 <u>MSG NO.</u>	<u>TITLE</u>
4 086	FD10 Flight Plan Revision
5 087	FD10 Mission Summary
6 088	FD10 Transfer Message (18-0294)
7 089	FD09 MMT Summary
8 090	FD10 PAO Event Summary (18-0295)
9 091	FD10 Crew Choice Video Downlink Options
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11 093	Stowage Locations for FD10 (GMT 328) (18-0297)
12 094	EVA 4 Summary Timeline (18-0299)
13 095	FD10 Combo Water Dump
14 096	ULF2 Tool Stow for MPLM Transfer (18-0301)
15 097	FD10 EVA Deltas (18-0302)
16 098	EVA 4 Tool Config (18-0305)
17 099	5-MLE Bag and Middeck Stowage

- 18
- 19
- 20 1. For today's cryo config, O2 tanks 1 and 2 will be active with dual heaters and H2 tanks 1
- 21 and 5 will be active with dual heaters.

22

23 R1 O2,H2 MANF VLV TK1 (two) - OP (tb-OP)

24 O2 TK2 HTRS A,B (two) - AUTO

25

26 A15 CRYO TK5 HTR O2 A - OFF

- 27
- 28
- 29 2. REPLACE PAGES 3-104 THROUGH 3-113.
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REPLANNED

FD10

GMT 11/23/08 (328)

MET Day 008

11/24 009/00

Day	12	13	14	15	16	17	18	19	20	21	22	23	24
D N	SLEEP		SLEEP	POST SLEEP	POST SLEEP	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	MEAL	MEAL	EXERCISE	EXER
	SLEEP		SLEEP	POST SLEEP	POST SLEEP	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	MEAL	MEAL	MPLM XFER	MPLM XFER
I S S	SLEEP		SLEEP	POST SLEEP	POST SLEEP	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY
	SLEEP		SLEEP	POST SLEEP	POST SLEEP	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY
U P	SLEEP		SLEEP	POST SLEEP	POST SLEEP	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY
	SLEEP		SLEEP	POST SLEEP	POST SLEEP	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY

NOTES

*CND TERM/CND INI

*WST TERM/CND INI

*UPA-FILL

*EFBM-TROUBLESHOOT

*OMBS REPRESS/I/CNCT TK SWITCH L-R

*STATUS CHECK

*BIAS -XLV -ZVW

*FILTER CHECK

DUMP

2-34

FLT PLN/126/FLIGHT

REPLANNED

FD10

GMT 11/24/08 (329)

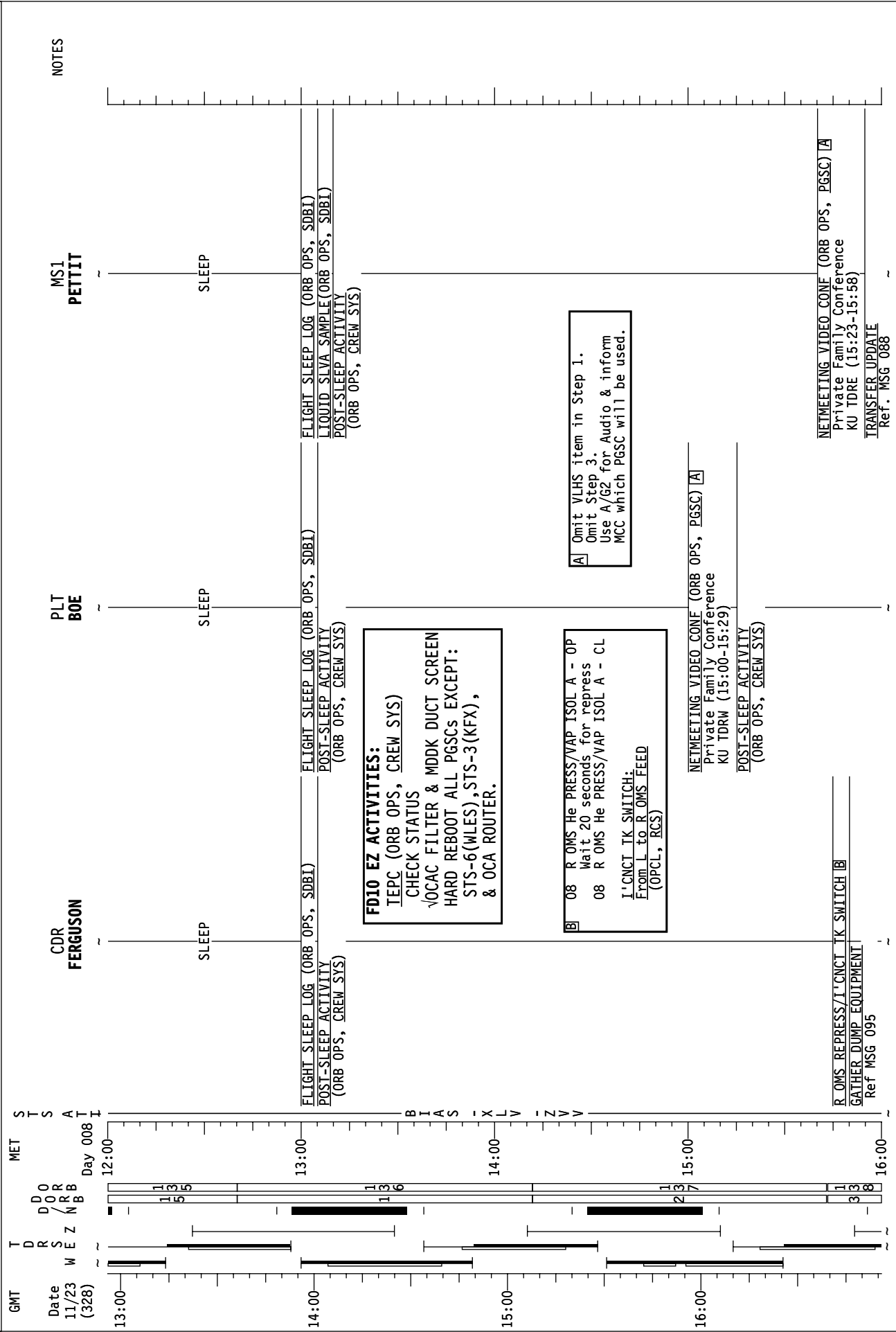
MET Day 009

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S T S - 1 2 6	CDR FERGUSON	I M U	M D H D/ K O #	EVA4 PROC REVIEW	M U S	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP
	R1 PLT BOE	E X E R	C T W N C I T 9	EVA4 PROC REVIEW	C T X M W E I F U C R I C E S M R	PRE SLEEP		PRE SLEEP	SLEEP
R3 MS1 PETTIT	M P L M X F E R	X T F A E G R	EVA4 PROC REVIEW	M U S	PRE SLEEP	PRE SLEEP		PRE SLEEP	SLEEP
EV2 MS2 BOWEN	P S L E P		EVA4 PROC REVIEW	PRE SLEEP	MASK PB/TOOL CONFIG	PRE SLEEP		PRE SLEEP	SLEEP
EV1 MS3 PIPER	M P L M X F E R	X T F A E G R	EVA4 PROC REVIEW	EXERCISE	PRE SLEEP	PRE SLEEP		PRE SLEEP	SLEEP
R2/EV3 MS4 KIMBROUGH	EX E R		EVA4 PROC REVIEW	PRE SLEEP	MASK PB/TOOL CONFIG	PRE SLEEP		PRE SLEEP	SLEEP
FE-2 CHAMITOFF	A M I A I N S T L		EVA4 PROC REVIEW	* D P C P M	PRE SLEEP-ISS			PRE SLEEP-ISS	SLEEP
ISS CDR FINCKE	R E D		EVA4 PROC REVIEW	P M D P C P M	PRE SLEEP-ISS			PRE SLEEP-ISS	SLEEP
FE-1 LONCHAKOV	C O K M N T	P W	EVA4 PROC REVIEW	P M D P C P M	PRE SLEEP-ISS			PRE SLEEP-ISS	SLEEP
FE-2 EXP18 MAGNUS	M P L M X F E R	D I R C S U S	EVA4 PROC REVIEW	P M D P C P M	PRE SLEEP-ISS			PRE SLEEP-ISS	SLEEP
DAY/NIGHT ORBIT	143	144	145	146	147	148	149	150	151
TDRS W E Z	-171.0 -46.0 -275.0								
ORB ATT									
NOTES	#STATUS CHECK #AMIA CNCT BIAS -XLV -ZVV								

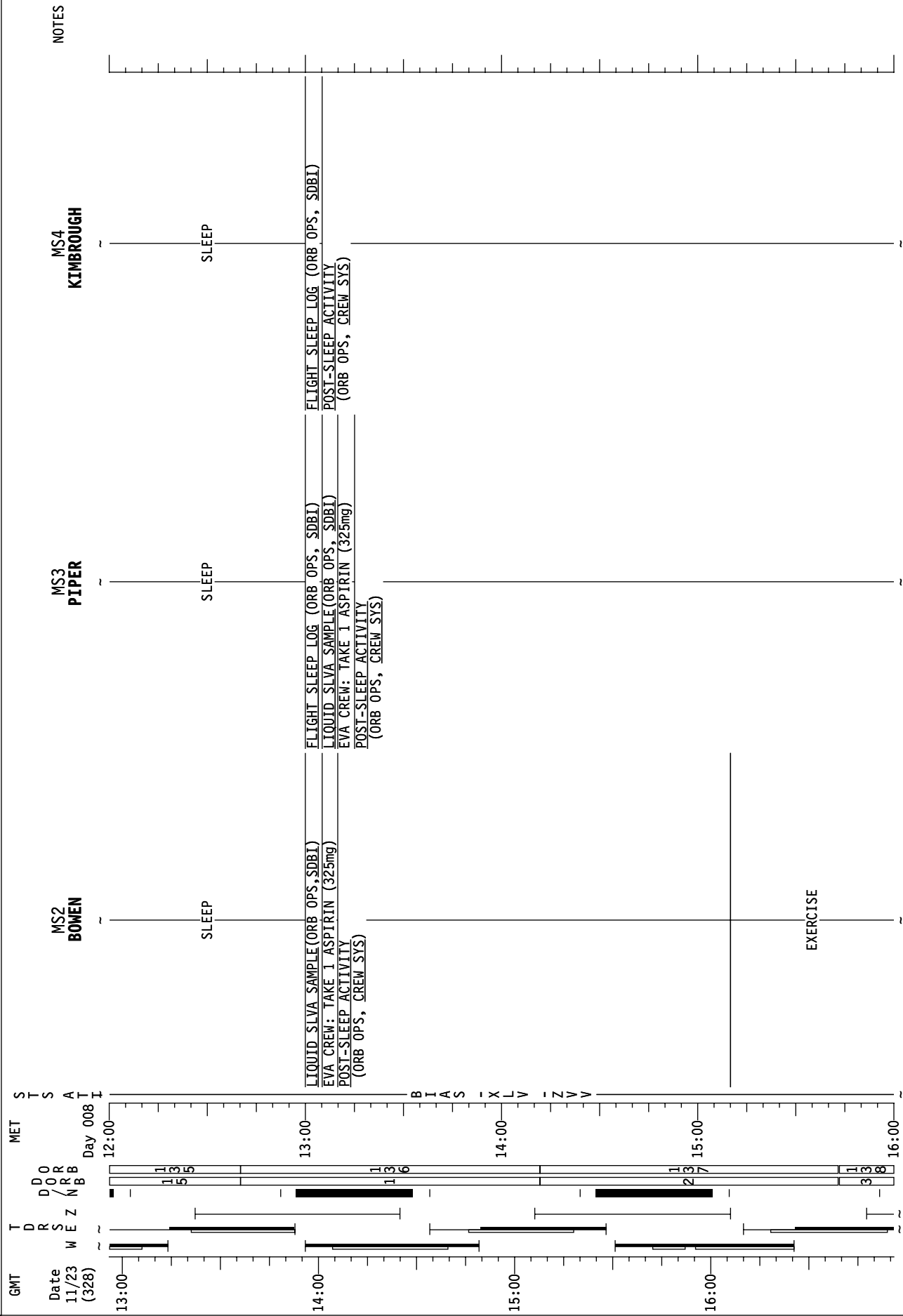
STS-126 FD (10)

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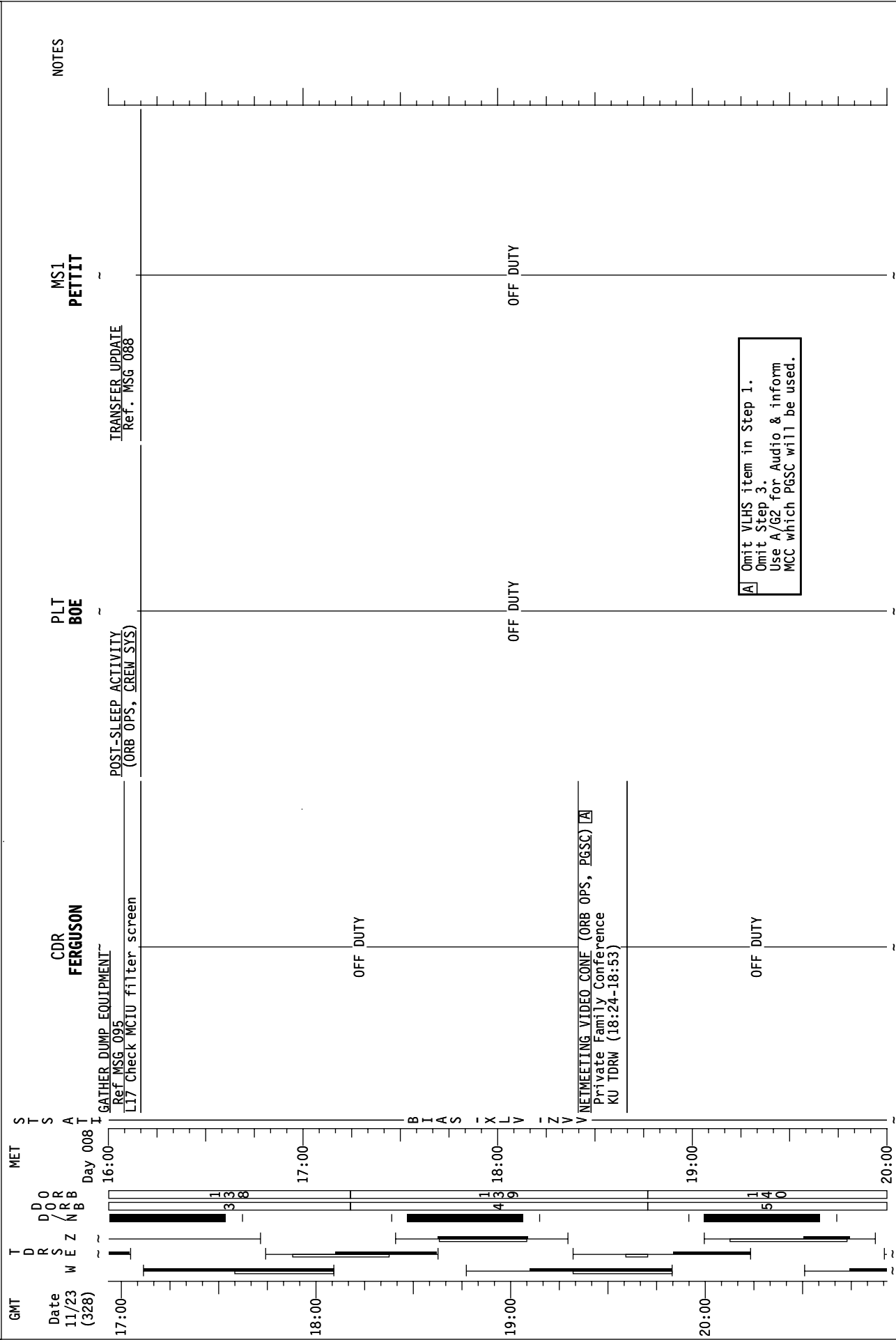
STS-126 FD (10)

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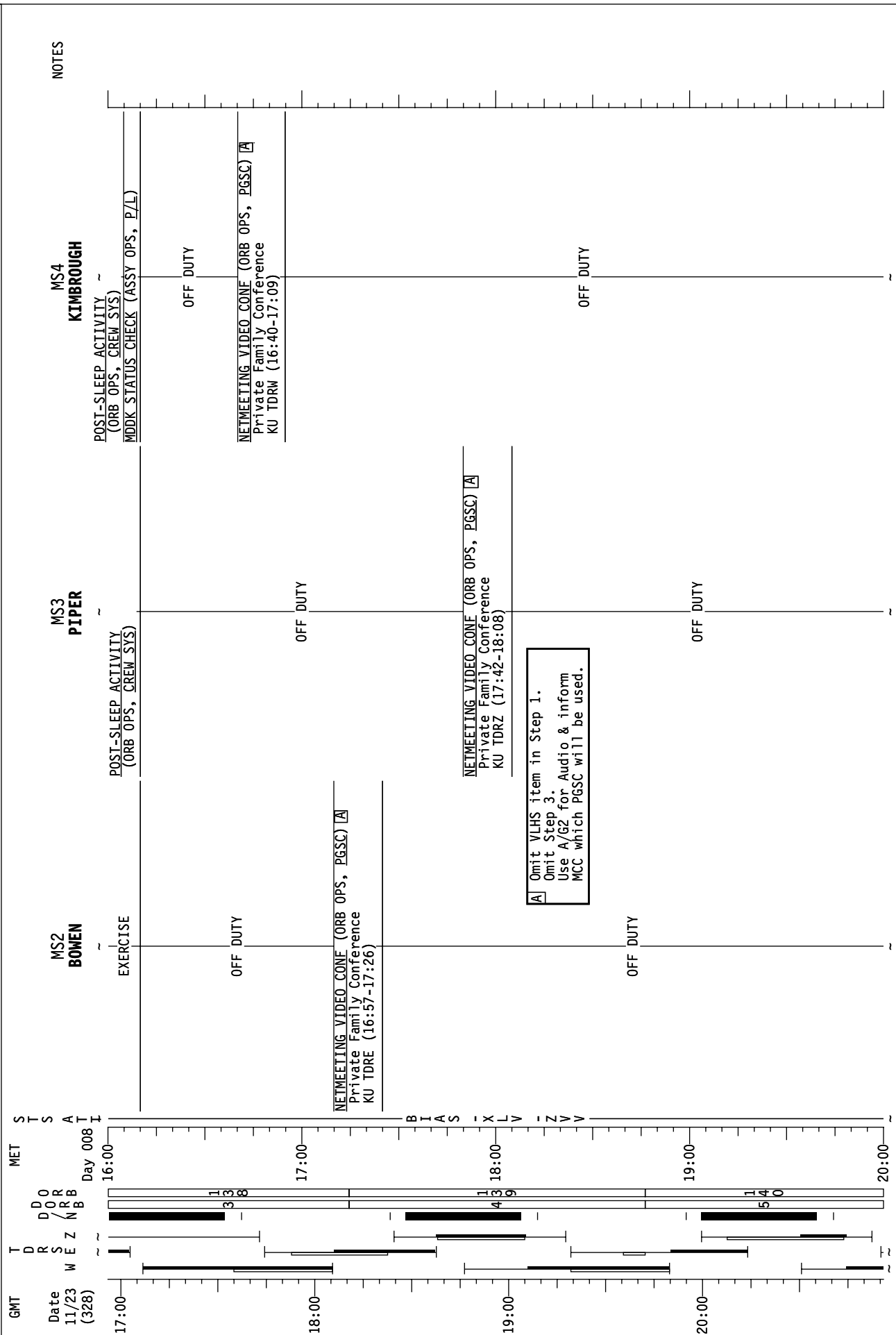
STS-126 FD (10)

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STS-126 FD (10)

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STS-126 FD (10)

REPLANNED

GMT	Date 11/23 (328)	TDRS W E Z	MET Day 008 I	CDR FERGUSON	PLT BOE	MS1 PETTIT	NOTES
21:00		1 54	20:00	OFF DUTY	OFF DUTY	OFF DUTY	
				PUBLIC AFFAIRS EVENT Ref. MSG 090 ISS KU: 20:07-20:47	PUBLIC AFFAIRS EVENT Ref. MSG 090 ISS KU: 20:07-20:47		
22:00		1 64	21:00	MEAL	MEAL	MEAL	
				Select DAP B, then JOINT OPS: 3.110 HANDOVER ATTITUDE CONTROL CMG TA to ORBITER MNV (TRK) BIAS -XLV -ZVV (Dump) TG=2 BV=5 P=160 Y=354 OM=194 B12/AUTO/VERN Init TRK When in attitude, select DAP A SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Initiate Waste Dump, Ref. MSG 095	TRANSFER OPS Ref. MSG 088 Ref. MPLM Resupply and Return Transfer List books: Items 203, 203.1, 783, 783.1 Ref. MDDK Return Transfer List: Item 961		
23:00		1 74	22:00	EXERCISE	TERM WASTE DUMP/INIT COND DUMP □	EXERCISE	
					REPLACE PMR CAP Ref. MSG 092		
00:00		1 84	23:00	EXERCISE	EXERCISE	EXERCISE	
				CWC OVERBOARD DUMP (ORB OPS, ECLS) Init CWC Dump (s/n 1096), Ref. MSG 095 CWC OVERBOARD DUMP (ORB OPS, ECLS) Perform DUMP TERMINATION, Ref. MSG 095			
		1 84	00:00	TRANSFER OPS Ref. MSG 095	TRANSFER OPS Ref. MPLM Resupply & Return Xfer List books	TRANSFER OPS Ref. MPLM Resupply & Return Xfer List books	
				MNV (TRK) BIAS -XLV -ZVV TG=2 BV=5 P=160 Y=354 OM=177 B12/AUTO/VERN Init TRK When in attitude, select DAP A			UPDATE H2O WASTE DUMP QTY

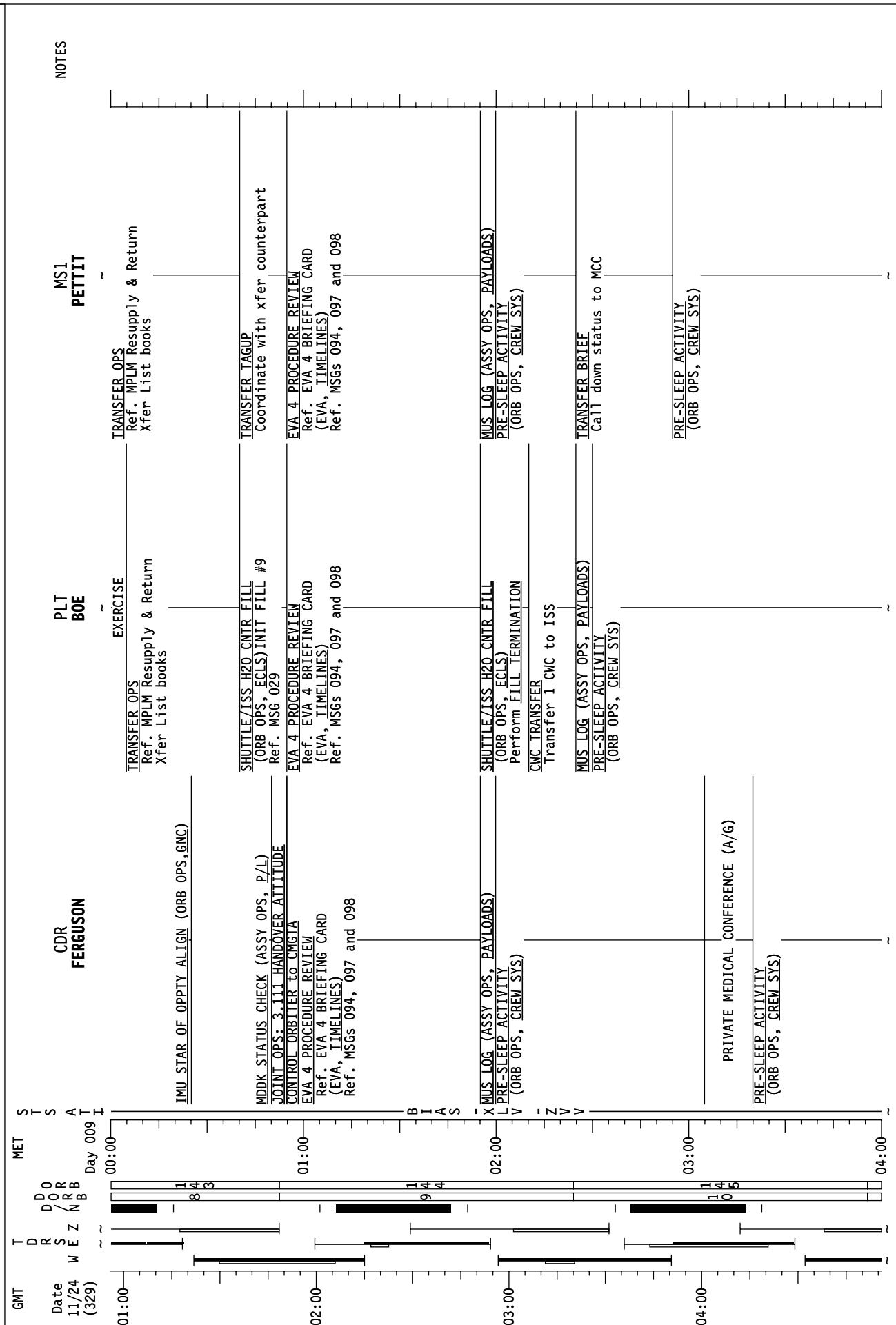
STS-126 FD (10)

REPLANNED

GMT	MET	D O R S W E Z	T D S W E Z	Date 11/23 (328)	Day 008 I	MS2 BOWEN	MS3 PIPER	MS4 KIMBROUGH	NOTES
21:00	20:00					OFF DUTY	OFF DUTY	OFF DUTY	
						MEAL	MEAL		
22:00	21:00					EVA SYS: 1.605 BSA BATTERY RECHARGE Steps 14-16 & 19-21 Ref: STS-126 CONSUMABLES TRACKING CC(EVA) EVA SYSTEMS: 1.605 BSA BATTERY RECHARGE Steps 1-3 & 5-12 Ref: STS-126 CONSUMABLES TRACKING CC(EVA) EMU SWAP FOR EVA 4 (EVA, AIRLOCK CONFIG)	SHUTTLE CONDENSATE COLLECTION (ORB OPS ECLS) Perform CHANGEOUT Ref. MSG 095 EVA SYSTEMS: 1.401 SAFER CHECKOUT Checkout of SAFER sn 1003 Ref. MPLM Resupply Transfer List: Items 203, 203.1 Ref. MPLM Return Transfer List: Items 783, 783.1 TRANSFER OPS Ref. MPLM Resupply & Return Xfer List books	EMU SWAP FOR EVA 4 (EVA, AIRLOCK CONFIG) EVA SYSTEMS: 1.515 EMU METOX/LIOH/BATTERY REPLACEMENT Ref: STS-126 CONSUMABLES TRACKING CC (EVA)	
23:00	22:00					EVA SYSTEMS: 1.515 EMU METOX/LIOH/BATTERY REPLACEMENT Ref: STS-126 CONSUMABLES TRACKING CC (EVA)			EVA SYSTEMS: 1.305 EQUIPMENT LOCK PREP Steps 1-3 not req'd In Step 7, swap EV3 CCA to b/u s/n 1209 located in Kb ECOK Ref: STS-126 CONSUMABLES TRACKING CC (EVA)
						MEAL	MEAL		
00:00	23:00					PRE-EVA 4 TOOL CONFIG (EVA, TIMELINES) Ref. MSGs 097 and 098			PRE-EVA 4 TOOL CONFIG (EVA, TIMELINES) Ref. MSGs 097 and 098
						PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			EXERCISE

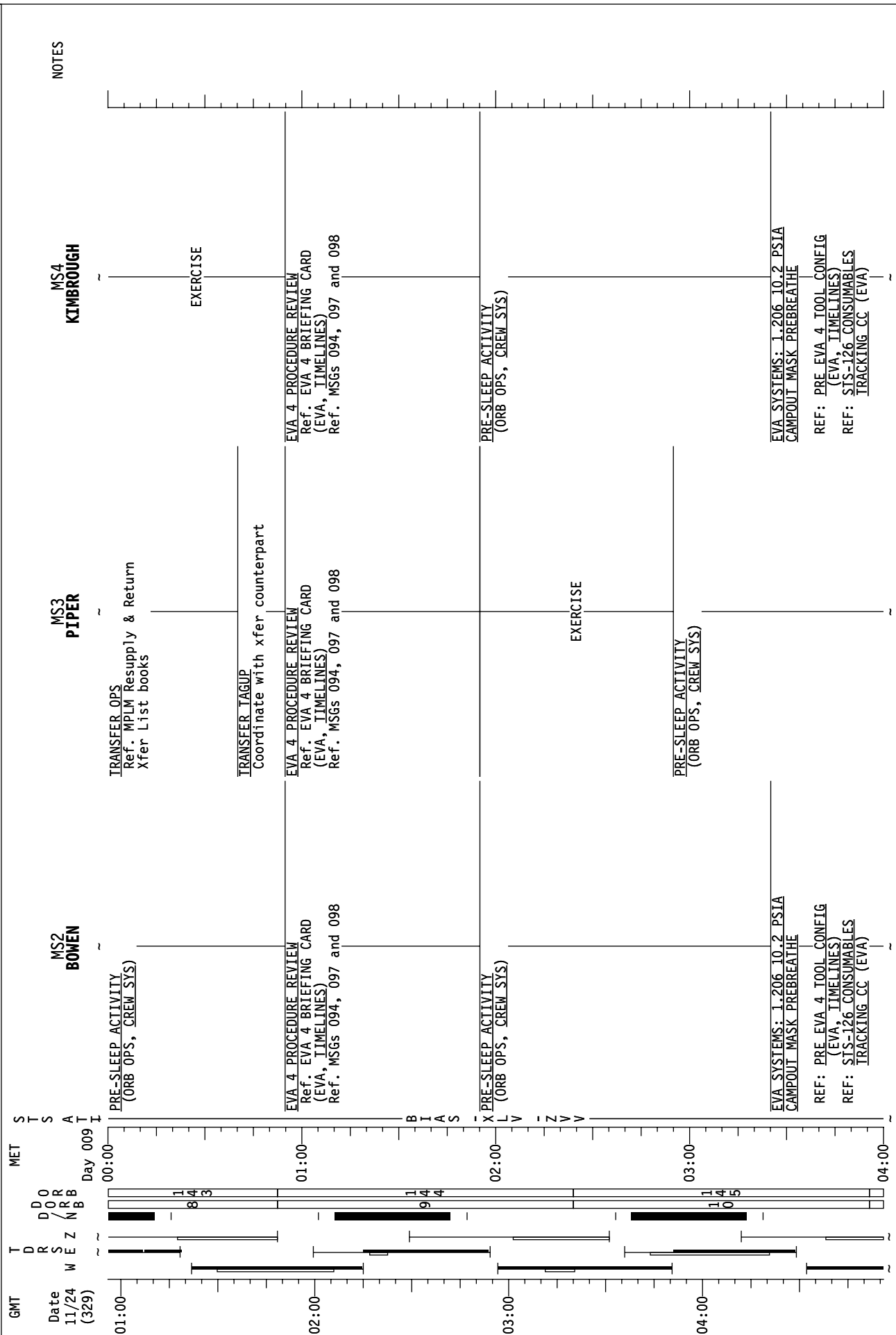
STS-126 FD (10)

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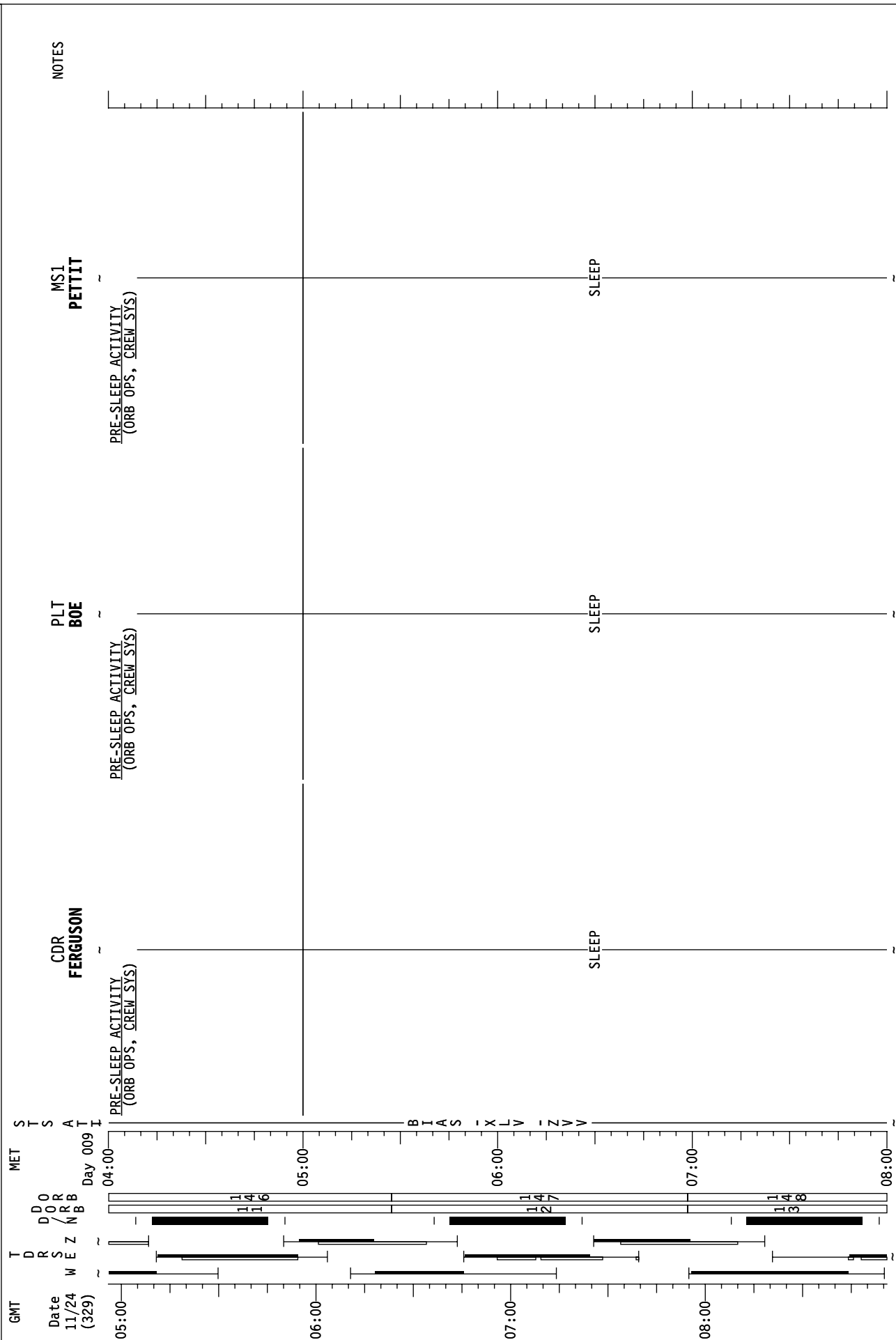
STS-126 FD (10)

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STS-126 FD (10)

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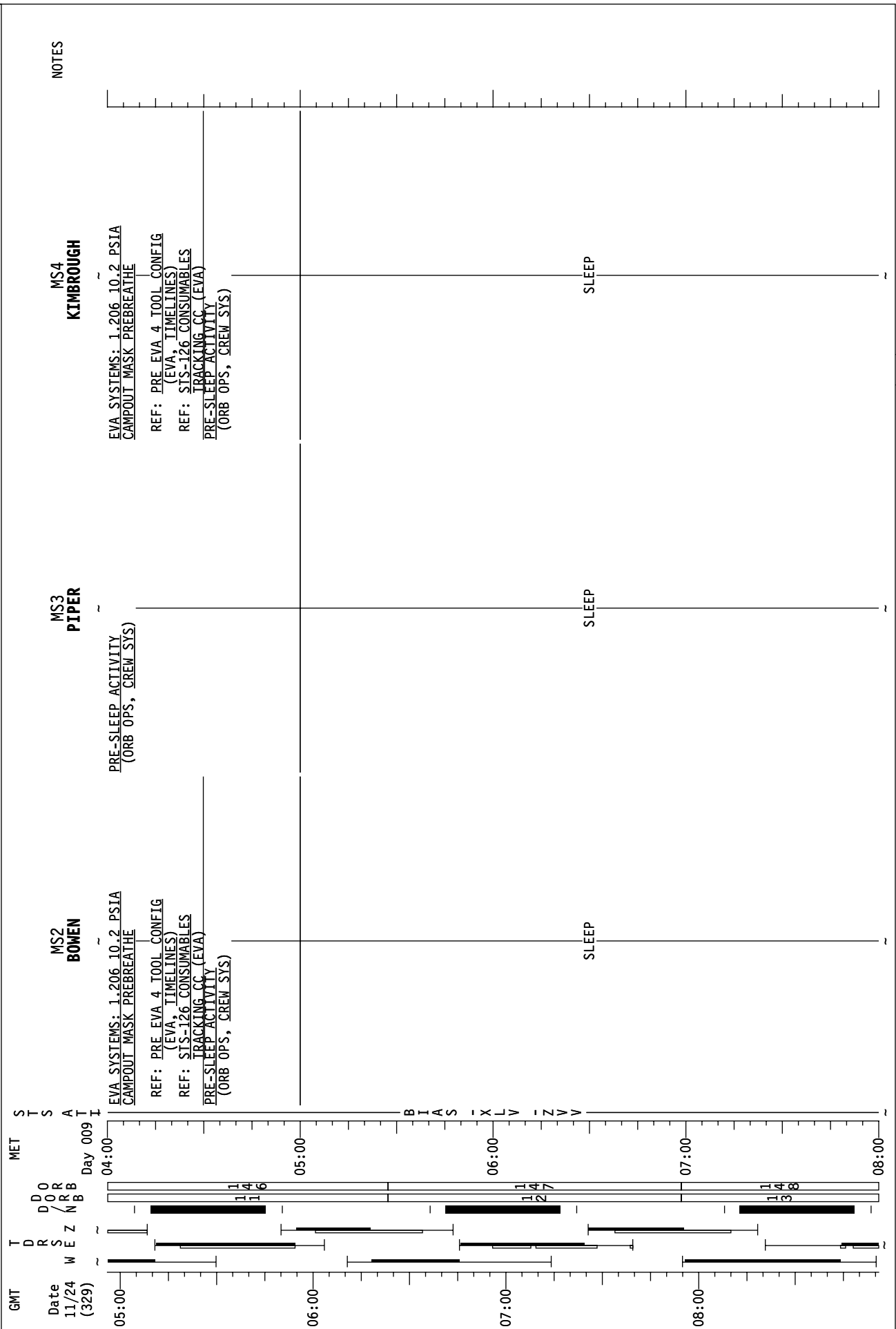


FLT PLN/126/FLIGHT

3-112

REPLANNED

STS-126 FD (10)



1 Good Morning Endeavour!!!

2

3 Once again, a huge thank you for your outstanding work!

4

5 Have a great day!

6

7 YOUR CURRENT ORBIT IS: 195 X 186 NM

8

9 NOTAMS:

10

11 **NOTAMS - ONE CHANGE**

12

13 **DELETED MRN NOTAM**

14

EDW – EDT IN USE FOR STS-126. EDW ELS DAY / VFR ONLY.

15

EDW – LAKEBED RUNWAY 15/33 ELS ONLY. OTHER LAKEBED RWYS RED.

16

NOR – LAKEBED RUNWAYS GREEN.

17

ZZA – 20' HIGH BARRIER IN OVERRUN OF RWY 30L. LDA 12,200'.

18

YHZ – RWY 05/23 CLOSED 24 NOV 1100Z - 26 NOV 1600Z.

19

DOV – RWY 14/32 CLOSED.

20

AMB – RWY 15/33 CLOSED.

21

YYT – RWY 16/34 CLOSED.

22

IKF – NOT USABLE. NO AGREEMENT.

23

BEN – NOT RECOMMENDED/NOT SUPPORTED.

24

25

26

27 NEXT 2 PLS OPPORTUNITIES:

28

29 NOR35 ORB 141 – 8/21:08 FEW200 7 310/07P12

30

EDT22R ORB 157 – 9/21:34 SCT120 BKN250 7 190/11P17

31

32

33 OMS TANK FAIL CAPABILITY:

34

35 L OMS FAILS: NO

36

R OMS FAILS: NO

37

38

39 LEAKING OMS PRPLT BURN:

40

41 L OMS LEAK: ALWAYS BURN RETROGRADE

42

R OMS LEAK: ALWAYS BURN RETROGRADE

43

44

45 OMS QUANTITIES(%)

46

47 L OMS OX = 33.6 R OMS OX = 34.0

48

FU = 33.3 FU = 33.8

49

Subtract interconnect counter for current OMS quantities.

50

51

MSG 087 - FD10 MISSION SUMMARY

Page 2 of 2

DELTA V AVAILABLE:

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OMS	340 FPS
<u>ARCS (TOTAL ABOVE QTY1)</u>	<u>40 FPS</u>
TOTAL IN THE AFT	380 FPS
ARCS (TOTAL ABOVE QTY2)	73 FPS
FRCS (ABOVE QTY 1)	21 FPS
AFT QTY 1	78 %
AFT QTY 2	40 %

<u>SYSTEM</u>	<u>FAILURE</u>	<u>IMPACT</u>	<u>WORK AROUND</u>
EVA	PWR 1023 missing QD cap and lanyard	Potential for FOD in PWR QD	Take cap from R/R hose and put on PWR, then install Ziploc bag over the end of the R/R Hose. Reference MSG092.

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MSG 088 (18-0294) - FD10 TRANSFER MESSAGE

Page 1 of 8

1 Good morning Don, STS-126 & Increment 18 crews!

2
3 Great work up there again yesterday! We're getting very close to completing MPLM
4 transfer, as you are currently 84% complete. The light is visible at the end of the tunnel
5 now!

6
7 Today is another simple choreography day...continue packing up the MPLM for return.
8 Additionally, the Columbus TCS water sample will be taken and available for packing in the
9 middeck; and once the SAFER checkout is successful, it can be packed in the MPLM for
10 return.

11
12 The Transfer List Excel file, FD10_Transfer_List_STS126.xls, locations are:

- 13 • Shuttle: **C:\OCA-up\transfer** (KFX machine)
- 14 • Station: **K:\OCA-up\transfer**

15 16 Transfer Notes

- 17
18 • **TBA Return:** During last night's transfer brief, we mentioned the modified TBA return
19 plan. Two TBAs will now be returning in the middeck to allow early access for the
20 ground teams to assess. Just to make sure the plan is clear, we've included the details
21 below:
 - 22 • One CTB of two TBAs, originally planned for return in the MPLM as item 790, will
23 now be returned in Bag E in the Middeck as item 980.
 - 24 • Please pack TBA s/n 1001 (over-torqued) and any other one TBA removed from
25 the SARJ this flight in their TBA bags in item 980 for return.
- 26
27 • **Items 806 and 807:** We understand Greg was having some trouble locating the PGT
28 Torque Analyzer Kit and the Small Shuttle EVA Trash Bag. We've been working with
29 our ISO friends and they've recommended the following locations:
 - 30 • **Item 806:** PGT Torque Analyzer Kit (s/n 1003) – A/L1O1_B1
 - 31 • **Item 807:** Small Shuttle EVA Trash Bag (s/n 1013) – A/L1O0 (inside 1.0 CTB,
32 s/n 1075, behind the closeout)
- 33
34 • **Item 438:** Since we now have 3 KBO-Ms stowed in A1_A1 for return, we'll need you to
35 relocate one return bag originally planned for A1_H1 in order to keep the A1 rack within
36 its mass limits. Therefore you'll now need to stow item 438 in S2_D1 for return
37 (fortunately you haven't called this item complete yet). Your MPLM Return transfer list
38 has been updated today to reflect this.

39 40 FD10 Choreography

- 41
42 • **Item 961:** Pack Columbus TCS water sample for return in MF14E or MF14G.
- 43 • **Items 783, 783.1:** Pack SAFER for return in MPLM after SAFER C/O.
- 44 • **Pack endcone foam.**
- 45 • **Continue packing MPLM return items.**

MSG 088 (18-0294) - FD10 TRANSFER MESSAGE

Page 2 of 8

1 **Please incorporate uplink pages as follows (we've listed the updates in the order they**
2 **printed out for you):**

3 **MIDDECK TRANSFER BOOK**

4

5 In the Middeck Transfer List **MDDK RTN REALTIME ADDITIONS** tab

6 Replace the following page:

7 Return 10

8

9 **MPLM RETURN TRANSFER BOOK**

10 In the MPLM Return Transfer List **LAYOUTS** tab

11 Replace the following page:

12 L-25

13

14 In the MPLM Return Transfer List **RETURN** tab

15 Replace the following pages:

16 Return 14, 15, and 25

17

18 In the MPLM Return Transfer List **MPLM RETURN REALTIME ADDITIONS** tab

19 Replace the following page:

20 Return 32

21

22 **Changes to the Transfer List are detailed below:**

23 **MIDDECK RETURN**

24 Item 968 – new item

25 Item 979 – new item

26 Items 980, 980.1, 980.1 – TBAs moved from MPLM

27

28 **MPLM RETURN**

29 Item 431 – item deleted

30 Item 438 – updated final location and added note

31 Item 784.1 – updated final location on ISS

32 Item 790, 790.1, 790.2 – TBAs moved to middeck

33 Item 969 – updated item name

34 Item 970 and 971 – updated final location

35 Items 972, 974, 975, 976, 977, 981 – new items

36

37 **FD11 Choreography**

38 • **Item 782:** Pack old Respiratory Support Pack (RSP) for return in MPLM following successful
39 checkout of the new RSP.

40 • **Complete MPLM transfer.**

41 • **Complete Middeck resupply transfer.**

42 • **Continue Middeck return packing.**

43 • Pack JEM Post-AMiA water sample for return.

44 • **MPLM Cleanup:**

45 ○ **Item 850:** Return any bungees and seat track studs borrowed from ISS.

46 ○ **Item 853:** Return Pivot Fittings used to rotate A4 and F4 RSPs to ISS.

47 ○ **Items 854 and 854.1:** Transfer Don's MPLM Kit to ISS.

48 ○ **NOTE:** Endcone & inter-rack bungee jails can remain deployed for entry.

49 • **Configure MPLM racks and verify rack contents.**

50 • **Item 105:** Transfer scavenged MPLM GLAs to ISS.

51 • **Items 104 and 179:** Transfer remaining handrails from MPLM to ISS.

52 Have a great day!

53 - The STS-126 Transfer Team

MSG 089 - FD09 MMT SUMMARY

1 The MMT met to review mission progress, orbiter systems, and the post launch
2 assessments from SSME, ET and SRB/RSRM. EVA 3 was just underway as the MMT was
3 meeting.

4
5 The mission is progressing extremely well and due to the fact that you are well ahead of the
6 timeline, an extra day will not need to be added in order to collect the additional water
7 samples. Endeavour's systems continue to perform well. The DTV mux errors and the very
8 small LOMS GN2 Tank leak were briefly mentioned. The DTV errors cleared with a power
9 cycle and are not expected to have any mission impact. The small LOMS GN2 Tank leak
10 will have no affect on operations and pressures will remain well above limits long after
11 landing. The post launch assessments were presented and all was quite nominal.

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END OF PAGE 1 OF 1, MSG 089

MSG 091 - FD10 CREW CHOICE VIDEO DOWNLINK OPTIONS

1 Here are the available Ku times for your Crew Choice Video Downlink. Let us know which
2 time works best for you. Please give the ground 30 minutes to configure for HD video.
3
4

Crew Choice KU FD10

TDRS	AOS	LOS	DURATION (min)	COMMENT
W-171	8/13:09	8/13:43	35	
E-46	8/14:02	8/14:21	20	
W-171	8/15:00	8/15:29	30	
E-46	8/15:30	8/15:58	28	
W-171	8/16:40	8/17:09	30	
E-275	8/17:42	8/18:08	26	No DTV or HD
W-171	8/18:24	8/18:53	30	
W-171	8/20:05	8/20:33	29	
W-171	8/23:02	8/23:36	34	
W-171	9/00:34	9/01:09	36	
E-46	9/02:55	9/03:24	29	
E-46	9/04:23	9/04:58	35	

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MSG 092A (18-0296A) - PWR QD CAP REPLACEMENT PROCEDURE

Page 1 of 2

REPLACE PWR CAP

(20 MIN)

OBJECTIVE: Replace PWR QD cap using a QD cap from R/R Hose

LOCATION: Middeck

TOOLS REQD:

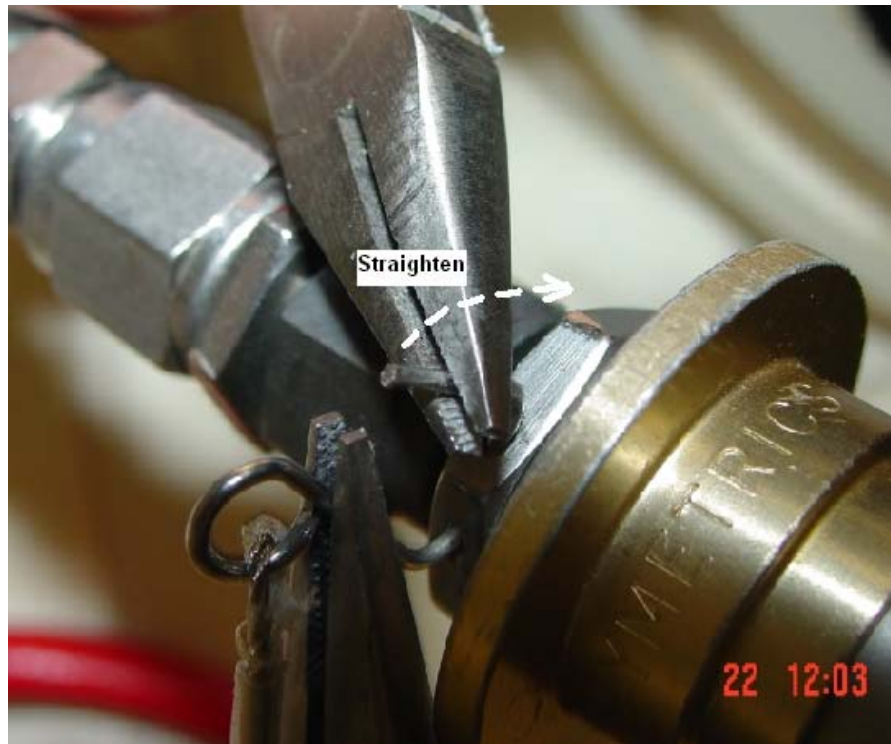
TOOL	Large Needlenose pliers
	Small Needlenose pliers
	Gray Tape
CHCK	R/R Hose
MF57H	Ziploc bag (8 in x 8 in)
MISC	Disinfectant wipes
	PWR S/N 1023

To remove R/R Hose QD cap (including tether)

NOTE

Tether ring will have to be completely straight to be removed

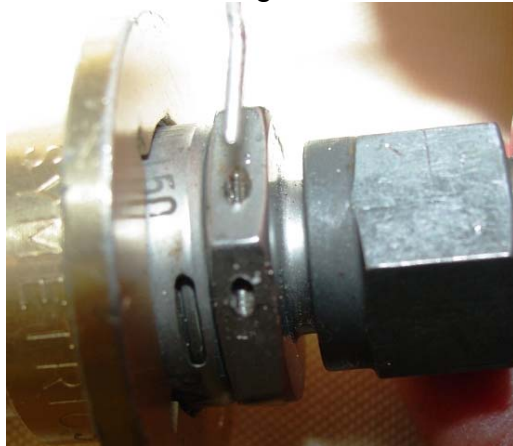
Middeck 1. Straighten tether ring, as shown below (two needlenose pliers).



MSG 092A (18-0296A) - PWR QD CAP REPLACEMENT PROCEDURE

Page 2 of 2

2. Remove tether ring from R/R Hose.



NOTE

Avoid touching R/R QD when removing cap

3. Remove QD cap from R/R Hose.
4. Insert uncapped R/R Hose QD in Ziploc bag. Secure bag with Gray Tape.
5. Insert tether ring into PWR as shown below.



6. Bend back tether ring (as required).
7. Disinfect QD cap and PWR QD (disinfectant wipes), allow to dry (~ 5 min).
8. Install QD cap onto PWR QD.
9. Temp stow PWR near Galley for future fill.
10. Stow tools.

EVA 4 SUMMARY TIMELINE

TIME HR : MIN	IV/SRMS	EV2 (Bw)	EV3 (Kb)
00:00		POST DEPRESS (00:05) EGRESS/SETUP (00:30)	POST DEPRESS (00:05) EGRESS/SETUP (00:30)
01:00		REMOVE P3 MILL COVERS (00:45) Cover 11 Cover 10 Cover 7 Cover 6 STBD SARJ (2:30) Set up Under Cover 17/18 Clean Lube TBA 3 Install Cover Install Cleanup	REMOVE P3 MILL COVERS (00:30) Cover 14 Cover 15 PORT SARJ LUBE - 1st (00:45) Expect SARJ at 2 10°
02:00			EIVCG INSTALL CP Z (01:15)
03:00			PORT SARJ LUBE - 2nd (00:45) Expect SARJ at 30°
04:00	EFBM CONTINGENCY Pen & Ink Changes to EFBM Cont C/O Proc: Add to Step 4: "Stop when latch is flush w/ EFBM Mating surface." Add Step 5A: PGT [A1 2.5 ft-lb, CCW1 10 RPM, MTL 30.5] ext 7/16: drive MODE SELECT to 'AUTO'; 0.25 turns Add Step 5B: \MODE SELECT is in 'AUTO' Delete Step Z	EFBM CONTINGENCY (00:30) Structural Latch 1 (EVA FS 16-24) INSTALL EFBM COVER (00:20) GPS ANTENNA (00:45)	INSTALL P3 MILL COVERS (01:30)
05:00		JEM CLEAN UP (00:35) Possible Getaheads: S1 Rad, P1 Rad CLEANUP/INGRESS (00:25)	GET AHEADS (00:40) S1 Radiator P1 Radiator
06:00		PREREPRESS (00:05)	CLEANUP/INGRESS (00:25) PREREPRESS (00:05)

1 **Condensate Changeout Details**

2
3 During the CHANGEOUT of SHUTTLE CONDENSATE COLLECTION, replace CWC s/n
4 5111 with the empty CWC s/n 5060 which was temp stowed on the middeck following the
5 FD6 dump.

6
7 Temp stow CWC s/n 5111, which will be dumped today.

8
9 **Combo Dump Details**

10
11 Today you will gather dump equipment for a combo dump later in the day. The combo
12 dump will dump the waste tank, condensate CWC s/n 5111, and leaky CWC s/n 1096.

13
14 **Gather Dump Equipment**

15 Pregather the following equipment and temp stow on the middeck:

- 16 a. Middeck: Condensate CWC s/n 5111 (will be temp stowed after FD10 changeout)
17 b. NOD1D2: Leaky CWC s/n 1096
18 c. Break Out Box (BOB) Locker (MA16D): Waste Water Dump (WWD) Filter
19 d. Contingency Hose and Cable Kit (CHCK) in the window shade bag: 8 ft Y-Y hose.

20
21 **Waste Water Dump**

22
23 Prior to opening the waste dump valve, verify with MCC-H that the solar arrays are in the
24 proper config, and the stack is in the proper attitude.

25
26 Perform a Waste dump using SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) p. 5-2.
27 Perform steps E, G and I. After completing step I-2, proceed to CWC OVERBOARD DUMP
28 (ORB OPS, ECLS). MCC-H will TMBU FDA in steps B and K.

29
30 Waste dump valve open time will be ~25 minutes. Dump the waste tank to 5%.

31
32 **CWC Dump**

33 After performing the Waste dump step I-2, perform CWC OVERBOARD DUMP (ORB OPS,
34 ECLS) p. 5-36. Perform steps A, D, E, F, and G. MCC-H will TMBU FDA in steps B and H.
35 Dump CWC s/n 5111 followed by CWC s/n 1096.

36
37 Waste dump valve open time for CWC s/n 5111 will be ~35 minutes.

38
39 Waste dump valve open time for CWC s/n 1096 will be ~10 minutes.

40
41 Stow CWC s/n 5111 in MF57C for return. Double-bag CWC s/n 1096 with unused 24"x24"
42 ziplocks from MF28K and stow in Bag E (Middeck Ceiling Port 1) for return.

43 Stow the WWD in a separate ziplock bag in the BOB.

44 Stow the Y-Y hose in a separate ziplock bag in the CHCK.

18-0301 (MSG 096) – ULF2 Tool Stow for MPLM Transfer

Page 1 of 1

ULF2 TOOL STOW FOR MPLM TRANSFER

1. Stow following items in 24" x 24" ziplock bag(s) post EVA:
 - All used EVA Wipes (dry and wet)
 - All used towels
 - All fully used (< 1/4 full) Grease Cartridges
 - Scraper Debris Containers (5)
2. Stow following items in TBA CTBs (from MPLM) and TBA foam (from shuttle)

NOTE

Remove middle block of foam to fit 2 TBAs in each CTB.
TBA foam may have to be secured with tape

- TBAs w/connector caps (12)
 - TBA Bags (12)
3. Stow following tools in a mesh bag to be transferred to MPLM for return:
 - All ziplock bags from step 1
 - RETs (RED: 8 Lg-eq)
 - RETs (RED: all, expect 3 w/PIP pin)
 - 4A SLR and rail stub
 - EFBM Small Petal Covers (4)
 - GPS Antenna Receptacle MLI (2)
 - ~~GPS Antenna jack caps (4)~~
 - ~~GPS Antenna connector caps (4)~~
 - ~~EVA Large Trash Bag (1008) (1)~~
 - 55-ft Safety Tether (Number 72, Lg-sm, s/n 1022)

FS 8-1

EVA/126/FIN

18-0302 (MSG 097) – FD10 EVA Deltas

Page 1 of 3

Heide, Eric, Shane, & Steve,

Great job yesterday on EVA3!

This message contains EVA 4 Deltas. The new EVA 4 Summary Timeline is in [18-0299](#) (MSG 094).

[18-0305](#) (MSG 098) EVA 4 Tool Config contains the updates as discussed last night. Please let us know of any deltas so we can stay in sync with you.

[18-0301](#) (MSG 096) ULF2 Tool Stow for MPLM Transfer includes deltas for Post-EVA 4 EVA transfer items.

We will be sending up a message later today with two items for your procedure review. The first addresses how momentum management and the SARJ angle may affect the timing of tasks on EVA 4. The second contains some new cribsheet inputs that JAXA provided for the EFBM task.

Execute Notes

During tool config and while inspecting your RETs, please carefully inspect RET 4264 (the one that was tangled with the PGT on EVA 3).

Please verify that the fasteners on back of the GPS antenna brackets were re-taped and bolt was flagged per [18-0300](#) GPS ANT Failure Bolt Taping.

Please change both grease gun cartridges for EVA 4.

The SARJ failure analysis is indicating that the success of the Port SARJ may be attributed to the inadvertent application of grease to the port race ring. As a result, we would like you to inspect the outer canted surface of the port SARJ prior to applying grease on EVA 4. The grease itself may be difficult to see. However, if grease is present, you should be able to see white-ish debris trapped in the grease near the edge where the roller would be. If you cannot determine the presence of grease visually, you can try using a dry wipe to collect a grease sample for return. These steps are incorporated into the pg 7-95 P&I changes below.

Please make the following updates to your detailed STS-126 EVA FS pages.

1. pg 7-93 EGRESS
 - a. In EV2 column, ADD new step 2a:
2a. Retrieve CL/TBA Bag
 - b. Modify EV2 Step 3
WAS: Retrieve Large ORU Bag (Handrails and GPS):
IS: Retrieve Medium ORU Bag (GPS)
 - c. Modify EV2 Step 9
WAS: Stow Large ORU Bag on S0 port strut handrail
IS: Stow Medium ORU Bag and CL/TBA Bag on S0 port strut handrail
2. pg 7-94, EV2
 - a. ADD Steps 6 & 7:

Page 1 of 3, 18-0302 (MSG 097)

18-0302 (MSG 097) – FD10 EVA Deltas

Page 2 of 3

6. Retrieve CL/TBA Bag from port strut handrail,
7. Go to Stbd SARJ task
3. pg 7-95, EV3
 - a. ADD:
 0. Inspect outer canted surface; notify MCC if grease/white residue present
 - 0a. If grease is not visible, use dry wipe to collect grease sample from outer canted surface
 - 5a. Inspect outer canted surface; notify MCC if grease/white residue present
 - 5b. If grease is not visible, use dry wipe to collect grease sample from outer canted surface
 - 9a. Inspect outer canted surface; notify MCC if grease/white residue present
 - 9b. If grease is not visible, use dry wipe to collect grease sample from outer canted surface
4. pg 7-97, EV2, EFBM COVER REINSTALL
 - a. Modify Step 1:
WAS: Retrieve Large ORU Bag from S0 port strut handrail
IS: Retrieve Medium ORU Bag from S0 port strut handrail
 - b. ADD Step 4a After Step 4:
 - 4a. Go to 16-24 EFBM CONTINGENCY CHECKOUT
5. pg 7-97, After Step 9, Skip JEMRMS GROUNDING TABS and Skip pg 7-98 JEM OIHs AND OI WIFs; Go to pg 7-99 GPS ANTENNA INSTALL
6. pg 16-22, EFBM CONTINGENCY CHECKOUT INHIBIT PAD, EFBM Block
WAS:
 - IV** verify P011B on jumper cable disconnected for BEP
 - SSIPC** PDB A2 RPC01 – OPIS:
 - BM CDU
 - IV** verify INTLK – OFF
verify STOP – ON
verify ACTUATOR SELECT/UMB – ON
verify MODE/CONNECT – ON
7. pg 16-24, EFBM CONTINGENCY CHECKOUT
 - a. ADD: Step 1 to IV column
 1. Verify EFBM inhibits in place per pg 16-22
 - b. Modify: step 4
WAS:
 4. **PGT [A1 2.5 ft-lb, CCW2 30 RPM, MTL 30.5]-6 ext 7/16:**
drive EVA Drive Shaft to 'RELEASE'; < 200 turnsIS:
 4. **PGT [A1 2.5 ft-lb, CCW2 30 RPM, MTL 30.5]-6 ext 7/16:**
drive EVA Drive Shaft to 'RELEASE'; < 200 turns; stop when latch is flush with EFBM mating surface
 - c. ADD:
 - 5A. **PGT [A1 2.5 ft-lb, CCW1 10 RPM, MTL 30.5]-6 ext 7/16:**
drive MODE SELECT to 'AUTO'; 0.25 turns
 - 5B. √MODE SELECT is in 'AUTO'

Page 2 of 3, 18-0302 (MSG 097)

18-0302 (MSG 097) – FD10 EVA Deltas

Page 3 of 3

- d. DELETE: step 7
- 8. pg 7-103, P1 APFR has yaw of 12, for S1 APFR has yaw of 6
Note this is a get ahead only today

Transfer Changes:

- 1. Replace EVA Checklist FS 8-13 with 18-0301 (MSG 096) ULF2 Tool Stow for MPLM Transfer. Also note this procedure needs to be executed promptly after EVA 4 so these tools are transferred to the MPLM prior to MPLM closeout.
- 2. FS 2-18, under step 1
WAS:
Red RETs (16)
IS:
Red RETs (all on ISS, report quantity _____)

Shane,

The suspected root cause of the lost comm during EVA 2 is either a low volume setting on EMU 3018 or an issue with Kb1 CCA (s/n 1198). In preparation for EVA 4, we would like for you to replace your prime CCA Kb1 with backup Kb2 CCA (s/n 1209) from your ECOK. Equipment Lock Prep Step 7 would be a convenient time to perform the exchange.

Also, to help us investigate the anomaly, we would appreciate any answers you can give us to the following questions:

- 1) Was audio (i.e., left or right earphone) better in one earphone than the other when the problem existed?
- 2) Was the diminished audio gradual, intermittent or instantaneous?
- 3) When the audio was fully recovered in the airlock, how did the volume level and quality compare previous to the failure?
- 4) During the failure, did you hear your own sidetones?
- 5) Post EVA2, IV reported moisture in CCA earcup. Was the quantity about equal on both sides?

EVA 4 PRE TOOL CONFIG (Cont)

AIRLOCK CONFIG (Cont)

	Staging Bag
	Fish Stringer Tether
	Wire Tie Caddy
	Velcro/Tape Caddy
	PGT
	PGT Battery
	7/16 (wobble) Socket-6 ext
	Vise Grips
	Ratchet Wrench
	7/16 (rigid) Socket-9 ext
	Needle Nose Pliers
	Spare 55-ft Safety Tether
	Spare WIF Adapter
	Fish Stringer
	Connector Cleaner Tool Kit
	Pin Straightener Assy
	Probe
	Pry Bar
	MWS Key Strap Assy
	Long Duration Tie Down Tethers (2)
	Wheel Begie PIP Pin

s/n _____
 s/n _____

AIRLOCK CONFIG (Cont)

	IV Bag
	Towels (2)
	Contamination Detection Kit
	GP Caddy (2)
	Adjustable Thermal Mittens (2)
	Socket Caddy (hatch cont) w/RET (eq-eq) (Black)
	1/2 Socket-8 ext
	7/16 (wobble) Socket-6 ext (spare)
	DCM Plug (SAFER Hardmount) (2)

EXTERIOR CONFIG

	JEM
	EFBM Center Cover
	Wire Tie (1) (JEM HR 1179)
	Adj Equip Tether (1) (JEM HR 1185)
	S0 HR 3529 – 55-ft Safety Tether
	S0 HR 3539 – 55-ft Safety Tether
	S3 SARJ
	SARJ Dust Cap on J11 (under cover 18)

EVA 4 POST TOOL CONFIG

EV2	MWS	BRT (L)	85-ft Safety Tether (R D-ring Ext)
		Wire Tie (2)	Waist Tether (2, L on D-ring Ext, R on D-ring)
		T-Bar	
		RET (eq-eq) (____)	
		RET (eq-eq) w/PIP pin	
		Adj Equip Tether (____)	
		Wire Tie (2)	
		Small ISS Trash Bag	
		Swing Arm (R)	
		RET (eq-eq)	
		PGT	
		PGT Battery	
		7/16 (wobble) Socket-6 ext	
		Camera (on integral RET)	
		Camera Bracket	

AIRLOCK CONFIG	Large ORU Transfer Bag (ETVCG) (Shane)
	RET (Lg-eq)
	RET (Lg-eq)
	Dummy Box
	RET (Lg-eq)
	Medium ORU Bag (Steve – GPS)
	Adj Equip Tether (on outside)
	Fish Stringer (on outside)
	MLI Covers (2)
	Connector Caps (2)
	Jack Caps (4)
	RET (eq-eq)
	Wire Tie (long)
	Connector Cap
	RET (eq-eq)
	Wire Tie (long)
	Connector Cap
	Spare 55-ft Safety Tether

AIRLOCK CONFIG (Cont)	RET (Lg-eq)
	Crewlock Bag
	RET (Lg-eq) (spare on outside door handle)
	Adj Equip Tether (on outside)
	Wire Tie (to secure grease gun)
	RET (eq-eq) (on outside)
	Grease Gun w/Straight Nozzle
	Wire Tie (to secure grease gun)
	RET (eq-eq) (on outside)
	Grease Gun w/J Nozzle
	EVA Wipe Caddy (int RET)
	EVA Wipes (____ dry)
	Large Trash Bag (int RET)
	Camera (on integral RET)
	Camera Bracket
	Adj Equip Tether (____) (from covers)
	RET (Lg-eq)
	Round Scoop

EV3	MWS	BRT (L)	85-ft Safety Tether (R D-ring Ext)
		Wire Tie (2)	Waist Tether (1, R on D-ring Ext)
		T-Bar	
		RET (eq-eq) (____)	
		Adj Equip Tether (____)	
		Wire Tie (2)	
		Small ISS Trash Bag	
		Swing Arm (R)	
		RET (eq-eq)	
		PGT	
		PGT Battery	
		7/16 (wobble) Socket-6 ext	

AIRLOCK CONFIG	Fish Stringer
	Crewlock Bag
	IR Camera
	Modified NOAX Grease Gun w/ wipe & wire tie
	Wire Tie to bag (for wipe & wire tie)
	Wipe Caddy
	EVA Wipes (6 wet)
	EVA Wipes (4 dry)

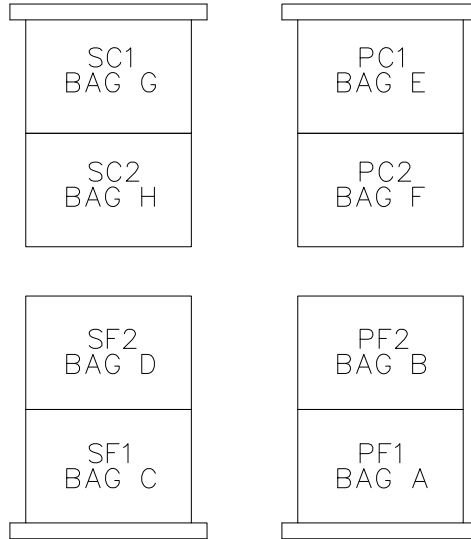
RET (Lg-eq)	Adj Equip Tether (strap TBA bag to CL Bag)
	TBA Bag Marked as Flight Spare 1040
	TBA Dust Cap (on bag tether)
	Crewlock Bag
	RET (Lg-eq) (on outside)
	EVA Wipe Caddy (buckled in)
	EVA Wipes (5 wet, 1 dry)
	Scraper Debris Container (int RET)
	RET (eq-eq)
	Scraper
	Large Trash Bag (int RET)
	EVA Wipe (dry) (int RET)
	Adj Equip Tether (int RET)
	EVA Wipes (2 dry)

Tether Counts: (Red RETs)	RETs (PIP Pin) = 2
RETs (eq-eq) = 12	Adj Equip Tethers = 12
RETs (Lg-eq) = 8	

MSG 099 – 5-MLE BAG AND MIDDECK STOWAGE

Good morning STS-126 crew. Enclosed are the 5-MLE bag layouts and middeck locker map. Since there are still a few days left in the mission, it's possible some of these may change. As of today, this is how they should look.

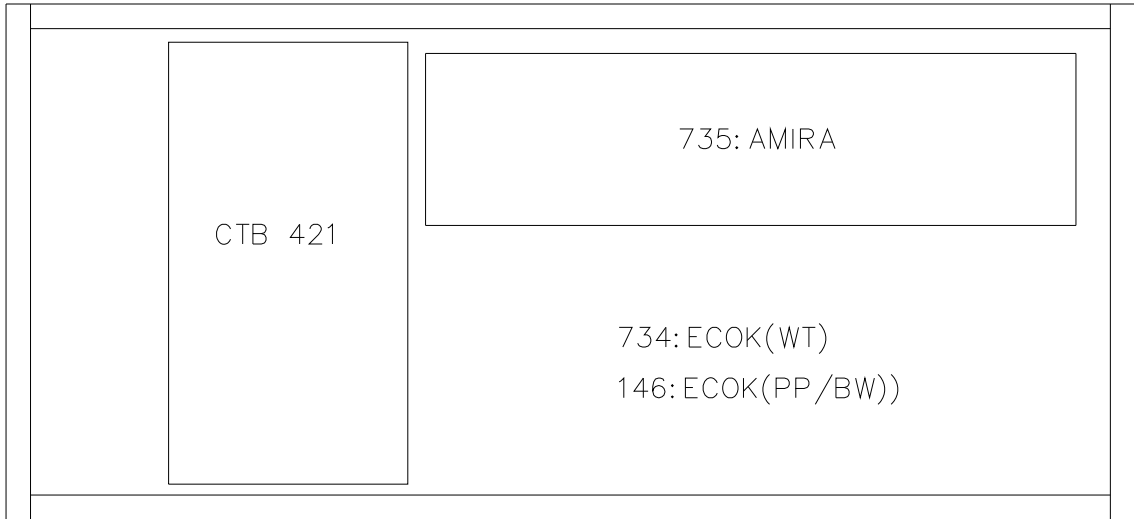
-The STS-126 Middeck Stowage Team



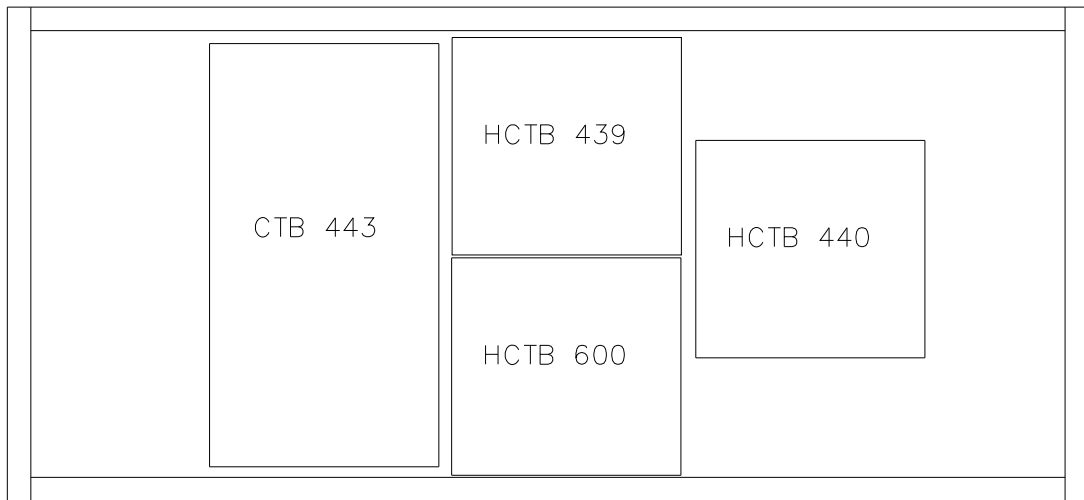
DITCH VIEW LOOKING AFT

- The above view is how the ditch bags should be arranged for return.
- Please stow all Actiwatches and Logbooks in MF28K for return.

MSG 099 – 5-MLE BAG AND MIDDECK STOWAGE

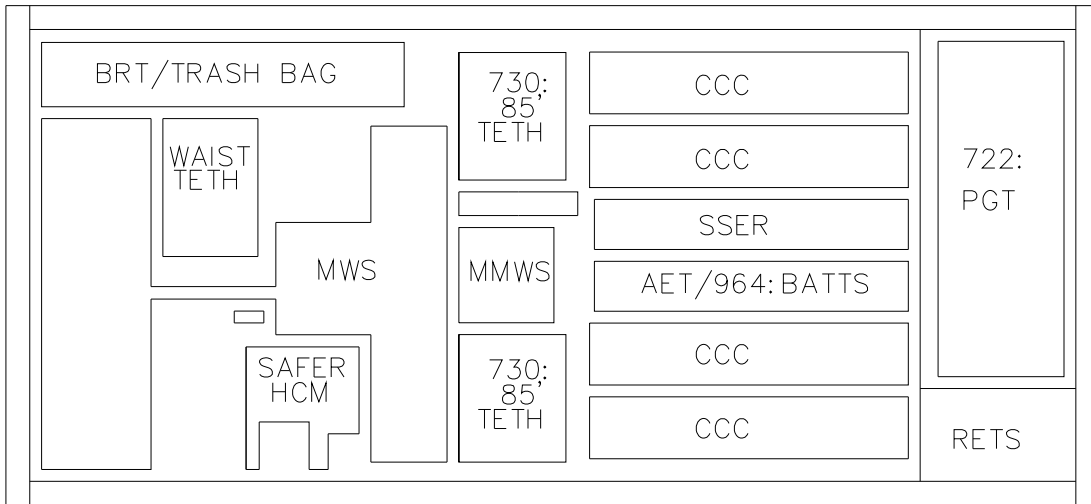


BAG A
ARRANGE AS SHOWN. FILL IN EMPTY AREAS WITH FOAM/CLOTHING 



BAG B
ARRANGE AS SHOWN. FILL IN EMPTY AREAS WITH FOAM/CLOTHING 

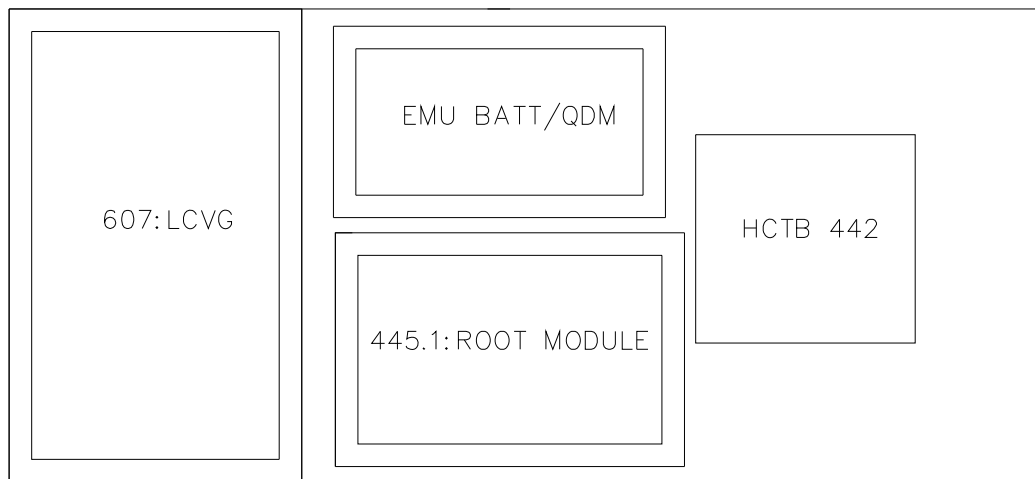
MSG 099 – 5-MLE BAG AND MIDDECK STOWAGE



BAG C



RETURN CONFIG IS SAME AS LAUNCH WITH THE EXCEPTION OF THE SSER ANTENNA, AETS AND BPSMU BATTs. THESE CAN GO IN THE GREASE GUN CUTOUTS. ORU BAG (715) GOES ON TOP.

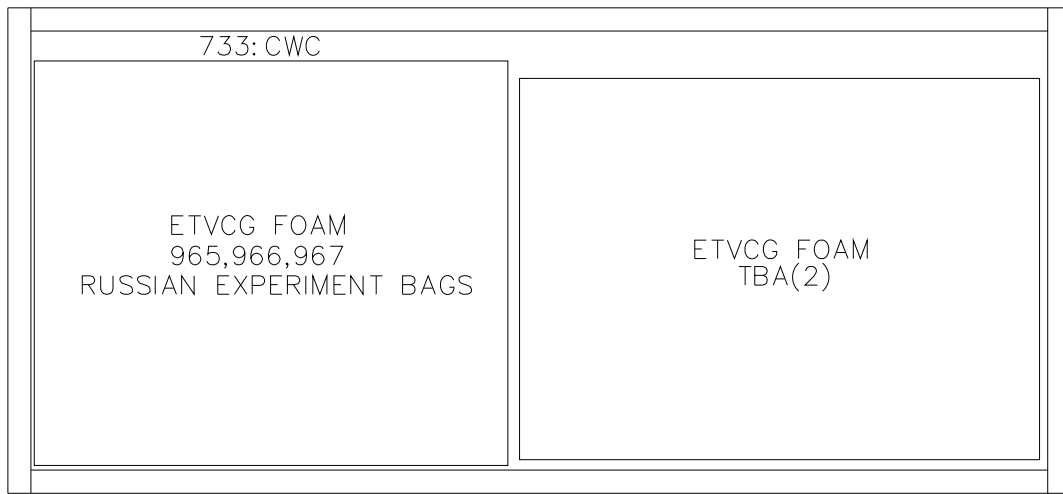


BAG D



ARRANGE AS SHOWN. FILL IN EMPTY AREAS WITH FOAM/CLOTHING

MSG 099 – 5-MLE BAG AND MIDDECK STOWAGE



BAG E

STOW TBA(2) INSIDE THE ETVCG/PTU CUSHION. ITEMS 965, 966 AND 967 CAN GO IN THE OTHER ETVCG CUSHION. CWC(2) SHOULD BE DOUBLE-BAGGED AND STOWED ALONG THE SIDE OR TOP OF THE CUSHION WITH ITEMS 966-968.

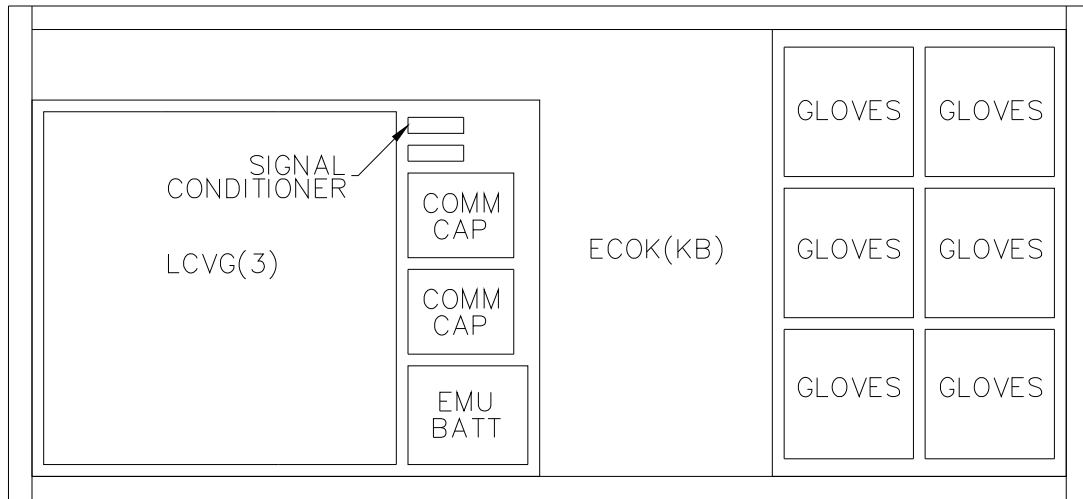


BAG F

PLACE THE AMIA (ITEM 631) IN PLACE OF THE RSK. THE ACES/HARNESS/CWC CAN BE STOWED ON TOP OF AMIA.



MSG 099 – 5-MLE BAG AND MIDDECK STOWAGE



BAG G

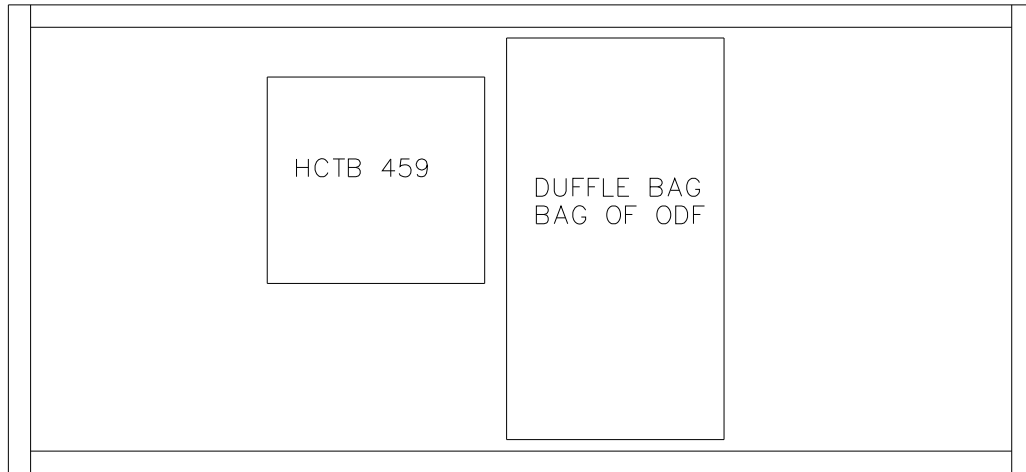
RETURN CONFIG IS THE SAME AS LAUNCH MINUS THE ENTRY GARMENTS



BAG H

NO CONTENTS DEFINED AT THIS TIME

MSG 099 – 5-MLE BAG AND MIDDECK STOWAGE



BAG I

PACK ODF AND BAG 459 IN THE CENTER. BAG OF ZSR BRACKETS AND PIP PINS (448.2) CAN BE STOWED NEXT TO THE ODF. FILL IN EMPTY AREA WITH FOAM/CLOTHING.

MSG 099 - 5-MLE BAG AND MIDDECK STOWAGE

LW MAR
SJD32108929-335

MODULAR LOCKER LAYOUT
DESCENT

CDR CHRIS FERGUSON
PLT ERIC BOE
M/S #1 DON PETTIT
M/S #2 STEVE BOWEN
M/S #3 HEIDE STEFANYSHYN-PIPER
M/S #4 SHANE KIMBROUGH
M/S #5 (UP) SANDY MAGNUS
M/S #5 (DN) GREG CHAMITOFF

ML60B6013
-310

STS1=OCA
STS2=WINDECOM
STS3=KFX
STS4=WLDMAP
STS5=RPDP
STS6=WMES
PCS=6505
630:PCS LAPTOP

ML60E 0695
-303

MIDDECK FORWARD

MF14E 2760
-180
WATER SAMPLES
CHEMICAL PROBES
FLUID/PURGE BAGS
ITCS SAMPLES

MF14G 2761
-180
ITCS SAMPLE

MF14H 2763
-304

MF28K 9657
-309
ACT/WATCH(7)/MAK
GAPS(5)/CRYO GLOVES
SAMPLE PURGE KIT
731: SILVER BIO KIT
LOGBOOKS

MF28M 2765
-304

MF280 2769
-309

MF43C 1900
-308

MF43E 5473
-305

MF43G 1902
-308

MF43H TBD
-301

MF43K 0679
-301
RESERVED FOR FEET

MF43M 1904
-307

MA9D 8737
-310

MA9E 8733
-302

(CTB)

MA9G 0688
-303

MA9J 8719
-307

MA9L 6269
-307
PRINTER TRAYS
6256-303

MA16D 5452
-327

MA16F 0663
-301
705: DOUBLE COLDBAG

MA16G 6268
-320

MF14G 2761
-180
ITCS SAMPLE

MF14H 2763
-304

MF28H 6654
-306
GLACIER

MF28K 9657
-309
ACT/WATCH(7)/MAK
GAPS(5)/CRYO GLOVES
SAMPLE PURGE KIT
731: SILVER BIO KIT
LOGBOOKS

MF28M 2765
-304

MF280 2769
-309

MF57C 8965
-314

MF57E 6240
-311
ORBITER EDF
SODR(ZIPLOCK)

MF57G 8947
-304

(CTB)

MF57H 8969
-313

MF57K
RESERVED FOR FEET

MF57M TBD
-301
BAG 704
STABILITY
305PAGE
PROBE (RDA
IP0D(3)
WRM HOSE
1246-301) (1252-301)

MA9D 8737
-310

MA9E 8733
-302

(CTB)

MA9G 0688
-303

MA9J 8719
-307

MA9L 6269
-307
PRINTER TRAYS
6256-303

MA16D 5452
-327

MA16F 0663
-301
705: DOUBLE COLDBAG

MA16G 6268
-320

VOL B 7436
-316
(MA730)

MF14G 2761
-180
ITCS SAMPLE

MF14H 2763
-304

MF28H 6654
-306
GLACIER

MF28K 9657
-309
ACT/WATCH(7)/MAK
GAPS(5)/CRYO GLOVES
SAMPLE PURGE KIT
731: SILVER BIO KIT
LOGBOOKS

MF28M 2765
-304

MF280 2769
-309

MF71C 1901
-305

MF71E 7497
-303
NLP-CELLS-1

MF71G 1903
-305

MF71H 8969
-313
POST INSERTION #2

MF71K 1908
-309
CREW SUPPORT

MF71M 3005
-304
RCC PLUGS(19)
RCC TOOLS
(CTB 0675-302)

MA9D 8737
-310

MA9E 8733
-302

(CTB)

MA9G 0688
-303

MA9J 8719
-307

MA9L 6269
-307
PRINTER TRAYS
6256-303

MA16D 5452
-327

MA16F 0663
-301
705: DOUBLE COLDBAG

MA16G 6268
-320

VOL 3B 7425
-326
(MA730)

MF14G 2761
-180
ITCS SAMPLE

MF14H 2763
-304

MF28H 6654
-306
GLACIER

MF28K 9657
-309
ACT/WATCH(7)/MAK
GAPS(5)/CRYO GLOVES
SAMPLE PURGE KIT
731: SILVER BIO KIT
LOGBOOKS

MF28M 2765
-304

MF280 2769
-309

MF71C 1901
-305

MF71E 7497
-303
NLP-CELLS-1

MF71G 1903
-305

MF71H 8969
-313
POST INSERTION #2

MF71K 1908
-309
CREW SUPPORT

MF71M 3005
-304
RCC PLUGS(19)
RCC TOOLS
(CTB 0675-302)

MA9D 8737
-310

MA9E 8733
-302

(CTB)

MA9G 0688
-303

MA9J 8719
-307

MA9L 6269
-307
PRINTER TRAYS
6256-303

MA16D 5452
-327

MA16F 0663
-301
705: DOUBLE COLDBAG

MA16G 6268
-320

A16 7490
-302

A17 7424
-304
CORE CC SVS BAG
DIV CAN BAG
732: PD100 LENS
QUICK DON MASK(4)
HATCH TOOL

MF71C 1901
-305

MF71E 7497
-303
NLP-CELLS-1

MF71G 1903
-305

MF71H 8969
-313
POST INSERTION #2

MF71K 1908
-309
CREW SUPPORT

MF71M 3005
-304
RCC PLUGS(19)
RCC TOOLS
(CTB 0675-302)

MA9D 8737
-310

MA9E 8733
-302

(CTB)

MA9G 0688
-303

MA9J 8719
-307

MA9L 6269
-307
PRINTER TRAYS
6256-303

MA16D 5452
-327

MA16F 0663
-301
705: DOUBLE COLDBAG

MA16G 6268
-320

31 LIQH: 29 + 1 ATCO IN LIQH BOX, 2 INSTLD
(7435-314)

WINDOW SHADE BAG
(5548-369)

ONLY LOCATIONS THAT CHANGE OR
CONTAIN TRANSFER ITEMS ARE SHOWN

L10A1:
L10A2:
L10A3:
L11:
L12A1:
L12A2:
L12A3:
R12A1:
R12A2:

MA9D 8737
-310

MA9E 8733
-302

(CTB)

MA9G 0688
-303

MA9J 8719
-307

MA9L 6269
-307
PRINTER TRAYS
6256-303

MA16D 5452
-327

MA16F 0663
-301
705: DOUBLE COLDBAG

MA16G 6268
-320

DWG NO. SGD32104449
/USR/DWGS/LOCKER/STS126
COMM: M. McDONALD 485-1384

NOTE: LOCKER LAYOUTS ARE FOR REFERENCE ONLY AND ARE NOT RELEASED DRAWINGS.
FOR RELEASED DRAWINGS, REFER TO CCDD DRAWING # SGD32104449