

STS-135/ULF7

FD 06 Execute Package

MSG	Page(s)	Title
042	1 - 15	FD06 Flight Plan Revision
043	16 - 17	FD06 Mission Summary
044	18 - 21	FD06 Transfer Message
045	22	FD05 MMT Summary
046	23 - 29	5-MLE Bag Layouts

Approved by FAO:

J. Mintz



Approved by OpsPlan:

K. Howell

Last Updated: Jul 13 2011 5:26 AM GMT

JEDI (Joint **E**xecute package **D**evelopment and **I**ntegration), v3.0



Life of Orbit 1 Shift



And now for something completely different. Lead FAO reports, “I used to be an Ops Planner but now I am an FAO and things are much better now.”

MSG 042 (28-0534) - FD06 FLIGHT PLAN REVISION

Page 1 of 15

MSG INDEX

MSG NO.	TITLE
042	FD06 Flight Plan Revision
043	FD06 Mission Summary
044	FD06 Transfer Message
045	FD05 MMT Summary
046	5-MLE Bag Layouts

1. We have continued to average ~700 watts under the predicted power level. Our current margin is 7 hours (H2 limited) above a 13+0+2 day mission.

For today's cryo config, O2 tanks 1 & 4 and H2 tanks 1 and 5 will be active.

R1 **O2,H2 MANF VLV TK1 (two) - OP (tb-OP)**
A11 **CRYO TK4 HTRS O2 A,B (two) – AUTO**
A15 **CRYO TK5 HTR O2 A - OFF**

2. The latest downlinked imagery from the Nikon D2Xs (S/N 1117) shows that the camera is set to an ISO of 320 and the focus is in manual. This is resulting in grainy and out of focus pictures. Please check the D2Xs nominal camera settings and make sure to set the following:

- ISO - 100
- Body Focus Mode - S
- Lens Focus Mode - M/A (A)

3. Below is information about the Wallops ground station for the ground pass at MET 4/21:13

Wallops' Space Shuttle support has been an important part of the overall program since the start of ISS missions. They have provided full S-Band and UHF A/G support throughout the years. They have been an integral part of each mission phase from pre-launch testing and launch, to on-orbit support. Wallops' professionalism and "can do" attitude has added to the success of the Space Shuttle program.

4. **Rex:** Based on the difficulties of getting a good connection between the Tridar Ethernet cable and the WLES PGSC on FD 3, would you prefer to keep the Tridar setup for undock on the WLES PGSC or would you like to try an alternate PGSC?
5. **Rex:** For the MICRO-4 Mixing activities today, we've moved the activities earlier in the day right after the middeck status check. Fill all syringes to the line per procedure.
6. **Fergy:** With the extra day in the mission, we've added an AEM Video Activity prior to the AEM Status Check.
7. Crew Choice Downlink KU Opportunities:

Please allow 1-2 minutes to lock up on Ku-band. Check with MCC before starting playback.

Pre-Sleep Evening of FD06

TDRS	AOS	LOS	Delta (min)	Notes
W-171	5/03:04	5/03:17	13	
E-TDS	5/05:16	5/05:51	35	

8. Replace pages 2-18 through 2-21 and 3-56 through 3-65.

FD06

GMT 07/13/11 (194)

MET Day 004

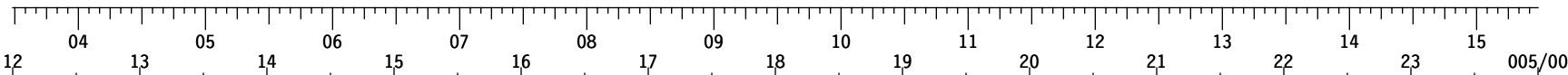
12 04 13 05 14 06 15 07 16 08 17 09 18 10 19 11 20 12 21 13 22 14 23 15 005/00

STS-135	CDR FERGUSON	SLEEP			POST SLEEP		EXERCISE		MDDK XFER			ARE D H / O	CREW CHOICE RECORD	WAPS 21:13 MDDK XFER	MEAL	I M U	MPLM XFER	
	PLT HURLEY	SLEEP			POST SLEEP		ILC C O I F C W C # 6 I N I T	EXERCISE		C W C T E R M	C W C X F E R	MDDK XFER	ARE D H / O	CREW CHOICE RECORD	MDDK XFER	MEAL	N 2 - I	MDDK XFER
	MS1 MAGNUS	SLEEP			POST SLEEP		T U R P A D N A S T E R	POST SLEEP		EXERCISE		MPLM XFER		CREW CHOICE RECORD	MPLM XFER	MEAL	MPLM XFER	
	MS2 WALHEIM	SLEEP			POST SLEEP		M D D K M I C R O A C T	M I C R O A C T	MPLM XFER			CREW CHOICE RECORD	MPLM XFER	MEAL	MPLM XFER			
	<div><div>DAY/NIGHT</div><div>ORBIT</div><div>W E Z</div><div>ORB ATT</div><div>ISS</div><div>TDRS</div><div>AVAIL</div></div>																	
<div><div>Notes</div></div>																		

FD06

GMT 07/13/11 (194)

MET Day 004



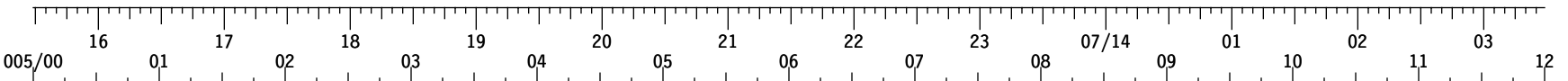
ISS

ISS	ISS CDR BORISENKO	SLEEP	П33 МО 9	POST SLEEP	Д А К - В Ф Y	DPC	DAK DNLD	VELO	MPLM XFER	MEAL	Р50 3 2 MSR							
	FE-1 SAMOKUTYAEV	SLEEP	PS П33 МО 9	POST SLEEP	Б И М Н П И Т Ф 1	DPC	МБМ FE1 EXE	СОГС ГА ФИТ С/О	С М О О Г Н С И П 1	T2	ARED	MEAL	COX	IMS	С Б С М Н Т			
	FE-3 GARAN	SLEEP	POST SLEEP			DPC	EVA PHS S/UC	EVA PHS CMOS	EVA PHS SUB	EVA PHS D/E	PW	*	ARED	CREW CHOICE RECORD	T2	MEAL	WHC AIR HOSE R&R	
	FE-4 VOLKOV	SLEEP	POST SLEEP	П 3 3 - М О - 9	М О 9 S T O W	PS	PW	DPC	PW	T2	MPLM XFER	MEAL	СУБА-RSK1 S/W-UPGRD	П О В Е Л О Т				
	FE-5 FURUKAWA	SLEEP	POST SLEEP	П33 МО 9	POST SLEEP	DPC	PW	H A M P / U	CEVIS	MPLM XFER	MEAL	P W S 1 D C T	CQ BATTERY CHANGEOUT	8				
	FE-6 FOSSUM	SLEEP	POST SLEEP	V C A N 2	DPC	U P N S P E C T	EVA PHS SUB	EVA PHS CMO	ARED	E V A C M R A	CREW CHOICE RECORD	V C A A D J	PCDF EU RMV	H R M V L S T O W	H R M V L S T O W	MEAL	PMA3 STOW REMOVAL	N3P HHGR INST
	DAY/NIGHT																	
	DAILY ORBIT																	
	TDRS AVAIL																	
	ISS TLM																	
ORBIT																		
NOTES	*EMU-H20-RCHG ♦P/TV-EVA CMR-TRNARNND ⊕ IRED RCNR																	

FD06

GMT 07/13/11 (194)

MET Day 005



STS - 135	CDR FERGUSON	MPLM XFER	PAO HD	THANK YOU * K2 YOU *	AEM VIDEO	ACHECK STATUS	PRE SLEEP	PMC A/G	PRE SLEEP	ISS EXTERNAL SURVEYS													
	PLT HURLEY	MDDK XFER	PAO HD	THANK YOU * K2 YOU *	MPLM XFER	ILLON	PRE SLEEP			SLEEP													
	MS1 MAGNUS	MPLM XFER	PAO HD	THANK YOU * K2 YOU *	CH RHO WICE D/L	MPLM XFER	TB RINE SF PREP	TB RINE SF R	PRE SLEEP	SLEEP													
	MS2 WALHEIM	MPLM XFER	PAO HD	THANK YOU * K2 YOU *	EXERCISE	MDDK	PRE SLEEP			SLEEP													
DAY/NIGHT ORBIT																							
TDRS W E Z																							
ORB ATT																							
ISS	TDRS	AVAIL																					
Notes		*FACE IN SPACE																					

FD06

GMT 07/13/11 (194)

MET Day 005

ISS

ISS

ISS CDR
BORISENKO

PEO
3
2
MSR

⊕

◆

T2

PW

DPC

PRE SLEEP-ISS

SLEEP

FE-1
SAMOKUTYAEV

CB C MNT

PW

DPC

PRE SLEEP-ISS

БМП
Φ1
END

SLEEP

FE-3
GARAN

WHC AIR
HOSE R&R

WHC COT R&R

WHC
ACT

WHC FLUSH

⊗

▼

PW

DPC

MP
C
DN

PRE SLEEP-ISS

MP
C
DN

SLEEP

FE-4
VOLKOV

VELO

ТПК
M1
БВН
КРЕП
R&R

MPLM XFER

PW

МБН
16
FE4

DPC

PRE SLEEP-ISS

SLEEP

FE-5
FURUKAWA

IR
RC
END
FG

DK C/O
XFR

PA
OS
/U

PW

PRE
SLEEP-ISS

PA
OS
/U

Δ

DPC

ARED

▲

SLEEP

FE-6
FOSSUM

Φ

PMA3 STOW
REPLACE

N3P
CDC
INSTL

N3P
INSTL

◆

∇

CEVIS

DPC

PRE SLEEP-ISS

SLEEP

DAY/NIGHT

DAILY ORBIT

TDRS AVAIL

ISS TLM

ORBIT

NOTES

79

80

81

82

83

84

85

86

87

▲CMS-TVIS-CRD-FORMAT

⊗CMS-TVIS-PREGATHER

◆CMS-TVIS-SCAVENGE

ΦN3P HHGR INST

⊗WHC CLOSE

♥VDS-N2-VID-CAP-INSTL

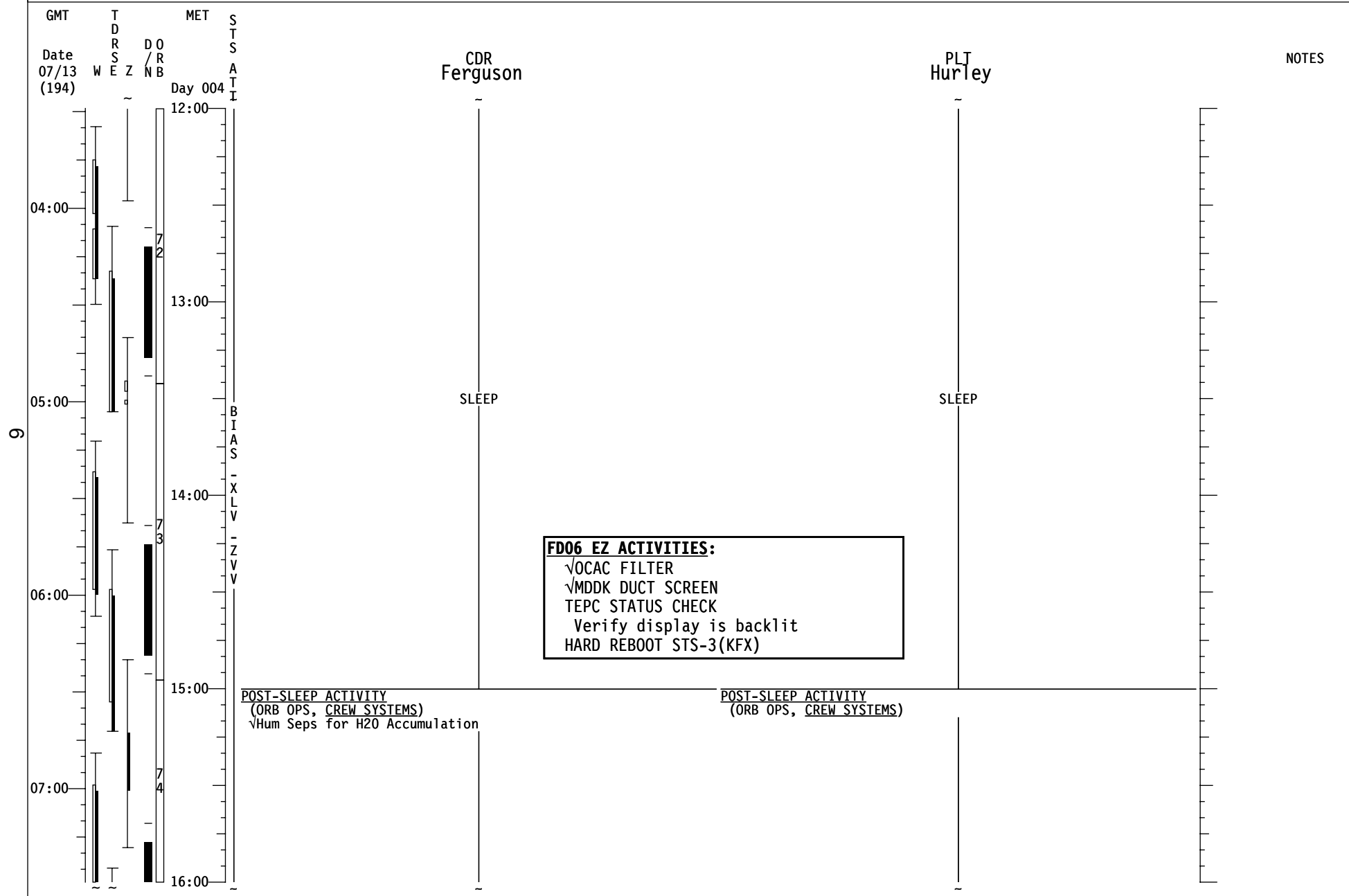
ΔPRE SLEEP-ISS

◆N3P HTCH CLS

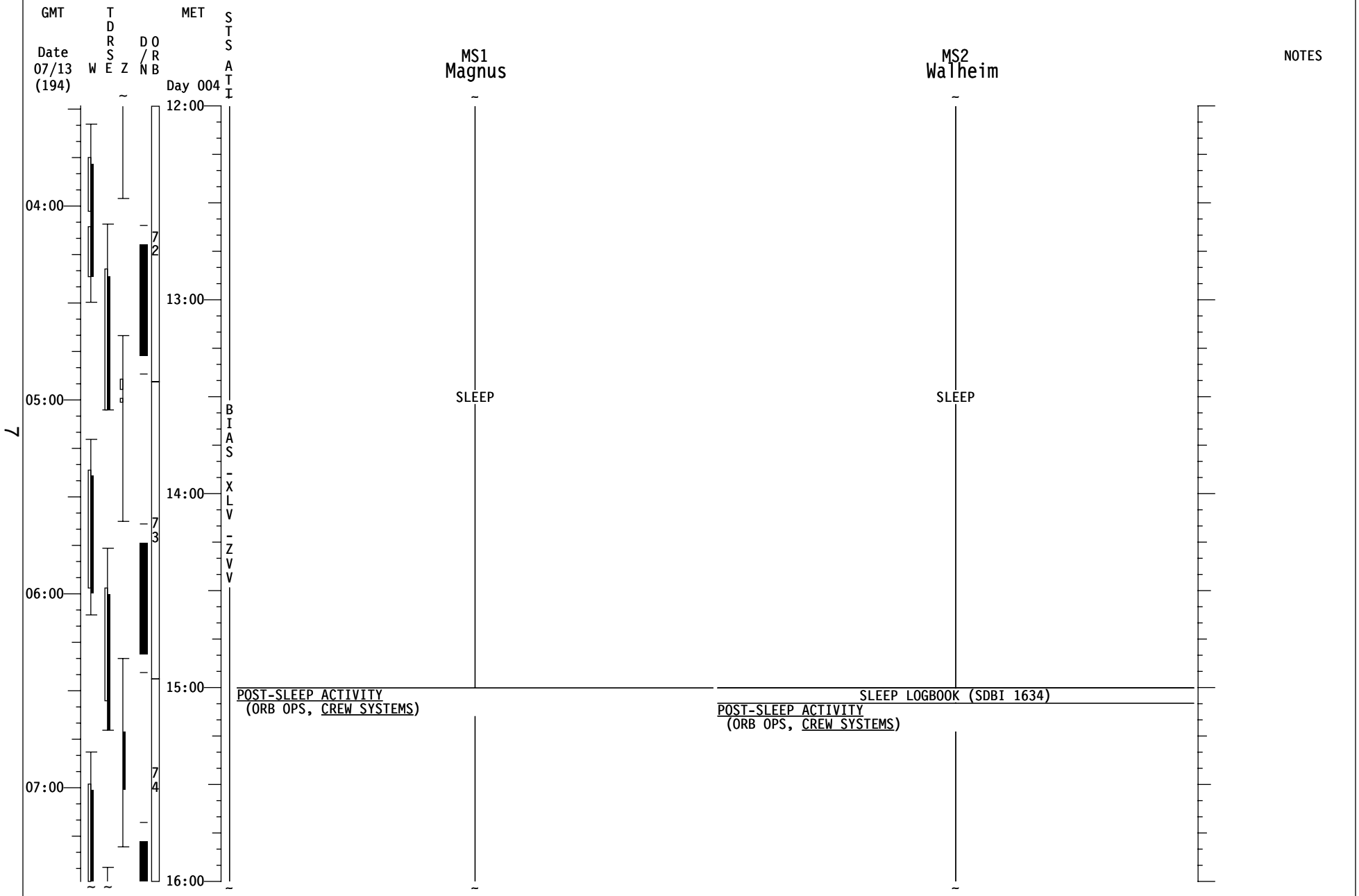
VHTCH STOW RPLC

▲PRE SLEEP-ISS

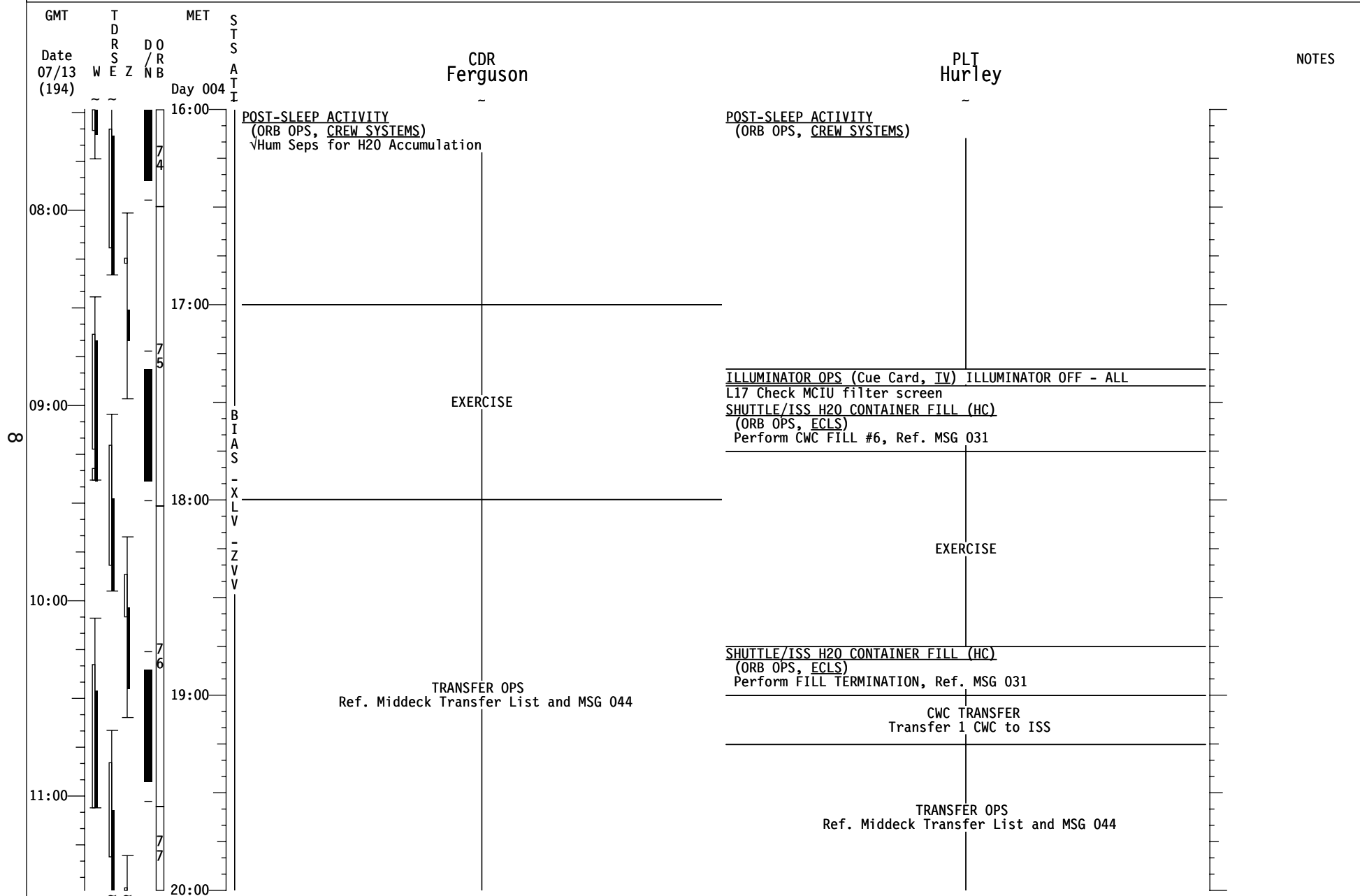
STS-135/ULF7 FD06



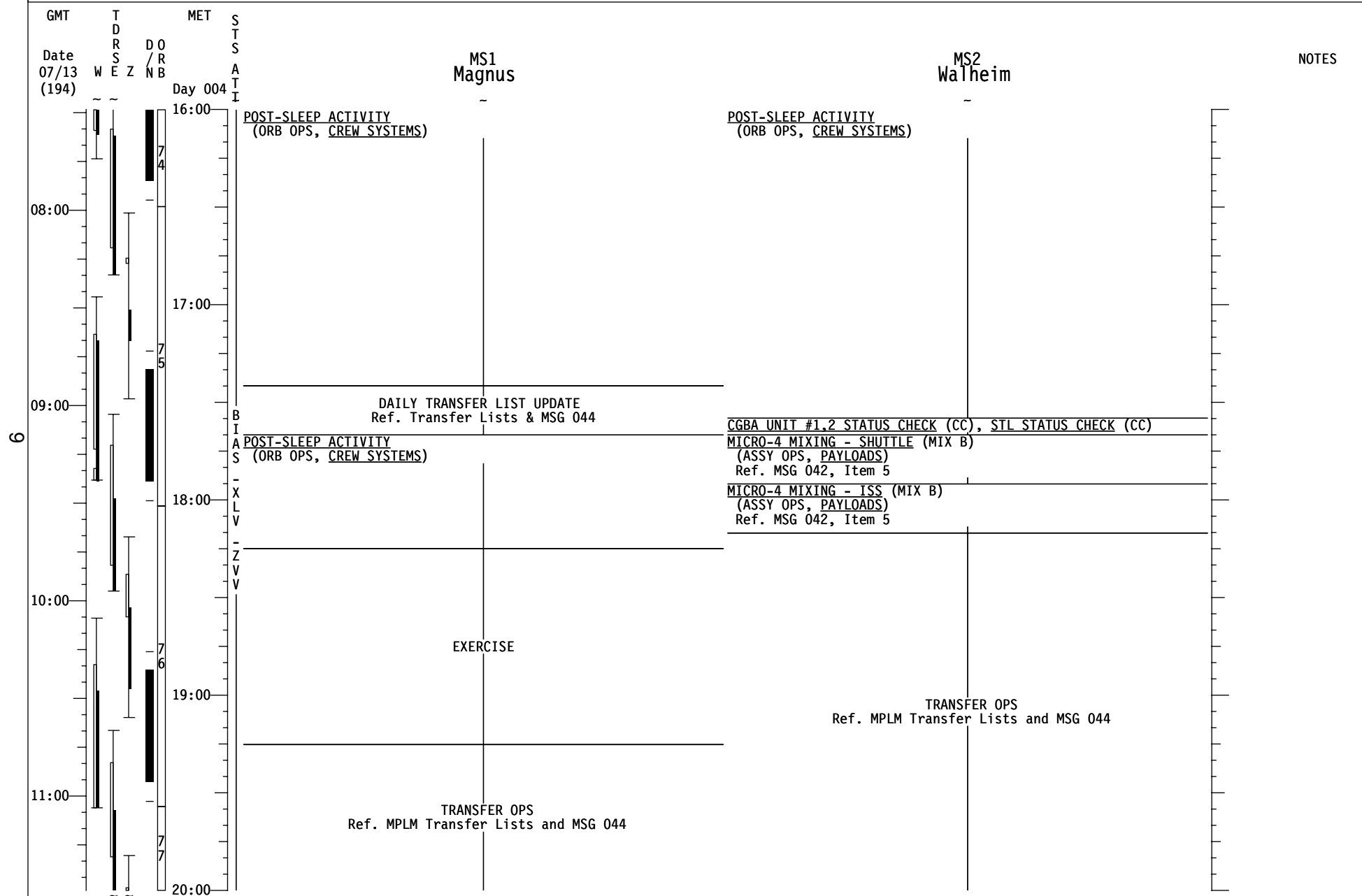
STS-135/ULF7 FD06



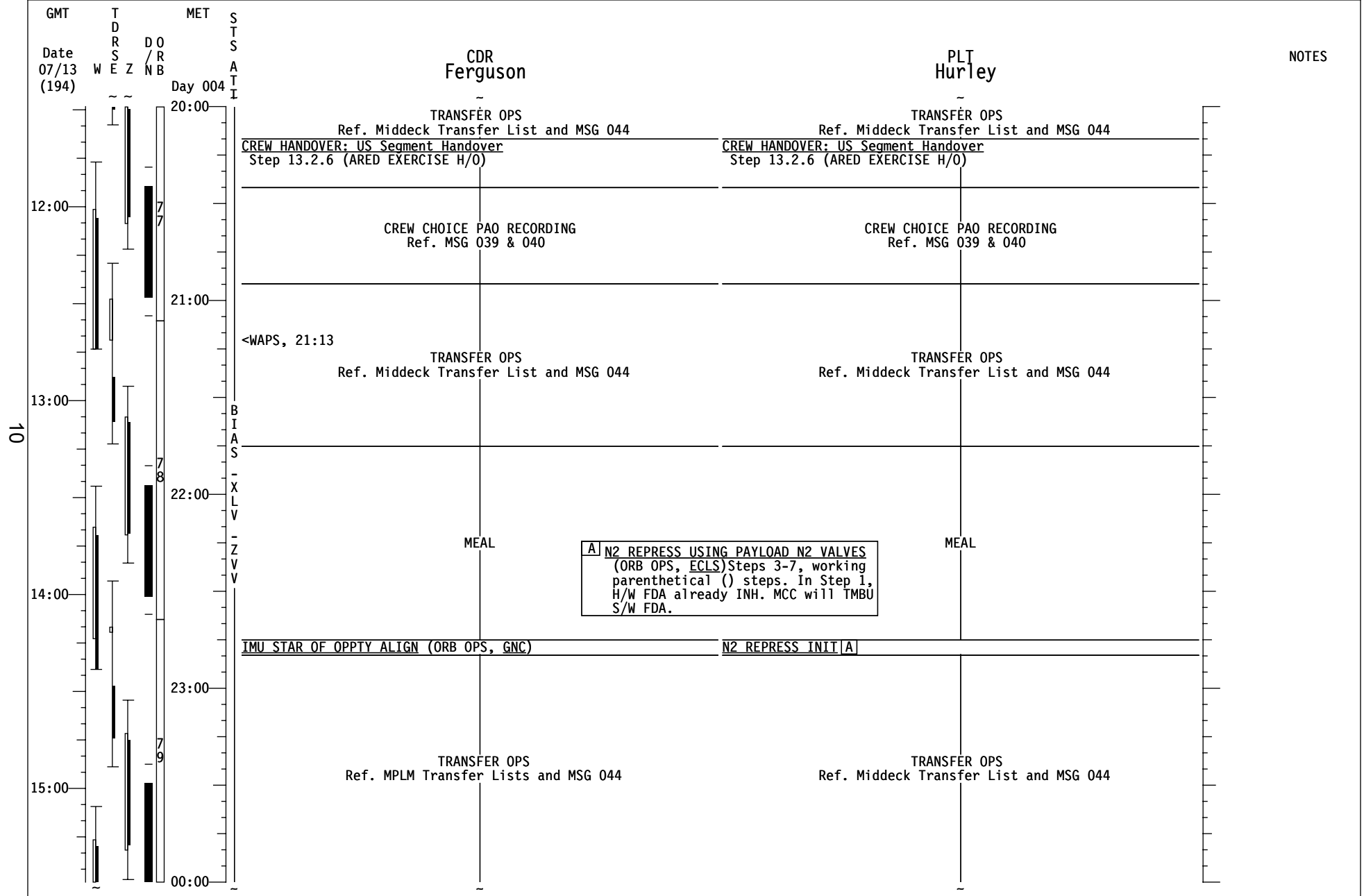
STS-135/ULF7 FD06



STS-135/ULF7 FD06

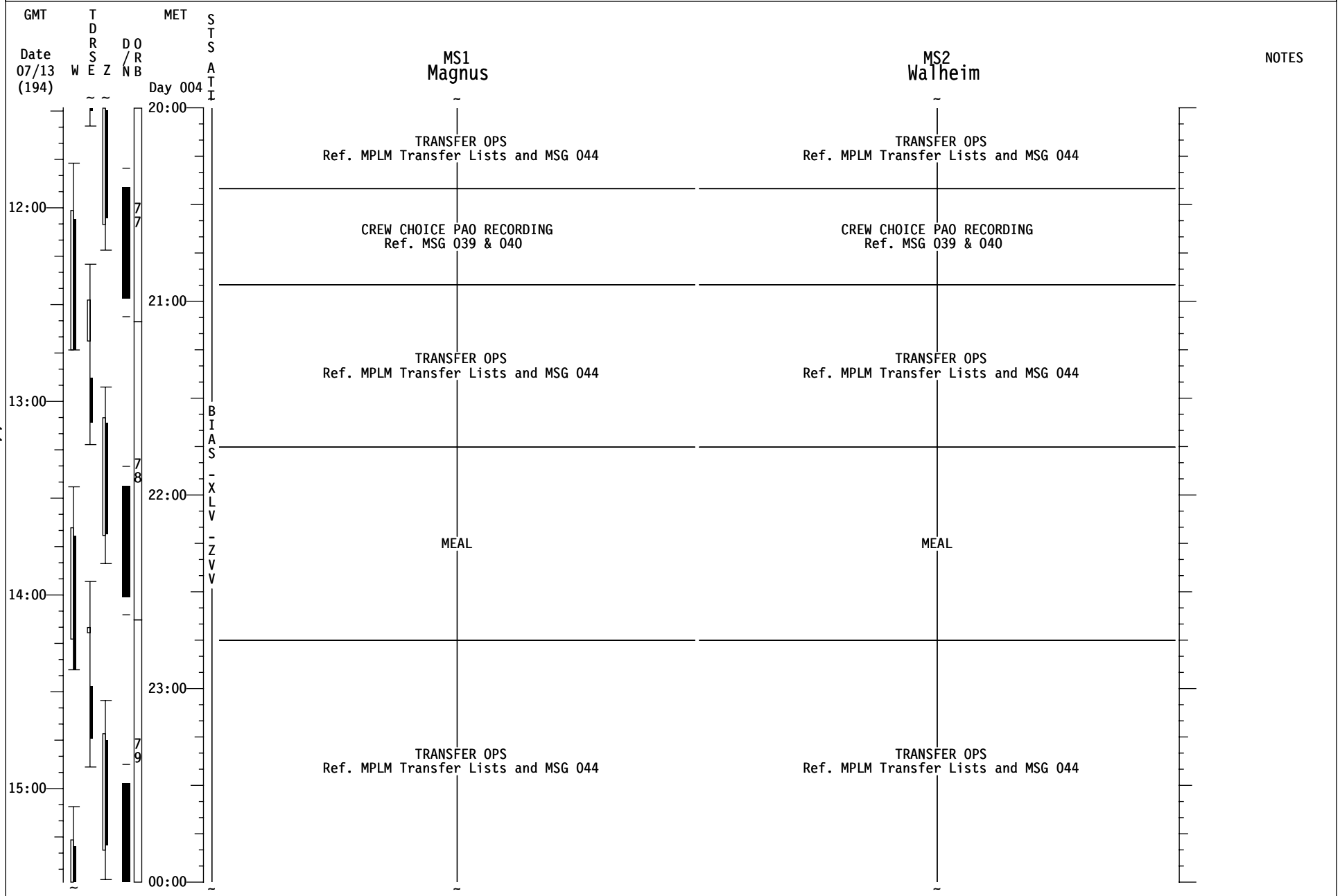


STS-135/ULF7 FD06

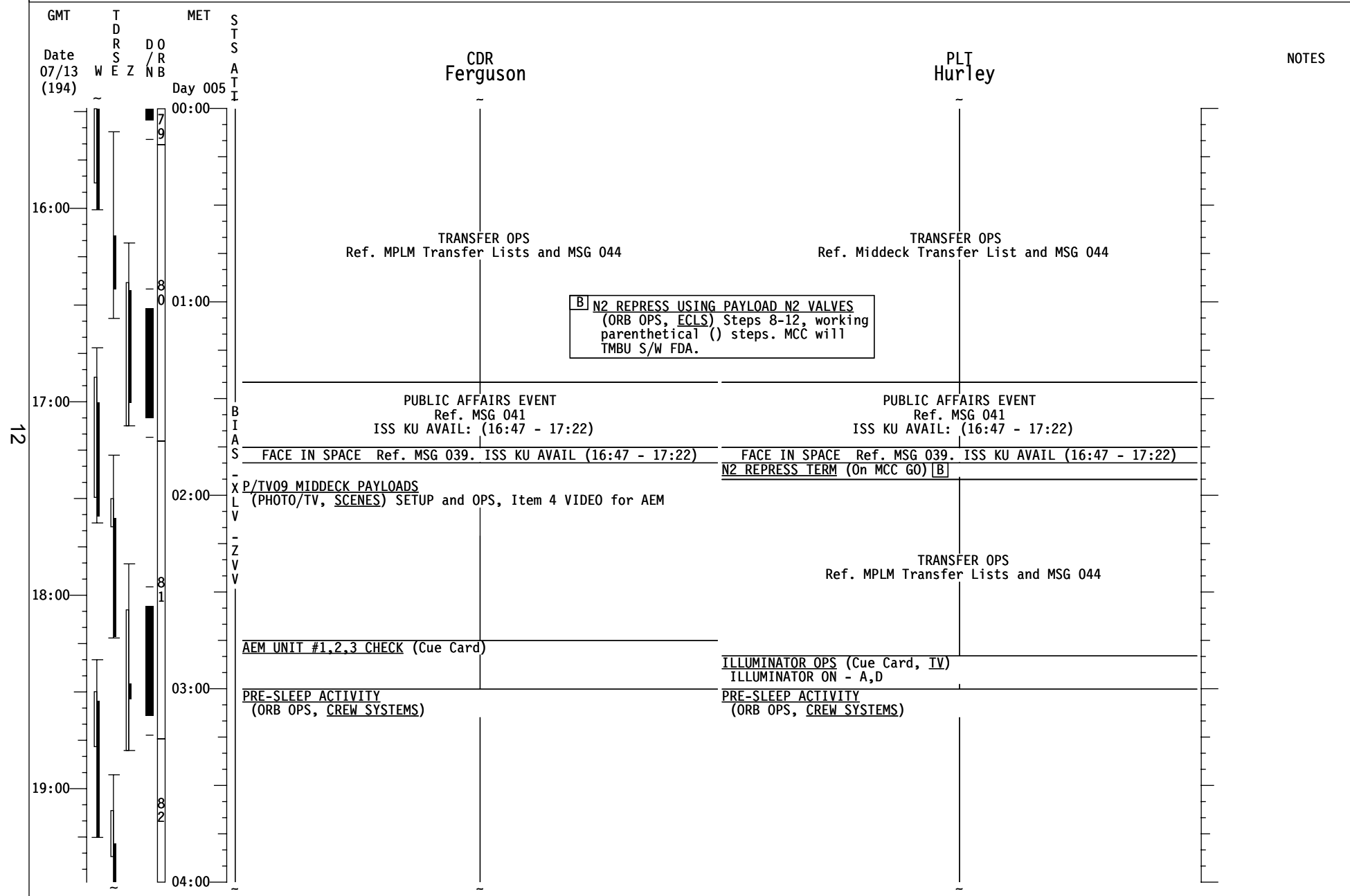


A] N2 REPRESS USING PAYLOAD N2 VALVES
(ORB OPS, ECLS) Steps 3-7, working
parenthetical () steps. In Step 1,
H/W FDA already INH. MCC will TMBU
S/W FDA.

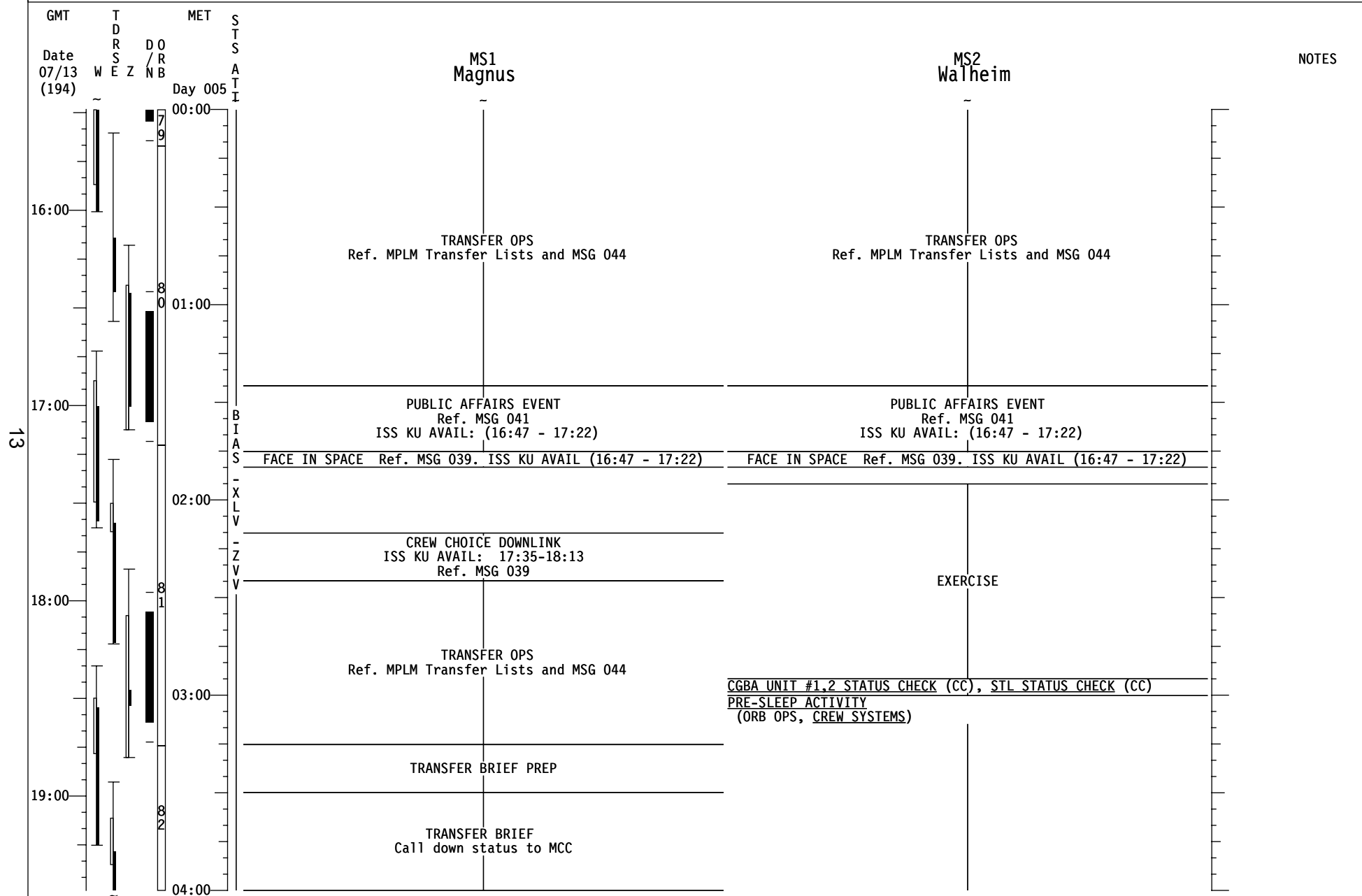
STS-135/ULF7 FD06



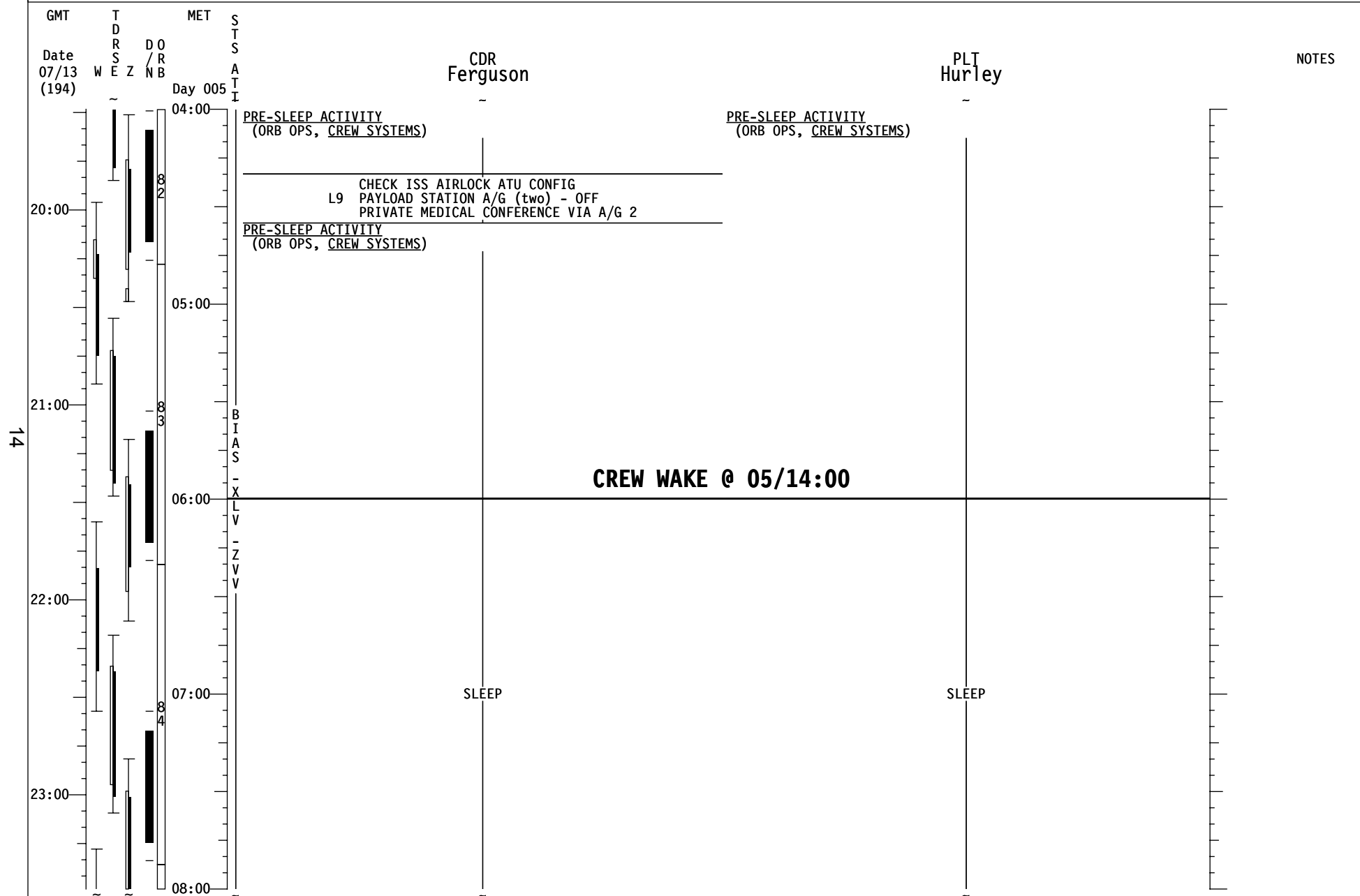
STS-135/ULF7 FD06



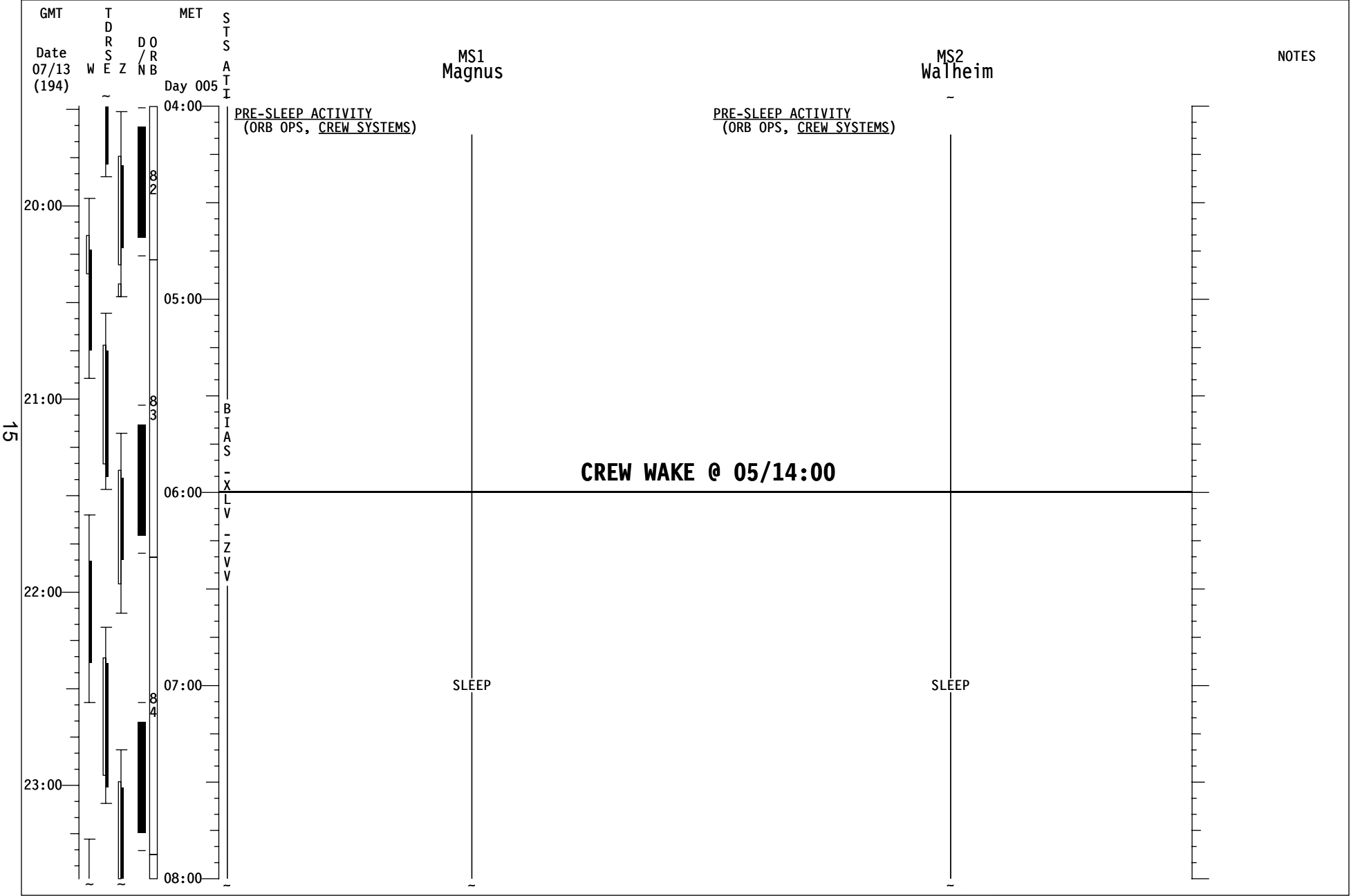
STS-135/ULF7 FD06



STS-135/ULF7 FD06



STS-135/ULF7 FD06



MSG 043 - FD06 MISSION SUMMARY

1 Good Morning Atlantis! Great job with all the great robotics work every day!
2 Congratulations on a flawless docking and a "sporty" PRLA release! And now for the happy
3 words:

Fluffy kittens and bunnies.
Blessed, blissful, blithe, can't complain,
cheerful. Happy, happy, joy, joy. Chipper, chirpy,
content, convivial, gelukkig, delighted, ecstatic, elated,
exultant. Skittles. Flying high, gay, glad, gleeful, gratified, jolly,
intoxicated, joyful, joyous, lykkelig, jubilant, laughing, light, lively,
looking good, merry. Woot! Mirthful, on cloud nine, sunny. Rainbow.
Overjoyed, peaceful, peppy, perky, playful, pleasant, pleased, tickled pink,
sparkling, thrilled, upbeat, walking on air, successful, buoyant. Cookies. Bouncy,
zingy, zippy, auspicious, graceful, whimsical, jaunty, energized, vital,
dynamic, vigorous, rosy, animated, ardent, laetus, fervent, excited,
enthusiastic, passionate, zestful. Vacation. Sprightly, lykkelig, heureux,
vivacious, elated, favorable, bright, lucky, prosperous, kosher, invigorated, nice, radiant,
optimistic, cozy, sanguine, breezy, carefree, debonair, well-done. jocund, funny, hilarious,
happy-go-lucky, insouciant, cool, счастливый, fortuitous, 3 good APUs, cordial, neighborly,
fornøyd, kind, pleased, relaxed, soft, onnellinen, soothed. Chocolate. Snug, wacky, keen,
festive, entertaining, gratified, serene, congenial, friend, delightful, harmony, amicable,
charmed, bubbly, ευτυχής, hearty. Flowers. Holiday, affectionate, glücklich, exuberant.
serendipitous. Run euphoric burrito. Charming, , felicitous, mellow, companionable,
sásta. Candy. Gleeful, fortunate. Supercalifragilisticexpialidocious. Felice, affluent,
מאוש, golden, frisky, impish, 幸せ, colorful, beautiful, best, shining,
valuable, balmy. Sunshine. Gentle, pastoral, good job, amusing,
tranquil, humorous, 12 hooks closed, Whoosh cozy cows!
ludicrous, industrious. Puppies. Enjoyable,
utopian, positive, hapus, promising, gift, brave, dream, rapture.
Zen. Eager, zealous, celebration, party, prize, winning, fond,
Panglossian, hopeful, compassionate, sparkling, beatific.
Babies. Enchanted, beguiled, euphoric.
Effervescent, Tinkerbell. Awesome!

4
5 -PDRS and MMACS
6

7
8 YOUR CURRENT ORBIT IS: 213 X 206 NM
9

10 NOTAMS -
11

12 EDW - EDW 22L/04R IN USE. EDT 22R/04L EMERGENCY DAY USE ONLY
13 EDW - LAKEBED RWYS RED
14 EDW - RWY 22L MLS AZIMUTH SINGLE STRING
15 NOR - LAKEBED RWYS GREEN
16 NTU - RWY 05L/23R AND 14R/32L CLSD
17 MRN - RWY 20 ALS OUT OF SERVICE
18 FMI - TACAN NIM53 DECOMMISSIONED
19 BEJ - CLOSED UNTIL 15 JULY
20 ESN - RWY 03R/21L CLSD

END OF PAGE 1 OF 2, MSG 043

MSG 043 - FD06 MISSION SUMMARY

ESN - TACAN BAG78 OUT OF SERVICE
GUA - TACAN UNZ105 OUT OF SERVICE
FFA - NOT USABLE. IN CARETAKER STATUS
HNL - RWY 26L ALS OUT OF SERVICE
YQX - TACAN YQX74 DME ONLY
YYR - TACAN UYR40 DME ONLY
YYT - TACAN UYT23 DME ONLY
YJT - TACAN YJT78 DME ONLY
BEN - NOT USABLE. NOT SUPPORTED
IKF - NOT USABLE. NO AGREEMENT

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB 79 – 4/23:29 SKC 7 210/10P16
EDW22 ORB 94 – 5/22:32 SKC 7 220/10P16

OMS TANK FAIL CAPABILITY:

NO

LEAKING OMS PRPLT BURN:

ALWAYS BURN RETROGRADE

OMS QUANTITIES(%):

L OMS OX = 37.90 R OMS OX = 37.74
FU = 37.97 FU = 37.32

DELTA V AVAILABLE:

OMS	362 FPS
ARCS (TOTAL ABOVE QTY1)	34 FPS
<hr/>	
TOTAL IN THE AFT	396 FPS
ARCS (TOTAL ABOVE QTY2)	63 FPS
FRCS (ABOVE QTY 1)	34 FPS
AFT QTY 1	84 %
AFT QTY 2	46 %

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

MSG 044 (28-0535) - FD06 TRANSFER MESSAGE

Page 1 of 13

Good morning, Sandy!

Great job yesterday staying ahead of the MPLM transfer curve. Today is a big transfer day in the MPLM, so we'll cut the happy words and let you get to work.

The Transfer List Excel file, FD06_Transfer_List_STS135.xls, locations are:

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

Transfer Notes

- **FD05 Change Page Reprint:** As you requested, we've reprinted the FD05 change pages. We apologize they weren't legible yesterday. You'll notice there are no changes flagged, since we have incorporated them already.
- **Resupply Stowage:** When you go to stow MPLM Resupply Items 105, 308, and 319, you will find three 1.0 CTBs (s/n 1090, 1246, & 1359) stowed in LAB1O5_B2/C2 that return as MPLM Return Items 624, 625, and 655. These bags were on the pre-pack list but not completed.
- **MPLM Resupply Item 260:** You reported the BSSPCM is temp-stowed on the LAB1O3 rack front. You should be able to stow it in LAB1O4_J2 once MPLM Return Items 626 and 627 (0.5 CTBs, s/n 1078 and 1359) are removed. These bags were on the pre-pack list but not completed.
- **LiOH Swap:** As you have probably noticed, we will no longer be completing the LiOH Swap today. We are currently targeting FD08 to complete that activity.
- **IRET Return Items:** With the addition of the PMA3 ingress activity today, we will now be returning the IRET hardware in the MPLM. You can expect to receive one 1.0 CTB, two 3.0 CTBs, and the IRET Hardmount Adapter Plate. You'll also need to retrieve an empty 0.5 CTB to stow the Support Blocks that are removed from the plate. Your MPLM Return Transfer List and M-bag return drawings have been updated to reflect these new items.
- **QDMA Swap:** The following is a high-level overview of the QDMA swap:
 - Retrieve spare QDMAs (qty 2) from NOD1S4_A2
 - Swap one with QDMA in LAB1P0 PEP Locker and one with QDMA in MPLM
 - Pack QDMAs for return in Middeck
- **5 MLE Bag Return Layouts:** MMACS has uplinked the 5 MLE Bag return layouts in MSG 046. These pages have been numbered appropriately for you to incorporate into the Middeck Transfer Book Layouts section.
- **GLA Fastener Release:** Don't forget to release the bottom six (6) fasteners on the PA2 (GLA 6), PA4 (GLA 8), PF2 (GLA 2), and PF4 (GLA4) GLAs while you have the RSPs rotated down. This will require a 1/8" Ball Tip Hex Head, 1/4" Drive already stowed in your MPLM Tool Page.

MSG 044 (28-0535) - FD06 TRANSFER MESSAGE

Page 2 of 13

Transfer Questions

- **2.0 CTB for Wet Wipes:** Could you please let us know the serial number of the 2.0 CTB you are using for the Wet Wipes? This will help us update IMS appropriately.

FD06 Choreography

- **Rotate A2 and A4 RSPs down** to access backside stowage; transfer resupply items and stow return items
 - Relocate RFTA foam from A3_A1 to A2_K1 prior to packing RFTA for return
 - Retrieve foam from A2_H1 (Parts 1 & 2), A2_K1 (Parts 1 & 2), A3_H1 (Parts 1 & 2), and A4_H1 (Parts 1-4) prior to packing backsides for return
 - Loosen bottom row of PA4 GLA fasteners before rotating rack up (1/8" Ball Tip Hex Head, 1/4" Drive)
- **Rotate A2 and A4 RSPs up**
- **Rotate F2 and F4 RSPs down** to access backside stowage; transfer resupply items and stow return items
 - Verify A2 front fences are removed since they will be stowed on backside of F3 for return
 - Retrieve foam from F2_H1 (Parts 1-4 and 6), F3_H1 (Part 1 or 2), and F4_H1 (Parts 1 & 2) prior to packing backsides for return
 - Loosen bottom row of PF2 and PF4 GLA fasteners before rotating racks up (1/8" Ball Tip Hex Head, 1/4" Drive)
- **Rotate F2 and F4 RSPs up**
- **MPLM Resupply Item 310:** Transfer PWRs from MPLM to middeck for FD07
- **MPLM Return Item 416.1:** Pack PCDF EU after removal activity.
- **Middeck Return Item 449.1:** Pack COL PWS1 laptop after disconnect activity.
- **Middeck Return Items 723 & 724:** Swap and pack QDMAs (no PBAs) for return:
 - Retrieve spare QDMAs (qty 2) from NOD1S4_A2
 - Swap one with QDMA in LAB1P0 PEP Locker and one with QDMA in MPLM
 - Pack QDMAs for return in middeck
- **Middeck Return Items 1003 thru 1007.1:** Pack IRED hardware following PMA3 ingress.
- Transfer and stow return items in middeck 5 MLE bags

MSG 044 (28-0535) - FD06 TRANSFER MESSAGE

Page 3 of 13

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

MIDDECK TRANSFER LIST BOOK

In the Middeck Transfer List **LAYOUTS** tab
Add the following pages (from MSG 046):
L-2 thru L-8

In the Middeck Transfer List **RESUPPLY** tab
Pen & Ink on the following page:
Resupply 5 – Items 28 and 29: update flight day of LiOH Swap to FD08
Replace the following page:
Resupply 9

In the Middeck Transfer List **RETURN** tab
Replace the following page:
Return 1

Pen & Ink on the following pages:
Return 7 – Items 714 and 715: update flight day of LiOH Swap to FD08
Return 10 – Item 727: update flight day of sampling to FD07

MPLM RESUPPLY TRANSFER LIST BOOK

In the MPLM Resupply Transfer List **F1 - RSP** tab
Pen & Ink on the following page:
Resupply 23 – Item 156: update Stowage at Undock location
WAS: PMM1P1_A2
IS: PMM1P1_D

In the MPLM Resupply Transfer List **F2 - RSP** tab
Replace the following page:
Resupply 24

In the MPLM Resupply Transfer List **P1 - RSR** tab
Pen & Ink on the following page:
Resupply 28 – Items 194 and 196: update Stowage at Undock location
WAS: FGB_302 behind panel
IS: FGB_304 behind panel

In the MPLM Resupply Transfer List **P4 - RSR** tab
Pen & Ink on the following page:
Resupply 33 – Item 230: update Stowage at Undock location
WAS: FGB_302 behind panel
IS: FGB_304 behind panel

MSG 044 (28-0535) - FD06 TRANSFER MESSAGE

Page 4 of 13

MPLM RETURN TRANSFER LIST BOOK

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

Replace the following pages:

L-19, L-31, and L-35

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

Pen & Ink on the following pages:

Return 17 – Item 416.1: update flight day of PCDF EU Remove to FD06

Return 19 – Item 433: update Stowage at Undock location

WAS: MPL2P1_B2

IS: MPL2S1_G1

Return 24 – Item 622: update MPLM Resupply Item reference to 163

Return 24 – Item 630: update Stowage at Undock location

WAS: MPL2S1_G1

IS: MPL2P1_B2

Replace the following pages:

Return 16

Return 37

Add the following page:

Return 38

FD07 Choreography

- Complete any RSP backside items not completed on FD06.
- Stow return items in RSR blocked locations while RSP fences are folded.

Have a great day!

- STS-135 Transfer Team

MSG 045 (28-0537) - FD05 MMT SUMMARY

Page 1 of 1

1 STS-135/ULF7 FD5 - MMT Summary

2
3 Congratulations on a very successful EVA. The teams couldn't be more thrilled
4 accomplishing the EVA objectives.

5
6 The MMT met today to review the orbiter systems and mission progress.

7
8 Atlantis continues to perform exceptionally well and the teams are very complementary of
9 the work accomplished so far in the mission.

10
11 The DAT completed the assessment of all the Ascent, FD2, and FD3 imagery. They ran the
12 standard analysis (baseline heating, BLT, Cavity Heating, Thermal analysis, stress) on the
13 frayed blankets (3 - LOMS Pod, 1 - FWD of - Y Tracker door) and minor damage to a tile
14 outboard of the STBD ET door and confirmed no liberation or entry heating concerns.

15
16 With the analysis complete, the MMT unanimously agreed that both RCC and TPS were
17 cleared for Entry.

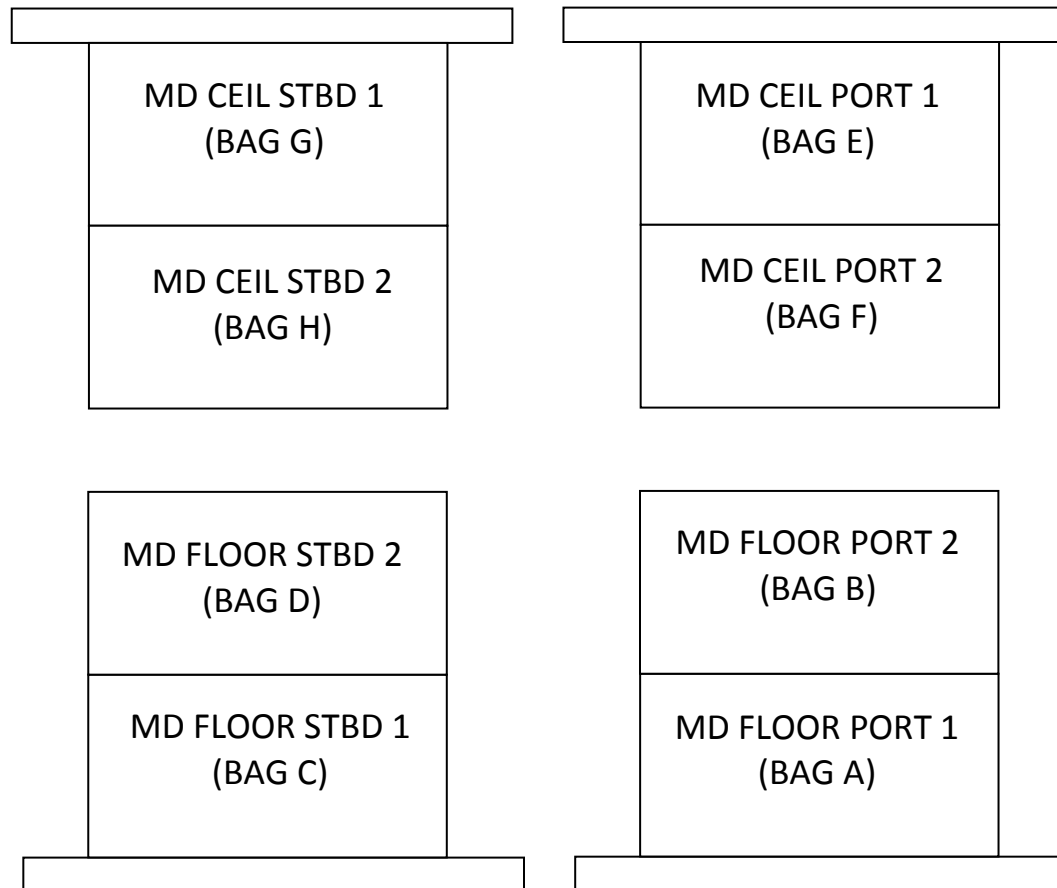
18
19 The MMT chairman took the opportunity to thank the DAT members for their exceptional
20 work starting with spooling up and getting prepared to support RTF. A "Job Well Done" (of
21 course they still need to stick around for the Late Inspection Imagery review).

22
23 Keep up the great work!

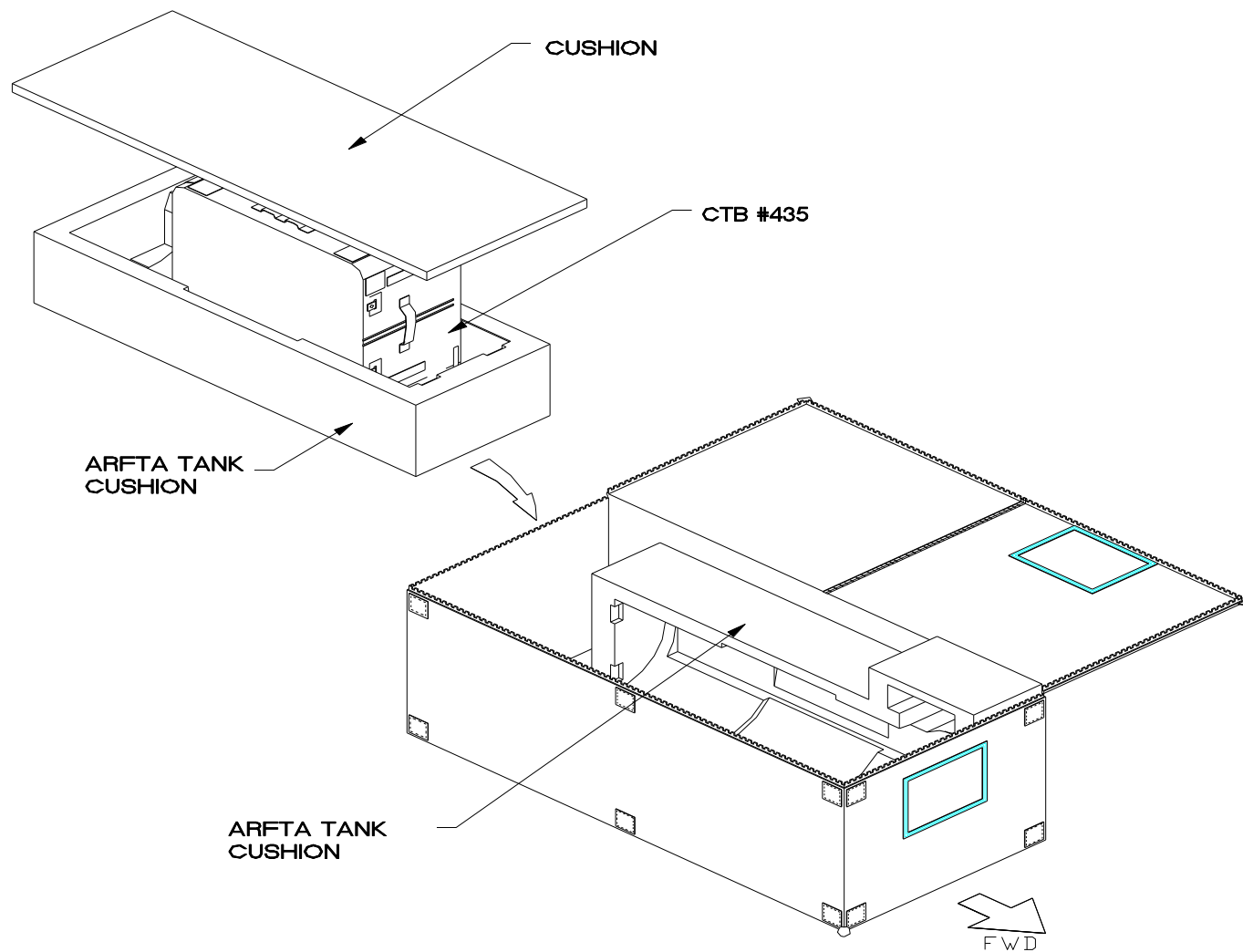
Good Morning STS-135 Flight Crew,

Below you will find the latest 5-MLE bag layouts. Currently there is only launch foam planned for return in Bag E and Bag C. If there are any changes to this plan, the updates will be submitted via another message.

- The STS-135 Middeck Stowage Team

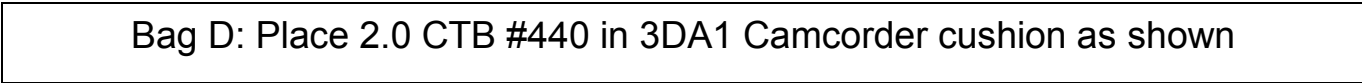


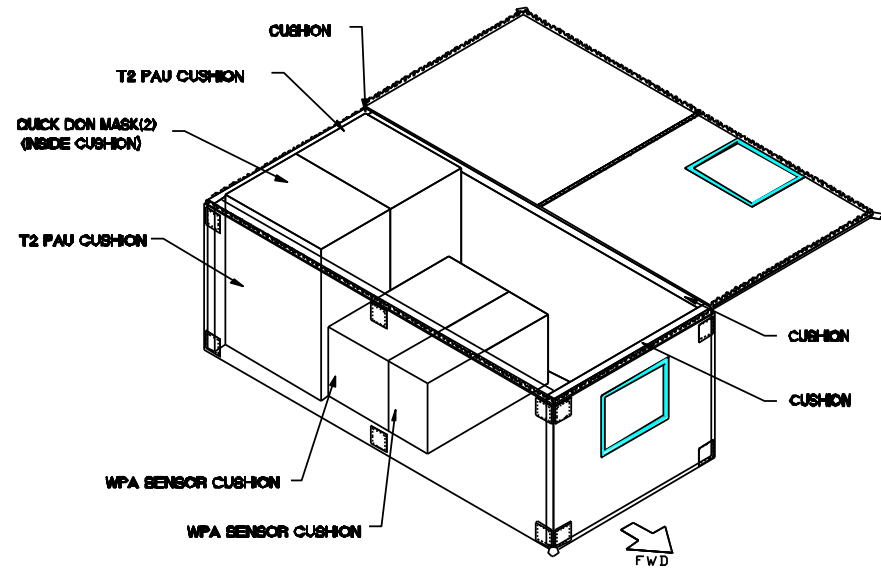
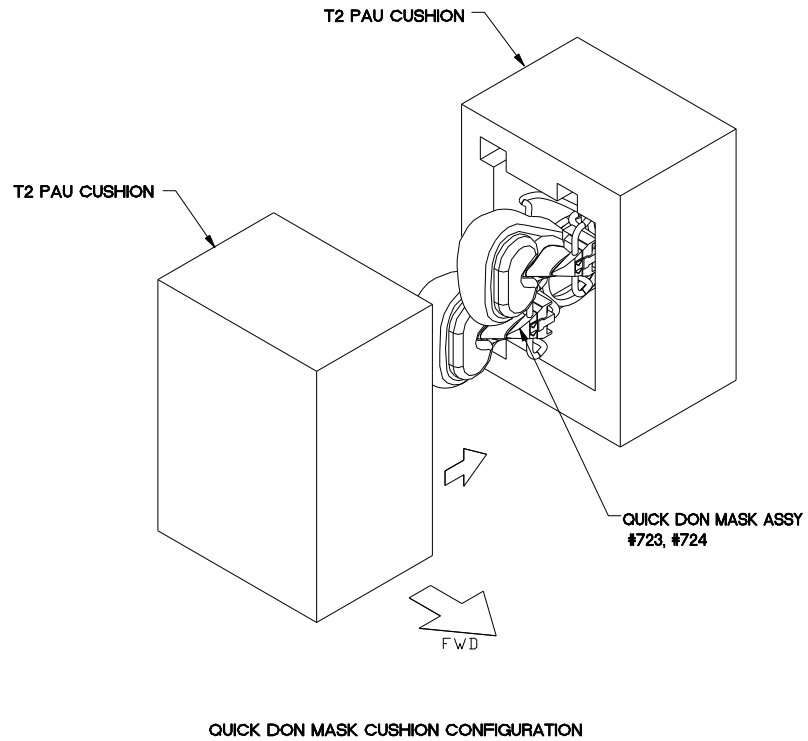
VIEW: DITCH LOOKING AFT



Bag A: Place 1.0 CTB #435 in ARFTA cushion as shown



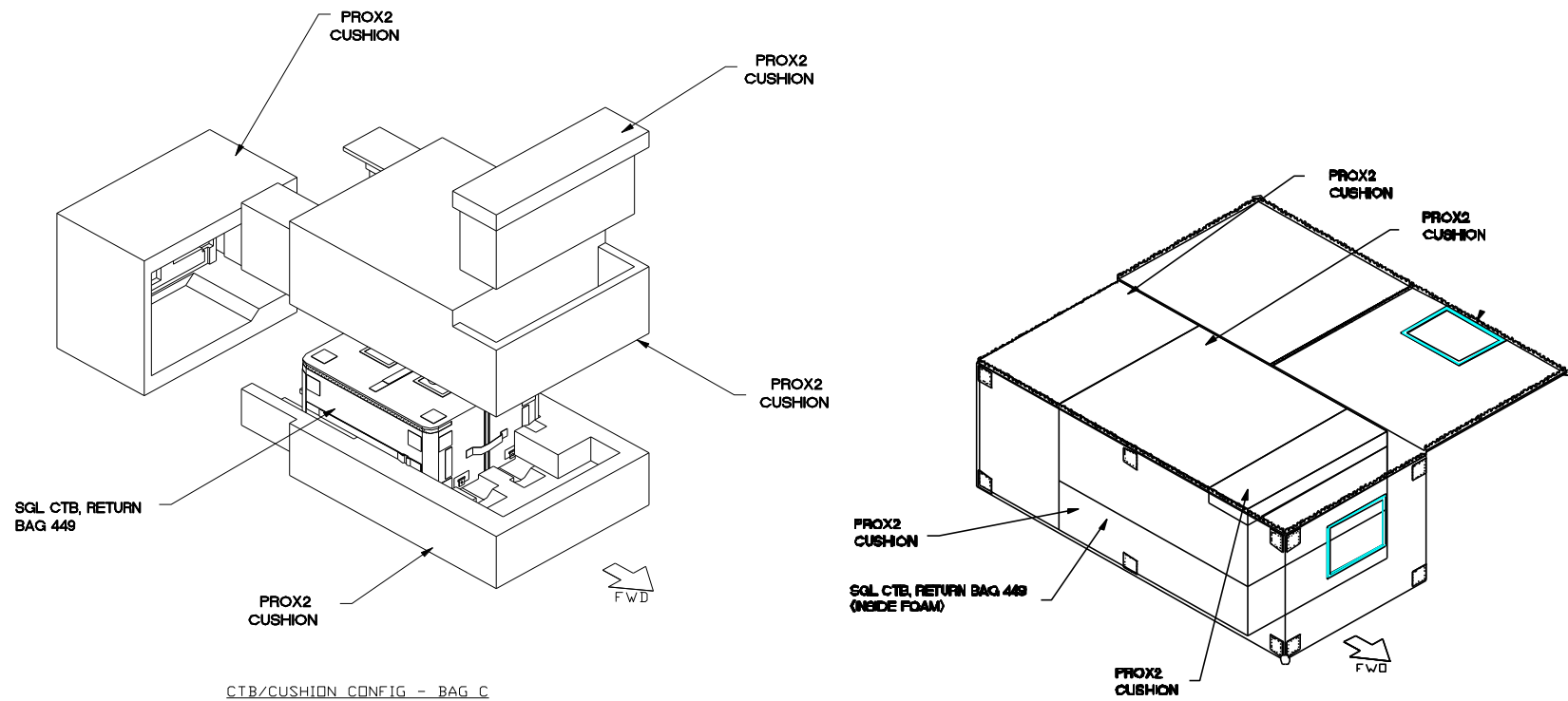




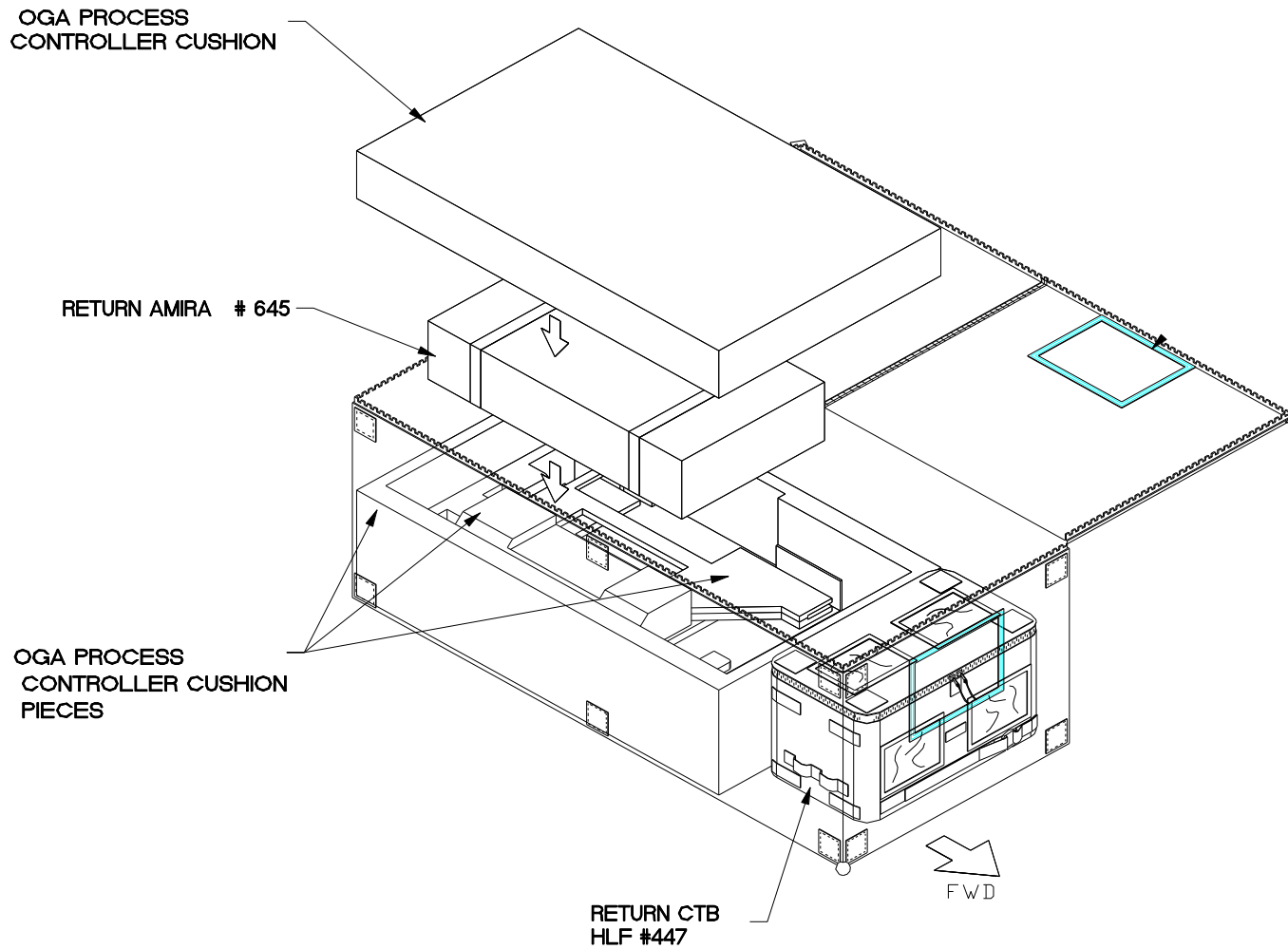
Bag F: Place Quick Don Masks into cushion as shown.

MSG 046 - 5-MLE BAG LAYOUTS

28



Bag G: Place 1.0 CTB #449 in PROX 2 cushion as shown



Bag H: Place AMIRA #645 into cushion and place 0.5 CTB #447 as shown