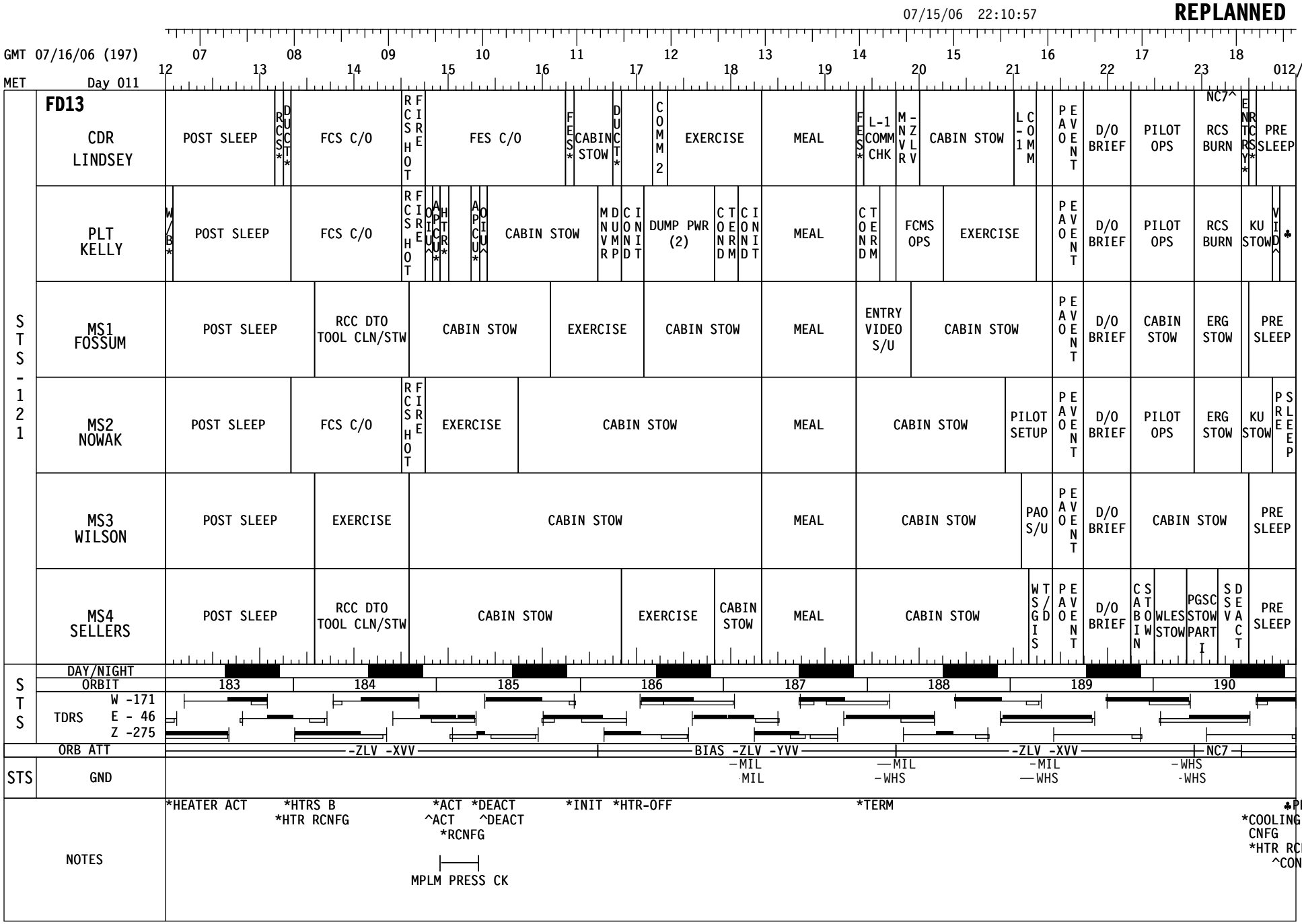
STS-121 / ULF1.1

FD 13 Execute Package

MSG	Page(s)	Title
125B	1 - 2	FD13 Summary Timeline **(pdf)**
118B	3 - 14	FD13 Flight Plan Revision **(pdf)**
119	15 - 16	FD13 Mission Summary **(pdf)**
120	17	FD13 Water Summary **(pdf)**
122	18 - 20	FD13 FES Checkout Procedure **(pdf)**
123A	21	Final Entry Stowage Map Delta **(pdf)**
124	22	FD12 MMT Summary **(pdf)**

Approved by FAO: *L. Eadie*

Last Updated: Jul 16 2006 6:44AM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v2.04.0003*


GMT 07/16/06 (197)
MET Day 011
07 08 09 10 11 12 13 14 15 16 17 18
12 13 14 15 16 17 18 19 20 21 22 23 012/00
STS-121
FD13
CDR LINDSEY
POST SLEEP
RCS*
DUCT*
FCS C/O
RCS HOT FIRE
FES C/O
FES*
CABIN STOW
DUCT*
COMM 2
EXERCISE
MEAL
FES*
L-1 COMM CHK
M-MVR
CABIN STOW
L-1 COMM
PAO EVENT
D/O BRIEF
PILOT OPS
NC7^ RCS BURN
ENTRY*
PRE SLEEP
PLT KELLY
W/B*
POST SLEEP
FCS C/O
RCS HOT FIRE
OPS^
APCU*
HTR*
APCU^
OPS^
CABIN STOW
MNVR
DUMP
CONDT
DUMP PWR (2)
CONDM
CONDT
MEAL
CONDM
TERM
FCMS OPS
EXERCISE
PAO EVENT
D/O BRIEF
PILOT OPS
RCS BURN
KU STOW
VID^
MS1 FOSSUM
POST SLEEP
RCC DTO TOOL CLN/STW
CABIN STOW
EXERCISE
CABIN STOW
MEAL
ENTRY VIDEO S/U
CABIN STOW
PAO EVENT
D/O BRIEF
CABIN STOW
ERG STOW
PRE SLEEP
MS2 NOWAK
POST SLEEP
FCS C/O
RCS HOT FIRE
EXERCISE
CABIN STOW
MEAL
CABIN STOW
PILOT SETUP
PAO EVENT
D/O BRIEF
PILOT OPS
ERG STOW
KU STOW
PRE SLEEP
MS3 WILSON
POST SLEEP
EXERCISE
CABIN STOW
MEAL
CABIN STOW
PAO S/U
PAO EVENT
D/O BRIEF
CABIN STOW
PRE SLEEP
MS4 SELLERS
POST SLEEP
RCC DTO TOOL CLN/STW
CABIN STOW
EXERCISE
CABIN STOW
MEAL
CABIN STOW
WTS/GDIS
PAO EVENT
D/O BRIEF
CATBWIN
STOWLES
PGSC STOW PART I
SSV DEACT
PRE SLEEP
DAY/NIGHT
ORBIT 183 184 185 186 187 188 189 190
STS TDRS W -171 E - 46 Z -275
ORB ATT -ZLV -XVV BIAS -ZLV -YVV -ZLV -XVV NC7
STS GND
-MIL -MIL -MIL -WHS
MIL -WHS -MIL -WHS -WHS
NOTES
*HEATER ACT *HTRS B *HTR RCNFG
*ACT *DEACT ^ACT ^DEACT *RCNFG
MPLM PRESS CK
*INIT *HTR-OFF
*TERM
♣PRE SLEEP *COOLING CNFG *HTR RCNFG ^CONFIG

GMT 07/16/06 (197): 19 | 20 | 21 | 22 | 23 | 07/17 | 01 | 02 | 03 | 04 | 05 | 06

MET Day 012: 012/00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12

FD13

STS-121

Crew								
CDR	PRE SLEEP	PMC A/G	PRE SLEEP	MNVR	-YSI	FUT	MNVR	PRE SLEEP / SLEEP / POST SLEEP
PLT	PRE SLEEP							SLEEP / POST SLEEP
MS1	PRE SLEEP							SLEEP / MS1 DSO / POST SLEEP
MS2	PRE SLEEP							SLEEP / MS2 DSO / POST SLEEP
MS3	PRE SLEEP							SLEEP / MS3 DSO / POST SLEEP
MS4	PRE SLEEP							SLEEP / MS4 DSO / POST SLEEP

STS

DAY/NIGHT

ORBIT: 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198

TDRS: W -171 | E - 46 | Z -275

ORB ATT: -ZLV -XVV | BIAS -YSI | -ZLV -XVV

STS GND: MIL | MIL | WHS | MIL | MIL | WHS | WHS

NOTES

MSG 118B - FD13 FLIGHT PLAN REVISION

MSG INDEX

1. FINAL E-MAIL OPS

Prior to stowing the Ku antenna, we will downlink your personal mail folders so that you can have access to them when you return to Houston. Please move all messages that you want to keep from your "Inbox", "Sent Items" and "Work Related" folders to your personal folder in Outlook. During the Ku pass at MET 11/22:30, we will downlink your personal folders and your mail OST files and perform one last mail synch on the ground (to send any outgoing messages). The OSTs will not be uplinked after this.

2. WLES DEACTIVATION AND TEARDOWN PEN AND INK

In the procedure **DEACTIVATION AND TEARDOWN** (ORB OPS, WLE SENSORS), in step 3, delete the A31p stow callout:

Was:

Stow:
Laptop Receiver Units (2)
Cabin Relay Units (2)
A31p Laptops (2)

Is:

Stow:
Laptop Receiver Units (2)
Cabin Relay Units (2)
~~A31p Laptops (2)~~

3. PRIMARY LOGICS AND DRIVERS POST RCS HOTFIRE

At the completion of the RCS Hotfire, leave the Primary Logics and Drivers ON to support the FES checkout. At the completion of the FES check out, turn the Primary Logics and Drivers OFF.

4. DAP OPS WITH L5L DESELECTED

   Recall that with L5L deselected, the DAP will downmode to FREE anytime VERN is selected. You will need to reselect the previous DAP mode (AUTO, INRTL, or LVLH) after any DAP downmode to FREE after selecting VERN.

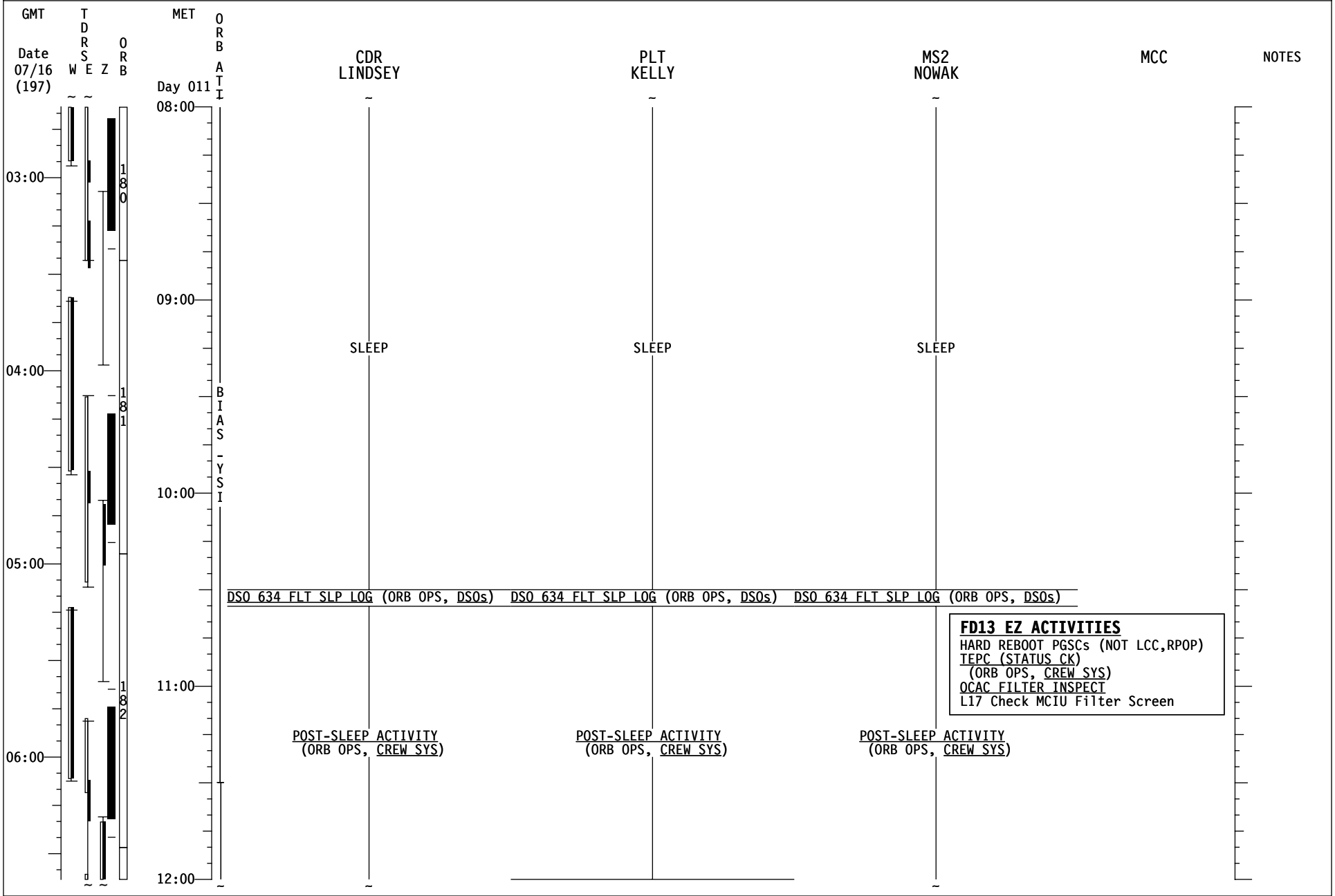
5. AGGIELAND

   We have uplinked a file for MS1 to the C:\oca-up\video folder on the KFX PGSC.

6. REPLACE PAGES 3-138 THROUGH 3-147.

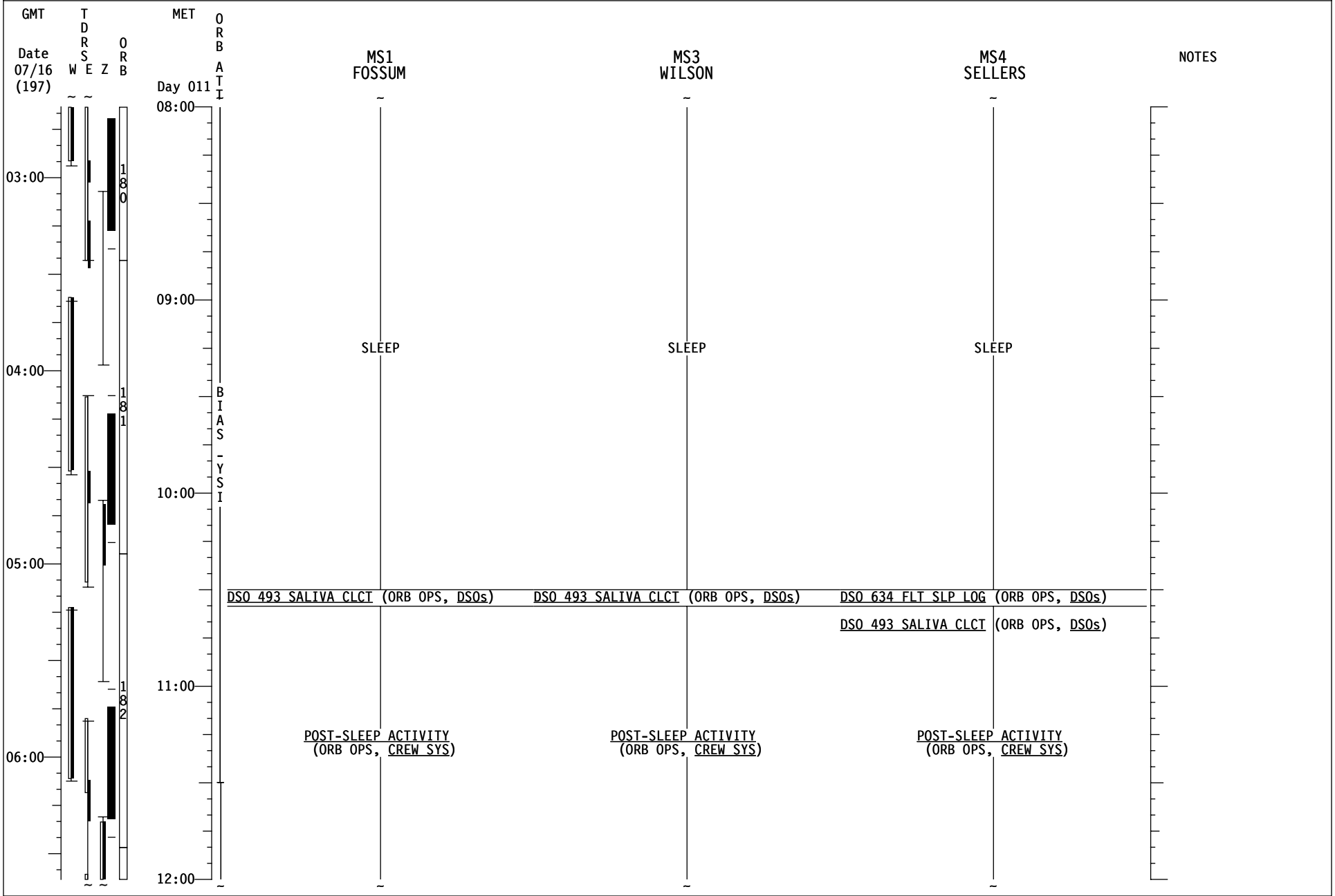
STS-121/ULF 1.1 (FD 13)

REPLANNED



STS-121/ULF 1.1 (FD 13)

REPLANNED



STS-121/ULF 1.1 (FD 13) — REPLANNED

GMT Date 07/16 (197) | TDRS W E Z | ORB | MET Day 011 | ORBIT | CDR LINDSEY | PLT KELLY | MS2 NOWAK | MCC | NOTES

07:00 / 08:00 / 09:00 / 10:00 — 183 / 184 / 185

12:00

W/B STEAM VENT HTR ACT
R2 √BLR CNTLR/HTR(three) -B
PWR (three) -ON

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS) — CDR LINDSEY

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS) — PLT KELLY

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS) — MS2 NOWAK

13:00

A14 RCS/OMS HTR L POD - B OFF
- A AUTO
L1 HI LOAD DUCT HTR - B

FCS CHECKOUT (ORB OPS, GNC) Do not perform Part 2, step 3 SENSOR TEST - GPS — CDR LINDSEY

FCS CHECKOUT (ORB OPS, GNC) Do not perform Part 2, step 3 SENSOR TEST - GPS — PLT KELLY

FCS CHECKOUT (ORB OPS, GNC) Do not perform Part 2, step 3 SENSOR TEST - GPS — MS2 NOWAK

TFL 161

ZLV-XVV

14:00

A
A12 APU HTR LUBE OIL LN 1 - A AUTO
GAS GEN/FU PUMP 2 - A AUTO
TK/FU LN/H2O SYS 1A,2A,3A(three) - AUTO
1B,2B,3B(three) - OFF

RCS HOT FIRE TEST (ORB OPS, RCS) Ref. MSG 118, item 3 — CDR LINDSEY

RCS HOT FIRE TEST (ORB OPS, RCS) Ref. MSG 118, item 3 — PLT KELLY

RCS HOT FIRE TEST (ORB OPS, RCS) Ref. MSG 118, item 3 — MS2 NOWAK

TFL 184

FES CHECKOUT Ref. MSG 122 MSG 118 items 3,4 — CDR LINDSEY

ON MCC GO: SSP1 OIU PWR - OIU 1 ON (tb-UP)
SSP1 APCU 1 OUTPUT RLY - CL
CONV - ON (tb-gray)
HEATER RCNFG [A] — PLT KELLY

MPLM: 1.1O1 MPLM ENVIRONMENT CHECK
Steps 1 & 4
PRESS CK (NO fan) — MCC

15:00

EXERCISE — MS2 NOWAK

ON MCC GO: SSP1 APCU 1 CONV - OFF (tb-bp)
OUTPUT RLY - OP
SSP1 OIU PWR - OFF (tb-bp) — PLT KELLY

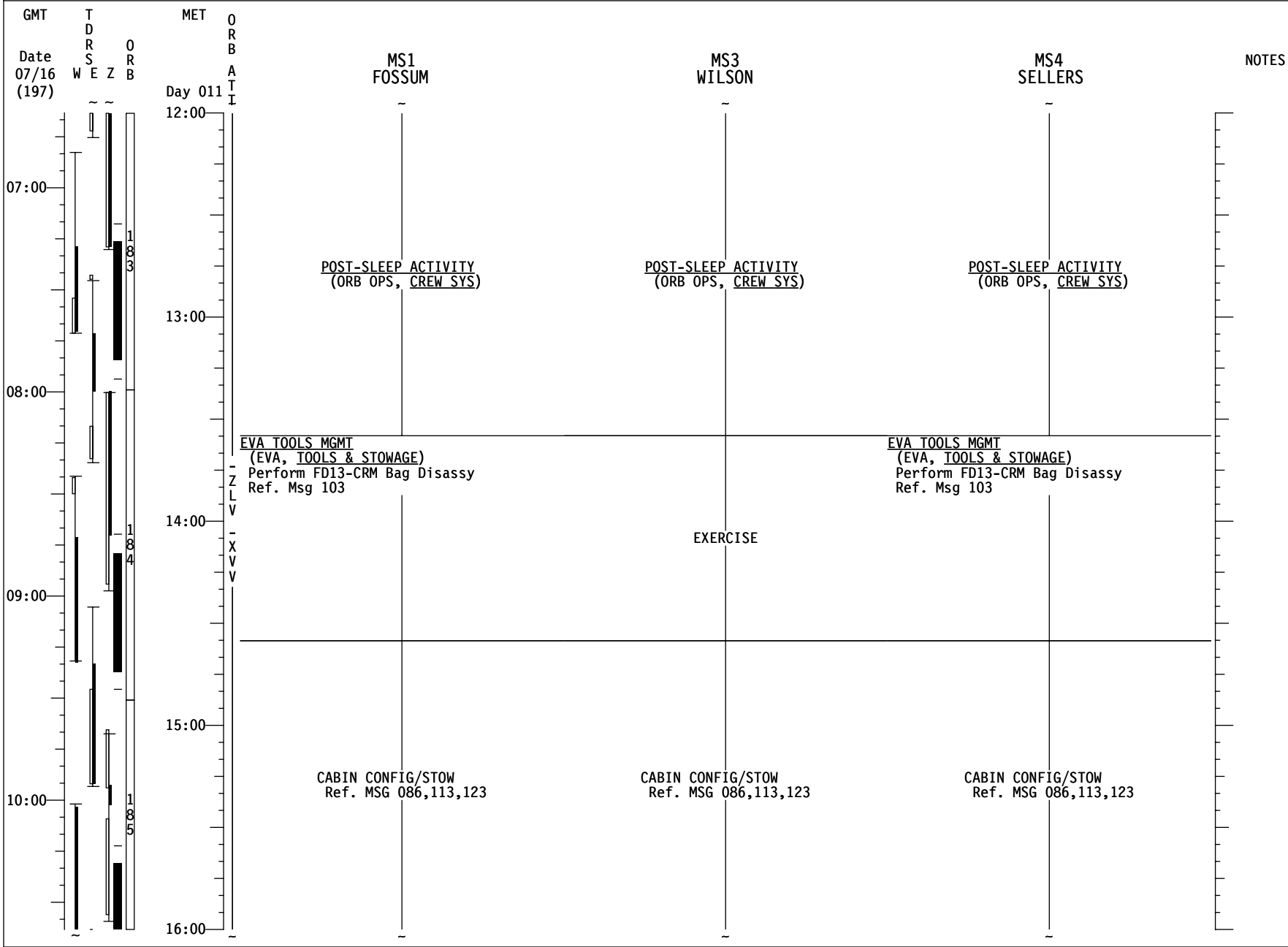
CABIN CONFIG/STOW Ref. MSG 086,113,123 — PLT KELLY

CABIN CONFIG/STOW Ref. MSG 086,113,123 — MS2 NOWAK

16:00

STS-121/ULF 1.1 (FD 13)

REPLANNED



STS-121/ULF 1.1 (FD 13)

REPLANNED

GMT Date 07/16 (197) | TDRS W E Z | ORB | MET Day 011 | ORB ATT

ORB: 185, 186, 187, 188

ORB ATT: BIAS -ZLV -YVV

GMT 11:00 / MET 16:00 through GMT 15:00 / MET 20:00

CDR LINDSEY

16:00 FES CHECKOUT
Ref. MSG 122
MSG 118 items 3,4

SPLY H2O DUMP W/FES (ORB OPS, ECLS)
Step 1 using FES Pri A, Ref. MSG 120

CABIN CONFIG/STOW
Ref. MSG 086,113,123

On MCC GO:
L1 HI LOAD DUCT HTR - OFF

COMM STRING 1 C/O (PART B)
(ORB OPS, COMM/INST)

EXERCISE

MEAL

SPLY H2O DUMP W/FES (ORB OPS, ECLS)
Step 2. FES Pri A req'd

LANDING-1 COMM C/O
(ORB OPS, COMM/INST)

MNVR (TRK) -ZLV -XVV
TG=2 BV=3 OM=0
A/AUTO/VERN Init TRK

PLT KELLY

CABIN CONFIG/STOW
Ref. MSG 086,113,123

MNVR (TRK) BIAS -ZLV -YVV
TG=2 BV=3 OM=110
A/AUTO/VERN Init TRK

CWC OVERBOARD DUMP
(ORB OPS, ECLS) Ref. MSG 120

PWR DUMP - SUPPLY LINE
(ORB OPS, ECLS) Ref. MSG 120

CWC OVERBOARD DUMP (TERM)
(ORB OPS, ECLS)

CWC OVERBOARD DUMP
(ORB OPS, ECLS)
Ref. MSG 120

MEAL

CWC OVERBOARD DUMP (TERM)
(ORB OPS, ECLS)

FC MONITORING SYS (FCMS) OPS
(ORB OPS, EPS)

MS2 NOWAK

CABIN CONFIG/STOW
Ref. MSG 086,113,123

MEAL

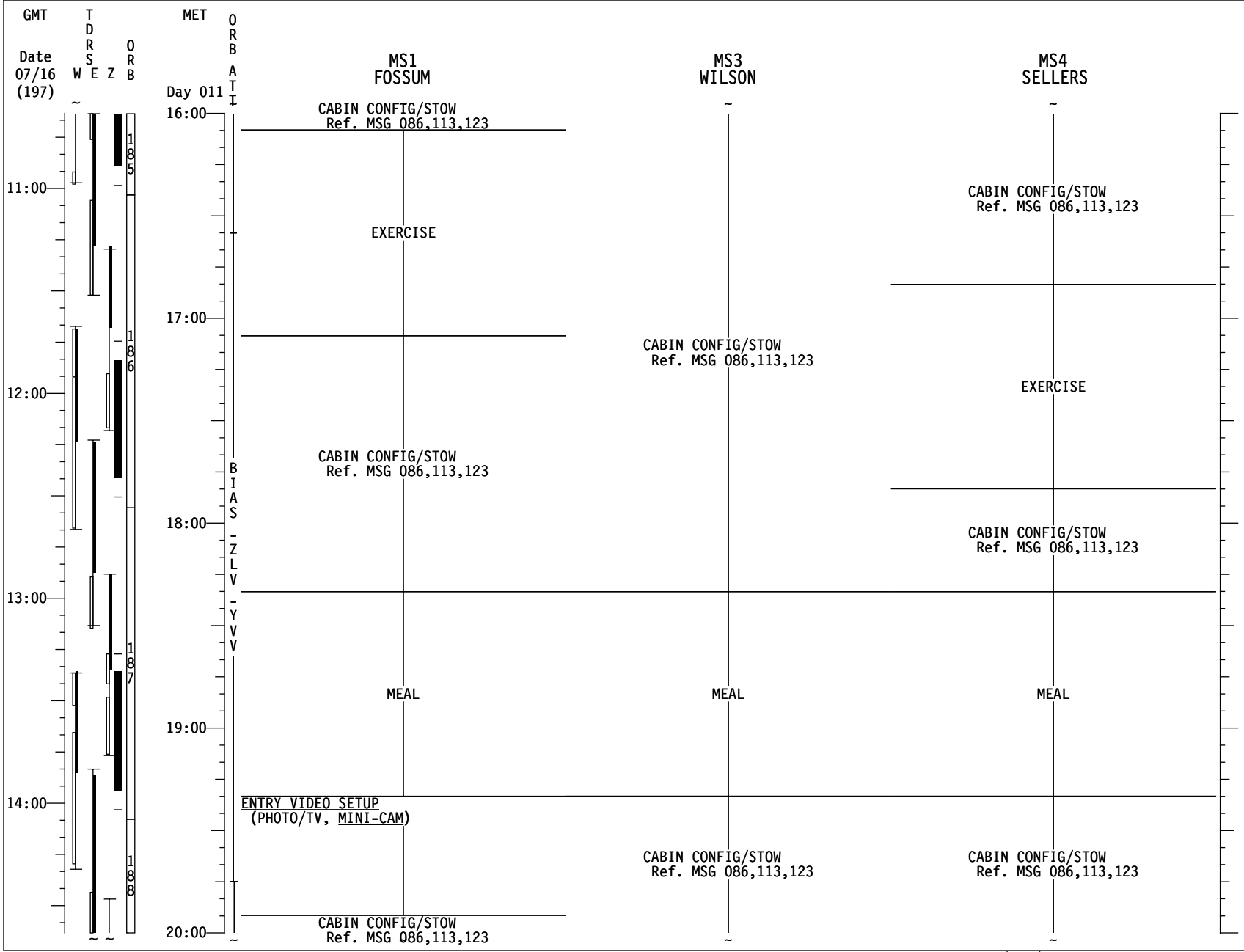
CABIN CONFIG/STOW
Ref. MSG 086,113,123

MCC

NOTES

STS-121/ULF 1.1 (FD 13)

REPLANNED



STS-121/ULF 1.1 (FD 13) **REPLANNED**

GMT Date 07/16 (197) | TDRS W E Z | ORB | MET Day 011 | ORB ATT | CDR | PLT | MS2 | MCC | NOTES

GMT: 15:00, 16:00, 17:00, 18:00
ORB: 188, 189, 190
MET: 20:00, 21:00, 22:00, 23:00, 00:00
ORB ATT: -ZLV, -XVV, NC7

20:00

CDR: CABIN CONFIG/STOW
Ref. MSG 086,113,123

PLT: FC MONITORING SYS (FCMS) OPS
(ORB OPS, EPS)

PLT: EXERCISE

MS2: CABIN CONFIG/STOW
Ref. MSG 086,113,123

MS2: PILOT W/ RHC SETUP DIAGRAM
(ORB OPS, PGSC)

21:00

CDR: LANDING-1 COMM C/O
(ORB OPS, COMM/INST)

CDR / PLT / MS2: PUBLIC AFFAIRS EVENT
KU AVAIL TDRE: 21:25-21:45
Ref. MSG 121

22:00

CDR / PLT / MS2: DEORBIT PREP BRIEFING

CDR / PLT / MS2: PILOT WITH RHC
(ORB OPS, PGSC)

MCC:

A
R12 √VPU PWR - OFF (LED-off) Minimize use of P/TV equipment Dim cabin lighting to 25%

23:00

CDR: ON-ORBIT MULTI-AXIS RCS BURN
(ORB OPS, RCS)

PLT: ON-ORBIT MULTI-AXIS RCS BURN
(ORB OPS, RCS)

MS2: CYCLE ERGOMETER OPS
(ORB OPS, CREW SYS)
Perform RECONFIG/STOW

NOTES: TFL 161

CDR: < NC7 TIG (23:21)

PLT: < NC7 TIG (23:21)

CDR: ENTRY COOLING CONFIG [A]
A14 RCS/OMS HTR L POD - A OFF
- B AUTO
R POD - A OFF
- B AUTO

PLT: KU-BD ANT STOW
(ORB OPS, COMM/INST)
Deactivate CCTV

MS2: KU-BD ANT STOW
(ORB OPS, COMM/INST)
Deactivate CCTV

PLT: L10 MUX/VTR/C PWR - OFF (LED off)
VTR/CC PWR - OFF (LED off)
VIP PWR - OFF (LED off)

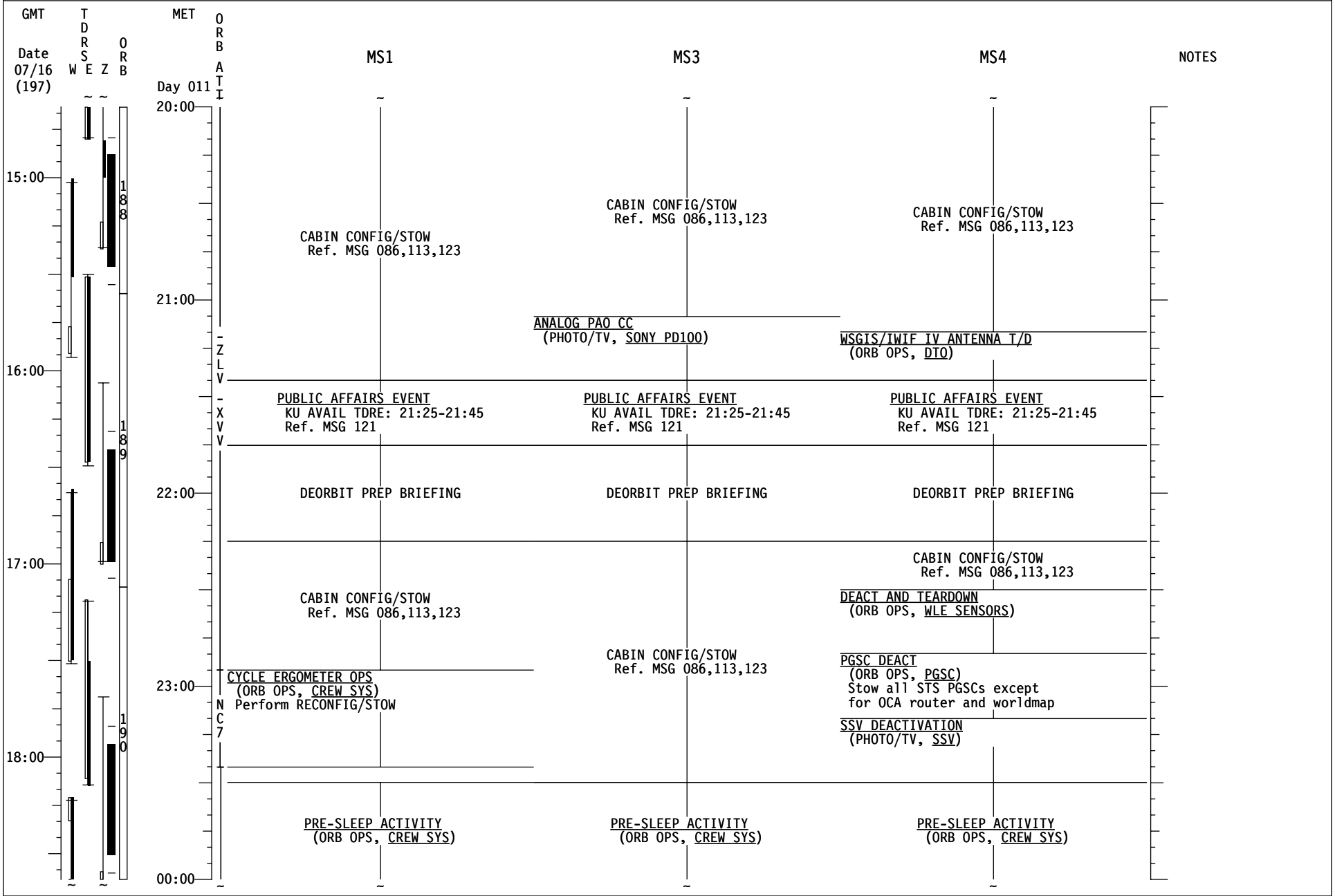
CDR: PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

MS2: PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

00:00

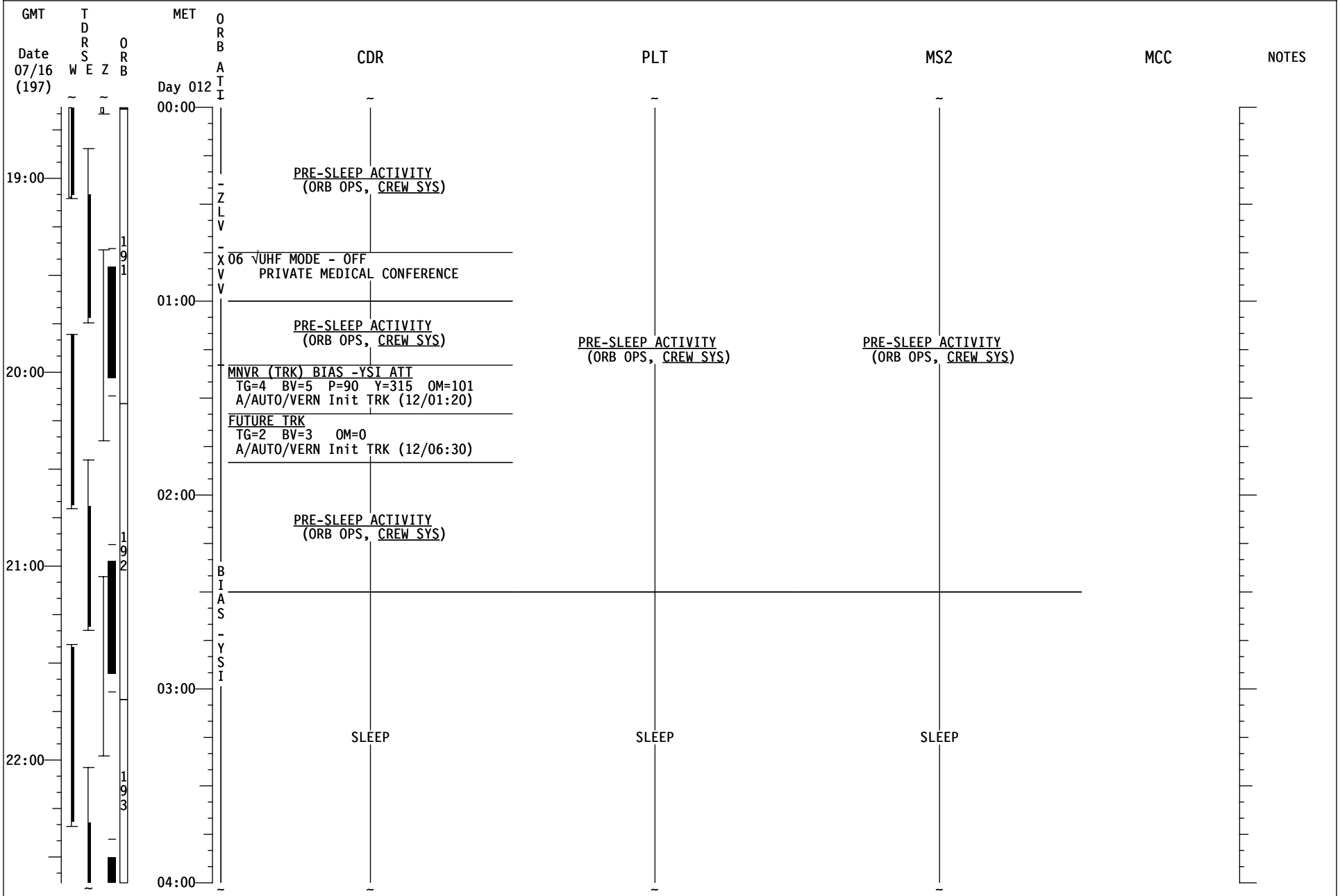
STS-121/ULF 1.1 (FD 13)

REPLANNED



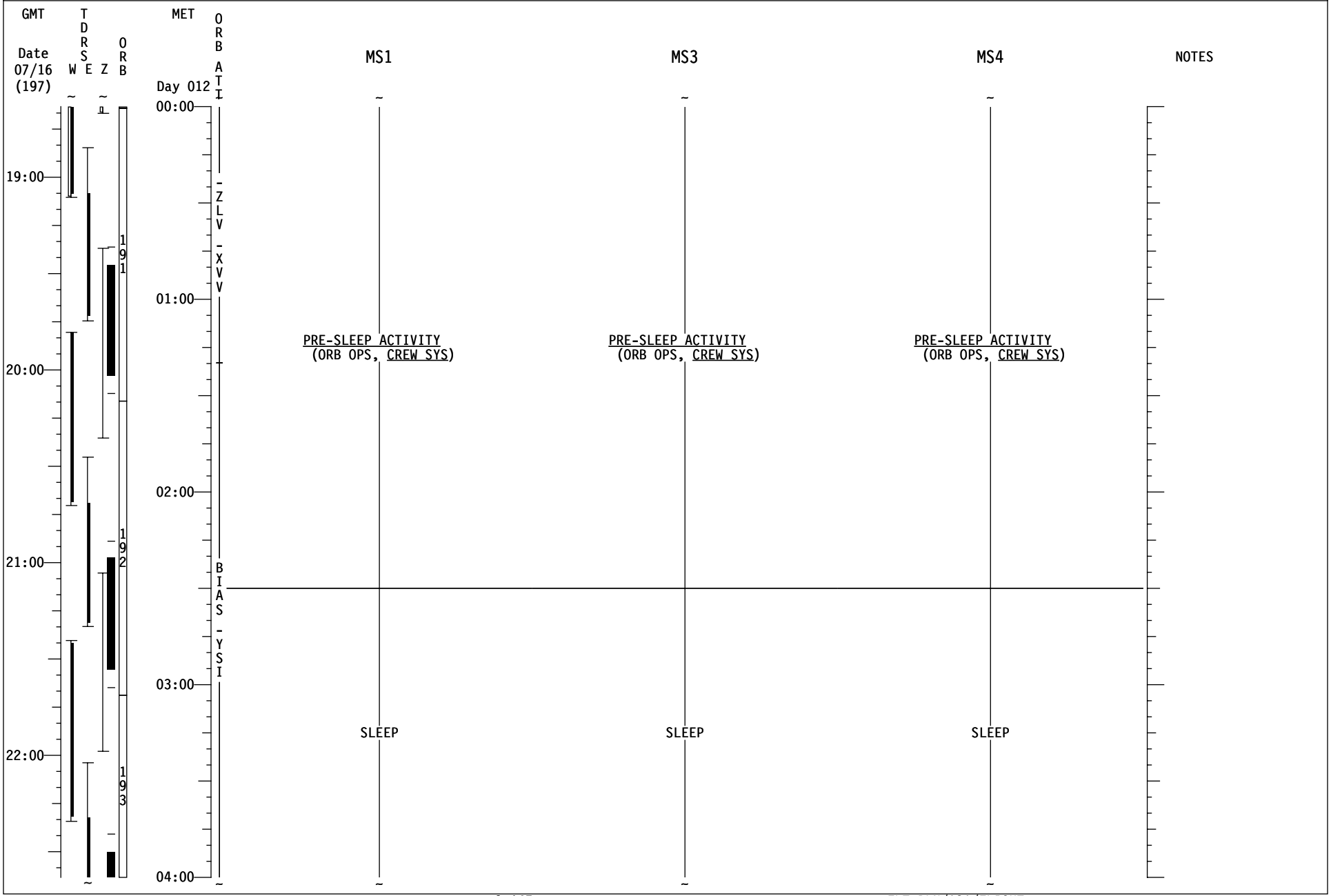
STS-121/ULF 1.1 (FD 13)

REPLANNED



STS-121/ULF 1.1 (FD 13)

REPLANNED



Good morning, Discovery.

This is the last execute package you're going to get from us. We've had it. We're done with execute packages, finished, over, our cooked indicator has popped, the fat lady is singing (and she's not singing the Aggie War Hymn). No more…. O.K., maybe that's a little bit of an exaggeration. Actually, if the truth be told, we really have enjoyed working this mission and if the Ku antenna wasn't going to be stowed tomorrow, we would gladly do another execute package. Thanks for making this a great mission – one we're proud to be part of. Take care and see you back in Houston – and we'll buy the first adult malted beverage.

YOUR CURRENT ORBIT IS: 191 X 177 NM

NOTAMS:

GUAM (GUA) - RUNWAY END IDENTIFIER LIGHTS 06R UNSERVICEABLE TIL 24 AUG
GUAM (GUA) – RWY 06L/24R CLOSED UNTIL 31 JULY
ORMOND BEACH (KOMN) – TAC (OMN CH 73) AZIMUTH OUT OF SERVICE UFN
LAJES – TACAN 45X OUT OF SERVICE TIL 8 SEP
KING KHALID - VORTAC CH 92X OPERATIONAL BUT CAUTION ADVISED DUE TO NO MONITORING
AMBERLEY (AMB) – CLOSED
RIO GALLEGOS (AWG) - NOT APPROVED
ISTRES (FMI) – 33 RWY REMAINING MARKERS AVAIL ARE 300,600,900M

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB188 – 11/20:16 (FEW150 SCT250, 230@5P10–WND 230@10P15 AFT 11/22:22)
EDW22 ORB204 – 12/20:41 (FEW150 SCT250, 200@5P8 – WND 200@10P15 AFT 12/22:22)

OMS TANK FAIL CAPABILITY:

L OMS FAILS: NO
R OMS FAILS: NO

LEAKING OMS PRPLT BURN:

L OMS LEAK: ALWAYS BURN RETROGRADE
R OMS LEAK: ALWAYS BURN RETROGRADE

OMS QUANTITIES(%)

L OMS	OX = 33.8	R OMS OX = 34.1	
	FU = 34.3		FU = 34.7

DELTA V AVAILABLE:

OMS	330 FPS
ARCS (TOTAL ABOVE QTY1)	26 FPS
TOTAL IN THE AFT	356 FPS
ARCS (TOTAL ABOVE QTY2)	56 FPS
FRCS (ABOVE QTY 1)	32 FPS
AFT QTY 1	83 %
AFT QTY 2	45 %

MSG 120 - FD13 WATER SUMMARY

Today two condensate CWCs (s/n 5069 & 5086) will be dumped from the waste line, two PWRs (s/n 1004 & 1006) from the supply line, and after the FES Checkout procedure, there will be a Supply Water Dump using the FES.

CWC Overboard Dump Details

At MET 11/16:50, perform a CWC overboard dump with the following details:

Perform CWC OVERBOARD DUMP (ORB OPS, ECLS) p. 5-32, steps A, and C through G.

CWC s/n 5069 will take approximately 55 minutes to dump.

CWC s/n 5086 will take approximately 65 minutes to dump.

When dump complete, put the Y-Y hose in a ziploc bag and mark it contaminated. Stow CWC s/n 5069 in Middeck Ceiling Port 2 Bag F. Stow CWC s/n 5086 and the Y-Y hose in MA9D.

MCC will TMBU the limits.

PWR Supply Line Dump Details

At MET 11/17:05, perform a PWR supply line dump with the following details:

Perform PWR DUMP-SUPPLY LINE (ORB OPS, ECLS) p. 5-40, steps 1, and 3 through 6.

PWR s/n 1004 will take approximately 12 minutes to dump.

PWR s/n 1006 will take approximately 11 minutes to dump.

When dump complete, stow PWRs in Middeck Floor Port 2. Stow the B-B hose and R-Y QD Adapter in the Contingency Hose and Cable Kit (CHCK). Use gray tape to mark the hose "used" prior to stowing.

MCC will TMBU limits.

Supply Water Dump using FES Details

On MCC call, perform a supply water dump using the FES following the completion of the FES C/O at approximately MET 11/16:45. The following details will be required for the dump:

Perform SUPPLY WATER DUMP USING FES (ORB OPS, ECLS) p. 5-9 step 1 DUMP INITIATION, using FES PRI A.

Terminate dump on MCC call,

Perform SUPPLY WATER DUMP USING FES (ORB OPS, ECLS) p. 5-9 step 2 DUMP TERMINATION, FES PRI A req'd.

FES TROUBLESHOOTING

WARNING
To protect against a potential undertemp condition, if a S88 EVAP OUT T 1(2) msg occurs at any time due to low EVAP OUT T, immediately perform L1 H2O PUMP LOOP 1 – ON

Initial Setup:

ML31C 1. SPLY H2O TK D OUTLET - CL (tb-CL)

L1 2. TOP EVAP HTR DUCT sel – A/B
HI LOAD DUCT HTR – A/B
FLASH EVAP CNTLR SEC - B SPLY

L4:P 3. cb AC2 ΦB RAD CNTLR 1A – op
AC3 ΦB RAD CNTLR 2A – op

R11L 4. SPLY H2O TK B INLET - CL (tb-CL)
TK C OUTLET - CL (tb-CL)

Adjust Hardware C&W, MCC will TMBU Software limits:

R13U 5.

PARAMETER NAME	C/W CH	UPPER LIMIT
FREON LOOP 1 EVAP OUT T	107	4.3V/115.2 deg
FREON LOOP 2 EVAP OUT T	117	4.3V/115.2 deg

6. √DAP: A/AUTO/ALT(PRI)

CRT SM 88 APU/ENVIRON THERM

FES Pri A:

L1 7. FLASH EVAP CNTLR PRI A - OFF
RAD CNTLR LOOP 1,2 (two) - OFF, AUTO A

When S88 RAD OUT T 1,2 decr (~110 sec),

8. RAD CNTLR LOOP 1,2 (two) – OFF
OUT TEMP - HIGH
HI LOAD EVAP - ENA
FLASH EVAP CNTLR PRI A - ON

After 5 minutes, √ S88 EVAP OUT T 1,2 ~ 39 deg and stable then,

9. RAD CNTLR LOOP 2 - AUTO A

After 5 minutes, √ S88 EVAP OUT T 1,2 ~ 39 deg and stable then,

10. RAD CNTLR LOOP 1 - AUTO A

After 7 minutes, √ S88 EVAP OUT T 1,2 ~ 39 deg and stable then, proceed to FES Pri B step 11.

Continued next page

FES Pri B:

> NOTE
> If the FES Pri B controller shuts down during the FES Pri B portion of the test, the controller can be cycled one time. If another shut down is observed prior to the end of the wait period, √ MCC.

L1 11. FLASH EVAP CNTLR PRI A - OFF
RAD CNTLR LOOP 1,2 (two) - OFF, AUTO A

When S88 RAD OUT T 1,2 decr (~110 sec),
12. RAD CNTLR LOOP 1,2 (two) – OFF
FLASH EVAP CNTLR PRI B - ON

After 5 minutes, √ S88 EVAP OUT T 1,2 ~ 39 deg and stable then,
13. RAD CNTLR LOOP 2 - AUTO A

After 5 minutes, √ S88 EVAP OUT T 1,2 ~ 39 deg and stable then,
14. RAD CNTLR LOOP 1 - AUTO A

After 7 minutes, √ S88 EVAP OUT T 1,2 ~ 39 deg and stable then, proceed to FES Secondary step 15.

FES Secondary:

L1 15. FLASH EVAP CNTLR PRI B – OFF
RAD CNTLR LOOP 1,2 (two) – OFF, AUTO A

When S88 RAD OUT T 1,2 decr (~110 sec),
16. RAD CNTLR LOOP 1,2 (two) – OFF
FLASH EVAP CNTLR SEC – ON

After 5 minutes, √ S88 EVAP OUT T 1,2 ~ 62 deg and stable then,
17. FLASH EVAP CNTLR SEC - A SPLY
SEC – OFF, ON

After 5 minutes, √ S88 EVAP OUT T 1,2 ~ 62 deg and stable then,

L1 18. FLASH EVAP CNTLR SEC – OFF
HI LOAD EVAP – OFF

R11L 19. SPLY H2O XOVR VLV – CL (tb-CL)
TKC INLET – CL (tb-CL)
TKC OUTLET – OP (tb-OP)

L1 20. FLASH EVAP CNTLR SEC – ON

After 7 minutes, √ S88 EVAP OUT T 1,2 ~ 62 deg and stable then,

Continued next page

Reconfigure for Nom Ops:

21. RAD CNTLR LOOP 1,2 (two) - AUTO A

After 5 minutes, perform the following

L4:P 22. cb AC2 ΦB RAD CNTLR 1A – cl
AC3 ΦB RAD CNTLR 2A – cl

L1 23. RAD CNTLR OUT TEMP – NORM
TOP EVAP HTR DUCT sel – B
HI LOAD DUCT HTR - B

R11L 24. SPLY H2O TK B INLET – OP (tb-OP)
TK C INLET – OP (tb-OP)
XOVR VLV – OP (tb-OP)

ML31C 25. SPLY H2O TK D OUTLET – OP (tb-OP)
On MCC call,

L1 FLASH EVAP CNTLR PRI A – ON

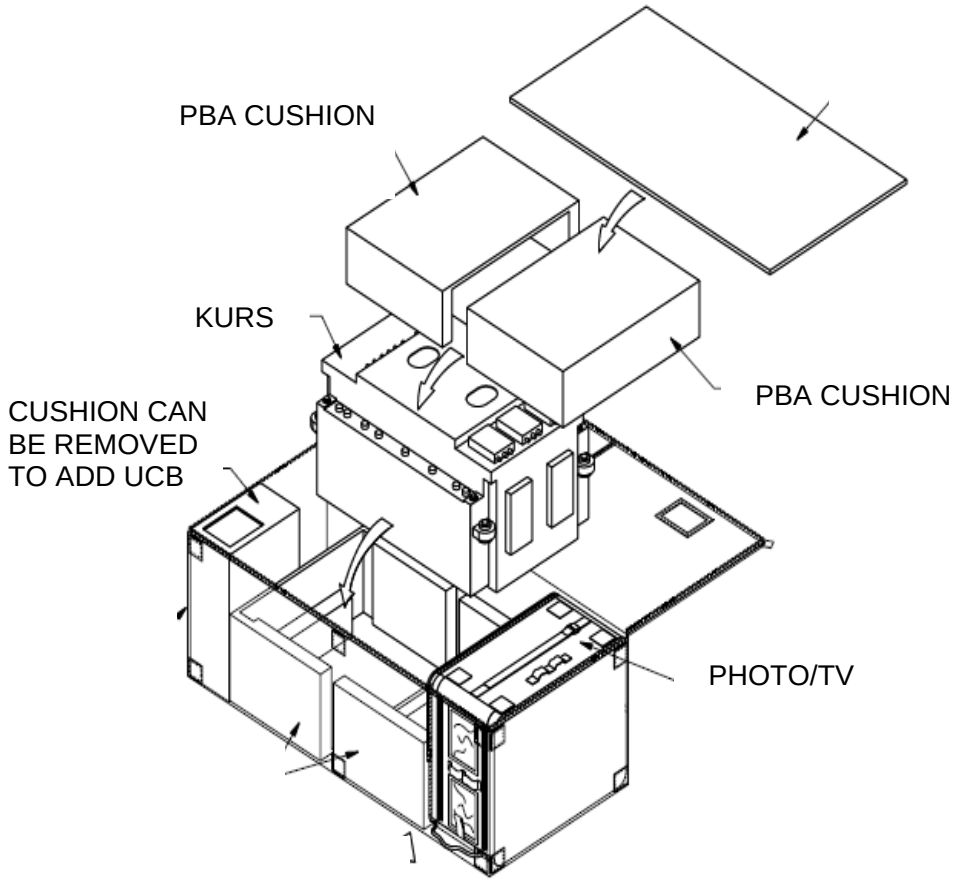
Adjust Hardware C&W, MCC will TMBU Software limits:

R13U 26.

PARAMETER NAME	C/W CH	UPPER LIMIT
FREON LOOP 1 EVAP OUT T	107	1.9V/64.8 deg
FREON LOOP 2 EVAP OUT T	117	1.9V/64.8 deg

MSG 123A - FINAL ENTRY STOWAGE MAP DELTA

Reference the following for the final Middeck 5MLE Stowage Bag Update.



AIRLOCK FLOOR BAG(C)

- "EYES" OF KURS FACE UP AS SHOWN
- EXCESS CUSHION CAN BE STOWED IN BAG I OR PUT INTO JETTISON STOWAGE BAG. IF A JETTISON STOWAGE BAG IS NEEDED, IT MUST BE TETHERED TO THE A/L AFT HANDRAIL STAND-OFFS AND TAPED TO THE FLOOR AS BEST AS POSSIBLE.

MIDDECK RETENTION NET

- REFERENCE **REF DATA FS,** SECTION 6 FOR MD RETENTION NET CONFIGURATION

FD12 MMT Crew Summary

Today's MMT wrapped up the APU 1 pressure decay story.

APU 1 Tank Pressure Decay – There is no change in the APU 1 leak decay rate. There is still no way to definitively tell if the leak is N2 or hydrazine. Data presented by the NESC, White Sands, and JSC Engineering today reaffirmed that if this leak was hydrazine, as it dribbled out underneath the insulation it would be ice and would induce increased heater duty cycles which would turn it to vapor. We are not seeing this in our data, and the team is confident that we would be if the leak was hydrazine. The only location that is not covered with insulation is the fuel fill Quick Disconnect (QD), so this may still be a possible leak site. For your information, this QD panel is external to the vehicle but is vented back to the aft compartment in order to maintain delta pressure across the closeout panel. The bottom line is that data and analysis from all the experts strongly suggests that we are not leaking hydrazine.

Even so, the MMT reviewed the impacts if the leak was hydrazine. There was no change in the conclusions reached yesterday that showed that at this slow leak rate, vapor concentrations in the aft compartment would still be well below the flammability limits. Below 95,000 feet, a minimal amount (less than 20 cc's) of liquid hydrazine could drip from the leak site. There are no hot spots, ignition sources or catalyst concerns below the APU fuel tank in the drip zone. We'll also have the standard entry MPS helium purge and airflow from the vent doors to help disperse the hydrazine vapors. Again, our data and analysis is leaning strongly towards this not being a hydrazine leak.

You'll hear the details about the entry plan later today from your Entry team, but the quick look is to use APU 1 for a nominal FCS checkout. For entry, we'll start APU 1 pre-TIG at the nominal time or maybe a little bit earlier. Post-landing shut-down plan will be nominal.