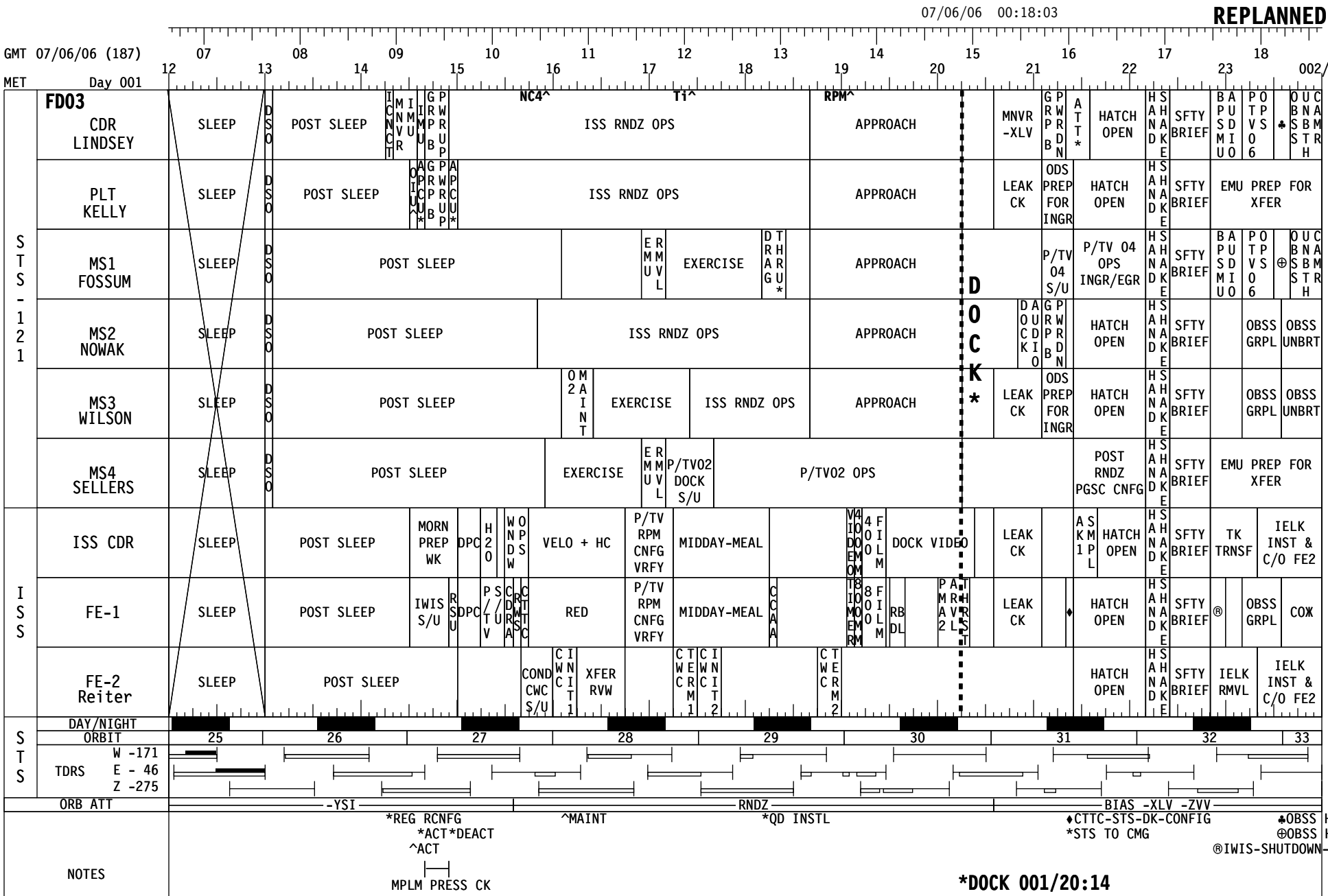
STS-121 / ULF1.1

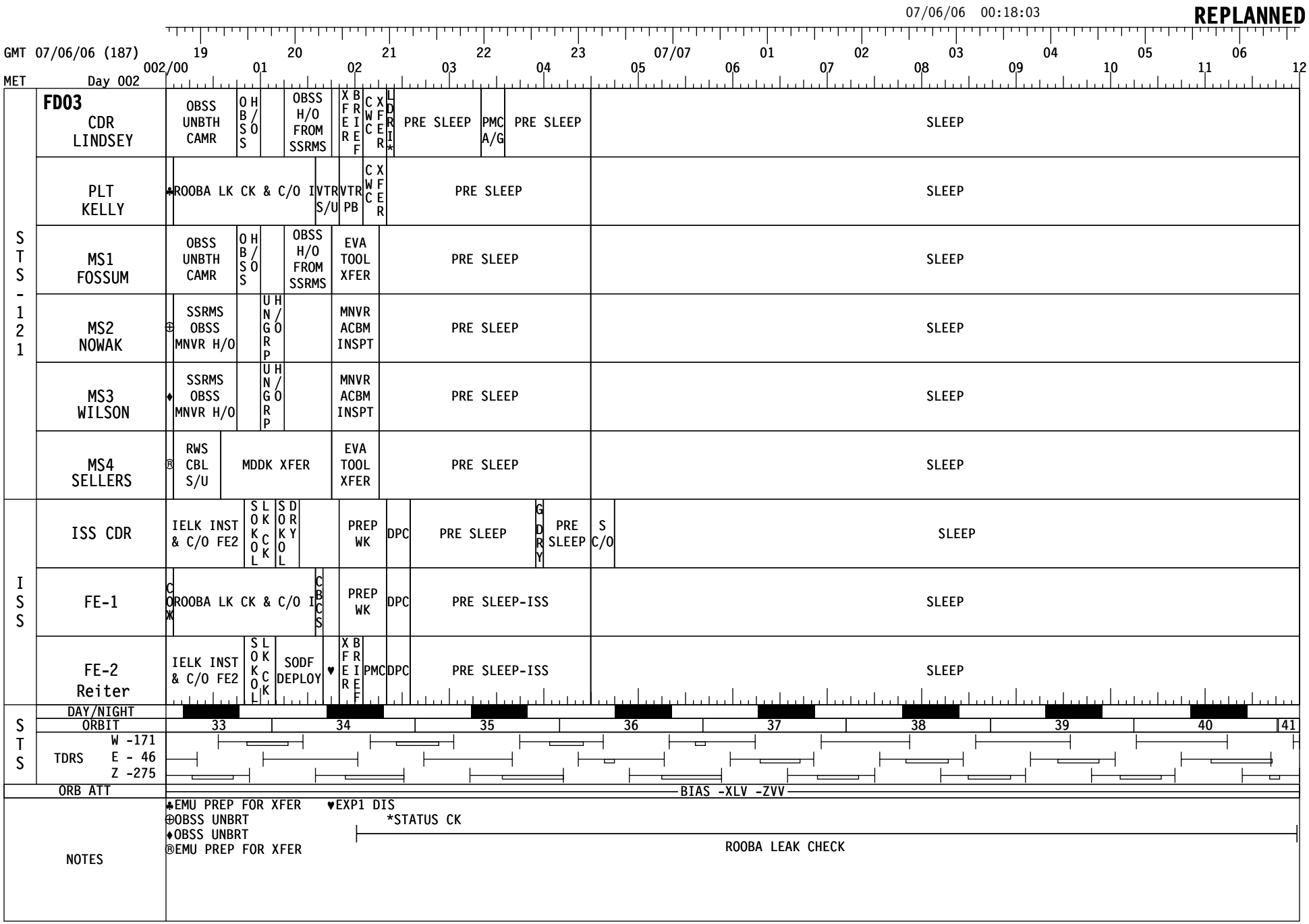
FD 03 Execute Package

MSG	Page(s)	Title
018A	1 - 2	FD03 Summary Timeline (pdf)
010A	3 - 13	FD03 Flight Plan Revision (pdf)
011A	14 - 15	FD03 Mission Summary (pdf)
009	16 - 18	SODF Transfer List (pdf)
012	19 - 20	FD03 Transfer Message (pdf)
013A	21	FD03 Water Summary (pdf)
014A	22 - 26	FD02 MMT Summary (pdf)
015	27	WLES Reconfig Post Dock/Undock (pdf)
016	28 - 34	HRF 1 Reconfiguration (pdf)
017	35 - 39	RelMo Plots and Burn Pads (pdf)

Approved by FAO: *L. Eadie*

Last Updated: Jul 6 2006 5:55AM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v2.04.0003*


07/06/06 00:18:03
REPLANNED
GMT 07/06/06 (187)
MET Day 001
07 08 09 10 11 12 13 14 15 16 17 18
12 13 14 15 16 17 18 19 20 21 22 23 002/00
FD03
CDR LINDSEY
PLT KELLY
MS1 FOSSUM
MS2 NOWAK
MS3 WILSON
MS4 SELLERS
STS-121
ISS CDR
FE-1
FE-2 Reiter
ISS
SLEEP
POST SLEEP
ISS RNDZ OPS
APPROACH
EXERCISE
MNVR -XLV
LEAK CK
HATCH OPEN
SFTY BRIEF
NC4^
Ti^
RPM^
DOCK*
P/TV 04 OPS INGR/EGR
POST RNDZ PGSC CNFG
P/TV02 OPS
DOCK VIDEO
EMU PREP FOR XFER
OBSS GRPL
OBSS UNBRT
DAY/NIGHT
ORBIT
25 26 27 28 29 30 31 32 33
STS
TDRS
W -171
E - 46
Z -275
ORB ATT
-YSI
RNDZ
BIAS -XLV -ZVV
NOTES
*REG RCNFG
*ACT*DEACT
^ACT
MPLM PRESS CK
^MAINT
*QD INSTL
♦CTTC-STS-DK-CONFIG
*STS TO CMG
♣OBSS H/O FROM
⊕OBSS H/O FROM
®IWIS-SHUTDOWN-STOW
*DOCK 001/20:14


07/06/06 00:18:03
REPLANNED
GMT 07/06/06 (187)
MET Day 002
19 20 21 22 23 07/07 01 02 03 04 05 06
002/00 01 02 03 04 05 06 07 08 09 10 11 12
STS-121
FD03
CDR LINDSEY
OBSS UNBTH CAMR
OBSS H/O FROM SSRMS
XFER
BRIEF
CWC
XFER
LDRI*
PRE SLEEP
PMC A/G
PRE SLEEP
SLEEP
PLT KELLY
♣ROOBA LK CK & C/O I
VTR S/U
VTR PB
CWC
XFER
PRE SLEEP
SLEEP
MS1 FOSSUM
OBSS UNBTH CAMR
OBSS H/O FROM SSRMS
EVA TOOL XFER
PRE SLEEP
SLEEP
MS2 NOWAK
⊕ SSRMS OBSS MNVR H/O
UNGRP
H/O
MNVR ACBM INSPT
PRE SLEEP
SLEEP
MS3 WILSON
♦ SSRMS OBSS MNVR H/O
UNGRP
H/O
MNVR ACBM INSPT
PRE SLEEP
SLEEP
MS4 SELLERS
® RWS CBL S/U
MDDK XFER
EVA TOOL XFER
PRE SLEEP
SLEEP
ISS
ISS CDR
IELK INST & C/O FE2
SOKOL
LKCK
SORKOL
PREP WK
DPC
PRE SLEEP
GDRY
PRE SLEEP
S C/O
SLEEP
FE-1
COX
ROOBA LK CK & C/O I
CBCS
PREP WK
DPC
PRE SLEEP-ISS
SLEEP
FE-2 Reiter
IELK INST & C/O FE2
SOKOL
LKCK
SODF DEPLOY
♥
XFER
BRIEF
PMC
DPC
PRE SLEEP-ISS
SLEEP
STS
DAY/NIGHT
ORBIT 33 34 35 36 37 38 39 40 41
TDRS W -171 E - 46 Z -275
ORB ATT
BIAS -XLV -ZVV
NOTES
♣EMU PREP FOR XFER
♥EXP1 DIS
⊕OBSS UNBRT
*STATUS CK
♦OBSS UNBRT
®EMU PREP FOR XFER
ROOBA LEAK CHECK

MSG 010A - FD03 FLIGHT PLAN REVISION

MSG INDEX

MSG NO.	TITLE
09	SODF Transfer List (13-0608)
10	FD03 Flight Plan Revision
11	FD03 Mission Summary (13-0609)
12	FD03 Transfer Message (13-0610)
13	FD03 Water Summary
14	FD02 MMT Summary (13-0611)
15	WLES Reconfig Post Dock/Undock
16	HRF 1 Reconfiguration (13-0613)
17	RelMo Plots and Burn Pads
18	FD03 Summary Timeline

1. REPLACE PAGES 3-20 THROUGH 3-29.

STS-121/ULF 1.1 (FD 03)

REPLANNED

GMT Date 07/06 (187) | MET Day 001 | TDRS W E Z | ORB 25 26 27 | ORBIT -YSI +RNDZ

CDR LINDSEY	PLT KELLY	MS2 NOWAK	MCC	NOTES
SLEEP	SLEEP	SLEEP		
DSO 634 FLT SLP LOG (ORB OPS, DSOs)	DSO 634 FLT SLP LOG (ORB OPS, DSOs)	DSO 634 FLT SLP LOG (ORB OPS, DSOs)		
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
I'CNCT RETURN (OPS2,3) (ORB PKT, RCS)	SSP1 OIU PWR - OIU 1 ON (tb-UP)			
MNVR IMU ALIGN ATT [A] R=178 P=281 Y=341 A1/AUTO/VERN (14:30) Init MNVR	**ON MCC GO:** SSP1 APCU 1 OUTPUT RLY - CL CONV - ON (tb-gray)			
IMU ALIGN - S TRK (ORB OPS)				
PRIORITY PWRUP GRP B [B] (ORB PKT, PRIOR PWRDN)	PRIORITY PWRUP GRP B [B] (ORB PKT, PRIOR PWRDN)			
RENDEZVOUS TIMELINE (RNDZ, RENDEZVOUS T/L)	**ON MCC GO:** SSP1 APCU 1 CONV - OFF (tb-bp) OUTPUT RLY - OP			
	RENDEZVOUS TIMELINE (RNDZ, RENDEZVOUS T/L)			
		RENDEZVOUS TIMELINE (RNDZ, RENDEZVOUS T/L)		

TRANSITION TO RNDZ C/L @ MET 1/14:55

< NC4 15:55

FD03 EZ ACTIVITIES
HARD REBOOT PGSCs (NOT WLES,RPOP2)
TEPC (STATUS CK) (ORB OPS, CREW SYS)
OCAC FILTER INSPECT
L17 Check MCIU Filter Screen
MS2: If PMZ req'd,
PMZ PROTOCOL (ORB OPS, DSOs)

[A] IMU STAR PAD
-Y: 62
AOS: 14:12
LOS: 14:55
-Z: 41
AOS: 14:30
LOS: 15:18

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

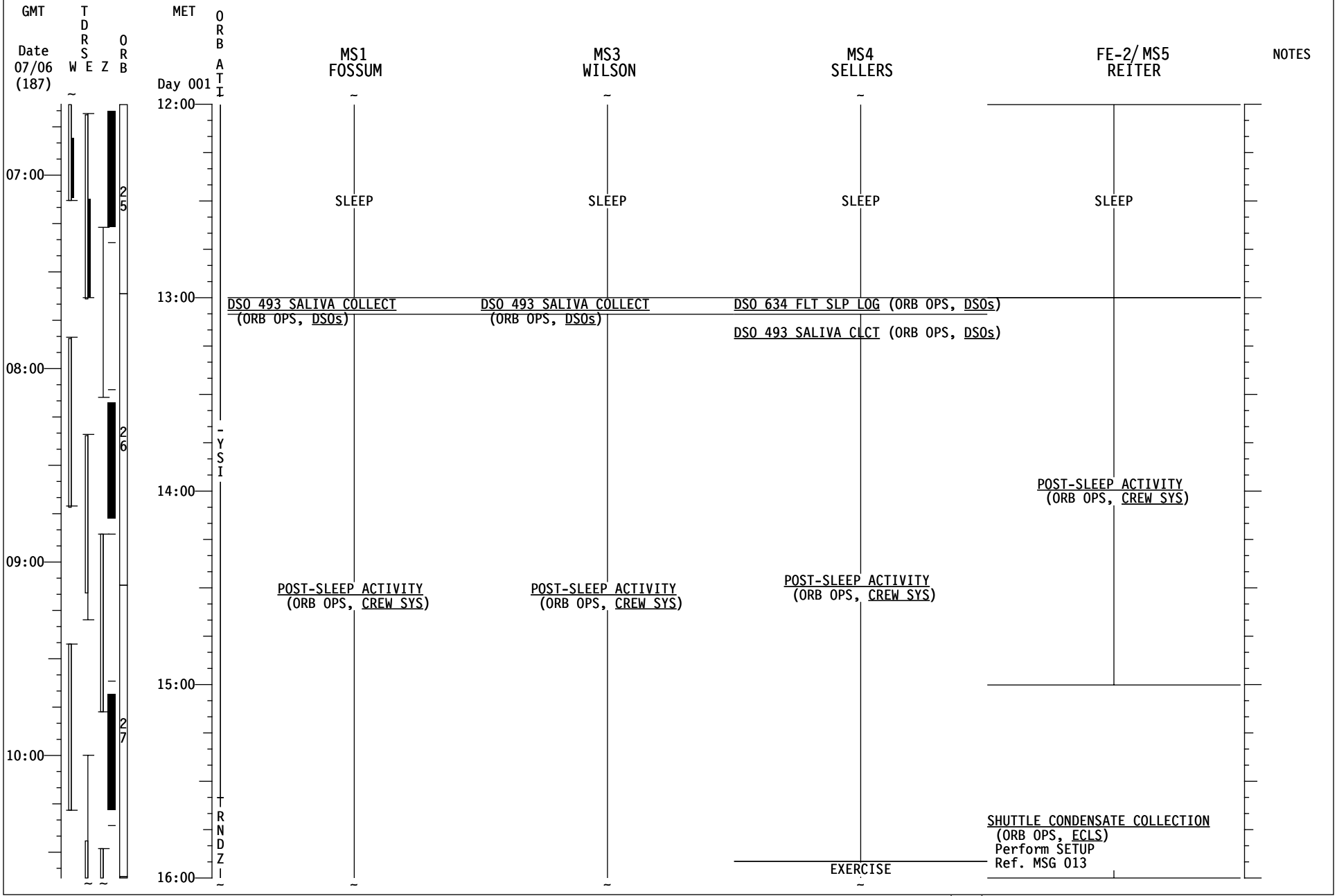
MPLM: 1.1O1 MPLM ENVIRONMENT CHECK
Steps 1 & 4
PRESS CK (NO fan)

[B] Steps 12,10,9,6,5 ONLY
Step 12: Recover IMU 1
Step 6: Triple G2, 1233

TFL 192

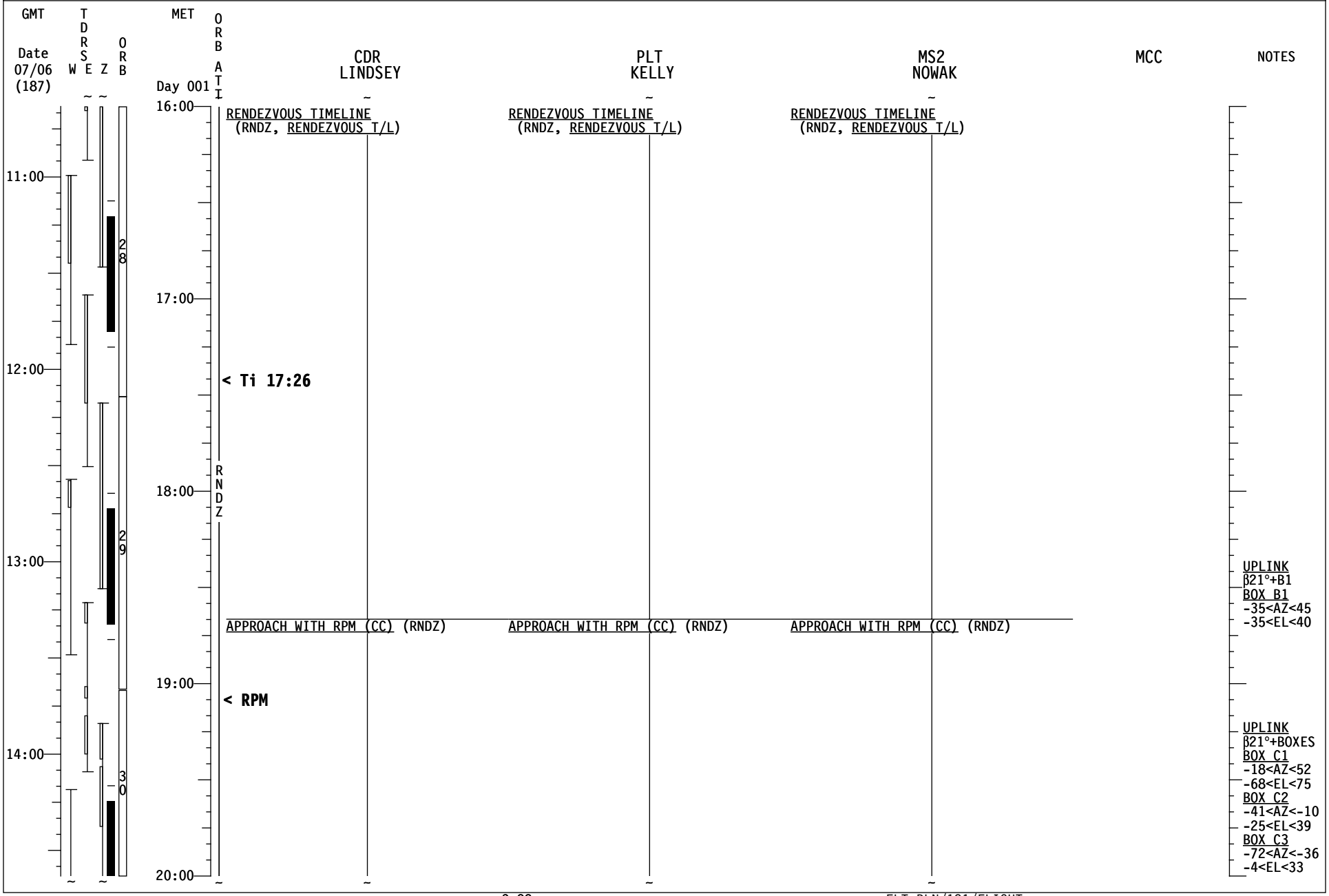
STS-121/ULF 1.1 (FD 03)

REPLANNED



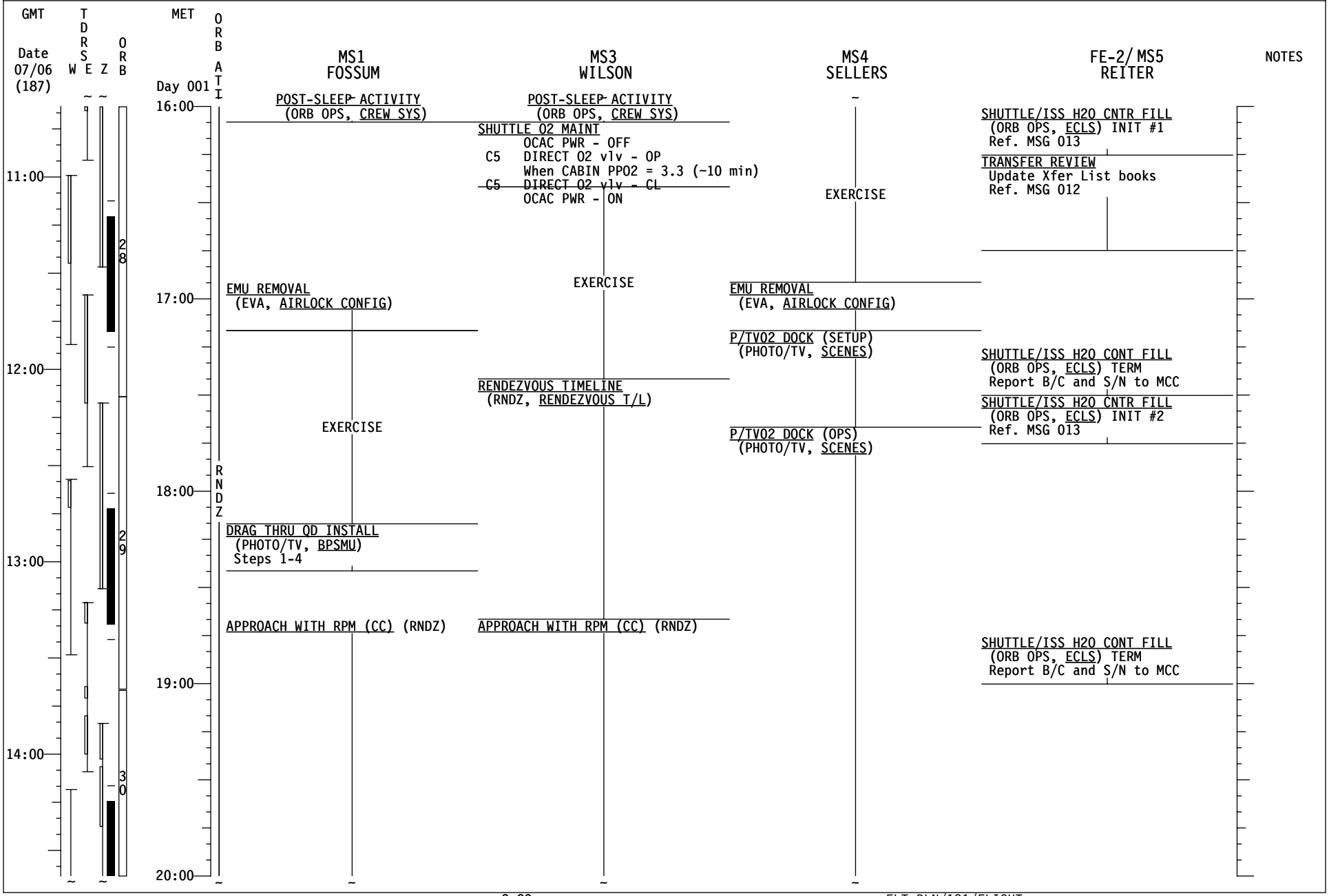
STS-121/ULF 1.1 (FD 03)

REPLANNED



STS-121/ULF 1.1 (FD 03)

REPLANNED



GMT Date 07/06 (187) | TDRS W E Z | ORB | MET Day 001 | ORB ATTI

Timeline: 20:00, 21:00, 22:00, 23:00, 00:00 MET (GMT 15:00, 16:00, 17:00, 18:00)

ORB: 30, 31, 32, 33

ORB ATTI: RNDZ; BIAS -XLV -ZVV

CDR LINDSEY

APPROACH WITH RPM (CC) (RNDZ)

< Contact 20:14

When rates damped from DAP:LVLH (RNDZ C/L):

MNVR (TRK) BIAS -XLV -ZVV
TG=2 BV=5 P=157 Y=0 OM=178
Init TRK when DAP:FREE >2 sec
DAP:A12/AUTO/VERN
Note time of DAP:AUTO, MET 1/___:___
At 10 & 20 min after AUTO,
DAP:FREE >2 sec, then DAP:AUTO

PRIORITY PWRDN GRP B [A]
(ORB PKT, PRIOR PWRDN)

JNT OPS: 3.111 H/O ATTITUDE CONTROL ORBITER TO CMG TA

JNT OPS: 2.106 HATCH OPEN AND DUCT INSTALL (BYPASS CONFIG)

WELCOME

SAFETY BRIEFING

BPSMU AUDIO ONLY
(PHOTO/TV, BPSMU)

P/TV06 SSRMS ASSY OPS (NON-EVA)
(PHOTO/TV, SCENES) OPS

OBSS HANDOFF FROM SSRMS TO SRMS
(PDRS, NOMINAL) Steps 1-2

OBSS H/O FROM SSRMS TO SRMS
(PDRS, NOMINAL) Steps 3-5

PLT KELLY

APPROACH WITH RPM (CC) (RNDZ)

RETURN TO FLIGHT PLAN

POST DOCKING HATCH LEAK CHECK
(RNDZ, APDS)

A/L PREP FOR INGRESS - BYPASS CONFIG
(RNDZ, APDS)

JNT OPS: 2.106 HATCH OPEN AND DUCT INSTALL (BYPASS CONFIG)

WELCOME

SAFETY BRIEFING

EMU PREP FOR ISS TRANSFER
(EVA, A/L CONFIG)

MS2 NOWAK

APPROACH WITH RPM (CC) (RNDZ)

SSV OUT RATE = 2

JNT OPS: 6.103 H/L AUDIO CONFIG (ISS)
Steps 1,2,6,7

PRIORITY PWRDN GRP B [A]
(ORB PKT, PRIOR PWRDN)

JNT OPS: 2.106 HATCH OPEN AND DUCT INSTALL (BYPASS CONFIG)

[A] Steps 6,12 ONLY
Step 6: Single G2, 1111
Step 12: IMU 1 STBY - ITEM 21 EXEC
O6 S TRK PWR -Z - OFF

WELCOME

SAFETY BRIEFING

ROBO: 1.110 BERTHED OBSS GRAPPLE

ROBO: 1.111 OBSS UNBERTH

MCC

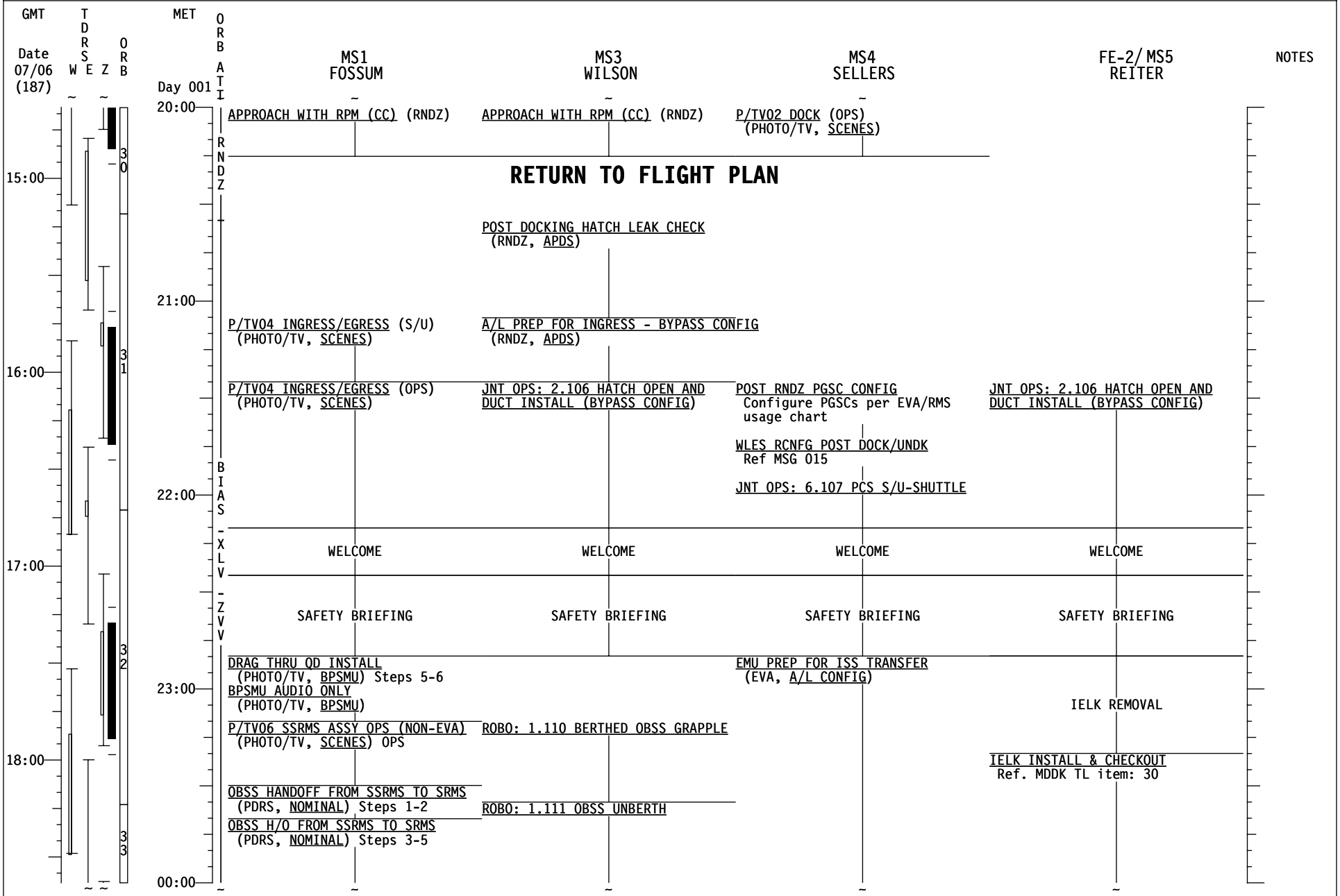
NOTES

TFL 199

UPLINK
β21°+BOXES
BOX C1
-18<AZ<52
-68<EL<75
BOX C2
-41<AZ<-10
-25<EL<39
BOX C3
-72<AZ<-36
-4<EL<33
BOX D2
-120<AZ<6
-89<EL<-45

STS-121/ULF 1.1 (FD 03)

REPLANNED



STS-121/ULF 1.1 (FD 03)

REPLANNED

GMT Date 07/06 (187) | MET Day 002 | TDRS W E Z | ORB | ORB ATT | CDR LINDSEY | PLT KELLY | MS2 NOWAK | MCC | NOTES

00:00

CDR: OBSS H/O FROM SSRMS TO SRMS (PDRS, NOMINAL) Steps 3-5

PLT: EMU PREP FOR ISS TRANSFER (EVA, A/L CONFIG)

PLT: ROOBA PURGE/LEAK CK/SETUP FOR P/B USING STS O2 (ASSY OPS, ISS) Steps 1-9

MS2: ROBO: 1.111 OBSS UNBERTH

MS2: ROBO: 1.112 OBSS MNVR TO HANDOFF

19:00

MCC: ISS OIU CMD TEST

ORB: 33

CDR: OBSS H/O FROM SSRMS TO SRMS (PDRS, NOMINAL) Steps 6-7

01:00

MS2: ROBO: 1.113 OBSS UNGRAPPLE AT HANDOFF

CDR: OBSS H/O FROM SSRMS TO SRMS (PDRS, NOMINAL) Steps 8-9

20:00

NOTES: UPLINK
β21°+BOXES
BOX C1
-18<AZ<52
-68<EL<75
BOX C2
-41<AZ<-10
-25<EL<39
BOX C3
-72<AZ<-36
-4<EL<33

PLT: ACTIVATION (CUE CARD) (PHOTO/TV, PLAYBACK)

ORB: 34

ATT: BIAS_XLV_ZVV

CDR: TRANSFER BRIEF Call down status to MCC

PLT: PLAYBACK (CUE CARD) (PHOTO/TV, PLAYBACK)
KU TDRZ (01:54 - 02:31)

MS2: ROBO: 1.114 MANEUVER TO ACBM INSPECT POSITION

02:00

CDR: CWC TRANSFER Transfer 1 CWC to ISS Ref. MSG 013

PLT: CWC TRANSFER Transfer 1 CWC to ISS Ref. MSG 013

CDR: R12(VPU) GREEN JMPR-LDRI/ITVC
R12(OBSS) ITVC ENA - ON

21:00

ORB: 35

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

CDR: √HUM SEP FOR H2O ACCUMULATION

03:00

MCC: ROOBA LEAK CHECK

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

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

22:00

CDR: 06 √UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

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

NOTE: SLEEP SHIFT 30 MIN EARLIER
WAKEUP @ MET 2/12:30

04:00

STS-121/ULF 1.1 (FD 03)

REPLANNED

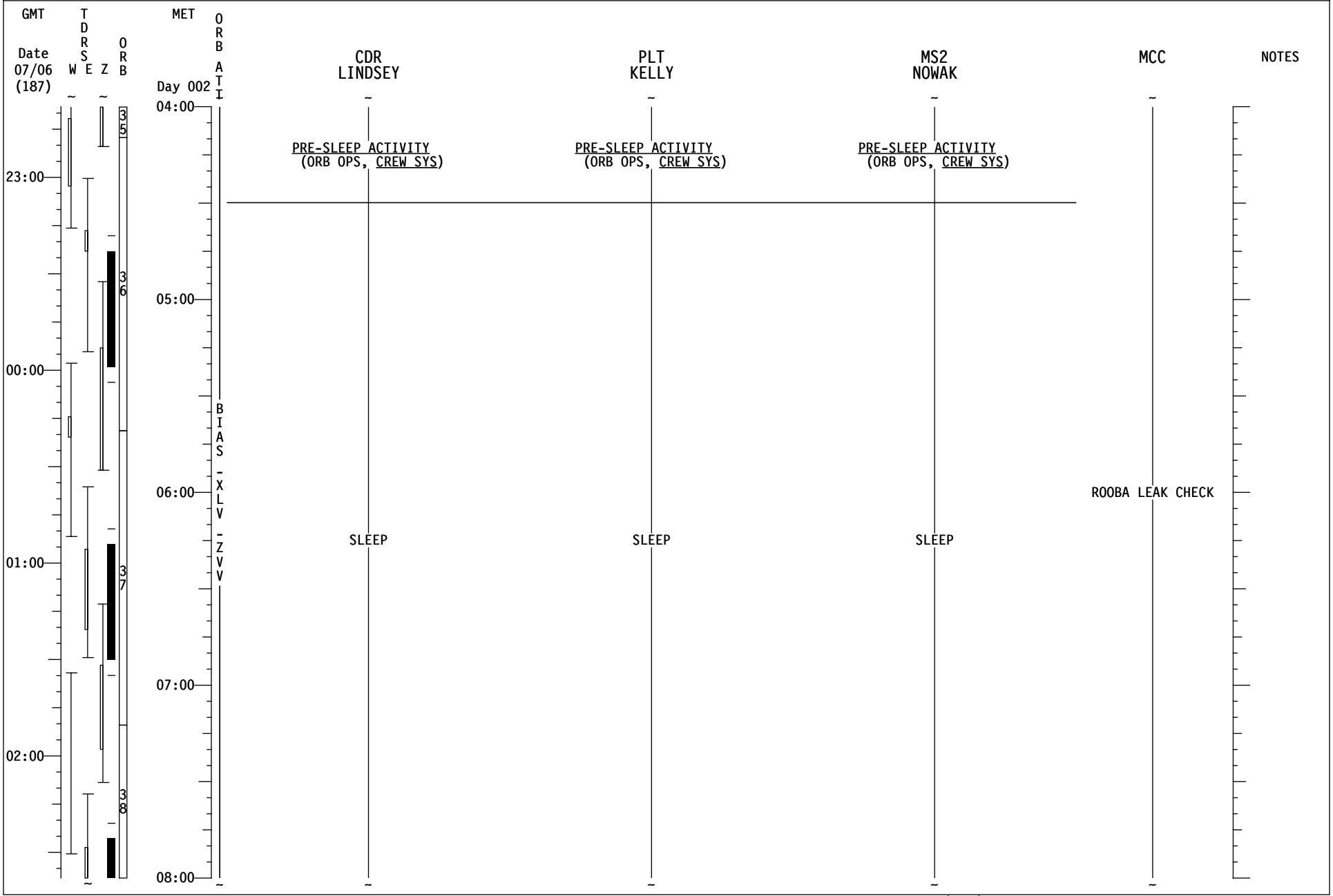
GMT Date 07/06 (187) | TDRS W E Z | ORB | MET Day 002 | ORBIT BIAS -XLV -ZVV

MS1 FOSSUM	MS3 WILSON	MS4 SELLERS	FE-2 REITER	NOTES
		EMU PREP FOR ISS-TRANSFER (EVA, A/L CONFIG)	IELK INSTALL & CHECKOUT Ref. MDDK TL item: 30	
OBSS H/O FROM SSRMS TO SRMS (PDRS, NOMINAL) Steps 3-5	ROBO: 1.111 OBSS UNBERTH ROBO: 1.112 OBSS MNVR TO HANDOFF	RWS VIDEO CABLE S/U FOR FD3 (PHOTO/TV, V10)		
		MIDDECK TRANSFER Ref. MDDK TL items: 22,29,29.1,29.2,38,43,45 Ref. MPLM RTN TL item: 434.1		
OBSS H/O FROM SSRMS TO SRMS (PDRS, NOMINAL) Steps 6-7				
	ROBO: 1.113 OBSS UNGRAPPLE AT HANDOFF		SOKOL LEAK CHECK	
			SODF DEPLOY Ref. MDDK TL items: 38,43 Ref. MSG 009	
OBSS H/O FROM SSRMS TO SRMS (PDRS, NOMINAL) Steps 8-9				
EVA TOOLS MGMT (EVA, TOOLS & STOWAGE) Perform FD3-EVA Tool Transfer Ref. MDDK TL items: 32,33,49	ROBO: 1.114 MANEUVER TO ACBM INSPECT POSITION	EVA TOOLS MGMT (EVA, TOOLS & STOWAGE) Perform FD3-EVA Tool Transfer Ref. MDDK TL items: 32,33,49	EXPRS RACK 1 MTL QD DISCNCT TRANSFER BRIEF Call down status to MCC	
			PMC DPC	
PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE SLEEP-ISS	

NOTE: SLEEP SHIFT 30 MIN EARLIER
WAKEUP @ MET 2/12:30

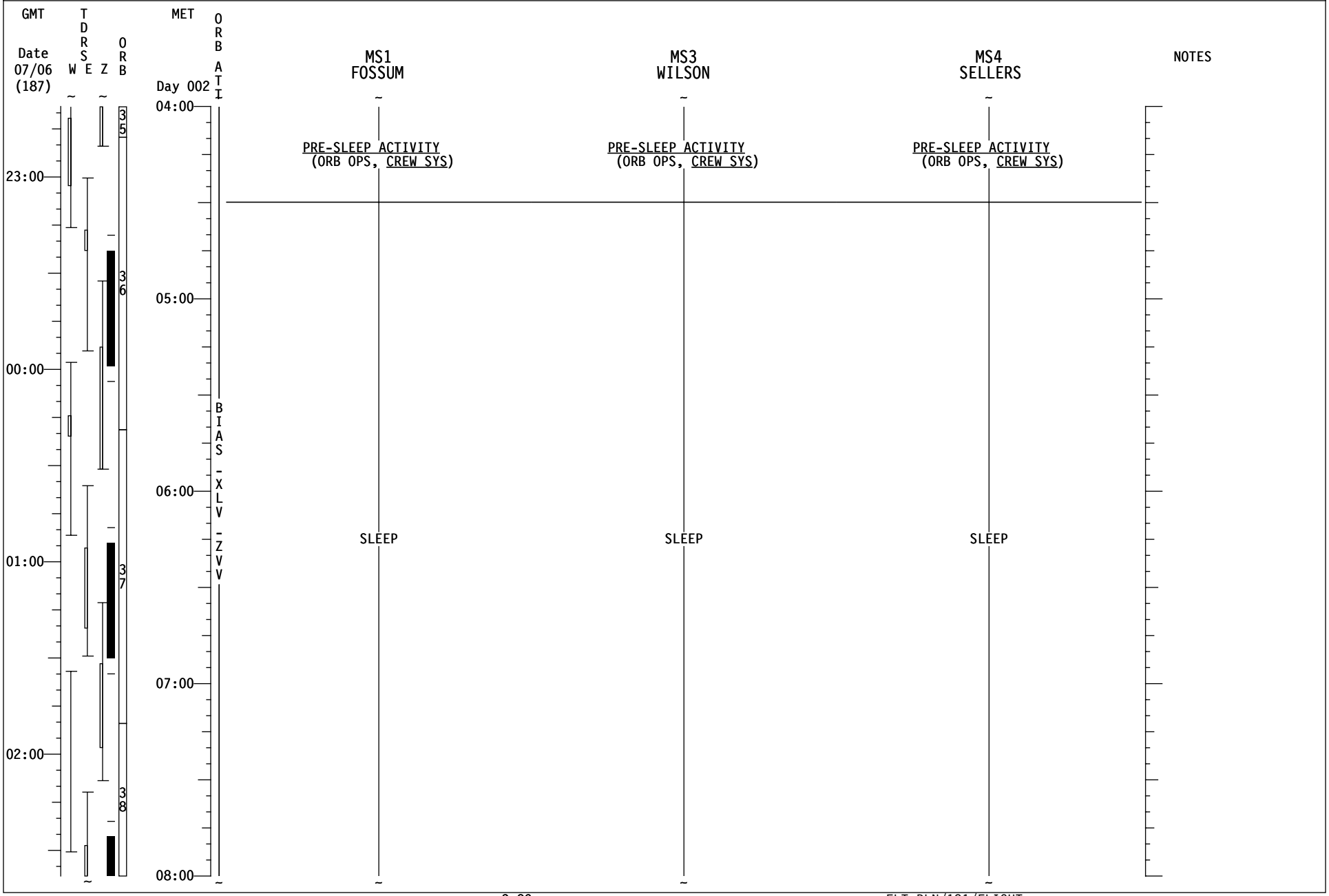
STS-121/ULF 1.1 (FD 03)

REPLANNED



STS-121/ULF 1.1 (FD 03)

REPLANNED



MSG 011A (13-0609A) - FD03 MISSION SUMMARY

Good morning, Discovery!

Great day yesterday, finishing flight day 2 early, that's amazing. As for today, just a rendezvous. However, you will be losing a crewmember at the end of the day, but then again, you're gaining a Station.

L5L is still warm and we plan on using it for the rendezvous. We will call you to reselect it sometime before NC4 - when PROP sees it at its warmest.

The WLES System continues to work well and all the ascent summary files have been received on the ground. We expect the starboard wing units to get too cold to operate over the next day or so due to the -YSI attitude we've been flying, but are expecting those units to warm up again after we undock. Port wing temperatures look good for the docked mission, but we expect them to get too cold to operate after undocking. Thanks for all your work in this area.

YOUR CURRENT ORBIT IS: 183 X 135 NM

NOTAMS:

LAJES – TACAN 45X OUT OF SERVICE TILL 10 JULY
ASCENSION (HAW) - TAC UNRELIABLE 03 JULY 18:32 - 5 JULY 830
GUAM (GUA) – RWY 06L/24R CLOSED
AMBERLEY (AMB) – CLOSED
OCEANA (NTU) - RWY 23L/05R CLOSED
RIO GALLEGOS (AWG) - NOT APPROVED
ISTRES (FMI) – 33 RWY REMAINING MARKERS AVAIL ARE 300,600,900M

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB 33 – 2/00:26 (SCT250, 220@12P20 – EDW22 ONLY)
EDW22 ORB 49 – 3/00:49 (SCT100 SCT250, 230@14P22 – EDW22 ONLY)

OMS TANK FAIL CAPABILITY:

POST-NC4		POST-DOCKING	
L OMS FAILS:	NO	L OMS FAILS:	NO
R OMS FAILS:	NO	R OMS FAILS:	NO

LEAKING OMS PRPLT BURN:

POST-NC4		POST-DOCKING	
L OMS LEAK:	ALWAYS BURN RETRO	L OMS LEAK:	ALWAYS BURN RETRO
R OMS LEAK:	ALWAYS BURN RETRO	R OMS LEAK:	ALWAYS BURN RETRO

POST-NC4 OMS QUANTITIES(%)				POST-DOCKING OMS QUANTITIES(%)			
L OMS	OX = 37.2	R OMS	OX = 37.2	L OMS	OX = 34.6	R OMS	OX = 37.2
	FU = 37.7		FU = 37.9		FU = 35.1		FU = 37.9

SUBTRACT I'CNCT COUNTER FOR CURRENT OMS QUANTITIES

DELTA V AVAILABLE:

POST-NC4		POST-DOCKING	
OMS	338 FPS	OMS	326 FPS
ARCS (TOTAL ABOVE QTY1)	54 FPS	ARCS (TOTAL ABOVE QTY1)	25 FPS
TOTAL IN THE AFT	392 FPS	TOTAL IN THE AFT	351 FPS
ARCS (TOTAL ABOVE QTY2)	83 FPS	ARCS (TOTAL ABOVE QTY2)	54 FPS
FRCS (ABOVE QTY 1)	49 FPS	FRCS (ABOVE QTY 1)	33 FPS
AFT QTY 1	91 %	AFT QTY 1	84 %
AFT QTY 2	53 %	AFT QTY 2	46 %

Lead ODF Coordinator: DO3/Sandy Wayne x33155
Alt. Coordinator: DO3/Jason Morrow x41189
OPS Flight Lead: DO3/Alfred Ontiveros x35224
OPS Assistant: DO3/Libbie Sanders x32235

ODF TRANSFER LIST
STS-121 / ULF1.1 / EXP 13

BOOK TITLE or ITEM NAME	DOCUMENT NUMBER / DATE (BAR CODE if applicable)	QTY	CREW COLOR	CONFIGURATION COMMENTS	✓
HARDCOPY DOCUMENTS					
EMER-1	JSC-48512	***4***	NO COLOR	MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
EMER-2	JSC-48512	***3***	NO COLOR	MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
Medical Checklist	JSC-48522	***1***	NO COLOR	MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
Medical Checklist (ACLS Flipbook)	N/A	***1***	NO COLOR	MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
Portable Onboard Computers (POC)	JSC-48529	***1***	NO COLOR	MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
Warning Procedures Book	JSC-48537	***3***	NO COLOR	MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
JOINT MISSION OPS CUE CARDS				MF57G	
SSRMS LEE Cue Card	JNT OPS RBT - 1b/ALL/H RBT-1b/ALL/H	***1***		Stowed inside MS2 Robo FS book	

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ODF TRANSFER LIST
STS-121 / ULF1.1 / EXP 13

BOOK TITLE or ITEM NAME	DOCUMENT NUMBER / DATE (BAR CODE if applicable)	QTY	CREW COLOR	CONFIGURATION COMMENTS	✓
SODF CUE CARD KIT				MF43H	
Respiratory Support Pack Cue Card	SODF ISS MED - 3a/ALL/A ISS MED - 3a/ALL/A	***1***		MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
Audio Loss of Voice - Cue Card	SODF C&T - 1a/E13-ALL/A C&T - 1b/E13-ALL/A	***1***		MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
Variable Oxygen System - Set Up Cue Card	SODF ISS MED -2a/ALL/B ISS MED - 2a/ALL/B	***1***		MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
400 MM R-Bar Pitch Maneuver Documentation	SODF P/TV SPEC - 5a/E13-ALL/A P/TV SPEC - 5b/ULF1.1-ALL/B	***1***		MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
800 MM R-Bar Pitch Maneuver Documentation	SODF P/TV SPEC - 6a/E13/A P/TV SPEC - 6b/E13/B	***1***		MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	
FABRICATED ITEMS				MF43H	
ISS EVA Cuff Checklists	JSC-48538	***3***		MF43H - CTB Transferred with EMU Prep for Transfer activity SN - Prime: 5044, 5047, 5052 SN - Backup: 5041, 5042, 5056	
Leak Pinpoint Repair Procedures		***1***		MF43H - CTB Info only - CTB will be deployed sometime during ULF1.1 stage ops.	

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ODF TRANSFER LIST
STS-121 / ULF1.1 / EXP 13

BOOK TITLE or ITEM NAME	DOCUMENT NUMBER / DATE (BAR CODE if applicable)	QTY	CREW COLOR	CONFIGURATION COMMENTS	✓
ZIPLOCK BAG					
10.101 Big Loop Reactivation	JNT OPS JNT OPS - 4a/8A-ALL/A JNT OPS - 4b/8A-ALL/A	***1***		Crew preference	
10.102 Joint Emergency Egress (2 Qty.)	JNT OPS JNT OPS - 1a/8A-ALL/L JNTOPS - 1~~ab~~/8A-ALL/L	***1***		Station side of the Hatch Transferred with EMU Prep for Transfer activity	
	JNT OPS JNT OPS - 1a/8A-ALL/L JNTOPS - 1~~ab~~/8A-ALL/L	***1***		Stow in Airlock Transferred with EMU Prep for Transfer activity	
Crewlock Depress/Repress Cue Card	JNT OPS ISS EVA - 1a/8A-ALL/G ISS EVA - 1b/8A-ALL/G	***1***		Transferred with EMU Prep for Transfer activity	
Crewlock Depress/Repress Cue Card Without IV	JNT OPS ISS EVA - 1a/E6-ALL/D ISS EVA - 1b/E6-ALL/D	***1***		Stow in Airlock	
EVA Prebreathe Cue Card	JNT OPS ISS EVA - 2a/ALL/F ISS EVA - 2b/ALL/F	***1***		Transferred with EMU Prep for Transfer activity	
ISS EVA Systems Book	JSC-48538	***1***	NO COLOR		

Good morning Thomas, Stephanie, and Steve,

Transfer Choreography for FD03:
Incorporate uplinked changes in Transfer List books

- Transfer ODF, IELK, Ammonia Detection Kit from MDDK to ISS
- Transfer PBAs:
    - 3 bottles w/o masks to A/L
    - 2 bottles w/masks to NOD1P4_B1 ZSR locker and install decal on ZSR door
    - 2 bottles w/masks to LAB1O5_D2 ZSR locker and install decal on ZSR door
    - Pack up 1010 (w/o mask) from A/L in CTB 434 containing 1006 for mddk rtn

We understand that Piers carried on a SANDISK COMPACT FLASH CARD for the IR camera and that he will put it in the EVA IR Camera Bag in MF43O. This shows up in your uplinked pages today as mddk resupply item 800. We also expect some late-stowed coffee to be transferred to ISS and will not reflect this in the Transfer List.

We've uplinked the revised HRF Rack 1 Reconfiguration procedure today. This procedure is simplified from what you saw in training due to some reconfiguration Jeff did in this rack a few weeks ago.

We've added a new mddk swap tab item: IVA Tools Swap. Item 47 is a mddk resupply bag of miscellaneous hdwe that contains new torque wrenches. These wrenches are replacing some wrenches that will return in mddk return item 488. These torque wrenches are in use throughout the flight. These two items should swap on FD6 after the CCAA HX transfer. They will be added to the detailed pages for the mddk transfer block on FD6 afternoon.

Please incorporate uplink pages as follows (call us with any questions!):

In the MDDK Transfer List Book
LAYOUTS tab, Replace the both pages:
Modular Locker Layout Ascent (W/TRAD)
Modular Locker Layout Descent
RESUPPLY tab, Replace the following pages:
Page Resupply 3
Page Resupply 6
Page Resupply 7
MDDK RSPLY REALTIME ADDITIONS tab, Replace Page Resupply 9
SWAP tab, Replace the following pages:
Page Swap 2
Page Swap 3
Add Page Swap 24 at the back of this tab
RETURN tab, Insert the following pages:
Page Return 1 through Page Return 7
MDDK RTN REALTIME ADDITIONS tab, Insert Page Return 8

In the MPLM Resupply Transfer List Book
LAYOUTS tab,
Replace the following Treasure Maps pages:
L-13
L-25

F4 RSP tab, Replace following pages:
Page Resupply 21 through Page Resupply 22
P3 RSR tab, Replace following pages:
Page Resupply 26 through Page Resupply 27
S2 RSR tab, Replace Page Resupply 30
Swap tab, Replace following pages:
Page Swap 9
Page Swap 10
Page Swap 12
Procedures tab, Replace the HRF Rack 1 Reconfiguration as follows:
Remove pages P-33 through P-40 and insert pages 1-7 of 13-0613 (msg 016)
Messages tab, insert this FD3 Transfer Message

In the MPLM Return Transfer List Book
LAYOUTS tab,
Replace the following MPLM Layouts pages:
L-4
L-17
L-22
L-29
L-31
Insert the following Treasure Maps pages at the back of this tab:
L-33 through L-40
RETURN tab, Insert the following pages
Page Return 9 through Page Return 31
MPLM RTN REALTIME ADDITIONS tab, Insert Page Return 32:

-The Transfer Team-

MSG 013A - FD03 WATER SUMMARY

FD3 Water Activity Summary:

Today, the Condensate Collection CWC will be setup. For water transfer to ISS, two CWCs will be filled.

At MET 1/15:40, perform SETUP of SHUTTLE CONDENSATE COLLECTION (ORB OPS, ECLS) p. 5-36. All hardware is stowed in MA9D. Report initiation time and CWC barcode and serial number to MCC.

The Shuttle/ISS H2O Container Fill initiation scheduled for FE-2 at MET 1/16:00 should contain the following details:

SHUTTLE/ISS H2O CONT FILL INIT #1
(ORB OPS, ECLS)
Ag Biocide is req'd.
Sample is req'd.
Fill Duration: ~52 minutes
Report Serial Number and Barcode to MCC.

Following fill #1, at MET 1/17:30 FE-2 should perform:

SHUTTLE/ISS H2O CONT FILL INIT #2
(ORB OPS, ECLS)
Ag Biocide is req'd.
Sample is not req'd.
Fill Duration: ~52 minutes
Report Serial Number and Barcode to MCC.

After both fills are complete, temp stow bags on middeck. At MET 2/02:05, transfer the CWCs to the water wall (NOD1P2) per the flight plan. If there is insufficient room for the bags at this ISS location, report the actual stowage location to MCC.

FD2 MMT Crew Summary

The MMT met to review the mission progress and there were only a few items of significant discussion. These include the management of the L5L jet for rendezvous, the FES PRI B shutdown on FD 1, and a review of the preliminary ascent video and Wing Leading Edge sensor system data.

L5L: The MMT concurred with the plan to continue to thermally condition L5L and maximize the probability of all 6 VRCS jets being available for rendezvous. Based on the real-time data and thermal analysis predictions, the temperatures are expected to be warm enough to have L5L available for rendezvous/docking and the post docking maneuver to attitude. However, if all 6 vernier jets are not available, the MMT concluded that ALT DAP should be used for the RPM since it's a certified configuration and published procedures are already in place. The MMT understood that the risk of using ALT DAP is that the attitude excursions may result in some of the RPM photos being of insufficient quality, possibly requiring some focused inspections. Based on Draper simulation data, VRCS (5 or 6 jets) results in roll excursions of about 5-7 degrees when between 145 and 215 degree pitch (Orbiter bottom side imaging window), whereas ALT DAP results in roll excursions of about 20-25 degrees. The primary concern is that 5 of 6 vernier jets are not a certified ISS loads configuration and there is also the possibility of jet shelf pulsing, ISS loads resonance, or other off nominal DAP performance with 5 jets during the RPM.

FES PRI- B: As you know oscillations in evap out temps were observed on FES PRI B (high load and topper) in the post-insertion timeframe. Full up FES PRI A worked well during ascent and in post insertion prior to selecting FES PRI B. The topping and hi load FES were flushed on FD1 and no indications of ice were noted. During the core flush procedure, the secondary high load also exhibited oscillations and took longer to stabilize than normal. There is no definitive cause of these oscillations although the likely candidates are the FES PRI B controller and/or temperature sensors in the midpoint block which is located between the high-load and topper. The SECONDARY high load oscillations have been observed before on other missions. Neither FES PRI B nor the SECONDARY FES are being declared failed at this time and further troubleshooting will be planned for post undocking. It is quite possible that the plan will be to use FES PRI A for deorbit/prep entry. This plan will continue to evolve over the next few days and is being worked by the Entry Flight Director and EECOM.

Wing Leading Edge Sensors - All the WLEIDS data has been downlinked and the preliminary assessment is that the system detected 6 probable impacts during ascent (tripped the .87 Grms sensor limit). Three of these were on the port wing and three were on the starboard wing. This is very similar to the number of probable impacts that were observed on STS-114 and there may be some correlation between the two missions.

Imagery - The teams continue to review the ascent imagery data (ET LOX feedline camera, ground cameras, WAVE aircraft video, and debris radar). The preliminary characterization is the debris environment was substantially less than that observed for STS-114. These reports show two events that may have impacted the Orbiter. The first event was at approximately 19 seconds (Figure 1) and the other was at ~285-294 seconds. Both of these are outside the critical debris region of concern that spans from 35 seconds to 140 seconds. Exact size and velocity estimates are still being refined.

The 19 second event that was observed to be a single piece of debris traveling between ET and Orbiter fuselage which could indicate an impact although the image quality is poor . For the 285-294 second event (Figure 2), multiple (~5-12) pieces of ET debris were observed and one piece possibly impacted the Orbiter. The debris originated from aft of bipod on -Y side of LO2 feedline, traveled toward the Orbiter fuselage, changed direction abruptly, and then fell aft breaking into several pieces after possible contact with Orbiter. Early prediction are a 33 feet/sec average velocity with a maximum velocity of 67 feet/sec. The ascent camera views have not detected any visible signs of TPS damage as a result of these events.

The LDRI FD2 imagery shows a protruding gap filler (Figure 3) on the port side near outer edge of wing. It is located in an area where GAP fillers were not replaced with a tile thickness of 2.6 inches. Initial measurements estimate the protruding GAP filler to be about 1/2 inch. The aeroheating community is analyzing this to determine if any future action is required to remove. Additionally, all of the Tyvek covers on the FRCS thrusters were reported to have come off within about 8 seconds MET, which meets the velocity requirements for all of these covers. Finally, the imagery experts reviewed the ET handheld photography and confirmed the MCC assessment of ice being the unusual item reported by Mike Fossum. Ice was also observed in the STS-114 handheld photography and this has been observed on other missions as well.

Of course we'll have a better assessment of the TPS (wing leading edge RCC and tile) after tomorrow's FD 3 MMT when the FD2 inspection data will be reviewed.

Figure 1 19 Second Event

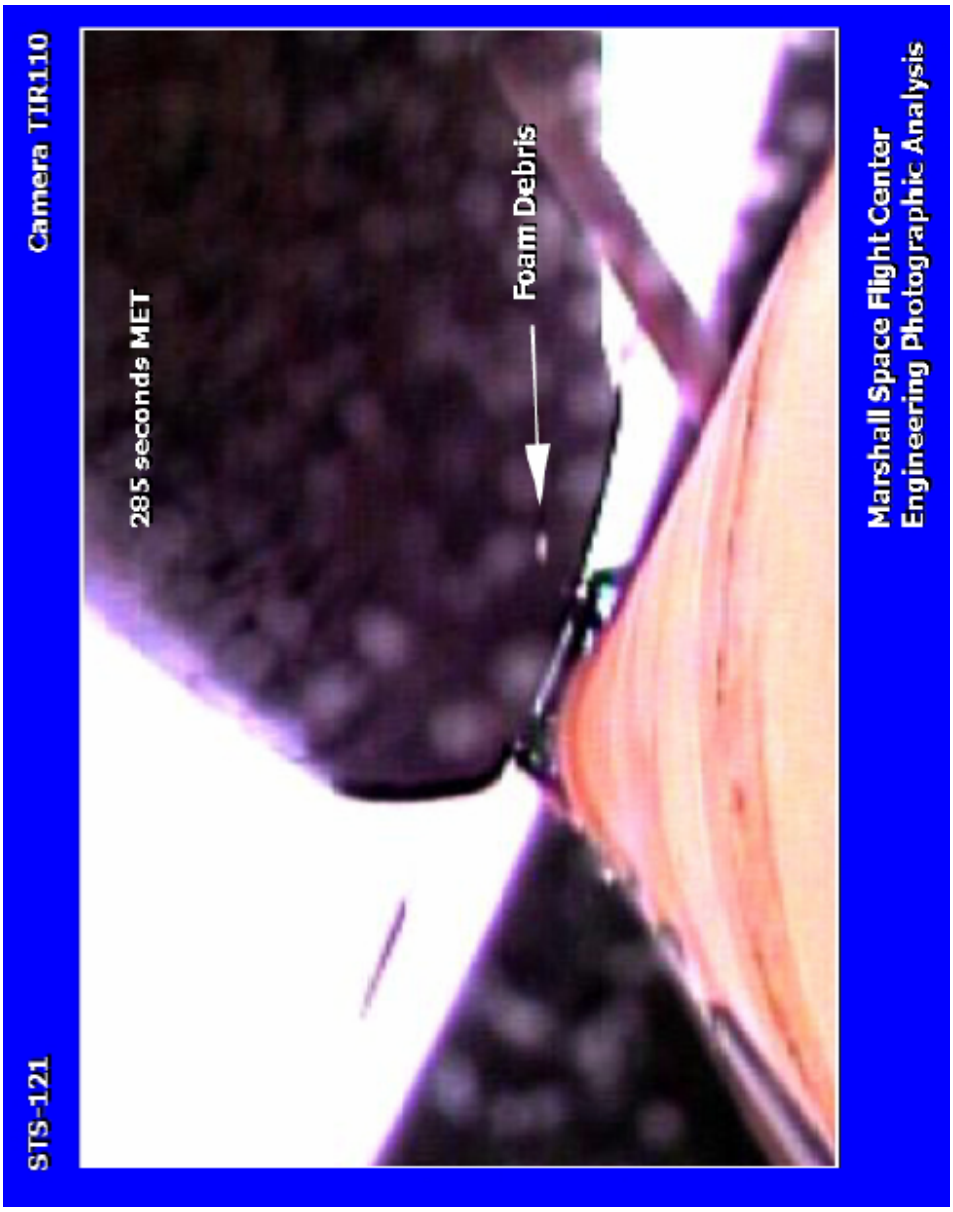


Figure 2 285 Second Event

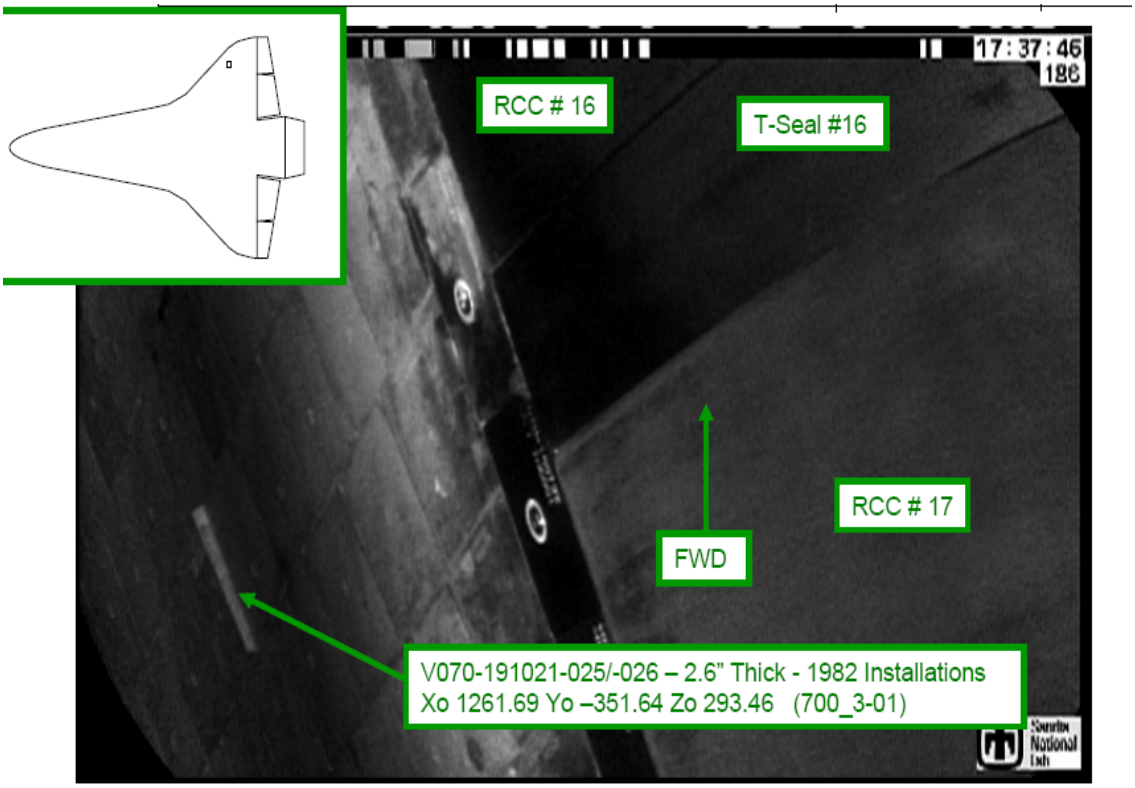


Figure 3 Port Wind Protruding Gap Filler

MSG 015 - WLES RECONFIG POST DOCK/UNDOCK

1. RECOVER BACKUP WLE SENSORS LAPTOP

A31p On Backup WLES laptop:

If necessary, close all applications, exit Windows
Click ‘Start’>‘Shutdown’
Connect Laptop Receiver Unit to A31p Serial port

A31p pwr – On
Double click ‘Shuttle Apps’>‘EWBMTAU-WLEFlight’

‘Backup Mode Selection’
Click ‘Secondary’

2. REACTIVATE WLES FILE BACKUP

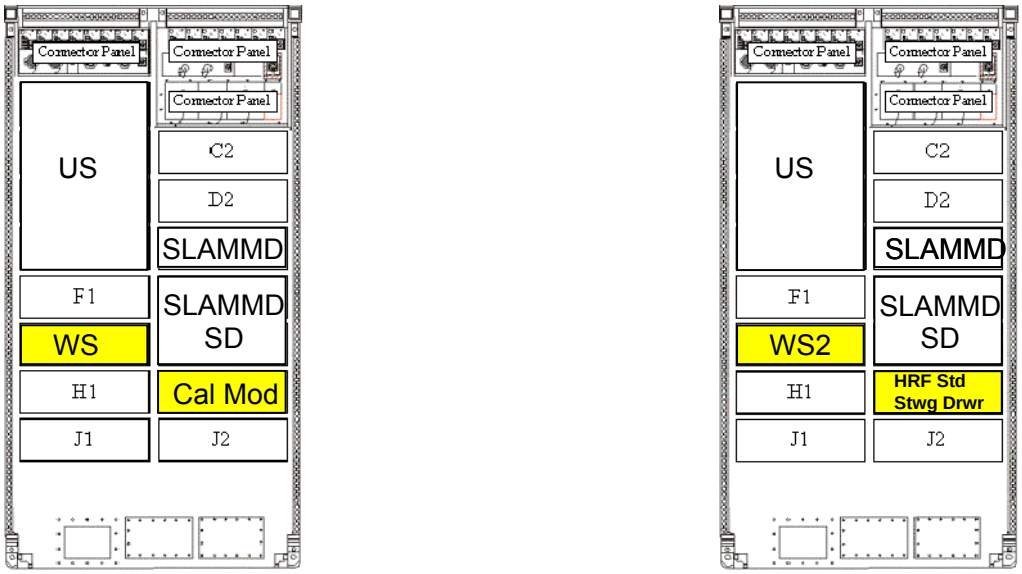
A31p On Prime WLES laptop:

‘Main’

Click ‘System Settings’ (left side of display)
‘Backup Mode’
Click ‘Primary’
Click ‘Status’ (left side of display)

13-0613 (MSG 016) HRF RACK 1 RECONFIGURATION

OBJECTIVE:
Reconfigure HRF Rack 1 by removing the HRF Workstation and the Calibration Module from HRF Rack and installing one HRF Standard Stowage Drawer (labeled HRF Renal Stone Hardware) and the Workstation 2 payload drawer.



Initial Config Final Config

Figure 1.- HRF Rack 1 Reconfig.

LOCATION:
Stowed: EXPRESS TRANSPORTATION RACK 2 – MPL1A3
Installed: HRF Rack 1 – LAB1S2

DURATION:
90 minutes

CREW:
One

TOOLS:
ISS IVA Toolbox:
Drawer 2:
(40-200 in-lbs) Trq Wrench, 3/8” Drive
Ratchet, 3/8" Drive
Ratchet, 1/4” Drive
5/32” Hex Head, 1/4” Drive
Drawer 3:
6" Long, 3/16" Hex Head, 3/8" Drive
Drawer 4:
Wire Cutters

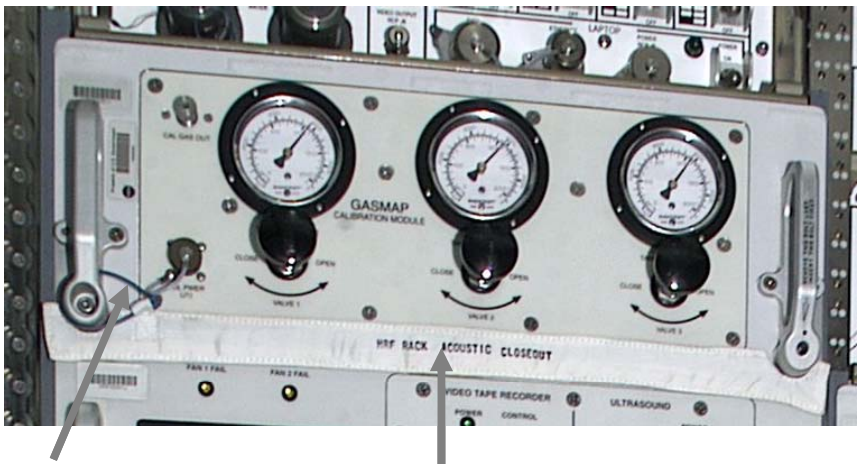
PARTS:
Calibration Module
HRF Workstation
HRF Standard Stowage Drawer (labeled HRF Renal Stone Hardware)
Workstation 2

STATION MATERIALS:
Braycote 601
Dry Wipes
Cable Ties (4)

CAUTION
Power and data connection pins located at the rear of some units will be exposed when the units are removed from HRF Rack 1 and EXPRESS Transportation Rack (ETR). Care should be taken to ensure that no pins are bent or otherwise damaged. Contact with any object and the back of any unit should be avoided.

1. ACOUSTIC CLOSEOUT REMOVAL

LAB1S2_H2 1.1 Cut Cable Ties attaching the top and bottom HRF RACK ACOUSTIC CLOSEOUTS to Calibration Module (Wire Cutters). Refer to Figure 2.



Cable Tie HRF RACK ACOUSTIC CLOSEOUT

Figure 2.- HRF Rack Acoustic Closeout With Cable Tie.

LAB1S2_G1 1.2 Cut Cable Tie attaching HRF RACK ACOUSTIC CLOSEOUT to HRF Workstation (Wire Cutters).

1.3 Remove three loose HRF RACK ACOUSTIC CLOSEOUTS from the payload drawers and dispose of cut Cable Ties.

1.4 Temp stow loose HRF RACK ACOUSTIC CLOSEOUTS (three)

2. HRF RACK 1 PREPARATION

LAB1S2_A1
2.1 √sw LAPTOP POWER – OFF

2.2 √LAPTOP POWER Lt – Off

LAB1S2_A1, A2
2.3 √sw DRAWER B1, C1, D1, E1, F1, G1, H1, J1, C2, D2, E2, F2, G2, H2, J2, POWER (fifteen) – OFF

LAB1S2_A2
2.4 √sw PAYLOAD POWER – OFF

2.5 sw RACK POWER → OFF

LAB1S2_B1
2.6 √sw ULTRASOUND POWER – OFF

LAB1S2_E2
2.7 √sw SLAMMD POWER – OFF

LAB1S2_G1
2.8 √sw MAIN PWR – OFF

2.9 √sw 28VDC PWR – OFF

3. REMOVING DRAWERS FROM ETR IN MPLM

MPL1A3_B2
3.1 Disengage launch restraints on both drawer handles on HRF Standard Stowage Drawer. Rotate adjustment screw counterclockwise one full revolution (Ratchet Wrench, 1/4" Drive; 5/32"Hex Head). Refer to Figure 3.

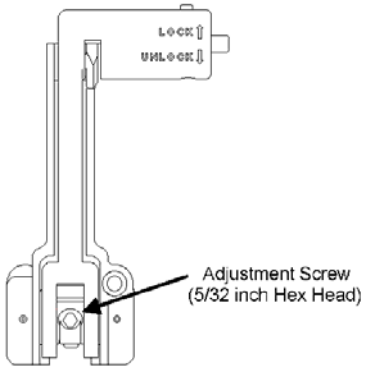


Figure 3.– Drawer Handle Adjustment Screw Location

3.2 Drawer Handle Lock Buttons → UNLOCK

CAUTION
Do not rotate handles past ~70° until all handles are at ~45°.

3.3 Press Drawer Handle Release Button, rotate each Drawer Handle down ~45°, then rotate Drawer Handles simultaneously down ~90°.

3.4 Grasp handles, pull Drawer outward until hard stop. Rotate all Drawer Handles up to closed position (audible click).

3.5 Locate the safety latch on the back left side of HRF Standard Stowage Drawer (labeled HRF Renal Stone Hardware) and push latch up.
Refer to Figure 4.

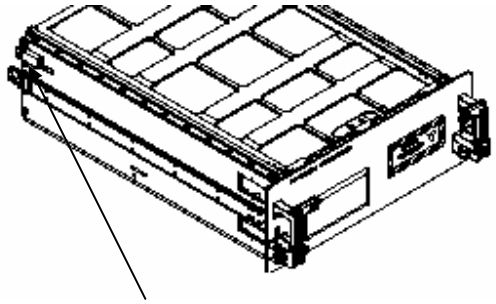


Figure 4.- Example of Safety Latch Location.

3.6 Pull HRF Standard Stowage Drawer (labeled HRF Renal Stone Hardware) out of ETR.
Temporarily stow for transfer to LAB1S2.

MPL1A3_B1

3.7 Remove one silver-plated bolt from the left side handle of Workstation 2 (6" Long, 3/16" Hex Head, 3/8" Drive; Ratchet, 3/8" Drive).
Temporarily stow for transfer to LAB1S2.

3.8 Unfasten captive bolt in the right side handle of Workstation 2 (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

3.9 Open Workstation 2 drawer until fully extended.

3.10 Locate the safety latch on the back left side of Workstation 2 drawer and push latch up.

3.11 Remove Workstation 2 from ETR.

3.12 Transport Workstation 2, one silver-plated bolt, and HRF Standard Stowage Drawer (labeled HRF Renal Stone Hardware) to LAB1S2.
Temporarily stow.

4. REMOVING HRF WORKSTATION FROM HRF RACK 1

LAB1S2_G1

4.1 Remove one silver-plated bolt from the left side handle of the HRF Workstation and temp stow
(Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

4.2 Unfasten captive bolt in the right side handle of the HRF Workstation (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

4.3 Open HRF Workstation drawer until fully extended.

4.4 Locate the safety latch on the back left side of HRF Workstation drawer and push latch up.

4.5 Remove HRF Workstation from HRF Rack 1.
Temporarily stow.

5. INSTALLING WORKSTATION 2 IN HRF RACK 1

5.1 Retrieve Workstation 2 from temporarily stowed location.

5.2 Inspect connector pins on back of Workstation 2 for debris or damage.

****
* If any debris or damage is found,
* |
* | √**MCC-H**
****

LAB1S2_G1

5.3 Install Workstation 2 into HRF Rack 1.

5.4 Fasten captive bolt in the right side handle of Workstation 2.
No specific torque is required (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

5.5 Retrieve silver-plated bolt from temporarily stowed location.
Lubricate bottom third of bolt threads with a small amount of Braycote 601.
Clean excess lubricant with Dry Wipe, if necessary, and discard.
Install silver-plated bolt into the left side handle of Workstation 2.
No specific torque is required (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

6. REMOVING CALIBRATION MODULE

LAB1S2_H2

6.1 Remove one silver-plated bolt from the left side handle of the Calibration Module and temp stow (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

6.2 Unfasten captive bolt in the right side handle of the Calibration Module (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

6.3 Open Calibration Module drawer until fully extended.

6.4 Locate the safety latch on the back left side of Calibration Module drawer and push latch up.

6.5 Remove Calibration Module from HRF Rack 1.
Temporarily stow.

7. INSTALLING HRF STANDARD STOWAGE DRAWER IN HRF RACK 1

LAB1S2_H2 7.1 Retrieve HRF Standard Stowage Drawer (labeled HRF Renal Stone Hardware) from temporarily stowed location and install in HRF Rack 1.

7.2 Insert Drawer slides into Rack guides, push Drawer into Rack past Retention Mechanism (~5 inches).

7.3 Drawer Handle Lock Buttons → UNLOCK
Press Standard Handle Release Buttons, rotate Standard Handles down 90°.

7.4 Push Drawer into Rack until fully seated

7.5 Rotate Drawer Handles up 90° to closed position (audible click).
Drawer Handle Lock Buttons → LOCK

WARNING

Drawer handle captive bolts and restraining bolts must be torqued 95-105 in-lbs to ensure proper fit of the drawer into the EXPRESS Transportation Rack for structural and safety purposes.

8. INSTALLING DRAWERS INTO MPLM

8.1 Retrieve HRF Workstation, Calibration Module, and two silver-plated bolts from temporarily stowed location and transport to ETR.

MPL1A3_B1 8.2 Install HRF Workstation into ETR.

8.3 Fasten captive bolt in the right side handle of the HRF Workstation (Ratchet Wrench 3/8” Drive; 6" Long, 3/16" Hex Head).

8.4 Retrieve one silver-plated bolt and lubricate bottom third of bolt threads with a small amount of Braycote 601.
Clean excess lubricant with Dry Wipe, if necessary, and discard.

8.5 Fasten silver-plated bolt (restraining bolt) on left side handle of the HRF Workstation until secure (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

8.6 Torque captive bolt and restraining bolt to 100 in-lbs [(40-200 in-lbs) Trq Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head].

MPL1A3_B2 8.7 Install Calibration Module into ETR.

8.8 Fasten captive bolt in the right side handle of the Calibration Module (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

8.9 Retrieve one silver-plated bolt and lubricate bottom third of bolt threads with a small amount of Braycote 601.
Clean excess lubricant with Dry Wipe, if necessary, and discard.

8.10 Fasten silver-plated bolt (restraining bolt) on left side handle of the Calibration Module until secure (Ratchet Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head).

8.11 Torque captive bolt and restraining bolt to 100 in-lbs [(40-200 in-lbs) Trq Wrench, 3/8” Drive; 6" Long, 3/16" Hex Head].

9. CONCLUDING OPERATIONS

9.1 Unstow Cable Ties (4) and temp stow.

LAB1S2_H2 9.2 Retrieve two HRF Rack Acoustic Closeouts from temp stow. Attach HRF Rack Acoustic Closeouts to the top and bottom of the HRF Standard Stowage Drawer using Cable Ties.

> NOTE
> Cable Ties can be chained together in order to attach the HRF Rack Acoustic Closeout to Workstation 2.

LAB1S2_G1 9.3 Retrieve one HRF Rack Acoustic Closeout from temp stow. Attach HRF Acoustic Closeout to Workstation 2 using Cable Ties per crew discretion.

LAB1S2_A2 9.4 sw RACK POWER → ON

RESTOW tools, parts, and materials.

Calibration Module	TO: ETR (per Transfer List)
HRF Standard Stowage Drawer (labeled HRF Renal Stone Hardware)	TO: HRF Rack 1
HRF Workstation	TO: ETR (per Transfer List)
Workstation 2	TO: HRF Rack 1

TO: FD, CAPCOM, FAO, RENDEZVOUS, PROP, GC
FROM: FDO
SUBJECT: NOMINAL MANEUVER TIGS

COPIES: 1

	MET	
NC-4	001:15:55:07.600	
NCC	001:16:29:09.000	
TI	001:17:26:51.000	PET = 0:0 ; SS – 38.5 MIN
MC1	001:17:46:51.000	
MC2	001:18:16:45.000	ET = 0:0
MC3	001:18:33:45.000	MC2 + 17 MIN
MC4	001:18:43:45.000	MC2 + 27 MIN

1/ 1

PRELIMINARY ORBIT MANEUVER PAD FOR NC-4 (RNDZ C/L PG. 3-2)

OMS BOTH	1	X
L	2	
R	3	
RCS SEL	4	

( ) +X
( ) -X
( ) MULTI-AXIS

TV ROLL	5	000
TRIM LOAD P	6	(+) 0.7
LY	7	(-) 5.7
RY	8	(+) 5.7
WT	9	247847
TIG	10	01/15:55:07.6
TGT PEG 7 ΔVX	19	(+) 070.1
ΔVY	20	(+) 000.0
ΔVZ	21	(+) 001.9

BURN ATT

R	24	0	8	8
P	25	2	3	3
Y	26	0	3	3

ΔVTOT		070.1
TGO		00:44
VGO X		(+) 067.7
VGO Y		(+) 000.0
VGO Z		(+) 018.3

TGT	HA	HP
	186	(+) 173

NOTES

OMS GMBL CK:

	PRE	POST-BURN
L PRI		X
L SEC		
R PRI		X
R SEC		
NONE	X	

RCS I'CNCT:
- ( ) L OMS → RCS
- ( ) R OMS → RCS
- (X) NONE

DOWN MODE OPTIONS:
- (X) 2 OMS → 1 OMS
- ( ) 1 OMS → RCS
- ( ) NONE

OMS HE REG TEST:

[L] [R] OMS HE P/VAP ISOL

	GPC	OP	CL
A	X		
B		X	

-X RCS BURNS:

	BURN ATT	LVLH ATT
P	N/A	
Y		
OM 17		

ORBIT BURN MONITOR

GPC FILL-INS 1 (3)

- (X) CRIT BURN
- ( ) NON-CRIT BURN

MAX TIG SLIP___ MIN.

( ) DO NOT UPDATE TIG
( ) UPDATE TIG AFTER [ ] MIN.

1

PRELIMINARY ORBIT MANEUVER PAD FOR Ti (RNDZ C/L PG. 3-6)

OMS BOTH 1 [ ]
L 2 [X]
R 3 [ ]
RCS SEL 4 [ ]

[ ] +X
[ ] -X
[ ] MULTI-AXIS

TV ROLL 5 [000]

TRIM LOAD P 6 [(+)0.7]
LY 7 [(+)4.7]
RY 8 [(-)4.8]

WT 9 [246093]

TIG 10 [01/17:26:51.0]

TGT PEG 7 ΔVX 19 [(+)013.9]
ΔVY 20 [(+)000.3]
ΔVZ 21 [(+)000.1]

Ti DELAY

TGT PEG 7 ΔVX 19 [( ) .]
ΔVY 20 [( ) .]
ΔVZ 21 [( ) .]

NEW Ti (BASETIME) [01/18:58:12.0]

BURN ATT

R 24 [084]
P 25 [244]
Y 26 [031]

ΔVTOT [013.9]
TGO [00:18]

VGO X [(+)013.1]
VGO Y [(+)002.7]
VGO Z [(+)003.5]

TGT HA [190] HP [(+)178]

NOTES

OMS GMBL CK:

	PRE	POST-BURN
L PRI		
L SEC		
R PRI		
R SEC		
NONE	X	X

RCS I'CNCT:
[ ] L OMS → RCS
[ ] R OMS → RCS
[X] NONE

DOWN MODE OPTIONS:
[ ] 2 OMS → 1 OMS
[X] 1 OMS → RCS
[ ] NONE

OMS HE REG TEST:
[L] R OMS HE P/VAP ISOL

GPC	OP	CL
A	X	
B		X

-X RCS BURNS:

N/A

	BURN ATT	LVLH ATT
P		
Y		
OM 17		

ORBIT BURN MONITOR

GPC FILL-INS 1 (3)

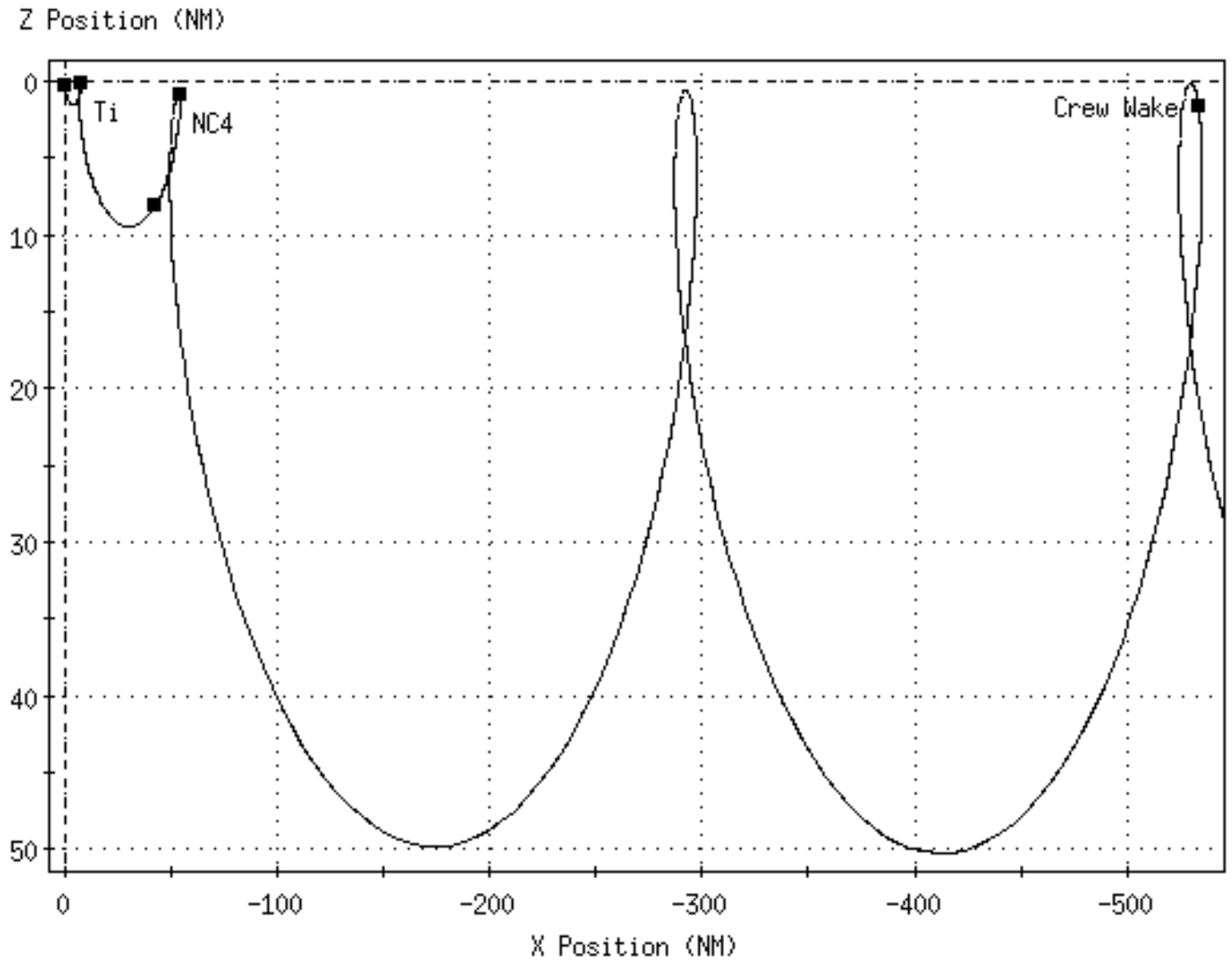
[X] CRIT BURN
[ ] NON-CRIT BURN

TIG SLIP: If Ti not started by nominal TIG + ___ min (G34 as reqd), reload original TIG and go to Ti DELAY, 5-27

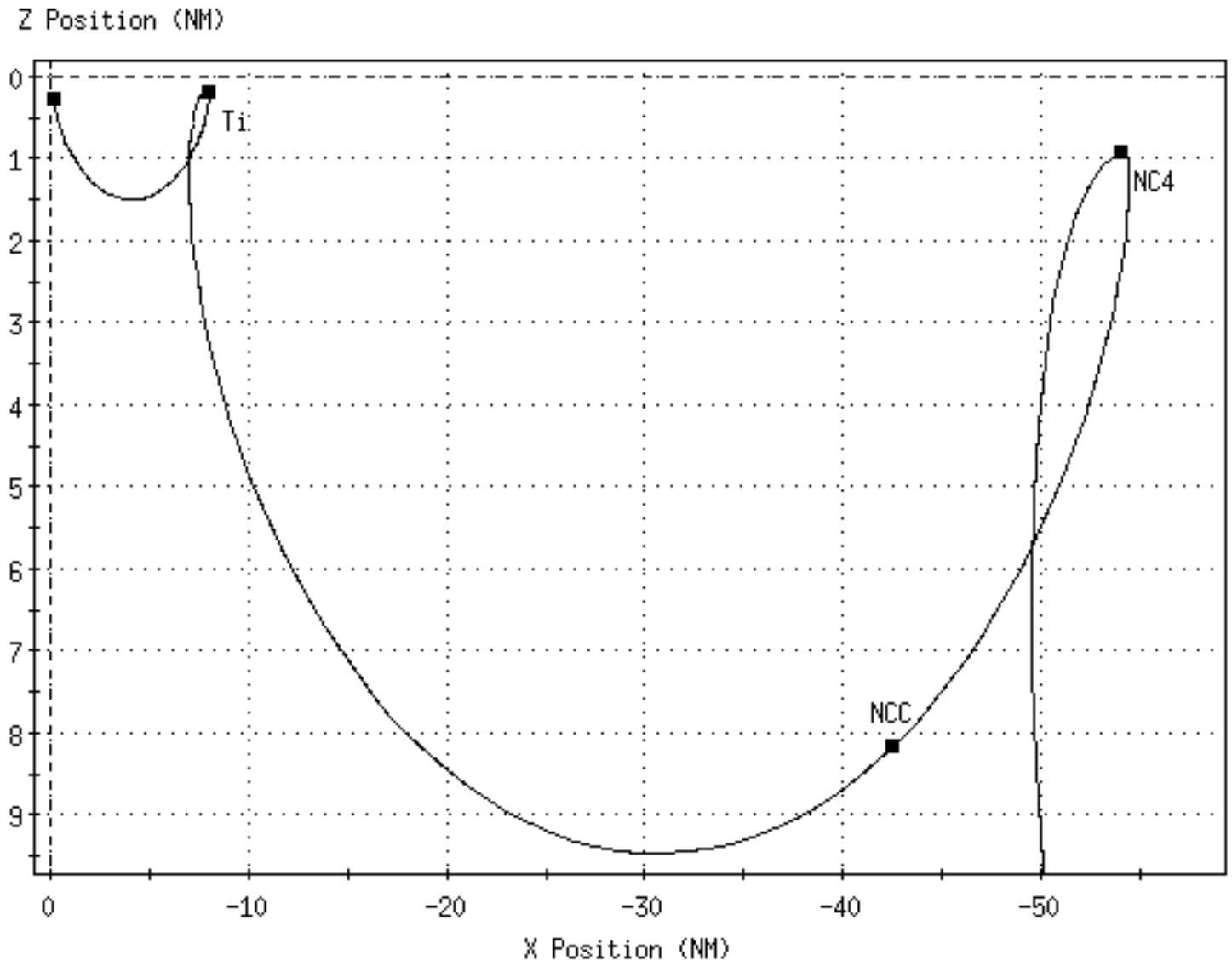
Max Ti DELAY TIG slip ___ min.

[ ] DO NOT UPDATE TIG
[ ] UPDATE TIG AFTER ___ MIN.

1


Z Position (NM)
0
10
20
30
40
50
Ti
NC4
Crew Wake
0
-100
-200
-300
-400
-500
X Position (NM)

1


Z Position (NM)
0
1
2
3
4
5
6
7
8
9
Ti
NC4
NCC
0
-10
-20
-30
-40
-50
X Position (NM)

1