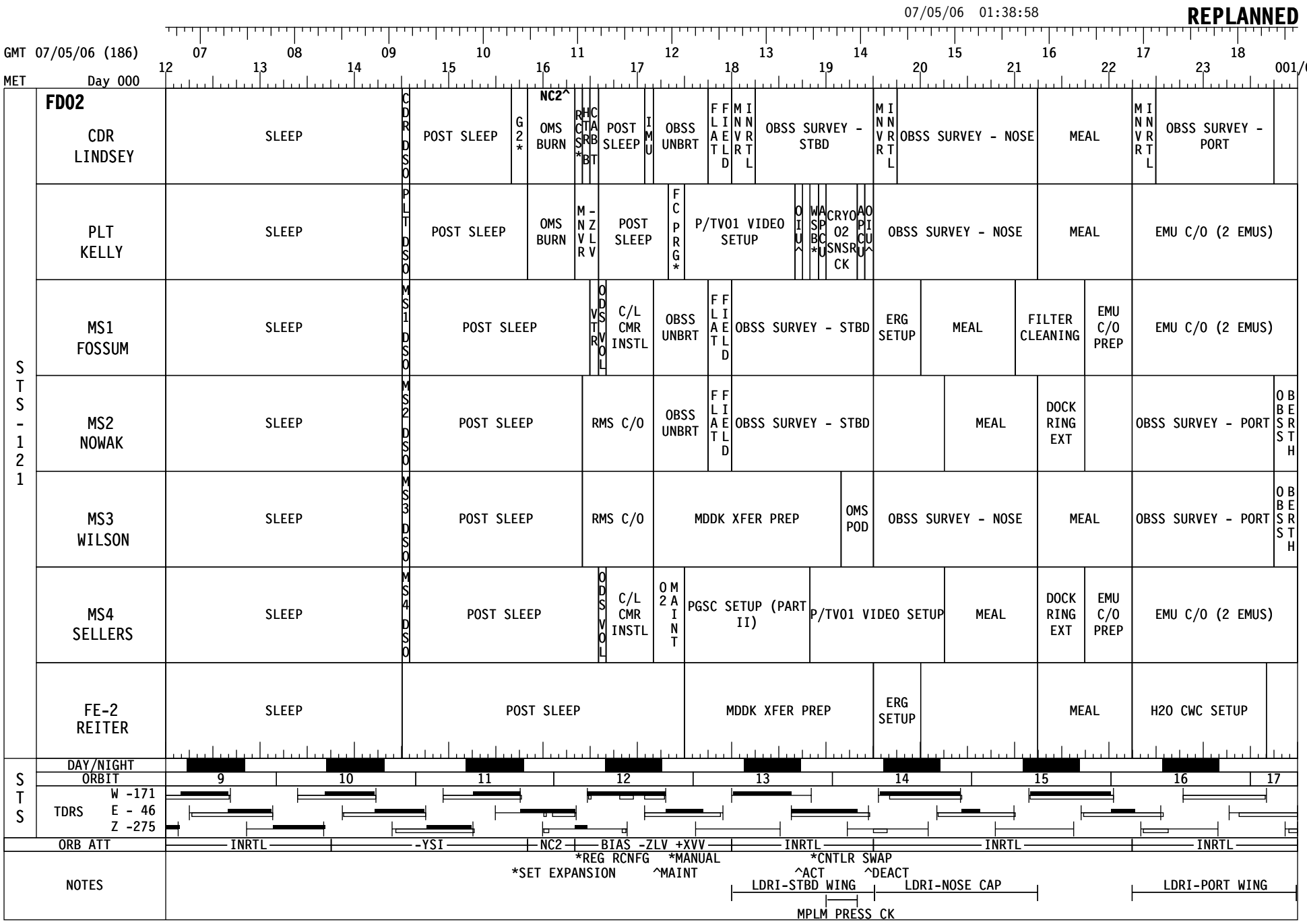
STS-121 / ULF1.1

FD 02 Execute Package

MSG	Page(s)	Title
005A	1 - 2	FD02 Summary Timeline **(pdf)**
002B	3 - 13	FD02 Flight Plan Revision **(pdf)**
003A	14 - 15	FD02 Mission Summary **(pdf)**
004	16 - 26	EVA Tool Config Deltas **(pdf)**
006	27	RCS Jet Reprioritization **(pdf)**

Approved by FAO: *L. Eadie*

Last Updated: Jul 5 2006 10:12AM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v2.04.0003*


07/05/06 01:38:58
REPLANNED
GMT 07/05/06 (186)
MET Day 000
12 13 14 15 16 17 18 19 20 21 22 23 001/00
07 08 09 10 11 12 13 14 15 16 17 18
STS-121
FD02
CDR LINDSEY
SLEEP
CDR DSO
POST SLEEP
G2*
NC2^
OMS BURN
RCS*
HTR BT
CAB
POST SLEEP
IMU
OBSS UNBRT
FLT AT
FIELD
MNVR
INRTL
OBSS SURVEY - STBD
MNVR
INRTL
OBSS SURVEY - NOSE
MEAL
MNVR
INRTL
OBSS SURVEY - PORT
PLT KELLY
SLEEP
PLT DSO
POST SLEEP
OMS BURN
M-NVR
ZLV
POST SLEEP
FCPRG*
P/TVO1 VIDEO SETUP
OIU^
WSBC*U
CRYO O2 SNSR CK
AOPIU^
OBSS SURVEY - NOSE
MEAL
EMU C/O (2 EMUS)
MS1 FOSSUM
SLEEP
MS1 DSO
POST SLEEP
VTR
ODSVOL
C/L CMR INSTL
OBSS UNBRT
FLT AT
FIELD
OBSS SURVEY - STBD
ERG SETUP
MEAL
FILTER CLEANING
EMU C/O PREP
EMU C/O (2 EMUS)
MS2 NOWAK
SLEEP
MS2 DSO
POST SLEEP
RMS C/O
OBSS UNBRT
FLAT
FIELD
OBSS SURVEY - STBD
MEAL
DOCK RING EXT
OBSS SURVEY - PORT
OBSS
BERTH
MS3 WILSON
SLEEP
MS3 DSO
POST SLEEP
RMS C/O
MDDK XFER PREP
OMS POD
OBSS SURVEY - NOSE
MEAL
OBSS SURVEY - PORT
OBSS
BERTH
MS4 SELLERS
SLEEP
MS4 DSO
POST SLEEP
ODSVOL
C/L CMR INSTL
O2
MAINT
PGSC SETUP (PART II)
P/TVO1 VIDEO SETUP
MEAL
DOCK RING EXT
EMU C/O PREP
EMU C/O (2 EMUS)
FE-2 REITER
SLEEP
POST SLEEP
MDDK XFER PREP
ERG SETUP
MEAL
H2O CWC SETUP
STS
DAY/NIGHT
ORBIT 9 10 11 12 13 14 15 16 17
TDRS W -171
TDRS E - 46
TDRS Z -275
ORB ATT
INRTL -YSI NC2 BIAS -ZLV +XVV INRTL INRTL INRTL
*REG RCNFG *MANUAL
*SET EXPANSION ^MAINT
*CNTLR SWAP
^ACT ^DEACT
NOTES
LDRI-STBD WING
LDRI-NOSE CAP
LDRI-PORT WING
MPLM PRESS CK

07/05/06 01:38:58 **REPLANNED**

GMT 07/05/06 (186): 19 20 21 22 23 07/06 01 02 03 04 05 06

MET Day 001: 001/00 01 02 03 04 05 06 07 08 09 10 11 12

FD02

STS-121

Crew	Activities
CDR LINDSEY	MNVR; -ZLV; PRE SLEEP; MNVR; INRTL; PRE SLEEP; NC3^ OMS BURN; MNVR; -YSI; G2*; PMC A/G; PRE SLEEP; SLEEP (MNVR)
PLT KELLY	PRE SLEEP; RNDZ TOOLS C/O; PRE SLEEP; SLEEP
MS1 FOSSUM	SRMS SURVEY; PRE SLEEP; VTR PB; PRE SLEEP; SLEEP
MS2 NOWAK	OBSS BERTH; SRMS SURVEY; PRE SLEEP; SLEEP
MS3 WILSON	OBSS BERTH; SRMS SURVEY; PRE SLEEP; SLEEP
MS4 SELLERS	PRE SLEEP; PGSC RCNFG; RNDZ TOOLS C/O; PRE SLEEP; SLEEP
FE-2 REITER	CWC; TERM 1; PRE SLEEP; SLEEP

STS

DAY/NIGHT	
ORBIT	17 18 19 20 21 22 23 24 25
TDRS	W -171; E - 46; Z -275
ORB ATT	INRTL; BIAS -ZLV-XVV; COMM; NC3; -YSI

*SET CONTRACTION

NOTES

MSG 002B - FD02 FLIGHT PLAN REVISION

MSG INDEX

1. HAZMAT DATA FILE UPDATE

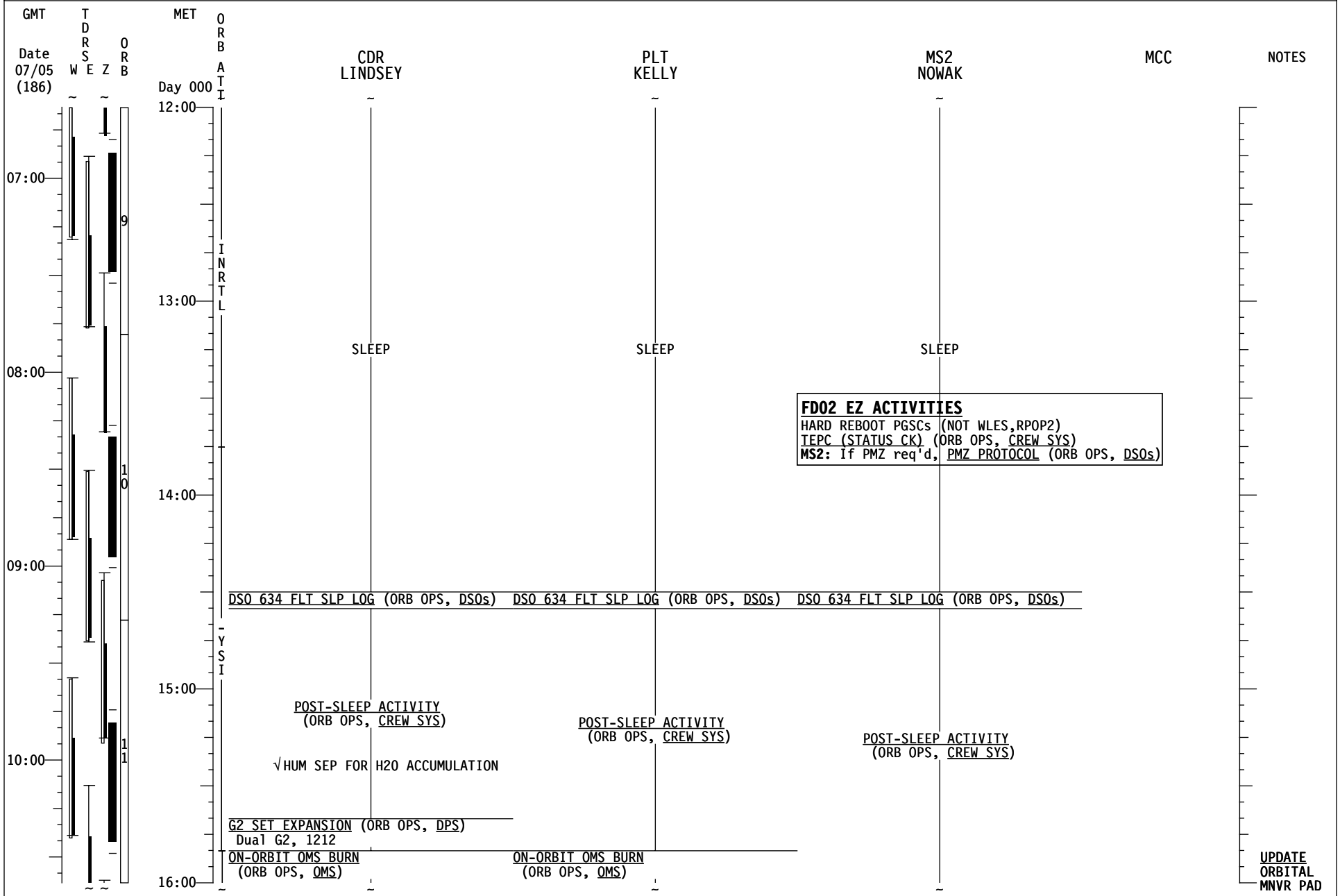
   The MCC has uplinked the latest HazMat data file to all networked PGSCs onboard.

2. PGSC NETWORK

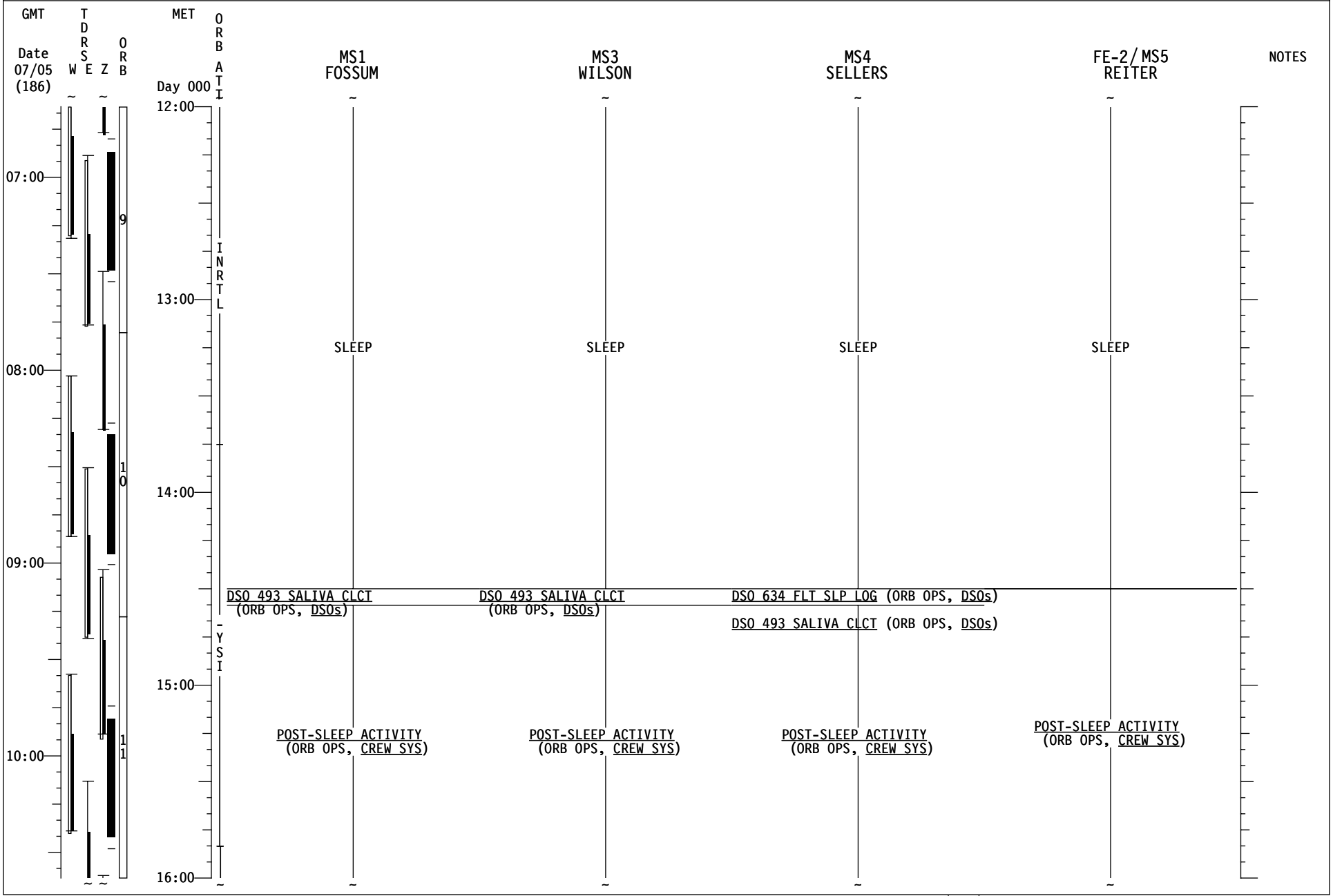
   We noticed that many of the PGSCs were not on the network overnight. We have kept PGSC Setup, Part 2 task in the timeline for Piers. Please let us know if you have encountered any issues or have questions.

3. REPLACE PAGES 3-8 THROUGH 3-17.

STS-121/ULF 1.1 (FD 02) — REPLANNED



STS-121/ULF 1.1 (FD 02) — REPLANNED



STS-121/ULF 1.1 (FD 02) — REPLANNED

GMT Date 07/05 (186) | MET Day 000 | TDRS W E Z | ORB 1 2 3 4

ORB ATT: NC2 < NC2 TIG (16:15) | BIAS -ZLV +XVV | INRTL | INRTL

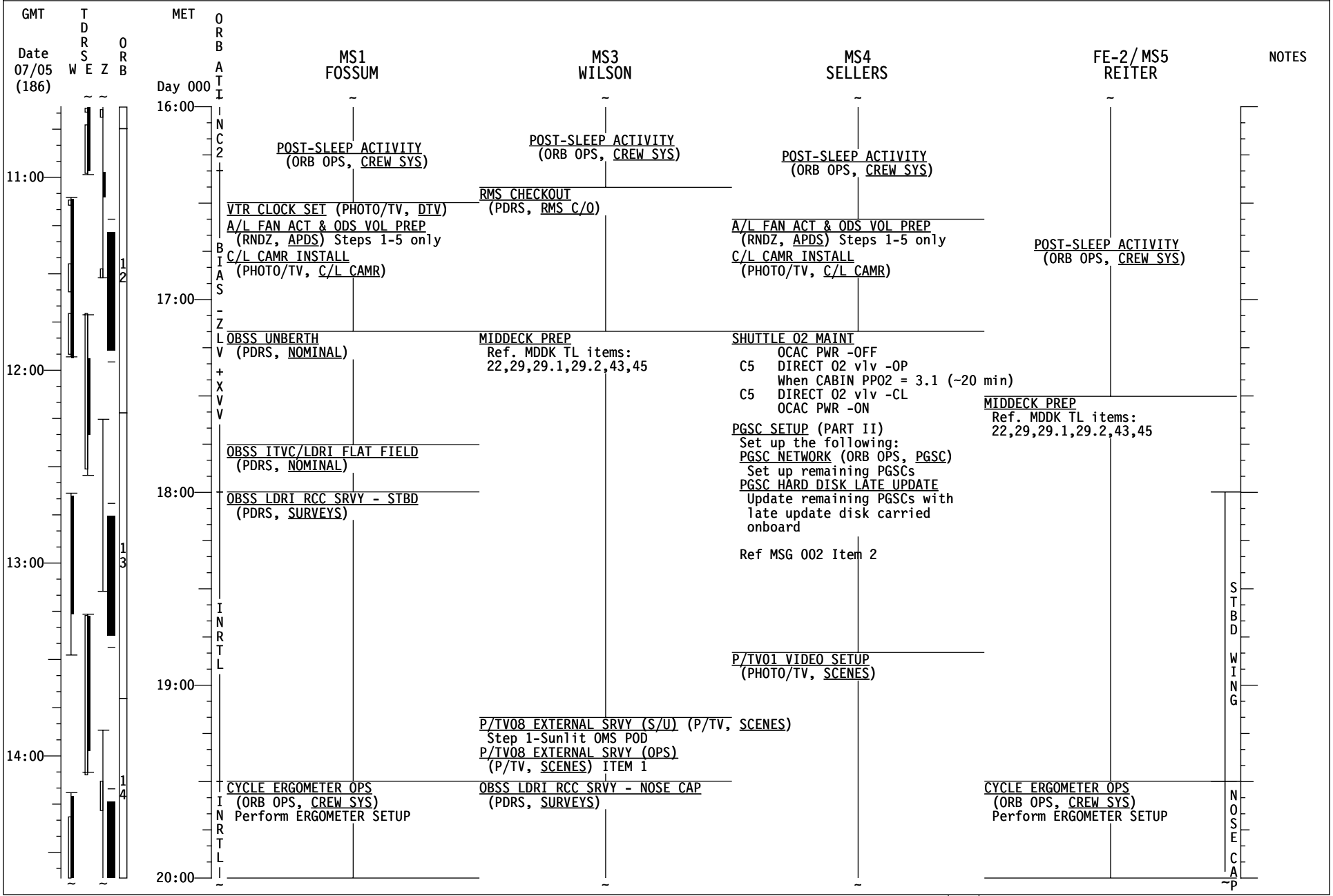
MET	CDR LINDSEY	PLT KELLY	MS2 NOWAK	MCC
16:00	ON-ORBIT OMS BURN (ORB OPS, OMS)	ON-ORBIT OMS BURN (ORB OPS, OMS)		
		< NC2 TIG (16:15)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
	RCS REG RCNFG (ORB OPS, RCS) HTR RCNFG-CNFG B (ORB OPS, EPS) CABIN TEMP CONTROLLER RECNFG 2(1) (ORB OPS, ECLS)	MNVR (TRK) BIAS -ZLV +XVV TG=2 BV=5 P=90 Y=0 OM=135 A1/AUTO/VERN Init TRK	RMS CHECKOUT (PDRS, RMS C/O)	
11:00				
	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
17:00	IMU STAR OF OPTY ALIGN (ORB OPS, GNC) OBSS UNBERTH (PDRS, NOMINAL)		OBSS UNBERTH (PDRS, NOMINAL)	
		FC PURGE - MANUAL (ORB OPS, EPS)		
12:00		DATE/TIME SET (PHOTO/TV, DCS 760) R12 VPU POWER -ON		
	OBSS ITVC/LDRI FLAT FIELD (PDRS, NOMINAL)	P/TVO1 VIDEO SETUP (PHOTO/TV, SCENES) Prior to start, verify Late Update Complete	OBSS ITVC/LDRI FLAT FIELD (PDRS, NOMINAL)	
18:00	MNVR STBD SURVEY TG=4 BV=5 P=0 Y=49 OM=115 A1/AUTO/VERN/ Init TRK on MCC GO OBSS LDRI RCC SRVY - STBD (PDRS, SURVEYS)		OBSS LDRI RCC SRVY - STBD (PDRS, SURVEYS)	
13:00		SSP1 OIU PWR - OIU 1 ON (tb-UP) R2 BLR CNTLR/HTR (three) - B		
		ON MCC GO: SSP1 APCU 1 OUTPUT RLY - CL (tb-gray) CRYO O2 TK HTR SNSR CK (ORB OPS, EPS)		MPLM: 1.1O1 MPLM ENVIRONMENT CHECK Steps 1 & 4 PRESS CK (NO fan)
19:00		**ON MCC GO:** SSP1 APCU 1 OUTPUT RLY - OP (tb-bp) SSP1 OIU PWR - OFF (tb-bp)		
14:00	MNVR NOSE CAP SURVEY TG=4 BV=5 P=331 Y=0 OM=282 A1/AUTO/VERN/ Init TRK on MCC GO OBSS LDRI RCC SRVY - NOSE CAP (PDRS, SURVEYS)	OBSS LDRI RCC SRVY - NOSE CAP (PDRS, SURVEYS)		
20:00				

NOTES

- **UPDATE ORBITAL MNVR PAD**
- UPLINK β21°+MASK+ BOX A1 26<AZ<110 -90<EL<-30
- UPLINK β21°+MASK+ BOX A2 -27<AZ<110 -90<EL<0 BOX A3 -81<AZ<110 -67<EL<-10
- UPLINK β21°+MASK+ BOX A4 -122<AZ<110 -90<EL<45
- UPLINK β21°+MASK

STBD WING — NOSE CAP

STS-121/ULF 1.1 (FD 02) — REPLANNED



STS-121/ULF 1.1 (FD 02)

REPLANNED

GMT Date 07/05 (186) | TDRS W E Z | ORB | MET Day 000 | ORBITI

CDR LINDSEY

20:00 OBSS LDRI RCC SRVY - NOSE CAP
(PDRS, SURVEYS)

MEAL

MNVR PORT SURVEY
TG=4 BV=5 P=0 Y=334 OM=310
A1/AUTO/VERN/ Init TRK on MCC GO

OBSS LDRI RCC SRVY - PORT
(PDRS, SURVEYS)

PLT KELLY

OBSS LDRI RCC SRVY - NOSE CAP
(PDRS, SURVEYS)

MEAL

EMU CHECKOUT
(EVA, CHECKOUTS)
Perform for EMUs 3006 & 3015
Upon completion, stow SCOFs
in EMU Sys Transfer Bag #1

Post EMU C/O:
A/L FAN BYPASS
(RNDZ, APDS)

MS2 NOWAK

MEAL

DOCKING MECH INITIALIZATION
DOCKING MECH POWERUP
DOCKING RING EXTENSION
DOCKING MECH POWERDOWN
(RNDZ, APDS)

OBSS LDRI RCC SRVY - PORT
(PDRS, SURVEYS)

OBSS BERTH
(PDRS, NOMINAL)

MCC

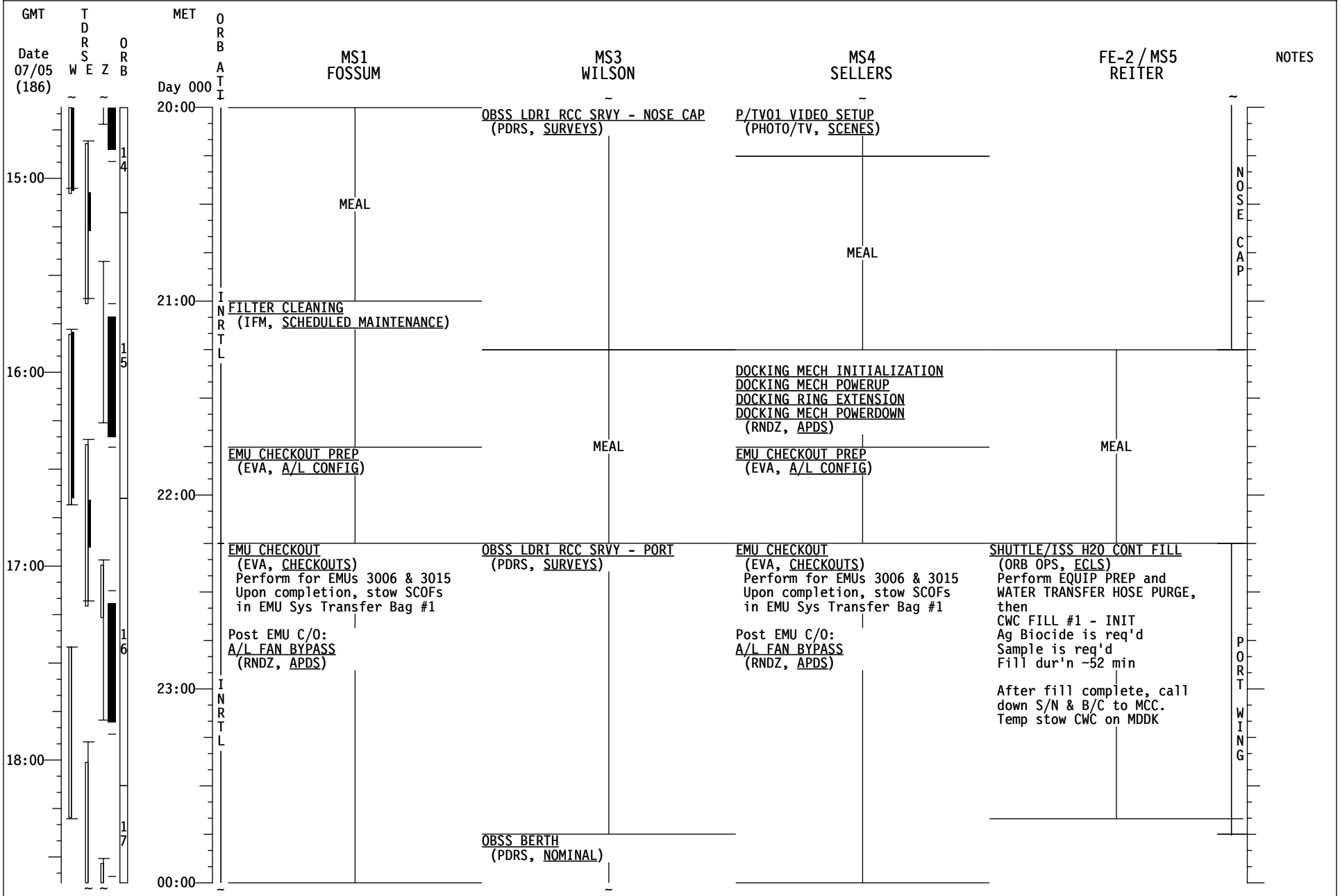
NOTES

NOSE CAP

PORT WING

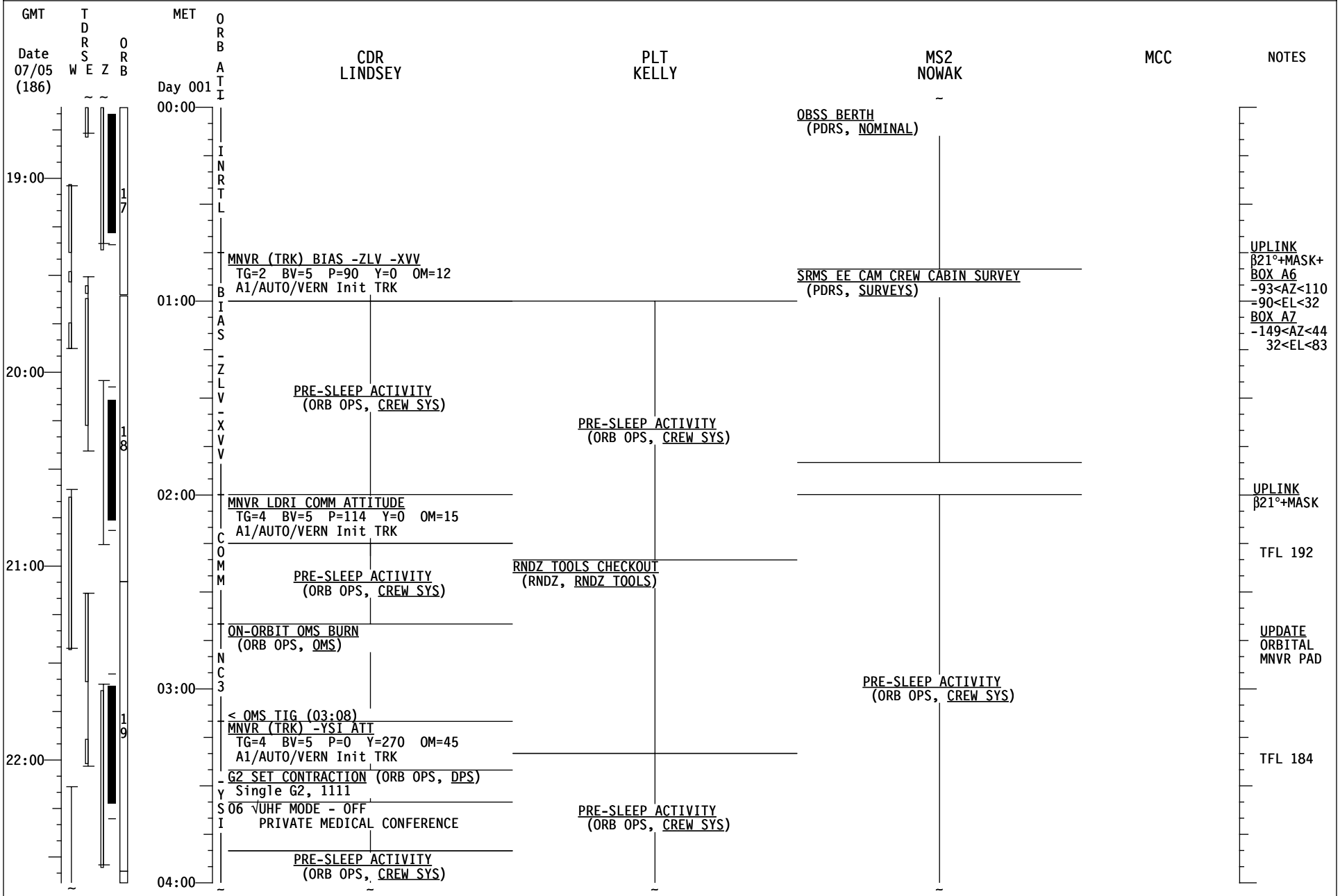
UPLINK
β21°+MASK+
BOX A2
-27<AZ<110
-90<EL<0

STS-121/ULF 1.1 (FD 02) — REPLANNED

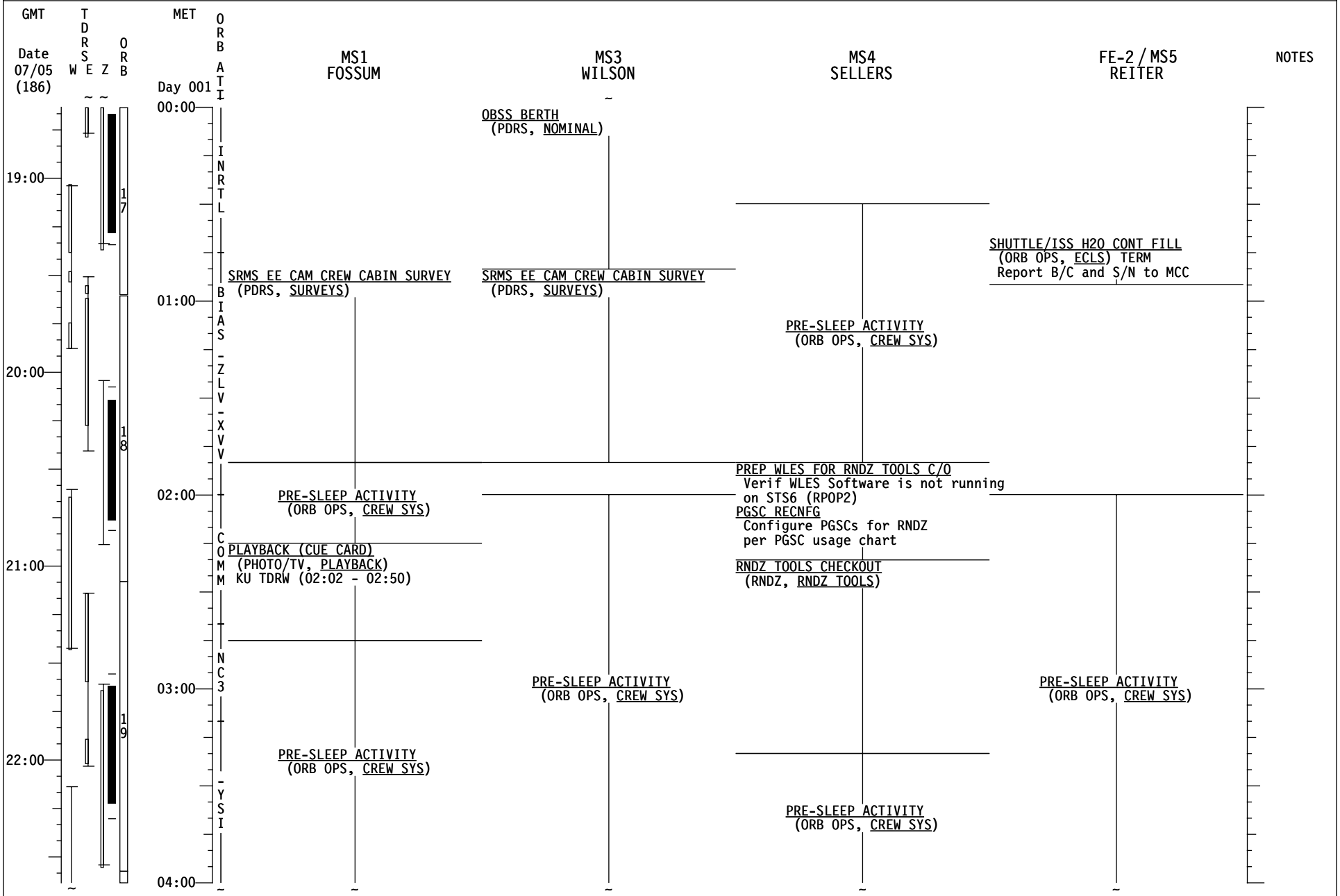


STS-121/ULF 1.1 (FD 02)

REPLANNED



STS-121/ULF 1.1 (FD 02) — REPLANNED



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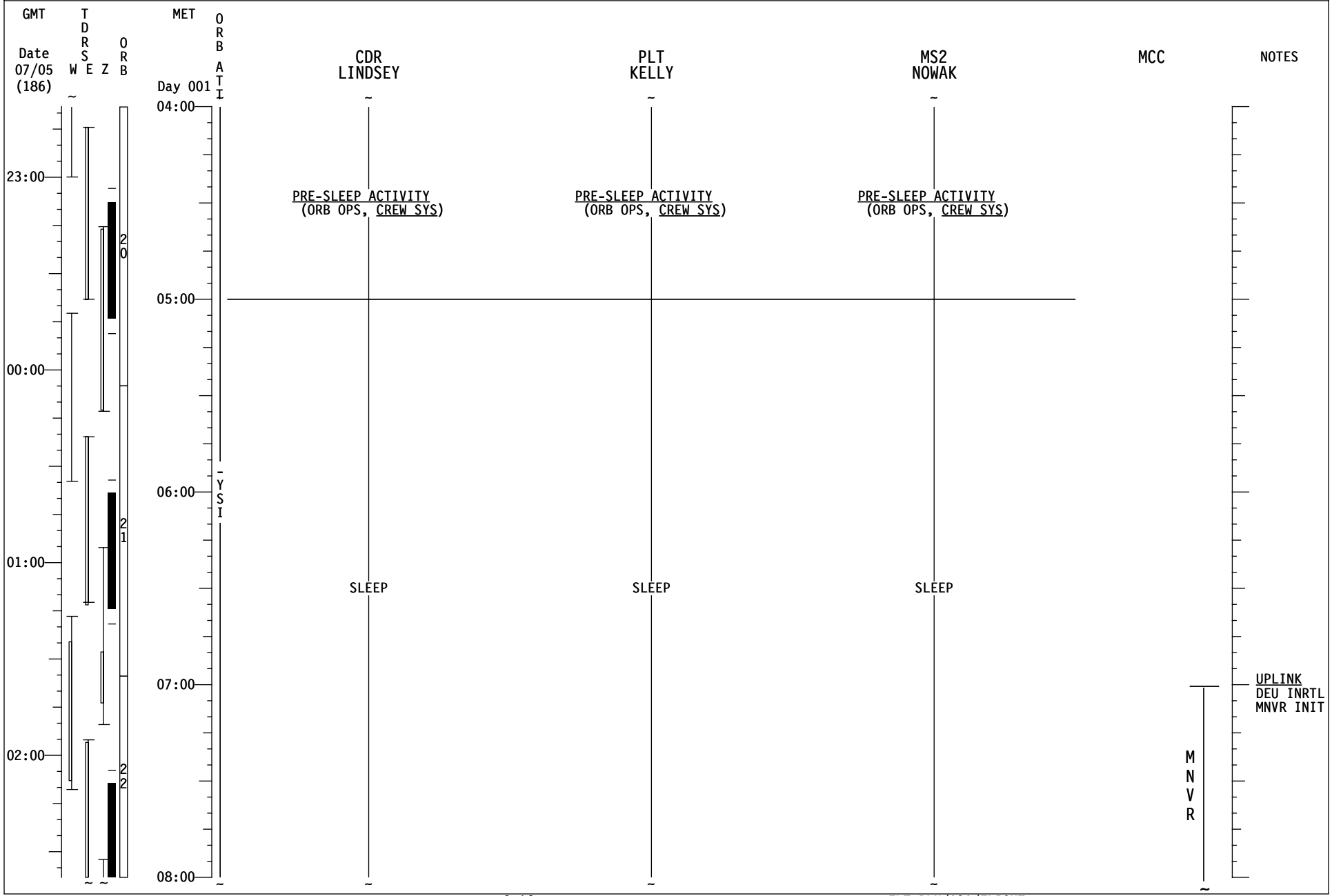
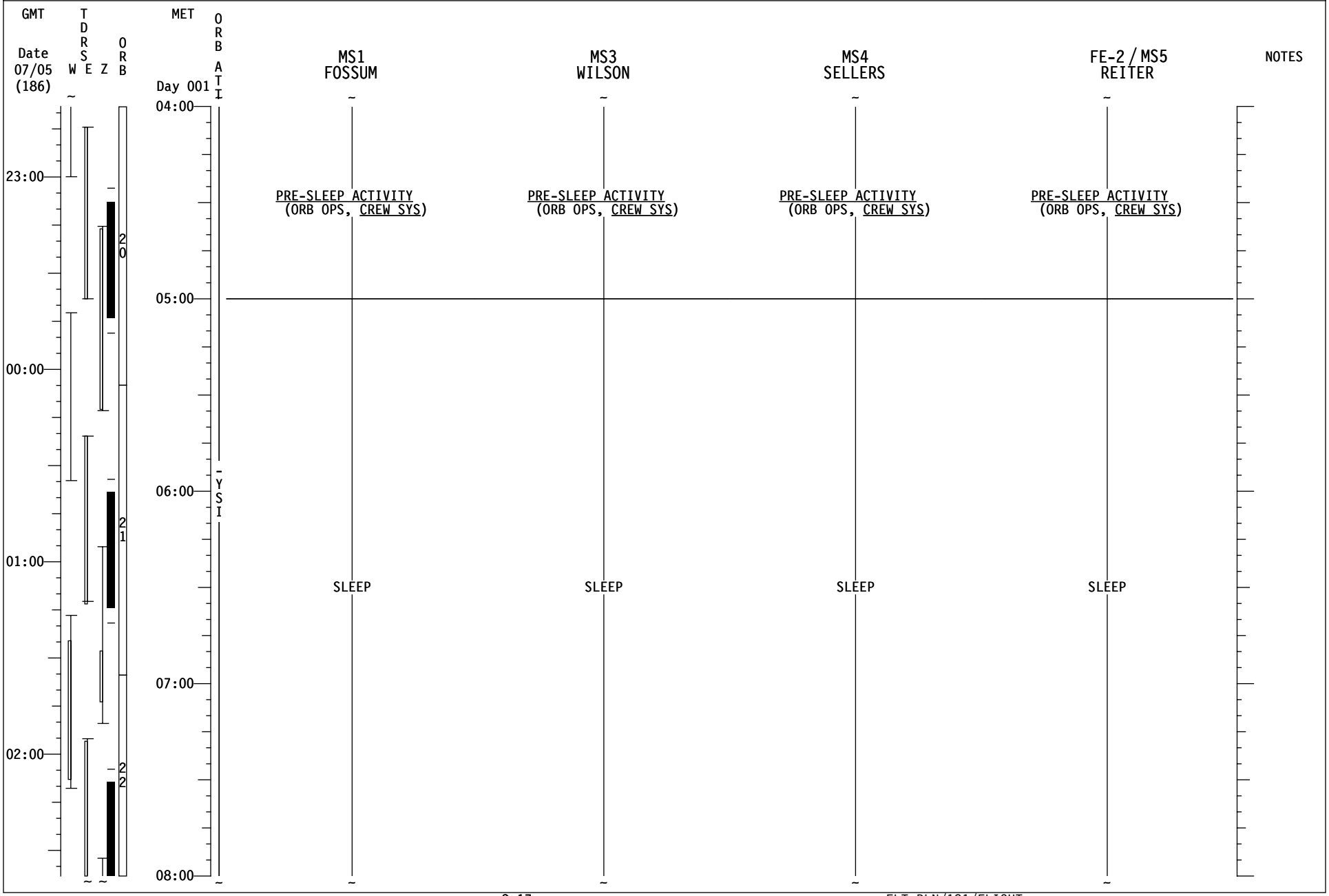


STS-121/ULF 1.1 (FD 02)

REPLANNED



Good Morning Discovery!

Congratulations! The launch looked spectacular, especially with all the camera views. Thanks for working late last night, we appreciate it. And to top it all off, there is an Aggie in space, a first - think of all the possibilities for new jokes.

The new attitude to keep L5L warm is working well. It's staying nice and toasty.

Due to timeline constraints, we have made NC2 a critical burn, therefore you will need to go to dual G2 this morning at 15:45 MET.

Piers, a question if you don't mind - for WLES, we were wondering if the 2nd WLES LRU was not inside MA9J when you unstowed the WLES equipment or did it just get misplaced accidentally? Also, since we are using the standard mode on the WLES, we would like to verify the WLES software is not running on the back-up WLES (RPOP2) machine. Thanks.

And just to get all of the DPS bonus points possible, please remember to leave the IDP on for 30 seconds before powering off.

YOUR CURRENT ORBIT IS: 122 X 84 NM

NOTAMS:

LAJES – TACAN 45X OUT OF SERVICE TILL 10 JULY
GUAM (GUA) – RWY 06L/24R CLOSED
AMBERLEY (AMB) – CLOSED
RIO GUAM - OCEANA (NTU) - RWY 23L/05R CLOSED
RIO GALLEGOS (AWG) - NOT APPROVED
ISTRES (FMI) – 33 RWY REMAINING MARKERS AVAIL ARE 300,600,900M
ASCENSION (HAW) – TACAN UNRELIABLE 03 JUL 18:32 TIL 05 JUL 18:30

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB 18 – 1/02:07 (FEW060 SCT250, 240@14P20 – EDW22 ONLY)
EDW22 ORB 33 – 2/00:26 (SKC, 240@14P20 – EDW22 ONLY)

OMS TANK FAIL CAPABILITY:

PRE-NC3		POST NC-3	
L OMS FAILS:	YES	L OMS FAILS:	YES
R OMS FAILS:	YES	R OMS FAILS:	YES

LEAKING OMS PRPLT BURN:

PRE-NC3		POST-NC-3	
L OMS LEAK:	ALWAYS BURN OOP	L OMS LEAK:	ALWAYS BURN OOP
R OMS LEAK:	ALWAYS BURN OOP	R OMS LEAK:	ALWAYS BURN OOP

PRE-NC3 OMS QUANTITIES(%)

L OMS OX = 59.9 R OMS OX = 59.8
FU = 60.3 FU = 60.4

POST NC-3 OMS QUANTITIES(%)

L OMS OX = 43.7 R OMS OX = 43.7
FU = 44.2 FU = 44.4

SUBTRACT I'CNCT COUNTER FOR CURRENT OMS QUANTITIES

DELTA V AVAILABLE:

PRE-NC3		POST-NC3	
OMS	580 FPS	OMS	411 FPS
ARCS (TOTAL ABOVE QTY1)	53 FPS	ARCS (TOTAL ABOVE QTY1)	54 FPS
TOTAL IN THE AFT	633 FPS	TOTAL IN THE AFT	465 FPS
ARCS (TOTAL ABOVE QTY2)	81 FPS	ARCS (TOTAL ABOVE QTY2)	82 FPS
FRCS (ABOVE QTY 1)	51 FPS	FRCS (ABOVE QTY 1)	51 FPS
AFT QTY 1	92 %	AFT QTY 1	92 %
AFT QTY 2	54 %	AFT QTY 2	54 %

SYSTEM	FAILURE	IMPACT	WORK AROUND
Crew Sys	Personal Hygiene Hose Leaking	Hose required to be disconnected to prevent leakage	PHH replaced with Red-Red Hose and Contingency Water Dispenser
ECLS #1	FES PRI B not controlling as expected. Erratic EVAP OUT Ts observed.	Possible loss of redundancy for FES controllers. Possible impact to CWC fills.	Switched to alternate FES controller, FES PRI - A. Nominal controller ops observed.
ECLS #2	L1 Right Flight Deck Smoke light did not light during Smoke Detection Circuit Test, Part B, Test 1. Subsequent testing showed light worked as expected.	None.	None.

Changes are required to the procedures below, based on Jeff's call downs during his Airlock Unstow and STS-121 Tools Pre-gather activities, the late addition of T-RAD to the flight, and some late serial number changes.

TOOLS COLLECTED ON ISS, FS 8-12
EVA TOOLS MANAGEMENT, FS 8-13

We've attached the updated procedures. Additional detailed rationale for the changes follows.

1. Jeff did not want to bend wire ties in order to stow them in a CTB, so all wire ties that have been found on ISS are in a brown mesh bag in A/L1O0
2. The result of the on-orbit BRT inspection is that BRT s/n 1017 will be returning along with s/n 1021. BRT s/n 1002 will remain on-orbit as a backup unit along with the two that you transfer from the shuttle.
3. With the addition of the BRTs to the return list, Jeff needed a larger CTB to hold everything, so the "BACKUP EVA HDW for RETURN AFTER EVAs" is now a full (vs. half) CTB, in A/L1O1
4. We inadvertently called out more 6-in wobble sockets in TOOLS COLLECTED ON ISS than exist onboard, so there will not be one in Crewlock Bag #1. You still have all the sockets you require for EVA 1, and the procedure will correctly have you relocate them for the following EVAs.
5. Both PGTs needed for EVA 1 have been configured with your EVA 1 hardware, so there is only one in the PGT Hardware CTB (it will be used on EVA 2)
6. Locations for the various bags have been noted now that Jeff has completed the pre-gather activities, and a few other changes simply add clarity
7. With the addition of T-RAD to the flight, the printer was moved to MF71H, and the Digital Flash CTB was moved to the Port Ceiling 1 bag

The changes have been made in all appropriate locations in both procedures. Pen & Ink changes that were made to your book pre-launch are denoted with double strike-through and blue text.

TOOLS COLLECTED ON ISS

EVA 1

Large ORU Bag s/n 1002, with internal tether loops (Labeled "EVA 1") (A/L1O1)

- ❑ Fish Stringer
  - ❑ PAD
  - ❑ EVA Ratchet
    - ❑ 6-Ext 7/16
  - ❑ WIF Adapter
  - ❑ Small EVA Trash Bag (2)
  - ❑ PGT (after PGT checkout)
    - ❑ 6-Ext 7/16
- ❑ Fish Stringer
  - ❑ Round Scoop
- ❑ Large ORU Bag s/n 1001 without internal tether loops (Labeled "RJMC")
  - ❑ Med ORU Bag

Digital Camera CTB (Full CTB s/n 1221, b/c 006717J, labeled "EVA Camera Accessories") (A/L1O1)

- ❑ Digital Cameras w/MLI (3) (121 uses 2)
- ❑ Camera mounts w/MLI (3) (121 uses 1)
- ❑ Flash Brackets w/MLI (3)

- ❑ Staging Bag and IV Bag configured per STS-121 EVA 1 TOOL CONFIG (except Velcro/Tape Caddy)
- ❑ All tethers in tether staging area, 85-ft safety tether #22, 55-ft safety tethers ~~(3~~(2), D-ring extenders (4), waist tethers (6)
- ❑ One WIF Adapter tethered in tether staging area
- ❑ ~~BRTs (2) standing by at tether staging area~~
- ❑ D-ring extender on A/L D-ring
- ❑ All wire ties collected in a brown mesh bag, in A/L1O0

- ❑ Full CTB s/n 1033, b/c 002918J (Labeled "BACKUP EVA HDW for RETURN AFTER EVAs") (A/L1O1)
  - ❑ RH swingarms (2)
  - ❑ MWS baseplates (2)
    - ❑ T-bars (2)
  - ❑ 85-ft Safety Tether #23
  - ❑ BRT s/n 1021, 1017

- ❑ IR Camera CTB, s/n 1352, b/c 010533J (NOD1O4_A2)
  - ❑ IR Camera 1257950-701, s/n 1001
    - ❑ Compact Flash Card , s/n 07
  - ❑ Compact Flash to PC card adapter SDZ12100650-301, s/n 1001

EVA 2

Crewlock Bag #1 (Labeled "EVA 2") (Crewlock Endcone)

- ❑ Socket Caddy
  - ❑ 2-Ext 7/16
  - ❑ 2-Ext 7/16
- ❑ Ballstack
- ❑ MUT EE

"PGT Hardware" CTB, s/n 1161, b/c 004155J (A/L1O1)

- ❑ PGT

EVA 3

NOTE: O2 actuator covers are installed via Systems procedures

EVA TOOLS MANAGEMENT

Flight Day 3 - EVA Tool Transfer

NOTE
Steps 1-6 are required prior to FD4 EVA 1 Tool Config
Steps 7-16 are required prior to FD8 EVA 3 Tool Config

1. From EV1 ECOK, obtain the Mesh Bags (3) labeled “SHUTTLE EVA X TOOLS”
2. Using the tables below, obtain items from each stowage location and distribute as indicated

Shuttle EVA1 Tools Bags (2)				
Locker	**Item Description**	**Qty.**	**Part No.**	**Serial No.**
Port Floor 1	Load Cell (IWIF)	□ 1	1F15470-1	1002
	Force Measurement Tool **Cover hook tip w/ gray tape**	□ 1	SED33103285-301	1003
	85-ft Safety Tether (# 26)	□ 1	SED33116109-307	1006
Port Floor 2	IUA Spare **Rmv tape/velcro from L.R. bolts**	□ 1	1F42993-503	0003
	IUA Blade Blocker	□ 2	1F15871	N/A
MF57O	Velcro/Tape Caddy	□ 1	SED33104207-301	1020
Ext A/L Floor	MWS Baseplate MWS Gimbal (T-bar)	□ 2 □ 2	SEG33110490-303 SEG33110493-305	1007, 1023 1006, 1007
	BRT	□ 2	SEG33110400-307	1009, 1001
	Adjustable Equipment Tether (+ 2 that transfer on EMUs) **Stow on MWS’s (2 - EV1, 3 - EV2)**	□ 5	SEG33106945-307	1012, 1016, 1034, 1067, 1068
	Sm-sm Retractable Equip Tether **Stow 6 on MWSs (3 each)**	□ 8	SEG33106164-381	4056, 4065, 4072, 4081, 4083, 4171, 4169, 4173
	Sm-sm/pip Retractable Equip Tether **Stow 1 on ea MWS**	□ 4	SEG33106164-383	4174, 4243, 4244, 4245
	Lg-Sm Retractable Equip Tether	□ 7	SEG33106164-385	4055, 4060, 4076, 4077, 4175, 4176, 4254
	85-ft Safety Tether (# 24)	□ 1	SED33116109-307	1004
	Short Wiretie	□ 30	SDG 33108130-001	N/A
	Long Wiretie	□ 30	SDG 33108130-003	N/A

Shuttle EVA 2 Tools Bag				
Locker	**Item Description**	**Qty.**	**Part No.**	**Serial No.**
Ext A/L Floor	Long Duration Tiedown Tether	□ 4	SEG33113860-301	1005 - 1008
MF57O	Right Angle Drive	□ 2	SEG33106925-305	1009, 1019
Port Floor 2	TUS FSE Knob	□ 1	SEG33119805-301	1001

3. Obtain the Digital Flash CTB (PORT CEILING 1)

Digital Flash CTB s/n 1105 Transfer entire CTB as is				b/c 004099J
Locker	**Item Description**	**Qty.**	**Part No.**	**Serial No.**
Port Ceiling 1	Digital Camera Flash Thermal Blanket Flash Bracket Bracket Thermal Blanket Camera Mount Mount Thermal Blanket	1 1 1 1 1 1	SEZ33117230-301 SEZ33117228-301 SED33117404-301 SED33117416-301 SED33113695-302 SED33117417-301	1007 1004 1004 1004 1032 1004
	Digital Camera Flash Thermal Blanket	2 2	SEZ33117230-301 SEZ33117228-301	1005, 1006 1002, 1003
	Flash Synch Cable Flash Synch (IR Sensor) Cover	3 3	SEZ33117231-301 SEZ33113449-308	1003 - 1005 1009 - 1011
	DCS EVA Power Cable	3	SEZ33117255-301	1003 - 1005
	Remote Shutter Cable	3	SED33112525-302	1008, 1009, 1014

4. Transfer SHUTTLE EVA X TOOLS bags and Digital Flash CTB to ISS A/L
5. Stow Retractable Tethers and Adjustable tethers from bags on Tether Staging Area
6. Stow Wire ties from bags in brown mesh bag (A/L1O0)

EVA TOOLS MANAGEMENT (Cont)

Flight Day 3 - EVA Tool Transfer (Cont)

CRM Bag Assembly:

7. Remove, temp stow foam wedge on top of CRM bag (PORT CEILING 1)
8. Remove CRM bag and lid (SED33118750-301 s/n 1003)
9. Stow foam wedge in PORT CEILING 1
10. Assemble lid onto CRM bag:
    a. Separate door stay flaps

Figure 1.– Lid and hinge flaps with quarter turn fastener openings

    b. Install quarter turn fasteners (2) and then mate hinge Velcro on interior and exterior sides of lid

Figure 2.– Lid hinge installed

11. Remove large foam block from interior of bag
12. Remove foam blocks (6) from CRM Applicator stowage areas, stow in Ziploc in PORT CEILING 1
13. Stow tools from large foam block in CRM bag (stow ziploc bags from spatulas with foam in PORT CEILING 1):

CRM Bag				
	Item Description	**Qty.**	**Part No.**	**Serial No.**
Foam block	Temperature Probe w/gooseneck	□ 1	SED33118700-303	1004
	2-in spatula	□ 5	SED33118187-301	1001 - 1005
	5-in spatula	□ 1	SED33118187-302	1015

14. Stow foam block with foam wedge in PORT CEILING 1
15. Verify the following tools are already stowed in the CRM Bag:

CRM Bag				
	Item Description	**Qty.**	**Part No.**	**Serial No.**
CRM Bag	CRM Applicator w/ TMG	□ 2	SED33119446-301	1004, 1005
	EVA Wipe (in pouches)	□ 6	SED33116397-701	N/A
	Large Trash Bag	□ 1	SEG33106937-301	1007

EVA TOOLS MANAGEMENT (Cont)

Flight Day 3 - EVA Tool Transfer (Cont)

16. Install remaining tools in bag, ensure all Velcro straps are used to retain tools

CRM Bag				
Locker	**Item Description**	**Qty.**	**Part No.**	**Serial No.**
Ext A/L Floor	Fish Stringer	□ 1	SED39127200-701	1033
Port Ceiling 1	5-in spatula **Stow in Lg Trash Bag**	□ 1	SED33118187-302	1 of: 1014, 1016, 1017
	Palette **Rmv film from both sides** **Avoid scratching surface**	□ 2	SED33118670-301	1001, 1002
	CRM Applicator w/ TMG	□ 1	SED33119446-301	1006
	CRM Applicator Nozzle **Stow in ziploc**	□ 3	SED33119448-301	3 of: 1004 - 1008
	Broom Clip Caddy	□ 2	GD2051000-301	1011, 1012
	EVA Wipe - **install on Fish Stringer (1 wipe is for Staging Bag)**	□ 8	SED33116397-701	N/A
	SSRMS LEE CLA Cover	□ 1	51617-0052-1	201
MF57O	Gap Spanner	□ 1	SEG33109930-307	1071

Flight Day 4 - RJMC Transfer

1. Retrieve RH swingarms from ISS A/L, transfer to MPLM

Full CTB "BACKUP EVA HDW", s/n 1033, b/c 002918J				
	Item Description	**Qty.**	**Part No.**	**Serial No.**
1.0 CTB 1033	RH Swingarm	□ 2	SEG33110491-305	1005, 1006

2. Retrieve the following items from Shuttle and MPLM; transfer to ISS A/L

Shuttle, MPLM				
	Item Description	**Qty.**	**Part No.**	**Serial No.**
	Ziploc bag (for RJMC conn. caps)	□ 1	N/A (small)	N/A
MPLM A4-A1	RJMC	□ 1	5842400-505	1017
MPLM P3-A1	RH Swingarm **(swap w/ old ones)**	□ 2	SEG33110491-307	1003, 1004

3. Configure swingarms and RETs on EV1 and EV2 MWS per EVA 1 TOOL CONFIG
4. Configure RJMC in Lg ORU Bag per EVA 1 TOOL CONFIG
5. Remove blind mate connector caps (4, black plastic), stow in a Ziploc bag labeled "RJMC caps" in "PGT Hardware" CTB s/n 1161 (A/L1O1)
6. Verify Adj tethers (2) removed from EMU wrists

EVA TOOLS MANAGEMENT (Cont)

Flight Day 6 – EVA 1 Tool Deconfig

1. Verify SHUTTLE EVA 1 TOOLS bags (2) are empty
2. Deconfigure Lg ORU (OBSS DTO) Bag:
   - ❑ Load Cell should already be in Middeck
   - ❑ Digital Camera w/mount should already be out for battery charging
   - ❑ Stow Digital camera w/flash and mount in Digital Flash CTB s/n 1105
   - ❑ Move WIF Adapter to EV2 Trash Bag
   - ❑ Move Force Measurement Tool to SHUTTLE EVA 1-A TOOLS bag
   - ❑ Move EVA Ratchet to crewlock bag; swap 6-in socket to PGT (in "PGT Hardware" CTB s/n 1161); stow on EV2 MWS
   - ❑ Move 85-ft Safety Tethers (# 24 and 26) to EV1 and EV2 MWS; move 55-ft safety tethers to tether staging area
   - ❑ Move 85-ft Safety Tether spare (# 22) to Staging Bag in crewlock; move 55-ft safety tether from staging bag to tether staging area
   - ❑ Stow PAD in Crewlock Bag #2
   - ❑ Stow all tethers and fish stringer from Lg ORU Bag in tether staging area
3. Fold, stow Lg ORU bag (sunshade) for EVA 3 TOOL CONFIG
4. Reconfigure Med ORU Bag:
   - ❑ Move Blade Blocker to SHUTTLE EVA 1-A TOOLS BAG
   - ❑ Move RET to tether staging area
   - ❑ Move PGT w/ 6-in socket to EV1 MWS
5. Leave Med ORU Bag configured in A/L:
   - ❑ Fish Stringer
   - ❑ IUA w/ RET
   - ❑ Spare RET
   - ❑ Lg-sm RET and sm-sm Adj tethers (2) on exterior of bag
6. Leave RJMC bag configured in A/L
7. Deconfigure EMUs
   - ❑ Replace wire ties on EV1 and EV2 MWS T-bars (2 ea.)
8. Temp stow SHUTTLE EVA 1 TOOLS bag in ISS for EVA 2 Tool Deconfig
9. Perform EVA 2 TOOL CONFIG using tools from SHUTTLE EVA 2 TOOLS bag and "EVA2" Crewlock bag

EVA TOOLS MANAGEMENT (Cont)

Flight Day 8 – EVA 2 Tool Deconfig

NOTE

This procedure assumes that the IUA and its connector caps are still in the airlock and haven't already been reconfigured for landing

1. If necessary, complete steps 7-16 of Flight Day 3 - EVA Tool Transfer
2. Obtain CRM Bag and IR Camera CTB (MF43O); transfer to ISS

IR Camera CTB s/n 1141 b/c 006590J Transfer entire CTB as is				
Locker	**Item Description**	**Qty.**	**Part No.**	**Serial No.**
MF43O	EVA IR Camera Assy Flash Card	1 1	1257950-701 SDCFBI-102420100	1002 08
	Compact Flash to PC Card Adapter	1	SDZ12100650-301	1002

3. Deconfigure EMUs
   - ❑ Move 6-in socket from one PGT to EVA Ratchet in Crewlock Bag; move 2-in socket from EVA ratchet to Right Angle Drive
   - ❑ Move 6-in socket from other PGT to socket caddy w/ RADs in Crewlock Bag
   - ❑ Remove battery from one PGT; stow battery in BSA, PGT in "PGT Hardware" CTB s/n 1161 (A/L1O1)
   - ❑ Leave remaining PGT on swingarm until crewlock bag has been emptied (replace battery)
   - ❑ Empty TUS dust caps (7) from EV2 trash bag; stow in SHUTTLE EVA 1-A TOOLS bag
   - ❑ Empty IUA dust caps (3) from EV1 trash bag; stow J1 cap (gas cap) in SHUTTLE EVA 1-A TOOLS bag, stow cable caps (2) in SHUTTLE EVA 1-B TOOLS bag
   - ❑ Replace wire ties on EV1 and EV2 MWS T-bars (2 ea.)

4. Deconfigure Crewlock Bag
   - ❑ Move exterior and interior tethers (4) to tether staging area
   - ❑ Move Socket Caddy w/ Right Angle Drives (2), 2-in sockets (2), and 6-in socket to Crewlock Bag #2
   - ❑ EVA Ratchet remains in crewlock bag
   - ❑ Digital Camera w/mount should already be out for battery charging
   - ❑ Move Ballstack and MUT EE to Crewlock Bag #3 for Inc. 13 EVA
   - ❑ Move TUS FSE Knob to SHUTTLE EVA 1-A TOOLS bag
   - ❑ Move temp-stowed PGT to crewlock bag
   - ❑ Temp stow crewlock bag for EVA 3 TOOL CONFIG
   - ❑ Move socket caddy w/12-in socket from crewlock bag #3 to EVA 3 crewlock bag

5. Deconfigure Med ORU Bag
   - ❑ Temp Stow IUA w/TUS cable in SHUTTLE EVA 1-B TOOLS bag (for later launch bolt reconfig); install caps (2) on cable ends
   - ❑ Stow Tethers (5) and Fish Stringer on tether staging area
   - ❑ Stow Med ORU Bag in A/L1O0 behind closeout

6. Leave RJMC bag configured in A/L
7. Remove Long Duration Tiedown Tethers (4) and fish stringer from Staging Bag
8. Move Long Duration Tiedown Tethers to SHUTTLE EVA 1-A TOOLS bag, stow fish stringer on tether staging area
9. Perform EVA3 TOOL CONFIG using tools from CRM Bag and IR Camera CTB (Recall that the "Sunshade" was temp-stowed following EVA 1, WIF Adapter is tethered in tether staging area)

EVA TOOLS MANAGEMENT (Cont)

Flight Day 10 – EVA 3 Tool Deconfig

NOTE

Steps 1-23 must be performed prior to undock, but bulleted *italicized* items are optional if time allows

While deconfiguring EVA 3 hardware, sort RETs by color (dash no. and s/n stamped on reel housing). Blue RETs stay on ISS, yellow RETs return on shuttle. Red RETs (if unpacked from MPLM transfer) stay on ISS

1. Collect all SHUTTLE EVA X TOOLS bags (3), temp stow nearby
2. Gather Ziploc bags (PI Locker), latex gloves (WCS), goggles (CCK, MA9N), dry and wet wipes (WCS/Vol B)
3. Don latex gloves, goggles
4. Inspect the following for visible NOAX and wipe off with dry wipe (wet wipe may be used on non-fabric surfaces if required)
   - ❑ EMUs, including MWSs and tethers
   - ❑ CRM Bag Exterior
   - ❑ CRM Bag interior and exterior tethers (6 RETs, 7 Adj); stow in tether staging area
   - ❑ CRM Bag fish stringer (stow clean EVA wipes from stringer on a used wire tie in CRM bag)
   - ❑ Crewlock Bag and contents
   - ❑ IR Camera (notify MCC if contamination found on exterior or lens)
   - ❑ Airlock
5. Report any staining to MCC
6. Discard wipes and latex gloves, doff and stow goggles (CCK, MA9N)
7. Stow IR Camera in A/L with blue lg-sm and sm-sm RETs (1 ea.) for Inc. 13 EVA
8. Deconfigure Crewlock Bag (bag stays on ISS)
   - ❑ Move broom clip caddy to CRM Bag
   - ❑ Stow RETs (2) on tether staging area
   - *Stow Digital Camera and mount in "EVA Camera Accessories" CTB, s/n 1221, b/c 006717J*
   - *Stow PGT in "PGT Hardware" CTB s/n 1161 (A/L1O1), stow PGT battery in BSA*
   - *Stow EVA Ratchet in Crewlock Bag #4*
   - *Stow 6-in socket on socket caddy w/ 12-in socket*
   - *Stow socket caddy w/ 6-in and 12-in sockets in Crewlock Bag #2*
9. Stow Crewlock Bag in crewlock endcone
10. Remove 85-ft Safety Tether # 22 and EVA Wipe from Staging Bag (A/L endcone)
11. Stow 85-ft safety tether in SHUTTLE EVA 1-A TOOLS bag, stow EVA wipe with other wipes in CRM bag

- *Move prybar from Staging Bag to Crewlock Bag #2*
- *Stow Lg ORU Bag (sunshade) in A/L1O0 behind closeout*

12. Deconfigure RJMC bag (Lg ORU Bag - stays on ISS)
    - ❑ If Lg-sm RET to Airlock is yellow-coded, replace with blue lg-sm, stow yellow RET on tether staging area
    - ❑ Move sm-sm RET and Adj Tether to tether staging area
    - ❑ Leave RJMC in bag for Inc. 13 EVA
    - *Replace covers on RJMC connectors (ziploc bag in "PGT Hardware" CTB s/n 1161 (A/L1O1)*
    - *Stow round scoop in Crewlock Bag used during EVAs*

13. Deconfigure CRM Bag
    - ❑ Verify all tethers and Fish Stringer already cleaned and moved to tether staging area
14. Deconfigure EMUs
    - ❑ Move SSRMS LEE Camera cover to SHUTTLE EVA 1-A TOOLS bag
    - ❑ Stow RETs (8) and Adj Tethers (5) on tether staging area
    - *Stow WIF Adapters (2) in Crewlock Bag #2*

EVA TOOLS MANAGEMENT (Cont)

15. Inventory items on EMUs:
    - ❑ MWS Baseplates (2) s/n 1007, 1023
      - ❑ MWS T-bars (2) s/n 1006, 1007
      - ❑ MWS swingarms (2) s/n 1003, 1004
      - ❑ BRTs (2) s/n 1009, 1001
      - ❑ Small Trash Bags (2)
      - ❑ Waist tethers (4)
      - ❑ D-ring extenders (4)
      - ❑ 85-ft safety tethers # 24 and 26

16. Inventory items in tether staging area:
    - ❑ Sm-sm RETS (8 yellow, 7 blue, plus 1 blue on IR camera in crewlock)
    - ❑ Sm-sm RETs w/ pip pin (4 yellow, 4 blue)
    - ❑ Lg-sm RETs (6 yellow, 4 blue, plus 2 blue on IR camera and RJMC bag in crewlock)
    - ❑ Sm-sm Adj (13)
    - ❑ Lg-sm Adj (2)
    - ❑ 55-ft safety tethers (3)
    - ❑ Fish Stringers (3)
    - ❑ Waist tethers (2)
    - ❑ D-ring extenders (1 on A/L D-ring)

17. Collect yellow-coded RETs into SHUTTLE EVA 1-A TOOLS BAG for return to shuttle:

    Sm-sm RETs (8)

    ❑ 4057 ❑ 4070 ❑ 4071 ❑ 4073 ❑ 4075 ❑ 4170 ❑ 4271 ❑4272

    Sm-sm RETs w/ pip pin (4)

    ❑ 4238 ❑ 4239 ❑ 4240 ❑ 4241

    Lg-sm RETs (6)

    ❑ 4252 ❑ 4253 ❑ 4254 ❑ 4255 ❑ 4256 ❑ 4257

18. Collect sm-sm Adj tethers into SHUTTLE EVA 1-A TOOLS bag for return to shuttle:

    ❑ 1026 ❑ 1033 ❑ 1067 ❑ 1068

19. Leave all blue-coded RETs in tether staging area (some are tethering items in crewlock):

    Sm-sm RETs (8)

    ❑ 4065 ❑ 4081 ❑ 4083 ❑ 4169 ❑ 4171 ❑ 4173 ❑ 4056 ❑ 4072

    Sm-sm RETs w/ pip pin (4)

    ❑ 4174 ❑ 4243 ❑ 4244 ❑ 4245

    Lg-sm RETs (6)

    ❑ 4055 ❑ 4060 ❑ 4076 ❑ 4077 ❑ 4175 ❑ 4176

20. Stow “backup” items from full CTB s/n 1033 “BACKUP EVA HDW…” in SHUTTLE EVA X TOOLS bags for return:
    - ❑ MWS Baseplates (2) s/n 1003, 1009
      - ❑ MWS T-bars (2) s/n 1005, 1029
    - ❑ 85-ft safety tether (# 23)
    - ❑ BRT (2) s/n 1021, 1017

21. Obtain CTB s/n 1352 (b/c 010533J) from NOD1O4_A2 with STS-114’s IR Camera for return
22. Transfer IR Camera CTB s/n 1352, SHUTTLE EVA X TOOLS bags (3), and CRM Bag to shuttle

EVA TOOLS MANAGEMENT (Cont)

23. Temp Stow CRM Bag for FD12 deconfig/stow:

CRM Bag Temp stow entire bag as is for FD12 cleanup				
	Item Description	**Qty.**	**Part No.**	**Serial No.**
Port Ceiling 1	Crack Repair Material bag	□ 1	SED33118750-301	1003
	Palette	□ 2	SED33118670-301	1001, 1002
	Temperature Probe w/gooseneck	□ 1	SED33118700-303	1004
	CRM Applicator w/ TMG	□ 3	SED33119446-301	1004 - 1006
	CRM Applicator Nozzle	□ 3	SED33119448-301	
	Large Trash Bag 5-in spatula EVA Wipes (dirty)	□ 1 □ 1 □	SEG33106937-301 SED33118187-302 SED33116397-70	1007 N/A
	Broom Clip Caddy	□ 2	GD2051000-301	1011, 1012
	EVA Wipe (extras, clean)	□ ___	SED33116397-701	N/A
	2-in spatula	□ 5	SED33118187-301	1001 -1005
	5-in spatula	□ 1	SED33118187-302	1015

24. Stow remaining tools per tables below:

NOTE

RH swingarms should have been stowed in MPLM on FD4.
IWIF should have been transferred/stowed following EVA 1.
Nadir IUA with cut TUS cable pigtail should have been stowed following the IVA reconfig of the shoe for landing

IR Camera CTB s/n 1352 b/c 010533J Stow entire CTB as is				
Locker	**Item Description**	**Qty.**	**Part No.**	**Serial No.**
MF43O	EVA IR Camera Assy Flash Card	1 1	1257950-701 SDCFBI-102420100	**1001** **07**
	Compact Flash to PC Card Adapter	1	SDZ12100650-301	**1001**

Shuttle EVA X Tools Bags				
Locker	**Item Description**	**Qty.**	**Part No.**	**Serial No.**
Port Ceiling 1	SSRMS LEE Camera Cover	□ 1	51617-0052-1	201
Port Floor 1	Force Measurement Tool	□ 1	SED33103285-301	1003
	IWIF (if not already stowed)	□ 1	1F15470-1	1002
	85-ft Safety Tether (#22 and 23)	□ 2	SED33116109-301	**1002, 1003**
Ext A/L Floor	**MWS Baseplate**	□ 2	SEG33110490-301 SEG33110490-303	**1009** **1003**
	MWS Gimbal (on baseplates)	□ 2	SEG33110493-303 SEG33110493-305	**1005** **1029**
	BRT	□ 2	SEG33110400-307	1021, 1017
	Sm-sm Adjustable Tether	□ 4	SEG33106945-307	1026, 1033, 1067, 1068
	Sm-sm Retractable Tether	□ 8	SEG33106164-381	4057, 4070, 4071, 4073, 4075, 4170, 4271, 4272
	Sm-sm Retractable Tether w/ pip pin	□ 4	SEG33106164-383	4238 - 4241
	Lg-sm Retractable Tether	□ 6	SEG33106164-385	4252 - 4257
	Long Duration Tiedown Tether	□ 4	SEG33113860-301	1005 - 1008
Port Floor 2	Failed IUA w/ TUS Cable piece IUA P1 Cable Connector Cap IUA P55 Cable Connector Cap (Should all be stowed already)	□ 1 □ 1 □ 1	1F42993-1 NZGL-PPC-N-15-R NZGL-PPC-N-25L-R	0002 N/A N/A
	TUS FSE Knob	□ 1	SEG33119805-301	1001
	IUA Blade Blocker	□ 1	1F15871	N/A
	TUS/VSC Connector Cap	□ 7	NZGL-RPC-N-15-0-MS	N/A
	IUA J1 Connector Cap	□ 1	1F00921-1	N/A
EV1 ECOK	Mesh Bag	□ 3		N/A

EVA TOOLS MANAGEMENT (Cont)

Flight Day 12 - CRM Bag Disassemble and Stow

1. Obtain CRM Bag from FD10 temp stow location
2. Gather 3 large Ziploc bags (PI Locker), latex gloves (WCS), goggles (CCK, MA9N), dry and wet wipes (WCS/Vol B)
3. As reqd, don latex gloves, goggles
4. Stow items in PORT CEILING 1
    - ❑ Palettes (2)
    - ❑ Broom Clip Caddies (2)
    - ❑ Clean EVA Wipes
    - ❑ 3rd CRM Applicator; place in Ziploc bag, verify nozzle valve remains closed when stowed
    - ❑ Temp stow Lg Trash bag outside CRM bag
5. Place CRM Applicators (2) in Ziploc bags, temp stow
6. Stow small foam blocks (6) for CRM Applicators in CRM Bag
7. Stow CRM Applicators inside CRM Bag; verify nozzle valves remain closed when stowed
8. Obtain foam block from PORT CEILING 1, stow items in it:
    - ❑ 2-in and 5-in spatulas (stow in individual ziploc bags from launch)
    - ❑ Temperature probe
9. Stow Lg Trash Bag in CRM bag spatula area; if necessary, discard dirty EVA wipes, stow 5-in spatula in ziploc in PORT CEILING 1
10. Install foam block with spatulas and temperature probe inside CRM bag
11. Remove CRM Bag lid:
    a. Release quarter turn fasteners and Velcro on door stays and hinge
    b. Fold flaps towards palette pockets, temp stow lid
12. Remove, temp stow foam wedge in PORT CEILING 1
13. Stow CRM Bag in PORT CEILING 1
14. Set CRM Bag lid on top of CRM bag, not attached
15. Install foam wedge on top of CRM bag lid
16. If necessary, complete step 24 of Flight Day 10 - EVA 3 Tool Deconfig to stow any remaining tools