STS-116 / 12A.1

FD 08 Execute Package

MSG	Page(s)	Title
074	1 - 13	FD08 Flight Plan Revision **(pdf)**
075	14 - 15	FD08 Mission Summary **(pdf)**
067	16 - 19	HAM Pass for GMT 351 - Thunmanskolan, Knivsta, Sweden **(pdf)**
077	20 - 21	FD08 Transfer Message **(pdf)**
078	22	FD08 Water Summary Message **(pdf)**
079	23	Updated LiOH CC **(pdf)**
068	---	Channel 1/4 Flow Chart Update **(pdf - Electronic Only)**
069	---	Channel 1/4 Power Reconfiguration Definitions Table **(pdf - Electro**
076A	---	FD07 MMT Summary **(pdf - Electronic Only)**
070	---	Channel 1/4 Ground/Crew Interaction Table **(pdf - Electronic Only)**
080	---	Big Picture Words for Channel (1/4) for Power Reconfiguration **(**

Approved by FAO: *Terry Clancy*

Last Updated: Dec 16 2006 1:15PM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v2.04.0003*

MSG INDEX

1. FD08 SPACEHAB VIEWPORT VIOLATIONS

   There are no viewport violations for FD08.

2. REPLACE PAGES 2-26, 2-28 AND 2-80 THROUGH 2-89.

REPLANNED

No TVIS Exercise

12/16/06 05:49:11

GMT 12/16/06 (350): 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 12/17 | 01

MET Day 006: 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 007/00

FD08

STS-116

Crew	Activities
CDR/R2 POLANSKY	SLEEP; POST SLEEP; COMM; FES-I; POST SLEEP; INHBT; PAD; EXERCISE; RMS*; MEAL; LIOH SWAP; ATTHO; P/TV07 EVA OPS; FES-T; N2; INIT; ATTHO; N2 TERM
PLT/IV OEFELEIN	SLEEP; POST SLEEP; CAMPOUT EVA PREP; EMU; PURGE; EMU PBRTHE; C/L DPRS; P-DPR; IV SUPPORT; P-RPR
MS1/R1 PATRICK	SLEEP; SDBI; POST SLEEP (14.7 RPRS; 10.2 DPRS); 14.7 RPRS; P/TV 07 S/U; MCIU*; EXERCISE; RMS^; RMS*; MEAL; SRMS EVA SUPPORT; RMS; PWRDN; TRANSFER; N1 Y JMPR RMV; 6:10
MS2/EV1 CURBEAM	SLEEP; POST SLEEP; HYGN BREAK/ PREBRTHE; CAMPOUT EVA PREP; EMU; PURGE; EMU PBRTHE; C/L DPRS; P-DPR; DEGRSS; CH 1/4 PWR RECONFIG; SMDP TRANSFER *; ♣; RS PWR RCNFG; AGB TRANSFER; CLEAN; UP; INGRS; P-RPR
MS3/EV2 FUGLESANG	SLEEP; POST SLEEP; CAMPOUT EVA PREP; EMU; PURGE; EMU PBRTHE; C/L DPRS; P/TV07 EVA OPS; TRANSFER
MS4 HIGGINBOTHAM	SLEEP; POST SLEEP - SHAB; EXERCISE; XFR; UPDAT; TRANSFER; MEAL; TRANSFER

DN / EXP 14 / UP

Crew	Activities
FE-2 REITER	SLEEP (8.5); POST SLEEP; SKN; POST SLEEP; PREP WORK; DPC; PW; OPS LAN P/D; HAM; СОЖ MNT; EXERCISE TVIS; CEVIS; RMV; LAB DDCU CONFIG; CEVIS; INSTL; MIDDAY-MEAL; TRANSFER; EXERCISE RED; XFER; N1 Y JMPR RMV
ISS CDR LOPEZ-ALEGRIA	SLEEP (8.5); POST SLEEP; PREP WORK; DPC; PW⊕; ГAHK; EXERCISE RED; XFER; LAB DDCU CONFIG; MIDDAY-MEAL; CDRA R&R; CDRA; TRANSFER; CEVIS
FE-1 TYURIN	SLEEP (8.5); POST SLEEP; CAMPOUT EVA PREP; EMU; PURGE; EMU PBRTHE; C/L DPRS; EXERCISE TVIS; MIDDAY-MEAL; CDRA R&R; EXERCISE VELO+RED
FE-2/EV3 WILLIAMS	SLEEP; POST SLEEP; HYGN BREAK/ PREBRTHE; CAMPOUT EVA PREP; EMU; PURGE; EMU PBRTHE; C/L DPRS; P-DPR; DEGRSS; CH 1/4 PWR RECONFIG; SMDP TRANSFER; RS PWR RCNFG; AGB TRANSFER; CLEAN; UP; INGRS; P-RPR

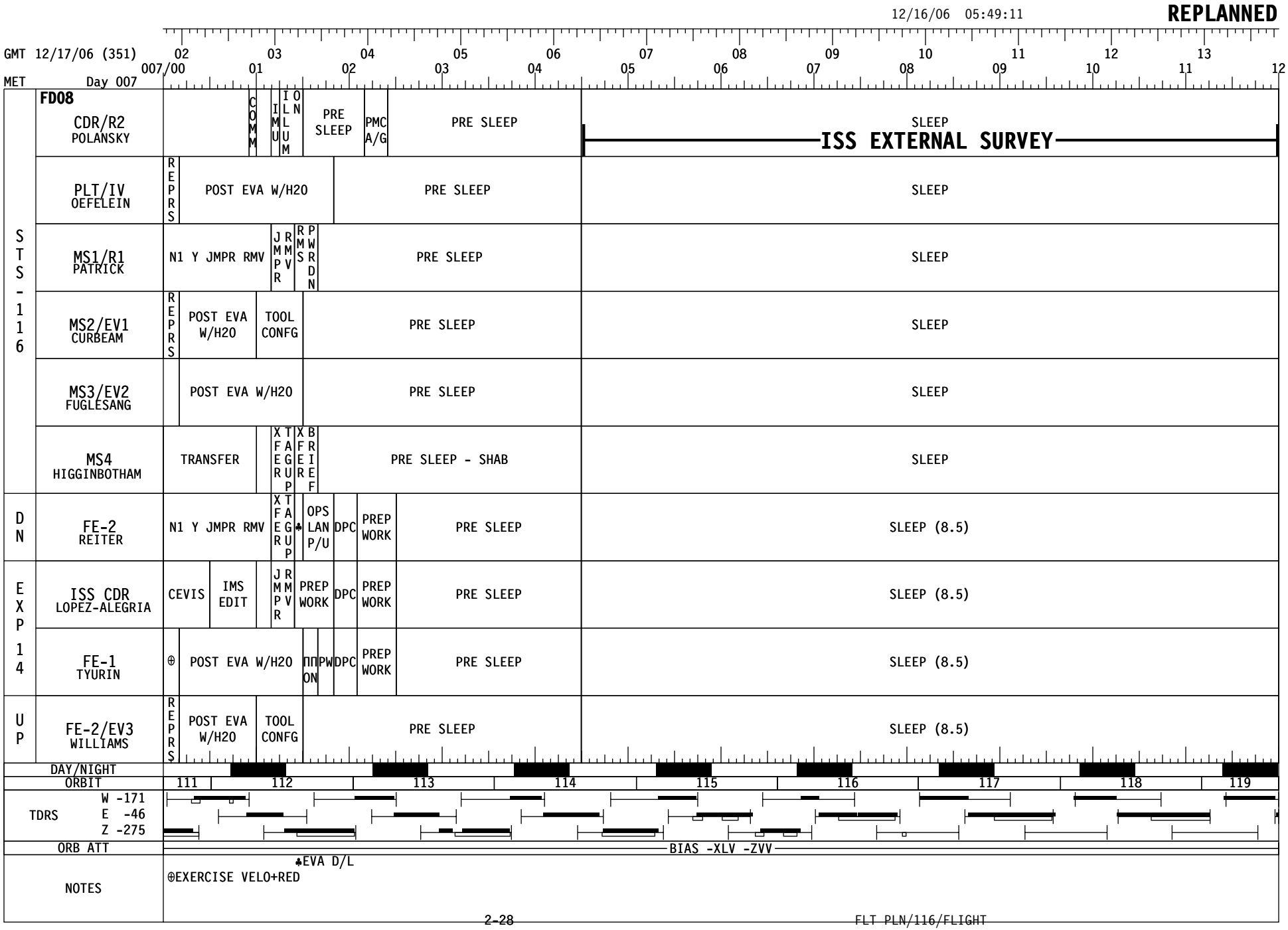
DAY/NIGHT

ORBIT: 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111

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

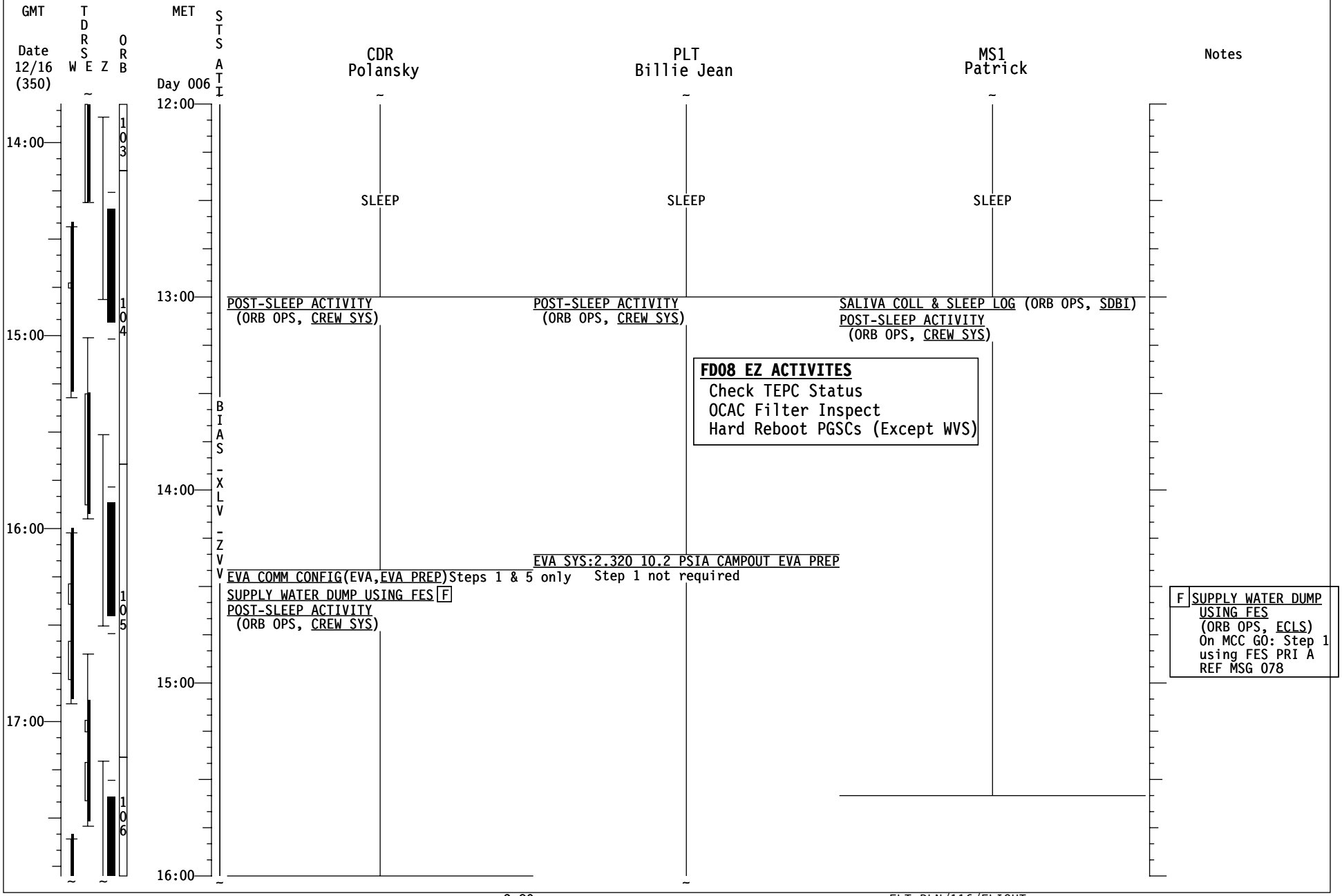
ORB ATT: BIAS -XLV -ZVV

NOTES:
⊕CDRA CNCT
*FILTER CK
*MNVR
^MNVR PRECRDL
♣Z1 PP RCNFG
***Verify MBSU and DDCU**


12/16/06 05:49:11
REPLANNED
GMT 12/17/06 (351)
MET Day 007
007/00
02 03 04 05 06 07 08 09 10 11 12 13
01 02 03 04 05 06 07 08 09 10 11 12
STS-116
DN
EXP 14
UP
FD08
CDR/R2 POLANSKY
COMM
IMU
ILUM
ONLUM
PRE SLEEP
PMC A/G
PRE SLEEP
SLEEP
ISS EXTERNAL SURVEY
PLT/IV OEFELEIN
REPRS
POST EVA W/H2O
PRE SLEEP
SLEEP
MS1/R1 PATRICK
N1 Y JMPR RMV
JMPR
RMVR
RMS
PWRDN
PRE SLEEP
SLEEP
MS2/EV1 CURBEAM
REPRS
POST EVA W/H2O
TOOL CONFG
PRE SLEEP
SLEEP
MS3/EV2 FUGLESANG
POST EVA W/H2O
PRE SLEEP
SLEEP
MS4 HIGGINBOTHAM
TRANSFER
XFER
TAGUP
XFER
BRIEF
PRE SLEEP - SHAB
SLEEP
FE-2 REITER
N1 Y JMPR RMV
XFER
TAGUP
♣
OPS LAN P/U
DPC
PREP WORK
PRE SLEEP
SLEEP (8.5)
ISS CDR LOPEZ-ALEGRIA
CEVIS
IMS EDIT
JMPR
RMVR
PREP WORK
DPC
PREP WORK
PRE SLEEP
SLEEP (8.5)
FE-1 TYURIN
⊕
POST EVA W/H2O
ПП ON
PW
DPC
PREP WORK
PRE SLEEP
SLEEP (8.5)
FE-2/EV3 WILLIAMS
REPRS
POST EVA W/H2O
TOOL CONFG
PRE SLEEP
SLEEP (8.5)
DAY/NIGHT
ORBIT 111 112 113 114 115 116 117 118 119
TDRS W -171
E -46
Z -275
ORB ATT
BIAS -XLV -ZVV
♣EVA D/L
NOTES
⊕EXERCISE VELO+RED

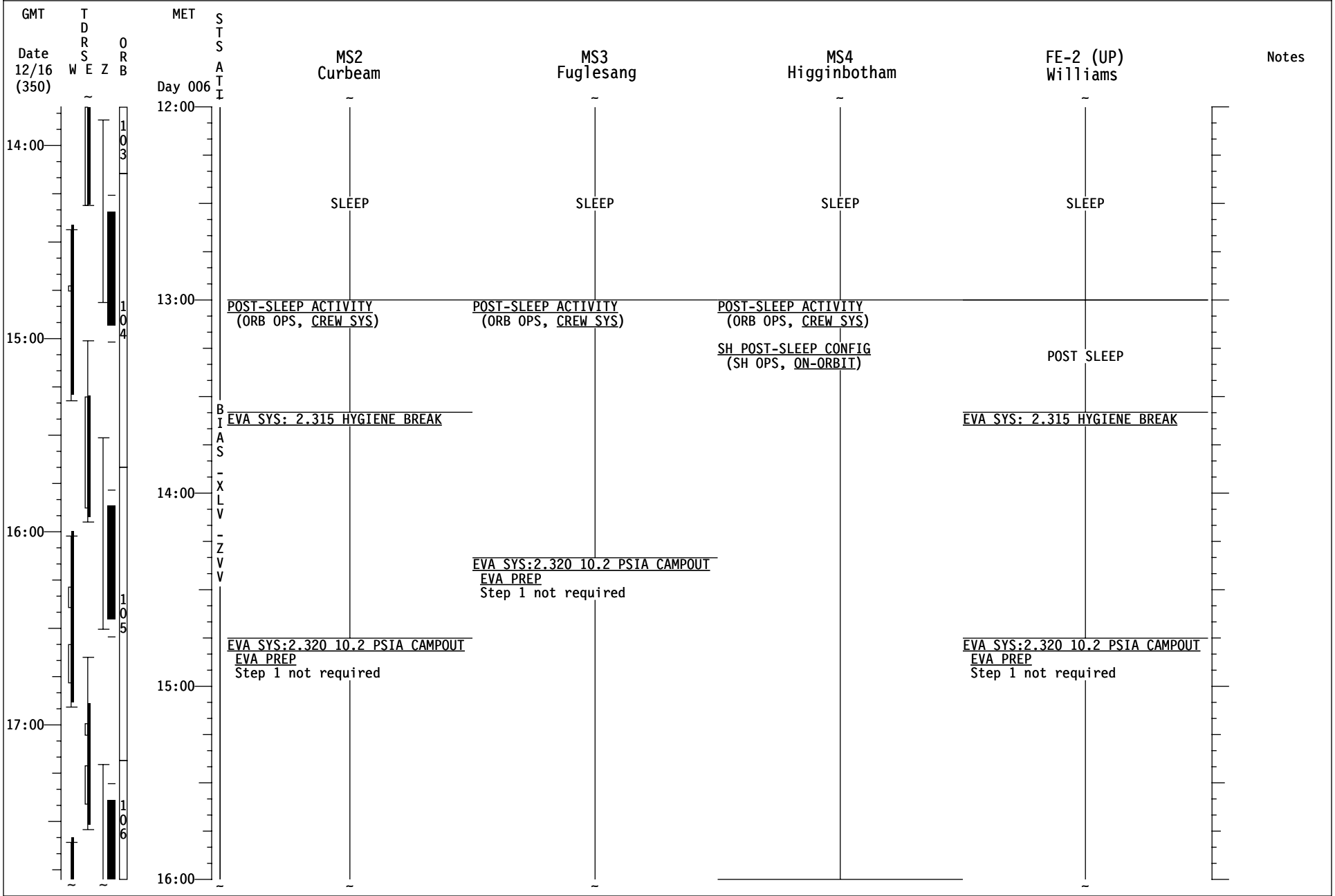
STS-116 FD08

REPLANNED



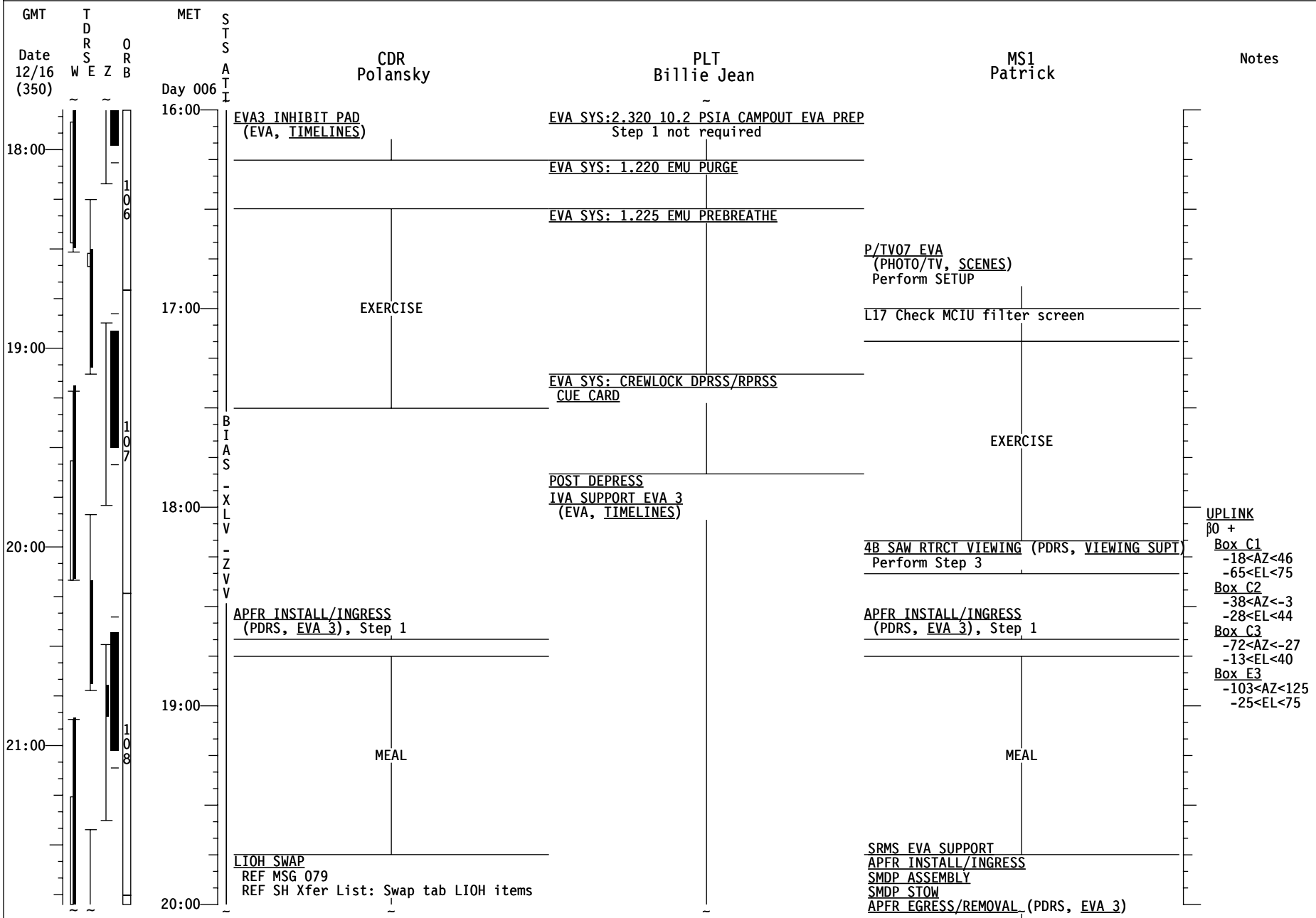
STS-116 FD08

REPLANNED



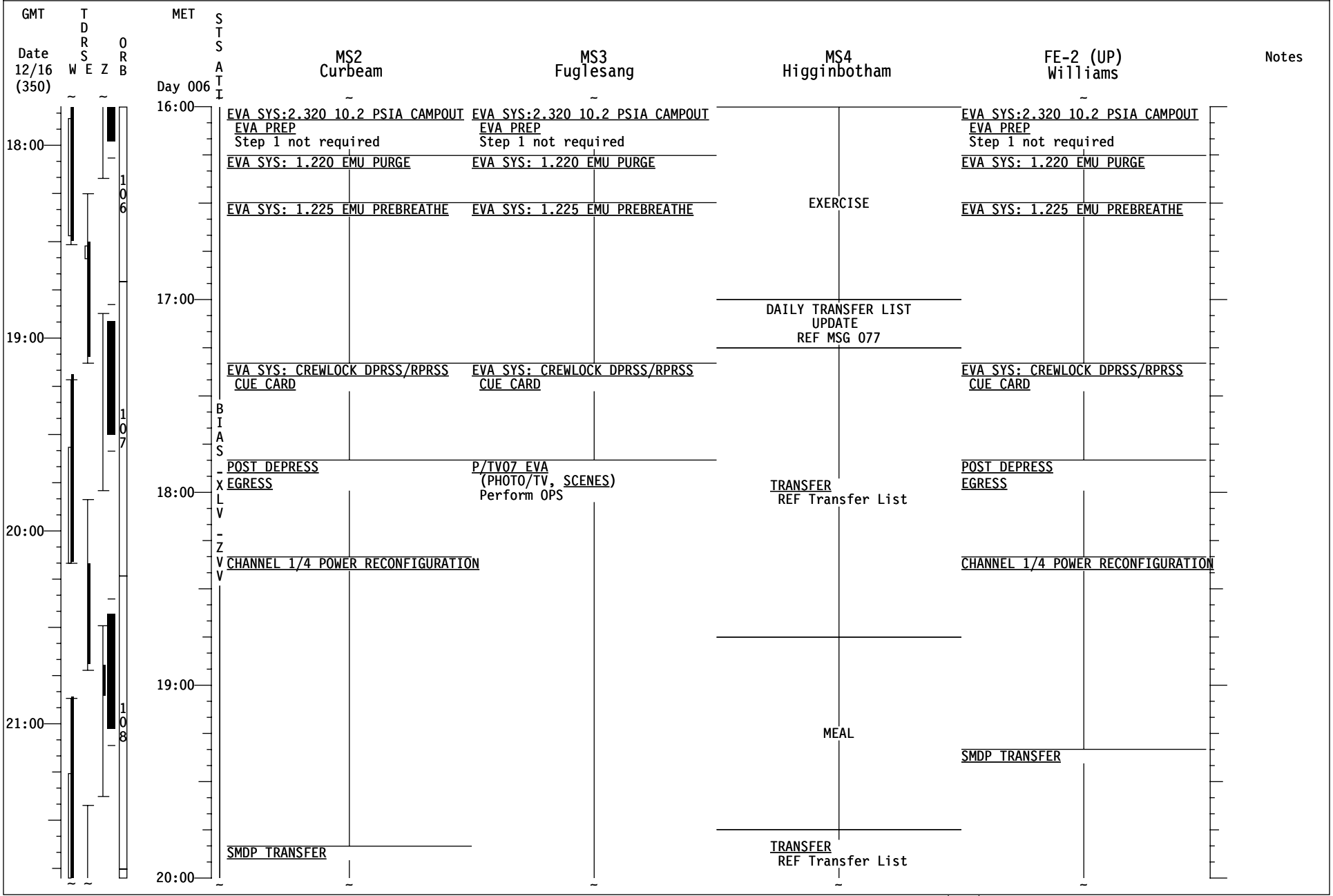
STS-116 FD08

REPLANNED



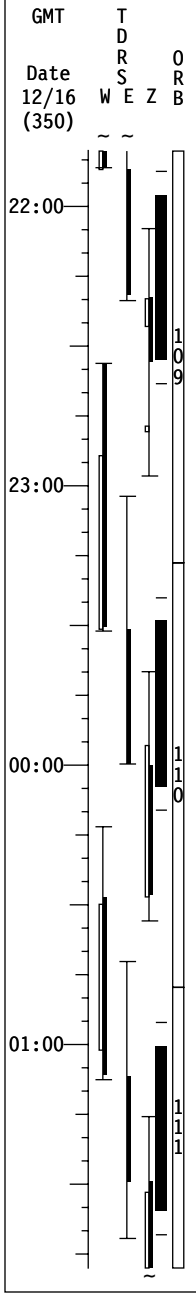
STS-116 FD08

REPLANNED



STS-116 FD08

REPLANNED



MET Day 006

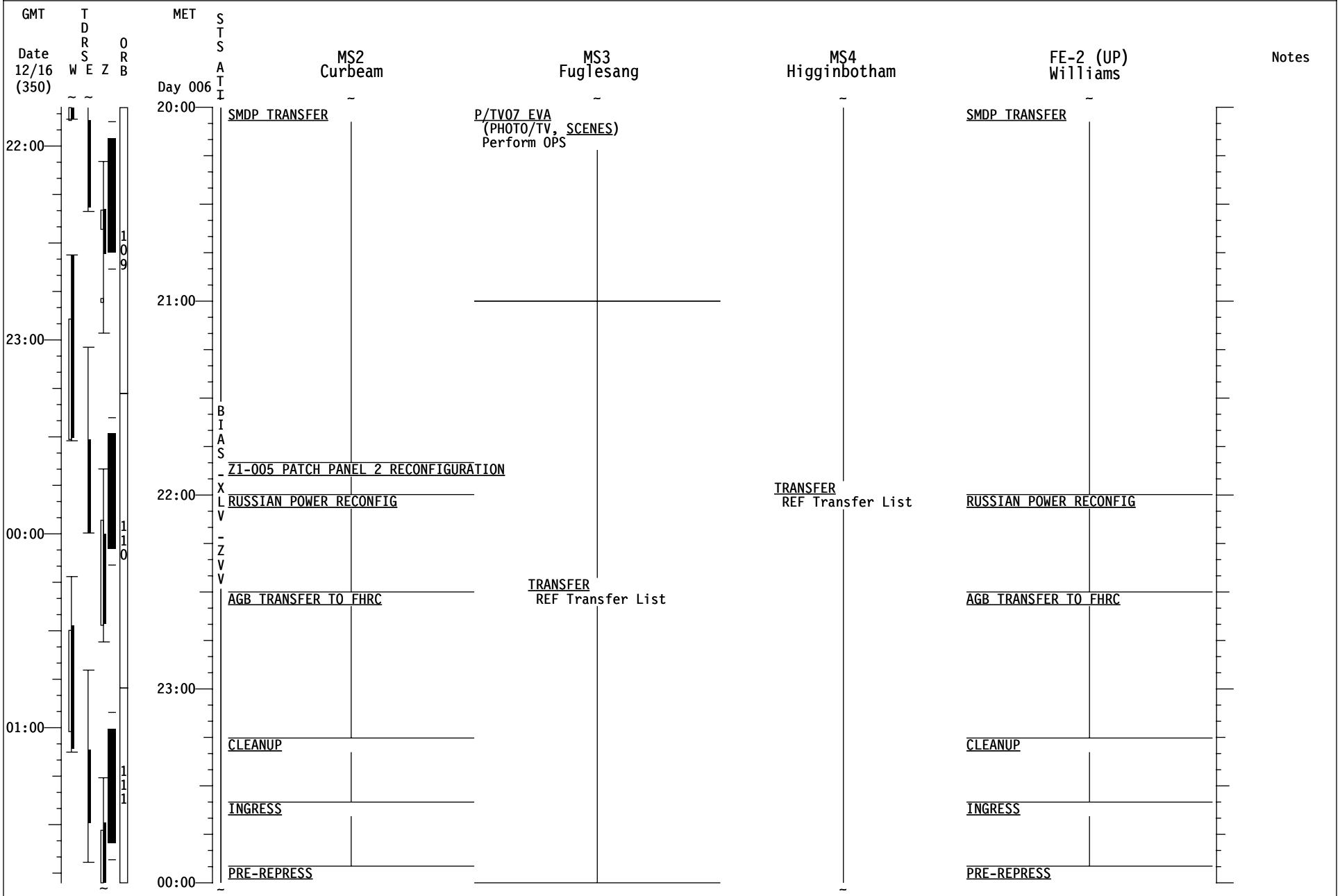
STS ATI

BIAS-XLV-ZVV

	CDR Polansky	PLT Billie Jean	MS1 Patrick	Notes
20:00	LIOH SWAP REF MSG 079 REF SH Xfer List: Swap tab LIOH items	IVA SUPPORT EVA 3 (EVA, TIMELINES)	SRMS EVA SUPPORT APFR INSTALL/INGRESS SMDP ASSEMBLY SMDP STOW APFR EGRESS/REMOVAL (PDRS, EVA 3)	
21:00	JNT OPS: 3.110 H/O ATT CNTRL CMG TA TO ORB P/TVO7 EVA (PHOTO/TV, SCENES) Perform OPS			
22:00	SUPPLY WATER DUMP USING FES F R13L MMU GN2 SPLY ISOL VLV A - CL (tb-CL) N2 REPRSS USING PAYLD N2 VLVS (ORB OPS,ECLS) Steps 1-6 MCC will TMBU all limits. In Step 5, O2 REG INLET SYS 2 vlv is already closed.		RMS PWRDN (PDRS, RMS PWRDN) Step 1 only	F SUPPLY WATER DUMP USING FES (ORB OPS, ECLS) On MCC GO: Step 2 w/FES PRI A reqd REF MSG 078
23:00	JNT OPS: 3.111 H/O ATT CNTRL ORB TO CMG TA		TRANSFER REF Transfer List	
00:00	N2 REPRSS USING PAYLD N2 VLVS (ORB OPS,ECLS) Steps 7-12; MCC will TMBU all limits. In Step 8, O2 REG INLET SYS 2 vlv remains closed.	PRE-REPRESS	IFM: 2.3.402 N14B Y-JUMPER INSTALLATION/ REMOVAL Perform Steps 1,4-6 REF MSG 064	

STS-116 FD08

REPLANNED



STS-116 FD08

REPLANNED

GMT Date 12/17 (351) | MET Day 007 | TDRS W E Z | ORB 111 112 113 114 | STS ATI BIAS -XLV -ZVV

CDR Polansky

EVA COMM DECONFIG(EVA,EVA PREP)Steps 1 & 5 only

IMU STAR OF OPPTY ALIGN (ORB OPS, GNC)

TV (ILLUMINATOR OPS)
(P/TV, CUE CARDS)
ILLUMINATORS ON - ALL

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PRIVATE MEDICAL CONFERENCE
Perform PMC using Private A/G 2

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PLT Billie Jean

EVA SYS: CREWLOCK DPRSS/RPRSS CUE CARD

EVA SYS: 1.240 POST EVA
Steps 37,38 and 68 not required
Perform step 39(H2O Recharge)
Do not perform steps 40-42(Metox Regen)
REF: LOGISTICS CC

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

MS1 Patrick

IFM: 2.3.402 N14B Y-JUMPER INSTALLATION/ REMOVAL
Perform Steps 1,4-6
REF MSG 064

S&M: LAB SYSTEM RACK POWER JUMPER REMOVAL LAB1O5 TO LAB1D1 (AV2 RACK)
Perform steps 2 & 4

RMS PWRDN
(PDRS, RMS PWRDN)
Do not stow MPMs

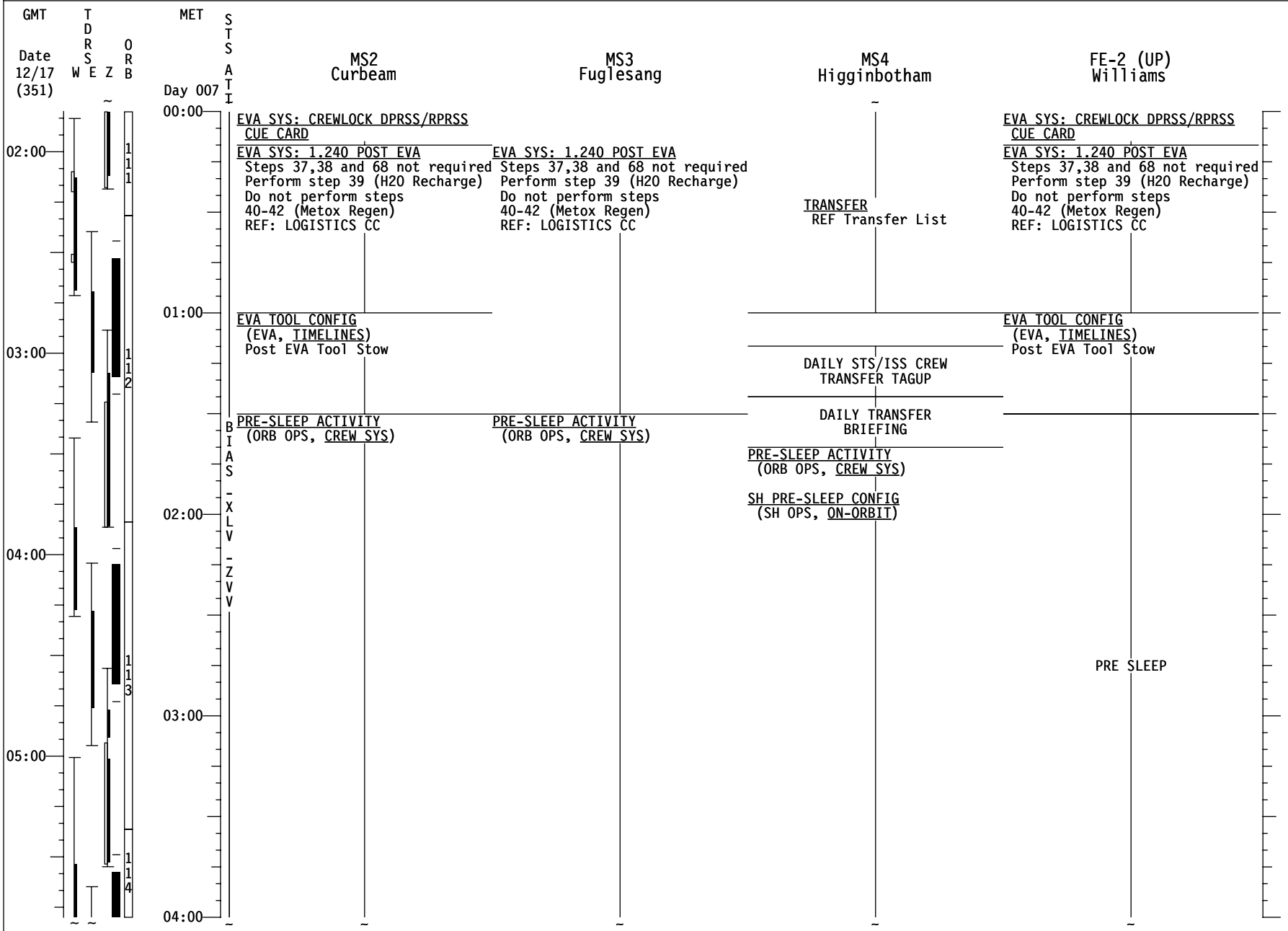
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Notes

UPLINK
β21 +
Box C1
-18<AZ<46
-65<EL<75
Box C2
-38<AZ<-3
-28<EL<44
Box C3
-72<AZ<-27
-13<EL<40
Box D2
-94<AZ<-20
9<EL<75

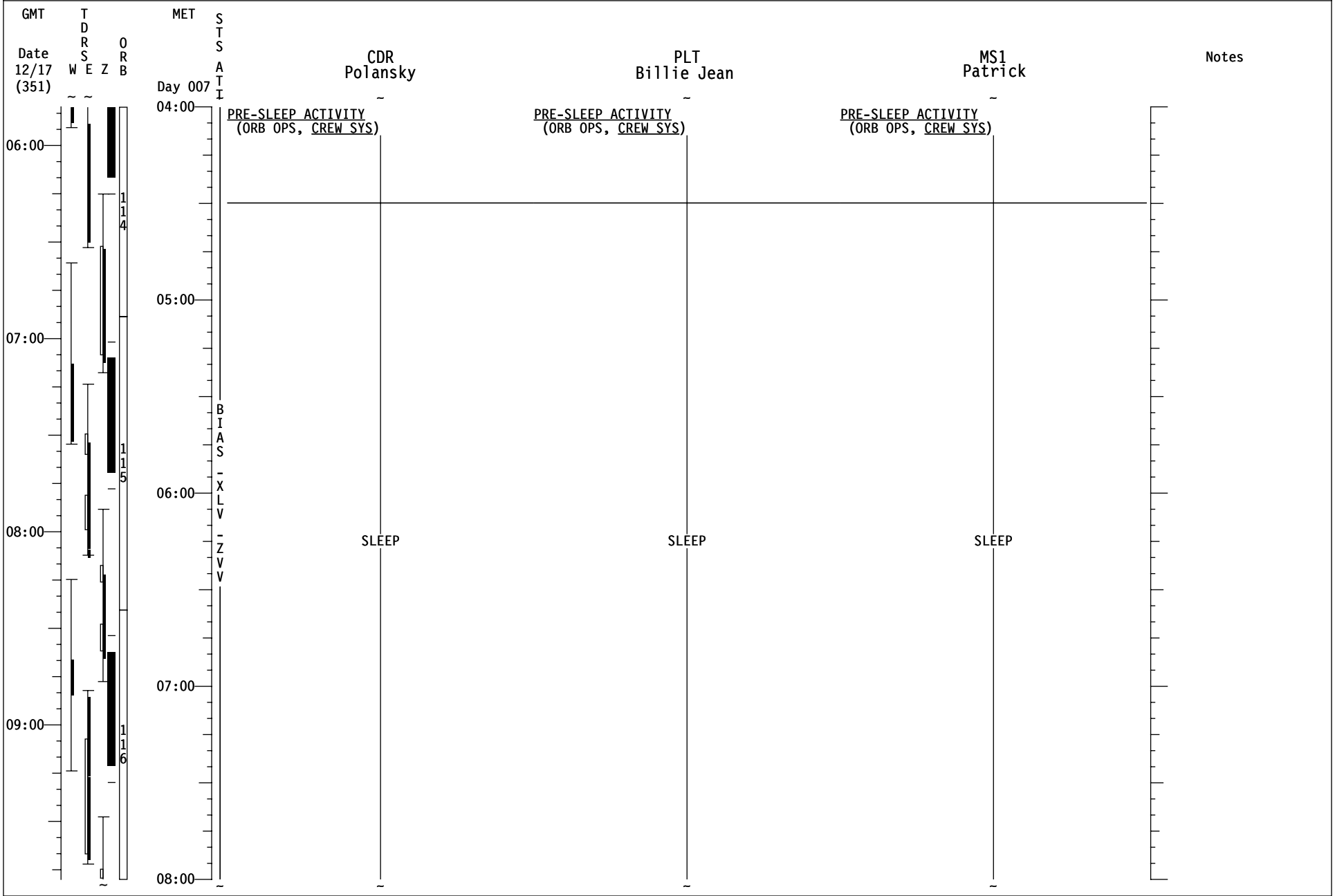
STS-116 FD08

REPLANNED



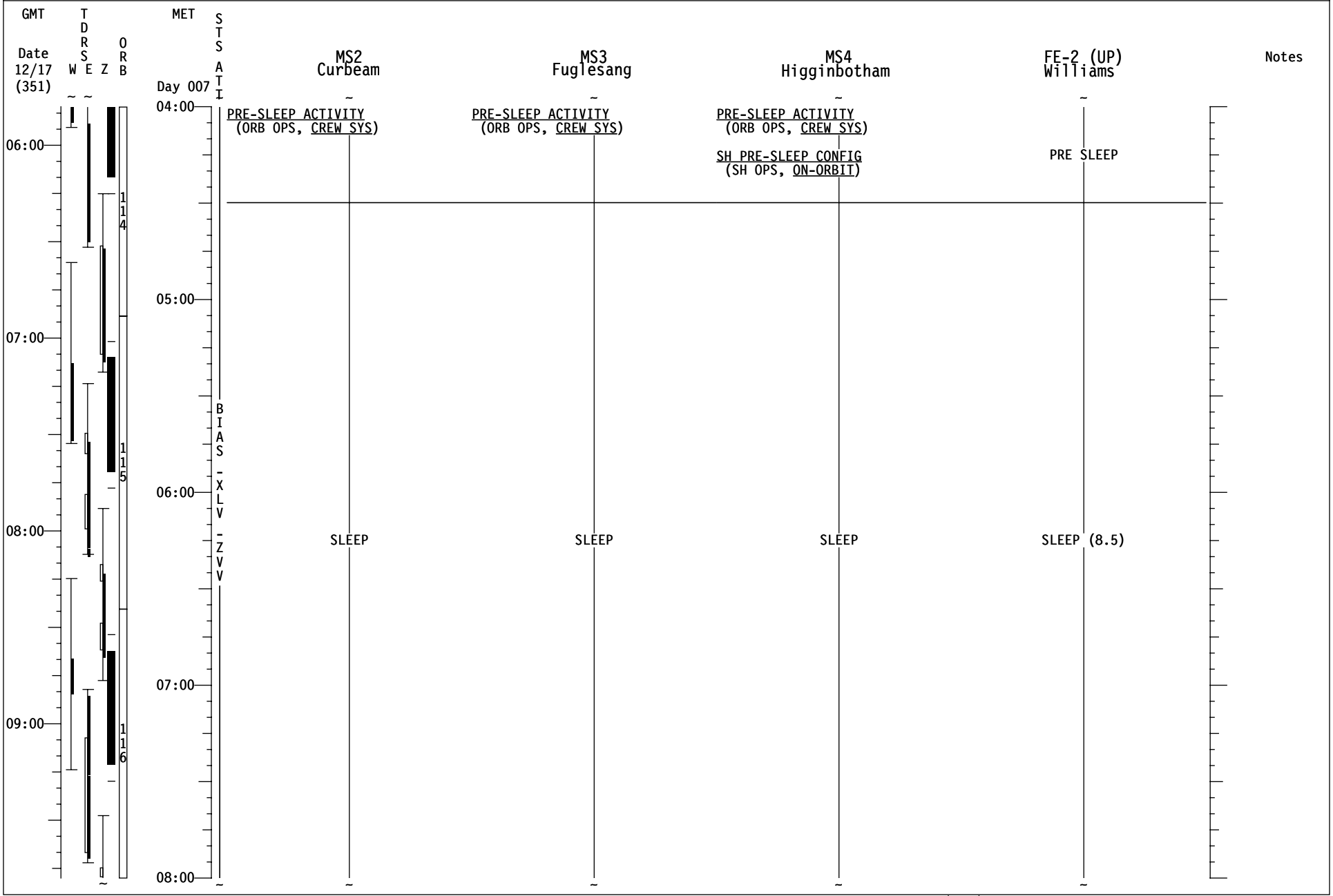
STS-116 FD08

REPLANNED



STS-116 FD 08

REPLANNED



MSG 075 (14-0597) - FD08 MISSION SUMMARY

Good Morning Discovery!!!!

Thank you so much for all of your extra efforts yesterday attempting to retract the solar array. We especially want to thank you for using your half day off for this!

We hope that you had a little time yesterday to catch your breath and are now ready to charge forward into the home stretch!

YOUR CURRENT ORBIT IS: 193 X 177 NM

NOTAMS:

EDWARDS (EDW) - LAKEBEDS YELLOW DUE TO MOISTURE
WHITE SANDS (NOR) – 17/23 GREEN (TOW WAYS WET)
AMBERLY (AMB) -CLOSED
ANDERSEN (GUA) -06L/24R CLOSED, ALTERNATE 06R/24L
GANDER TACAN (YQX-74X) - AZIMUTH OUT OF SERVICE, DME AVAILABLE
KEFLAVIK (IKF) – UNUSABLE
ORMOND BEACH TACAN (OMN-73X) - AZIMUTH OUT OF SERVICE
OCEANA (NTU) – 32R/14L CLOSED
RIO GALLEGOS (AWG) – UNUSABLE
SALSBURY TACAN (SBY-49X) - AZIMUTH OUT OF SERVICE
WAKE ISLAND (WAK) - CLOSED

NEXT 2 PLS OPPORTUNITIES:

KSC33 ORB 108 – 6/19:14 (SCT030 BKN200, 050/6P10)
KSC33 ORB 124 – 7/19:37 (FEW030 SCT120, 090/8P12)

OMS TANK FAIL CAPABILITY:

L OMS FAIL: NO
R OMS FAIL: NO

LEAKING OMS PRPLT BURN:

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

OMS QUANTITIES(%)

L OMS	OX = 44.1	R OMS OX = 45.3	
	FU = 44.1		FU = 45.8

SUBTRACT I'CNCT COUNTER FOR CURRENT OMS QUANTITIES

DELTA V AVAILABLE:

OMS	430 FPS
ARCS (TOTAL ABOVE QTY1)	43 FPS
TOTAL IN THE AFT	473 FPS
ARCS (TOTAL ABOVE QTY2)	73 FPS
FRCS (ABOVE QTY 1)	34 FPS
AFT QTY 1	84 %
AFT QTY 2	46 %

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

Date Prepared: 2006-12-15 04:00 UTC
Christer Fuglesang crew pick

Option 11: Sun 2006-12-17 18:19 UTC via VK4KHZ
Option 14: Mon 2006-12-18 18:41 UTC 51 deg via VK4KHZ
Option 15: Mon 2006-12-18 20:18 UTC 77 deg via VK5ZAI
Option 16: Tue 2006-12-19 17:29 UTC 24 deg via VK4KHZ
Option 17: Tue 2006-12-19 19:06 UTC 25 deg via VK5ZAI

School: **Thunmanskolan, Knivsta, Sweden**

Callsign: **VK4KHZ**

ISS callsign: NA1SS

Radio to use: **(SM) Kenwood**
Primary ISS channel: **42**
Backup ISS channel: **41**
Please make sure the microphone is close to the mouth so as to provide proper audio levels!

Predicted AOS time: 7/16:32-16:41 MET (GMT 351/18:19-18:28)

Direct or Telebridge: **Telebridge**
Ground Station Coordinates:

VK4KHZ Australia	Lat. 21.154S	Long. 148.136E	Elev. 300m
VK5ZAI Australia	Lat. 36.8707S	Long. 139.8215E	Elev. 5m

Setup Date/Time: About 5 minutes before rise time.
Pass is approximately ten minutes in duration.

Before the contact:
(SM) Configure Kenwood using US SODF: Uplinked Procedures: CSS: 14-0193 Ham Radio – Kenwood Manual Frequency Control (Steps 1 & 2) and frequency reference table in OCA message 14-0194 Ham Radio – Kenwood Manual Frequency Reference Table.
(SM) Adjust right side volume counter clockwise to hard stop

After the contact:
(SM) Press OFF for the Kenwood Radio .

Notes:
-Swedish is the language expected to be used in the contact.
-If there is difficulty in establishing contact, please announce which channel you are using.
-The entire crew is invited to participate as long as they use the NA1SS call sign.

School Information:

Coordinating Teacher: Thomas Nordlöv, School phone #: +46-18-34-7178, School Fax #: +46-18-34-7165, School email address: Thomas.nordlov@edu.knivsta.se, Home phone #: +46-18-34-3410, Home Fax #: +46-18-34-3410 (on request only), Cellular phone #: +46-737-89-0430, Home email address: Thomas.nordlov3@comhem.se

Radio Contact Coordinator: Eskil van Loosdrecht SM5SRR (AB6BC), Home Phone #: +46-18-380720, Cellular phone #: +46-709-225848, Home Fax #: +46-18-38-0720 (on request only), Home email Address: evl@post.utfors.se, Work email address: eskil.van-loosdrecht@sas.se

Thunmanskolan is, with a student number of about 600, the largest school in the municipality of Knivsta and encompasses grades 5 to 9. The school has been in existence since 1964. Students have access to computer rooms. These are used as a complement to the different taught subject like French, English, history etc. Thunmanskolan was the first school in Sweden with a Bulletin Board System (BBS) and they had their internet website up and running 2 years before Uppsala City Hall started their website. The students mostly come from typical middle-class areas and the community is located between two big cities i.e. the University City Uppsala, and the capital city Stockholm.

Students First Names & Questions:

1. My name is Moa. How do you eat in space and can the food come back up after it is swallowed because of weightlessness? – Over!

   Jag heter Moa. Hur äter man i rymden och kan maten åka upp när den är svald på grund av tyngdlösheten? – Over!

2. My name is Therese. Can birds fly in weightlessness? – Over!

   Jag heter Therese. Kan fåglar flyga i tyngdlöshet? – Over!

3. My name is Malin. How do you handle garbage? Do you bring it back to Earth or does part of it end up in space? – Over!

   Jag heter Malin. Hur hanterar ni avfall? Tar ni med det tillbaka till jorden eller hamnar en del i rymden? – Over!

4. My name is Paulina. Do you always have to wear you space suit? – Over!

   Jag heter Paulina. Måste du alltid ha din rymddräkt på? – Over!

5. My name is Marcus. What has made the biggest impression on you so far? – Over!

   Jag heter Marcus. Vilken är din starkaste upplevelse än så länge? – Over!

6. My name is Andrea. Where from do you get the oxygen in the space station? – Over!

   Jag heter Andrea. Varifrån får ni syret i rymdstationen? – Over!

7. My name is Emma. What do stars look like up there? Is it different than on earth? – Over!

   Jag heter Emma. Hur ser stjärnorna ut däruppe? Är det annorlunda än på jorden? – Over!

8. My name is Christian. Is it true that you see small light flashes in you eyes from cosmic radiation? – Over!

   Jag heter Christian. Är det sant att ni ser små ljusblixtar i ögonen från kosmisk strålning? – Over!

9. My name is Anna. What kind of personal thing did you bring with you?

   Jag heter Anna. Vilken slag ”personlig sak” tog du med dig?

10. My name is Victor. How do you define time in space? – Over!

    Jag heter Victor. Hur definierar ni tiden i rymden? – Over!

11. My name is Maja. What would you do if, during a space walk, you floated away from the space station? – Over!

    Jag heter Maja. Vad skulle du göra om du på en rymdpromenad åkte iväg från rymdstationen? – Over!

12. My name is Eric. Do you get stronger in weightlessness and how does one sleep? – Over!

    Jag heter Eric. Blir man starkare i tyngdlöshet och hur sover man i tyngdlöshet? – Over!

13. My name is Elisabeth. Did you get a pressure increase in your ears and did you become air sick when the rocket took you through the atmosphere? – Over!

    Jag heter Elisabeth. Fick du lock för öronen och blev du åksjuk när raketen tog er genom atmosfären? – Over!

14. My name is Carl-Johan. What type of fuel do you have for the rocket and how much do you burn? – Over!

    Jag heter Carl-Johan. Vilken sorts bränsle har ni i raketen och hur mycket går det åt? -Over!

15. My name is Marcus. Why did you become an astronaut? – Over!

    Jag heter Marcus . Varför blev du astronaut? – Over!

16. My name is Dominick. What were you thinking when the rocket started? – Over!

    Jag heter Dominick. Vad tänkte du när raketen startade? – Over!

17. My name is Tobias. What is your greatest concern during your journey? – Over!

    Jag heter Tobias. Vad är du mest orolig för som kan inträffa under er resa? – Over!

18. My name is Sara. Would you later like to travel further away in space to the moon or Mars? – Over!

Jag heter Sara. Skulle du senare vilja åka längre ut i rymden till månen eller Mars? – Over!

19. My name is Jakob. Do you think there is intelligent life in space? – Over!

Jag heter Jakob. Tror du att det finns intelligent liv i rymden? – Over!

20. My name is Linnea. Are you afraid of not coming back? – Over!

Jag heter Linnea. Är du rädd att inte komma

Good morning Joanie, Patrick, and STS-116 & Increment 14 crews!

Last night a little birdie told me to lighten up a bit, so I thought I'd start by lightening up your transfer message today!

Today the CDRA R&R will be completed, so the returning CDRA will be packed along with an additional LHA in Spacehab. Also, another ISS condensate CWC has been identified for Middeck return.

Transfer Status: Based on our conversation last night, you are currently 82% complete with resupply and 43% complete with return, for a total of 61% complete. You continue to amaze us with your speed and efficiency, which has kept you ahead of the curve.

The Transfer List Excel file, FD08_Transfer_List_STS116.xls, is located on the KFX machine in **C:\OCA-up\transfer.**

For ISS, the Transfer List Excel file, FD08_Transfer_List_STS116.xls, is located in **K:\OCA-up\transfer.**

Questions for Joanie

- We copied L-A's call yesterday that RSP C/O was completed, but we did not hear you call item 412.1 complete during last night's calldown. Has item 412.1 been transferred?

Transfer Notes

- Inside Spacehab at FC11, the left strap securing the SEBS to the stowage location appears to be coming loose. Please crisscross the straps to ensure this penetrator is secured.

- As requested, we've uplinked the latest version of the Spacehab layouts (both bulkheads and both racks).

- Just a reminder…don't forget to wrap the old CDRA bed (item 753) returning in Spacehab with the two jettison stowage bags removed from the new CDRA bed (item 12.1).

FD08 Choreography

Item 753: After R&R, transfer old CDRA to 5 MLE bag at AS03 (Bag "A") for return.
Item 807: Stow additional LHA in AS03 for return.

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

No updates to Resupply or Swap today!!

In the Middeck Transfer List **LAYOUTS** tab
Replace the following page:
L-2

In the Spacehab Transfer List **LAYOUTS** tab
Replace the following pages:
L-5 thru L-8

In the Middeck Transfer List **MDDK RTN REALTIME ADDITIONS** tab
Replace the following page:
Page Return 8

In the Spacehab Transfer List **RETURN** tab
Replace the following pages:
Page Return 12
Page Return 19

In the Middeck Transfer List **SPACEHAB RTN REALTIME ADDITIONS** tab
Replace the following page:
Page Return 22

Changes to the Transfer List are detailed below:

MIDDECK RTN REALTIME ADDITIONS
Item 805 – new item

SPACEHAB RETURN
Item 630 – updated comments
Item 773.4 – new item

SPACEHAB RTN REALTIME ADDITIONS
Item 807 – new item

Have a great day!

- The Transfer Team

Today there will only be a Supply Water Dump using the FES.

FES Dump Details

The FES Dump duration will be approximately 8 hours. Due to constraints with ISS momentum management, it is important that the dump initiation and termination occur at the prescribed times. Check MCC prior to initiating and terminating the FES Dump. The following details are required for the dump:

At MET 6/14:30, initiate SUPPLY WATER DUMP USING FES (ORB OPS, ECLS), p. 5-9, Step 1 DUMP INITIATION, using FES PRI A.

At MET 6/22:30, terminate the FES dump on MCC call using Step 2, DUMP TERMINATION; FES PRI A is req'd.

116

Back of LiOH Cue Card

FLIGHT DAY 3 DOCKING
ORBITER with ISS
CO2 ABSORBER REPLACEMENT

LiOH CANISTER STOWAGE LOCATIONS

ASCENT STOWAGE LOCATIONS

Orbiter:
MD52M (LiOH Box): Cans 1-31*****

*****2 LiOH cans installed in LiOH slots A and B

SpaceHAB:

SF01:	Cans 32-34
FS09:	35-37
SF11:	38-40
SF07:	41-43
FS08:	44-46
FS03:	47-49

NOTE

LiOH cans stored in Spacehab will be transferred to orbiter LiOH box per Flight Plan. When needed for changeouts, cans 32-49 will be found in orbiter LiOH box.

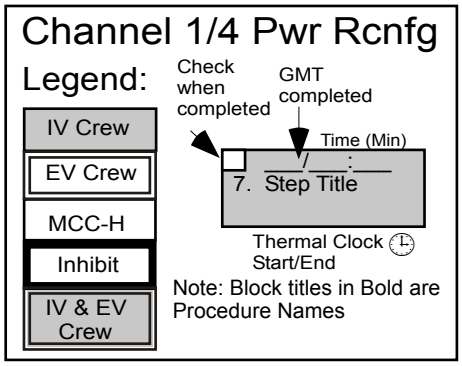
ENTRY (EOM) STOWAGE LOCATIONS

Orbiter:
MD52M (LIOH Box): Cans 5, 6, 21-49

SpaceHAB:

SF01:	Any three cans 1-4, or 7-20
SF02:	Any three cans 1-4, or 7-20
SF07:	Any three cans 1-4, or 7-20
SF09:	Any three cans 1-4, or 7-20
SF11:	Any three cans 1-4, or 7-20
SF12:	Any three cans 1-4, or 7-20

Channel 1/4 Power Reconfig



ASSUMPTIONS:
LVLH
Campout is EVA Protocol
ROOBA fully functional
Port SARJ on String 2 and rotating
MT at Workstation #3 in MT-CETA-CETA config
P6 4B Array is retracted
CMGs 2, 3, 4 are powered from Z1; CMG 1 powered from S0
CMG-3 not in control law

CHANNEL 1/4 RECONFIG INITIAL CONDITIONS

ADCO
- ☐ all GPS Antennas are on String 2

ODIN
- ☐ Tier 1 & 2 MDMs are powered from Channel 2/3

CATO
- ☐ S-band String 2 configured for Primary
- ☐ UHF system configured to UHF-1
- ☐ Audio and UHF FDIR inhibited
- ☐ IAC-2 is prime

THOR
- ☐ ORUs preheated to proper temps (ref FR 12A.1_C2-84)
- ☐ S1 and P1 TRRJs in Directed Position (position dependent on β)
- ☐ EATCS Loop A Fill Complete & ETCS Pressure > 2592 kPa (376 psi)
- ☐ Lab Window Shutter Shut (required for LA-1 MDM powerdown)
- ☐ IATCS in Single MT

ECLSS
- ☐ LAB1S6 CCAA operational

PHALCON
- ☐ Payload racks off (except ER4 and MELFI)
- ☐ A/L Patch Panel Reconfig complete (A/L avionics powered from Ch 2/3 string)
- ☐ Node 1 Y-Jumper installed (DDCU Z14B loads powered by RACU 6)

CIO
- ☐ UOPs and Ops LAN in proper config

BME
- ☐ EV-CPDS in standby

Russian Power:

Remove power from all FGB ARCUs and SM CHTs: Block 40*

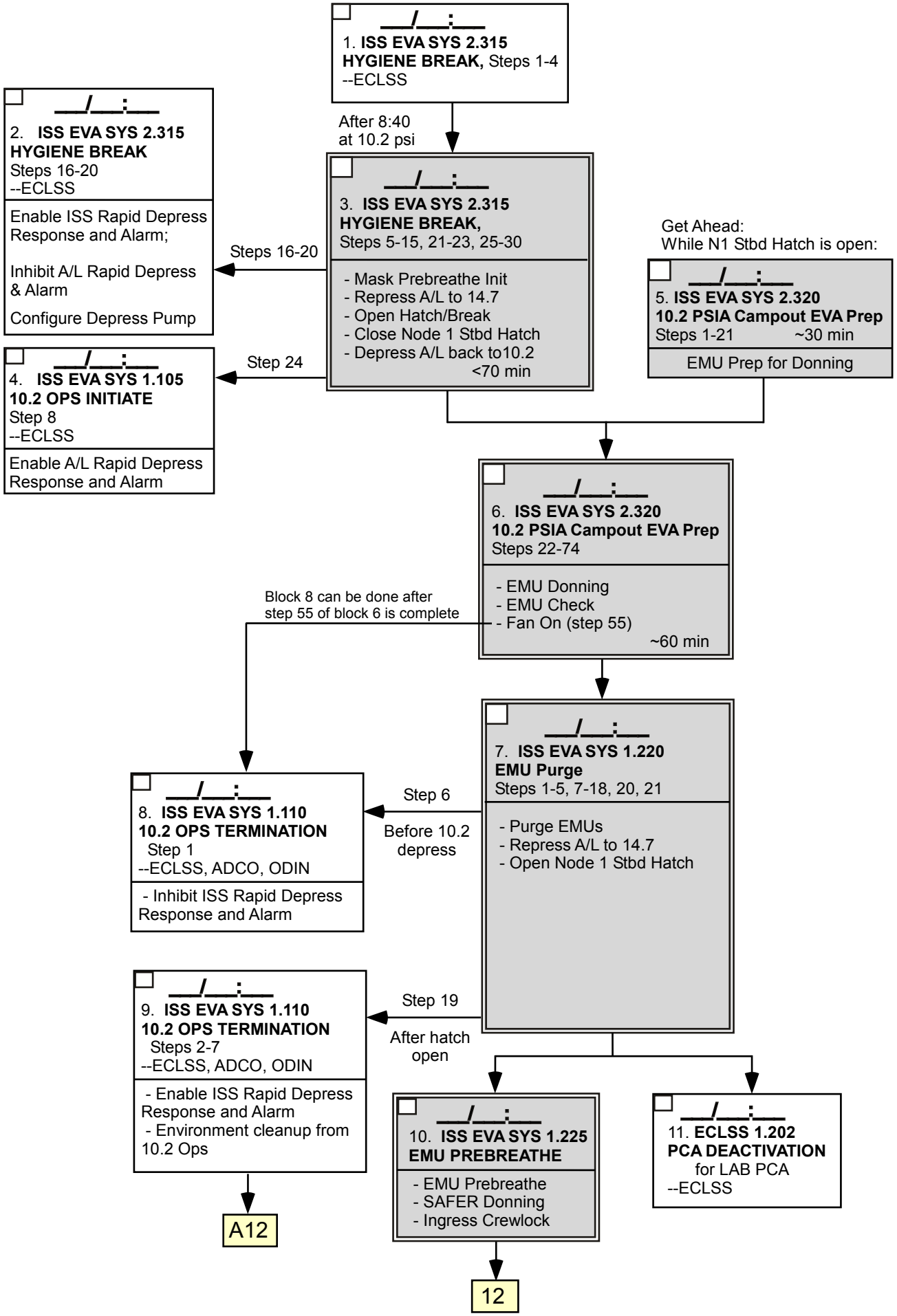
Reapply power to SM CHTs and FGB ARCUs: Block 46*

*Assumes S0/N1 Primary Power Jumper routed but not connected

Articulating Components:

	Stop Rotating	Start Rotating
SARJ	does not stop	does not stop
P1 TRRJ	Positioned	Taken to Lock in A6
S1 TRRJ	Positioned	Positioned

Channel 1/4 Power Reconfig



Channel 1/4 Power Reconfig

Disciplines will perform Blocks A1-A16 in parallel

Inform crew that they will have only one smoke detector in both Lab

Inform crew that Rack Power Switches will be disabled. Crew should use PCS if they need a Rack Power Switch.

___/___:___

A1. Lab Systems Rack Jumper Installation

- ☐ Avionics Rack Equipment Powerdowns (C&C 1, SCU1, VSU1, IAC1, ABC1, CVIU1, trunklines)

LAB SYSTEMS RACK POWER JUMPER INSTALLATION LAB1O5 TO LAB1D1 (AV2 RACK),

- ☐ Step 1 (MCC-H)
- ☐ Step 2, 4 (CREW)
- ☐ Step 3 (MCC-H)

- ☐ Power on C&C-1 MDM
- ☐ Swap C&C-1 -> Backup
  C&C-3 -> Standby
- ☐ Config S-bd in C&C-1

--ODIN, IV, CATO, PHALCON

→ A15

___/___:___

A2. Verify all Tier 1 & 2 MDMs are in proper config
--ODIN

___/___:___

A3. RT FDIR Inhibits
--ODIN ~15 min

___/___:___

A4. Pre EVA Config Script
--ODIN

A1 →

___/___:___

A5. Deact MDM

- ☐ C&C-3
- ☐ GNC-1

--ODIN

___/___:___

A6. Thor Powerdowns

- ☐ **2.410 LOOP B LOCK CROSS-STRAPPED DLA WITH ACTIVE STRING P1-1 (P1-2)**
  For String 1
- ☐ **2.405 LOOP A(B) TRRJ STRING 1 TO STRING 2 SWITCHOVER,** steps 1-5
  For Loop B
- ☐ **ETCS LOOP A(B) CONFIGURATION VERIFICATION** (for Loop A)

--THOR ~30 min

___/___:___

A7. **CHANNEL 1/4 POWERDOWN TRUSS HEATER PREP**

--THOR ~15 min

___/___:___

A8. **TCS 4.204 LAB IATCS RECONFIGURATION FOR LA-1 MDM TRANSITION,** Steps 1-8;
in step 2 don't inhibit FRITCS
--THOR ~15 min

___/___:___

A9. **12A.1 SSAS HEATER RECONFIGURATION - CHANNEL 1/4**, step 1 (if req'd)

--OSO

___/___:___

A10. Ops LAN Powerdown

--IV (timelined)

___/___:___

A11. Configure Internal and External Video (powerdown EVSUs 1 & 3, CVIUs 2, 3, 12)

--CATO

9 →

___/___:___

A12. ECLSS Powerdowns

- ☐ Lab PD1 Smoke Detector
- ☐ Lab Fwd Stbd IMV Vlv
- ☐ Lab Aft Port IMV Fan
- ☐ MCA Sample Sequence change to Lab

___/___:___

A13. **EPS SYSTEM CONFIG FOR EVA 3 POWERDOWN**

- ☐ Config CETA lights
- ☐ Inhibit Rack RPSs
- ☐ Confirm MCC-M prepared for ARCU/CHT pwrdn

--PHALCON ~15 min

___/___:___

A14. Payload Rack Config

- ☐ Verify ER4 and MELFI are configured on Channel 2A
- ☐ Verify all other payload racks are powered off

--POIC

___/___:___

A15. Verify MSS configured for single string

--ROBO

___/___:___

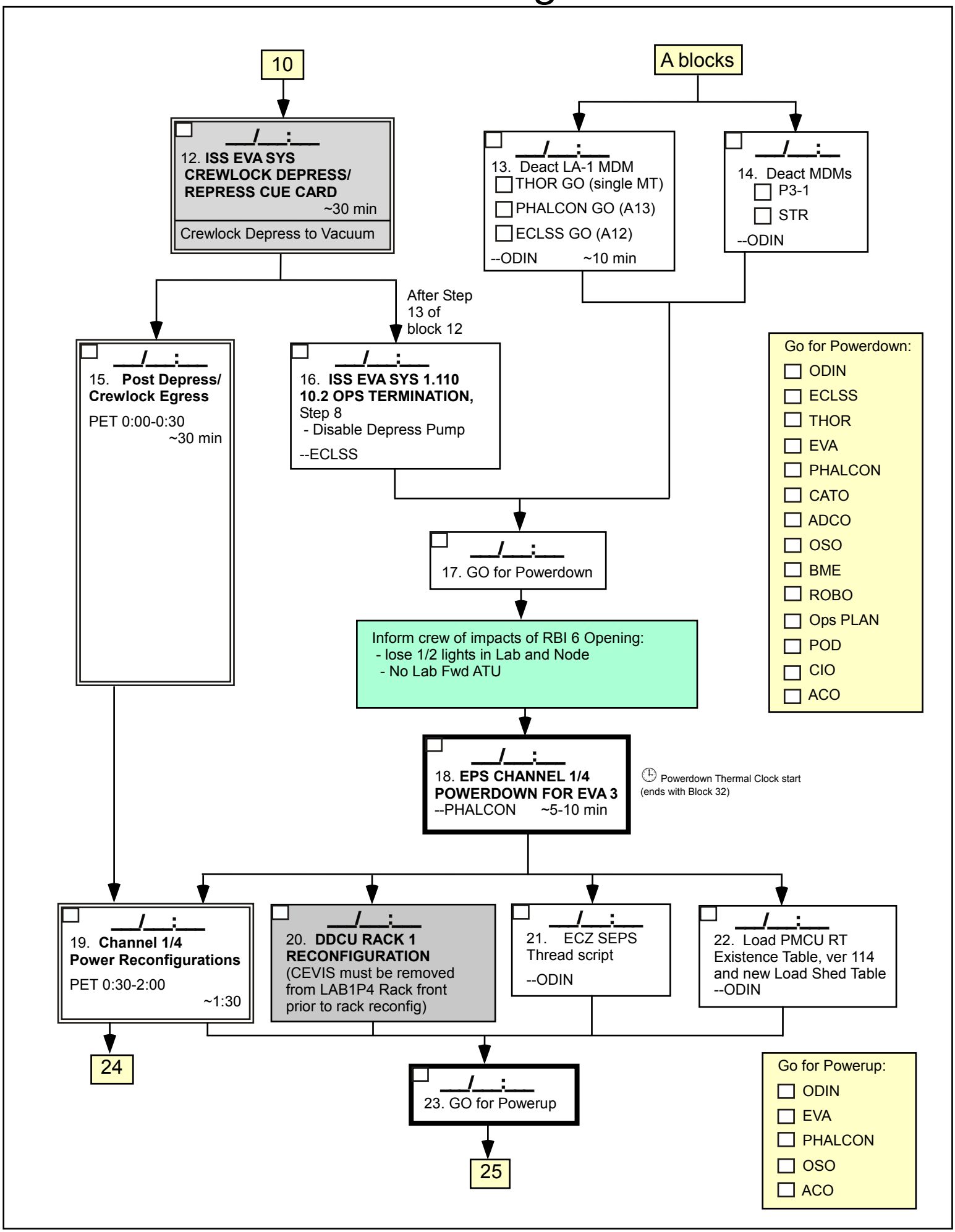
A16. ADCO Powerdowns

- ☐ Mode to USTO control
- ☐ **MCS 2.202 CMG SHUTDOWN** (for CMG 1)
- ☐ **MCS 2.608 GPS SHUTDOWN**
- ☐ **MCS 2.606 RGA SHUTDOWN**

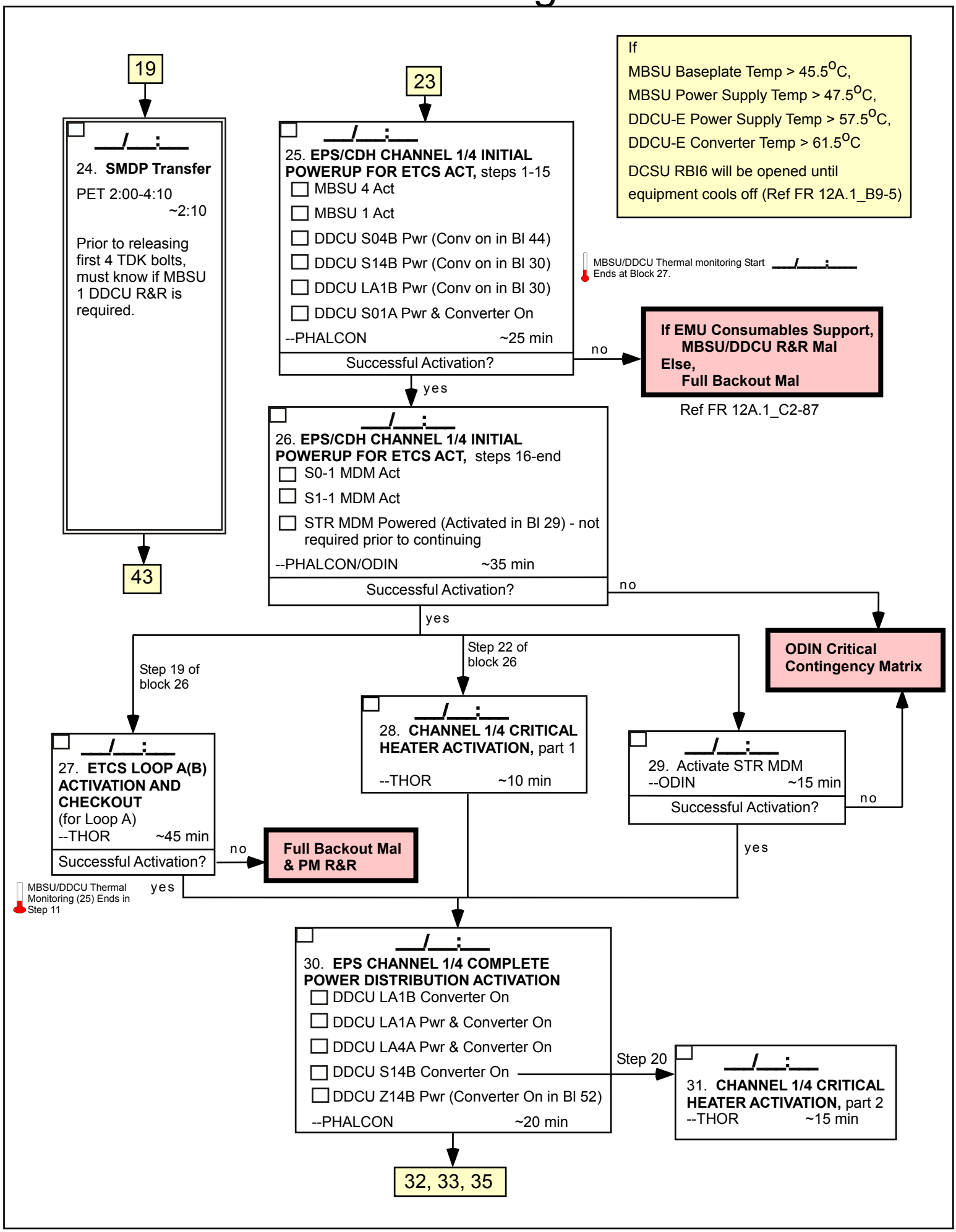
--ADCO

→ 13, 14

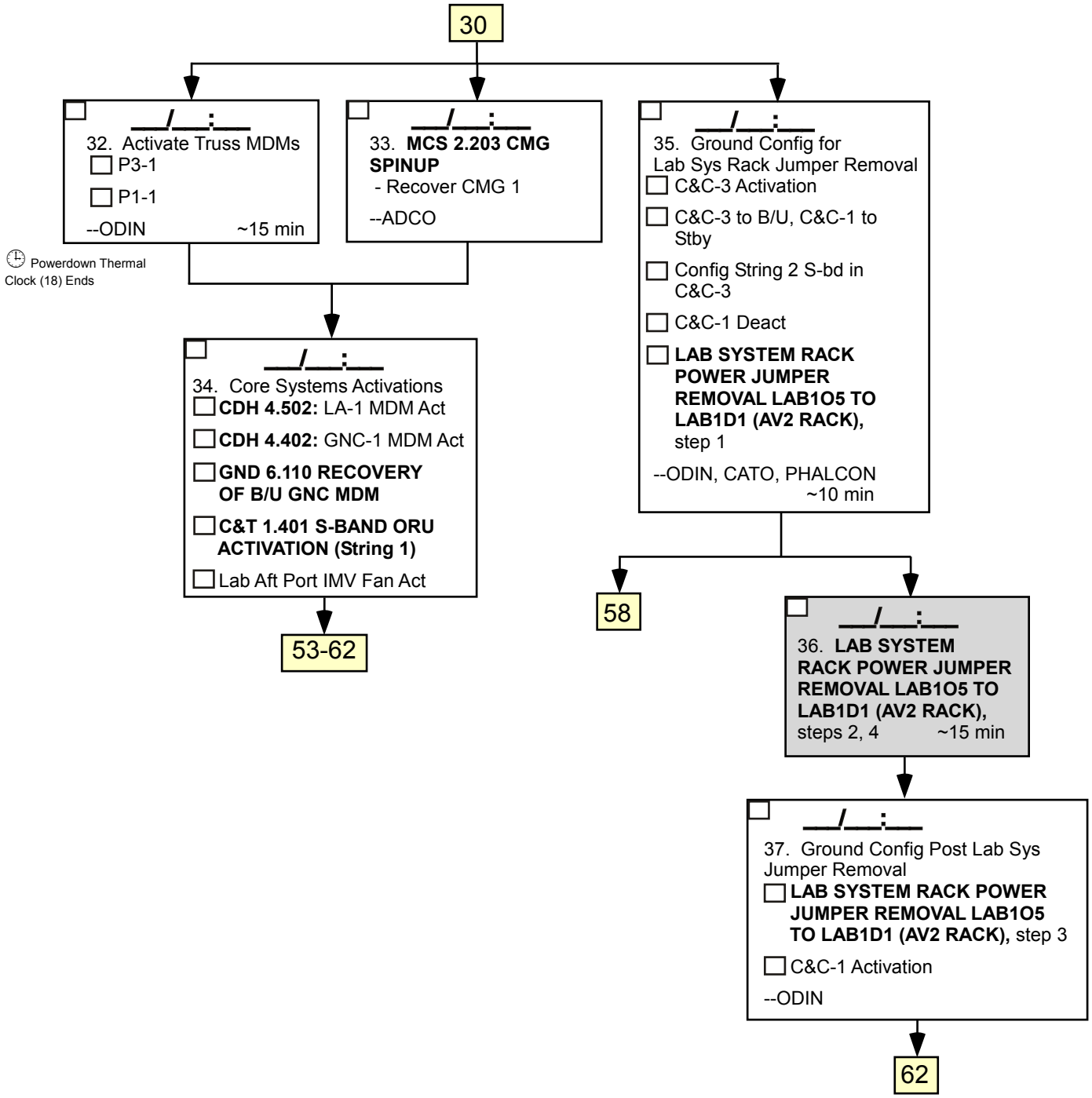
Channel 1/4 Power Reconfig



Channel 1/4 Power Reconfig



Channel 1/4 Power Reconfig



Channel 1/4 Power Reconfig

1 hour prior to starting Z1 Patch Panel 1 Reconfig

30 min prior to starting Z1 Patch Panel 1 Reconfig

☐ ___/___:___
38. **Prepare for CMG 4 Shutdown**
- Configure Solar Arrays for VRCS jet firings
- If required, perform Attitude control handover to Orbiter
--ADCO/PHALCON

☐ ___/___:___
39. **MCS 2.202 CMG SHUTDOWN**
- Shutdown CMG 4
--ADCO

☐ ___/___:___
40. MCC-M powerdown all FGB ARCUs and SM CHTs
--PHALCON/RIO

S-Band Clock Starts
___/___:___
Ends with Block 44

☐ ___/___:___
41. **Z1 CPP X1 (SPDA Z14B) RECONFIG,** Steps 1-7
--inhibits for Z1 PP Reconfig and Russian Power Reconfig
--PHALCON ~15 min

☐ ___/___:___
42. **Z1-005 Patch Panel 1 Reconfig (SPDA Z1-4B)**
PET 4:00-4:10 ~0:10

24

☐ ___/___:___
43. **Russian Power Reconfig**
PET 4:10-4:40 ~0:30

☐ ___/___:___
44. **Z1 CPP X1 (SPDA Z14B) RECONFIG,** Steps 8-14
☐ DDCU S04B Converter On
☐ CHT on
--PHALCON

S-band Clock (41) Ends

☐ ___/___:___
45. **AGB Transfer to FHRC**
PET 4:40-5:25 ~0:45

☐ ___/___:___
46. **Z1 CPP X1 (SPDA Z14B) RECONFIG,** Steps 15-end
--MCC-M activates FGB ARCUs & SM CHTs per plan
--Configure BGA2B for Nom Ops
--PHALCON

☐ ___/___:___
47. **MCS 2.203 CMG SPINUP**
- Recover CMG 4
--ADCO

☐ ___/___:___
48. **EVA 3 Cleanup**
PET 5:25-5:45 ~0:20

Inform crew that they are prime for Node 1 Smoke Detection for the duration of Node load powerdown

☐ ___/___:___
49. **Crewlock Ingress / Pre Repress**
PET 5:45-6:10 ~25 min

☐ ___/___:___
50. Ground Config for N1 Y-Jumper Removal
☐ Unpower ECLSS Loads
☐ N1-1 MDM powerdown
☐ RACU 6 powerdown
--ECLSS, ODIN, PHALCON

☐ ___/___:___
51. **IFM 2.3.402 NODE 1 Y-CABLE INSTL/REMOVAL**, steps 4-6

☐ ___/___:___
52. Ground Config Post Node 1 Y- Jumper Removal
☐ RACU 6 Activation
☐ DDCU Z14B Repower
☐ N1-1 MDM Repower
--ODIN, PHALCON, ECLSS

Channel 1/4 Power Reconfig

John McCullough Memorial Free For All

34

___/___:___

53. ADCO Free for All
- ☐ **2.607 GPS STARTUP**
- ☐ **2.605 RGA STARTUP**
- ☐ **2.206 CMG SURVIVAL HEATER POWERUP**

___/___:___

54. Verify MSS configured for dual string
--ROBO

___/___:___

55. OSO Free for All
- ☐ **12A.1 SSAS HEATER RECONFIGURATION - CHANNEL 1/4,** steps 2 - 5
- ☐ **12A.1 SSAS HEATER RECONFIGURATION - CHANNEL 2/3,** step 4

--OSO

___/___:___

56. **EPS LOAD RECONFIGURATION POST EVA 3**
- ☐ Set Rack RPS Availability for LA-1 MDM
- ☐ Enable Rack RPS
- ☐ Close RPCs to Loads
- ☐ Activate SARJ Redundant RJMC
- ☐ Power off Lab, S1-2, N1-2 CETA Lights

--PHALCON

GO for Ops LAN Powerup

___/___:___

57. RT FDIR Enable
--ODIN ~10 min

35

___/___:___

58. ODIN Free For All
- ☐ Post-EVA FDIR Config
- ☐ Configure C&W in backup C&C MDM (C&C-3)
- ☐ Activate APS1 & PEHG1

--ODIN

___/___:___

59. POIC Free for All
- ☐ ER4 and MELFI to nominal power config
- ☐ Power Off MELFI Brayton motor

--POIC

___/___:___

60. THOR Free for All
- ☐ **2.205 LAB IATCS TRANSITION TO SINGLE MT (AUTO),** Step 1 only
- ☐ **4.204 LAB IATCS RECONFIG FOR LA1 MDM TRANSITION,** steps 10-15
- ☐ **2.204 LAB IATCS TRANSITION TO SINGLE LT (AUTO)**
- ☐ **CHANNEL 1/4 NON-CRITICAL HEATER ACTIVATION**
- ☐ **2.402 LOOP A TRRJ INITIALIZE STRING 1(2);**
- ☐ **2.406 LOOP A(B) TRRJ STRING 2 TO STRING 1 SWITCHOVER,** steps 1-6
  For Loop B
- ☐ **2.417 LOOP A(B) TRRJ INITIATE DIRECTED POSITION OR AUTOTRACK;**
  For Loop B: Directed posn at $\Gamma = -30^{o}$

37

For Equipment in AV Rack 2

___/___:___

61. ECLSS Free for All
- ☐ **2.506 IMV VALVE RECONFIGURATION POST CCS,** step 1
  Lab Fwd Stb IMV Vlv
- ☐ **1.201 PCA ACTIVATION**
  For LAB PCA
- ☐ **1.401 SMOKE DETECTOR ACTIVATION**
  For Lab PD1 SD
- ☐ **2.301 MCA AUTO SEQUENCE LIST CHANGE**
- ☐ Turn on Payload Rack Smoke Detection (concurrent with Payload rack activation)

___/___:___

62. CATO Free for All
- ☐ Enable Audio & UHF FDIR
- ☐ **C&T 2.205 AUDIO SUBSYSTEM NOMINAL VOICE LOOPS SETUP**
  Power on Lab ATU 2, ABC1, AUAI2S
- ☐ **C&T 2.212 AUDIO SUBSYSTEM CONFIGURATION FOR DOCKED OPERATIONS**
- ☐ **C&T 1.301 K-BAND HEATER ACT**
- ☐ **C&T 1.601 VDS ACTIVATION**
- ☐ **C&T 4.602 VDS TRUNKLINE CONFIGURATION**

14-0593 (MSG 069) CHANNEL 1/4 POWER RECONFIGURATION DEFINITIONS TABLE
(ASSY OPS/12A.1/FIN) Page 1 of 19 pages

	Callout	Definition/Comment
	Initial Conditions	ADCO ❑ All GPS Antennas are on String 2 ODIN ❑ Tier 1 and 2 MDMs are powered from Channel 2/3 CATO ❑ S-Band 2 Configured for Primary ❑ UHF System configured to UHF-1 ❑ Audio and UHF FDIR inhibited ❑ IAC-2 is Prime THOR ❑ ORUs preheated to proper temperatures. Reference FR 12A.1_C2-84. ❑ S1, P1 TRRJs in Directed Position (position dependent on β) ❑ EATCS Loop A Fill Complete and EATCS Pressure > 2592 kPa (390 psi) (Pressure will be rechecked in Block A6) ❑ LAB Window Shutter Shut ❑ IATCS in Single MT ECLSS ❑ LAB1S6 CCAA Operational PHALCON ❑ Payload racks off (Except ER4 and MELFI) ❑ A/L Patch Panel Reconfigurations complete (A/L avionics powered from Channel 2/3 string) ❑ Node 1 Y-Jumper installed (DDCU Z14B loads powered by RACU 6). CIO ❑ UOPs and Ops LAN in proper configuration BME ❑ EV-CPDS in Standby

	Callout	Definition/Comment
A1	Lab Systems Rack Jumper Installation	Avionics Rack Equipment Powerdown {4.303 CC MDM TRANSITION C: TRANSITIONING CC 3(1, 2) MDM FROM STANDBY(BACKUP) TO FAILED/DIAGNOSTIC/OFF} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER I) Power down CC 1. {4.602 VDS TRUNKLINE CONFIGURATION} (SODF: C&T: CORRECTIVE: VIDEO) for USOS trunklines 1, 2, 5 to 7, 10, 14 to 29 and MSS trunklines 4, 5, 8, 9 {1.603 VDS DEACTIVATION} (SODF: C&T: ACTIVATION AND CHECKOUT: VIDEO) for VSU-1, SCU-1 {4.202 AUDIO SUBSYSTEM DEACTIVATION} steps 11, 13 (SODF: C&T: CORRECTIVE: AUDIO) Deact IAC-1, ABC-1 {1.602 VDS CVIU POWERUP AND POWERDOWN}, step 2 (SODF: C&T: ACTIVATION AND CHECKOUT: VIDEO) for CVIU-1 {LAB SYSTEM RACK POWER JUMPER INSTALLATION LAB1O5 TO LAB1D1 (AV2 RACK)}, (SODF: ASSY OPS: POWER RECONFIGURATION: S&M) Step 1 - performed by MCC-H Step 2, 4 - performed by crew Step 3 - performed by MCC-H {4.302 CC MDM TRANSITION B: TRANSITIONING CC 3(1,2) MDM FROM OFF TO STANDBY(BACKUP)} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER I) Power on CC 1. Swap CC 1 to Backup, CC 3 to Standby. Configure S-Band in CC 1 (CATO).

<table>
<tr><th></th><th>Callout</th><th>Definition/Comment</th></tr>
<tr><td>A2</td><td>Verify all Tier 1 and 2 MDMs are in proper configuration</td><td>Logical IDs:
<table>
<tr><td>Primary:</td><td>Other:</td></tr>
<tr><td>C&C-2</td><td>C&C-1 Backup
C&C-3 Standby</td></tr>
<tr><td>INT-2</td><td>INT-1 Off</td></tr>
<tr><td>GNC-2</td><td>GNC-1 Backup</td></tr>
<tr><td>PMCU-2</td><td>PMCU-1 Off</td></tr>
<tr><td>EXT-2</td><td>EXT-1 Off</td></tr>
<tr><td>PL-2</td><td>PL-1 Off</td></tr>
<tr><td>N1-2</td><td>N1-1 Secondary</td></tr>
</table></td></tr>
<tr><td>A3</td><td>RT FDIR Inhibits</td><td>ODIN FDIR INHIBIT Script (reference DEC ALPHA)
This is a “nice to have” block that will prevent buses from switching.</td></tr>
<tr><td>A4</td><td>Pre-EVA Configuration Script</td><td>Pre-EVA_FDIR_Config
Inh Recovery For Tier 2 MDMs (except INT and PMCU)
Inh BC Comm Fail
Inh Auto Trans to Diag for INT and PMCU
Suppress Caution & Warning for EVA</td></tr>
</table>

	Callout	Definition/Comment
A5	Deactivate MDMs CC 3 GNC 1	{4.303 CC MDM TRANSITION C: TRANSITIONING CC 3(1, 2) MDM FROM STANDBY(BACKUP) TO FAILED/DIAGNOSTIC/OFF} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER I) {LAB SYSTEM RACK POWER JUMPER INSTALLATION LAB1O5 TO LAB1D1 (AV 2 RACK)} (SODF: ASSY OPS: POWER RECONFIGURATION: S&M) (Block A1) must be complete prior to performing this step {4.403 GNC MDM TRANSITION C: TRANSITION BACKUP GNC MDM 2(1) FROM WAIT TO DIAGNOSTIC/OFF WHILE PRIMARY GNC MDM IS OPERATIONAL} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER II) For GNC 1
A6	THOR Power Downs	{2.410 LOOP B LOCK CROSS-STRAPPED DLA WITH ACTIVE STRING P1-1 (P1-2)} (SODF: TCS: NOMINAL: TRRJ) For String 1 {2.405 LOOP A(B) TRRJ STRING 1 TO STRING 2 SWITCHOVER} steps 1-5 (SODF: TCS: NOMINAL: TRRJ) For Loop B {ETCS LOOP A(B) CONFIGURATION VERIFICATION} (SODF: ASSY OPS: POWER RECONFIGURATION: TCS) Loop A ETCS Repress only if required, should not be necessary due to initial conditions. The repress takes ~20 minutes. It is desired to perform the repress before time-critical activities begin. This repress is required to achieve a Pump Inlet Pressure of at least 2592 kPa at PM Activation time (reference FR 12A.1_B18-11).
A7	{CHANNEL 1/4 POWERDOWN TRUSS HEATER PREP} (SODF: ASSY OPS: POWER RECONFIGURATION: TCS)	Assures that T-stat heaters on Channel 2/3 are powered.
A8	{4.204 LAB IATCS RECONFIGURATION FOR LA1 MDM TRANSITION}, steps 1 to 8 (SODF: TCS: CORRECTIVE: IATCS)	In step 2 of 4.205, do not inhibit FRITCS. Records applicable RFCA parameters prior to MDM deactivation. Configures PMA2, LAB Window, and IFHX Heaters as well as verifying stable ITCS performance prior to inhibiting TWMVs.

	Callout	Definition/Comment
A9	{12A.1 SSAS HEATER RECONFIGURATION - CHANNEL 1/4} step 1 (SODF: ASSY OPS: POWER RECONFIGURATION: S&M)	If required
A10	Ops LAN Powerdown	Timelined for IV Crew. Half of all UOPs and SSCs unavailable after powerdown. Fileserver and OCA are still available.
A11	Configure Internal and External Video	VIDEO: {1.602 VDS CVIU POWERUP AND POWERDOWN} (SODF: C&T: ACTIVATION AND CHECKOUT: VIDEO) For powering down CVIUs 2, 3, and 12 {1.603 VDS DEACTIVATION} (SODF: C&T: ACTIVATION AND CHECKOUT: VIDEO) for EVSU-1& -3 NOTE Comm equipment not powered off in this block or in block A1 is not powered down gracefully.
A12	ECLSS Powerdowns	Prior to performing this block, the crew should be informed that they will lose one smoke detector in the Lab for the duration of the powerdowns (full smoke detection will be regained in block 61). {1.402 SMOKE DETECTOR DEACTIVATION} (SODF: ECLSS: ACTIVATION AND CHECKOUT: FDS) LAB PD1 Smoke Detector {2.506 IMV VALVE RECONFIGURATION POST CCS}, step 4 (SODF: ECLSS: NOMINAL: THC) LAB Fwd Stbd IMV Valve {1.504 IMV FAN ACTIVATION/DEACTIVATION POST CCS}, step 3 (SODF: ECLSS: ACTIVATION AND CHECKOUT: THC) LAB Aft Port IMV Fan {2.301 MCA AUTOSEQUENCE LIST CHANGE} (SODF: ECLSS: NOMINAL: ARS) MCA Sample Sequence to Lab (only perform after block 9 has been completed.)

	Callout	Definition/Comment
A13	{EPS SYSTEM CONFIGURATION FOR EVA 3 POWERDOWN} (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	Part of this procedure instructs the ground to inform the crew that Rack Power Switches are being disabled. If the crew needs to use an RPS, they should use the PCS. Turn on LAB, N1-2, and S1-2 CETA Lights; check heater for S1-1 CETA light. Inhibit Rack RPS Monitoring at D1, D3, P1, P3, P5, P6, S1, S2, and S3 must be performed prior to deactivating LA 1 MDM. Confirm **MCC-M** prepared for ARCU/CHT powerdown.
A14	Payload Rack Configuration	Verify ER4 and MELFI are configured to Channel 2A. Verify all other payload racks are off. Since all racks are off, Smoke Detection is inhibited. LA 1 MDM controls LAB1S2 (HRF), LAB1S3 (MSG), and LAP1 smoke detectors.
A15	Verify MSS is configured for Single String Ops	Cup RWS active, SSRMS and MBS operational on redundant string
A16	ADCO Powerdowns	Mode to USTO control {2.202 CMG SHUTDOWN} (SODF: MCS: NOMINAL: CMGs) Disconnect Spin Motor from CMG 1. The CMG will not be completely spun down. {2.608 GPS SHUTDOWN} (SODF: MCS: NOMINAL: ATTITUDE AND STATE DETERMINATION) {2.606 RGA SHUTDOWN} (SODF: MCS: NOMINAL: ATTITUDE AND STATE DETERMINATION)

	Callout	Definition/Comment
1	{2.315 HYGEINE BREAK}, steps 1 to 4 (SODF: ISS EVA SYS: OVERNIGHT CAMPOUT)	
2	{2.315 HYGEINE BREAK}, steps 16 to 20 (SODF: ISS EVA SYS: OVERNIGHT CAMPOUT)	Enable ISS Rapid Depress Response and Alarm. Inhibit A/L Rapid Depress and Alarm. Configure Depress Pump
3	{2.315 HYGEINE BREAK}, steps 5-15, 21-23, 25-30 (SODF: ISS EVA SYS: OVERNIGHT CAMPOUT)	- Mask Prebreathe Init - Repress A/L to 14.7 (step 12) - Open Hatch/Hygiene Break - Close Node 1 Stbd Hatch - Depress A/L to 10.2 (step 23)
4	{1.105 ISS AIRLOCK 10.2 PSIA OPERATIONS INITIATION}, step 8 (SODF: ISS EVA SYS: 10.2 PSIA OPS)	Enable A/L Rapid Depress Response and Alarm. Called from step 24 of Block 3. To be performed after the Airlock is depressed to 10.2 psi (step 23 of Block 3).
5	{2.320 10.2 PSIA CAMPOUT EVA PREP}, steps 1 to 21 (SODF: ISS EVA SYS: OVERNIGHT CAMPOUT)	EMU Prep for Donning
6	{2.320 10.2 PSIA CAMPOUT EVA PREP}, steps 22 to 74 (SODF: ISS EVA SYS: OVERNIGHT CAMPOUT)	- EMU Donning - EMU Check - EMU Suit Fan on (in step 55)
7	{1.220 EMU PURGE}, steps 1 to 5, 7 to 18, 20, 21 (SODF: ISS EVA SYS: EVA PREP/POST)	- Purge EMUs - A/L Repress to 14.7 (step 10) - Open Node 1 Stbd Hatch (step 11)
8	{1.110 ISS AIRLOCK 10.2 PSIA OPERATIONS TERMINATION }, step 1 (SODF: ISS EVA SYS: 10.2 PSIA OPS)	Inhibit ISS Rapid Depress Response and Alarm. This step can be performed as soon as the Suit Fan is on (Step 55 of Block 6) and must be performed prior to A/L repress (Step 10 of Block 7).
9	{1.110 ISS AIRLOCK 10.2 PSIA OPERATIONS TERMINATION }, steps 2 to 7 (SODF: ISS EVA SYS: 10.2 PSIA OPS)	Enable ISS Rapid Depress Response and Alarm. Environment cleanup from 10.2 Ops. Perform this step after the Node 1 Stbd Hatch is open (Step 11 of Block 7).

	Callout	Definition/Comment
10	{1.225 EMU PREBREATHE} (SODF: ISS EVA SYS: EVA PREP/POST)	- EMU Prebreathe - SAFER Donning - Ingress Crewlock
11	{1.202 PCA DEACTIVATION} (SODF: ECLSS: ACTIVATION AND CHECKOUT: ACS)	For LAB PCA This procedure must occur after the Node 1 Starboard hatch is opened (Step 11 of Block 7). Not a constraint for the EVA pressing forward.
12	{CREWLOCK DEPRESS/REPRESS CUE CARD}, (SODF: ISS EVA SYS: EVA PREP/POST)	Crewlock Depress to Vacuum
13	Deactivate LA 1 MDM	{4.503 LAB MDM TRANSITION C: TRANSITIONING LAB MDM FROM OPERATIONAL/MIN OPS TO STANDBY/DIAGNOSTIC/OFF} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER III) Can do as soon as: ❑ THOR: must be in Single MT (initial condition). ❑ PHALCON: Rack RPSs must be disabled (Block A13). ❑ ECLSS: Must be done with Block A12.
14	Deactivate MDMs P3 1 STR	{4.631 P3 MDM TRANSITION C: TRANSITIONING P3 MDM FROM NORMAL/WAIT TO WAIT/DIAGNOSTIC/OFF} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER III) {4.619 STR MDM TRANSITION C: TRANSITIONING STR MDM FROM NORMAL/WAIT TO WAIT/DIAGNOSTIC/OFF} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER III)
15	Post Depress/Crewlock Egress	Reference EVA Timeline. PET 0:00 - 0:30
16	{1.110 ISS AIRLOCK 10.2 PSIA OPERATIONS TERMINATION}, step 8 (SODF: ISS EVA SYS: 10.2 PSIA OPS)	Disable Depress Pump.

	Callout	Definition/Comment
17	Go for Powerdown	Everyone but PHALCON should be done with their steps. Crew should be informed of the impacts of opening RBI6: - lose 1/2 lights in Node and Lab - No comm with Orbiter (ICOM) - No Lab Fwd ATU
18	{EPS CHANNEL 1/4 POWERDOWN FOR EVA 3} (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	All Thermostatically Controlled Heaters are turned off at this point. This block starts the Powerdown Thermal Clock (ends in Block 32). 4B RBI 6 open 4A RBI 6 open
19	Channel 1/4 Power Reconfigurations	Reference EVA Timeline. PET 00:30 - 02:00
20	{DDCU RACK 1 RECONFIGURATION} (SODF: ASSY OPS: POWER RECONFIGURATION: S&M)	DDCU LA1A and LA4A configured to allow parallel mode operations. Includes installing Channel 1/4 - LAB Cable Assembly Jumper. CEVIS must be removed from LAB1P3 Rack front prior to performing the DDCU Rack 1 Reconfiguration procedure. This will occur per timelined activity.
21	ECZ SEPS Thread script	Verify S1, P1, and S0 configuration after pulling power
22	Load PMCU RT Existence Table Version 114 to Pri PMCU and new Load Shed Table	This allows the PMCU to see the MBSU. This can be done earlier if needed, but alarms will be received because the PMCU will be looking for MBSUs that are not yet connected. Must be done prior to Block 25.
23	Go for Powerup	EVA Power Reconfigurations and DDCU Patch Panel reconfigurations must be complete for GO.
24	SMDP Transfer	Reference EVA Timeline. PET 02:00 - 04:10 Need to tell EVA if an MBSU or DDCU R&R will be required prior to EV crew releasing first four TDK bolts.

	Callout	Definition/Comment
25	{EPS/CDH CHANNEL 1/4 INITIAL POWERUP FOR ETCS ACTIVATION}, steps 1 to 15 (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	❑ MBSU 4 Activation ❑ MBSU 1 Activation ❑ DDCU S04B Power (converter not turned on until Block 44) ❑ DDCU S14B Power (converter not turned on until Block 30) ❑ DDCU LA1B Power (converter not turned on until Block 30) ❑ DDCU S01A Power and Converter On If an MBSU or DDCU failure is detected and EMU consumables support, an R&R of the failed box will be performed. Flight Rule 12A.1_C2-87. If a failure is detected after the time which EMU consumables could support an R&R, a complete backout of the EVA Power Reconfigurations is required and the EPS will be returned to the pre-12A.1 configuration for this channel. This block starts the MBSU/DDCU Thermal Monitoring. Ends with Block 27. Constraints MBSU Baseplate temp <45.5° C MBSU Power Supply Temp < 47.5° C DDCU Power Supply Temp < 57.5° C DDCU Converter Temp < 61.5° C
26	{EPS/CDH CHANNEL 1/4 INITIAL POWERUP FOR ETCS ACTIVATION}, steps 16 to end (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	❑ S0 1 MDM Activation ❑ S1 1 MDM Activation ❑ STR MDM Powered (Activated in Block 29) Reference {12A.1 CRITICAL CONTINGENCIES DURING POWERUP AFTER COMPLETION OF EPS CH 2/3 RECONFIGURATION} (SODF: ASSY OPS: POWER RECONFIGURATION: CONTINGENCY) for workarounds if off-nominal activation.
27	{ETCS LOOP A(B) ACTIVATION AND CHECKOUT} for Loop A (SODF: ASSY OPS: POWER RECONFIGURATION: TCS)	Successful activation of the Pump Module in this procedure ends MBSU/DDCU Thermal Monitoring (started in Block 25). If the PM Activation is not successful, the power system must be put into a pre-EVA configuration, using the Full Backout Mal procedure. A Pump Module R&R will be attempted at the next available opportunity. PHALCON will give go for this block in Step 19 of Block 26.

	Callout	Definition/Comment
28	{CHANNEL 1/4 CRITICAL HEATER ACTIVATION}, part 1 (SODF: ASSY OPS: POWER RECONFIGURATION: TCS)	This block ends part 1 of the Powerdown Thermal Clock (started Block 18). The entire Powerdown Thermal Clock is ended in block 32.
29	Activate STR MDM	{4.618 STR MDM TRANSITION B: TRANSITIONING STR MDM FROM OFF TO WAIT} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER III) The RPC for the STR MDM is closed in Step 23 of Block 26. Reference {12A.1 CRITICAL CONTINGNECIES DURING POWERUP AFTER COMPLETION OF EPS CH 2/3 RECONFIGURATION} (SODF: ASSY OPS: POWER RECONFIGURATION: CONTINGENCY) for workarounds if off-nominal activation. STR MDM can be used to read ETCS loop pressures. The STR MDM is activated at this time to prepare for off-nominal activation of the S1 1 MDM.
30	{EPS CHANNEL 1/4 COMPLETE POWER DISTRIBUTION ACTIVATION} (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	❑ DDCU LA1B Converter On (powered in Block 25) ❑ DDCU LA1A Power and Converter On ❑ DDCU LA4A Power and Converter On ❑ DDCU S14B Converter On (powered in Block 25). ❑ DDCU Z14B Power (Converter On in Block 52) This block should be completed prior to proceeding with remaining blocks to allow PHALCON to bring up the most critical equipment first.
31	{CHANNEL 1/4 CRITICAL HEATER ACTIVATION}, part 2 (SODF: ASSY OPS: POWER RECONFIGURATION: TCS)	This block ends part 2 of the Powerdown Thermal Clock (started Block 18). The entire Powerdown Thermal Clock is ended in block 32.
32	Activate Truss MDMs P3-1 P1-1	This block ends part 3 of the Powerdown Thermal Clock (started in block 18). After this block, all Powerdown Thermal clocks have ended. {4.630 P3 MDM TRANSITION B: TRANSITIONING P3 MDM FROM OFF TO WAIT} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER III) {4.622 P1 MDM TRANSITION B: TRANSITIONING P1 MDM FROM OFF TO WAIT} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER III)
33	{2.203 CMG SPIN UP}, Recover CMG 1 (SODF: MCS: NOMINAL: CMGS)	NOTE The CMG will require ~1 hour to spin up to 6600 rpm, but this block is complete as soon as commanding is complete.

	Callout	Definition/Comment
34	Core Systems Activations	{4.502 LAB MDM TRANSITION B: TRANSITIONING LAB MDM FROM OFF TO OPERATIONAL} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER III) Activate LA 1 MDM. {4.402 GNC MDM TRANSITION B: TRANSITIONING GNC BACKUP MDM 2(1) FROM OFF TO WAIT WHILE PRIMARY GNC IS OPERATIONAL} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER II) Activate GNC 1 MDM. {6.110 RECOVERY OF BACKUP GNC MDM} (SODF: GND AVIONICS: MCS: ACTIVATION AND CHECKOUT) {1.401 S-BAND ORU ACTIVATION} (SODF: C&T: ACTIVATION AND CHECKOUT: S-BAND) For String 1 {1.504 IMV FAN ACTIVATION/DEACTIVATION POST CCS}, steps 1 to 2 (SODF: ECLSS: ACTIVATION AND CHECKOUT: THC) LAB Aft Port IMV Fan NOTE The purpose of this block is to allow certain systems to be brought up as soon as possible without being stepped on by “Free for All” commanding. “Free for All” steps should not be started until this block is complete.

	Callout	Definition/Comment
35	Ground Configuration for Lab Systems Rack Jumper Removal	{4.302 CC MDM TRANSITION B: TRANSITIONING CC 3(1,2) MDM FROM OFF TO STANDBY(BACKUP)} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER I) CC 3 Activation {4.305 C&C MDM TRANSITION E: SWAPPING THE BACKUP AND STANDBY C&C MDM} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER I) Swap CC 3 to Backup, CC 1 to Standby Configure String 2 S-Band in CC 3. {4.303 CC MDM TRANSITION C: TRANSITIONING CC 3(1, 2) MDM FROM STANDBY(BACKUP) TO FAILED/DIAGNOSTIC/OFF} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER I) Deactivate CC 1. {LAB SYSTEM RACK POWER JUMPER REMOVAL LAB1O5 TO LAB1D1 (AV2 RACK)}, step 1 (SODF: ASSY OPS: POWER RECONFIGURATION: S&M) Safe RPCs for Jumper Removal. The Lab Systems Rack Jumper should be removed as soon as possible to reduce the amount of time that the CC MDMs are on the same power channel, but it can be deferred to the next day if necessary.
36	{LAB SYSTEM RACK POWER JUMPER REMOVAL LAB1O5 TO LAB1D1 (AV2 RACK)}, steps 2 & 4 (SODF: ASSY OPS: POWER RECONFIGURATION: S&M)	Crew actions to return power from Channel 1/4 to AV Rack 2, LAB1D1.
37	Ground Configuration post Lab Systems Rack Jumper Removal	{LAB SYSTEM RACK POWER JUMPER REMOVAL LAB1O5 TO LAB1D1 (AV2 RACK)}, step 3 (SODF: ASSY OPS: POWER RECONFIGURATION: S&M) {4.302 CC MDM TRANSITION B: TRANSITIONING CC 3(1,2) MDM FROM OFF TO STANDBY(BACKUP)} (SODF: C&DH: CORRECTIVE: MDM STATE TRANSITIONS TIER I) CC 1 Activation
38	Prepare for CMG 4 Shutdown	Start ~1 hour prior to EV crew performing the Z1 Patch Panel 1 Reconfiguration Configure Solar Arrays for VRCS jet firings If required, perform Attitude control handover to Orbiter. Attitude Control Handover may not be required if CMG 1 can be spun up prior to shutting down CMG 4.

	Callout	Definition/Comment
39	{2.202 CMG SHUTDOWN} (SODF: MCS: NOMINAL: CMGs)	Start ~30 minutes prior to EV crew performing the Z1 Patch Panel 1 Reconfiguration. Disconnect Spin Motor from CMG 4. The CMG will not be completely spun down.
40	**MCC-M** powerdown all FGB ARCUs and SM CHTs	Start ~30 minutes prior to EV crew performing the Z1 Patch Panel 1 Reconfiguration.
41	{Z1 CPP X1 (SPDA Z14B) RECONFIGURATION}, steps 1 to 7 (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	Starts the String 2 S-band Clock. Ends in block 44. Inhibit for Z1 Patch Panel Reconfiguration and Russian Power Reconfiguration. Includes positioning the 2B array for plasma protection
42	Z1-005 Patch Panel 1 Reconfiguration (ZPDA Z1-4B)	Reference EVA Timeline. PET 04:00 - 04:10
43	Russian Power Reconfiguration	Reference EVA Timeline. PET 04:10 - 04:40
44	{Z1 CPP X1 (SPDA Z14B) RECONFIGURATION}, steps 8 to 14 (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	DDCU S0-4B Converter On (powered in Block 25). CHT powered on
45	AGB Transfer to FHRC	Reference EVA Timeline. PET 04:40 - 05:25
46	{Z1 CPP X1 (SPDA Z14B) RECONFIGURATION}, steps 15 to end (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	**MCC-M** activates FGB ARCUs and SM CHTs per plan. Configure BGA 2B for Nominal Ops.
47	{2.203 CMG SPIN UP}, Recover CMG 4 (SODF: MCS: NOMINAL: CMGS)	NOTE The CMG will take ~1 hour to spin up to 6600 rpm, but this block is complete as soon as the commanding is complete.
48	EVA 3 Cleanup	Reference EVA Timeline. PET 05:25-05:45
49	Crewlock Ingress/Pre-Repress	Reference EVA Timeline. PET 05:45-06:10

	Callout	Definition/Comment
50	Ground Configuration for Node 1 Y-Jumper Removal	Prior to performing this block, Crew should be notified that they will be prime for Node 1 Smoke Detection for the duration of the Node powerdown. This should not be done until the Russian Power Reconfiguration is complete and **MCC-M** has repowered CHTs and ARCUs. Unpower ECLSS Loads Node 1 Cabin Fan Node 1 Smoke Detector 1 Node 1 Smoke Detector 2 (because Cabin Fan is off) Node 1 Aft Port IMV Fan Node 1 RAMV Node 1 IMV valves Stbd Fwd Stbd Aft Aft Port Aft Stbd {4.607 NODE 1 MDM TRANSITION G: N1-1 TO OFF/DIAGNOSTIC/STANDBY FROM SECONDARY WHILE N1-2 IS PRIMARY} (SODF: CDH: CORRECTIVE: MDM STATE TRANSITIONS TIER III) Unpower N1 1 MDM. {1.204 RACU 6 DEACTIVATION} (SODF: EPS: ACTIVATION AND CHECKOUT: SECONDARY POWER SYSTEM) {2.3.402 N14B Y-JUMPER INSTALLATION/REMOVAL} step 1 (SODF: IFM: NODE 1: MANUAL FAULT ISOLATION AND RECOVER/EPS) The Node 1 Y-Jumper should be removed as soon as possible but it can be deferred to the next day if necessary.
51	{2.3.402 N14B Y-JUMPER INSTALLATION/REMOVAL}, steps 4 to 6 (SODF: ISS IFM: NODE 1: MANUAL FAULT ISOLATION AND RECOVERY/EPS)	Reconfigure Channel 1/4 power back to DDCU Z14B loads.

	Callout	Definition/Comment
52	Ground Configuration Post Node 1 Y-Jumper Removal	{1.203 FGB RACU 6 ACTIVATION} (SODF: EPS: ACTIVATION AND CHECKOUT: SECONDARY POWER SYSTEM) {1.223 FGB RACU 6 CONTROLLED REPOWER} (SODF: EPS: ACTIVATION AND CHECKOUT: SECONDARY POWER SYSTEM) Repower N1 1 MDM. {1.225 Z1 DDCU Z14B CONTROLLED REPOWER} (SODF: EPS: ACTIVATION AND CHECKOUT: SECONDARY POWER SYSTEM) ECLSS will repower loads that were unpowered in Block 50 per {4.205 NODE MDM RECONFIGURATION}, step 4.4 (SODF: C&DH: CORRECTIVE: MDM RECONFIGURATION) and {1.401 SMOKE DETECTOR ACTIVATION}, all (SODF: ECLSS: ACTIVATION AND CHECKOUT: FDS) for Node 1 Smoke Detector 2.
53	ADCO Free for All	{2.607 GPS STARTUP} (SODF: MCG: NOMINAL: ATTITUDE AND STATE DETERMINATION) {2.605 RGA STARTUP} (SODF: MCG: NOMINAL: ATTITUDE AND STATE DETERMINATION) {2.206 CMG SURVIVAL HEATER POWERUP} (SODF: MCG: NOMINAL: CMGS)
54	Verify MSS configured for dual string	Power MBS to Keep-Alive on prime string. Verify PHALCON/THOR scripts have repowered the MT.
55	OSO Free For All	{12A.1 SSAS HEATER RECONFIGURATION - CHANNEL 1/4}, steps 2 to 5 (SODF: ASSY OPS: POWER RECONFIGURATION: S&M) {12A.1 SSAS HEATER RECONFIGURATION - CHANNEL 2/3}, step 4 (SODF: ASSY OPS: POWER RECONFIGURATION: S&M)
56	{EPS LOAD RECONFIGURATION POST EVA 3} (SODF: ASSY OPS: POWER RECONFIGURATION: EPS)	LA-1 must be up before these steps can be performed. Set Rack RPS Availability for LA 1 MDM. Enable Rack RPS. Close RPCs to Loads Luminaire Heaters Lights UOPs Activate SARJ Redundant RJMC. Power off LAB, S1-2, N1-2 CETA Lights

	Callout	Definition/Comment
57	RT FDIR Enable	ODIN RT FDIR Enable Script (Reference DEC ALPHA)
58	ODIN Free For All	Post-EVA FDIR Configuration (Post_EVA_FDIR_Config Script) Configure C&W in backup CC MDM. Activate APS1 and PEHG1.
59	POIC Free for All	ER4 and MELFI Power Reconfiguration to nominal power channel Power off MELFI Brayton Motor Must be complete prior to THOR performing TCS 4.235 (block 60).

	Callout	Definition/Comment
60	THOR Free For All	These procedures return the ITCS to a nominal Single MT mode after LA1 MDM recovery. DDCU LA1B activation in Block 30 and LA1 MDM activation in block 34 are required for these procedures. {2.205 LAB IATCS TRANSITION TO SINGLE MT (AUTO)}, step 1 (SODF: TCS: NOMINAL: IATCS) {4.204 LAB IATCS RECONFIG FOR LA1 MDM TRANSITION}, steps 10 to 15 (SODF: TCS: CORRECTIVE: IATCS) This procedure will configure the IATCS system in Single mode. DDCU LA1B activation in Block 30, LA1 MDM activation in block 34 and the two procedures listed above are required for this procedure. {2.204 LAB IATCS TRANSITION TO SINGLE LT (AUTO)} (SODF: TCS: CORRECTIVE: IATCS) This procedure activated survival heaters on the S0, S1 and P1 trusses in 2 parts. DDCU S01A activation in Block 25 and S0-1 and P1-1 MDM activation in Block 26 are required for part 1 and DDCU S14B activation in block 30 is required for part 2. {CHANNEL 1/4 NON-CRITICAL HEATER ACTIVATION} (SODF: ASSY OPS: POWER RECONFIGURATION: TCS) This procedure reinitializes Loop A String 1 after the reconfiguration powerdown. MBSUs 1 & 4 and DDCU S04B activation in Block 25 and S1-1 MDM activation in block 26 are required for this procedure: {2.402 LOOP A TRRJ INITIALIZE STRING 1(2)} (SODF: TCS: NOMINAL: TRRJ) {2.406 LOOP A(B) STRING 2 TO STRING 1 SWITCHOVER} steps 1-6 (SODF: TCS: NOMINAL: TRRJ) For Loop B {2.417 LOOP A(B) TRRJ INITIATE DIRECTED POSITION OR AUTOTRACK} (SODF: TCS: NOMINAL: TRRJ) For Loop B: Directed Position at $\Gamma = -30^{o}$

	Callout	Definition/Comment
61	ECLSS Free for All	{2.506 IMV VALVE RECONFIGURATION POST CCS}, step 1 (SODF: ECLSS: NOMINAL: THC) LAB Fwd Stbd IMV Valve {1.201 PCA ACTIVATION} (SODF: ECLSS: ACTIVATION AND CHECKOUT: ACS) for LAB PCA {1.401 SMOKE DETECTOR ACTIVATION} (SODF: ECLSS: ACTIVATION AND CHECKOUT: FDS) for LAB PD1 Smoke Detector {2.301 MCA AUTO SEQUENCE LIST CHANGE} (SODF: ECLSS: NOMINAL: ARS) Return to Node, LAB, A/L Nominal Sample Turn on Payload rack Smoke Detection (concurrent with Payload Rack Activation, if required).
62	CATO Free For All	{2.701 UHF 1 ORU ACTIVATION} (SODF: C&T: NOMINAL: UHF) Enable UHF FDIR Enable Audio FDIR (no SODF procedure) {2.205 AUDIO SUBSYSTEM NOMINAL VOICE LOOPS SETUP} (SODF: C&T: NOMINAL: AUDIO) Activate ABC-1, AUAI2S, Lab ATU2 {2.212 AUDIO SUBSYSTEM CONFIGURATION FOR DOCKED OPS} (SODF: C&T: NOMINAL: AUDIO) {1.301 KU-BAND HEATER ACTIVATION} (SODF: C&T: ACTIVATION AND CHECKOUT: KU-BAND) {1.601 VDS ACTIVATION} (SODF: C&T: ACTIVATION AND CHECKOUT: VIDEO) {4.602 VDS TRUNKLINE CONFIGURATION} (SODF: C&T: CORRECTIVE: VIDEO) NOTE Comm checks are desired after the Internal Audio configuration is complete; therefore, it is desired that this block be completed 2 hours prior to crew sleep. If not completed before sleep, comm checks should be performed after crew wake. The UHF will remain powered and functioning as the big loop until checks are performed.

The main topic at the MMT was a status of the Team Four activities with respect to a dedicated P6 retract EVA or potential simple get ahead tasks for P6 retract activities during EVA 3. The ongoing ISS P6 loads analysis and vehicle anomalies were also discussed. The MMT complimented both the STS-116 crew and the MCC team's outstanding performance during EVA 2.

Because analysis and EVA technique development are on-going, a final decision regarding an additional EVA for the P6 retract was not made at the FD 7 MMT. The teams continue to review the benefits of performing an additional EVA on STS-116 or delaying this EVA to the stage or subsequent shuttle mission. The factors for this decision are the ISS loads analysis required to clear docking on the FGB nadir docking port which will be used by Soyuz in April and a continued development of EVA tasks and associated risk assessments for improving the P6 Array problems. The ISS MMT discussed the loads analysis today and will make a final decision tomorrow on whether the loads are acceptable for a Soyuz nadir docking. If the loads are acceptable, then both the Shuttle and Station Programs will likely defer the P6 retract to a downstream shuttle mission. If not, your mission timeline will likely be modified to incorporate this EVA activity with details to follow for uplink prior to FD 9.

A summary of the Team 4 activities related to a P6 EVA provided the MMT insight into the techniques being considered. These include an in-flight constructed tool used for grommet realignment, blanket manipulation, and/or interface with the guide wires. The reach and access associated with the array hardware was discussed since this drives the need for the SSRMS to provide a translation path along both solar array blanket boxes. The hazards associated with this EVA near an active solar array are well understood and the team continues to work on risk mitigation including which tasks should be completed in day versus night passes.

An overview of how the P6 EVA will fit into the mission timeline as well as what activities will have to be deleted were provided to the MMT. Several timeline options were presented including adding these tasks to EVA 3 or a separate EVA on flight day 9 or flight day 10. The EVA 3 option was dismissed due to the inability to generate/verify operational products in time. Additionally for EVA 3 solar array tasks, the SSRMS must be at worksite 5 which is not compatible with the EVA 3 power channel 1/4 tasks which require the MT at worksite 3. The FD9 and FD10 options were discussed each with their respective pros/cons. The team recommends the FD10 option due to the time required to generate/verify/uplink the operational products, numerous SCSC violations, and sleep shift impacts associated with the back to back EVA option.

If a P6 EVA is required, the mission timeline trades include Late Inspection since one of the 12+2 days would be required for the EVA. The MMT provided direction that the Late Inspection activity will remain on the timeline and will discuss any tradeoffs at a subsequent MMT if required.

EVA 3 Get Ahead Task - The ISS MMT approved a simple get ahead task for EVA 3 which would involve an EVA crewmember inputting a load into the P6 array structure via the blanket box. The MCC will provide you with details and a plan later today.

P6 Loads Analysis - The ISS team continues to analyze the P6 array configuration and how FGB docking loads can affect this structure. The loads model was run with the P6 array at a 30, 60, and 95 percent deployed position and includes a 1.5 uncertainty factor to protect for model uncertainties. Preliminary analysis indicates that no load exceedance exist for the 60 and 95 percent deployed positions with an FGB nadir docking. The P6 array is currently at the 56 percent deployed position (17.5 bays). The 30 percent deploy position does indicate a slight loads exceedance and array billowing. The ISS MMT will decide tomorrow if the analysis is sufficient to wait for a subsequent Shuttle mission to execute an EVA to retract the array.

ISS Attitude Control - The reason that Shuttle had to take attitude control yesterday was excessive momentum in the ISS CMG Momentum Manager likely due to increased atmospheric density due to the recent increased solar activity. The stack lost 450 meters of altitude and has since regained 300 meters while on Shuttle vernier control.

ISS RPCM LA2B Trip - At GMT 349/07:41 RPCM LA2B-E RPC 5 tripped open which powers the lamps on the Lab C&W panel. You can still hear C&W tones as well as initiate C&W events by pushing the buttons on the panel. Lights are available via PCS or the Russian C&W panels. There is no plan to R&R this RPCM while docked.

ISS N2 Transfer - N2 transfer continues and at the end of FD 7 approximately 41 lbs have been transferred. This activity will conclude on FD9.

Solar Activity - The MMT discussed the geomagnetic event during EVA 2 and the predicted activity for the near term. Space weather conditions are currently at high levels due to a flare that was observed from Solar Region 930. These conditions are expected to remain at moderate/high levels for the immediate future. The Space Radiation Analysis Group will continue to closely monitor this region for changes and activity. EVA 3 is in a good location in terms of groundtrack, there are no plans to alter the EVA, and it will be managed within the existing flight rules.

1

Interactions between Ground and Crew -Channel 1/4 Power Reconfiguration

2

Flowchart Block	Activity	Performed by	Notes
Blocks 1-10	EVA Prep	IVs, EVs, ground	Timelined activties, am FD08
A1	Lab Systems Rack Jumper Installation	FE-2	Timelined activty, pm FD07
A10	Ops LAN Powerdown	FE-2	Timelined activity, am FD08
A12	ELCSS Powerdowns	ground	Lose 1/2 smoke detection in Lab
A13	EPS System Config for EVA 3 Powerdown	ground	Rack Power Switches (RPSs) disabled.
18	EPS Channel 1/4 Powerdown for EVA 3	ground	**Inhibits for EVA Activity:** Channel 1/4 Power Reconfigurations. Crew will lose 1/2 lights in Lab and Node, No Lab Fwd ATU
before 20	Remove CEVIS from LAB1P4 Rack Front	FE-2	Timelined activity, midday FD08. Must be done prior to DDCU Rack 1 Reconfiguration
20	DDCU Rack 1 Reconfiguration	ISS CDR, FE-2	Scheduled in timeline, must be done during powerdown
25	EPS/CDH Channel 1/4 Initial Powerup for ETCS Act	ground	If successful, no MBSU or DDCU R&R required
27	ETCS Loop A(B) Activation and Checkout (for Loop A)	ground	If successful, no PM R&R required
36	Lab Systems Rack Jumper Removal	MS-1, FE-2	Timelined activty, pm FD08
38	Attitude Control Handover to STS	STS CDR	Required for Z1 Patch Panel Reconfig powerdowns (powerdown CMG 4)
41	Z1 CPP X2 (SPDA Z14B Reconfig)	ground	**Inhibits for EVA Activities:** Z1-005 Patch Panel 1 Reconfig (SPDA Z1-4B) and Russian Power Reconfig. No visible impacts.
51	Node 1 Y-Jumper Removal	MS-1, FE-2	Crew will be prime for Smoke Detection in Node while Node loads are powered off.
After 56	EPS Load Reconfiguration Post EVA 3	ground	Crew go for Ops LAN Powerup

14-0600 (MSG 080) – Big Picture Words for Channel (1/4) for Power Reconfiguration

We are reconfiguring power channel 1/4 today. There are two parts to the power reconfigs: the main channel 1/4 reconfig and the Z1 Patch Panel Reconfig.

A full list of the equipment that is powered off during the powerdowns is available in {CHANNEL 1/4 POWERDOWN SUMMARY - (EVA 3)} (SODF: ASSY OPS: MALFUNCTION: REFERENCE: NONE).

- If you're interested in following along, we've uplinked a new version of the Channel 1/4 Flow Chart Update (14-0592, Msg 068) and Channel 1/4 Power Reconfiguration Definitions Table (14-0593, Msg 069), with some updates to THOR and OSO ground procedures. There are no block number changes from what you have in the Assy Ops book.
- Disciplines will be powering down redundant equipment throughout the morning, to put their system in a good config for powerdown. You will probably not notice the powerdowns until we put the EVA inhibits in place (corresponds to block 18 in the flowcharts). At that time, you will notice half of the lights in the Node and the Lab go off and the Lab Fwd ATU will not be functioning. You will be given a heads up before we put the inhibits in place.
- The Lab PCA will be unpowered, so there will not be any automatic Positive Pressure Relief. In the event that positive pressure relief is needed, you will need to execute Warning Book procedure {2.503 ISS Cabin Press High}, Step 10, star block.
- While the EV crew is performing the Channel 1/4 Power Reconfiguration (i.e. while the 1/4 channel is powered down), LA and Thomas will put Lab DDCUs LA1A and LA4A into a parallel configuration during the DDCU Rack 1 Reconfiguration activity. You'll need to remove CEVIS and rotate the rack to perform that activity. Also, for this activity we would like you to install the Channel 1/4 LAB Cable Assembly (W15345) at the rack UIP earlier in the procedure to avoid the bottleneck of having to wait for the 4400 fasteners on the rack rear access panel, prior to Channel 1/4 activation . The execute notes contain the recommended reordering of the steps in the procedure.
- After the EVA crew completes the cable reconfigurations, the ground will begin the powerup, starting with critical equipment (MBSUs, DDCUs, Pump Module). If any MBSU, DDCU, or the Pump Module fails its activation, a contingency plan will be executed to R&R the failed box, if possible. Power up will take most of the rest of the day. It may or may not be complete by the time you go to bed.
- All coordination between crew and ground during the Power Reconfig timeframe are summarized in Channel 1/4 Ground/Crew Interactions Table (14-0594, Msg 070)