STS-114/LF1

FD 11 Execute Package

MSG	Page(s)	Title
130D	1 - 14	FD11 Flight Plan Revision **(pdf)**
131A	15 - 16	FD11 Mission Summary **(pdf)**
125	17 - 19	ISS Scopemeter, Shuttle IFM Multimeter Swap **(pdf)**
128	20 - 21	APDS: Capture Latch 1 Manual Release Troubleshooting **(pdf)**
132	22 - 25	MNVR from Undock Viewing to ISS EVA 14 Viewing POSN **(pdf**
133	26 - 32	Post EVA Transfer and Reconfig Changes **(pdf)**
134	33 - 34	OBSS PTU Test **(pdf)**
135	---	FD11 PAO VIP Call **(pdf - Electronic Only)**
136	35 - 39	PCG-STES Transfer ISS to Mddk **(pdf)**
137	40 - 41	FD11 Water Activity Summary **(pdf)**
138	42 - 65	FD10 MMT Summary **(pdf)**
139	66 - 67	Laptop Prep for Transfer **(pdf)**
140	68 - 83	Excerpt from WLEIDS In-flight Status Report (FYI only) **(pdf)**
141	84 - 97	FD11 Transfer Message **(pdf)**

Approved by FAO: *L. DeLapp*
OPS Plan: *J. Aldape*

Last Updated: Aug 5 2005 1:56AM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v2.04.0003*

MSG 130D - FD11 FLIGHT PLAN REVISION

MSG INDEX

1. Post Sleep Cryo Config:

   R1 CRYO O2, H2 MANF VLV TK2 (two) - OP (tb - OP)
   TK1 HTRS A, B (four) - AUTO
   TK3 HTRS A, B (four) - OFF

   A11 CRYO TK4 HTRS H2 A, B (two) – AUTO

2. In OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, NOMINAL), pg FS 1-30, Step 9, the last line should read:

   On SSRMS Operator GO, go to RMS PWRDN, Step 1 only

   When the SRMS is at precradle,
   Give the SSRMS Operator GO to mnvr to EVA 14 Viewing Position

3. The Wing Leading Edge Sensors (WLES) continue to function nominally. Units in the cold (STBD) wing continue to respond. Since our last report, the WLES team has completed over 30 hours of near-continuous on-orbit operations. Included in today's Execute Package (MSG 140) is an excerpt from the L+120 Hour In-flight Status Report (released near the end of FD6). This is not for operational use, but only to provide you with insight into the results obtained from the downlinked data.

4. We have a couple of changes to today's SSRMS Operations. You will be happy to know the ground has decided that the big maneuvers in today's MPLM operations can be performed in Coarse rates. You can ignore all of the redlines in procedure 2.622 Contingency MPLM Uninstall! To save the Inc 11 crew a little time after undock, we have an additional procedure we would like you to perform to set up for viewing the upcoming Stage EVA. This new position will also be used to view the Shuttle undocking. The procedure will maneuver the SSRMS from the Undock Viewing position (procedure 1.124, step 3) to an ISS EVA 14 Viewing position. It will consist of a short Joint OCAS followed by an Elbow Pitch maneuver in Single and should only take you about ten minutes to perform. For arm to arm clearance purposes, it will not be performed until the SRMS is at the Pre-Cradle position.

5. Notes for MPLM Activities:

   CBM:

   a. Prep For Demate. Completed by OSO overnight. The checkout of the CBM was nominal, and we are GO for MPLM Demate, however during the deployment of Latch 4 (Port Aft) we saw a slight increase in torque. During the execution of 1.109 MPLM Vestibule Outfitting – Configure for Demate step 6, please inspect the area around all four Latches to determine if something in the interface might have interfered with deployment and caused some minor Latch torque, paying particular attention to Latch 4 (Port Aft).

   b. Controllers ON. The Node1/Nadir CBM Controllers were powered by OSO last night and will remain ON through Demate. The controllers will be below the required touch-temperature of 113 deg F. Care should be taken to not snag/pull any CBM Controller cables/connectors.

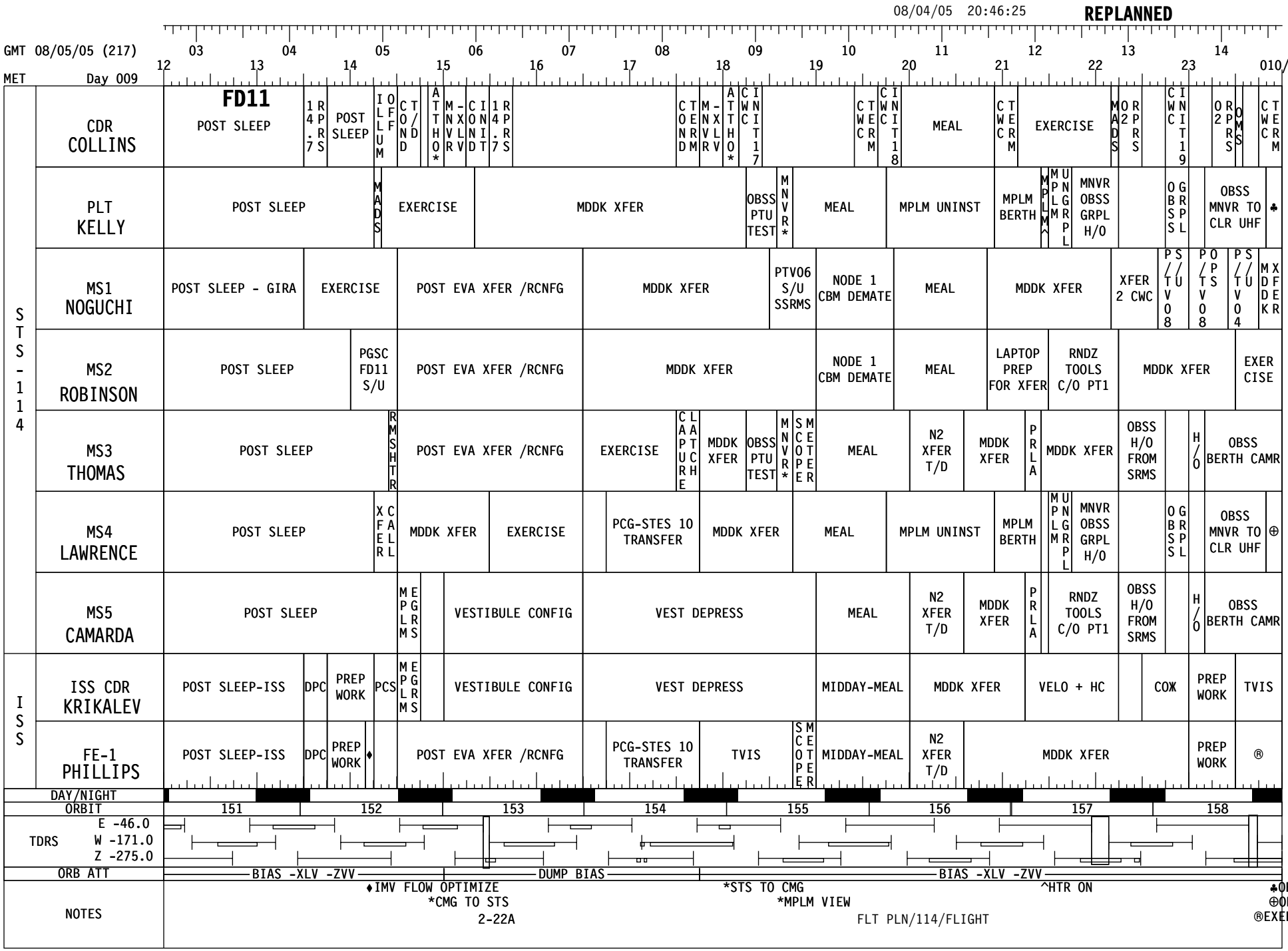
   MPLM Vestibule Outfitting: During MPLM vestibule outfitting you removed the Face O-ring from the MPLM-side IMV Cap to install on the IMV Supply Jumper. We have uplinked a revised step 3 (reference MSG 066) of 1.109 During MPLM Vestibule Outfitting – Configure for Demate to account for re-installing a Face O-ring on the MPLM-side IMV Cap.

6. Exercise Constraints for FD11:

   a. During Mechanism Ops no exercise is permitted prior to the initiation of CBM RBOLTs Remove Third Four (step 7 of 1.509 CBM Demate) until the MPLM has been maneuvered away from the CBM interface.

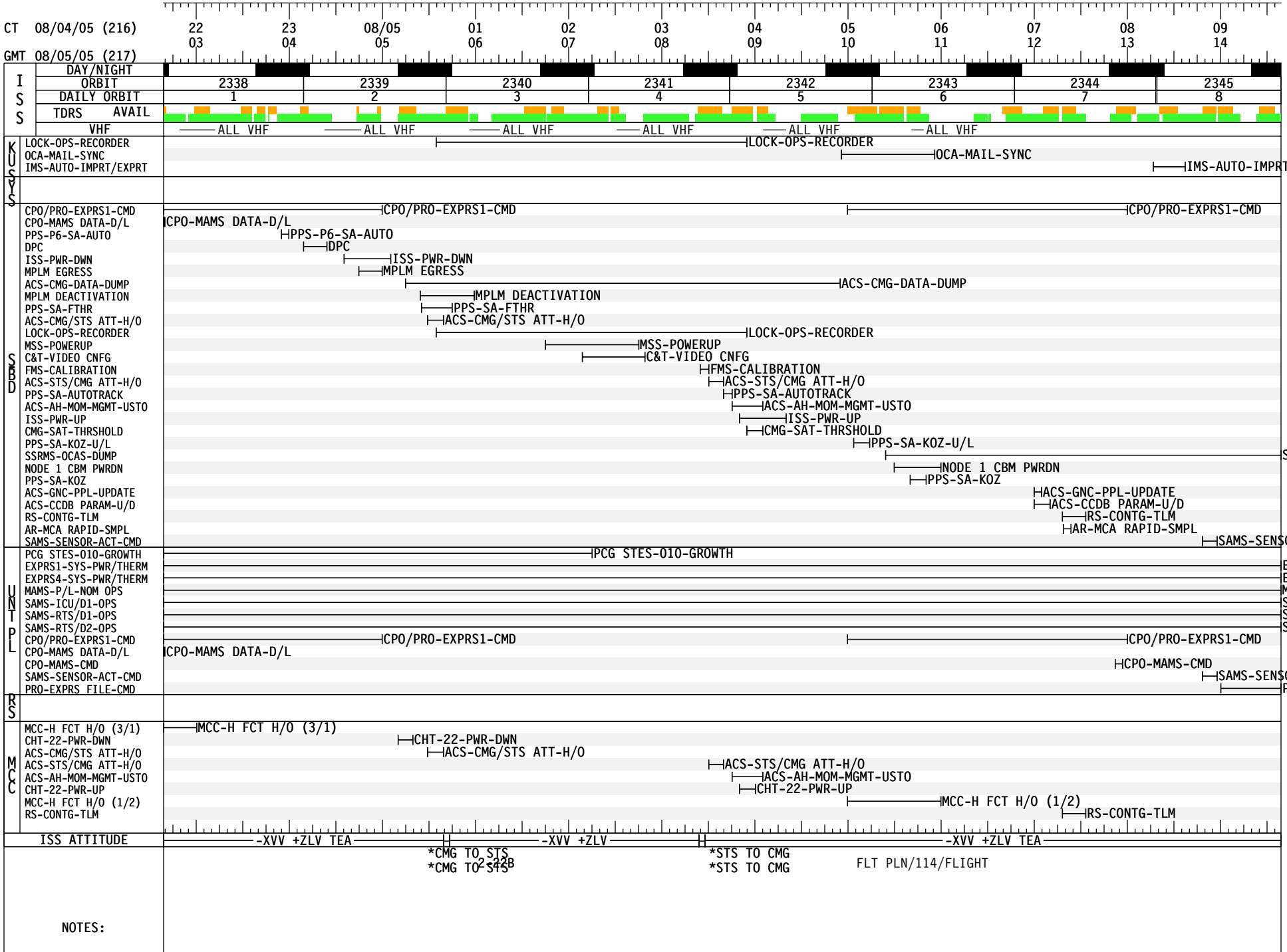
   b. No exercise is permitted while both arms are grappled to the OBSS.

7. REPLACE PAGES 2-22A THROUGH 2-23B AND 3-116 THROUGH 3-123.


08/04/05 20:46:25
REPLANNED
GMT 08/05/05 (217)
MET Day 009
03 04 05 06 07 08 09 10 11 12 13 14
12 13 14 15 16 17 18 19 20 21 22 23 010/00
STS-114
ISS
CDR COLLINS
FD11
POST SLEEP
14.7 RPRS
POST SLEEP
ILLUM OFF
COND TD
ATHO*
MNVR
CONDT
14.7 RPRS
COND MNVR ATHO* CWC INIT 17
CWC TERM
CWC INIT 18
MEAL
CWC TERM
EXERCISE
MADS O2 PRS
CWC INIT 19
O2 PRS OMS
CWC TERM
PLT KELLY
POST SLEEP
MADS
EXERCISE
MDDK XFER
OBSS PTU TEST
MNVR*
MEAL
MPLM UNINST
MPLM BERTH
MPLM^ UNGRPL
MNVR OBSS GRPL H/O
OBSS GRPL
OBSS MNVR TO CLR UHF
♣
MS1 NOGUCHI
POST SLEEP - GIRA
EXERCISE
POST EVA XFER /RCNFG
MDDK XFER
PTV06 S/U SSRMS
NODE 1 CBM DEMATE
MEAL
MDDK XFER
XFER 2 CWC
PS//TV08
POPTS V08
PS//TV04
MXFDEKR
MS2 ROBINSON
POST SLEEP
PGSC FD11 S/U
POST EVA XFER /RCNFG
MDDK XFER
NODE 1 CBM DEMATE
MEAL
LAPTOP PREP FOR XFER
RNDZ TOOLS C/O PT1
MDDK XFER
EXER CISE
MS3 THOMAS
POST SLEEP
RMSHTR
POST EVA XFER /RCNFG
EXERCISE
CAPTURE LATCH
MDDK XFER
OBSS PTU TEST
MNVR*
SCOPE METER
MEAL
N2 XFER T/D
MDDK XFER
PRLA
MDDK XFER
OBSS H/O FROM SRMS
H/O
OBSS BERTH CAMR
MS4 LAWRENCE
POST SLEEP
XFER CALL
MDDK XFER
EXERCISE
PCG-STES 10 TRANSFER
MDDK XFER
MEAL
MPLM UNINST
MPLM BERTH
MPLM UNGRPL
MNVR OBSS GRPL H/O
OBSS GRPL
OBSS MNVR TO CLR UHF
⊕
MS5 CAMARDA
POST SLEEP
MPLM EGRMS
VESTIBULE CONFIG
VEST DEPRESS
MEAL
N2 XFER T/D
MDDK XFER
PRLA
RNDZ TOOLS C/O PT1
OBSS H/O FROM SRMS
H/O
OBSS BERTH CAMR
ISS CDR KRIKALEV
POST SLEEP-ISS
DPC
PREP WORK
PCS
MPLM EGRMS
VESTIBULE CONFIG
VEST DEPRESS
MIDDAY-MEAL
MDDK XFER
VELO + HC
COMM
PREP WORK
TVIS
FE-1 PHILLIPS
POST SLEEP-ISS
DPC
PREP WORK
♦
POST EVA XFER /RCNFG
PCG-STES 10 TRANSFER
TVIS
SCOPE METER
MIDDAY-MEAL
N2 XFER T/D
MDDK XFER
PREP WORK
®
DAY/NIGHT
ORBIT 151 152 153 154 155 156 157 158
TDRS E -46.0 W -171.0 Z -275.0
ORB ATT
BIAS -XLV -ZVV
DUMP BIAS
BIAS -XLV -ZVV
NOTES
♦IMV FLOW OPTIMIZE
*CMG TO STS
2-22A
*STS TO CMG
*MPLM VIEW
^HTR ON
♣OBSS BERTH
⊕OBSS BERTH
®EXERCISE RE
FLT PLN/114/FLIGHT

08/04/05 20:46:25

ISS-11 SHORT TERM PLAN PAYLOAD PAGE



NOTES:

08/04/05 20:46:25 **REPLANNED**

GMT 08/05/05 (217) FD11 | MET 010/00 Day 010

15 16 17 18 19 20 21 22 23 08/06 01 02 03 04 05 06 07 08 09 10 11 12

STS-114

CDR COLLINS	APCU1* · VIP PRE SLEEP · APCU1* · MPLM^ · XFER · CWEC · H2O · CNFG · PRE SLEEP · PMC A/G · PRE · SLEEP	ISS EXTERNAL SURVEY — SLEEP — POST SLEEP
PLT KELLY	OBSS BERTH · OBSS UNGRPL · MNVR · PRE SLEEP	SLEEP — SALIVA · POST SLEEP
MS1 NOGUCHI	MDDK XFER · ILLUM ON · PRE SLEEP - GIRA	SLEEP — POST SLEEP - GIRA
MS2 ROBINSON	EXERCISE · PRE SLEEP	SLEEP — POST SLEEP
MS3 THOMAS	OBSS BRSTH · CAM TR H/O · RMS · PWR DN · PRE SLEEP	SLEEP — POST SLEEP
MS4 LAWRENCE	OBSS BERTH · OBSS UNGRPL · MNVR · XFER TAGUP · XFER CALL · PRE SLEEP	SLEEP — SALIVA LOG · POST SLEEP
MS5 CAMARDA	OBSS BRSTH · CAM TR H/O · RMS · PWR DN · MDDK · PRE SLEEP	SLEEP — SALIVA LOG · POST SLEEP

ISS

ISS CDR KRIKALEV	TVIS · DPC · XFER TAGUP · PRESLEEP-ISS	SLEEP
FE-1 PHILLIPS	EXERCISE RED · DPC · JRNL · PRESLEEP-ISS	SLEEP

DAY/NIGHT

ORBIT 159 160 161 162 163 164 165 166

TDRS E -46.0 W -171.0 Z -275.0

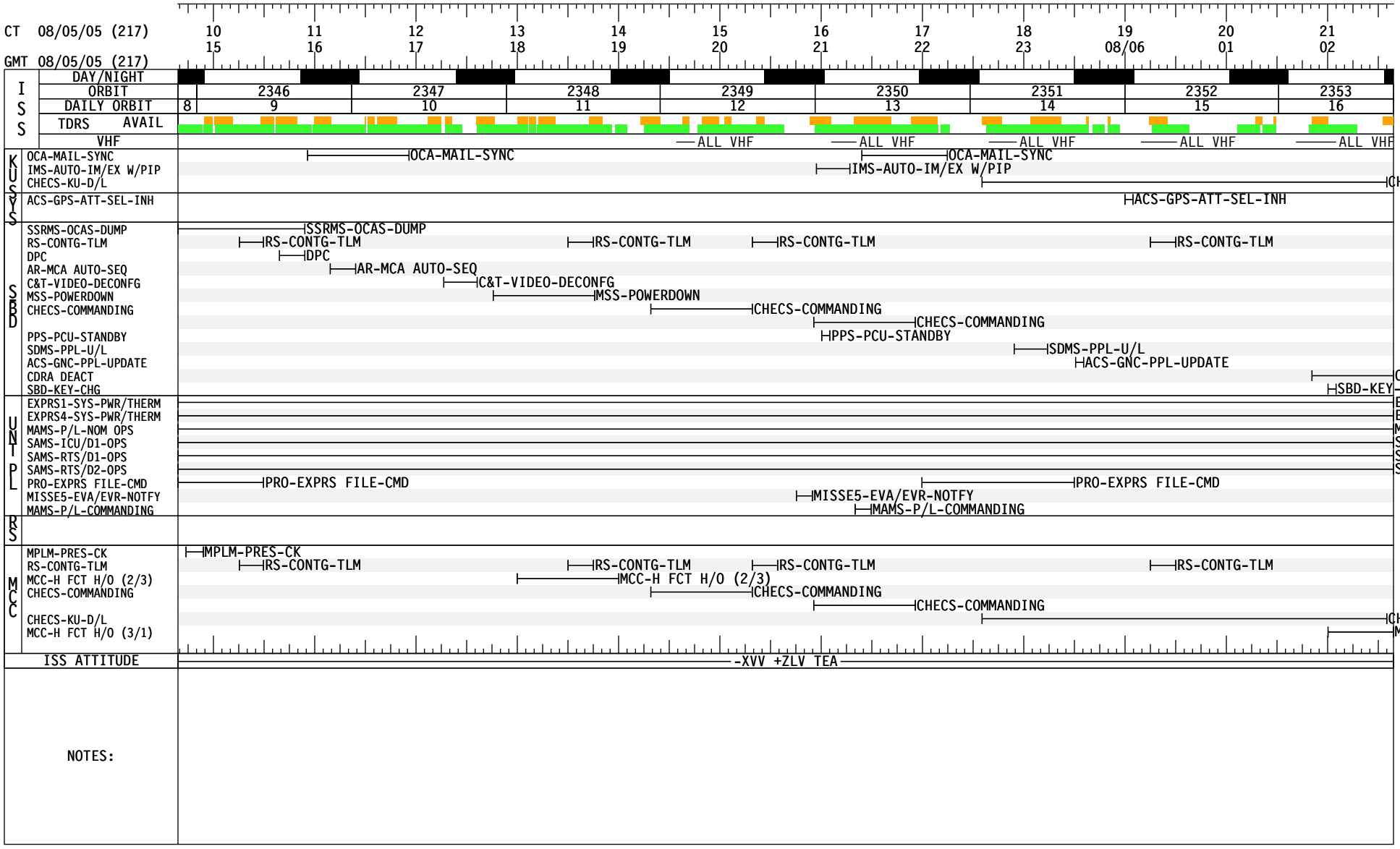
ORB ATT — BIAS -XLV -ZVV

NOTES

*ACT ^HTR OFF *DEACT

MPLM PRESSURE CK

ISS-11 SHORT TERM PLAN PAYLOAD PAGE



STS-114 LF1 (FD 11)

REPLANNED

GMT Date 08/05 (217) | MET Day 009 | TDRS E W Z | ORB | STS ATI

CDR COLLINS | PLT KELLY | MS1 NOGUCHI | MS2 ROBINSON | MCC

FD11

FD11 EZ ACTIVITIES
HARD REBOOT PGSCs (not WLES)
OCAC FILTER INSPECT
L17 CHECK MCIU FILTER SCREEN
TEPC (STATUS CK)
(ORB OPS, CREW SYS)

POST SLEEP ACTIVITY (ORB OPS, CREW SYS)

GALLEY MORNING CONFIG (ORB OPS, ECLS)

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

CONFIG ODF DRAG THROUGHS

OCAC OCAC PWR - OFF
L2 O2/N2 CNTLR VLV SYS 1 - CL(O2)
2 - AUTO

CONFIG DTV FOR DNLK
L10(MUX) √MUX BYPASS - ACT
MUX/VTR/CC PWR - ON

MO10W √O2 REG INLET SYS 1 - OP
14.7 CAB REG INLET SYS 1,2 vlv(two) - OP

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

EXERCISE

PGSC FD11 SETUP
Ref. Inspection Day diagram

A6L: MADS STRAIN GAGE - ON

TV ILLUMINATOR OPS
(PHOTO/TV, CUE CARD)
ILLUMINATORS OFF - A,B,C,D

SHUTTLE CONDENSATE COLLECTION
(ORB OPS, ECLS) TEARDOWN,SAMPLE
Ref. MSG 137, Item 1

POST EVA TRANSFER & RECONFIG
REF. MSG 133

POST EVA TRANSFER & RECONFIG
REF. MSG 133

3.11O H/O ATT CONTROL CMG TO ORB
(JOINT OPS, MATED OPS)

EXERCISE

MNVR (TRK) BIAS -XLV -ZVV
TG=2 BV=5 P=155 Y=0 OM=205
A12/AUTO/VERN Init TRK

CWC OVERBOARD DUMP (INIT)
(ORB OPS, ECLS)
Ref. MSG 137

TRANSFER
Ref. MDDK TRANSFER LIST

14.7 PSI CABIN CONFIG
(EVA, 10.2 PSI CABIN)
Configure for PCS 1
MCC will TMBU S/W limits
OCAC PWR - ON

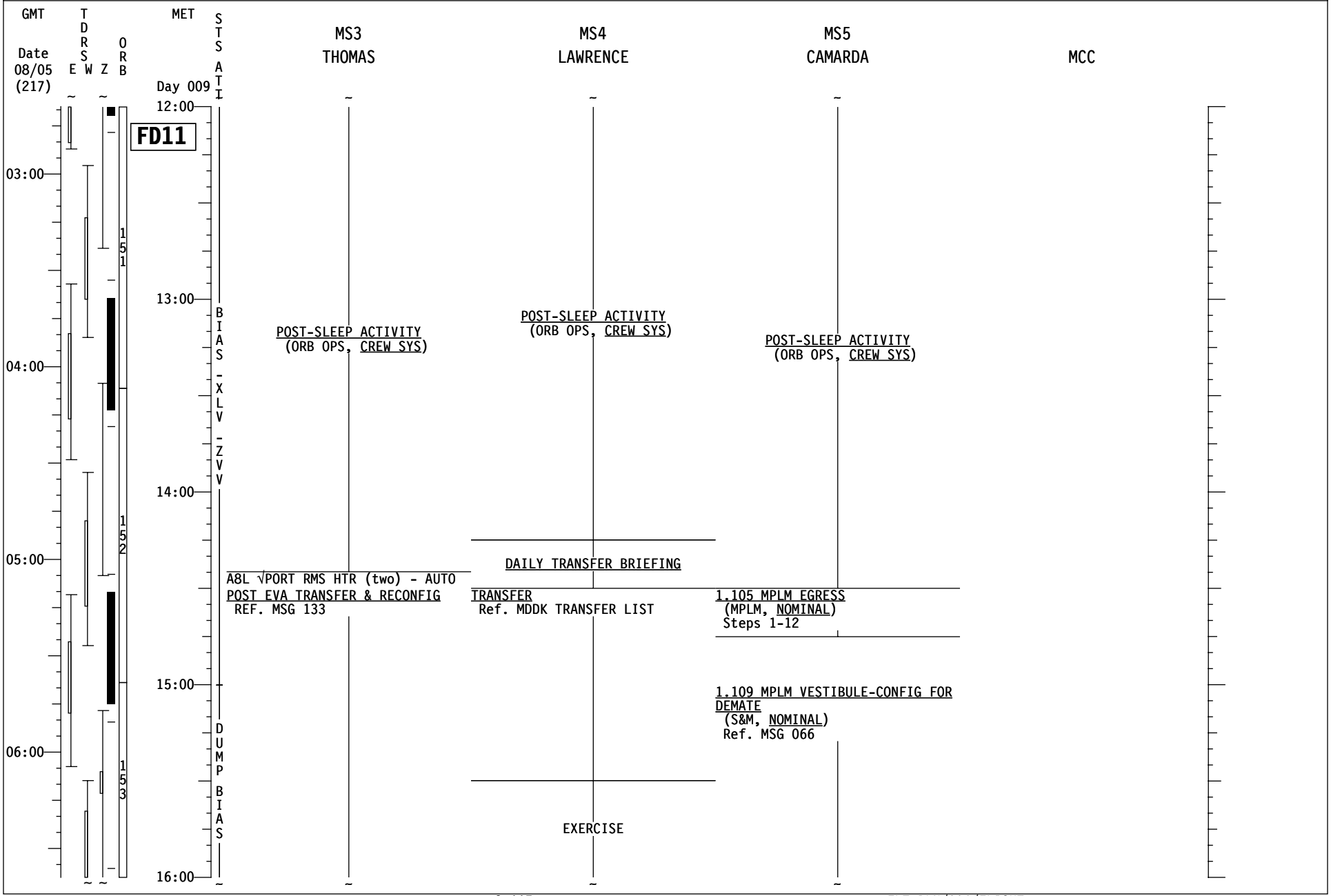
BIAS -XLV -ZVV DUMP BIAS

03:00 04:00 05:00 06:00 12:00 13:00 14:00 15:00 16:00

151 152 153

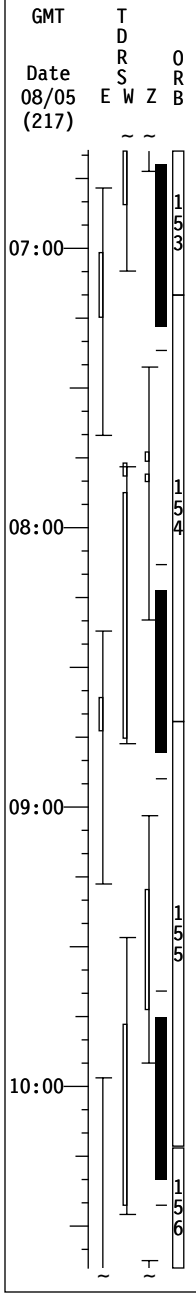
STS-114 LF1 (FD 11)

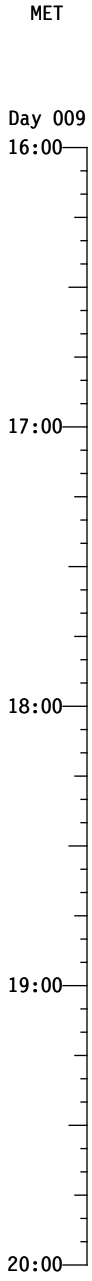
REPLANNED



STS-114 LF1 (FD 11)

REPLANNED





CDR COLLINS

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

MNVR (TRK) BIAS -XLV -ZVV
TG=2 BV=5 P=155 Y=0 OM=178
A12/AUTO/VERN Init TRK

3.111 H/O ATT CONTROL ORB TO CMG
(JOINT OPS, MATED OPS)

SHUTTLE/ISS H2O CONT FILL
(ORB OPS, ECLS) INIT #17
Ref. MSG 137

SHUTTLE/ISS H2O CONT FILL
(ORB OPS, ECLS) TERM
Report Barcode & S/N to MCC

SHUTTLE/ISS H2O CONT FILL
(ORB OPS, ECLS) INIT #18
Ref. MSG 137

MEAL

PLT KELLY

TRANSFER
Ref. MDDK TRANSFER LIST

OBSS PTU TEST
Ref. MSG 134

OBSS MNVR FROM CMG R&R TO MPLM VIEWING (PDRS, NOMINAL)

MEAL

2.622 CONT MPLM UNINSTALL
(ROBOTICS, CONT OPS)
NOTE: NO Exercise

MS1 NOGUCHI

POST EVA TRANSFER & RECONFIG
REF. MSG 133

TRANSFER
Ref. MDDK TRANSFER LIST

P/TVO6 SSRMS ASSY OPS (NON-EVA)
(PHOTO/TV, SCENES)
Setup

1.509 NODE 1 CBM DEMATE
(S&M, NOMINAL)
Steps 1-12
NOTE : NO Exercise

MEAL

MS2 ROBINSON

POST EVA TRANSFER & RECONFIG
REF. MSG 133

TRANSFER
Ref. MDDK TRANSFER LIST

1.509 NODE 1 CBM DEMATE
(S&M, NOMINAL)
Steps 1-12
NOTE : NO Exercise

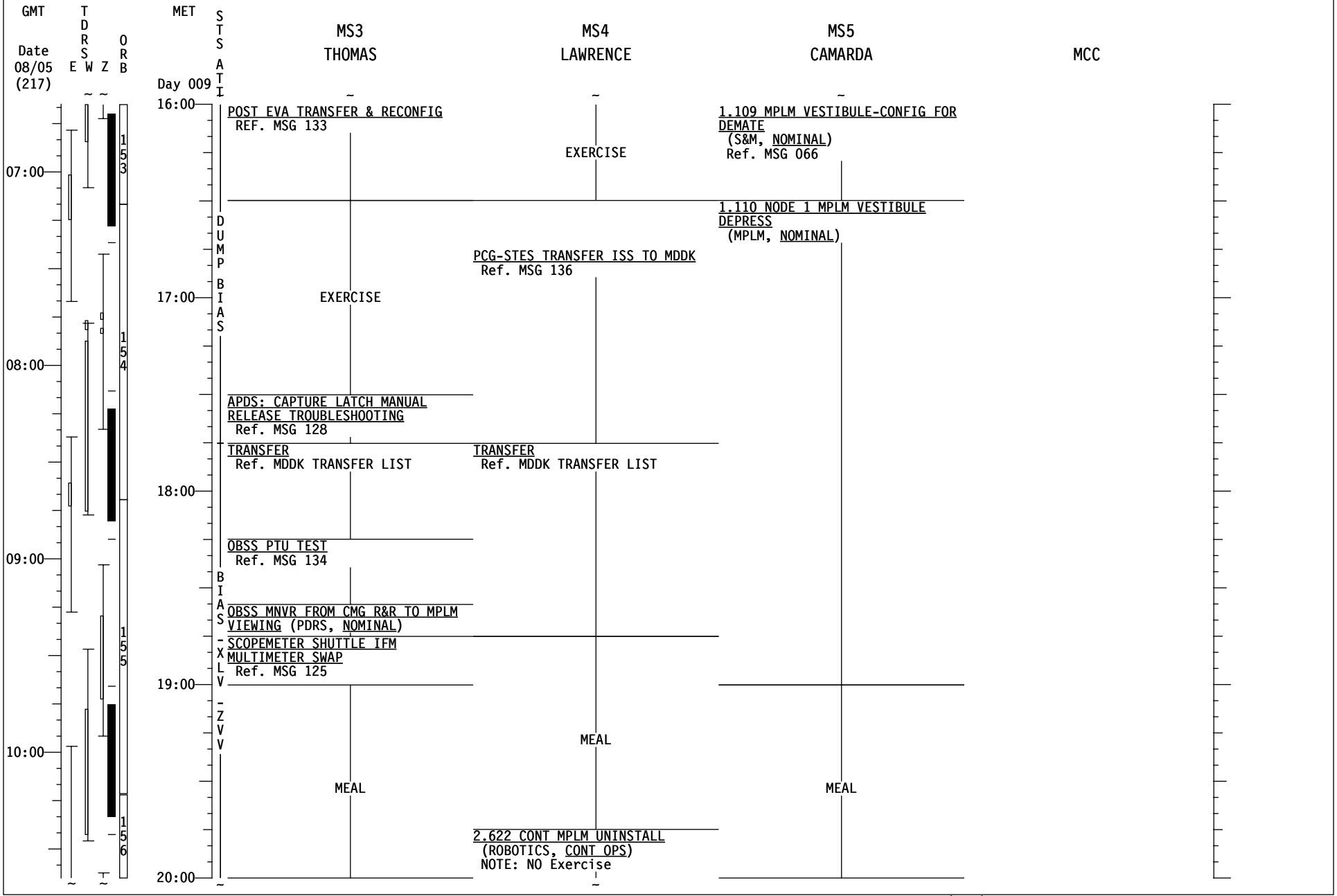
MEAL

MCC

PERFORM AT START OF MPLM UNINSTALL:
UPLINK
β 21° +C1,C2,C3+D2
BOX C1
-19<AZ<52
-67<EL<75
BOX C2
-41<AZ<-10
-25<EL<39
BOX C3
-72<AZ<-36
-4<EL<33
BOX D2
-80<AZ<5
-90<EL<-46

STS-114 LF1 (FD 11)

REPLANNED



STS-114 LF1 (FD 11)

REPLANNED

GMT Date 08/05 (217) | MET Day 009 | TDRS E W Z | ORB 156 157 158 | STS ATI BIAS -XLV ZVV

CDR COLLINS	PLT KELLY	MS1 NOGUCHI	MS2 ROBINSON	MCC
20:00	2.622 CONT MPLM UNINSTALL (ROBOTICS, CONT OPS) NOTE: NO Exercise			
MEAL		MEAL	MEAL	
SHUTTLE/ISS H2O CONT FILL (ORB OPS, ECLS) TERM Report Barcode & S/N to MCC	1.223 MPLM BERTH (ROBOTICS, MPLM OPS) Steps 1-4,6,7,10,11	TRANSFER Ref. MDDK TRANSFER LIST	LAPTOP PREP FOR TRANSFER Ref. MSG 139	
21:00				
	MPLM HEATER ON B 1.224 BERTHED MPLM UNGRAPPLE (ROBOTICS, MPLM OPS)		RNDZ TOOLS CHECKOUT (PART 1) (RNDZ, RNDZ TOOLS) Checkout RNDZ tools with RPOP1	TFL 192
EXERCISE	1.120 MNVR TO OBSS GRAPPLE AT HANDOFF (ROBOTICS, OBSS OPS)			
22:00				
Perform after MPLM BERTH: A6L: MADS STRAIN GAUGE - PCM ENA 3.105 O2 REPRESS (INIT) (JOINT OPS, MATED OPS) Steps 1-6, Skip Steps 3 & 4 MCC will TMBU s/w limits	B √ROEU MATE COMPLETE SSP1 MPLM CH 1,2 HTR PWR-ON(tb-gray)	CWC TRANSFER Xfer 2 CWC bags to ISS	TRANSFER Ref. MDDK TRANSFER LIST	TFL 199
		P/TVO8 EXTERNAL SURVEY (S/U) (PHOTO/TV, SCENES)		
SHUTTLE/ISS H2O CONT FILL (ORB OPS, ECLS) INIT #19 Ref. MSG 137	1.121 OBSS GRAPPLE AT HANDOFF (ROBOTICS, OBSS OPS) NOTE: NO EXERCISE w/2 arms grpl			
23:00		P/TVO8 EXTERNAL SURVEY (OPS) (PHOTO/TV, SCENES)		
	1.122 OBSS MNVR TO CLEAR UHF (ROBOTICS, OBSS OPS) NOTE: NO EXERCISE w/2 arms grpl			
3.105 O2 REPRESS (TERM) (JOINT OPS, MATED OPS) Steps 7-10		P/TVO4 INGRESS/EGRESS (S/U) (PHOTO/TV, SCENES)		
A14 RCS/OMS HTR L POD(two) - A AUTO B OFF				
SHUTTLE/ISS H2O CONT FILL (ORB OPS, ECLS) TERM Report Barcode & S/N to MCC	1.123 OBSS BERTH (ROBOTICS, OBSS OPS)	TRANSFER Ref. MDDK TRANSFER LIST	EXERCISE	TFL 184
00:00				

STS-114 LF1 (FD 11)

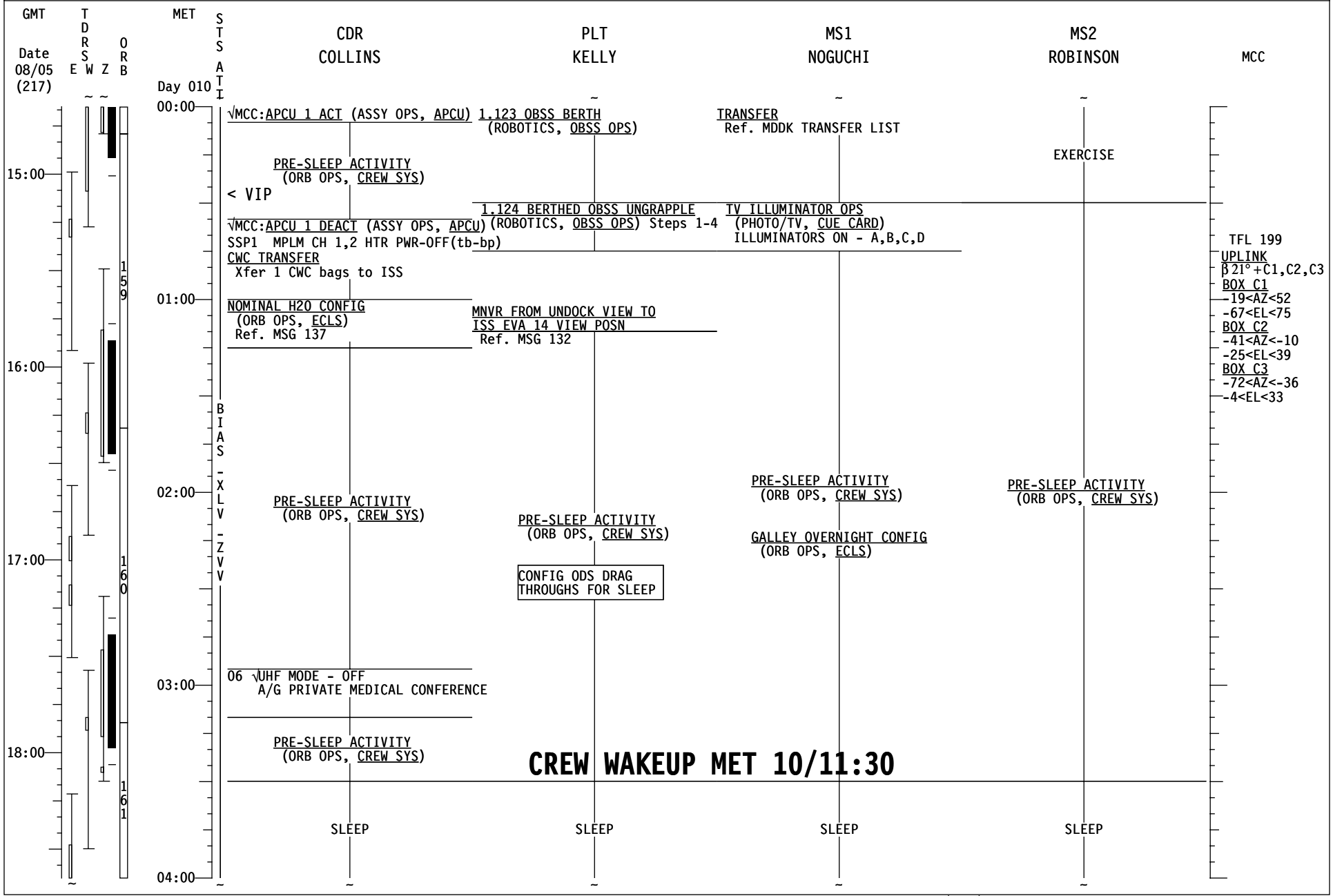
REPLANNED

GMT Date 08/05 (217) | MET Day 009 | TDRS E W Z | ORB 156 157 158 | STS ATI BIAS -XLV -ZVV

MS3 THOMAS	MS4 LAWRENCE	MS5 CAMARDA	MCC
20:00 3.103 NITROGEN TRANSFER TERM (JOINT OPS, MATED OPS)	2.622 CONT MPLM UNINSTALL (ROBOTICS, CONT OPS) NOTE: NO Exercise	3.103 NITROGEN TRANSFER TERM (JOINT OPS, MATED OPS)	
TRANSFER Ref. MDDK TRANSFER LIST		TRANSFER Ref. MDDK TRANSFER LIST	
	1.223 MPLM BERTH (ROBOTICS, MPLM OPS) Steps 1-4,6,7,10,11		
1.223 MPLM BERTH Steps 3-10 (ROBOTICS, MPLM OPS)		1.223 MPLM BERTH Steps 3-10 (ROBOTICS, MPLM OPS)	
TRANSFER Ref. MDDK TRANSFER LIST	1.224 BERTHED MPLM UNGRAPPLE (ROBOTICS, MPLM OPS)	RNDZ TOOLS CHECKOUT (PART 1) (RNDZ, RNDZ TOOLS) Checkout RNDZ tools with RPOP1	
	1.120 MNVR TO OBSS GRAPPLE AT HANDOFF (ROBOTICS, OBSS OPS)		
OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, NOMINAL) Steps 1-2		OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, NOMINAL) Steps 1-2	
	1.121 OBSS GRAPPLE AT HANDOFF (ROBOTICS, OBSS OPS) NOTE: NO EXERCISE w/2 arms grpl		
OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, NOMINAL) Steps 3-5 NOTE: NO EXERCISE w/2 arms grpl	1.122 OBSS MNVR TO CLEAR UHF (ROBOTICS, OBSS OPS) NOTE: NO EXERCISE w/2 arms grpl	OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, NOMINAL) Steps 3-5 NOTE: NO EXERCISE w/2 arms grpl	
OBSS BERTH CAMERA SUPPORT		OBSS BERTH CAMERA SUPPORT	
	1.123 OBSS BERTH (ROBOTICS, OBSS OPS)		
00:00			

STS-114 LF1 (FD 11)

REPLANNED



STS-114 LF1 (FD 11)

REPLANNED

GMT Date 08/05 (217) | MET Day 010 | TDRS E W Z | ORB 159 160 161 | STS ATI | BIAS -XLV -ZVV

MS3 THOMAS

OBSS BERTH CAMERA SUPPORT

OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, NOMINAL)Steps 6-9
Ref. MSG 130 Item 2

RMS PWRDN (PDRS, RMS PWRDN) Step 1 ONLY

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

SLEEP

MS4 LAWRENCE

1.123 OBSS BERTH (ROBOTICS, OBSS OPS)

1.124 BERTHED OBSS UNGRAPPLE (ROBOTICS, OBSS OPS) Steps 1-4

MNVR FROM UNDOCK VIEW TO ISS EVA 14 VIEW POSN
Ref. MSG 132

DAILY STS/ISS CREW TRANSFER TAGUP

DAILY TRANSFER BRIEFING

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

SLEEP

MS5 CAMARDA

OBSS BERTH CAMERA SUPPORT

OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, NOMINAL)Steps 6-9
Ref. MSG 130 Item 2

RMS PWRDN (PDRS, RMS PWRDN) Step 1 ONLY

MIDDECK STATUS CHECKS (ASSY OPS, CUE CARD)

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

SLEEP

MCC

1.101 MPLM ENVIRONMENT CHECK (MPLM, NOMINAL)
Steps 1 & 4
Note: Pressure Check (NO fan)

CREW WAKEUP MET 10/11:30

Good Morning Discovery!

Thank you for your thoughtful tribute – To Fallen Astronauts and Cosmonauts. We appreciated you sharing your tribute with us.

Your PAO events were outstanding. Thank you for doing them.

For being a scheduled "light day", you certainly did a lot of work! Thanks for all that you accomplished.

Today you need to finish packing and transferring. Then it will be time to close the hatch and maneuver your "suitcase" into position for the journey home.

Have a great day!

YOUR CURRENT ORBIT IS: 193 X 188 NM

NOTAMS:

EDWARDS (EDW) - LAKEBED RWY 15 GREEN, RWY 18 CLOSED
WHITE SANDS (NOR) - LAKEBEDS GREEN
OCEANA (NTU) - RWY 23L/05R CLOSED
HALIFAX (YHZ) - RWY 06/24 CLOSED
GUAM (GUA) - RWY 06L/24R CLOSED
RIO GALLEGOS (AWG) - NOT APPROVED
ELMENDORF (EDF) - RWY 06/24 CLOSED
TINDAL (PTN) - TACAN TDL 70 UNUSABLE, PTN14 UNUSABLE AFTER 217/12:30 GMT

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB 157 - 9/22:00
EDW22 ORB 172 - 10/20:52

OMS TANK FAIL CAPABILITY:

L OMS FAILS: NO
R OMS FAILS: NO

LEAKING OMS PRPLT BURN:

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

POST-TI OMS QUANTITIES(%)

L OMS OX = 35.2 R OMS OX = 36.6
FU = 35.6 FU = 37.3

SUBTRACT I'CNCT COUNTER FOR CURRENT OMS QUANTITIES

DELTA V AVAILABLE:	WITH MPLM	NO MPLM
OMS	324 FPS	354 FPS
ARCS (TOTAL ABOVE QTY1)	30 FPS	33 FPS
TOTAL IN THE AFT	354 FPS	387 FPS
ARCS (TOTAL ABOVE QTY2)	60 FPS	66 FPS
FRCS (ABOVE QTY 1)	25 FPS	27 FPS
AFT QTY 1	80 %	80%
AFT QTY 2	42 %	42%

SYSTEM	FAILURE	IMPACT	WORK AROUND
ECLS	CWC S/N 1012 Leaking following fill.	Less Technical Water transfer to ISS.	Leaking CWC will be dumped on FD11.

OCA 11-0726 (MSG 125) ISS SCOPEMETER, SHUTTLE IFM MULTIMETER SWAP

OBJECTIVE:
Exchange ISS Scopemeter with Discovery's IFM Multimeter. Task will include transferring items and verifying proper test leads in Scopemeter and Accessories Kit. A minimum set of probes and test leads are required for basic Scopemeter functions.

LOCATION:
NOD1O3
MF14G

DURATION:
15 min for actual transfer

CREW:
One

MATERIALS:
None

TOOLS:
DISCOVERY
- IFM TOOL KIT
  - Tray 1
    - Digital Multimeter Kit

ISS

Scopemeter Natalya	P/N: SEG39129678-303
Scopemeter Kit (Old)	P/N: SEG39130246-303

NOTE

1. Printed Scopemeter reference procedures are needed on Shuttle in the event hardware must be used post undock. Scopemeter Current Measurement procedure not needed because Scopemeter Current Probe is not being transferred to Shuttle.

2. The following ISS Scopemeter Reference procedures will be uplinked to the Orbiter for use, as needed:
   - SODF:IFM:APPENDIX D: D.1 ISS Scopemeter Kit Inventory
   - SODF:IFM:APPENDIX D: D.1.101 Scopemeter Resistance Measurement (Continuity Check)
   - SODF:IFM:APPENDIX D: D.1.301 Scopemeter Voltage Measurement
   - SODF:IFM:APPENDIX D: D.1.4 Pressure Probe Procedure

NOTE

1. A minimum set of test probes are required for voltage and continuity measurements. The following list only includes minimum required probes needed for transfer. Additional accessories may be left in kit. If items missing, check another "Old" Scopemeter Kit. Do not scavenge from "New" Scopemeter kits. Refer to Figure 1.

2. C-Cell batteries will not be transferred from ISS. If the Scopemeter is required prior to landing, batteries will be taken from the backup Hand Held LIDAR (HHL) battery pack.

Figure 1A.- Scopemeter Kit (Old)
(P/N SEG39130246-303)
Transfer This Kit

Figure 1B. – Scopemeter Kit (New)
(P/N SJG33115340-301)
Do Not Transfer This Kit

1. Verify Scopemeter Kit (Old) P/N SEG39130246-303.

NOTE
If more Scopemeter accessories than those listed below are found in the Scopemeter Kit (Old), transfer additional pieces to an alternate Scopemeter Kit.

2. Verify Scopemeter Kit (Old) contains 1 of each of the following. (Refer to figures below.)

Red 10:1 Probe ("√") _____

Red 10:1 Banana Adapter ("√") _____

Red Test Lead ("√") _____

Black Test Lead ("√") _____

Black Test Probe ("√") _____

Red Test Probe ("√") _____

Black Test Lead Banana Adapter ("√") _____

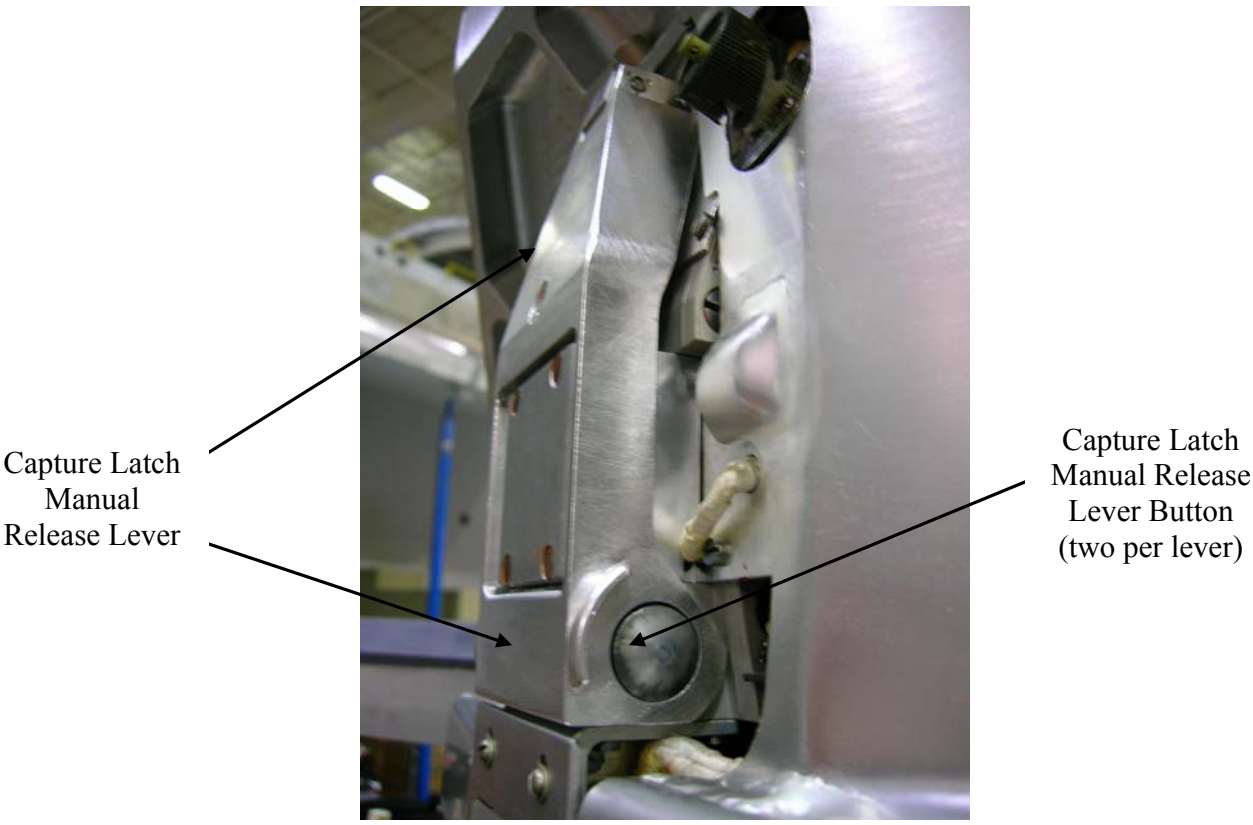
Red Test Lead Banana Adapter ("√") _____

3. Pack Scopemeter Natalya, accessories in Scopemeter Kit (Old).
4. Transfer Scopemeter Kit (Old) to Shuttle IFM Tool Locker.
5. Transfer Shuttle IFM Multimeter to ISS NOD1O3.
   DO NOT TRANSFER IFM Temperature, Pressure Probe Kit to ISS.
6. Inform **MCC-H** of task completion.

Capture Latch 1 Manual Release Lever Verification

To evaluate the integrity of the Capture Latch 1 Manual Release Lever restraint mechanism, please have the crew enter the ODS vestibule and perform the following:

1. Take pictures of both buttons on the Capture Latch Manual Release Lever for latches 1, 2, and 3 to document the pre-test configuration.



2. Depress the buttons on the Capture Latch 2 Manual Release Lever one at a time, noting the force required (the force should be similar between the two buttons). Ensure that the Manual Release Lever stays in the latched position, and that both buttons return to their previous positions.

3. Repeat step 2 for the Capture Latch 3 Manual Release Lever. The force should be similar to that for the buttons on latch 2.

4. Depress the right button on the Capture Latch 1 Manual Release Lever. Report any differences in the feel between the button on capture latch 1 and the buttons on capture latches 2 and 3. Also report if the button functions anomalously (e.g, remains depressed), and take pictures of the condition.

5. Repeat step 4 for the left button on capture latch 1.

6. Ensure that the Capture Latch 1 Manual Release Lever is fully closed.

7. Do not depress the buttons during this step. Grasp the Capture Latch 1 Manual Release Lever near the button interface and pull lever in the open direction. Pay special attention to the lever-button interface. Report any movement of the lever or buttons and take pictures of the condition.

8. Ensure that the Latch 1 Manual Release Lever is closed and both buttons are fully engaged.

9. Take pictures of both buttons on the Capture Latch 1 Manual Release Lever to document the post-test configuration.

Rationale: During docking operations, the capture latch manual release indication came on prior to hooks drive. Post-docking, once the hatches were open, the crew visually verified the manual release lever on petal 1 was partially open. Downlinked imagery from FD1 indicates that the manual release was slightly open prior to docking. Evaluation of KSC closeout photos is inconclusive in determining the launch configuration. This procedure will help to verify that the buttons are properly holding the lever in the closed position. If the procedure determines that the Capture Latch 1 Manual Release Lever does not properly engage the buttons then a separate procedure will be created and uplinked to have the crew restrain the lever in the closed position.

Certain contingency operations, such as redocking or the ODS HOOKS OPEN - CONTINGENCY procedure, assume capture latch functionality.

1. SETUP

Verify SRMS is at the PRE-CRADLE Position.

Configure cameras and overlays as required.

Monitor 1	Monitor 2	Monitor 3	V10
92: Camera C (-10, 30)	22: Base Elbow (90, -10)	03: S1 Lower Outboard (90, 10)	Camera A (20, 50)

PCS MSS: SSRMS: SSRMS

√Vernier

Verify SSRMS at Undock Viewing position (within 5 cm/1 deg).

SR	SY	SP	EP	WP	WY	WR
+110.0	+55.0	+5.0	+122.2	-179.6	-190.0	+33.7
X	Y	Z	Pitch	Yaw	Roll	
+125	+467	-847	+58.7	-74.0	+127.9	
FOR	Unloaded – LEE Tip, SY Held					
Disp	LAB>Berthed OBSS MidMPM					

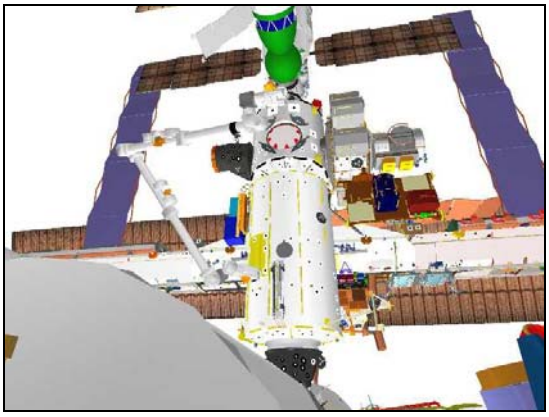


Figure 1.- Undock Viewing (92: Camera C: -10, 30).

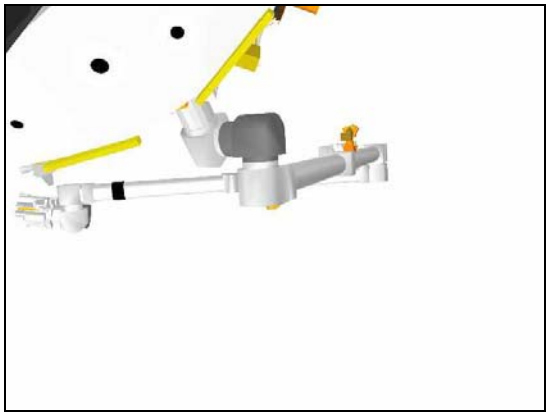


Figure 2.- Undock Viewing (V10: Camera A: 20, 50).

2. JOINT OCAS TO INTERMEDIATE POSN

PCS MSS: SSRMS: SSRMS

√Mode – Joint OCAS

SSRMS Joint OCAS

Input ‘Joint Angles’ ‘Destination’ for Intermediate position.

SR	SY	SP	EP	WP	WY	WR
+165.0	+55.0	+5.0	+122.2	-120.0	-200.0	+33.7

NOTE
The Target and Error fields on the SSRMS Joint OCAS display will not be correct. This data should be verified and monitored on the Joint Angle Position overlay. (SCR 31169)

cmd Load (Verify Sequence Status – Confirm or Cancel)

MON Verify joint angles and errors are correct on Joint Angle Position overlay.

	SR	SY	SP	EP	WP	WY	WR
(current)	+110.0	+55.0	+5.0	+122.2	-179.6	-190.0	+33.7
TGT	**+165.0**	**+55.0**	**+5.0**	**+122.2**	**-120.0**	**-200.0**	**+33.7**
ERR	-55.0	0.0	0.0	0.0	-59.6	+10.0	0.0

****
* If joint angles/errors are incorrect
PCS * **cmd** Cancel (Verify Sequence Status – Waiting Destination)
*
* Input correct Dest joint angles per table above.
*
* **cmd** Load (Verify Sequence Status – Confirm or Cancel)
*
MON * Verify joint angles and errors are correct on Joint Angle Position
* overlay.
****

PCS **cmd** Confirm (Verify Sequence Status – Auto Seq sw - Hot)

DCP AUTO SEQ → PROC

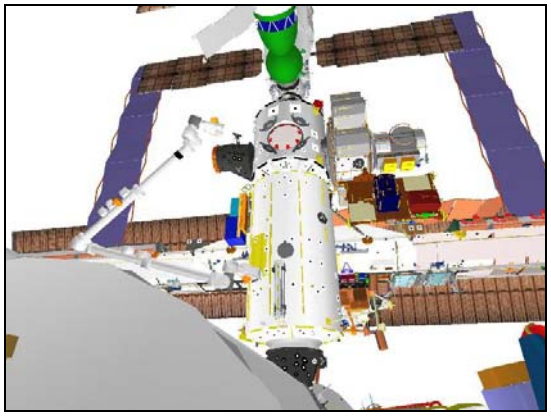


Figure 3.- Intermediate
(92: Camera C: -10, 30).

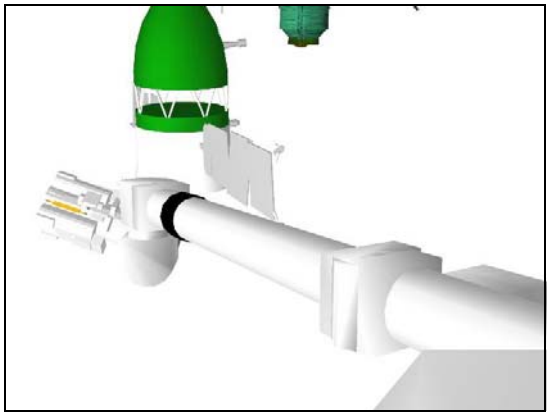


Figure 4.- Intermediate
(22: Base Elbow: 90, -10)

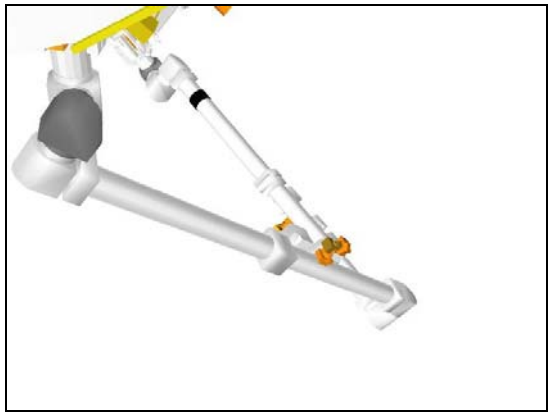


Figure 5.- Intermediate
(V10: Camera A: 45, 50).

PCS MSS: SSRMS: SSRMS

Verify Posn Hold – orange

Verify SSRMS at Intermediate position (within 5 cm/1 deg).

SR	SY	SP	EP	WP	WY	WR
+165.0	+55.0	+5.0	+122.2	-120.0	-200.0	+33.7
X	Y	Z	Pitch	Yaw	Roll	
-255	+882	-951	+170.9	-70.6	-147.1	
FOR	Unloaded – LEE Tip, SY Held					
Disp	LAB>Berthed OBSS MidMPM					

3. SJ TO ISS EVA 14 VIEWING POSITION

PCS MSS: SSRMS: SSRMS

Enter Mode – Single (Verify blue)

WARNING

The active joint must be checked on the PCS before initiating motion. Failure to do so may result in movement of the wrong joint.

DCP JOINT SELECT → ELBOW PITCH (Verify EP – Selected on PCS)

THC Perform "– " Single Joint maneuver to EP: +40.0 (THC down).

Verify SSRMS at ISS EVA 14 Viewing position (within 5 cm/1 deg).

SR	SY	SP	EP	WP	WY	WR
+165.0	+55.0	+5.0	+40.0	-120.0	-200.0	+33.7
X	Y	Z	Pitch	Yaw	Roll	
-284	+1978	-835	+101.8	-7.3	+125.7	
FOR	Unloaded – LEE Tip, SY Held					
Disp	LAB>Berthed OBSS MidMPM					

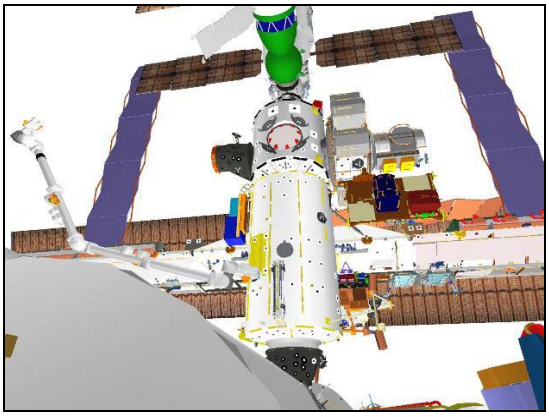


Figure 6.- ISS EVA 14 Viewing
(92 Camera C: -10, 30).

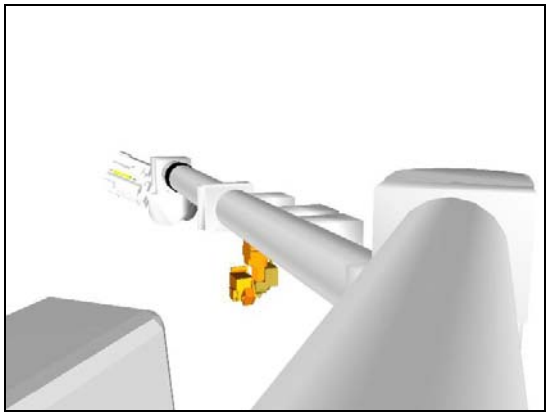


Figure 7.- ISS EVA 14 Viewing
(22: Base Elbow: 160,-10).

4. CLEANUP

NOTE

Expect the following message when safing is commanded:
'**R3Z - MSS OCS SSRMS Prime(Redun) ACU SRT Cat-1 Brk Stat Fail**' (SCR 17495)
This message should return to Norm.

DCP SAFING → SAFE (Verify ON)

ODS Hatch Disconnect V10 Cables

MSG 133 (11-0733) - POST EVA TRANSFER AND RECONFIG CHANGES

The procedure below contains a redlined version of the original Post EVA Transfer and Reconfig (EVA, Airlock Config), pgs fs 2-9 thru 2-13 with the updates that have resulted from manifest changes.

POST EVA TRANSFER AND RECONFIG

NOTE

☑ Indicates steps that were called up and completed on FD10
~~Strikethrough~~ indicates deletions from preflight plan
Underline indicates additions to preflight plan

Ng/Rb EMUs
1. √REBA sw – OFF
2. Disconnect EMU power harness from REBA (P1/J1)
3. Remove REBA from EMU; temp stow for transfer
☑4. Remove EMU batteries (S/N 2053, 2062); temp stow
☑5. Remove helmet light batteries; temp stow for transfer
6. Remove EMU TVs; stow in EMU TV foam for transfer
☑7. Remove MWS; install on middeck EMUs 3009, 3010

EMU 3009, 3010 ☑8. √~~Vent port plugs~~Metox cannisters installed
☑9. Install EVA 3 EMU batteries (S/N 2053, 2062); latch in place
☑10. Remove backup EMU gloves Ng2, Rb2; temp stow
☑11. Retrieve KK and PH comm caps from LTA Restraint Bag pouch
☑12. Remove helmet
☑13. Connect KK and PH comm caps to electrical harness
☑14. Install helmet

EMU 3009
☑15. Remove LTA
☑16. Remove Ng/Rb backup LCVG from HUT; temp stow
~~17. Disconnect boot from sizing ring~~
~~18. Remove BSIs from boots; stow BSIs in Ng ECOK~~
~~19. Connect boot to sizing ring~~
~~20. √Locking tabs (three per boot) – LOCK~~
☑21. Connect LTA to HUT; √locked

TABLE 1.– EMU 3009 (PH), 3010 (KK) CONFIG FOR TRANSFER

HUT
Helmet
Comm Cap
~~Vent Port Plugs~~Metox
EMU Battery
LTA
MWS (baseplate and T-bar)
(no gloves)

Vol H
☑22. Unstow Vol H bags
☑23. √O2 Actuator Covers (two) stowed in EMU Equipment Bag
☑24. Clean EMU Equipment Bag trash liner; replace if excessively soiled
☑25. Verify configuration of EMU Equipment Bag

TABLE 2.– EMU EQUIPMENT BAG CONFIG FOR TRANSFER

Shared Section
SCOFs (two)
Prybar
Donning Handles (L+R)
Scissors
O2 Actuator Covers (two)
Trash Bag w/liner
Spare Trash Bag Liners (four)
Cooling Loop Jumpers (two)
Crew Specific Sections (two)

26. Configure and transfer the following equipment to ISS per table 3
26a. Retrieve spare mesh bag from Ng's ECOK; label "Inc 12/13 EMU hdw"

TABLE 3.– ISS EVA EQUIPMENT TRANSFER TO ISS

ITEM	**Serial Number**	**FINAL STOWAGE LOCATION**	**COMMENTS**
☑**EMU (PH)**	3009	Fwd EDDA	
☑**EMU (KK)**	3010	Aft EDDA	
☑**EMU Equipment Bag**		E-Lk	Secure assy to seat track studs in Equipment Lock
☑**SAFERs (two)**	1005, 1007	SAFER Stowage Bag	√Inhibitor installed, Man Isol – CL
☑**SAFER CHECKOUT RESULTS Cue Card (two)**	1005, 1007	SAFER Stowage Bag	
EMU TV (two)	1009, 1010	E-Lk – crew discretion	Transferred in foam box
1.0 CTB – Suits Pregather		ISS A/L	Bag will be unpacked by stage
Helmet Light Batteries (four)	1015, 1017, 1019, 1021		
REBA Batteries (two)	1004, 1005		
EHIP DC PWR REBA DC EXT Y-cable			
REBA Extension Cable			
REBA Charger			
EMU Servicing Kit	5002		
~~Metox (b/c 007795J)~~			Installed in EMU (PH)
~~Metox (b/c 007814J)~~			Installed in EMU (KK)
1.0 CTB – Tools Pregather		ISS A/L	Bag will be unpacked by stage
3/8" Drive Ratchet Wrench (2)	1009, 1016		1009 Launched in MPLM, used for IVA Demo
Bag, Trash (Sm) (two)	1004, 1005, or 1008		Please let us know which was NOAXed, it comes home
~~Bag, Trash (Lg)~~			Coming home in MPLM
Ballstack	1010		
Caddy, Socket (two)			
Socket, 7/16 X 6" Wobble			
Socket, 7/16 X 2" Rigid			

ITEM	Serial Number	FINAL STOWAGE LOCATION	COMMENTS
Socket, 7/16 X 12" Wobble	1008		
Caddy, Socket (two)			
Socket, 7/16 X 6" Wobble			
Socket, 7/16 X 9" Rigid			
Drop Proof Tether Adapter			Used for IVA Demo
Caddy, Wire Tie (two)	1003, 1005		
CLPA Thermal Cover			
MUT End Effector (three)	1001, 1003, 1004		1001 and 1003 came from ISS. 1004 launched in the MPLM
MWS RH Swingarm (two)	1005, 1006		
Prybar	1004		
D-ring Tether Extenders (four)			
EVA Camera Accessories		ISS A/L	Replace all items into launch locations except where noted
28MM Lens (two)	1002, 1004		Lenses originally came from the ISS PHOTO/TV EVA H/W CTB. Place in foam cutouts in Digital EVA Camera CTB for transfer to ISS
35MM Lens	1002		Lens originally came from the ISS PHOTO/TV EVA H/W CTB. Place in foam cutouts in Digital EVA Camera CTB for transfer to ISS
50MM Lens	5012		Lens originally came from the ISS PHOTO/TV EVA H/W CTB. Place in foam cutouts in Digital EVA Camera CTB for transfer to ISS
EVA Digital Camera Bracket (three)	1001, 1002, 1003		Only 1 bracket was used
EVA Digital Camera Mount (three)	1038, 1039, 1040		Only 2 mounts were used
EVA Digital Camera (two)			
Action Viewfinder (two)			Installed on Cameras
50MM Lens (two)			Installed on Cameras
Regular Viewfinder (two)			Launched on Digital Cameras. Stow both in Action Viewfinder location
85MM Lens (w/thermal blanket)			Launched in this bag
105MM Lens (w/thermal blanket)			Launched in this bag
180MM Lens (w/thermal blanket)			Launched in this bag
NiMH Battery (nine)			Launched in this bag
Flash Memory Devices (six)			Launched in this bag
EVA Digital Camera thermal blanket			Launched in this bag
0.5 CTB (ISS PHOTO/TV EVA H/W) CTB 1043		ISS A/L	Replace all used items back into this bag for transfer

ITEM	Serial Number	FINAL STOWAGE LOCATION	COMMENTS
Blanket, NIKON F5 Thermal EVA (2)	1007		
Camera, NIKON F5 (2)	1014, 1023		
Action Viewfinder			Installed on 1 F5 Camera
STS-112 EVA Cue Card			
DCS 7VDC Power Cable Assy	1002		DCS Battery Charger s/n 1005 does not transfer to ISS. It returns on Shuttle in the Photo/TV Resupply CTB per Transfer List
~~DCS 28VDC Power Adapter Cable Assy~~ DC Harness Cable	~~1005~~		DCS Battery Charger s/n 1005 does not transfer to ISS. It returns on Shuttle in the Photo/TV Resupply CTB per Transfer List

ITEM	Serial Number	FINAL STOWAGE LOCATION	COMMENTS
1.0 CTB – Tethers		A/L1D2 – Tether Staging Area	Bag will be unpacked by stage
Adj Eq tether (Sm-Sm) (six) *partial qty may be in crewlock	1003, 1006, 1009, 1032, 1039, 1040		
RET (six) *partial qty may be in crewlock	4057, 4070, 4071, 4073, 4075, 4170		
RET w/PIP pin (four) *partial qty may be in crewlock	4238, 4239, 4240, 4241		
RET (Sm-Lg) (three) *partial qty may be in crewlock	4252, 4253, 4254		
Waist tether (six)	1057, 1060, 1061, 1062, 1063, 1064		Retrieve 1063 and 1064 from Ext A/L Floor Bag and add to Tethers CTB for transfer to ISS
85' Safety tether (two)	1002, 1003		
Safety tether (two)	1021, 1022, or1023		This should be all of the remaining new safety tethers on STS. Please let us know which S/Ns are in this bag.
BRT (two)	1017, 1021		
1.0 CTB – Modified Mini-Workstation		ISS A/L	Remove foam as necessary to accommodate items. Bag will be unpacked by stage
Contamination Detection Kit			
Contour gauge, mechanical (two)			Retrieve from ML60E and stow in MWS CTB for transfer
SAFER Hand Controller Mount (two)			Retrieve from Ext A/L Floor Bag and stow in MWS CTB for transfer
PGT	1006		This PGT came from MPLM on FD6
Wire ties (all that remain)			
3" Scraper (two)			Launched in this bag
MWS Baseplate	1009		This is the additional ISS MWS that Steve used on EVA 3
Modular MWS Gimbal Assy (T-Bar)	1005		This is the additional ISS MWS that Steve used on EVA 3
1.0 CTB – RAD, PGT		ISS A/L	Bag will be unpacked by stage
Right Angle Drive ~~(two)~~ with 2" socket	~~1009,~~ 1002		1009 is now coming home, you can just leave the 2" socket on RAD 1002
PGT (two)	1003, 1007		
PGT Batteries (five)	5011, 5012, 5013, 5014, 5015		
RS-422 Cable	1001		

ITEM	Serial Number	FINAL STOWAGE LOCATION	COMMENTS
~~**Bag, Crewlock EVA**~~		~~Install on Crewlock Endcone~~	This bag ended up in the C-Lk at the end of EVA3. You might need to put together another CTB for these items and excess from above bags – please just let us know what ends up where
Connector Cleaner Tool Kit (with caddy, cartridges (two))	1010		
WIF Adapter (two)	1013, 1015		
Small ORU Bag (used on GPS antenna)			
Mesh Bag – Inc 12/13 EMU Hdw		ISS A/L	Mesh bag from Ng ECOK
Croakie (2)			From Rb ECOK
Fresnel Lens (2)			From Rb ECOK
Comm Cap	1169		Rb backup (in Rb ECOK)
Comm Cap	1171		Ts (from MF57M)
LCVG	3160		Ts (from MF57M)
LCVG	3114		Ng prime
TCU top			Ng (choose driest one)
TCU bottom			Ng (choose driest one)

EMU 3011, 3005 ☑27. Transfer lower arm protective covers from old ISS EMUs to new ISS EMUs

28. Remove Vent Port Plugs (stow in EMU Servicing Kit S/N 5002)

EMU 3011 28a. Remove Legs/1.5” leg rings/boots from EMU 3011

28b. Beginning with mated velcro seam fold TMG over waist/brief metal disconnect rings

28c. Retrieve thigh/upper leg protective covers (two) from CTB 1163 in A/L1D2

28d. Install thigh/upper leg protective covers on recently removed legs

28e. Stow Legs/1.5” leg rings/boots in Airlock; report stowage location

BSA ☑29. Retrieve Helmet Light and EMU Batteries from BSA

29a. Report S/N of Steve’s sticky MWS T-bar/EE

30. Transfer the following to STS:

TABLE 4.– EVA EQUIPMENT TRANSFER TO STS

ITEM	**SERIAL NUMBER**	**RETURN LOCATION**
EMU	3005	Middeck AAP
EMU Battery	2047	
MWS Baseplate	1005	
EMU	3011	Middeck AAP
EMU Battery	2048	
MWS Baseplate	1004	
☑Helmet Light Batteries (three~~four~~)	~~1029~~, 1035, 1037, 1038	Vol H (two per bag)
☑EMU Batteries (two)	2051, 2055	Ng/Rb EMUs
RETs (Sm-Sm) (eight)	4171, 4173, 4177, 4260, 4065, 4081, 4083, 4169 – partial qty may be in STS	Return Bag 503 – MF71K
Tether, Adj Eq (Sm-Sm) (six)	1001, 1002, 1007, 1013, 1014, 1019 – partial qty may be in STS	Return Bag 503 – MF71K
Right Angle Drive	1009	MF14E
Small Trash Bag (with NOAX)	Report S/N	MF71K (tentative)
Forceps/Prybar Caddy (with both tools)	N/A	Middeck Floor Port 2

31. Stow RETs and Adjustable Tethers in Return Bag 503 (~~Ext A/L~~, MF71K)

EMU 3011, 3005 32. Install backup EMU gloves Ng2, Rb2

33. Install used EVA 2 LiOH in EMUs

EMU 3005 34. Disconnect LTA

35. Stow Ng/Rb backup LCVG in HUT

36. Connect LTA

EMU 3011, 3005 37. Install EMUs in middeck AAPs

☑38. Stow Helmet Light batteries in Vol H bags (2 per bag)

Ng/Rb EMUs ☑39. Install EMU Batteries (2051, 2055) in EMUs

MSG 134 - OBSS PTU TEST

NOTE

SINGLE MODE COARSE and VERN joint rates are the same for PLID 3. Assumes LDRI MODE 2(1).

1. SETUP

SM 94 PDRS CONTROL

√PL ID, ITEM 3: 3

√INIT ID, ITEM 24: 3

CMG R&R VIEWING Posn:

	X	Y	Z	PITCH	YAW	ROLL	PL ID
√	-622	-740	-1095	91	4	265	3
	SY	SP	EP	WP	WY	WR	
√	+95.0	+38.7	-22.8	-0.5	-0.3	+22.3	

A7U VIDEO OUT MON2 pb – push
IN PL2(VPU) pb – push

L10(VTR) REC pb – push, hold
PLAY pb – push, simo (red •)

OBSS ITVC CAMR CMD PAN/TILT – HI RATE (LO within 10°)
PAN – L (to hard stop)
TILT – UP (to hard stop)
PAN/TILT – RESET

PAN: +81.8° (right)
TILT: -25.0° (down)
ZOOM: 54° HFOV (full out)

A7U VIDEO OUT DTV pb – push
PL2 (VPU) pb – push

CCTV RMS ELBOW, PAN: +51.7°
TILT: +34.6°
ZOOM: 9.8 HFOV (full in)

Use monitor crosshair to adjust Elbow camera pan and tilt to center the OBSS ITVC lens in the monitor FOV. Focus as required.

OBSS ZOOM: 4° FOV (full in)

Use crosshair to adjust OBSS ITVC pan and tilt to center the RMS Elbow camera lens in the monitor FOV. Focus as required.

Record and report to MCC OBSS ITVC pan/tilt angles.

PAN	TILT

2. SRMS MOTION AFFECT ON OBSS PTU

NOTE

After each line of the table, stop arm motion for 10 seconds before proceeding to the next line. If the lens of the OBSS ITVC moves out of the FOV of the RMS Elbow camera during any portion of the single joint maneuvers, stop SRMS motion and perform step 3.

RATE – as desired
BRAKES – OFF (tb-OFF)
MODE – SINGLE, ENTER

Mnvr Arm to Induce OBSS PTU Slip:

	SY	SP	EP	WP	WY	WR
CMG R&R VIEWING	+95.0	+38.7	-22.8	-0.5	-0.3	+22.3
1: SY –	+90.0					
2: SY –	+85.0					
3: SY –	+80.0					
4: SY +	+85.0					
5: SY +	+90.0					
6: SY +	+95.0					
7: SP –		+33.7				
8: SP –		+28.7				
9: SP –		+23.7				
10: SP +		+28.7				
11: SP +		+33.7				
12: SP +		+38.7				
CMG R&R VIEWING	+95.0	+38.7	-22.8	-0.5	-0.3	+22.3

X	Y	Z	PITCH	YAW	ROLL	PL ID
-622	-740	-1095	91	4	265	3

3. ASSESS OBSS PTU

Once OBSS ITVC image stable,
Adjust OBSS ITVC pan and tilt to re-center the RMS Elbow camera lens in the monitor FOV

Record and report to MCC OBSS ITVC pan/tilt angles.

PAN	TILT

L10(VTR) REC pb – STOP (no red •)

BRAKES – ON (tb-ON)
MODE – not DIRECT
PARAM – PORT TEMP
JOINT – CRIT TEMP

OBJECTIVE:
Transfer Single Thermal Enclosure System (STES) from the ISS (US LAB, EXPRESS-4 RACK) to shuttle middeck. This activity removes the payload from the EXPRESS Rack, powers it off, transfers it to the shuttle middeck, powers it to a survival state, and then installs it.

LOCATION:
Removed: EXPRESS-4 RACK - LAB1P2_G1
Installed: MF71C

DURATION:
About 1 hour with two crewmembers

TOOLS:
Required in shuttle MDDK:
- High Torque Locker Tool
- (40-200 in-lbs) Trq Wrench, 1/4" Drive
- 1/4" Socket, 1/4" Drive
- Ratchet, 1/4" Drive

Required at EXPRESS-4 RACK:
- High Torque Locker Tool

ISS IVA Tools:
1/4" Socket, 1/4" Drive
Ratchet, 1/4" Drive
(5-35 in-lbs) Trq Wrench, 1/4" Drive

1. LOCKER AND ADAPTER PLATE REMOVAL

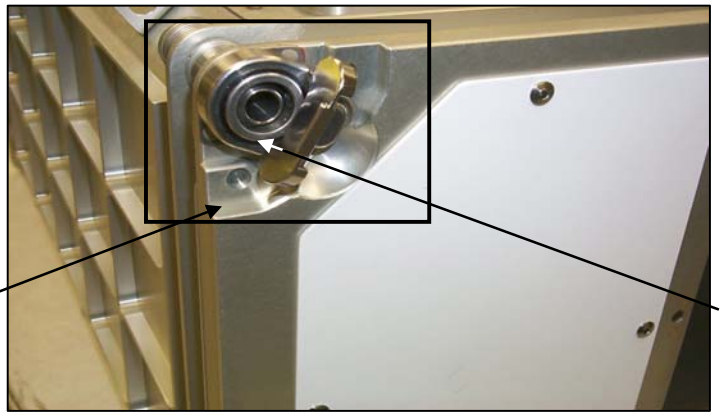


Figure 1.- Locker Latch, Top Left (Shown Unlatched).

MF71C 1.1 √Locker doors latched, red dot not visible

1.2 Remove Locker, Fasteners (four) (High Torque Locker Tool; 1/4" Socket, 1/4" Drive; Ratchet, 1/4" Drive).
Refer to Figure 1.
Temporarily stow Locker until adapter plate is removed.

1.3 Remove Adapter Plate (High Torque Locker Tool; 1/4" Socket, 1/4" Drive; Ratchet, 1/4" Drive).

1.4 Temporarily stow Adapter Plate in middeck.

1.5 Transfer Locker to LAB1P2.
Temporarily stow.

CAUTION
1. To prevent a loss of science, carefully remove muffler.
2. To prevent possible loss of science due to temperature excursions, keep STES door open to absolute minimum.

2. STES POWERDOWN

LAB1P2_G1 2.1 Remove STES Muffler.
Temporarily stow.

2.2 Rotate STES latches to expose the Locker Tool access holes.

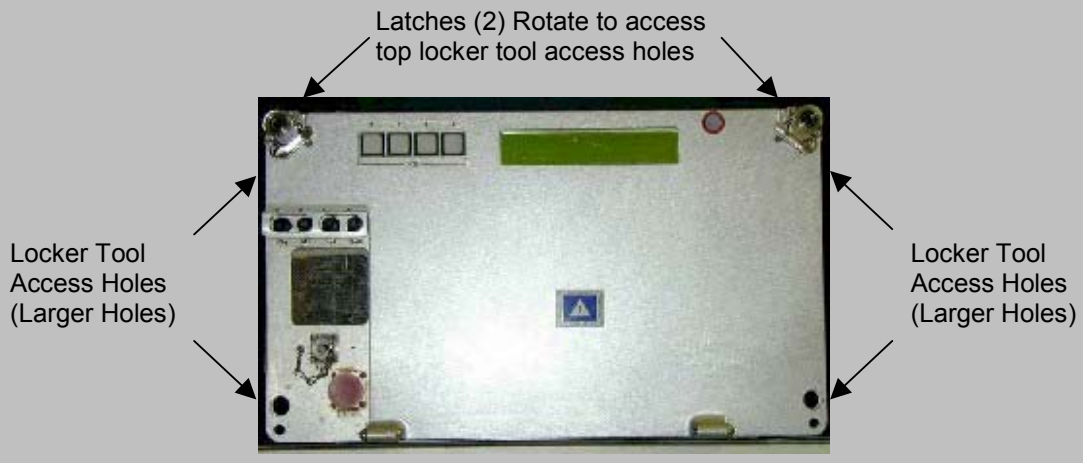


Figure 2.- STES Locker Tool Access Holes.

2.3 Unfasten STES from EXPRESS Rack backplate (High Torque Locker Tool; 1/4" Socket, 1/4" Drive; Ratchet, 1/4" Drive).
Temporarily stow all tools.

CAUTION

To prevent a loss of science, power interrupt time should not exceed 30 minutes. Be careful not to jar the STES due to sensitivities to vibrations.

NOTE

STES shutdown begins when the MAIN circuit breaker is opened.

2.4 cb 28V → Open

√cb BATT – Open

cb FAN → Open
cb MAIN → Open

2.5 Record Power Off Time (GMT): _____

LAB1P2_F1 2.6 sw LOCKER-3 POWER – OFF (Lt – Off)

3. DISCONNECTING STES EXPRESS RACK CABLE

LAB1P2_G1 3.1 Disconnect the following
Power Adapter Cable Assembly ←|→ STS 28V J9
RS422 Adapter Cable Assembly ←|→ RS 422 J8

3.2 Remove STES Ziplock Bag with connector covers from STES. Temporarily stow STES Ziplock Bag at rack.

MF71C 3.3 Transfer STES to the Middeck and insert in location.

CAUTION

When mating cables, verify pins are straight and inspect both connect halves for debris.

4. STES POWERON

ML85E 4.1 √DC 10 AMP MNB S2 – OFF

MF71C 4.2 √cb MAIN – Open
√cb FAN – Open
√cb BATT – Open
√cb 28V – Open

4.3 Connect DC Power Cable to STES.
STES ENT PWR →|← STS 28V J9

ML85E 4.4 cb DC 10 AMP MNB CB2 – cl
DC 10 AMP MNB S2 – ON

CAUTION
To prevent a loss of science and possible damage to hardware, do not close BATT circuit breaker.

NOTE
STES shutdown ends when the MAIN circuit breaker is closed.

MF71C 4.5 cb MAIN – Close
cb FAN – Close
cb 28V – Close

Record Power On Time (GMT): _____

√STES fan is running (listen at fan intake)

5. STES SETUP

NOTE
1. STES initialization could take up to two minutes. Cycling STES power will annunciate '**POWER ON RESET**' message. 2. STES '**POWER ON RESET**' message will automatically clear after 60 seconds. A '**BATTERY LOW**' message will appear due to open BATT circuit breaker.

MF71C 5.1 √Message, '**POWER ON RESET**', then
√Message, '**BATTERY LOW**'

5.2 pb 3 (Disable) – Press

√Display – '**DISABLED**'

5.3 Log message information in {STES MESSAGE LOG LIST (MIDDECK)} (SODF: ASSY OPS: PAYLOAD-MALFUNCTION: PCG-STES), then:

5.4 pb 1 (Next) – Press

√No new message appears

****
* If new message appears, √**MCC-H**.
****

5.5 pb 4 (RETURN) – Press

√Main display bottom line message – '**PUSH 1-2-3 TO UNLOCK KEYPAD**'

5.6 √STES_TEMP = CMD_TEMP± 0.5° C

Log data
STES_TEMP: _____°C
CMD_TEMP: _____°C
SEQ_TIME: ___:___:___
STES_TIME: ___:___:___

6. INSTALLING STES

WARNING

STES requires a minimum of three Fasteners (four nominal) at 75 in-lbs to be properly fastened onto Payload Mounting Panel for structural and safety purposes.

MF71C 6.1 Fasten STES Fasteners (four) in the following diagonal sequence: upper left, lower right, upper right, lower left (High Torque Locker Tool; 1/4" Socket, 1/4" Drive; (40-200 in-lbs) Trq Wrench, 1/4" Drive).
Torque to 75 (+0/-5) in-lbs.

6.2 Notify **MCC-H**
Installation of STES is completed in shuttle middeck.
Give shutdown start and end times from steps 2.5 and 4.5.
Log data from step 5.6.

7. EXPRESS RACK CABLE DISCONNECT AND STOW

LAB1P2_G1 7.1 Install Locker from Middeck into EXPRESS-4 Rack, G1 Position.
Fasten Locker fasteners (four) in a diagonal pattern into EXPRESS Rack (High Torque Locker Tool; 1/4" Socket, 1/4" Drive; (5-35 in-lbs) Trq Driver, 1/4" Drive).
Torque to 30 in-lbs.

7.2 Disconnect the following and replace captive connector covers.
LAB1P2_F1 EXPRESS Rack Power Cable (24") ←|→ LOCKER-3 POWER-J1
EXPRESS Rack Power Cable (24") ←|→ Power Adapter Cable Assembly
EXPRESS Rack Data Cable (24") ←|→ LOCKER-3 DATA-J2
EXPRESS Rack Data Cable (24") ←|→ RS422 Adapter Cable Assembly

7.3 Retrieve STES Ziplock Bag and replace connector covers on
Power Adapter Cable Assembly
RS422 Adapter Cable Assembly

Dispose of Ziplock Bag.

RESTOW tools, parts, materials as required to original locations except for:

EXPRESS Rack Power Cable (24") TO: LAB1P2_M1
EXPRESS Rack Data Cable (24") TO: LAB1P2_M1
Power Adapter Cable Assembly TO: See Transfer List
RS422 Adapter Cable Assembly TO: See Transfer List
STES Muffler TO: See Transfer List
Adapter Plate TO: Return to Middeck per Transfer List

MSG 137 - FD11 WATER ACTIVITY SUMMARY

FD11 Water Activity Summary:

Today, you'll be terminating Shuttle condensate collection and you will be dumping two CWCs overboard sequentially, the ISS Condensate CWC S/N 1042 and then the leaking CWC S/N 1012 filled yesterday.

Also, there will be three CWC Supply H2O fills and the Supply Water System will be reconfigured from the H2O Transfer Config to the Nominal H2O Config.

FD11 Water Activity Details:

1. At MET 9/14:30, the CDR should perform TEARDOWN of Condensate CWC S/N 6008 using SHUTTLE CONDENSATE COLLECTION (ORB OPS, ECLS), p. 5–36. Following this, fill two sample bags from this Condensate CWC using SHUTTLE/ISS H2O CONT FILL, CWC SAMPLING PROCEDURE (ORB OPS, ECLS), p. 5–29. Use Sampling Hardware with BLUE handle, which was previously used for potable CWC sampling. Stow the first sample bag in wet trash. Label the second bag "ORB CNDS SAMPLE" and stow in MF43E. Temp stow the Shuttle Condensate CWC for dumping post undocking.

2. Prior to starting the CWC dumps scheduled at MET 9/15:15, pregather the following items:

   ISS Condensate CWC S/N 1042 from ISS NOD1P2
   Leaking CWC Fill #16 S/N 1012

   Waste Water Dump (WWD) Filter from the Shuttle BOB (MF14H)

   CWC (Yellow-Yellow 20 ft) hose from Shuttle CHCK

   Initiate CWC OVERBOARD DUMP (ORB OPS, ECLS), p. 5–32 starting in Step A DUMP PREP and begin dumping ISS Condensate CWC S/N 1042. Do not perform Steps B and H. When first CWC dump complete, dump CWC S/N 1012. Dump duration for CWC S/N 1042 will be approximately 49 minutes and for CWC S/N 1012 the dump duration will be approximately 63 minutes. MCC will TMBU all S/W limits.

   Following the dumps, return Condensate CWC (S/N 1042) to ISS NOD1P2. Stow empty CWC (S/N 1012) in one of the following locations for return, and report the stowage location to MCC:

   - Volume F (if there is room)
   - Empty Food Locker (at crew discretion)
   - EXT ARLK Floor Bag

3. There are three CWC fills scheduled for today, and they are the last planned fills of the flight. Retrieve the empty CWC located in the ISS NOD1P2 M-02 Bag with S/N 1047. Also retrieve from the Inflight Stowage Restraint Bag, that is inside the ISS NOD1P2 M-02 Bag, two CWCs from among those with S/Ns 1052, 1055, and 1057.

   Use CWC FILL in SHUTTLE/ISS H2O CONTAINER FILL (ORB OPS,ECLS), p. 5–26. The only additive for all three of today's fills is Silver biocide, and each fill is

expected to take approximately 56 minutes. Sample the first fill and stow it in MF43E. The first fill is scheduled at 9/18:10, and the second fill may commence at the conclusion of the first fill. The third fill should start no earlier than 9/22:45 to ensure adequate supply water quantities in tanks A and B.

Following each fill, squeeze the CWC and inspect the outer canvas cover and all fittings for cracks and leaks; report each bag's condition to MCC along with its S/N and Barcode.

Transfer the first two bags to ISS after the second bag is filled. When the third CWC is filled, it should be transferred to ISS as well; report the stowage location(s) of all CWCs to MCC. Also, transfer the Silver Biocide Syringe Kit (S/N 1001) with its remaining syringe and the Sample/Purge Kit (S/N 1001) to the M-02 Bag in ISS NOD1P2.

4. No earlier than MET 10/01:15, perform NOMINAL H2O CONFIG (ORB OPS, ECLS), p. 5–51. FES is NOT req'd.

At the MMT today, the decision was made to fly as is. Here are charts from today's MMT. Please let us know if you have any questions.

STS-114 Blanket Impact Assessment Status

4 August 2005

Justin Kerr/MV5
281.244.5071
justin.h.kerr@nasa.gov

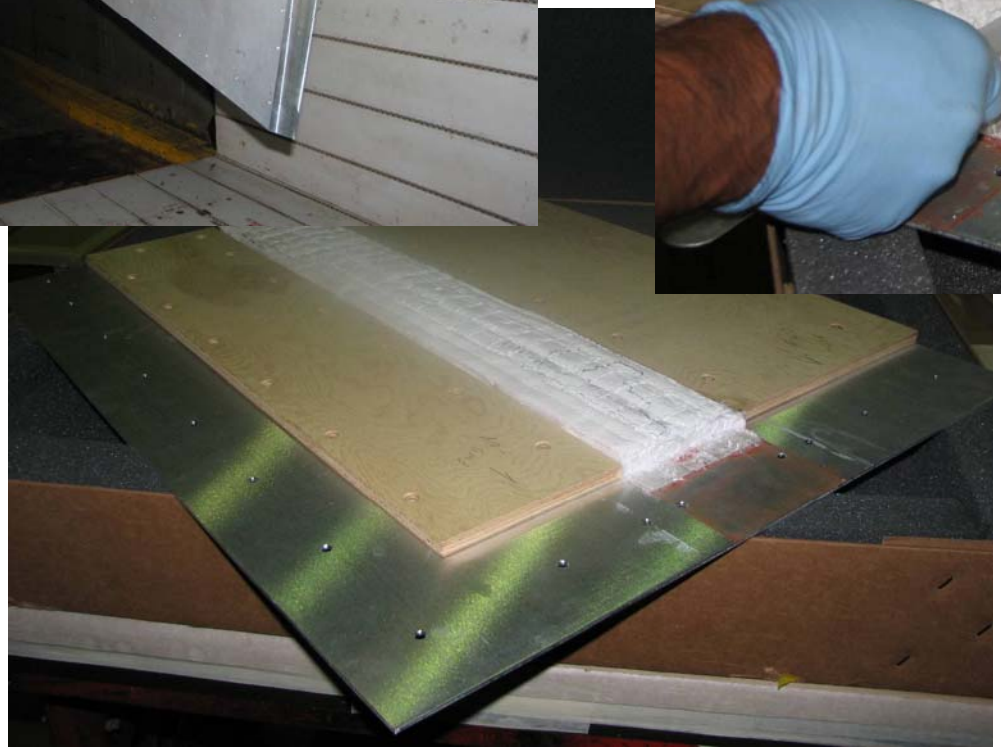
Flight Rationale

- **Our assessed probability of impact by the blanket OML fabric is lower than reported yesterday**
  - OMS pod probability of impact is <0.6%
  - Tail/rudder probability of impact is <1.5%
- **Considering the blanket release mechanism AND the structural/impact response the catastrophic risk associated with this threat is even lower than the probability of impact**
  - The risk of vehicle loss is zero if there is no release of the blanket OML fabric
    - Initial results of wind tunnel test results indicate no large pocket did not release
  - IF the blanket OML fabric strikes the Orbiter, then
    - TPS degradation due to impact could only occur after entry heating
      - No violation of structure certification temperatures were identified
    - Windows and rudder actuator strikes are not critically damaging
    - Rudder damage is possible, but even with a through perforation control authority is maintained
      - Rudder survives impacts by blanket fragments as large as 0.013 lbm (1/4 the mass of the largest expected fragment). Failure propagation has not been assessed.
    - Damaging OMS pod strikes are limited to encounters between M=1 to 2.6
      - Structural analysis shows that the OMS pod structure can survive impacts by blanket fragments as large as 0.0053 lbm (1/10 the mass of the largest expected fragment).

Recommend returning with the blanket as-is

Test set up

Presenter: Justin Kerr

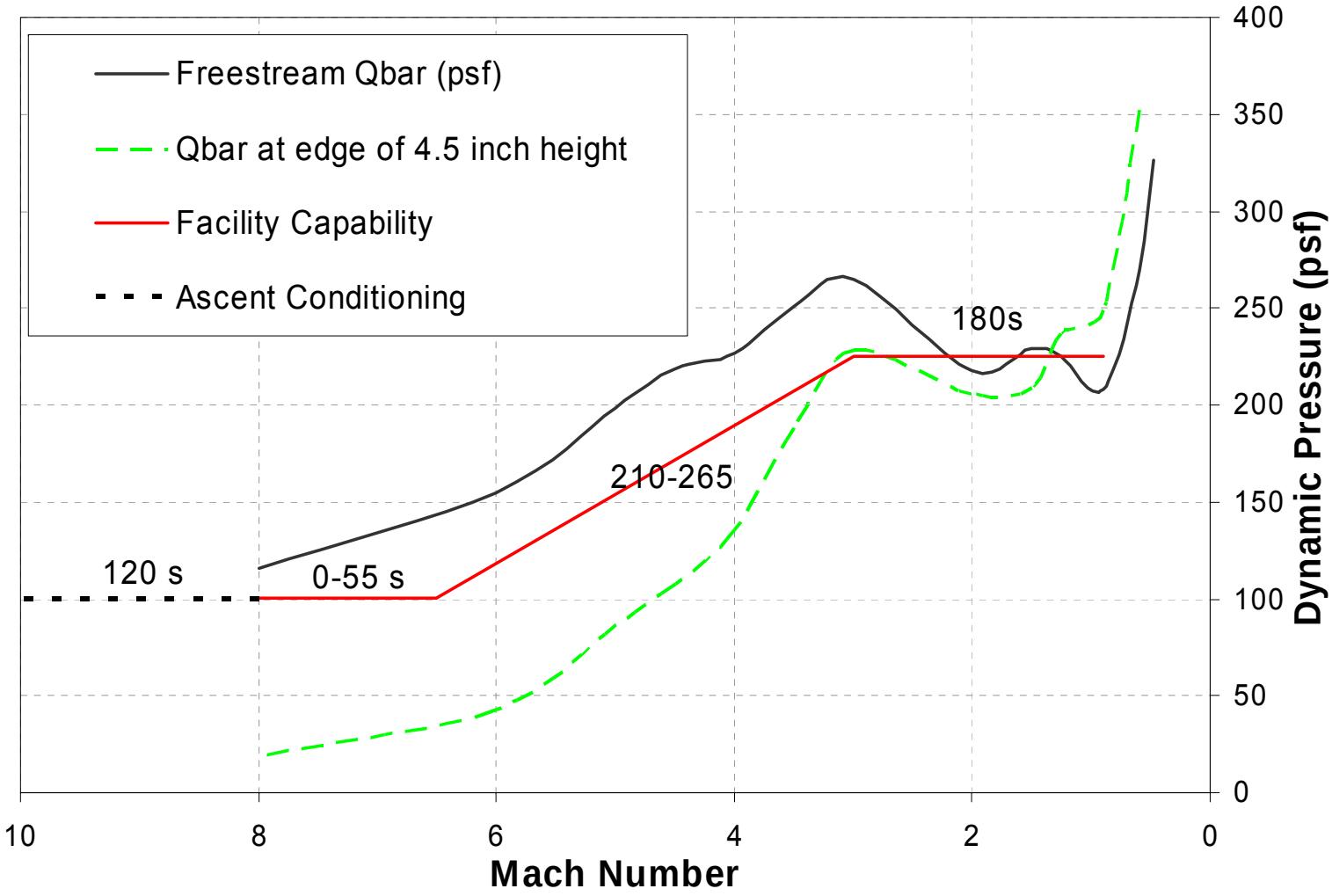


Final Test Conditions

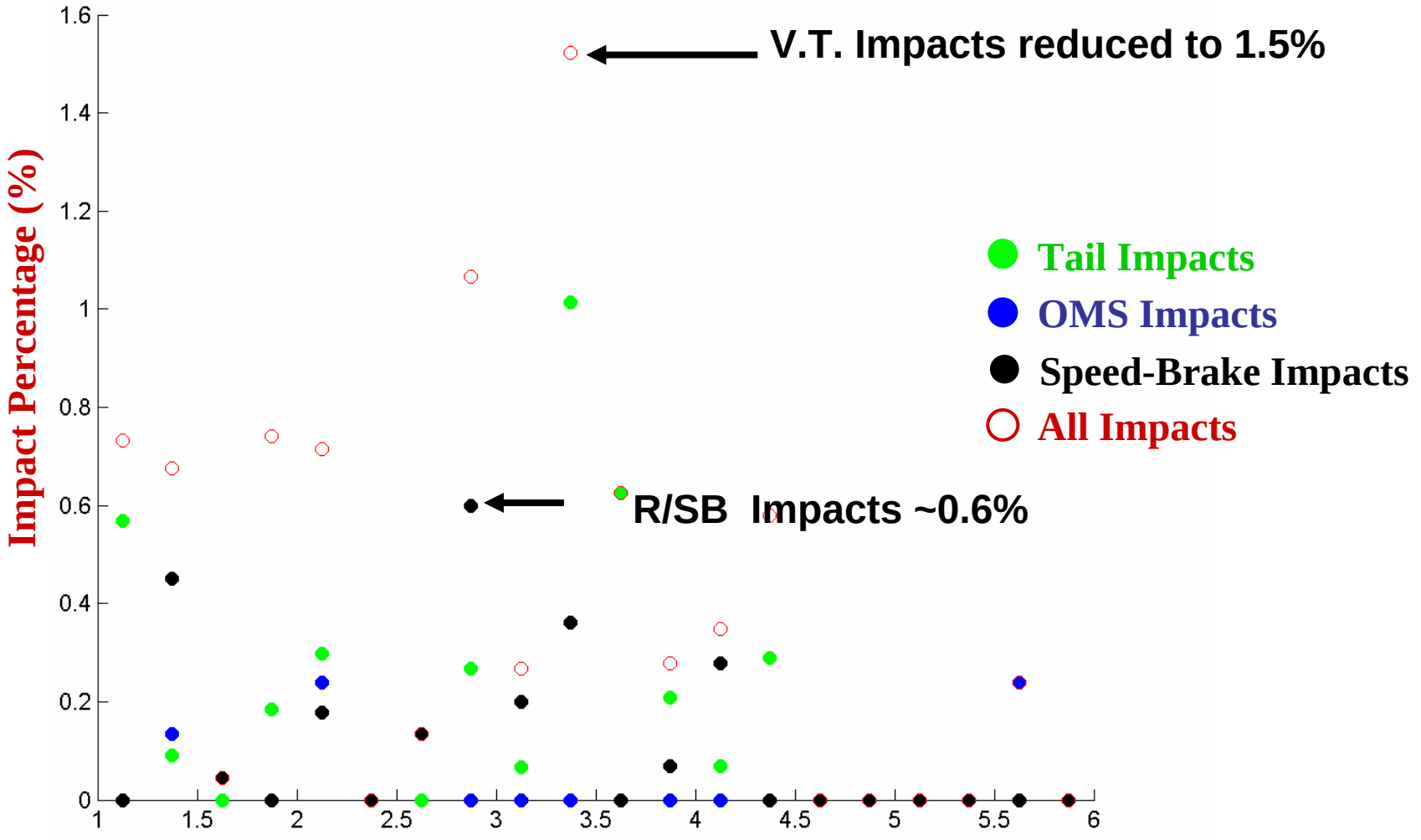
- **Test Profiles Briefed at 8-3-05 MMT were Describing the Vehicle Free Stream Conditions**
- **Needed to Adjust the Conditions to the Appropriate *Local Flow Conditions* on the Blanket**
- **Computations Completed at 18:00 CDT by EG and Independently Confirmed Over Night by Ames RC Personnel.**
- **Reduced Exposure Time at 100 PSF to Account for Boundary Layer Effect Prior Mach 4.5**
  - Boundary Layer Effect is Significant in Shielding the Blanket from Free Stream Dynamic Pressures. Local Dynamic Pressures are Therefore Lower.
  - Very Low Local Dynamic Pressure at Speeds Above Mach 8
  - Actual Tunnel Profile Adjusted to Account for the Boundary Layer Effect by Reducing the Amount of Time Exposed to 100 PSF Environment from 10 Minutes to 5 Minutes (Corresponds to the *Local* Dynamic Pressure Flight Profile)
- **Reduced Peak Dynamic Pressure from 260 PSF (Free Stream) to 225 PSF (Local) to Account for Boundary Layer Effect Between Mach 4.5 and Mach 1.2**
  - Peak Local Dynamic Pressure Computed at 4 Inches Above the Surface to be Enveloped by 225 PSF at Mach 3
  - Blanket Maximum Protrusion Estimated at 1.5 Inches Above Surface
  - Local Maximum Q Increases as You Move Away From the Surface
  - 4 Inches Envelopes What We Will Experience In Flight (Boundary Layer and Blanket Geometry Uncertainty)
- **Not Attempting to Simulate Below Mach 1.2 in Test Because Debris Transport Shows that Below Mach 1.2 is not a Threat**
- **Will Use the Same Profile on Test Article 1 and 2 (Best Match to Expected Flight Environment)**

Comparison of Qbar Conditions

Presenter: Justin Kerr



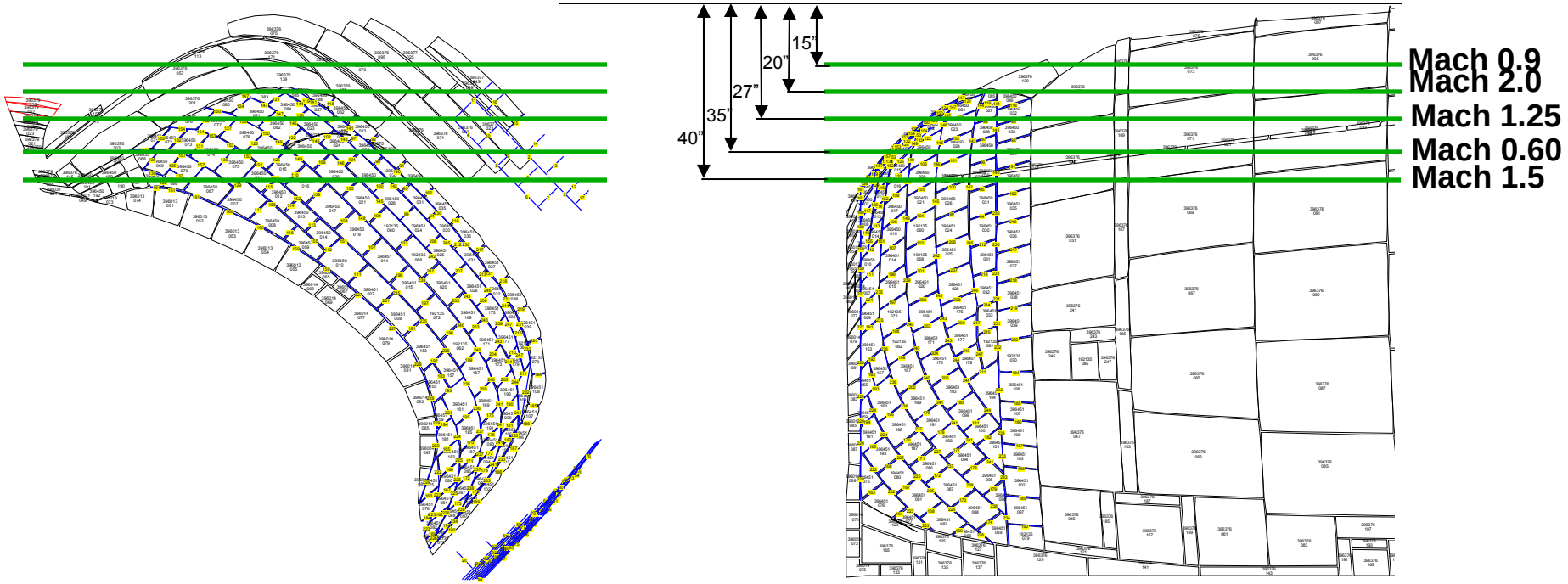
Conditional probability of impact



Case 4

Primary impact distributions overlay on OMS pod

Presenter: Justin Kerr



Impact testing to support evaluation

- **Impact testing at SwRI allowed for evaluation of worst case TPS damage and impact load histories**
- **HRSI tile arrays and aluminum plates were impacted with the largest blanket fragment**
- **All results were distributed to the analysts for use in thermal and structural assessments**

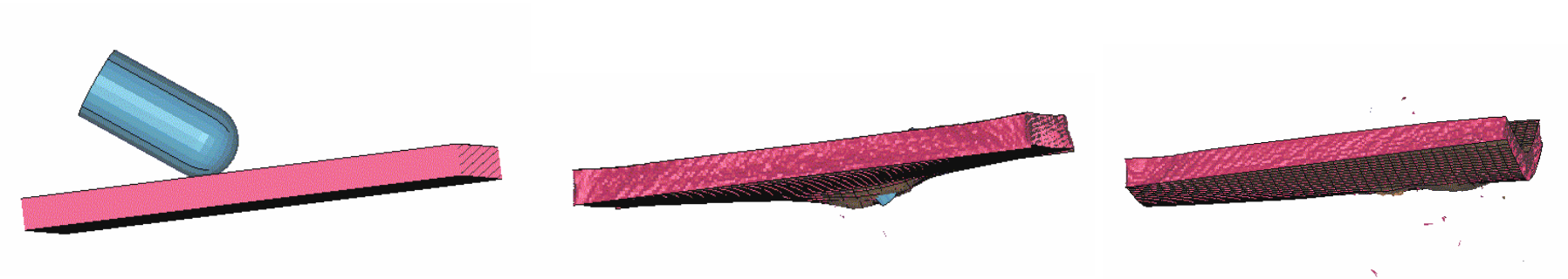
Test ID	Speed (ft/s)	Mass (g)	Target	Comments
FRSI-HRSI-1	1364	17.6	Tile	2 tiles damaged to dense layer
FRSI-HRSI-2	898	17.1	Tile	1 tile damaged to dense layer
FRSI-HRSI-3	805	17.1	Tile	horseshoe shaped damage to dense layer
FRSI-HRSI-4	512	21.8	Tile	hole in middle of tile all the way to dense layer
FRSI-HRSI-5	996	17.7	Bare Al	replicates test FRSI-HRSI-2 without tile present
FRSI-HRSI-6	609	21.7	Bare Al	replicates test FRSI-HRSI-4 without tile present
FRSI-6061-1	565	21.9	Bare Al	Target is alum plate with Aramis

Structural analysis of the windows and rudder actuator

- **Window assessment**
  - Since glass damage is determined empirically, a quantitative assessment is not possible
  - A qualitative assessment is possible by comparing the thermal blanket debris transport parameters to debris already tested (I.e. Tyvek)
  - Window PRT concludes the threat to the windows is at low Mach numbers when thermal protection function is complete
  - Threat at low Mach numbers is small (but unquantifiable)
- **Rudder speed brake actuator assessment**
  - Maximum load of 26000 lbs applied at maximum moment arm of 51.4 inches
  - Attenuation based on structural modes reduce this to 31500 in•lbs
  - Capability is 312000 in•lbs
  - Expected maximum flight load is ~282000 in•lbs
  - Peak loads do not coincide → loads do not exceed capability at any time

Structural analysis of the rudder/speed brake

- **¼ of blanket fragment is survivable**
  - 0.0135 lb (6.1g) and 2.5” length
- **Impact velocity: 1,583 ft/s**
- **Impact angle: 36 degrees**
- **Residual velocity: ~0 ft/s**



0.2 ms 0.5 ms

Reference: Walker, FD10 OPO briefing

Summary of OMS Pod

- Current analyses indicate smaller debris weights reduce potential for structural damage
  - No factor of safety (FS) applied to analysis at this time
    - Analysis uncertainties and FS application would lower critical debris weight
  - Initial analyses predicted damage for several potential impact cases evaluated using 0.053lb blanket particle was a strong possibility
- Modeling uncertainties exist and cause reduce analysis fidelity:
  - Model is not test verified
  - Debris Transport uncertainties cause large damage variations
    - Impact velocity
    - Incidence angle
  - Critical OMS Pod impact locations have not been evaluated
  - Limited parametric evaluation of critical debris configuration
  - Debris model of blanket fabric
    - material properties
  - Substructure modeling is currently of low fidelity
- Recommendation debris size no larger than .0053 lb

Thermal assessment

- Configurations of Damage Assessed
  - OMS POD – 2 tiles down to densified layer
  - Rudder Speed Brake – Approximately 3x3 ft Blanket removed down to RTV/Structure
  - Vertical Tail Leading Edge – 2 tiles removed to densified layer on leading edge

- Thermal Results
  - OMS POD – Acceptable structural temperatures for impacts occurring after ~ Mach 4.8 (Protecting G/E 250F Limit)
  - Rudder Speed Brake - Acceptable structural temperatures for impacts occurring after ~ Mach 4.0 (Protecting AL 350F Limit)
  - Vertical Tail Leading Edge – No thermal issues up to Mach 7

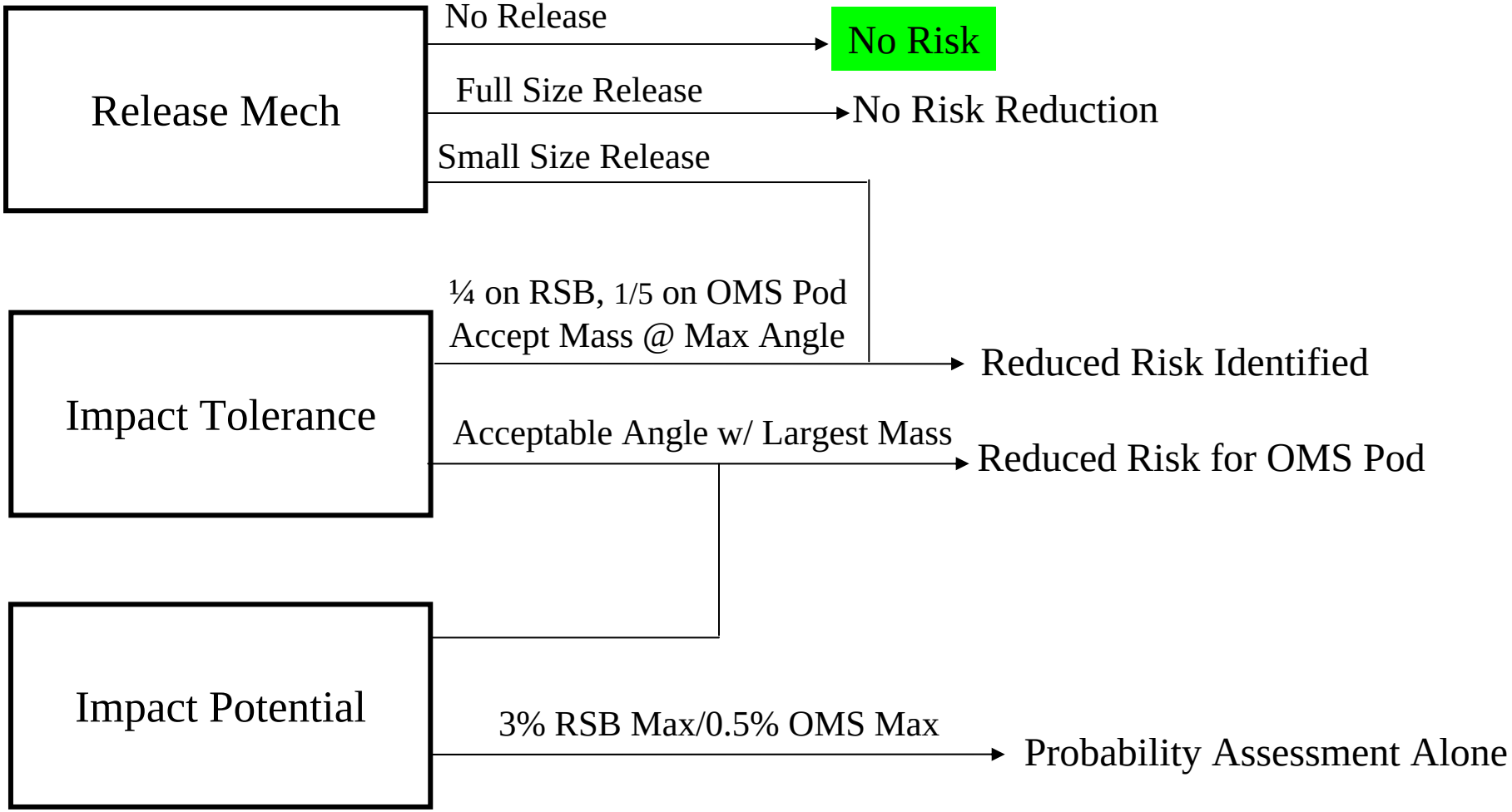
Reference: Norman, FD9 OPO briefing

Recommendations/Forward work

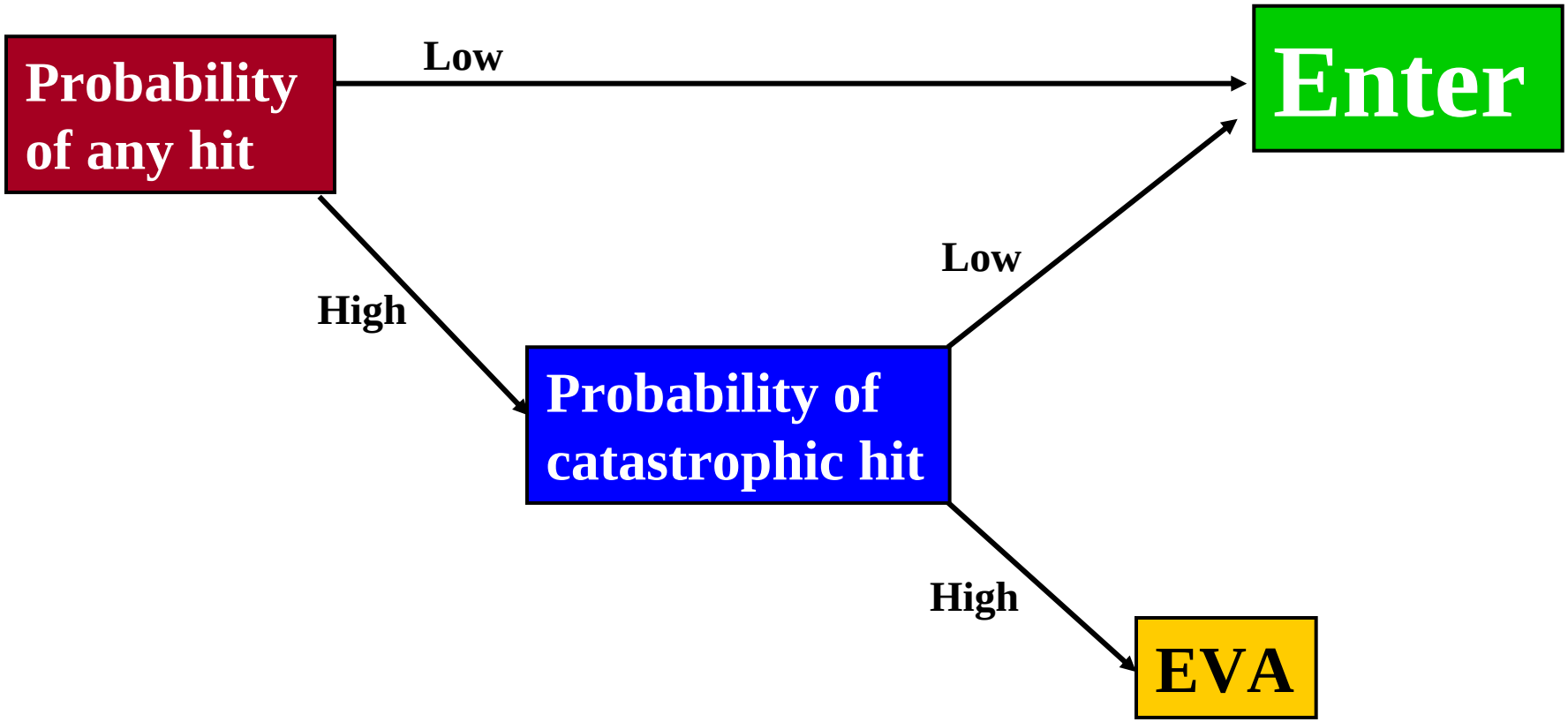
- **Recommend returning with blanket as-is**
- **Wind tunnel testing will continue to characterize blanket release mechanism**

Backup

Flight Rationale

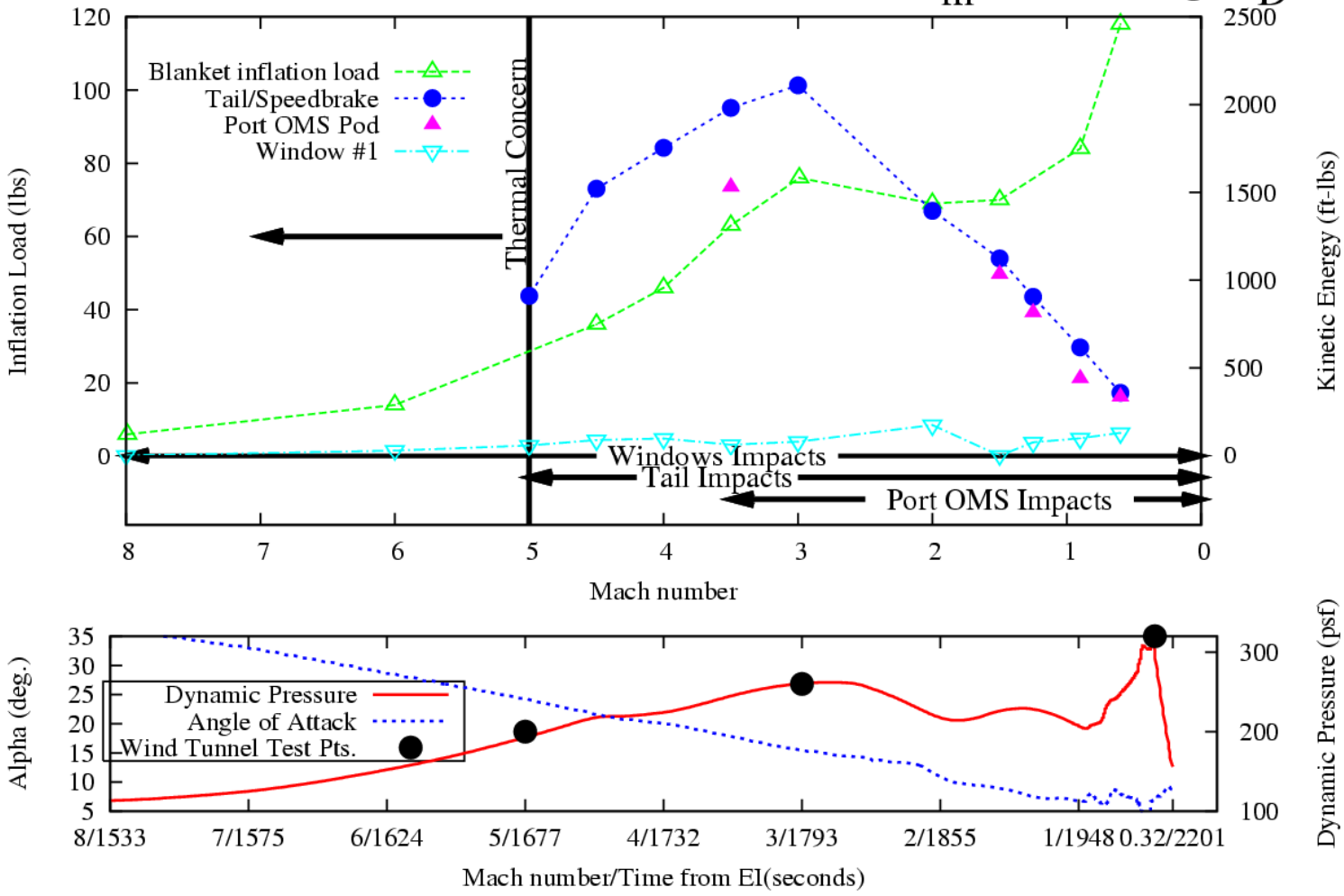


Road map


Probability of any hit
Low
Enter
High
Low
Probability of catastrophic hit
High
EVA

Debris transport

STS-114 AFRSI Blanket Debris - 0.053 lb_m, Tumbling C_D

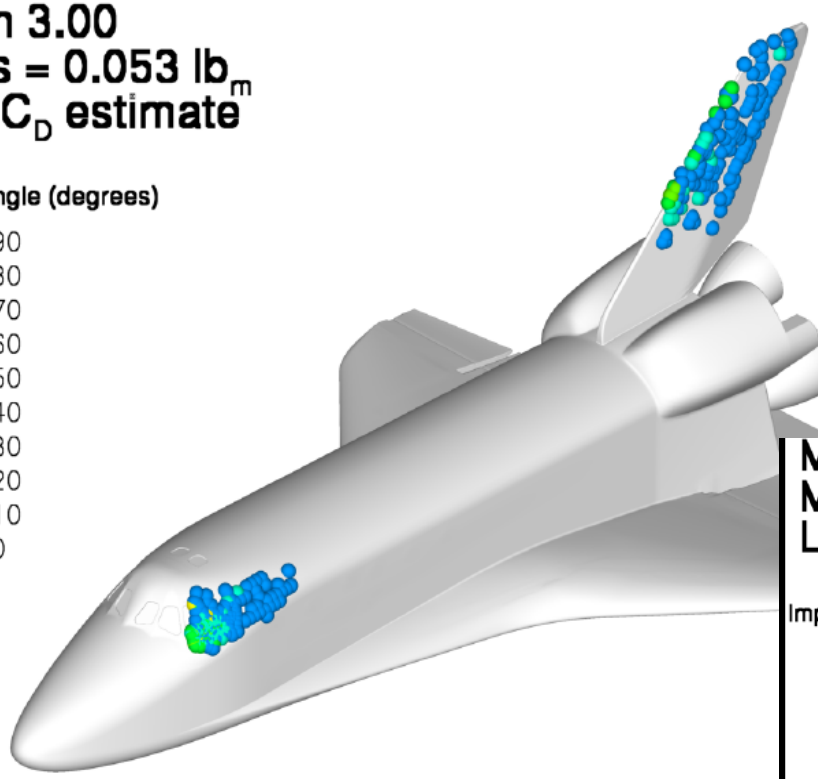


Reynaldo J. Gomez/NASA/JSC/EG3 x36108 Aug 3 2005

Potential strikes at M=3, 3.5

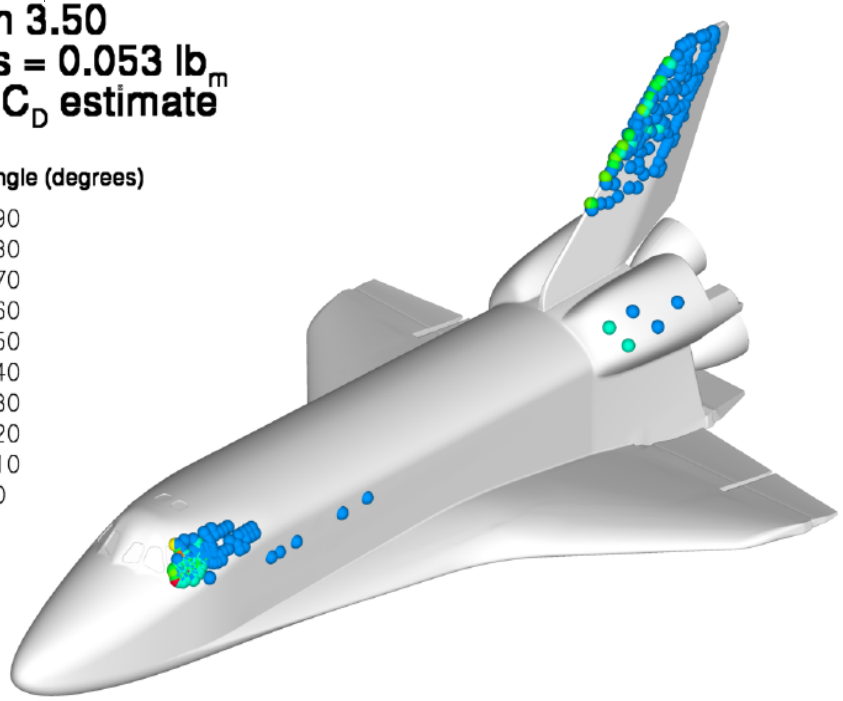
Mach 3.00
Mass = 0.053 lb_m
Low C_D estimate

Impact Angle (degrees)
90
80
70
60
50
40
30
20
10
0



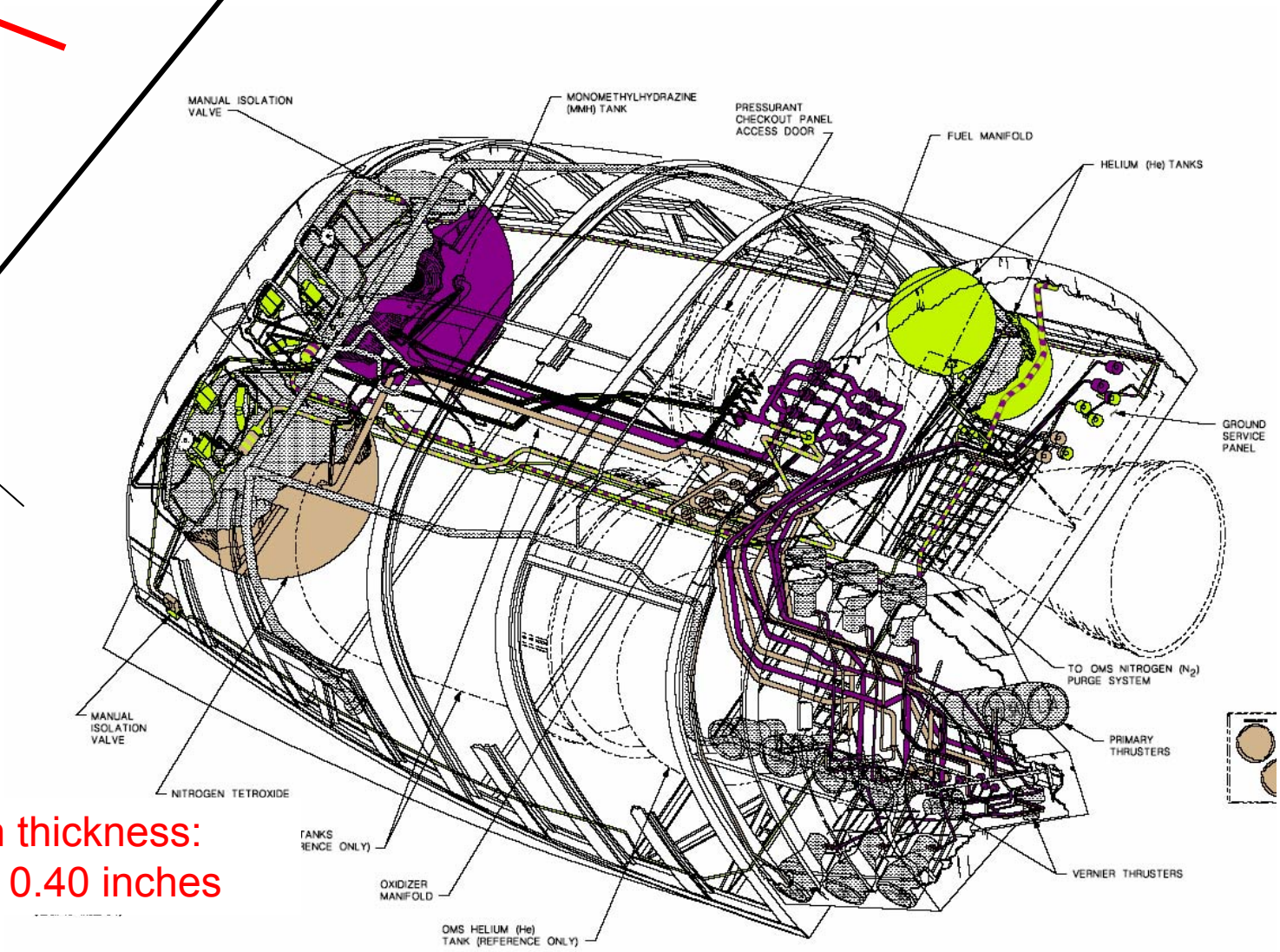
Mach 3.50
Mass = 0.053 lb_m
Low C_D estimate

Impact Angle (degrees)
90
80
70
60
50
40
30
20
10
0



OMS Pod

FWD



Pod skin thickness:
~0.35 to 0.40 inches

Baseplate installed on Sting Arm

Practice Panel

Modification of first test article, I/W

Modification of first test article, I/W

On MCC GO:

1. <u>SHUTDOWN STS7 AND REMOVE ULTRABAY HD</u>

STS7 A31p
'Enhanced Wideband MicroTAU – WLE 1.2'
Click 'Exit'
At prompt 'Are you sure you want to exit?' click 'Yes'
Sel 'Start'>'Shutdown'>' Shutdown'>'OK'
Disconnect WLES Laptop Receiver Unit from A31p Serial port
Remove WLES Laptop Receiver Unit from Velcro on A31p and temp stow

To discharge Ultrabay lever, pull Ultrabay switch (on left side of laptop) toward front of laptop
To release Ultrabay Adapter from bay, pull Ultrabay lever
Remove Ultrabay Adapter from Ultrabay and temp stow

2. <u>SWAP STS7 ULTRABAY ADAPTER WITH STS9 ULTRABAY ADAPTER</u>

STS9 A31p
Verify STS9 PGSC is shutdown
To discharge Ultrabay lever, pull Ultrabay switch (on left side of laptop) toward front of laptop
To release Ultrabay Adapter from bay, pull Ultrabay lever
Remove Ultrabay Adapter from Ultrabay and temp stow

Insert STS7 Ultrabay Adapter into STS9 Ultrabay
Push Ultrabay lever until firmly in place

Secure WLES Laptop Receiver Unit to A31p with Velcro
Connect WLES Laptop Receiver Unit to A31p Serial port

Disconnect OPP-LCS Cable from A31p RJ45 port

R12 (OPP)
Disconnect OPP-LCS Cable from LCS CDM/TLM (J107) port and temp stow

3. <u>WLES ACTIVATION ON STS9</u>

STS9 A31p
A31p pwr – On
Boot to Windows 2000:
3.1. Within 5 sec, sel any key at 'Timer' window to disable timer
3.2. Sel 'PGSC - Windows' at 'OSL2000' window
3.3. Press Enter to continue

After bootup complete, select clock from system tray
Select Time Zone tab
Under pulldown menu, confirm (GMT) Casablanca Monrovia time zone is selected
Select Date & Time tab
Adjust time and date to match orbiter GMT (CDT + 5 hours)
Select Apply
Select OK

Double click 'Shuttle Apps'>'EWBMTAU-WLE'
Verify 'Mode: Processing Remote Commands' (shows locked icon at top of display)

Perform step 5 from ACTIVATION AND CHECKOUT (ORB OPS, WLE SENSORS) on page 8-5 only

NOTE

NETWORK Card Acquisition will be blank, not 'Inactive'

Notify MCC-H: “WLES activation complete”

4. INSTALL STS9 ULTRABAY ADAPTER INTO STS7 AND STOW ITEMS

Retrieve STS9 Ultrabay Adapter from temp stow location

STS7 A31p Insert STS9 Ultrabay Adapter into STS7 Ultrabay

Push Ultrabay lever until firmly in place

Temp stow STS7 laptop in preparation for transfer to ISS per Middeck Resupply Transfer List

Retrieve OPP-LCS Cable and stow in MA16G

5. RETRIEVE PCMCIA CARDS FROM LAPTOPS BEING TRANSFERRED

Verify all PCMCIA cards are removed from laptops to be transferred

Stow PCMCIA cards not reqd for use in STS1, STS3, STS6, STS9

Excerpt from Wing Leading Edge Impact Detection System (WLEIDS) In-Flight Status Report: L +120 hours

WLEIDS Ascent Event Summary

The Wing Leading Edge Team observed 13 events of interest during ascent. Analysis of the combined summary data and raw data windows from the orbiter showed 2 probable impacts and 3 questionable impacts during ascent. A more extensive report was delivered to the LESS PRT, inspections were made using OBSS, and the orbiter wing leading edge was cleared for reentry. All 13 events of interest and their classification are shown in the table below. For this report, details were provided for four events (indicated by an * next to event number) that will highlight the different types of classifications made.

WLEIDS Event ID	Time (MET, seconds)	Wing	RCC Panel(s)	WLEIDS Impact Classification	Classification Rationale	Other Asset Indications (source)
1*	35	P	14-16	No Impact	Global Event, Impact Signature not Present in Raw Data	None
2	65.5	P	8-10	No Impact	No Significant Magnitude, Impact Signature not Present in Raw Data	None
3	79	S	8-9	No Impact	No Significant Magnitude, Impact Signature not Present in Raw Data	Debris (faint radar contact)
4*	122	P	6-7	Probable	Meets All Grms Criteria, Impact Signature is Present in Raw Data, Occurs Prior to Global SRB-Sep Event	Debris (radar)
5*	126	P	15-16	No Impact (bad data)	Identified as a Bad Data Point (Transient Spike in Data)	N/A
6	50	P	Chine	Questionable	All Grms Criteria Met, Unfamiliar with Impact Signature in Chine	None
7*	526	P	10-11	No Impact	All Grms Criteria Met, Can Be Explained by Global ET-Sep Event	None
8	50	P	19-20+	Probable	Meets All Grms Criteria, Impact Signature is Present in Raw Data	None
9	45	P	15-16	No Impact	No Significant Magnitude, Impact Signature not Present in Raw Data	None
10	75	S	14-15	No Impact	No Significant Magnitude, Impact Signature not Present in Raw Data	None
11	34	S	11-12	No Impact	No Significant Magnitude, Impact Signature not Present in Raw Data	None
12	109.5	P	6-7	Questionable	Meets Some Grms Criteria, Impact Signature is Present in Raw Data	None
13	101	P	6-7	Questionable	Meets Some Grms Criteria, Impact Signature is Present in Raw Data	None

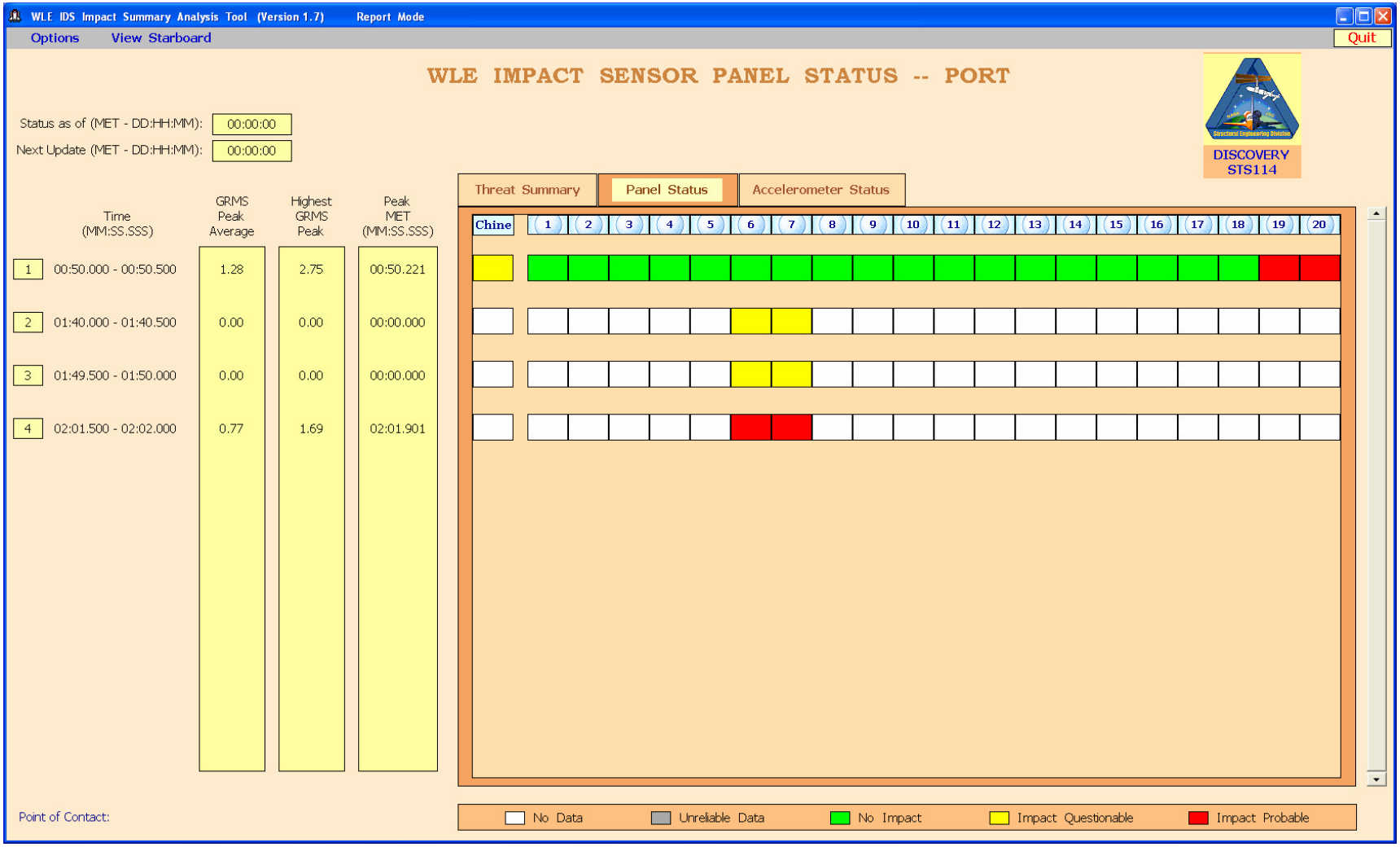


Figure 1 - Panel Status - Port Wing. Summary of the probable and questionable impacts that were identified on the port wing.

Note: Panel status not provided for Starboard wing because there were no questionable or probable impacts observed on this wing.

Ascent Data Download Status

File Type	Status	Notes
Grms Summary Files	Requested 44 / Received 40	4 sensor units did not process raw data
Grms Time History Files	Requested 8 / Received 8	2.5 minutes (1 is only 40 sec long)
	Requested 13 / Received 13	20 sec long (7 @ 121 sec, 4 @ 145 sec, 2 @ 40 sec)
	Requested 1/ Received 1	10 sec long (@ 116 sec MET)
	Requested 6 / Received 6	30 sec long (@ 50 sec MET)
½-Sec Raw Window Files	Requested 43 / Received 43	

On-orbit Mode Monitoring Status

Starting after flight day 5, when all desired ascent data had been received, we began evaluating on-orbit operations. In on-orbit mode the units are not continuously taking data, but instead are constantly looking for a trigger and recording a half second of raw data if an event is observed. We performed a series of timed data takes during different activities and 9 system characterization tests to define the trigger values to be used. Three units at a time are placed in on-orbit mode resulting in 9 measurements throughout the wing looking for a trigger. Only three units are used at a time to preserve battery power throughout the mission. There are seven groups of three units on each wing that can be used in on-orbit mode. At this time, two sets of three units have been depleted while monitoring the port side wing and no events have been observed. No on-orbit operations have been performed on the starboard wing as the temperature on this side of the vehicle is too low for our batteries to operate.

WLEIDS Details from Select Events

1. Event 4 – 121.5 seconds

WLEIDS Event ID	Time (MET, seconds)	Wing	RCC Panel(s)	Maximum Grms	Background Grms	Analysis Status	Impact Classification	Classification Rationale
4	122	Port	6-7	1.69	.77	Complete	Probable Impact	Meets All Grms Criteria, Impact Signature is Present in Raw Data, Occurs Prior to Global SRB-Sep Event

Figures 2-5 below show the localized nature of an impact signal. The largest impact transient occurs at the RCC panel 6/7 interface. One interface away at the 5/6 and 7/8 interfaces smaller transient signals occur, and no transient signals occur two or more RCC panel interfaces away (only the 4/5 interface is shown). Other events classified as probable impacts show similar localized transient signals.

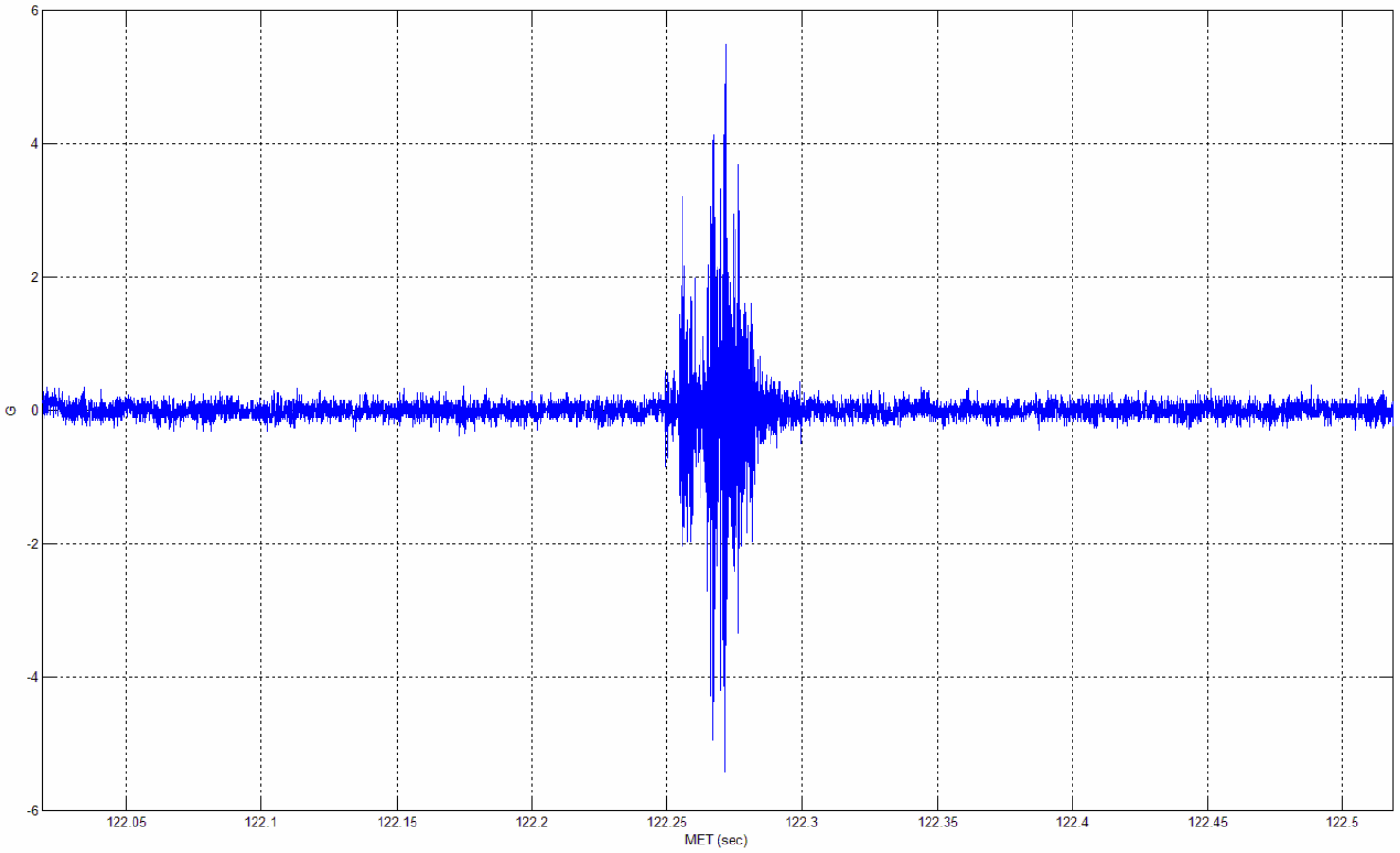


Figure 2 – Half Second of Raw Data for WLEIDS Event 4 - Port Panel 6/7 Interface

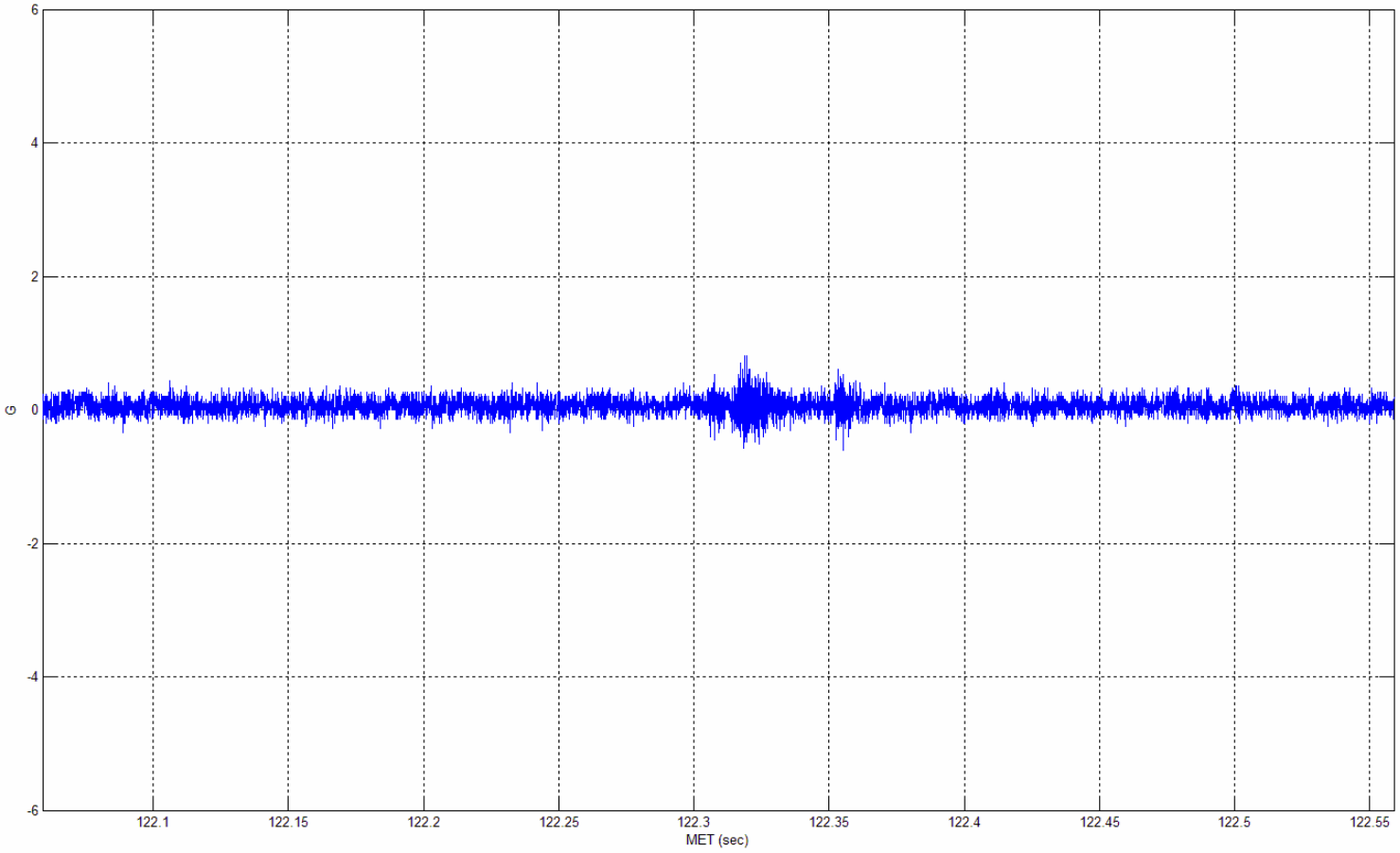


Figure 3 – Half Second of Raw Data for WLEIDS Event 4 - Port Panel 5/6 Interface

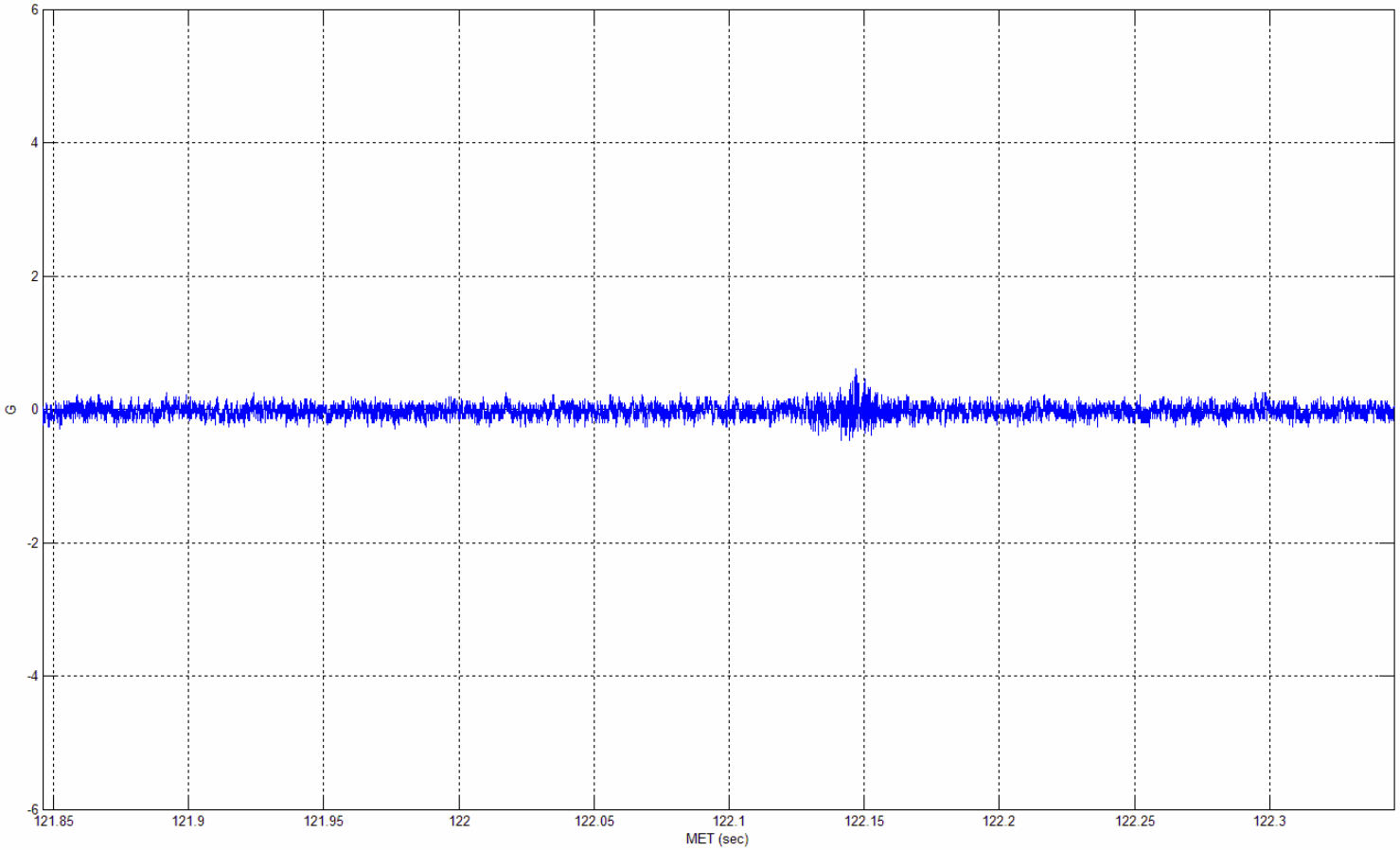


Figure 4 – Half Second of Raw Data for WLEIDS Event 4 - Port Panel 7/8 Interface

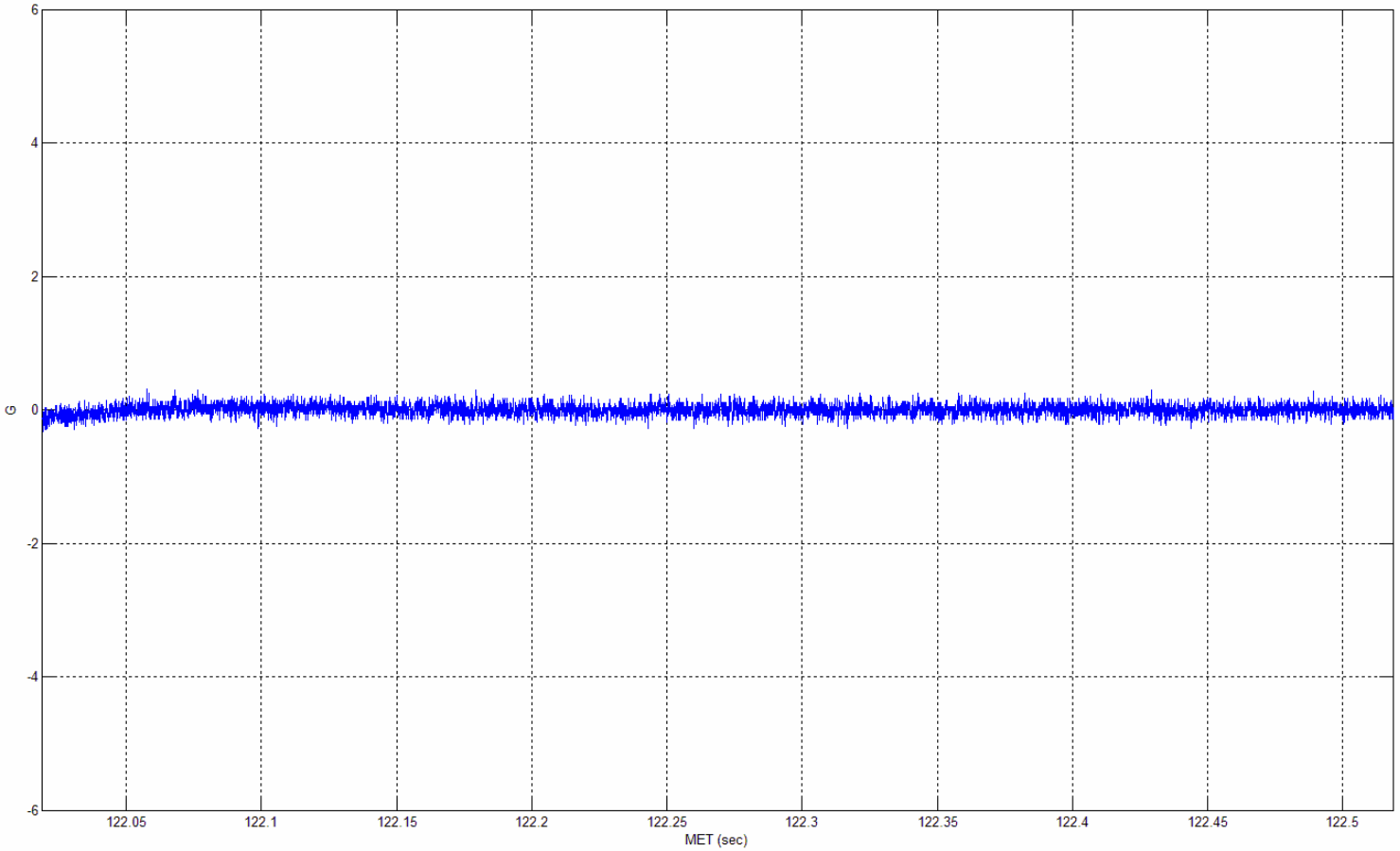


Figure 5 – Half Second of Raw Data for WLEIDS Event 4 - Port Panel 4/5 Interface

2. Event 7 – 526 seconds

WLEIDS Event ID	Time (MET, seconds)	Wing	RCC Panel(s)	Maximum Grms	Background Grms	Analysis Status	Impact Classification	Classification Rationale
7	526	Port	10-11	1.74	.97	Complete	No Impact	Explained By Global ET-Sep Event

The raw data below shows what the sensors picked up during ET-Sep at approximately 526 seconds. The transient signal looks similar to an impact signal, but when additional data was downloaded other sensors all across the port wing and also on the starboard wing had similar responses. This is what we call a global event and is not an indication of an impact. The plots below show a response at the port 10/11 interface and then a very similar response at the same time two interfaces away.

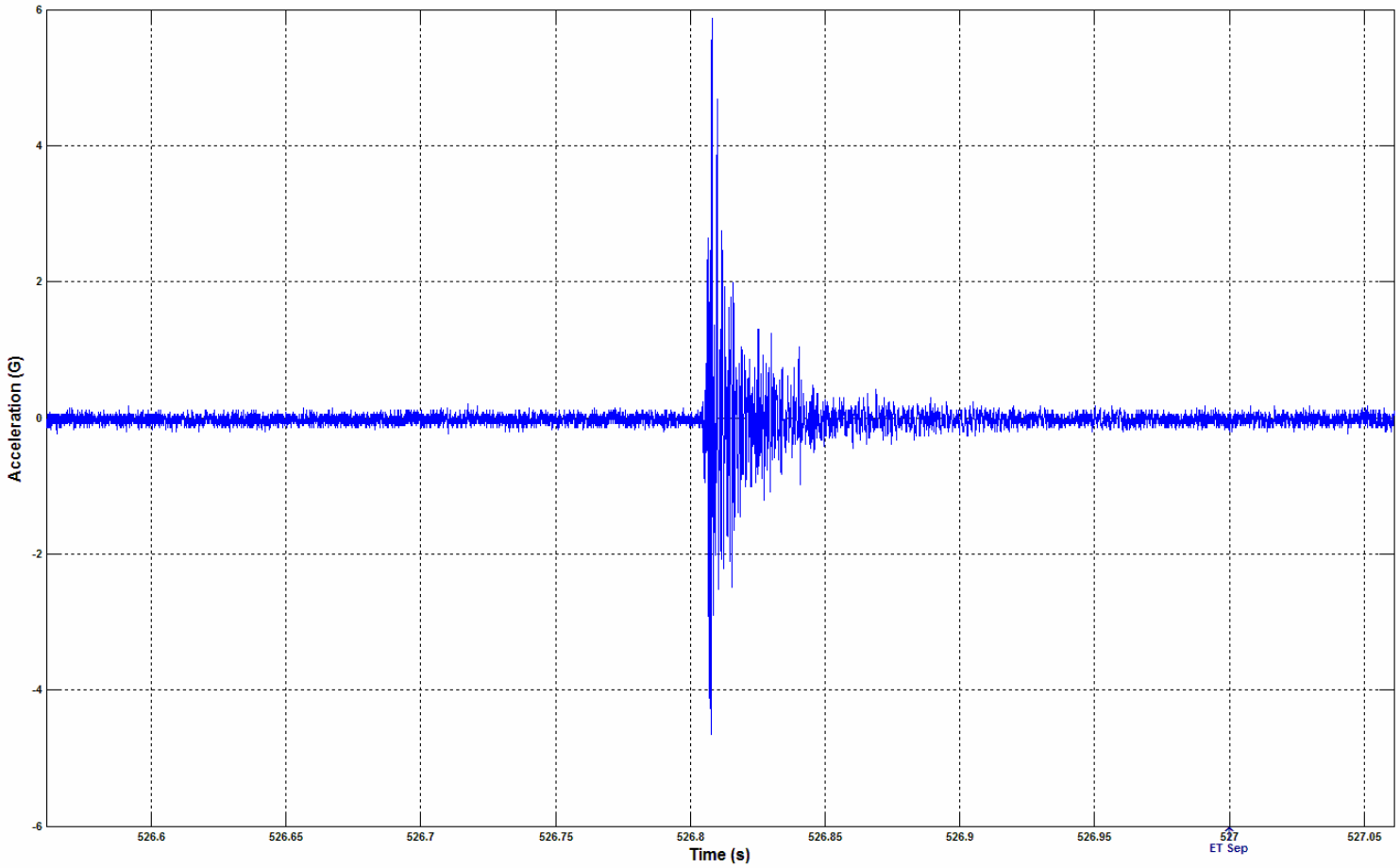


Figure 6 – Half Second of Raw Data for WLEIDS Event 7 - Port Panel 10/11 Interface

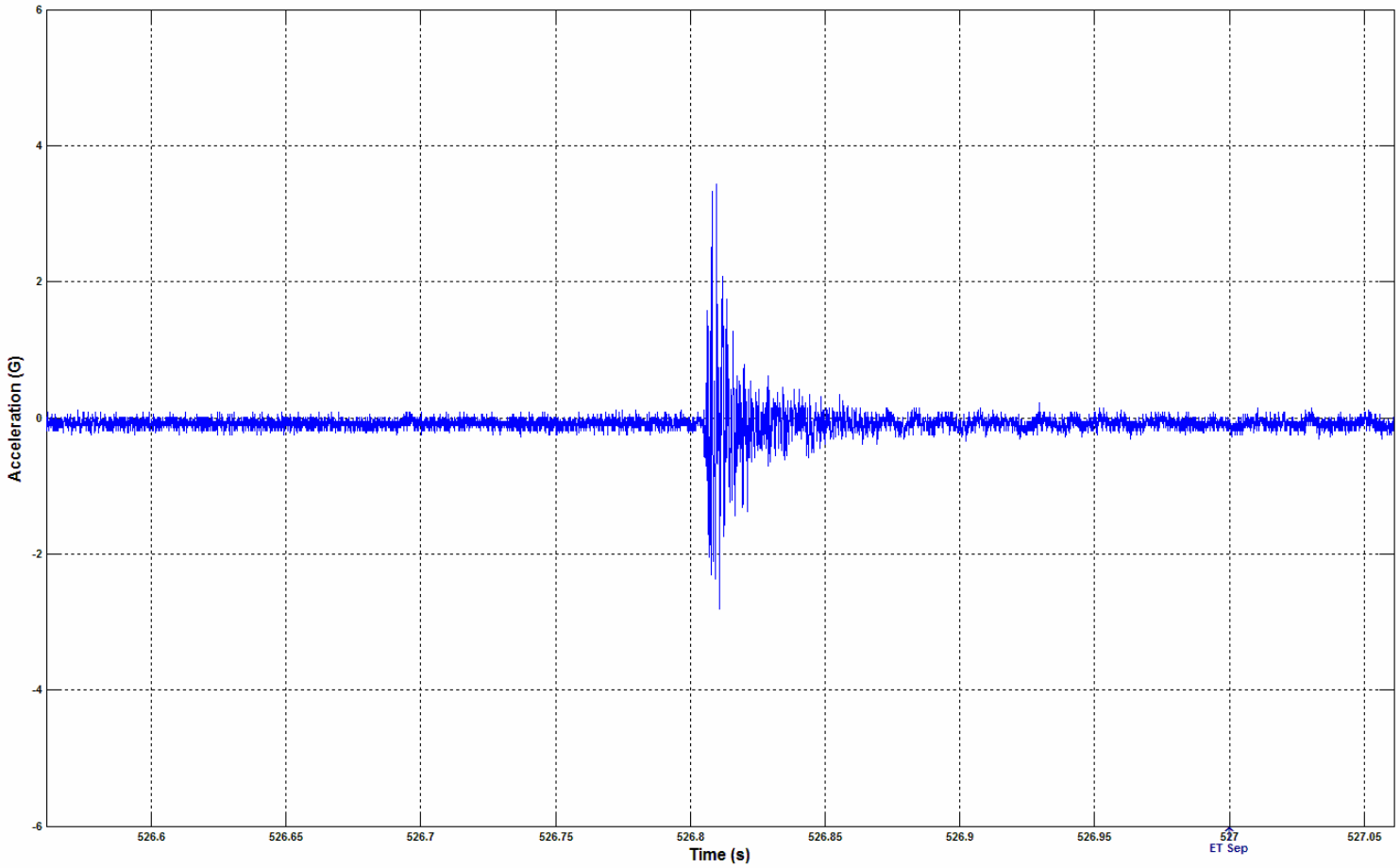


Figure 7 – Half Second of Raw Data for WLEIDS Event 7 - Port Panel 8/9 Interface

3. Event 5 – 126 seconds

WLEIDS Event ID	Time (MET, seconds)	Wing	RCC Panel(s)	Maximum Grms	Background Grms	Analysis Status	Impact Classification	Classification Rationale
5	126	Port	15-16	N/A	N/A	Complete	No Impact (Data Spike)	Identified as a Bad Data Point (Transient Spike in Data)

Figure 8 below shows the data spike that corresponds to WLEIDS event 5. This data spike is the same as spikes we saw in hardware testing but with significantly lower magnitude. As you can see, it doesn't have the same characteristics as the impact transient in event 4. The time shown in the plot below is incorrect.

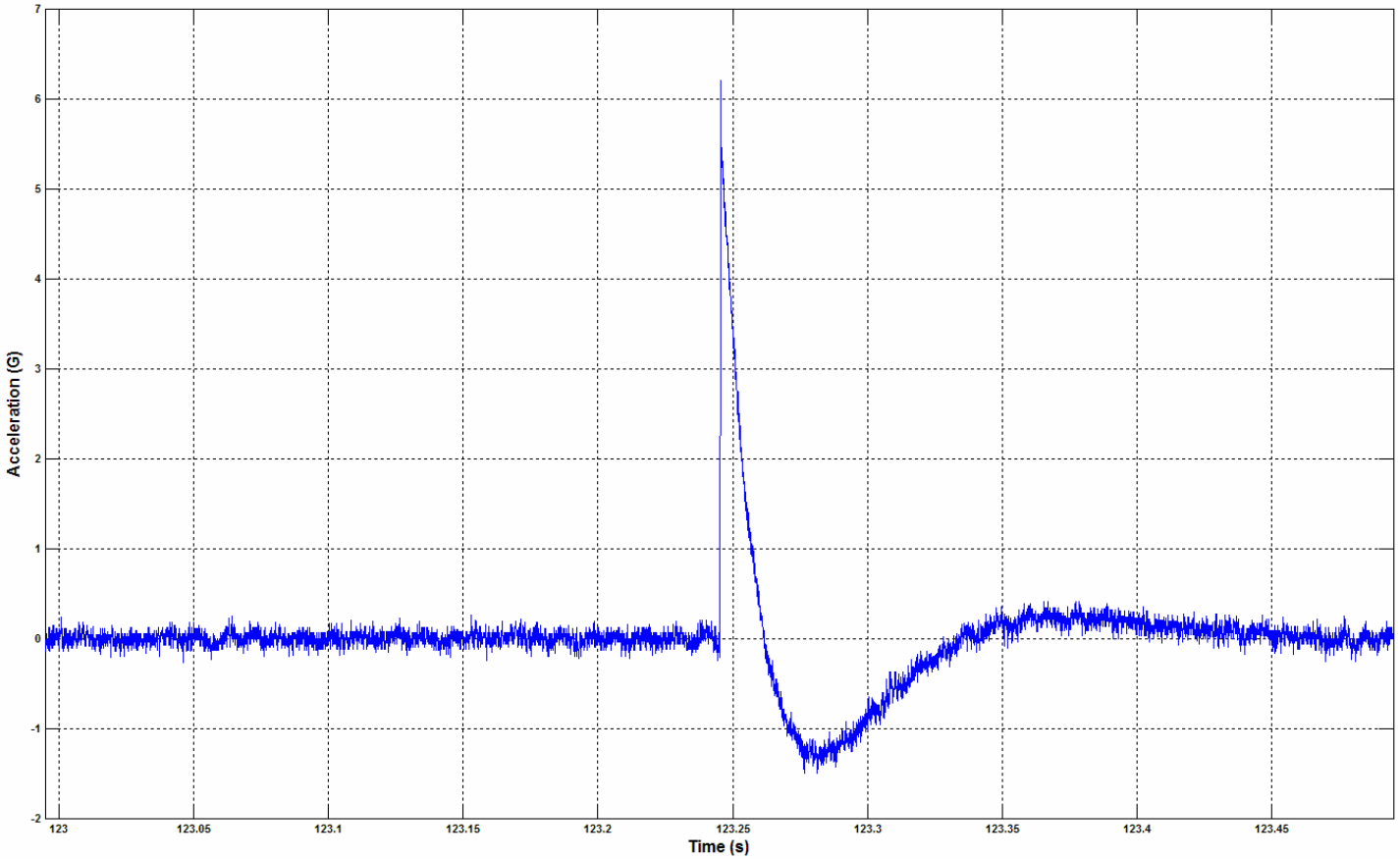


Figure 8 – Half Second of Raw Data For WLEIDS Event 5 – Data Spike

4. Event 1 – 35 seconds

WLEIDS Event ID	Time (MET, seconds)	Wing	RCC Panel(s)	Maximum Grms	Background Grms	Analysis Status	Impact Classification	Classification Rationale
1	35	Port	14-16	1.89	.89	Complete	No Impact	Global Event, Impact Signature not Present in Raw Data

The raw data for event 35 below does not show an impact transient and additional data from other sensor units show that a similar response was observed at multiple locations on the vehicle at this same time.

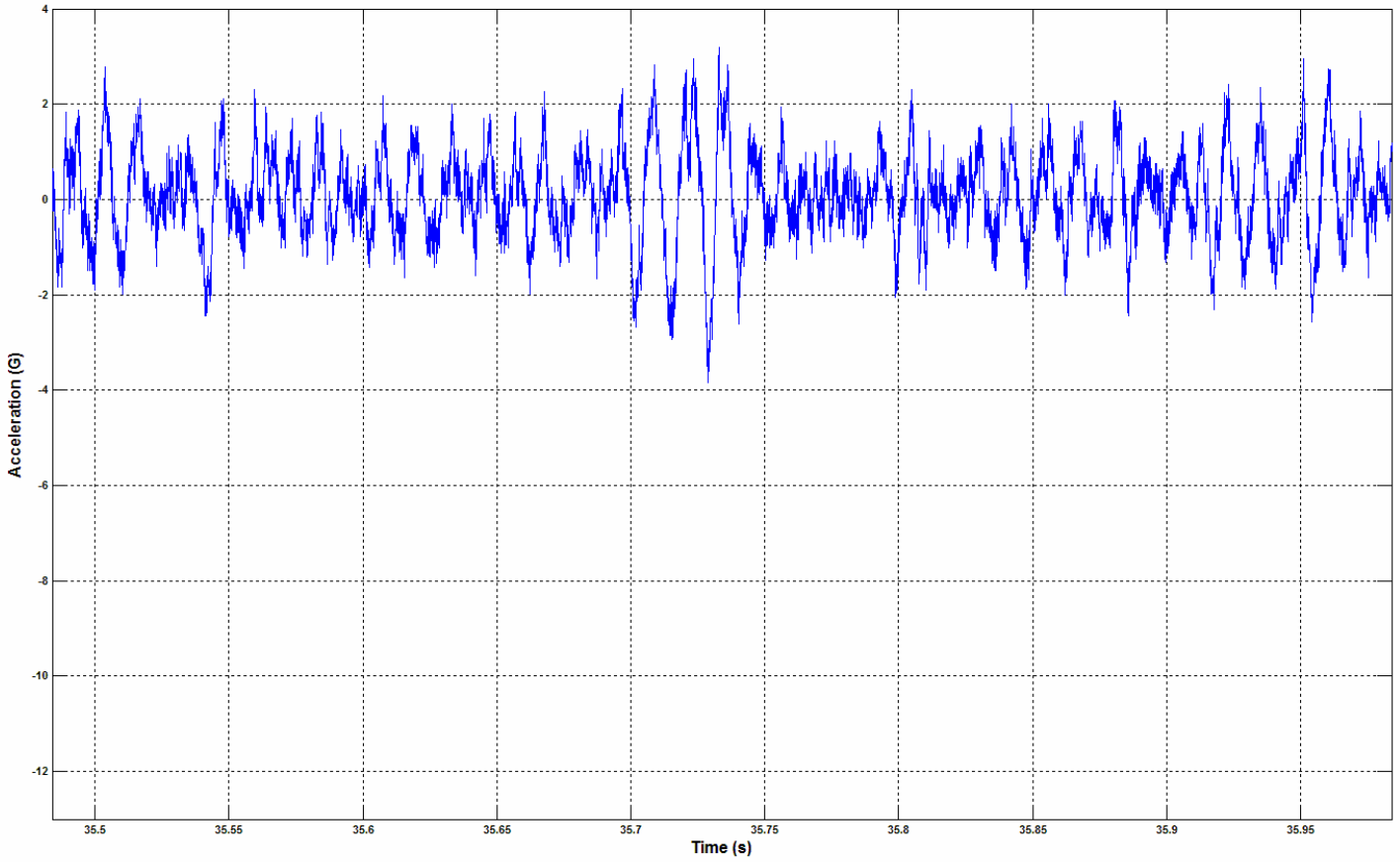


Figure 9 – Half Second of Raw Data For WLEIDS Event 1. No impact signal observed in raw data.

Good morning Wendy, Charlie, and crew!

Now that MPLM transfer is complete, there is only one more day of middeck transfer left!

The change pages to the Middeck Transfer List and Middeck Return Location Sort are attached to the message and the updated Middeck Transfer List is updated electronically on board. The list only includes items that fit into your timeline. We have a list of additional items for resupply (paper, food, and crew provisions) on the ground. Let us know if you get done early, and we'll get these additions to you.

The Transfer List Excel file, LF1_TransferList_FD11.xls, is located on the KFX machine in **C:\OCA-up\transfer.**

For ISS, the Transfer List Excel file, LF1_ TransferList_FD11.xls, is located in **K:\OCA-up\transfer.**

Transfer Notes

Today, the PCG-STES #10 will be transferred from ISS. The corresponding item numbers for PCG-STES in the Transfer List are 704 and 800 - 800.3. The empty ISS locker and CHeCS/EVA CTB will transfer inside the empty locker during the procedure and are items 30 and 30.1 in the Transfer List.

For the PGSC transfers, the Transfer List gives the initial location of the laptops and accessories; however, we understand that most of these items are deployed.

Charlie, if you are wondering what to do during the MPLM Vestibule Depress procedure hold points, we have an excellent suggestion….transfer ops!

Changes to the Transfer List are noted below

Middeck Resupply

- Items 808.3 and 808.4: Notes deleted
- Item 809.2 and 809.6: Items added
- Item 810.3: Note added
- Item 810.8: Initial Location change
- Item 810.11: Items added
- Items 816 – 824: Items added

Middeck Return

- Item 814: Stowage Location at Undock change
- Items 826 – 832: Items added

Enjoy your last day of "transfa"!!
-The Transfer Team-

STS-114 / LF1 Resupply Transfer List

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
			Real-Time Additions									
				802	760XD BATTERY PACK [S/N 5129]	1	Aft FD		NOD1S4_B1 (in CTB S/N 1063)	2	1.76	**Do not transfer until FD10** **Remove from WinDecom PGSC s/n 5025
				803	760XD BATTERY PACK [S/N 5102]	1	Aft FD		NOD1S4_B1 (in CTB S/N 1063)	2	1.76	**Do not transfer until FD10** **Remove from RPOP2 PGSC s/n 5094
				808	1.0 CTB - Laptop equipment bag 1	1 Sngl	LAB1O5_C1		FGB Deck	TBD	TBD	**Retrieve single CTB from ISS. Report CTB B/C to MCC-H
				808.1	A31P Laptop (STS7-WLES) (P/N SEG33115360-302) [S/N 1024]	1	MA16G		FGB Deck (inside item 808)	TBD	8.49	**Do not transfer until FD11 after 'A31P Laptop Prep for Transfer' procedure is complete per timeline**
				808.2	A31P DC PWR SPLY CABLE (10 FT) (P/N SDG33115374-301)	2	both prerouted R17 sts-7 L17 sts-8		FGB Deck (inside item 808)	TBD	TBD	**Do not transfer until FD11 after 'A31P Laptop Prep for Transfer' procedure is complete per timeline**
X				808.3	A31P Laptop STS8-DOUG (P/N SEG33115360-302) [S/N 1008]	1	MA16G		FGB Deck (inside item 808)	TBD	TBD	~~**Do not transfer until FD11 after 'A31P Laptop Prep for Transfer' procedure is complete per timeline**~~
X				808.4	DC POWER SUPPLY, 28VDC (P/N SEG33116428-301) [S/N 1020, 1019]	2	MA16G		FGB Deck (inside item 808)	TBD	TBD	~~**Do not transfer until FD11 after 'A31P Laptop Prep for Transfer' procedure is complete per timeline**~~
				808.5	Ultrabay Camera (P/N SEG33115371-301)	1	MA16G		FGB Deck (inside item 808)	TBD	TBD	
				808.6	1553 PC CARD W/ ADAPTER CABLE, 22 IN. (P/N SDG39129273-301)	2	MA16N		FGB Deck (inside item 808)	TBD	TBD	
				808.7	WRITABLE CD-ROM, PCS (P/N SEZ39131210-307)	2	MA16N		FGB Deck (inside item 808)	TBD	TBD	
				808.8	ASSY REMOVABLE HARD DISK 760XD-PCS (P/N SEZ39129266-301)	1	MA16N		FGB Deck (inside item 808)	TBD	TBD	

[ ] - indicates note added by Transfer Team (not seen on actual label)
* in Stowage at Undock - if ESP-2 not installed on ISS
[ ] in Stowage Locations - indicates prior stowage locations

STS-114 / LF1 Resupply Transfer List

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
				809	1.0 CTB - Laptop equipment bag 2	1 Sngl	LAB1O5_C1		FGB Deck	TBD	TBD	**Retrieve single CTB from ISS. Report CTB B/C to MCC-H
				809.1	STS2-PCMMU/Windecom (760XD) with attached and installed equipment (P/N SJD39129756-802) [S/N 5025]	1	MA16F		FGB Deck (inside item 809)	TBD	8.49	
X				809.2	BNC-RCA Photo Adapter (P/N SED39122368-001)	2	MA16F		FGB Deck (inside item 809)	TBD	0.02	
				809.4	STS10-SPARE (P/N SEG33115360-302) [S/N 1031]	1	MA9F		FGB Deck (inside item 809)	TBD	TBD	
				809.5	Ethernet PCMCIA card w/ Adapter Cable (P/N SDZ39129269-301)	4	MF71E		FGB Deck (inside item 809)	TBD	TBD	
X				809.6	EXTERNAL FLOPPY DRIVE CASE (P/N SDZ39131205-301) [S/N 5010]	1	MA9G		FGB Deck (inside item 810)	0	0.8	
				810	1.0 CTB - Laptop equipment bag 3	1 Sngl	LAB1O5_C1		FGB Deck	TBD	TBD	**Retrieve single CTB from ISS. Report CTB B/C to MCC-H
				810.1	STS4-World Map (760XD) with attached and installed equipment (P/N SJD39129756-802) [S/N 5023]	1	MA9G		FGB Deck (inside item 810)	TBD	TBD	
				810.2	PGSC DC PWR SPLY CBL, 10 ft P/N SEG39129263-301)	1	MA9G		FGB Deck (inside item 810)	TBD	TBD	
X				810.3	EXTERNAL FLOPPY DRIVE CASE (P/N SDZ39131205-301) [S/N 5008]	1	MA9G		FGB Deck (inside item 810)	TBD	TBD	**Contains Floppy Disk Drive (S/N 5008)

[ ] - indicates note added by Transfer Team (not seen on actual label)
* in Stowage at Undock - if ESP-2 not installed on ISS
[ ] in Stowage Locations - indicates prior stowage locations

STS-114 / LF1 Resupply Transfer List

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
X				810.4	DC POWER SUPPLY (P/N SED39126010-305) [S/N 1018]	1	MA9G		FGB Deck (inside item 810)	0 ~~TBD~~	0.3 ~~TBD~~	
				810.5	PGSC DC PWR SPLY CBL, 6 ft (P/N SED39122875-301)	3	MA9G sts-7 R17 sts-8 L17		FGB Deck (inside item 810)	TBD	TBD	
				810.6	PROXIM 7520 ASSY/ ACCESS POINT (P/N SEZ39129738-307) [S/N 1027]	1	MA9G		FGB Deck (inside item 810)	TBD	TBD	
				810.7	A31P DC PWR SPLY CABLE 10' (P/N SDG33115374-301)	2	sts-7 R17 sts-8 L17		FGB Deck (inside item 810)	TBD	TBD	
X				810.8	Ethernet Cable 25 ft (P/N SED39129317-301)	1	Prerouted between STS-7 and STS-8 ~~TBD~~		FGB Deck (inside item 810)	TBD	TBD	
				810.9	Black Ink Cartridge (S020108)	1	MA9J		FGB Deck (inside item 810)			
				810.10	Color Ink Cartridge (S020089)	1	MA9J		FGB Deck (inside item 810)			
X				810.11	DC POWER SUPPLY (P/N SED39126010-305) [S/N 5002]	1	MA9G		FGB Deck	0	0.3	
X				816	MULTIMETER (P/N 10118-10018-04)	1	MF14G		NOD1O3	0	3.1	**Swap with ISS SCOPEMETER "Natalie" per timeline.** **Reference OCA 11-0726 (MSG 125) ISS SCOPEMETER, SHUTTLE IFM MULTIMETER SWAP

[ ] - indicates note added by Transfer Team (not seen on actual label)
* in Stowage at Undock - if ESP-2 not installed on ISS
[ ] in Stowage Locations - indicates prior stowage locations

STS-114 / LF1 Resupply Transfer List

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
X				817	1.0 CTB - IFM equipment bag	1 Sngl	ISS		FGB Deck	TBD	TBD	**Retrieve single CTB from ISS. Report CTB B/C to MCC-H
X				817.1	Multimeter Battery 9 Volt (P/N 528-41350-6)	1	MF14G		FGB Deck (inside item 817)	2	0.3	
X				817.2	KAPTON TAPE (P/N 528-41353-1)	1	MF14G		FGB Deck (inside item 817)	0	1	
X				817.3	Video Fiberscope Kit (P/N SED33104003-307)	1	MA9N		FGB Deck (inside item 817)	TBD	0	
X				817.4	Ultrasonic Leak Detector Kit	1	ML60M		FGB Deck (inside item 817)	2.35431	2	
X				817.4.1	Ultraphonic Detector Headset (P/N 40659G-01)	1	ML60M		FGB Deck (inside item 817)	0.843	0	
X				817.4.2	Concentrator (P/N CS.757893.002)	1	ML60M		FGB Deck (inside item 817)	0.00341	0	
X				817.4.3	UT2000S Transmitter (P/N CS.418231.005)	1	ML60M		FGB Deck (inside item 817)	0.278	0	
X				817.4.4	UL101-RS Receiver (P/N CS.412231.002)	1	ML60M		FGB Deck (inside item 817)	0.623	0	
X				817.4.5	Adapter (P/N CS.713571.001)	1	ML60M		FGB Deck (inside item 817)	0.00034	0	
X				817.4.6	Battery 9V Alkaline (P/N 528-41350-6)	2	ML60M		FGB Deck (inside item 817)	0.3	2	** Verify leads taped with Kapton tape.

[ ] - indicates note added by Transfer Team (not seen on actual label)
* in Stowage at Undock - if ESP-2 not installed on ISS
[ ] in Stowage Locations - indicates prior stowage locations

STS-114 / LF1 Resupply Transfer List

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
X				817.4.7	Acoustic Probe (P/N CS.757895.005)	1	ML60M		FGB Deck (inside item 817)	0.00068	0	
X				817.4.8	Extension Probe (P/N CS.757895.004)	1	ML60M		FGB Deck (inside item 817)	0.00196	0	
X				817.4.9	Extension Probe (P/N CS.757895.002)	2	ML60M		FGB Deck (inside item 817)	0.00196	0	
X				**818**	**Wireless Video System**	**1 Assy**	**Flight Deck above R11, R12**		**FGB Deck**	**TBD**	**TBD**	
X				819	1.0 CTB - P/TV bag	1 Sngl	ISS		FGB Deck	TBD	TBD	**Retrieve single CTB from ISS. Report CTB B/C to MCC-H
X				819.1	Digital Video Tape (P/N SED33111489-305)	9	L10A1		FGB Deck (inside item 819)	0	1.8	
X				819.2	DCS 760 Camera Body (P/N SEZ33113001-302) [S/N 1012]	1	MA73J		FGB Deck (inside item 819)	0	0.04409	
X				819.3	NiMH Battery (P/N SDZ33112993-802)	2	MA73J		FGB Deck (inside item 819)	2	7.28	** Verify leads taped with Kapton tape.
X				819.4	LI-ION BATTERY PACK (P/N SED33111486-303)	2	MA73J		FGB Deck (inside item 819)	2	1	** Verify leads taped with Kapton tape.
X				819.5	DCS 760 DIGITAL CAMERA ASSY (P/N SEZ33113001-302) [S/N 1020]	1	MF43M		FGB Deck (inside item 819)	0	0.42	
X				819.6	NiMH Battery (P/N SDZ33112993-802)	4	MF43M		FGB Deck (inside item 819)	2	14.56	** Verify leads taped with Kapton tape.
X				819.7	Film	unused	A16 DTV Camera bag/ 35mm camera bag		FGB Deck (inside item 819)	TBD	TBD	

[ ] - indicates note added by Transfer Team (not seen on actual label)
* in Stowage at Undock - if ESP-2 not installed on ISS
[ ] in Stowage Locations - indicates prior stowage locations

STS-114 / LF1 Resupply Transfer List

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
X				820	STS5-RPOP (760XD) with attached and installed equipment (P/N SJD39129756-805) [S/N 5036]	1	MA9G		FGB Deck	TBD	8.49	
X				821	PGSC DC PWR CBL, 25' (P/N SED33103334-311) [S/N 5003]	1	Prerouted to Access Point		FGB Deck	0	1.25	
X				822	PGSC DC PWR SUPPLY CBL, 25' (P/N SED39126013-301) [S/N 1013]	1	MF71E		FGB Deck	0	0.8	
X				823	DC Power Supply (SED39126010-305) (S/N 1019)	1	STS-5		FGB Deck	0	0.3	
X				824	LIDAR C-cell Batteries	all but 4	MA16L (inside LIDAR)		FGB Deck	TBD	TBD	**Keep 4 batteries on Shuttle for Scopemeter **Remove batteries from LIDAR Battery Packs (2) by removing 4 non-captive screws using Phillips Screwdriver

[ ] - indicates note added by Transfer Team (not seen on actual label)
* in Stowage at Undock - if ESP-2 not installed on ISS
[ ] in Stowage Locations - indicates prior stowage locations

STS-114 / LF1 Return Transfer List

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
	☑	10		812.2	Defib Battery Assembly (P/N SEG46116000-301) (S/N 1007, 1008)	2	LAB1D4_A2 (Inside HASP S/N 1001)		MF71M (inside item 812)	2	2.42	**Tape terminals and connectors, then place each battery in an individual ziplock.**
	☑	10		812.3	KU BAND POWER SUPPLY ASSY (P/N SEG46116711-301) (P/N 1003)	1	NOD1D4_K1		MF71M (inside item 812)	TBD	6.56	**Marked as "broken"
	☑	10		812.4	Dual Sorbent Tubes (DST) (S/Ns 1020, 1022, 1023, 1024, 1048, 1049)	6	LAB1D4_C1		MF71M (inside item 812)	0	2.268	**Stowed with unused DSTs in CHeCS rack **Do not return Control Samples
X	☑	10		812.5	Formaldahide Monitoring ~~Kit~~ (Used)	12	LAB1D4_C1		MF71M (inside item 812)	1	0.1 ~~3.348~~	**Return all used Formaldahide Monitors ~~FMKs~~ **Do not return Control Samples
				813	0.5 CTB - Foot restraint for return (S/N 1020)	1 Hlf	LAB1O4_D		Ext A/L Floor	TBD	15.82	
	☑	10		813.1	Short Duration Foot Restraints (P/N G11F5001-1) (S/N 024, 025, 027, 053)	4	LAB1O4_D (inside item 813)		Ext A/L Floor (inside item 813)	TBD	Part of above	**Verify items stowed in above CTB
X				814	Long Duration Foot Restraints (P/N G11F5008-1) (S/N 001, 003, 004)	3	LAB1O4_D		MD Bag A (Floor Port 1) ~~Ext A/L Floor~~	TBD	9.54	**Taped together in LAB1O4_D

[ ] - indicates note added by Transfer Team (not seen on actual label)
* in Stowage at Undock - indicates items that do not return if ESP-2 not installed on ISS
[ ] in Stowage Locations - indicates prior stowage locations

STS-114 / LF1 Return Transfer List

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
				815	1.0 CTB - Harddrive Assy-12 T-Bar Mount-1 T-Bar Assy-2 (S/N 1178)	1 Sngl	NOD1O4_F2		MA16J	TBD	25.778	**Verify CTB only contains below contents.
	☑	10		815.1	Hard Drive Assy (P/N 60050AMA3308) (04, 05, 06, 07, 08, 09, 10)	7	NOD1O4_F2 (inside item 815)		MA16J (inside item 815)	TBD	Part of above	
	☑	10		815.2	Tee Bar Assy (P/N 60050LMA1201)	2	NOD1O4_F2 (inside item 815)		MA16J (inside item 815)	TBD	Part of above	
	☑	10		815.3	T Bar Mount (P/N 60050LMA1204)	1	NOD1O4_F2 (inside item 815)		MA16J (inside item 815)	TBD	Part of above	
X				826	Small EVA Trash Bag	1	A/L1 Crewlock		MF71K	0	1	**Used during EVA 1 to contain mixed NOAX Report S/N of trash bag to MCC-H
X				827	ADVASC-SS [S/N NA_111_486]	1	LAB1P2_J2		MD Bag A (Floor Port 1)	0	55.34	
X				828	0.5 CTB - EARTHKAM (S/N 1314)	1 Hlf	LAB1O5_A1		MF43K	TBD	80.13	**Transfer entire CTB, no need to verify contents
X				829	LAN ACCESS POINTS (AP) (S/N 1006)	1	NOD1S4_A1 (in CTB S/N 1052)		MA9G	0	3.5	
X				830	SCOPEMETER "Natalie"	1	NOD1O3		MF14G	TBD	7.06	**Swap with STS MULTIMETER per timeline.** **Reference OCA 11-0726 (MSG 125) ISS SCOPEMETER, SHUTTLE IFM MULTIMETER SWAP
X				831	A31P Laptop (P/N SEG33115360-301) [S/N_1002]	1	ISS		MA9F	2	TBD	
X				832	A31P Laptop (P/N SEG33115360-301) [S/N_1005]	1	ISS		MA16G	2	TBD	

[ ] - indicates note added by Transfer Team (not seen on actual label)
* in Stowage at Undock - indicates items that do not return if ESP-2 not installed on ISS
[ ] in Stowage Locations - indicates prior stowage locations

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
Middeck												
				482	Return Bag 482 [PHOTO/TV RESUPPLY]	1 Sngl	See Swap List		Ext A/L Floor	BA-2	15.81	**Reference Swap List for instructions.
				813	0.5 CTB - Foot restraint for return (S/N 1020)	1 Hlf	LAB1O4_D		Ext A/L Floor	TBD	15.82	
	☑	10		813.1	Short Duration Foot Restraints (P/N G11F5001-1) (S/N 024, 025, 027, 053)	4	LAB1O4_D (inside item 813)		Ext A/L Floor (inside item 813)	TBD	Part of above	**Verify items stowed in above CTB
				403	Return Bag 403 [KURS Electronics Unit]	1	FGB Deck		Ext A/L Floor	N/A	149.91	
				506	Return Item 506 [LCVG in Mesh Bag]	1 mesh bag	LAB1P4 (Rack Front) (Returning ZSR)		Ext A/L Floor		29.60	**Use mesh bag to transfer four LCVGs to MDDK.** **Return mesh bag to ISS.
				800	PCG-STES Hardware	1 Hlf	ISS		Ext A/L Floor	N/A	8.89	Transfer per procedure {PCG-STES TRANSFER ISS TO MDDK} (SODF:ASSY OPS: Transfer: Powered) Gather the following PCG-STES hardware (items 800.1-800.3) and stow in half CTB retrieved from ISS. **Report CTB B/C to MCC-H**
				800.1	PCG-STES Muffler [96M12647-1]	1	LAB1P2_G1		Ext A/L Floor (inside item 800)		5.8	Transfer per procedure {PCG-STES TRANSFER ISS TO MDDK} (SODF:ASSY OPS: Transfer: Powered)
				800.2	PCG-STES Power Adapter Cable [96M20602-1]	1	LAB1P2_G1		Ext A/L Floor (inside item 800)		0.35	Transfer per procedure {PCG-STES TRANSFER ISS TO MDDK} (SODF:ASSY OPS: Transfer: Powered)
				800.3	PCG-STES RS422 Adapter Cable [96M20601-1]	1	LAB1P2_G1		Ext A/L Floor (inside item 800)		0.24	Transfer per procedure {PCG-STES TRANSFER ISS TO MDDK} (SODF:ASSY OPS: Transfer: Powered)
	☑	10		739	Bungees Ziplock Bag	1		Deployed in MPLM	FGB_226_1	N/A	N/A	** Ref MPLM Setup item 104.
				702	DCS Power Supply/Charger [S/N 1002]	1	See Swap List		L10A1	N/A	0.50	**Reference Swap List for instructions on FD10.
X				832	A31P Laptop (P/N SEG33115360-301) [S/N 1005]	1	ISS		MA16G	2	TBD	
				815	1.0 CTB - Harddrive Assy-12 T-Bar Mount-1 T-Bar Assy-2 (S/N 1178)	1 Sngl	NOD1O4_F2		MA16J	TBD	25.778	**Verify CTB only contains below contents.
	☑	10		815.1	Hard Drive Assy (P/N 60050AMA3308) (04, 05, 06, 07, 08, 09, 10)	7	NOD1O4_F2 (inside item 815)		MA16J (inside item 815)	TBD	Part of above	

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
	☑	10		815.2	Tee Bar Assy (P/N 60050LMA1201)	2	NOD1O4_F2 (inside item 815)		MA16J (inside item 815)	TBD	Part of above	
	☑	10		815.3	T Bar Mount (P/N 60050LMA1204)	1	NOD1O4_F2 (inside item 815)		MA16J (inside item 815)	TBD	Part of above	
				700	760XD Laptop [S/N 6076]	1	NOD1S4_A1 (in CTB S/N 1297)		MA16N	BA-2	15.00	
	☑	4		701	ALSP Drug Subpack [S/N 1001]	1	See Swap List		MA16N	1	7.94	**Reference Swap List for instructions.
X				831	A31P Laptop (P/N SEG33115360-301) [S/N 1002]	1	ISS		MA9F	2	TBD	
X				829	LAN ACCESS POINTS (AP) (S/N 1006)	1	NOD1S4_A1 (in CTB S/N 1052)		MA9G		3.5	
X				827	ADVASC-SS [S/N NA_111_486]	1	LAB1P2_J2		MD Bag A (Floor Port 1)		55.34	
				811	1.0 CTB - PPA filters/IV pump battery assy/CEVIS Control Pnl/Acoustic Closeout Covers	1 Sngl	LAB1O5_C1		MD Bag A (Floor Port 1)	TBD	37.67	**Retrieve single CTB from ISS. Report CTB B/C to MCC-H.
	☑	10		811.1	Filter Assembly [FILTER ASSY, PUMP PACKAGE OUTLINE] (S/N 0001, 0014)	2	LAB1S5_C1		MD Bag A (Floor Port 1) (inside item 811)	TBD	Part of Above	
	☑	10		811.2	CEVIS DISPLAY/CONTROL PANEL (P/N SEG46117191-301)	1	NOD1D4_K1 (Inside Hlf CTB S/N 1125)		MD Bag A (Floor Port 1) (inside item 811)	TBD	Part of Above	**Located inside 0.5 CTB S/N 1125 "Broken Items"
	☑	10		811.3	Acoustic Closeout Cover Upper (P/N 60050NMA1125)	1	LAB1S4_D1		MD Bag A (Floor Port 1) (inside item 811)	TBD	Part of Above	
	☑	10		811.4	Acoustic Closeout Cover Lower (P/N 60050NMA1126)	1	LAB1S4_D1		MD Bag A (Floor Port 1) (inside item 811)	TBD	Part of Above	
X				814	Long Duration Foot Restraints (P/N G11F5008-1) (S/N 001, 003, 004)	3	LAB1O4_D		MD Bag A (Floor Port 1) ~~Ext A/L Floor~~	TBD	9.54	**Taped together in LAB1O4_D
				512	Return Item 512 [LAB1D1 MTL Return Flexhose]	1	LAB1P4		MD Bag B (Floor Port 2)	4	2.09	**Do not bend or stow items on top of flexhose when stowing.**
				494	Return Bag 494 [MDDK CHeCS Bag #1]	1 Hlf	NOD1O1		MD Bag B (Floor Port 2)	BA-2	28.43	**See following line item for packing GSC.

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
				494.1	Grab Sample Container [GSC]	1	LAB1D4_C1		MD Bag B (Floor Port 2) (inside item 494)		Part of above	**Stow after ops during MPLM ingress on FD4.** **Report S/N of GSC to MCC-H.**
				466	Return Item 466 [SPCU]	1 Foam Box	LAB1P4_E1		MD Bag D (Floor Stbd 2)	N/A	9.00	**Ensure Heat Exchanger SPCU Gamah plugs are oriented up toward the top of the 5 MLE bag.**
				703	ISS Adapter Plate	1	MF71C		MD Bag D (Floor Stbd 2)	N/A	3.99	**Removed per item 30.
				705	Port EMU [Phillips] [S/N 3005]	1	ISS A/L		MD Ceil Port	BA-2	328.39	Transfer on FD10 per POST EVA TRANSFER AND RECONFIG (FDF: EVA FS, Airlock Config)
				707	Starboard EMU [Krikalev] [S/N 3011]	1	ISS A/L		MD Ceil Stbd	BA-2	324.29	Transfer on FD10 per POST EVA TRANSFER AND RECONFIG (FDF: EVA FS, Airlock Config)
X				830	SCOPEMETER "Natalie"	1	NOD1O3		MF14G	TBD	7.06	**Swap with STS MULTIMETER per timeline.** **Reference OCA 11-0726 (MSG 125) ISS SCOPEMETER, SHUTTLE IFM MULTIMETER SWAP
	☑	8		500	Return Bag 500 [MDDK KURS]	1 Hlf	FGB 217_1 (behind FGB panel)		MF28E/G	N/A	18.40	
				517	Return Bag 517 [MDDK Misc]	1 Sngl	NOD1O1 (Rack Front)		MF28O	BA-2	17.49	
				514	Return Item 514 [Sample Purge Kit Assembly]	1	LAB1P3		MF43C	N/A	1.82	
				495	Return Bag 495 [CHECS RTH Water Samples]	1 Hlf	LAB1P4_F2 (Returning ZSR)		MF43E	1	11.74	**Remove items from CTB and stow inside food trays. **Stow empty CTB near LAB window.
X				828	0.5 CTB - EARTHKAM (S/N 1314)	1 Hlf	LAB1O5_A1		MF43K	TBD	80.13	**Transfer entire CTB, no need to verify contents
				807	DCS 760 Camera Bag	1 Hlf	Aft ZSR		MF43K		27.00	
	☑	8		482.3	DCS 760 Camera Assemblies [S/N 1040, 1013]	2	ISS deployed		MF43K (inside item 807)	BA 2	Part of above	**Camera moved to this bag from item #482.
				482.4	DCS Battery Charger [S/N 1005]	1		STS deployed	MF43K (inside item 807)	N/A	Part of above	**Do not pack in CTB until FD10.** **Moved to this bag from item #482.
	☑	8		482.1	Camcorder Assembly [PD100] [S/N 1001, 1010, 1011, 1012]	4	ISS deployed		MF43K (inside item 807)	BA 2	Part of above	**Moved to this bag from item #482.
				704	PCG-STES #10	1	LAB1P2_G1		MF71C	1	60.69	Transfer per procedure {PCG-STES TRANSFER ISS TO MDDK} (SODF:ASSY OPS: Transfer: Powered)

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
				435	Return Bag 435 [Yeast Gap Return Bag]	1 Hlf	LAB1O3_G2		MF71E	N/A	15.00	
				503	Return Bag 503 [Ext A/L Bag]	1 Sngl	LAB1P4 (Rack Front) (Returning ZSR)		MF71K	N/A	53.61	
				503.1	Mini Workstation Key Strap	1	Ext A/L (inside L shaped foam)		MF71K (inside item 503)			**Move item to Bag #503 for return.
X				826	Small EVA Trash Bag	1	A/L1 Crewlock		MF71K		1	**Used during EVA 1 to contain mixed NOAX Report S/N of trash bag to MCC-H
				812	1.0 CTB - Velocicalc/Defib Battery Assy/ku band pwr supply assy/DST/FMK	1 Sngl	LAB1O5_C1		MF71M	TBD	TBD	**Label CTB "Tox 2".** **Retrieve single CTB from ISS. Report CTB B/C to MCC-H
	☑	10		812.1	Velocicalc (S/N 9908376)	1	LAB1P5_A2		MF71M (inside item 812)	2	1.2	**Wrap velocicalc with absorbent material (used towel, t-shirt, etc.) and secure with gray tape. Place wrapped velocicalc in ziplock.** **Velocicalc launched on LF-1 also in this location, Verify S/N of return Velocicalc.
	☑	10		812.2	Defib Battery Assembly (P/N SEG46116000-301) (S/N 1007, 1008)	2	LAB1D4_A2 (Inside HASP S/N 1001)		MF71M (inside item 812)	2	2.42	**Tape terminals and connectors, then place each battery in an individual ziplock.**
	☑	10		812.3	KU BAND POWER SUPPLY ASSY (P/N SEG46116711-301) (P/N 1003)	1	NOD1D4_K1		MF71M (inside item 812)	TBD	6.56	**Marked as "broken"
	☑	10		812.4	Dual Sorbent Tubes (DST) (S/Ns 1020, 1022, 1023, 1024, 1048, 1049)	6	LAB1D4_C1		MF71M (inside item 812)		2.268	**Stowed with unused DSTs in CHeCS rack **Do not return Control Samples
X	☑	10		812.5	Formaldahide Monitoring ~~Kit~~ (Used)	12	LAB1D4_C1		MF71M (inside item 812)	1	0.1 ~~3.348~~	**Return all used Formaldahide Monitors ~~FMKs~~ **Do not return Control Samples
				502	Return Bag 502 [Middeck PGT]	1 Sngl	LAB1P4 (Rack Front) (Returning ZSR)		MF71O	BA-2	40.60	
				502.1	Right Angle Drive [broken] [S/N 1009]	1	Used during EVA		MF71O (inside item 502)	TBD	2.4	**Verify item is stowed inside #502.
	☑	8		472	Return Bag 472 [Fan Pump]	1	LAB1P4_E1		ML60E	N/A	7.00	
				509	Return Item 509 [Airlock Stowage Bag]	1	LAB1P4 (Rack Front) (Returning ZSR)		Vol H (INBD)	N/A	38.41	

Chg Flag	☑	FD	Crew Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Tox Level	Wt (lbs)	PROCEDURES/**Constraints/** **Comments
				510	Return Item 510 [EMU Servicing Kit]	1	LAB1P4 (Rack Front) (Returning ZSR)		Vol H (INBD)	1	38.41	