

STS-126/ULF2

FD17/Entry Execute Package



MSG	Page(s)	Title
173A	1 - 12	FD17 Through EOM+2 Timeline (pdf)
167A	13 - 15	Deorbit Prep Updates (pdf)
168	16	Entry FIWs Summary (pdf)
169B	17 - 18	Entry Checklist Deltas (pdf)
170	19	MPLM Pressure Check Steps for Waveoff Days (pdf)
171	---	Blank Entry Summary (pdf - Electronic Only)
172A	20 - 21	Entry Summary (pdf)
174	---	Sunday Funnies (pdf - Electronic Only)
175A	---	Weather Forecast Sheet (pdf - Electronic Only)

Approved by FAO: J. Clevenger

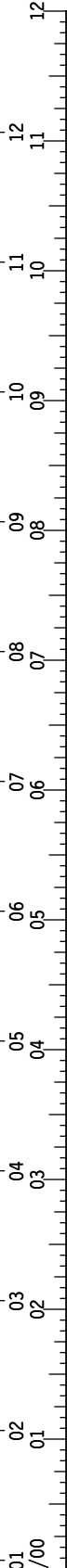
A handwritten signature in black ink, appearing to read 'J. Clevenger'.

Last Updated: Nov 29 2008 6:26PM GMT
JEDI (Joint Execute package Development and Integration), v2.04.0003

**EOM
FD18**

GMT 12/01/08 (336)
MET Day 016

REPLANNED



Activity	01	02	03	04	05	06	07	08	09	10	11	12
CDR FERGUSON	<p>EOM+1</p> <p>SLEEP</p> <p>POST SLEEP</p> <p>POST SLEEP</p> <p>POST SLEEP</p> <p>DEORBIT PREP</p>											
PLT BOE	<p>SLEEP</p> <p>POST SLEEP</p> <p>DEORBIT PREP</p>											
MS1 PETTIT	<p>SLEEP</p> <p>POST SLEEP</p> <p>DEORBIT PREP</p>											
MS2 BOWEN	<p>SLEEP</p> <p>POST SLEEP</p> <p>DEORBIT PREP</p>											
MS3 PIPER	<p>SLEEP</p> <p>POST SLEEP</p> <p>DEORBIT PREP</p>											
MS4 KIMBROUGH	<p>SLEEP</p> <p>POST SLEEP</p> <p>DEORBIT PREP</p>											
MS5 CHAMITOFF	<p>SLEEP</p> <p>POST SLEEP</p> <p>DEORBIT PREP</p>											
DAY/NIGHT ORBIT	<p>253 254 255 256 257 258 259 260 261</p>											
TDRS	<p>W -171</p> <p>E -46</p> <p>Z -275</p>											
ORB ATT	<p>-WSS -DFR -MILA</p> <p>-ZLV -XVV -DFR</p> <p>-WSS -DFR</p> <p>-XSI</p>											
GND	<p>#STATUS CHECK</p> <p>%SALIVA KIT</p>											
NOTES												

S T S - 1 2 6

EOM+1
FD18

GMT 12/01/08 (336)
MET Day 016

REPLANNED

12/02 23 22 21 20 19 18 17 16 15 14 13 12

017/00

CDR FERGUSON	DEORBIT PREP	DEORBIT PREP BACKOUT	M - N Z V L R V/A/G	PRE SLEEP					
PLT BOE	DEORBIT PREP	DEORBIT PREP BACKOUT	M T A E S R T M E	PRE SLEEP					
MS1 PETTIT	DEORBIT PREP	DEORBIT PREP BACKOUT	M P L L M ^	PRE SLEEP					
MS2 BOWEN	DEORBIT PREP	DEORBIT PREP BACKOUT	M A T I G I R A I N S T A L L	PRE SLEEP					
MS3 PIPER	DEORBIT PREP	DEORBIT PREP BACKOUT	M O S C E T I A T C C U P	PRE SLEEP					
MS4 KIMBROUGH	DEORBIT PREP	DEORBIT PREP BACKOUT	M D D K #	PRE SLEEP					
MS5 CHAMITOFF	DEORBIT PREP	DEORBIT PREP BACKOUT	M A T I C H	PRE SLEEP					
DAY/NIGHT ORB	261	262	263	264	265	266	267	268	269
TDRS W -171 E -46 Z -275									
ORB ATT	XSI	COMM	ENTRY	MLA			DUMP	MSS	DFR
GND									
NOTES	\$FILTER CHECK #STATUS CHECK *OIU/APCU ACT ^OIU/APCU DEACT Ref. MSG 170 Ref. MSG 170 @UNSTOW SALIVA KIT								

S T S - 1 2 6

EOM+2
FD19

GMT 12/02/08 (337)
MET Day_017

REPLANNED

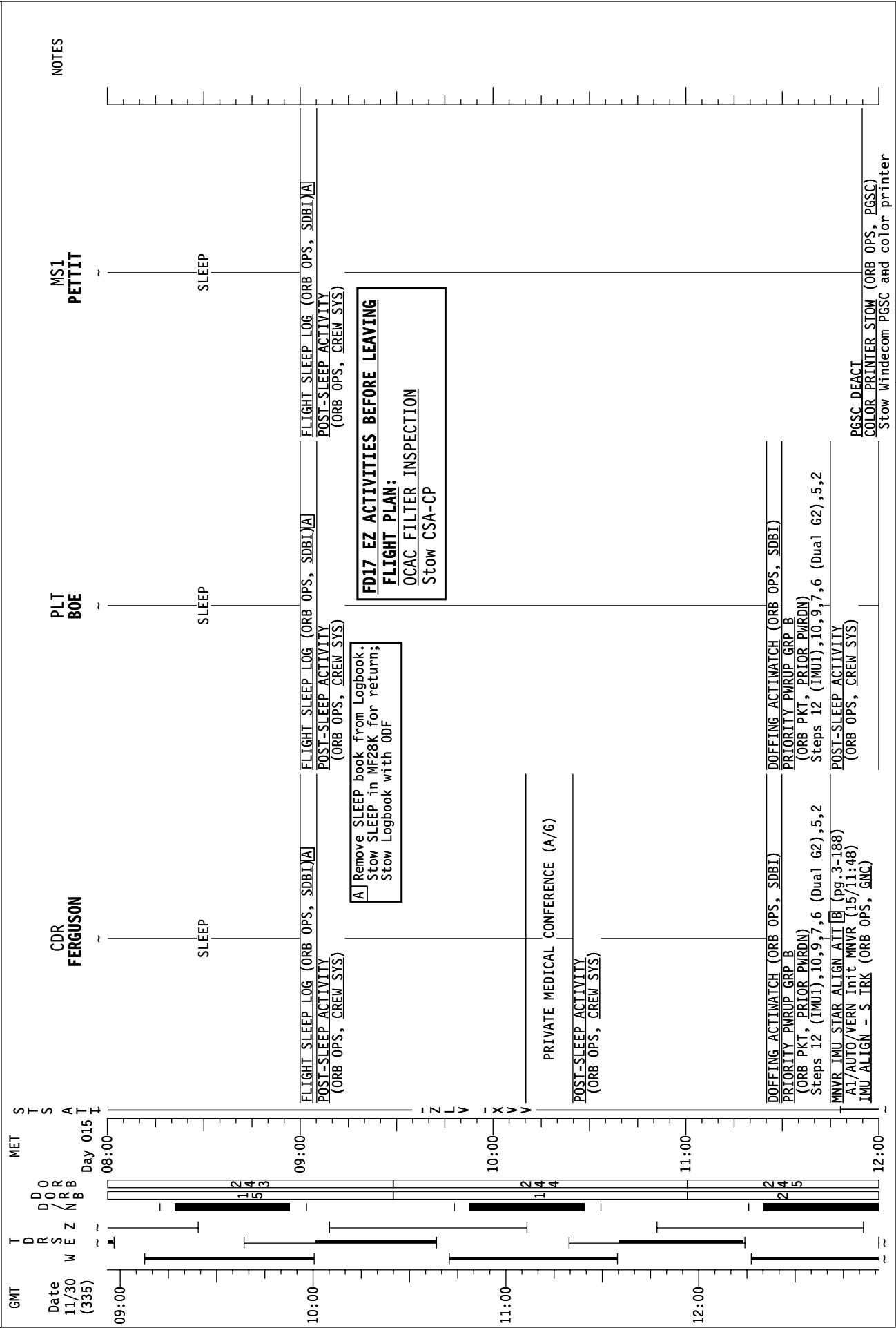
12/03
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CDR FERGUSON	DEORBIT PREP	D	K
PLT BOE	DEORBIT PREP	E	S
MS1 PETTIT	DEORBIT PREP	R	C
MS2 BOWEN	DEORBIT PREP	B	L
MS3 PIPER	DEORBIT PREP	I	A
MS4 KIMBROUGH	DEORBIT PREP	T	N
MS5 CHAMITOFF	DEORBIT PREP	*	D
DAY/NIGHT ORB	277 278 279 280 281 282 283 284		I
TDRS W -171 E -46 Z -275			N
ORB ATT	DO ENTRY		G
GND			*
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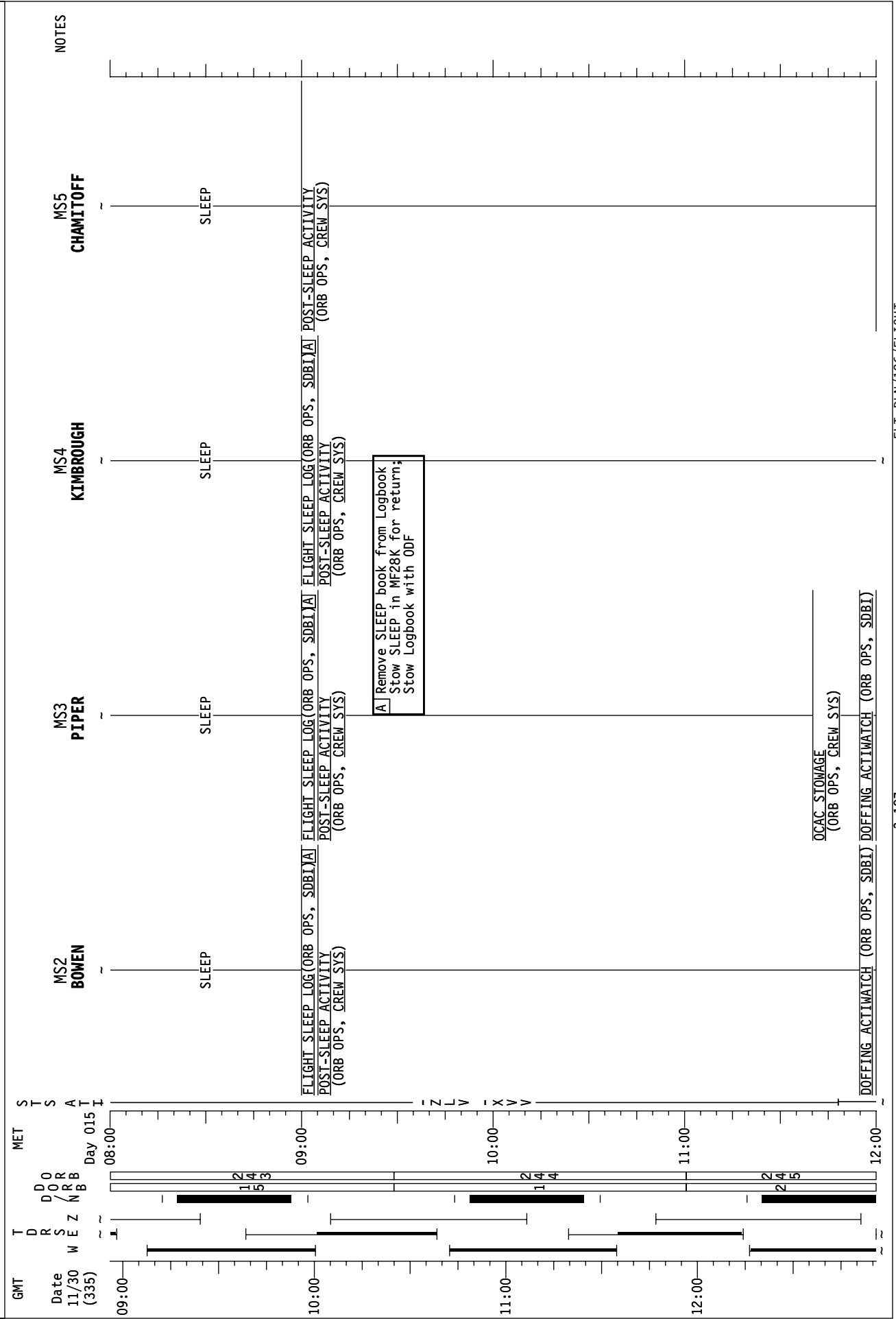
ORB	TIG
KSC 279	017/15:35
NOR 280	017/17:07
KSC 280	017/17:11
EDW 281	017/18:40
NOR 281	017/18:42
EDW 282	017/20:16

REPLANNED

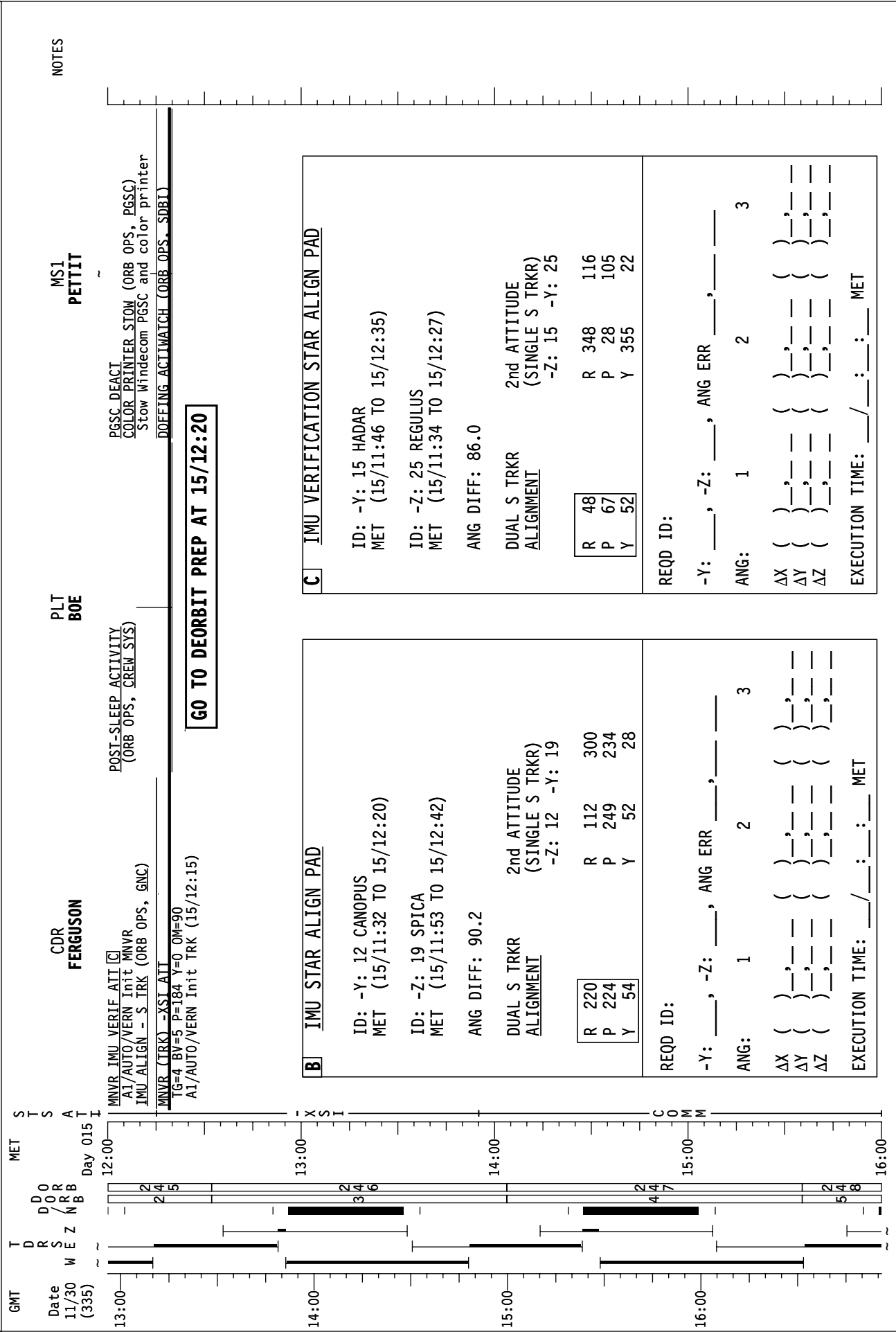
STS-126 FD (17)



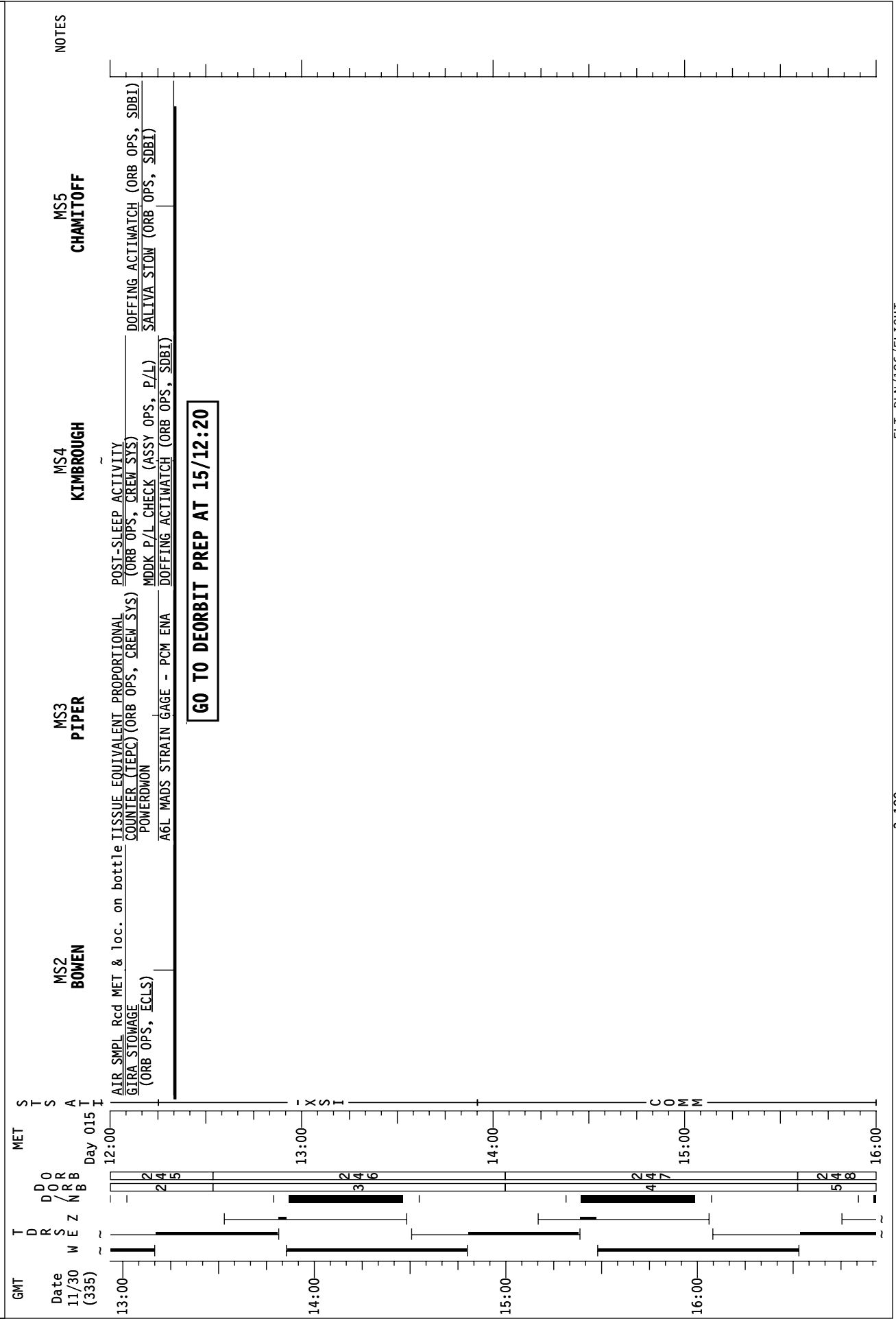
STS-126 FD (17)



STS-126 FD (17)



STS-126 FD (17)



BLANK WAVEOFF PADS

B IMU STAR ALIGN PAD	
ID: -Y: MET	
ID: -Z: MET	
ANG DIFF:	
DUAL S TRKR <u>ALIGNMENT</u>	2nd ATTITUDE (SINGLE S TRKR) -Z: -Y:
<input type="checkbox"/> R <input type="checkbox"/> P <input type="checkbox"/> Y	<input type="checkbox"/> R <input type="checkbox"/> P <input type="checkbox"/> Y
REQD ID:	
-Y: _____, -Z: _____, ANG ERR _____	_____
ANG: 1 2 3	
ΔX () _____ () _____ () _____	
ΔY () _____ () _____ () _____	
ΔZ () _____ () _____ () _____	
EXECUTION TIME: ____/____: ____ MET	

C IMU VERIFICATION STAR ALIGN PAD	
ID: -Y: MET	
ID: -Z: MET	
ANG DIFF:	
DUAL S TRKR <u>ALIGNMENT</u>	2nd ATTITUDE (SINGLE S TRKR) -Z: -Y:
<input type="checkbox"/> R <input type="checkbox"/> P <input type="checkbox"/> Y	<input type="checkbox"/> R <input type="checkbox"/> P <input type="checkbox"/> Y
REQD ID:	
-Y: _____, -Z: _____, ANG ERR _____	_____
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ΔX () _____ () _____ () _____	
ΔY () _____ () _____ () _____	
ΔZ () _____ () _____ () _____	
EXECUTION TIME: ____/____: ____ MET	

BLANK WAVEOFF PADS

B IMU STAR ALIGN PAD	
ID: -Y: MET	
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ANG DIFF:	
DUAL S TRKR <u>ALIGNMENT</u>	2nd ATTITUDE (SINGLE S TRKR) -Z: -Y:
<input type="checkbox"/> R <input type="checkbox"/> P <input type="checkbox"/> Y	<input type="checkbox"/> R <input type="checkbox"/> P <input type="checkbox"/> Y
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EXECUTION TIME: ____/____: ____ MET	

C IMU VERIFICATION STAR ALIGN PAD	
ID: -Y: MET	
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DUAL S TRKR <u>ALIGNMENT</u>	2nd ATTITUDE (SINGLE S TRKR) -Z: -Y:
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REQD ID:	
-Y: _____, -Z: _____, ANG ERR _____	_____
ANG: 1 2 3	
ΔX () _____ () _____ () _____	
ΔY () _____ () _____ () _____	
ΔZ () _____ () _____ () _____	
EXECUTION TIME: ____/____: ____ MET	

MSG 167A - DEORBIT PREP UPDATES

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ASSEMBLY OPS DELTAS

PAGE	PROCEDURE	ACTION
NO DELTAS		

ORBIT OPS DELTAS

PAGE	PROCEDURE	ACTION
NO DELTAS		

PAYLOAD OPS DELTAS

PAGE	PROCEDURE	ACTION
NO DELTAS		

NOMINAL DEORBIT PREP CHECKLIST DELTAS

PAGE	TIG	CHANGE
1-8	-3:15	In Block 6, the if OV-105 steps are not required
1-15	-1:50	Block 14; PNL 06 WAS: √ PWR AMP – ON IS: √ PWR AMP - OFF

ENTRY SWITCH LIST VERIFICATION DELTAS

PAGE	PANEL	NOMENCLATURE	NEW ENTRY SWITCH POSITION
(OV105) C3-18	O6	UHF SPLX/EVA PWR AMPL	OFF

MSG 167A - DEORBIT PREP UPDATES

1 **DEORBIT PREP BACKOUT DELTAS**

PAGE	ET	CHANGE
2-9	1:05	In Block 16, the if OV-105 steps are not required
2-18	1:50	<p>AIRLOCK SETUP FOR INGRESS Block 21</p> <p>If Airlock Ingress is desired, replace Block 21 with the following:</p> <p>AIRLOCK SETUP FOR INGRESS 21</p> <p>MA73C:G 1. cb AC 1,2 ARLK TNL FAN A,B (six) – cl MO13Q 2. AIRLK 2 – ON/OFF Inner Hatch 3. Equal vlv cap (two) – remove 4. Open hatch per decal 5. Equal vlv (two) – OFF, install caps Tunnel Ext 6. Unstow Airlock Fan Inlet duct from Tunnel Extension wall MDDK 7. Remove diffuser cap from Aft Middeck floor fitting and temp stow 8. Attach one end of Airlock Fan Inlet duct to Airlock Fan muffler inlet. Attach free end to Aft Middeck floor fitting. AW18A 9. LTG FLOOD 1(3,4) – ON (as reqd) MO13Q 10. AIRLK FAN A – ON EXT A/L 11. √Airflow at top of external airlock halo</p>

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ENTRY POCKET CHECKLIST DELTAS

PAGE	PROCEDURE	ACTION
PL4-2	PL PWRDN MATRIX	In the ACTION column, after every "A", add ", B" except in the AV BAY COOLING (ENTRY) row.
PL4-2	PL PWRDN MATRIX	Was: AV BAY COOLING (ENTRY) A (AV BAY 2 ONLY) Is: AV BAY COOLING (ENTRY) A (AV BAY 1 ONLY)
PL4-2		Add attached page PL4-3

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ACTION

B	PWRDN	PWRUP
	<p><u>MIDDECK PAYLOADS</u></p> <p>NOTE When orbiter power removed, science degradation or loss will occur to CGBA (30min)</p> <p><u>CGBA</u></p> <p>MF71E 1. cb MAIN POWER – op MO63P 2. 10A J4 – OFF 3. cb CB4/J4 – op</p>	N/A

126

PL 4-3

PL PWR/126/E/FIN A

MSG 168 - ENTRY FIWS SUMMARY

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System	Failure	Impact	Work Around
COMM/INST	PSP 1	No commanding to OIU 1 for MPLM checks.	Early on FD15, INCO will command to PSP2, Crew will switch to OIU2.
EPS	Fuel Cell 1 H2 flowmeter is erratic. (SPEC 69 FUEL CELLS, FC 1 FLOW H2).	Loss of insight into Fuel Cell 1 H2 flow.	None. MCC has additional insight into the health of Fuel Cell 1. Onboard FDA has been inhibited.
OMS/RCS 1	Aft Right Ox Low Point Drain Line Crossfeed A Heater	Loss of OMS Crossfeed Line A Heaters	Use OMS Crossfeed Line B Heaters for the remainder of the mission.
OMS/RCS 2	LOME GN2 accumulator leak.	At the current GN2 accumulator leak rate of 1.2 psi/hr, there is no impact to using the LOME. Periodic accumulator represses will be required to avoid nuisance alarms.	No additional action.

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MSG 169B - ENTRY CHECKLIST DELTAS

1 **ENTRY CHECKLIST DELTAS**

PAGE	PROCEDURE	ACTION
FS 4-5 FS CC 8-17	Entry Maneuvers CC (ENT, <u>ENTRY CUE CARDS</u>) Entry Maneuvers CC (ENT, <u>CUE CARD CONFIG</u>)	If landing at Edwards Temp Runway change the "5K' remaining" references to "4K' remaining" (in the braking actions near the bottom of the CC). They should read: <ul style="list-style-type: none"> • V<120 KGS or 4K' remaining • * If 4K' remaining and V > 140 KGS - MAX BRAKING *
5-8	NH3 ACT (ENT, <u>POST LDG</u>)	Use the following NH3 Controller: L1 NH3 CNTLR A – PRI/GPC
5-22	NH3 RECONFIG (ENT, <u>ASP EXT PWR UP</u>)	Use the following NH3 Controller: L1 NH3 CNTLR B – SEC/ON

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END OF PAGE 1 OF 2, MSG 169B

MSG 169B - ENTRY CHECKLIST DELTAS

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**THIS TABLE MAY BE CUT AND PASTED OVER THE OLD
OMS He PRESS/ Δ V/BURN TIME TABLE, ENT FS PG 2-6.**

OMS He PRESS/ Δ V/BURN TIME

OMS% GAGE	OMS He Press	OMS Δ V	RCS Δ V	RCS BURN MIN:SEC
31.4	2600	156	129	4:21
30	2540	148	122	4:08
28	2460	137	113	3:49
26	2380	125	103	3:30
24	2300	114	94	3:10
22	2220	103	85	2:51
20	2140	91	75	2:32
18	2060	80	66	2:13
16	1980	68	56	1:54
14	1900	57	47	1:35
12	1820	45	37	1:15
10	1740	34	28	0:56
8	1660	22	18	0:37
6	1580	11	9	0:18

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NOTE: Uses vehicle weight of 229,924 lb

MSG 170 - MPLM PRESSURE CHECK STEPS FOR WAVEOFF DAYS

1 An MPLM pressure check is required to be performed on a wave-off day. To accomplish
2 this, OIU 2 and APCU 1 will be repowered for the check, then unpowered on MCC Go.

3

4 SSP1 1. OIU PWR - OIU 2 (tb-dn)

5

6 On MCC Go: SSPTS APCU ACT

7 A15

8 2. cb CNTL PWR PTU 1 - cl
9 PTU/MAIN BUS A - ON (tb-ON)
10 APCU 1 OUTPUT - ON
11 CONV - ON

11

12 The pressure check will take approximately 15 minutes. When it is complete, perform the
13 following:

14

15 On MCC Go: SSPTS APCU DEACT

16 A15

17 3. APCU 1 CONV - OFF
18 OUTPUT - OFF
19 PTU/MAIN BUS A - OFF (tb-OFF)
20 cb CNTL PWR PTU 1 - op

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21 SSP1 4. OIU PWR - OFF (tb-bp)

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MSG 172A - ENTRY SUMMARY

1 ORBIT IS 193 X 184 NM
2 DEORBIT DELTA V WILL BE APPROXIMATELY 299 FPS IN-PLANE.
3
4 AT THE DEORBIT BURN, YOU WILL HAVE (%):
5 L OX = 31.8 R OX = 31.9
6 L FU = 31.4 R FU = 31.6
7
8 THE PREDICTED POST DEORBIT BURN OMS QUANTITIES ARE AS FOLLOWS (%):
9 L OX = 5.9 R OX = 5.9
10 L FU = 5.5 R FU = 5.8
11
12 FORWARD RCS DUMP: FU TO 0%
13
14 CG AT EI: X = 1087.6
15 CG AT M2.5: X = 1086.7
16 Y = -0.3
17
18 ATMOS ITEM: 22
19 ELEV. SCHED: AUTO
20 BODY BENDING FILTER: ALT
21

22 SITE: **KSC** REV: **248** | SITE: **KSC** REV: **249**
23
24 CROSS RANGE WILL BE 278 NM A/L | CROSS RANGE WILL BE 587 NM A/R
25
26 ROLL REVERSAL HISTORY: | ROLL REVERSAL HISTORY:
27 V= 18200 FPS | V= 13200 FPS
28 V= 9800 FPS | V= 6500 FPS
29 V= 4000 FPS | V= 3400 FPS
30
31
32 DEORBIT TIG: 15/16:19 | DEORBIT TIG: 15/17:55
33 LANDING APPROX: 15/17:23 | LANDING APPROX: 15/18:59
34
35 WX FCST: SCT030 SCT090 OVC250 VIS 7 | WX FCST: SCT030 SCT090 OVC250 VIS 7
36
37
38 WIND FCST: | WIND FCST:
39 50K 245/70 | 50K 245/70
40 38K 245/95 | 38K 245/95
41 28K 240/90 | 28K 240/90
42 20K 235/70 | 20K 235/70
43 12K 230/40 | 12K 230/40
44 7K 230/50 | 7K 230/50
45 3K 215/35 | 3K 215/35
46 1K 215/25 | 1K 215/25
47 SFC 200/16P23 | SFC 200/16P23
48
49 ALTIMETER: 29.68 | ALTIMETER: 29.68
50 DENSITY ALTITUDE: 1563 | DENSITY ALTITUDE: 1563
51
52 HAC PROCEDURES: | HAC PROCEDURES:
53 LEFT OVHD TO KSC15 | LEFT OVHD TO KSC15
54 TURN ANGLE 240 DEG | TURN ANGLE 280 DEG
55 AIM POINT: NOM | AIM POINT: NOM
56 SPEEDBRAKE: NOM | SPEEDBRAKE: NOM
57 TD 2600 FT AT 205 KTS | TD 2600 FT AT 205 KTS
58 3K SPEEDBRAKE: 15% | 3K SPEEDBRAKE: 15%
59 NAV AIDS STATUS: GREEN | NAV AIDS STATUS: GREEN
60

END OF PAGE 1 OF 2, MSG 172A

MSG 172A - ENTRY SUMMARY

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1 -----
2 SITE: EDT REV: 250                               SITE: EDT REV: 251
3
4 CROSS RANGE WILL BE 169 NM A/L                   CROSS RANGE WILL BE 545 NM A/R
5
6 ROLL REVERSAL HISTORY:                           ROLL REVERSAL HISTORY:
7     V= 19800 FPS                                  V= 14000 FPS
8     V= 11000 FPS                                  V= 6900 FPS
9     V= 4100 FPS                                    V= 3500 FPS
10
11
12 DEORBIT TIG: 15/19:25                            DEORBIT TIG: 15/21:01
13 LANDING APPROX: 15/20:29                        LANDING APPROX: 15/22:04
14
15 WX FCST: FEW300 VIS 7                            WX FCST: FEW300 VIS 7
16
17
18 WIND FCST:                                        WIND FCST:
19     50K 340/15                                    50K 340/15
20     38K 325/25                                    38K 325/25
21     28K 340/25                                    28K 340/25
22     20K 355/10                                    20K 355/10
23     12K 035/15                                    12K 035/15
24     7K 045/20                                     7K 045/20
25     3K 055/20                                     3K 055/20
26     1K 065/10                                     1K 065/10
27     SFC 050/6P11                                 SFC 050/6P11
28
29 ALTIMETER: 30.20                                ALTIMETER: 30.20
30 DENSITY ALTITUDE: 3005 FT                       DENSITY ALTITUDE: 3005 FT
31
32 HAC PROCEDURES:                                  HAC PROCEDURES:
33     LEFT OVHD TO EDT04L                          LEFT OVHD TO EDT04L
34     TURN ANGLE 340                                TURN ANGLE 340 DEG
35     AIM POINT: CI                                 AIM POINT: CI
36     SPEEDBRAKE: NOM                              SPEEDBRAKE: NOM
37     TD 2200 FT AT 205 KTS                       TD 2200 FT AT 205 KTS
38     3K SPEEDBRAKE: 15%                          3K SPEEDBRAKE: 15%
39     NAV AIDS STATUS: GREEN                       NAV AIDS STATUS: GREEN
40
41
42 CONUS NOTAMS:
43     EDWARDS (EDW) - LAKEBED RUNWAYS RED - WET
44     EDT IN USE FOR STS-126. EDW ELS DAY / VFR ONLY
45     WHITE SANDS (NOR) - ALL LAKEBED RWYS GREEN
46
47 24 HOUR DELAYED DEORBIT: SITE KSC ORBIT 263 TIG 16/15:09 MET
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END OF PAGE 2 OF 2, MSG 172A