STS-124 / 1J

FD 15 Entry Execute Package

MSG	Page(s)	Title
119A	1	Deorbit Prep Updates **(pdf)**
120	2	Entry FIW Summary **(pdf)**
121	3 - 4	Entry Checklist Deltas **(pdf)**
122	5 - 6	Radiator Hose Still Photography Post Payload Bay Closing **(pdf)**
123	7 - 8	Blank Entry Summary **(pdf)**
124	9 - 10	Entry Summary **(pdf)**

Approved by FAO: *Al Cofrin*

Last Updated: Jun 13 2008 2:39PM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v2.04.0003*

ASSEMBLY OPS DELTAS

PAGE	PROCEDURE	ACTION
737	PAYLOAD ENTRY SWITCH LIST/VERIFICATION, last line of step 2 *(Note: Preflight, Crew requested that a copy of this procedure be rung in their D/O Prep books.)*	WAS: √cb SW PWR 2 - op IS: ~~√cb SW PWR 2 - op~~

ORBIT OPS DELTAS

PAGE	PROCEDURE	ACTION
NO DELTAS		

DEORBIT CHECKLIST UPDATES:

NOMINAL DEORBIT PREP CHECKLIST DELTAS

PAGE	TIG	CHANGE
1-11	-02:51	Below the PAYLOAD DEACTIVATION, and prior to "If SSPTS" Add: **R1 MN BUS TIE B – OFF (tb - OFF)** **C – OFF (tb - OFF)**

ENTRY SWITCH LIST VERIFICATION DELTAS

PAGE	PANEL	NOMENCLATURE	NEW ENTRY SWITCH POSITION
NO DELTAS			

DEORBIT PREP BACKOUT DELTAS

PAGE	ET	CHANGE
2-5	00:07	Add: **R1 MN BUS TIE B – ON (tb - ON)** **C – ON (tb - ON)**

END OF PAGE 1 OF 1, MSG 119A

MSG 120 - ENTRY FIW SUMMARY

SYSTEM	FAILURE	IMPACT	WORK AROUND
EPS 1	Shortly after MECO the FC3 O2 flow meter began behaving erratically for about an hour. FC3 O2 flow has since read the expected value.	If the erratic behavior returns, there will be a loss of insight in FC3 O2 flow (available in SM only, SPEC 69, FC 3 O2 FLOW).	None. MCC has additional insight into the health of FC3. Onboard FDA has been inhibited
EPS 2	The instrumentation for the FC3 H2 flow meter and FC3 cell performance monitor (CPM) was lost (a common fuse may have opened).	Loss of FC3 CPM which provides insight into the health of FC3 (available in SM, SPEC 69, and BFS, SM 1, as FC 3 SS1,2,3). Loss of insight into FC3 H2 flows (available in SM only, SPEC 69, FC 3 H2 FLOW).	MCC will use alternate methods to verify fuel cell health. A daily FCMS data take will be performed and a B-C bus tie will be maintained except during deorbit prep through entry.
GNC	During ascent, Left OMS Secondary TVC positions failed to null in both pitch and yaw. The most likely cause is a failure in the L OMS Secondary TVC power supply.	L OMS Secondary TVC is failed resulting in loss of redundancy.	Left OMS has been parked through EOM CG. D/O burn will be dual engine using active Left OMS Primary TVC.

END OF PAGE 1 OF 1, MSG 120

ENTRY CHECKLIST DELTAS

PAGE	PROCEDURE	ACTION
5-8	NH3 ACT (ENT, POST LDG)	Use the following NH3 Controller: L1 NH3 CNTLR A – SEC/ON
5-22	NH3 RECONFIG (ENT, ASP EXT PWR UP)	Use the following NH3 Controller: L1 NH3 CNTLR B – PRI/GPC
3-6	OMS TVC GMBL CHECK (ENT, DEORBIT BURN)	Due to the L OMS Secondary TVC failure, the system should not be checked. SECONDARY CHECK Perform PRI L, SEC R then PRI L,R GMBL CK

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

OMS He PRESS/ΔV/BURN TIME

OMS% GAGE	OMS He Press	OMS ΔV	RCS ΔV	RCS BURN MIN:SEC
28.9	2680	156	128	3:58
28	2640	151	124	3:50
26	2560	138	113	3:30
24	2480	126	103	3:11
22	2400	113	93	2:52
20	2320	101	83	2:33
18	2240	88	72	2:14
16	2160	76	62	1:55
14	2080	63	52	1:36
12	2000	51	42	1:17
10	1920	38	31	0:58
8	1840	25	21	0:39
6	1760	13	11	0:19

NOTE: Uses vehicle weight of **210,868** lb

END OF PAGE 2 OF 2, MSG 121

MSG 122 - RADIATOR HOSE STILL PHOTOGRAPHY POST PAYLOAD BAY CLOSING

After payload bay door closure is complete, it is highly desired that still photographs be taken of all four radiator retract flexhoses (at least one photograph of each flexhose framing all visible parts of the hose). Please use the following procedure when performing this action.

Post-PLBD Close Radiator Hose Still Photo Procedure

1. Unstow Hardware
   Vol 3B Unstow D2Xs, 400mm lens

2. Configure Camera
   Lens - 400mm
   Aperture - Min, locked
   Lens Focus Mode - A
   Body Focus Mode - S

   √Batt installed
   √Flash Card installed
   Pwr - ON
   Top LCD
   √Batt
   √Frames remaining sufficient

   Exp Comp ( ) - 0.0
   Exp Mode - S
   Meter - Matrix ( )
   Diopter - Adjust
   Frame Rate - S

   √BKT disabled - 0 F
   Rear LCD
   ISO - 800
   √QUAL - RAW
   √WB 0,A
   AF Area Mode - [[ ]]

   √Focus Area - Center
   √Focus Selector Lock - L

3. Photograph Port Radiator FWD,AFT Hoses
   √Camr A,B,C,D illuminators, PLB flood lights are ON
   W10 Remove window shield
   Frame each radiator hose (fwd,aft) while stabilizing lens on window frame
   Adjust Shutter speed as fast as possible (f-stop is no longer “LO”)
   Focus on hose
   Take images
   Reinstall window shield

END OF PAGE 1 OF 2, MSG 122

4. Photograph STBD Radiator FWD,AFT Hoses

W9 Remove window shield
Frame each radiator hose (fwd,aft) while stabilizing lens on window frame
Adjust Shutter speed as fast as possible (f-stop is no longer “LO”)
Focus on hose
Take images
Reinstall window shield
Turn Camr Pwr - OFF

5. Stow Hardware

Vol 3B Stow D2Xs, 400mm lens

END OF PAGE 2 OF 2, MSG 122

MSG 123 - BLANK ENTRY SUMMARY

ORBIT IS ___ X ___ NM
DEORBIT DELTA V WILL BE APPROXIMATELY ___ FPS IN-PLANE/OUT-OF-PLANE
WITH _____ LBS WASTING.

AT THE DEORBIT BURN, YOU WILL HAVE (%):
L OX = ____ R OX = ____
L FU = ____ R FU = ____

THE PREDICTED POST DEORBIT BURN OMS QUANTITIES ARE AS FOLLOWS (%):
L OX = ____ R OX = ____
L FU = ____ R FU = ____

FORWARD RCS DUMP: ___ TO ___ %

CG AT EI: X = _____
CG AT M2.5: X = _____
Y = _____

ATMOS ITEM: 22
ELEV. SCHED: AUTO
BODY BENDING FILTER: ALT

SITE: ___ REV: ___

CROSS RANGE WILL BE ___ NM L/R

ROLL REVERSAL HISTORY:
V= _____ FPS
V= _____ FPS
V= _____ FPS

DEORBIT TIG: __/__:__
LANDING APPROX: __/__:__

WX FCST:_____

WIND FCST:
50K ___/___
38K ___/___
28K ___/___
20K ___/___
12K ___/___
7K ___/___
3K ___/___
1K ___/___
SFC ___/___

ALTIMETER: _____
DENSITY ALTITUDE: _____ FT

SITE: ___ REV: ___

CROSS RANGE WILL BE ___ NM L/R

ROLL REVERSAL HISTORY:
V= _____ FPS
V= _____ FPS
V= _____ FPS

DEORBIT TIG: __/__:__
LANDING APPROX: __/__:__

WX FCST:_____

WIND FCST:
50K ___/___
38K ___/___
28K ___/___
20K ___/___
12K ___/___
7K ___/___
3K ___/___
1K ___/___
SFC ___/___

ALTIMETER: _____
DENSITY ALTITUDE: _____ FT

END OF PAGE 1 OF 2, MSG 123

MSG 123 - BLANK ENTRY SUMMARY

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HAC PROCEDURES:                          | HAC PROCEDURES:
    L/R OVHD TO _____                    |    L/R OVHD TO _____
    TURN ANGLE ___ DEG                   |    TURN ANGLE ___ DEG
    AIM POINT: NOM/CI                    |    AIM POINT: NOM/CI
    SPEEDBRAKE: NOM/SF                   |    SPEEDBRAKE: NOM/SF
    TD ____ FT AT ___ KTS                |    TD ____ FT AT ___ KTS
    3K SPEEDBRAKE: __%                   |    3K SPEEDBRAKE: __%
    NAV AIDS STATUS: _____               |    NAV AIDS STATUS: _____
-----------------------------------------------------------------------------------------------------
CONUS NOTAMS:
        EDWARDS (EDW) – _____
        WHITE SANDS (NOR) – _____

24 HOUR DELAYED DEORBIT: SITE ___ ORBIT ___ TIG __/__:__ MET

-----------------------------------------------------------------------------------------------------
 SITE: ___  REV: ___                     |  SITE: ___  REV: ___
                                         |
CROSS RANGE WILL BE ___ NM L/R           | CROSS RANGE WILL BE ___ NM L/R
                                         |
ROLL REVERSAL HISTORY:                   | ROLL REVERSAL HISTORY:
        V=  _____ FPS                    |    V= _____ FPS
        V=  _____ FPS                    |    V= _____ FPS
        V=  _____ FPS                    |    V= _____ FPS
                                         |
                                         |
DEORBIT TIG:    __/__:__                 | DEORBIT TIG:    __/__:__
LANDING APPROX: __/__:__                 | LANDING APPROX: __/__:__
                                         |
WX FCST:_____                            | WX FCST:_____
                                         |
WIND FCST:                               | WIND FCST:
        50K    ___/___                   |     50K    ___/___
        38K    ___/___                   |     38K    ___/___
        28K    ___/___                   |     28K    ___/___
        20K    ___/___                   |     20K    ___/___
        12K    ___/___                   |     12K    ___/___
         7K    ___/____                  |      7K    ___/___
         3K    ___/____                  |      3K    ___/___
         1K    ___/____                  |      1K    ___/___
        SFC    ___/____                  |     SFC    ___/___
                                         |
ALTIMETER: _____                         | ALTIMETER: _____
DENSITY ALTITUDE: _____ FT               | DENSITY ALTITUDE: _____ FT
                                         |
HAC PROCEDURES:                          | HAC PROCEDURES:
    L/R OVHD TO _____                    |     L/R OVHD TO _____
    TURN ANGLE ___ DEG                   |     TURN ANGLE ___ DEG
    AIM POINT: NOM/CI                    |     AIM POINT: NOM/CI
    SPEEDBRAKE: NOM/SF                   |     SPEEDBRAKE: NOM/SF
    TD ____ FT AT ___ KTS                |     TD ____ FT AT ___ KTS
    3K SPEEDBRAKE: ___%                  |     3K SPEEDBRAKE: ___%
    NAV AIDS STATUS: _____               |     NAV AIDS STATUS: _____
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END OF PAGE 2 OF 2, MSG 123

ORBIT IS 190 X 181 NM
DEORBIT DELTA V WILL BE APPROXIMATELY 289 FPS IN-PLANE.

AT THE DEORBIT BURN, YOU WILL HAVE (%):
L OX = 29.3 R OX = 29.6
L FU = 29.0 R FU = 29.6

THE PREDICTED POST DEORBIT BURN OMS QUANTITIES ARE AS FOLLOWS (%):
L OX = 6.5 R OX = 6.7
L FU = 6.1 R FU = 6.9

FORWARD RCS DUMP: FU TO 0%

CG AT EI: X = 1088.5
CG AT M2.5: X = 1087.5
Y = -0.5

ATMOS ITEM: 22
ELEV. SCHED: AUTO
BODY BENDING FILTER: ALT

SITE: **KSC** REV: **217**	SITE: **KSC** REV: **218**
CROSS RANGE WILL BE 269 NM A/L	CROSS RANGE WILL BE 594 NM A/R
ROLL REVERSAL HISTORY:	ROLL REVERSAL HISTORY:
V= 18500 FPS	V= 13100 FPS
V= 10200 FPS	V= 6500 FPS
V= 4300 FPS	V= 3400 FPS
DEORBIT TIG: 13/17:08	DEORBIT TIG: 13/18:44
LANDING APPROX: 13/18:13	LANDING APPROX: 13/19:48
WX FCST: FEW035 VIS 7	WX FCST: SCT035 VIS 7
WIND FCST:	WIND FCST:
50K 030/10	50K 030/10
38K 015/15	38K 015/15
28K 015/15	28K 015/15
20K 085/05	20K 085/05
12K 040/05	12K 040/05
7K 090/12	7K 090/12
3K 090/08	3K 090/08
1K 090/06	1K 090/08
SFC 060/4P6	SFC 090/7P12
ALTIMETER: 30.08	ALTIMETER: 30.09
DENSITY ALTITUDE: 1697 FT	DENSITY ALTITUDE: 1747 FT

END OF PAGE 1 OF 2, MSG 124

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HAC PROCEDURES:                          | HAC PROCEDURES:
  RIGHT OVHD TO KSC33                    |   LEFT OVHD TO KSC15
  TURN ANGLE 300 DEG                     |   TURN ANGLE 280 DEG
  AIM POINT: NOM                         |   AIM POINT: NOM
  SPEEDBRAKE: NOM                        |   SPEEDBRAKE: NOM
  TD 2500 FT AT 195 KTS                  |   TD 2600 FT AT 195 KTS
  3K SPEEDBRAKE: 25%                     |   3K SPEEDBRAKE: 23%
  NAV AIDS STATUS: GREEN                 |   NAV AIDS STATUS: GREEN
-------------------------------------------------------------------------------------------------------------------
CONUS NOTAMS:
        EDWARDS (EDW) – LAKEBED RUNWAY 15/33 GREEN ELS ONLY.  ALL OTHER
        LAKEBED RWYS RED.
        WHITE SANDS (NOR) – ALL LAKEBED RWYS GREEN

24 HOUR DELAYED DEORBIT: SITE KSC ORBIT 232 TIG 14/15:59 MET
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