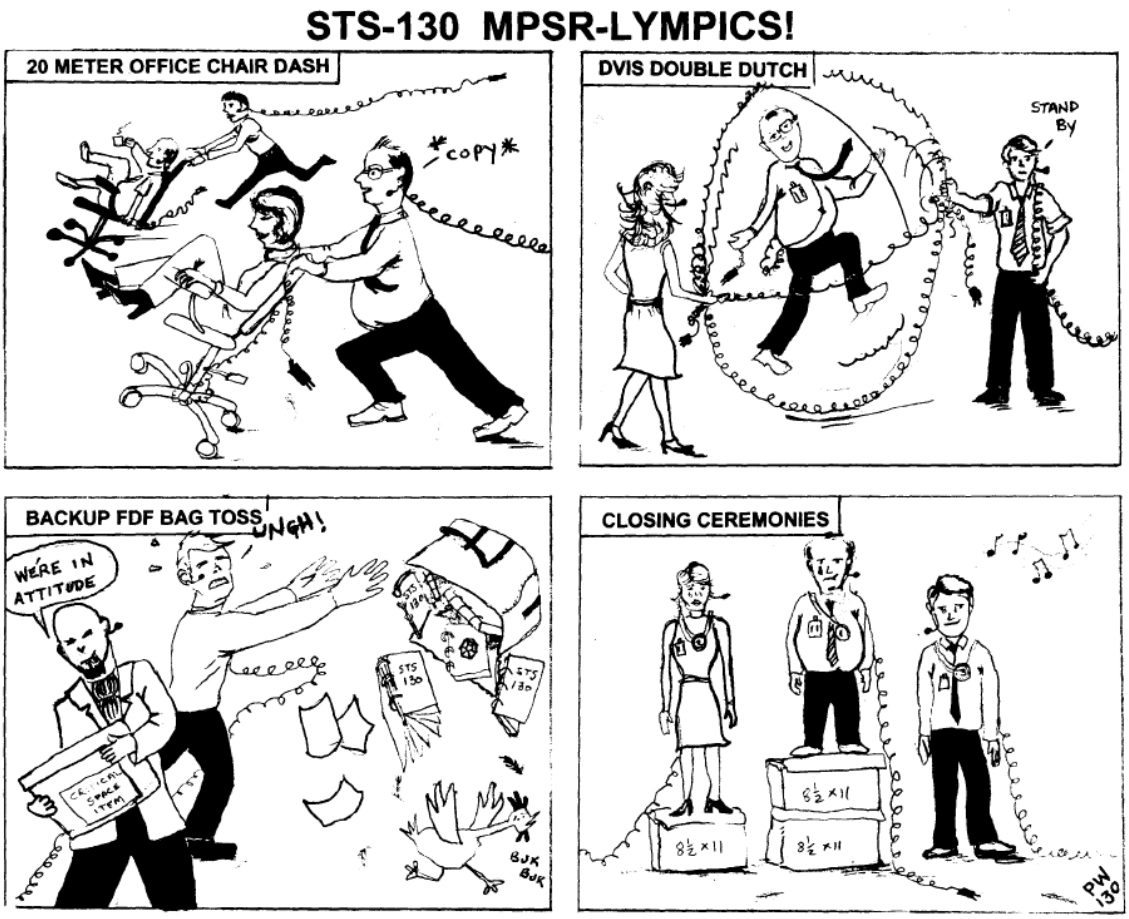
STS-130 / 20A *FD 14 Entry Package*

MSG	Page(s)	Title
190A	1 - 5	FD15-EOM +2 Summary Timeline
191A	6 - 10	FD15 Detailed Timeline
192A	11 - 13	Entry Summary
193	14 - 15	Entry Summary Blank Template
194	16 - 17	Entry Checklist Deltas
195A	18	Entry FIW List
196	19	Deorbit Prep Updates
197	20 - 27	Weather Briefing Charts
198	28	STS-130 Overview FD15-EOM+2 DSC Landing
188A	29 - 30	Entry Fluid Loading

Approved by FAO:
L. Knowlton



MCC Flight Controllers don't have to wait four years to participate in MPSR-LYMPICS. They occur every day!!!!

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MSG 190A - FD15 THROUGH EOM +2 SUMMARY TIMELINE (ASCENDING)

02/20/10 23:18:47 **REPLANNED**

FD15

GMT 02/21/10 (052) — 12 22 23 02/22 01 02 03 04 05 06 07 08 09 014/00

MET Day 013 — 12 13 14 15 16 17 18 19 20 21 22 23

STS-130

CDR ZAMKA	*WATCH; IMU ALIGN & VERIF; TRK; -XSI	DEORBIT PREP
PLT VIRTS	MADS*; GRPB; PWRUP; POST SLEEP; SAMPL; WATCH	DEORBIT PREP
MS1 HIRE	POST SLEEP	DEORBIT PREP
MS2 ROBINSON	⊕GRPB; PWRUP; PGSC STOW PART II; POST; SLEEP	DEORBIT PREP
MS3 PATRICK	POST SLEEP; OSCAOCW; GIRA; STOW; WATCH	DEORBIT PREP
MS4 BEHNKEN	POST SLEEP; MDKCK; TEPC; PWRDN	DEORBIT PREP

DEORBIT BURN — **KSC LANDING**

ORBIT	TIG
KSC 217	13/16:59
KSC 218	13/18:35
EDW 219	13/20:05
EDW 220	13/21:41*

***SCSC violation if waived off for 1st ascending opp next day.**

CDR ZAMKA	DEORBIT PREP BACKOUT	WATCH; OA^ -ZLV; OAD^ -XVV; G2; PRE; SLEEP
PLT VIRTS	DEORBIT PREP BACKOUT	MCIU*; WATCH; PRE SLEEP; G2; PRE; SLEEP
MS1 HIRE	DEORBIT PREP BACKOUT	PRE SLEEP
MS2 ROBINSON	DEORBIT PREP BACKOUT	FCMS OPS; PRE SLEEP
MS3 PATRICK	DEORBIT PREP BACKOUT	OCACC; SETUP; GIRA INSTALL; WATCH; PRE SLEEP
MS4 BEHNKEN	DEORBIT PREP BACKOUT	TEPC; PWRON; MDKCK; PRE SLEEP

STS

DAY/NIGHT

ORBIT 214 215 216 217 218 219 220 221 222

TDRS W E Z

ORB ATT — IMU; -XSI; COMM; DO; ENTRY; COMM; -ZLV -XVV; OA

NOTES
- *POST SLEEP
- ⊕POST SLEEP
- *STRAIN GAGE ENABLE

DEORBIT TIG LANDING
(13/16:59) (13/18:02)

*FILTER CK

OA ASCENDING 13/23:12^
OA DESCENDING 13/23:36^

MSG 190A - FD15 THROUGH EOM +2 SUMMARY TIMELINE (ASCENDING)

02/20/10 23:18:47

REPLANNED

FD15

GMT 02/22/10 (053)

MET Day 014

014/00 10 11 12 13 14 15 16 17 18 19 20 21 01 02 03 04 05 06 07 08 09 10 11 12

STS-130	CDR ZAMKA	PRE SLEEP; FD CONF; PMC A/G; PRE SLEEP; SLEEP; LOG; POST SLEEP; PMC A/G; POST SLEEP
STS-130	PLT VIRTS	PRE SLEEP; SLEEP; LOG; POST SLEEP
STS-130	MS1 HIRE	PRE SLEEP; SLEEP; POST SLEEP
STS-130	MS2 ROBINSON	PRE SLEEP; SLEEP; POST SLEEP
STS-130	MS3 PATRICK	PRE SLEEP; SLEEP; LOG; POST SLEEP
STS-130	MS4 BEHNKEN	PRE SLEEP; SLEEP; POST SLEEP
STS	DAY/NIGHT	
STS	ORBIT	222; 223; 224; 225; 226; 227; 228; 229
STS	TDRS W	
STS	TDRS E	
STS	TDRS Z	
STS	ORB ATT	-ZLV -XVV
	NOTES	

2

MSG 190A - FD15 THROUGH EOM +2 SUMMARY TIMELINE (ASCENDING)

02/20/10 23:18:47 **REPLANNED**

FD16/EOM+1

GMT 02/22/10 (053) 12 22 13 23 14 02/23 15 01 16 02 17 03 18 04 19 05 20 06 21 07 22 08 23 09 015/00

MET Day 014

STS-130

| | | |

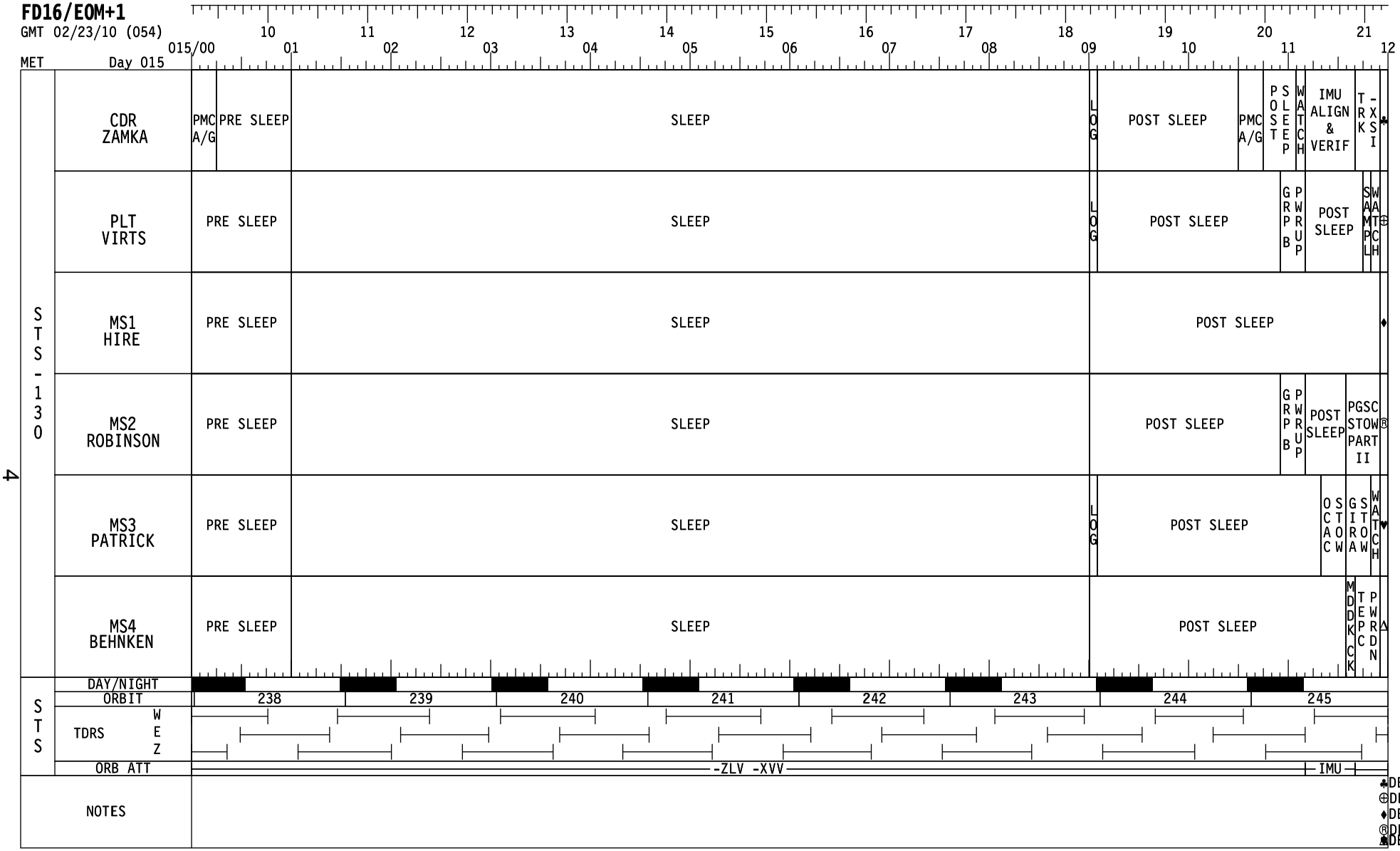
MSG 190A - FD15 THROUGH EOM +2 SUMMARY TIMELINE (ASCENDING)

02/20/10 23:18:47 **REPLANNED**

FD16/EOM+1

GMT 02/23/10 (054)

MET Day 015



4

MSG 190A - FD15 THROUGH EOM +2 SUMMARY TIMELINE (ASCENDING)

02/20/10 23:18:47 **REPLANNED**

FD17/EOM+2

GMT 02/23/10 (054) 12 13 14 15 16 17 18 19 20 21 22 23 02/24 01 02 03 04 05 06 07 08 09 016/00

MET Day 015

STS-130

CDR ZAMKA	DEORBIT PREP
PLT VIRTS	DEORBIT PREP
MS1 HIRE	DEORBIT PREP
MS2 ROBINSON	DEORBIT PREP
MS3 PATRICK	DEORBIT PREP
MS4 BEHNKEN	DEORBIT PREP

DEORBIT BURN

KSC LANDING

ORBIT	TIG
KSC 248	15/15:58
NOR 249	15/17:29
KSC 249	15/17:33
EDW 250	15/19:03
NOR 250	15/19:05
EDW 251	15/20:39
NOR 251	15/20:41

STS

DAY/NIGHT	
ORBIT	246 247 248 249 250 251 252 253
TDRS W	
TDRS E	
TDRS Z	
ORB ATT	-XSI COMM DO Entry

NOTES

DEORBIT TIG LANDING
(15/15:58) (15/17:01)

5

STS-130 FD15

GMT Date 02/21 (052) | W | TDRSE | Z | D/N | ORB | MET Day 013 | STS ATI | CDR ZAMKA | PLT VIRTS | MS1 HIRE | Notes

08:00 – 09:00 – 10:00 – 11:00 – 12:00

18:00 – 19:00 – 20:00 – 21:00

211 – 212 – 213 – 214

-ZLV -XVV

SLEEP

SLEEP

SLEEP

FD15 EZ ACTIVITIES BEFORE LEAVING
FLIGHT PLAN:
√OCAC FILTER
Stow CSA-CP
TEPC (STATUS CHECK)
(ORB OPS, CREW SYS)

SLEEP LOGBOOK (ORB OPS, SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SLEEP LOGBOOK (ORB OPS, SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PRIVATE MEDICAL CONFERENCE
L9 PAYLOAD STATION A/G (two) - OFF
Perform via A/G2

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

STS-130 FD15

GMT Date 02/21 (052) | W | TDRS E | Z | D/N | ORB | MET Day 013 | STS ATI

ORB: 211, 212, 213, 214

STS ATI: -ZLV, -XVV

MS2 ROBINSON	MS3 PATRICK	MS4 BEHNKEN	Notes
SLEEP	SLEEP	SLEEP	
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	SLEEP LOGBOOK (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	

STS-130 FD15

GMT Date 02/21 (052) | W | TDRSE | Z | D/N | ORB | MET Day 013 | STS ATT

CDR ZAMKA	PLT VIRTS	MS1 HIRE	Notes
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	A6L MADS STRAIN GAGE - PCM ENA	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
DOFFING ACTIWATCH (ORB OPS, SDBI)	PRIORITY PWRUP GRP B(ORB PKT,PRI PWRDN) Steps 12(IMU 2),10,9,7,6(Dual G2),5, & 2		
MNVR IMU STAR ALIGN ATT A (pg 3-166) A1/AUTO/VERN, Init MNVR (12:13)			
IMU ALIGN - S TRK (ORB OPS, GNC)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
MNVR IMU VERIF ATT B (pg 3-166) A1/AUTO/VERN, Init MNVR			
IMU ALIGN - S TRK (ORB OPS, GNC)			
MNVR (TRK) -XSI ATT TG=4 BV=5 P=184 Y=0 OM=270 A1/AUTO/VERN, Init TRK (12:54)	AIR SAMPLE Record MET & location on bottle		
	DOFFING ACTIWATCH (ORB OPS, SDBI)		

GO TO DEORBIT PREP @ 13/12:59

Time scale: 22:00, 23:00, 00:00, 01:00; 12:00, 13:00, 14:00, 15:00, 16:00

214, 215, 216

STS ATT: IMU, -XSI, COMM

8

STS-130 FD15

GMT Date 02/21 (052) | W | TDRSE | Z | D/N | ORB | MET Day 013 | STS ATI

MS2 ROBINSON	MS3 PATRICK	MS4 BEHNKEN	Notes
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
PRIORITY PWRUP GRP B(ORB PKT,PRI PWRDN) Steps 12(IMU 2),10,9,7,6(Dual G2),5, & 2			
PGSC NETWORK (B.TEARDOWN) (ORB OPS, PGSC) Stow remaining PGSCs	OCAC STOWAGE (ORB OPS, CREW SYS)		
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	GIRA STOWAGE (ORB OPS, ECLS)	GLACIER STATUS CHECK (ASSY OPS,CC)	
	DOFFING ACTIWATCH (ORB OPS, SDBI)	TISSUE EQUIVALENT PROPORTIONAL COUNTER (TEPC) (ORB OPS, CREW SYSTEMS) Powerdown	

GO TO DEORBIT PREP @ 13/12:59

Time scale: 12:00, 13:00, 14:00, 15:00, 16:00; 22:00, 23:00, 00:00, 01:00

ORB: 214, 215, 216

STS ATI: IMU, -XSI, COMM

6

MSG 191A - FD15 DETAILED TIMELINE

A IMU STAR ALIGN PAD

ID: -Y: 77 ALGENIB
MET (013/12:22 TO 13/13:05)

ID: -Z: 35 NUNKI
MET (013/12:06 TO 13/12:54)

ANG DIFF: 87.6

DUAL S TRKR ALIGNMENT		2nd ATTITUDE (SINGLE S TRKR) -Z: 77 -Y: 35	
R	272	R 180	354
P	65	P 74	77
Y	27	Y 39	18

REQD ID:

-Y: _____, -Z: _____, ANG ERR____,____ ____

ANG:	1	2	3
ΔX	( )___,___ ___	( )___,___ ___	( )___,___ ___
ΔY	( )___,___ ___	( )___,___ ___	( )___,___ ___
ΔZ	( )___,___ ___	( )___,___ ___	( )___,___ ___

EXECUTION TIME: ____/___:___:___MET

B IMU VERIFICATION STAR ALIGN PAD

ID: -Y: 89 ARNEB
MET (013/12:44 TO 013/13:32)

ID: -Z: 28 AL NA'IR
MET (013/12:21 TO 013/13:05)

ANG DIFF: 90.6

DUAL S TRKR ALIGNMENT		2nd ATTITUDE (SINGLE S TRKR) -Z: 89 -Y: 28	
R	200	R 111	288
P	137	P 152	133
Y	4	Y 0	350

REQD ID:

-Y: _____, -Z: _____, ANG ERR____,____ ____

ANG:	1	2	3
ΔX	( )___,___ ___	( )___,___ ___	( )___,___ ___
ΔY	( )___,___ ___	( )___,___ ___	( )___,___ ___
ΔZ	( )___,___ ___	( )___,___ ___	( )___,___ ___

If any ΔX, ΔY, OR ΔZ > 0.1 Check MCC

EXECUTION TIME: ____/___:___:___MET

MSG 192A - ENTRY SUMMARY

ORBIT IS 189 X180 NM
DEORBIT DELTA V WILL BE APPROXIMATELY 294 FPS IN-PLANE

AT THE DEORBIT BURN, YOU WILL HAVE (%):
L OX = 30.2 R OX = 30.1
L FU = 29.9 R FU = 30.0

THE PREDICTED POST DEORBIT BURN OMS QUANTITIES ARE AS FOLLOWS (%):
L OX = 7.2 R OX = 7.0
L FU = 6.9 R FU = 7.0

FORWARD RCS DUMP: FUEL TO 0 %

CG AT EI: X = 1083.9
CG AT M2.5: X = 1082.8
Y = -0.5

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

END OF PAGE 1 OF 3, MSG 192A

MSG 192A - ENTRY SUMMARY

```
-----------------------------------------------------------------------
 SITE: KSC    REV: 217                    |  SITE: KSC  REV: 218
                                          |
CROSS RANGE WILL BE 337 NM LEFT           | CROSS RANGE WILL BE 538 NM RIGHT
                                          |
ROLL REVERSAL HISTORY:                    | ROLL REVERSAL HISTORY:
        V=  17400 FPS                     |        V= 14300 FPS
        V=  9300 FPS                      |        V= 7000 FPS
        V=  3900 FPS                      |        V= 3500 FPS
                                          |
                                          |
DEORBIT TIG:    13/17:00                  | DEORBIT TIG:    13/18:36
LANDING APPROX: 13/18:06                  | LANDING APPROX: 13/19:41
                                          |
WX FCST:BKN060 BKN120 BKN250              | WX FCST: BKN060 BKN120 BKN250
CHC SHRA WI 30NMI                         | CHC SHRA WI 30 NMI
                                          |
                                          |
WIND FCST:                                | WIND FCST:
         50K   275/110                    |         50K    275/110
         38K   280/160                    |         38K    280/160
         28K   255/90                     |         28K    255/90
         20K   290/50                     |         20K    290/50
         12K   260/20                     |         12K    260/20
          7K   215/10                     |          7K    215/10
          3K   170/13                     |          3K    170/13
          1K   160/11                     |          1K    160/11
        SFC   160/7P10                    |        SFC    160/7P10
                                          |
ALTIMETER: 30.03                          | ALTIMETER: 30.01
DENSITY ALTITUDE: 280 FT                  | DENSITY ALTITUDE: 106 FT
                                          |
HAC PROCEDURES:                           | HAC PROCEDURES:
 L OVHD TO KSC15                          |  L OVHD TO KSC15
 TURN ANGLE 230 DEG                       |  TURN ANGLE 270 DEG
 AIM POINT: NOM                           |  AIM POINT: NOM
 SPEEDBRAKE: NOM                          |  SPEEDBRAKE: NOM
 TD 2100 FT AT 195 KTS                    |  TD 2100 FT AT 195 KTS
 3K SPEEDBRAKE: 15%                       |  3K SPEEDBRAKE: 15%
 NAV AIDS STATUS: GREEN                   |  NAV AIDS STATUS: GREEN
-----------------------------------------------------------------------
```

-

END OF PAGE 2 OF 3, MSG 192A

MSG 192A - ENTRY SUMMARY

```
 SITE: EDW  REV: 219                    |  SITE: EDW REV: 220
                                        |
CROSS RANGE WILL BE 222 NM LEFT         | CROSS RANGE WILL BE 506 NM RIGHT
                                        |
ROLL REVERSAL HISTORY:                  | ROLL REVERSAL HISTORY:
        V=  19,000 FPS                  |    V= 14,800 FPS
        V=  10,700 FPS                  |    V= 7300 FPS
        V=  4100 FPS                    |    V= 3600 FPS
                                        |
                                        |
DEORBIT TIG:    13/20:06                | DEORBIT TIG:    13/21:42
LANDING APPROX: 13/21:11                | LANDING APPROX: 13/22:46
                                        |
WX FCST:BKN030 BKN060 OVC100            | WX FCST: BKN030 BKN060 OVC100
            SHRA WI 30NM                |              SHRA WI 30NM
                                        |
                                        |
WIND FCST:                              | WIND FCST:
        50K    275/40                   |     50K    275/40
        38K    300/75                   |     38K    300/75
        28K    305/105                  |     28K    305/105
        20K    295/60                   |     20K    295/60
        12K    275/45                   |     12K    275/45
         7K    295/36                   |      7K    295/36
         3K    265/22                   |      3K    265/22
         1K    250/16                   |      1K    250/16
        SFC  240/12P18                  |     SFC   240/12P18
                                        |
ALTIMETER: 29.93                        | ALTIMETER: 29.93
DENSITY ALTITUDE: 1885 FT               | DENSITY ALTITUDE: 1885 FT
                                        |
HAC PROCEDURES:                         | HAC PROCEDURES:
 R OVHD TO EDT22                        |  L OVHD TO EDT22
 TURN ANGLE 210 DEG                     |  TURN ANGLE 190 DEG
 AIM POINT: CI                          |  AIM POINT: CI
 SPEEDBRAKE: NOM                        |  SPEEDBRAKE: NOM
 TD 2100 FT AT 195 KTS                  |  TD 2100 FT AT 195 KTS
 3K SPEEDBRAKE: 15%                     |  3K SPEEDBRAKE: 15%
 NAV AIDS STATUS: GREEN                 |  NAV AIDS STATUS: GREEN _
-------------------------------------------------------------------------
CONUS NOTAMS:
        EDWARDS (EDW) – TEMP RWY IN USE.  LAKEBEDS RED
        WHITE SANDS (NOR) – LAKEBEDS GREEN.

24 HOUR DELAYED DEORBIT:
ASCENDING          SITE KSC ORBIT 233 TIG 14/17:14 MET
DESCENDING         SITE KSC ORBIT 238 TIG 15/01:30 MET
```

END OF PAGE 3 OF 3, MSG 192A

MSG 193 - ENTRY SUMMARY BLANK

```
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:
-----------------------------------------------------------------------
 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:
```

END OF PAGE 1 OF 2, MSG 193

MSG 193 - ENTRY SUMMARY BLANK

```
 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: _____
```

END OF PAGE 2 OF 2, MSG 193

ENTRY CHECKLIST DELTAS

PAGE	PROCEDURE	ACTION
5-8	NH3 ACT (ENT, POST LDG)	Use the following NH3 Controller: L1 NH3 CNTLR B – PRI/GPC
5-22	NH3 RECONFIG (ENT, ASP EXT PWR UP)	Use the following NH3 Controller: L1 NH3 CNTLR A – PRI/GPC

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
29.9	2650	161	134	4:06
28	2570	149	125	3:48
26	2490	137	114	3:29
24	2410	124	104	3:10
22	2330	112	93	2:50
20	2250	99	83	2:31
18	2170	86	73	2:12
16	2090	74	62	1:53
14	2010	61	52	1:34
12	1930	49	41	1:15
10	1850	36	31	0:56
8	1770	23	20	0:36
6	1690	11	9	0:16

NOTE: Uses vehicle weight of **208,086** lb

END OF PAGE 2 OF 2, MSG 194

MSG 195A - ENTRY FIW LIST

SYSTEM #	FAILURE	IMPACT	WORK AROUND
OMS	LOMS GN2 Accumulator Leak	Potential for Crew Alarm	Periodic represses may be required to avoid alarm
EPS	FC2 Cell Performance Monitor failed several self-tests on Substack 3 (SS3). Spec 69 indication displayed OSH (500mV) until the next self-test. This instrumentation can also be found on FC2 SS3 on BFS SYS SUMM 1.	FC2 Cell Performance Monitor is currently performing nominally. Subsequent failures will reduce insight into the health of FC2.	Bus tied B-C and daily FCMS data takes being performed for additional FC2 health insight. FC2 SS3 SM FDA has also been inhibited. The BFS FDA will be inhibited via TMBU prior to Entry.

END OF PAGE 1 OF 1, MSG 195A

DEORBIT CHECKLIST UPDATES:

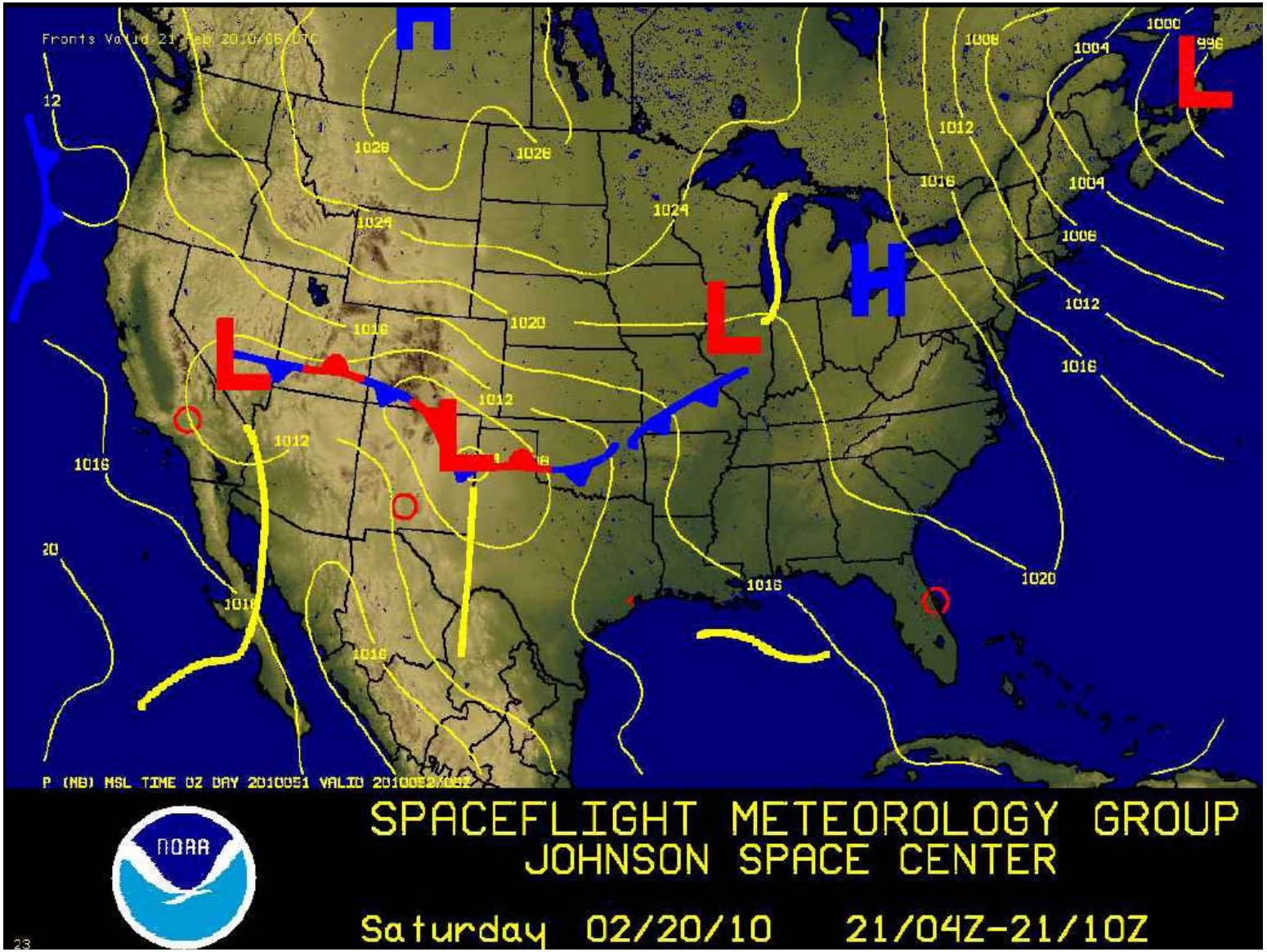
NOMINAL DEORBIT PREP CHECKLIST DELTAS

PAGE	TIG	CHANGE
3-21	-1:50	For the FINAL ENTRY SWITCH LIST VERIF procedures on page 3-21 the bus tie switches will be an action not a verfication: **R1 MN BUS TIE B,C (two) - OFF (tb-OFF)**

DEORBIT PREP BACKOUT DELTAS

PAGE	ET	CHANGE
2-11	1:55	Main Bus B and C will need to be tied to regain insight into fuel cell 2 during deorbit prep backout. On MCC GO: **R1 MN BUS TIE B,C (two) - ON (tb-ON)**

END OF PAGE 1 OF 1, MSG 196


SPACEFLIGHT METEOROLOGY GROUP
JOHNSON SPACE CENTER
Saturday 02/20/10 21/04Z-21/10Z
NOAA

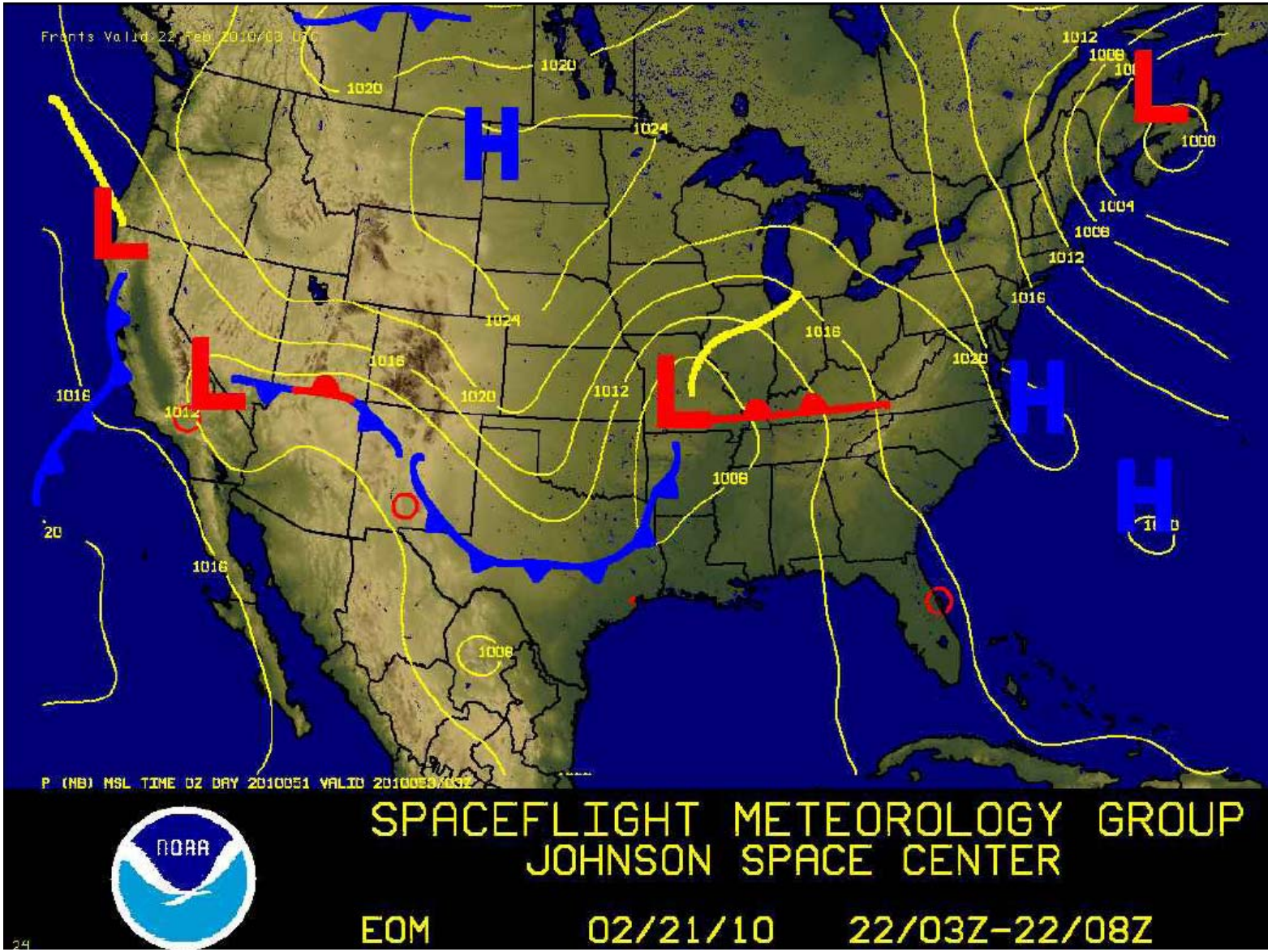
1

CONUS DAY 1 LANDING FORECASTS

STS-130

ISSUED: Saturday Feb. 20, 2010 1500Z
Saturday Feb. 20, 2010 0900CST

KSC	Valid: Sunday 0433 UTC		
	Valid: Saturday Feb 20 2233 CST		
	SCT030 SCT120	7 SM	04005P08 KT
			RWY 15/33 X=7 T/H=3
EDW	Valid: Sunday 0603 UTC - 0914 UTC		
	Sunday Feb 21 0003 CST - 0314 CST		
	FEW060 SCT100	7 SM	24010P16 KT
			RWY 22/04 X=4 H/T=15
NOR	Valid: Sunday 0604 UTC - 0740 UTC		
	Sunday Feb 21 0004 CST - 0140 CST		
	SCT060 BKN250	7 SM	22010P16 KT
			RWY 17/35 X=11 H/T=12

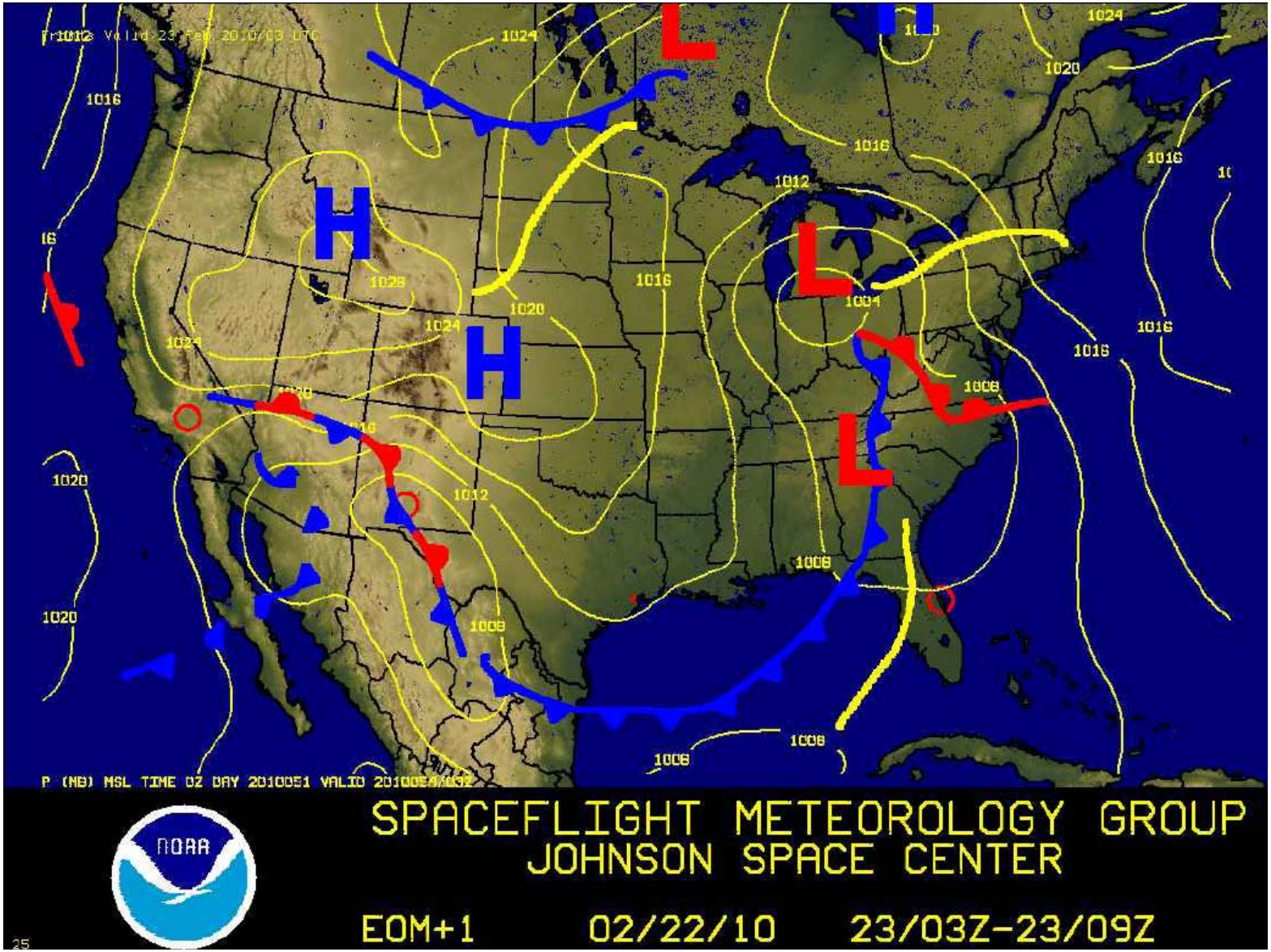

Fronts Valid:22 Feb 2010/03 UTC
P (MB) MSL TIME 0Z DAY 2010051 VALID 2010053/03Z
SPACEFLIGHT METEOROLOGY GROUP
JOHNSON SPACE CENTER
NOAA
EOM
02/21/10
22/03Z-22/08Z

CONUS DAY 2 LANDING FORECASTS

EOM
STS-130

ISSUED: Saturday Feb. 20, 2010 1500Z
Saturday Feb. 20, 2010 0900CST

KSC	Valid: Monday 0316 UTC Valid: Sunday Feb 21 2116 CST		
	BKN060 BKN120 BKN250	7 SM	16010P14 KT
	CHC SHRA WI 30NM		RWY 15/33 X=1 H/T=14
KSC	Valid: Monday 0451 UTC Valid: Sunday Feb 21 2251 CST		
	BKN060 BKN120 BKN250	7 SM	16010P14 KT
	CHC SHRA WI 30NM		RWY 15/33 X=1 H/T=14
EDW	Valid: Monday 0620 UTC - 0755 UTC Monday Feb 22 0020 CST - 0155 CST		
	BKN030 BKN060 OVC100	7 SM	24012P18 KT
	SHRA WI 30NM		RWY 22/04 X=5 H/T=17
NOR	Valid: Monday 0447 UTC - 0622 UTC Sunday Feb 21 2247 CST - Monday Feb 22 0022 CST		
	SCT150 BKN250	7 SM	20010P16 KT
			RWY 17/35 X=7 H/T=15



END OF PAGE 5 OF 8, MSG 197

CONUS DAY 3 LANDING FORECASTS

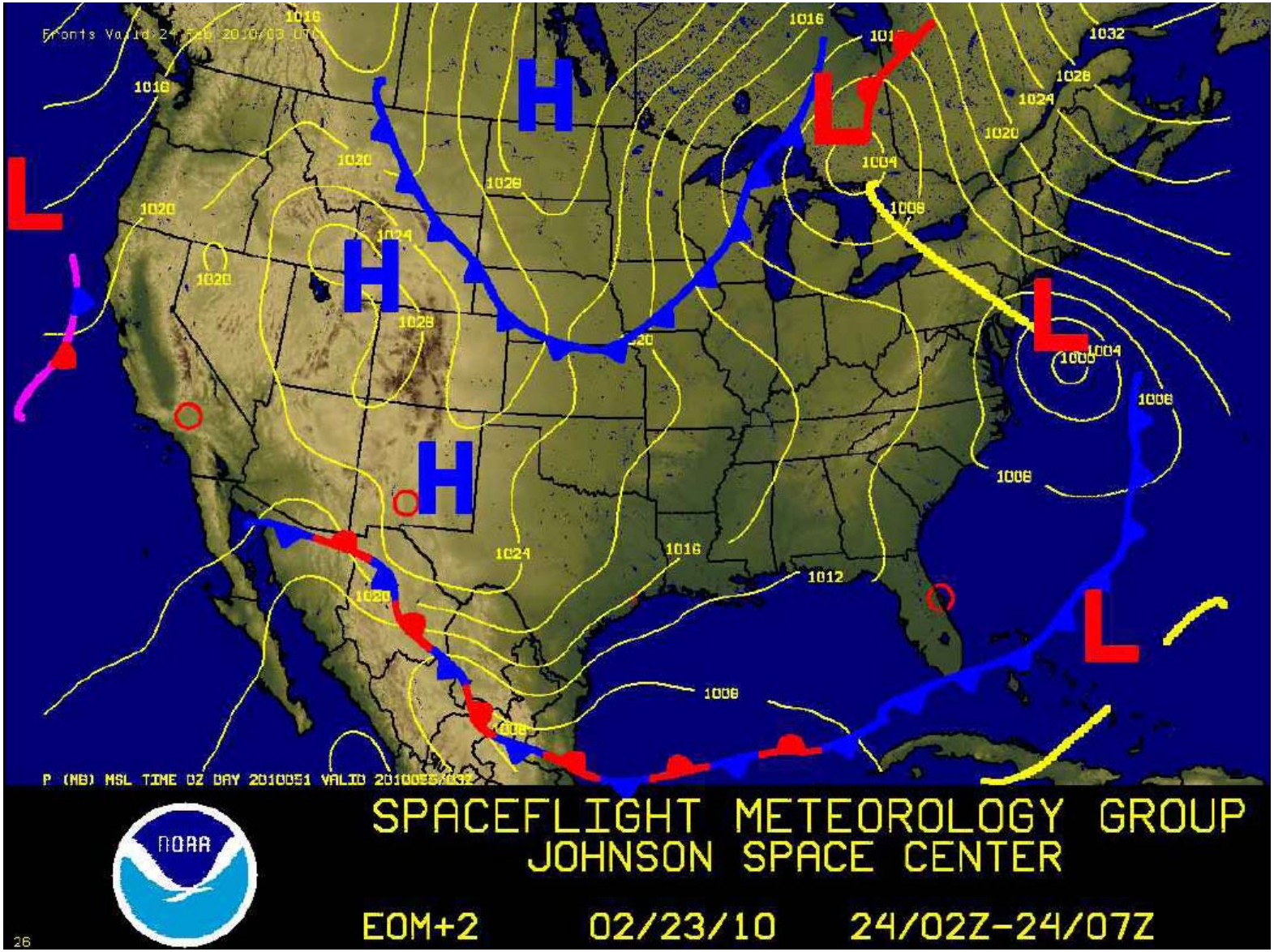
EOM+1

STS-130

ISSUED: Saturday Feb. 20, 2010 1500Z
Saturday Feb. 20, 2010 0900CST

KSC	Valid: Tuesday 0333 UTC - 0508 UTC		
	Monday Feb 22 2133 CST - 2308 CST		
	BKN020 OVC120	7 SM	21014P20 KT
	SHRA/TSRA WI 30 NM		RWY 15/33 X=16 H/T=12
EDW	Valid: Tuesday 0503 UTC - 0812 UTC		
	Monday Feb 22 2303 CST - Tuesday Feb 23 0212 CST		
	SCT250	7 SM	04006P10 KT
			RWY 22/04 X=1 T/H=10
NOR	Valid: Tuesday 0504 UTC - 0639 UTC		
	Monday Feb 22 2304 CST - Tuesday Feb 23 0039 CST		
	BKN060 BKN120 BKN250	7 SM	03008P14 KT
	CHC RA WI 30 NM		RWY 17/35 X=8 T/H=12

1



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CONUS DAY 4 LANDING FORECASTS

EOM+2

STS-130

ISSUED: Saturday Feb. 20, 2010 1500Z
Saturday Feb. 20, 2010 0900CST

KSC	Valid: Wednesday 0215 UTC - 0349 UTC		
	Tuesday Feb 23 2015 CST - 2149 CST		
	SKC	7 SM	30007P12 KT
			RWY 15/33 X=7 T/H=10
EDW	Valid: Wednesday 0519 UTC - 0654 UTC		
	Tuesday Feb 23 2319 CST - Wednesday Feb 24 0054 CST		
	BKN100	7 SM	24007P11 KT
			RWY 22/04 X=3 H/T=11
NOR	Valid: Wednesday 0346 UTC - 0656 UTC		
	Tuesday Feb 23 2146 CST - Wednesday Feb 24 0056 CST		
	SCT030 SCT060	7 SM	36006P10 KT
			RWY 17/35 X=1 T/H=10

1

STS-130/20A Overview Timeline FD15 - EOM+2 Descending Landing/Approach
GMTLO 039/09:14:08 Feb 8th, 2010

FD15 (EOM)

	MET 12	13	14	15	16	17	18	19	20	21	22	23	13/0	1	2	3	4	5	6	7	8	9	10	11	12
FD 14	STS		R MS		FCS C/O / RCS HF		Brief	PA O	Meal	L-1 Cm	Pilot Ops	L-1 Cm	Cabin Stow	L-1 Cm	MAUI	KU	PSA							PSA	
	Orb Att	-ZLV -XVV									+ZLV	-ZLV -XVV													

^Powerdown ^MLA ^WSS ^DFR

^MAUI TIG 12/23:39

<--18HR SCSC DAY

	MET 12	13	14	15	16	17	18	19	20	21	22	23	14/0	1	2	3	4	5	6	7	8	9	10	11	12
FD 15	STS	PSA	IMU	D/O Prep			Ent				D/O PREP BACKOUT		O A		PSA			SLEEP (10 HRS)							
	Orb Att		I	-XSI	Comm		Ent				COMM		OA	-ZLV -XVV											

^KSC 217 13/16:59 NOEM ^EDW 220 13/21:41

^KSC 218, 13/18:35 ^13/23:36 OA BURN

^EDW 219, 13/20:05

FD16 (EOM+1)

<-- 18HR SCSC DAY

	MET 12	13	14	15	16	17	18	19	20	21	22	23	15/0	1	2	3	4	5	6	7	8	9	10	11	12
FD 16	STS			PSA			*H2O DUMP			IMU	DEORBIT PREP				ENT		D/O PREP BACKOUT		PSA		SLEEP (8 HRS)				
	Orb Att	-ZLV -XVV					+YVV	-ZLV -XVV		I	-XSI		Comm		Ent			-ZLV -XVV							

^KSC 238 15/01:26

^EDW 239 15/02:53

^KSC 239 15/03:01

^EDW 240 15/04:28

FD17 (EOM+2)

	MET 12	13	14	15	16	17	18	19	20	21	22	23	16/0	1	2	3	4	5	6	7	8	9	10	11	12
FD 17	STS					PSA			IMU	DEORBIT PREP				ENT											
	Orb Att	-ZLV -XVV							I	-XSI		Comm		Ent											

^KSC 253 16/00:09

^EDW 254 16/01:36

^KSC 254 16/01:44

^EDW 255 16/03:11

SCSC VIOLATIONS (NSTS-37326):

1. FD15-16 SLEEP SHIFT = 4HRS (3HR MAX), REF. 2.2.2.1

Fluid Loading:

Fluid loading water for each days deorbit opportunities (nominal deorbit plus a one orbit wave-off) should be pulled during pre-sleep the night before. Report to MCC when complete. Treat any unused fluid bags as trash. Any fluid can be used for loading as long as it is supplemented with salt tablets (no salt tablets required for Ades).

EOM, EOM +1 Fluid Loading:

Initiate fluid loading at 1 hour before TIG on GO from MCC. Consume 8 ounces of water or artificially sweetened (A/S) drink with two salt tablets, every 15 minutes. Fluid loading must be completed by Entry Interface (EI).

CREWMEMBER	FLUID	TOTAL # OF SALT TABLETS
CDR (Zamka)	16 oz Tropical Punch w/ A/S 8 oz Lemon Lime Ade 16 oz Orange Ade	4
PLT (Virts)	24 oz Water 16 oz Lemon-Lime Ade 8 oz Orange Ade	6
MS1 (Hire)	32 oz Orange Drink w/ A/S	8
MS2 (Robinson)	24 oz Lemon-Lime Ade 16 oz Orange Ade	0
MS3 (Patrick)	48 oz Grape Drink w/ A/S	12
MS4 (Behnken)	24 oz Water 24 oz Lemonade w/ A/S	12

Note: Pre-packaged volume may exceed prescribed quantity.

If there is a one orbit wave-off and fluid loading was completed on the previous de-orbit attempt, then the following prescription should be completed by EI:

CREWMEMBER	FLUID	TOTAL # OF SALT TABLETS
CDR (Zamka)	8 oz Tropical Punch w/ A/S 8 oz Lemon-Lime Ade 4 oz Orange Ade	2
PLT (Virts)	8 oz Water 8 oz Lemon-Lime Ade 8 oz Orange Ade	2
MS1 (Hire)	16 oz Orange Drink w/ A/S	4
MS2 (Robinson)	8 oz Lemon-Lime Ade 12 oz Orange Ade	0
MS3 (Patrick)	24 oz Grape Drink w/ A/S	6
MS4 (Behnken)	8 oz Water 16 oz Lemonade w/ A/S	6

If there is a greater than one orbit wave-off or a partial fluid load was performed on the previous de-orbit attempt then the entire protocol above should be repeated.

Fluid Loading bags must be discarded at 30 hours.

EOM+2 Fluid Loading:

If both fluid loading kits have been used, the following prescription should be completed by Entry Interface (EI):

CREWMEMBER	FLUID	TOTAL # OF SALT TABLETS
CDR (Zamka)	40 oz Any Fluid	10*
PLT (Virts)	48 oz Any Fluid	12*
MS1 (Hire)	32 oz Any Fluid	8*
MS2 (Robinson)	40 oz Any Fluid	10*
MS3 (Patrick)	48 oz Any Fluid	12*
MS4 (Behnken)	48 oz Any Fluid	12*

*If fluid is Ade, reduce salt tablets by 2 per 8 oz of Ade.

If there is a one orbit wave-off and fluid loading was completed on the previous de-orbit attempt, then the half of the above prescription should be completed by EI.

Anti-G Suit Operations:

Anti-G suits must be inflated to 0.5 psi (one click) at or near Entry Interface and to at least 1.0 psi (two clicks) at one G.

Dosimeter Reminder:

Ensure that all dosimeters are stowed in your ACES suits.

END OF PAGE 2 OF 2, MSG 188A