

STS-127/2JA

FD 16 Execute Package



MSG	Page(s)	Title
148B	1 - 13	FD16 Flight Plan Revision (pdf)
149	14 - 15	FD16 Mission Summary (pdf)
150	16 - 19	Payload Deploy Summary (pdf)

Approved by FAO: T. Melroy

Last Updated: Jul 30 2009 6:00AM GMT

JEDI (*Joint Execute package Development and Integration*), v2.04.0003

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MSG 148B - FD16 FLIGHT PLAN REVISION

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MSG INDEX

<u>MSG NO.</u>	<u>TITLE</u>
148B	FD16 Flight Plan Revision
149	FD16 Mission Summary
150	Payload Deploy Summary

1. POST SLEEP CRYO CONFIG

For today's cryo config, O2 and H2 tanks 1 and 2 will be active.

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

2. D2X S/N 1121 AUTOFOCUS TROUBLESHOOTING

Please have the crew perform the following troubleshooting checks to attempt to regain autofocus capability on D2Xs S/N 1121:

- Lens
 - √Lens Focus Mode – M/A or A, depending on installed lens
 - Camera Front
 - √Body Focus Mode – S
 - Camera Back
 - √AF Area Mode – [[]]
 - √Focus Area - Center
 - √Focus Selector Lock - L
- Report results to MCC

3. FINAL EMAIL SYNC

Prior to Ku Stow this afternoon, we will downlink your Outlook Personal Folders so that you may have them when you return to Houston. Please move any messages that you would like to keep from your INBOX, SENT ITEMS and UPLINKED BY CAPCOM folders to your Personal Folder before MET 14/19:00. We will also perform one final mail sync at the same time to deliver any last minute messages you want to send. We will not lock you out of your e-mail during this time so that you can still read your e-mail, but anything you change or write will be lost.

END OF PAGE 1 OF 2, MSG 148B

MSG 148B - FD16 FLIGHT PLAN REVISION

1 4. SEITE-2 AND OA BURN PROCEDURE UPDATES

2
3 With the burn and deploy activities scheduled for today, the following will simplify your
4 procedural activities:

- 5 a. After initial power up of the PRI RJD LOGIC, DRIVERS & DDU's, they can remain
6 powered all day until after last use (SEP-4 burn) when they will be powered down.
7 b. The SEITE-2 and OA TIGs are only 21 minutes apart. Expect words in the
8 SEITE-2 burn pad to remain in MM202 and select DAP:LVLH to set up the OA
9 burn attitude.

10
11
12 5. L OMS TK P MESSAGE AT OPS TRANSITIONS

13
14 A 'L OMS TK P' message can be expected after all OPS transitions on orbit, including
15 the transition from OPS 2 to OPS 8 for FCS C/O, after the return to OPS 2, and also
16 after the transition to OPS 3 for deorbit prep (BFS annunciated).

17
18 The GMEM uplinked on FD11 lowered the L OMS GN2 tank pressure limit to 500 psi.
19 However, the GMEM will be lost at the OPS transition, causing the limit to return to 1200
20 psi. Since the L OMS GN2 tank pressure is currently below 1200
21 psi, generating recurring alarms due to bit-toggling across that limit is no longer a
22 concern. As a result, the GMEM will not be re-implemented in OPS 2.

23
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25
26 6. REPLACE PAGES 2-54 THROUGH 2-56 AND 3-174 THROUGH 3-181.

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END OF PAGE 2 OF 2, MSG 148B

FD16

FD15 GMT 07/29/09 (210) Day_014

MET	014/00	01	02	03	04	05	06	07	08	09	10	11	12
CDR POLANSKY		SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	PILOT OPS	PILOT OPS	FCS C/O	
PLT HURLEY		SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	PILOT OPS	PILOT OPS	FCS C/O	
MS1 CASSIDY		SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	FILTER CLEAN	FILTER CLEAN	CABIN STOW	
MS2 PAYETTE		SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	EXERCISE	EXERCISE	FCS C/O	
MS3 MARSHBURN		SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	EXERCISE	EXERCISE	FCS C/O	
MS4 WOLF		SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	EXERCISE	EXERCISE	FCS C/O	
MS5 WAKATA		SLEEP	SLEEP	SLEEP	SLEEP	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	EXERCISE	EXERCISE	FCS C/O	

DAY/NIGHT	222	223	224	225	226	227	228	229	230
ORBIT									
TDRS									
ORB ATT									

*HEATER ACT
 %COMPACT #STATUS CHECK
 ^TRBLSHT

FLT PLN/127/FLIGHT

2-54

REPLANNED

NO EXERCISE
[ANDE-2 Dep1oy]

NO EXERCISE
[DRAGONSAT Deploy]

GMT 07/30/09 (211)	Day 014	12	13	14	15	16	17	18	19	20	21	22	23	015/00
--------------------	---------	----	----	----	----	----	----	----	----	----	----	----	----	--------

MET	CDR POLANSKY	11	12	13	14	15	16	17	18	19	20	21	22	23	015/00
		SEITE-2 FCS C/O BURN	OA MULTI AXIS RCS BURN	DRAGON -- IEN ZX MSC LVU IT	MEAL	PE AV OE N T	D/O BRIEF	CABIN STOW	EXERCISE	ANDE-2 MULTI AXIS RCS BURN	CABIN STOW	PS L-1 RLL COMM EA/G P	PRE SLEEP		
PLT HURLEY	11	12	13	14	15	16	17	18	19	20	21	22	23	015/00	
	SEITE-2 FCS C/O BURN	OA MULTI AXIS RCS BURN	DRAGON -- IEN ZX MSC LVU IT	MEAL	PE AV OE N T	D/O BRIEF	EXERCISE	CABIN STOW	CABIN STOW	ANDE-2 MULTI AXIS RCS BURN	CABIN STOW	PRE SLEEP			
MS1 CASSIDY	11	12	13	14	15	16	17	18	19	20	21	22	23	015/00	
	CABIN STOW	EXERCISE	CABIN STOW	CABIN STOW	MEAL	PE AV OE N T	D/O BRIEF	CABIN STOW	CABIN STOW	DPLY ANDE2	ERG STOW	PRE SLEEP			
MS2 PAYETTE	11	12	13	14	15	16	17	18	19	20	21	22	23	015/00	
	FCS C/O CABIN STOW	CABIN STOW	CABIN STOW	MEAL	PE AV OE N T	D/O BRIEF	CABIN STOW	CABIN STOW	CABIN STOW	P/T V10	ERG STOW	PRE SLEEP			
MS3 MARSHBURN	11	12	13	14	15	16	17	18	19	20	21	22	23	015/00	
	SP ET IV TS EU	PTV12 SEITE VA OPS	DRAGON -- IEN ZX MSC LVU IT	MEAL	PE AV OE N T	D/O BRIEF	CABIN STOW	CABIN STOW	CABIN STOW	DPLY ANDE2	ERG STOW	PRE SLEEP			
MS4 WOLF	11	12	13	14	15	16	17	18	19	20	21	22	23	015/00	
	EXERCISE	CABIN STOW	CABIN STOW	MEAL	PE AV OE N T	D/O BRIEF	CABIN STOW	CABIN STOW	CABIN STOW	P/T V10	ERG STOW	PRE SLEEP			
MS5 WAKATA	11	12	13	14	15	16	17	18	19	20	21	22	23	015/00	
	EXER CTISE	CABIN STOW	CABIN STOW	MEAL	PE AV OE N T	D/O BRIEF	CABIN STOW	EXERCISE	CABIN STOW	CABIN STOW	RCMBNT SEAT S/U	PRE SLEEP			
DAY/NIGHT ORBIT	230	231	232	233	234	235	236	237	238						
TDRS															
ORB ATT															
GND															
NOTES															

S T S - 1 2 7

REPLANNED

FD17

FD16

GMT 07/30/09 (211)

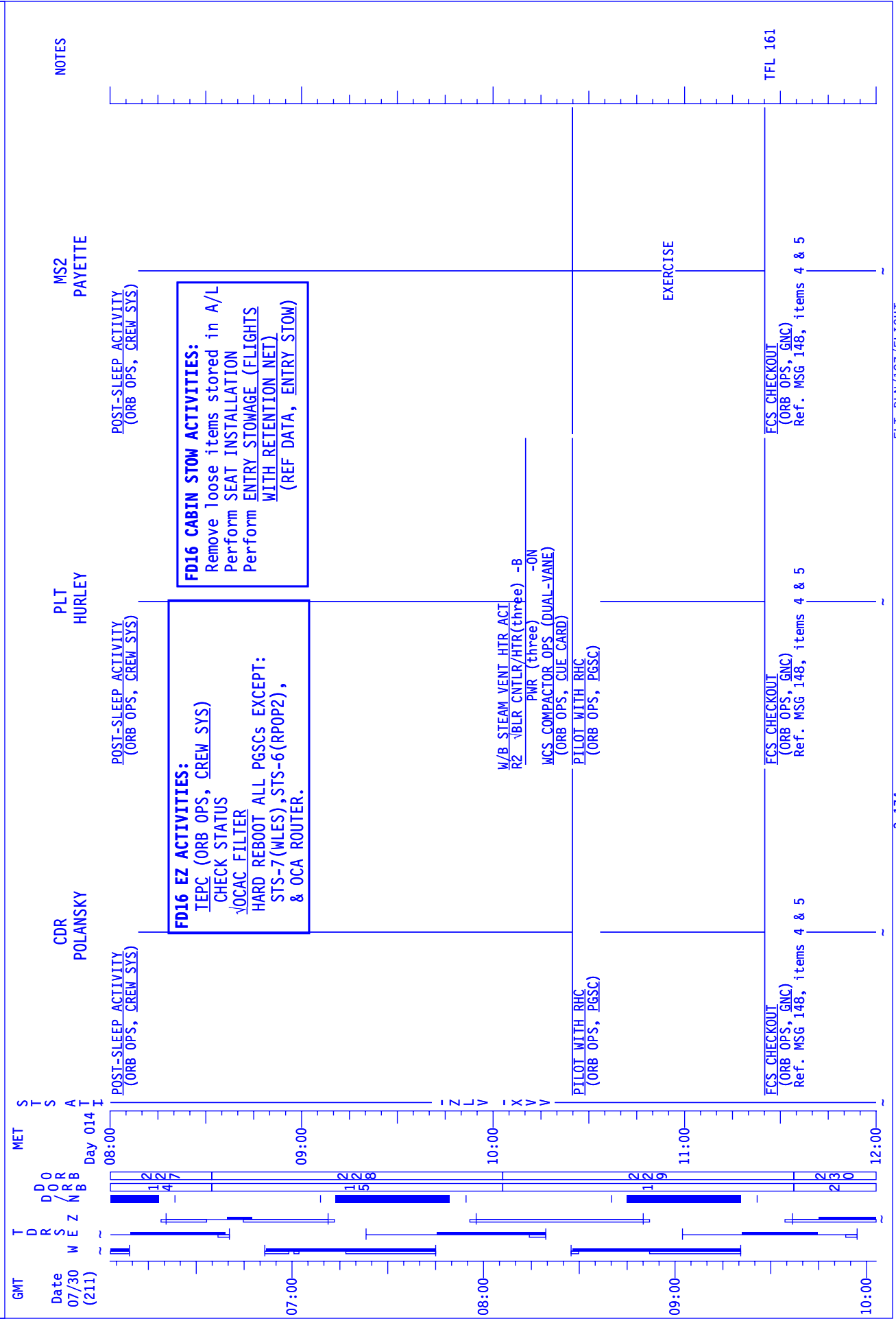
MET Day_015 015/00

01 02 03 04 05 06 07 08 09 10 11 12

CDR POLANSKY	SLEEP	POST SLEEP	GP IMU ALIGN X R PR U & S B P VERIF I P I T	DP ER - OE RP S B I T
PLT HURLEY	SLEEP	POST SLEEP	GP RW PR U B P	DP ER S OE RP A R P T B # I T
MS1 CASSIDY	SLEEP	POST SLEEP	WAPGSC A T T STOM C PART H I I	DP ER W OE RP A R P T B # I T
MS2 PAYETTE	SLEEP	POST SLEEP		DP ER G OE RP A R P T B # I T
MS3 MARSHBURN	SLEEP	POST SLEEP	MMOS DIACT DIAO KCCW #H	DP ER M OE RP A R P T B # I T
MS4 WOLF	SLEEP	POST SLEEP	MT P AEW DPR SCD N	DP ER M OE RP A R P T B # I T
MS5 WAKATA	SLEEP	POST SLEEP	W A T I C H	DP ER M OE RP A R P T B # I T
DAY/NIGHT ORBIT	238 239 240 241 242 243 244 245			
TDRS W E Z				
ORB ATT				
NOTES	2-56	FLT PLN/127/FLIGHT	#STATUS CHECK *ENABLE	#PWR ON

S T S - 1 2 7

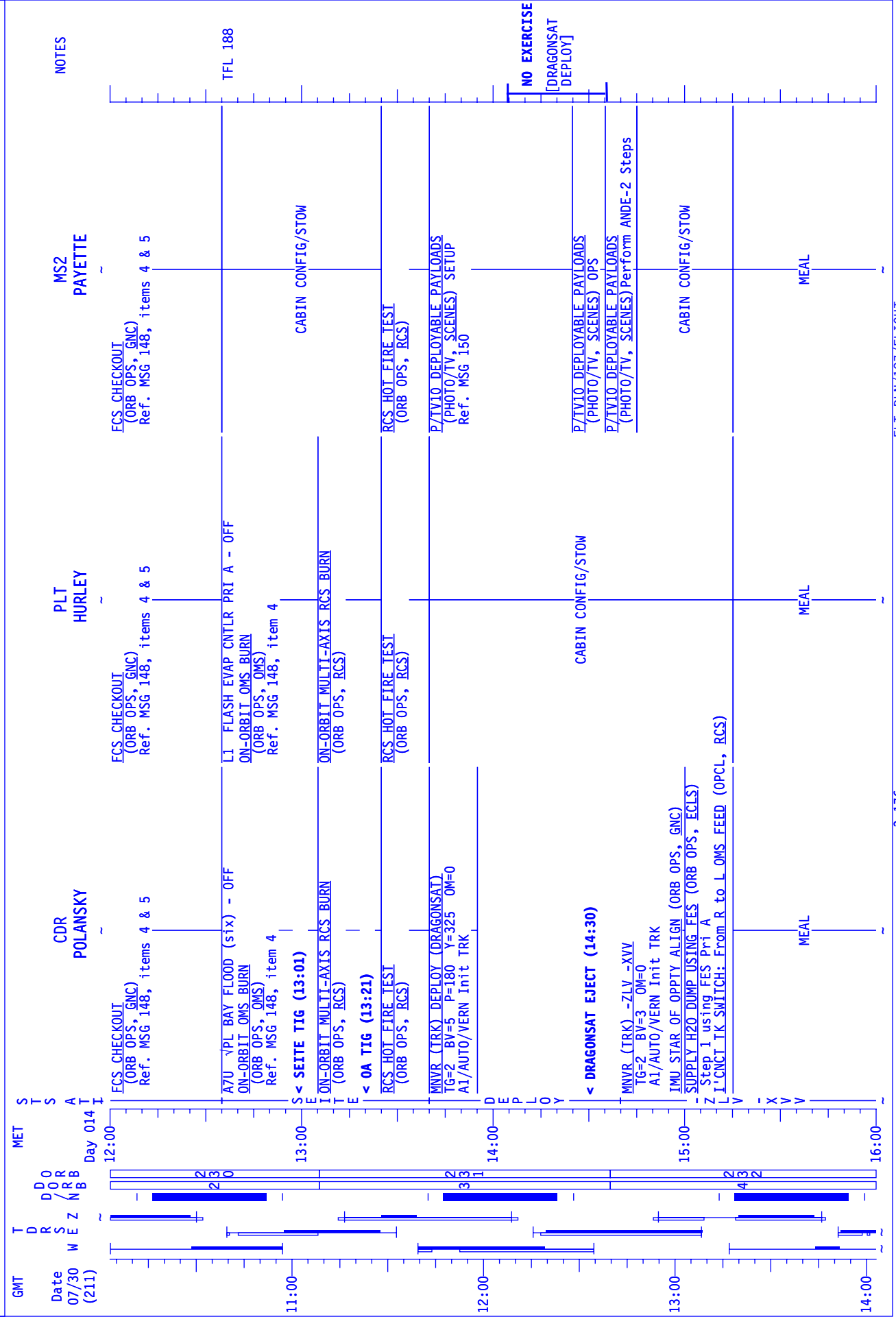
STS-127 FD (16)



STS-127 FD (16)

GMT	Date 07/30 (211)	TDRS W E Z	MET	S T S A T I	MS1 CASSIDY	MS3 MARSHBURN	MS4 WOLF	MS5 WAKATA	NOTES
07:00			08:00		DRY SALIVA CLCT (ORB OPS, SDBI) LIQUID SLVA CLCT (ORB OPS, SDBI) SLEEP LOGBOOK (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	DRY SALIVA CLCT (ORB OPS, SDBI) LIQUID SLVA CLCT (ORB OPS, SDBI) SLEEP LOGBOOK (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	DRY SALIVA CLCT (ORB OPS, SDBI) LIQUID SLVA CLCT (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
08:00			09:00		DRY SALIVA CLCT (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	DRY SALIVA CLCT (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	DRY SALIVA CLCT (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
09:00			10:00						
10:00			11:00						
11:00			12:00						
12:00									

STS-127 FD (16)



STS-127 FD (16)

GMT	Date 07/30 (211)	TDRS W E Z	MS1 CASSIDY	MS3 MARSHBURN	MS4 WOLF	MS5 WAKATA	NOTES
12:00			CABIN CONFIG/STOW	P/TV12_SEITE (P/TV, SCENES) SETUP IV CC (P/TV, CUE CARDS) Activation IV CC (P/TV, CUE CARDS) Operation - Auto Ops Update: A7 VID IN pb - A(D)	EXERCISE	EXERCISE	
13:00			EXERCISE	P/TV12_SEITE (P/TV, SCENES) OPS PLBD VTR RECORDING CC (P/TV, CUE CARDS) Update: A7 VID IN pb - A(D)	EXERCISE		
14:00			CABIN CONFIG/STOW	P/TV SEITE (P/TV, SCENES) DEACTIVATION IV CC (P/TV, CUE CARDS) DEACTIVATION (AS REQUIRED)	CABIN CONFIG/STOW	CABIN CONFIG/STOW	
14:00			CABIN CONFIG/STOW	CABIN CONFIG/STOW	DRY_SALIVA_CLCT (ORB OPS, SDBI)	CABIN CONFIG/STOW	
14:00			DRY_SALIVA_CLCT (ORB OPS, SDBI) DRAGONSAT DEPLOY (ASSY OPS, PAYLOADS) Ref. MSG 150	DRAGONSAT DEPLOY (ASSY OPS, PAYLOADS) Ref. MSG 150	CABIN CONFIG/STOW	CABIN CONFIG/STOW	NO EXERCISE
14:00			EXERCISE CONSTRAINT < DRAGONSAT EJECT (14:30)	EXERCISE CONSTRAINT	P/TV10_DEPLOYABLE_PAYLOADS (PHOTO/TV, SCENES) OPS		[DRAGONSAT DEPLOY]
15:00			CABIN CONFIG/STOW	DRY_SALIVA_CLCT (ORB OPS, SDBI) ANALOG_CC_REC_DNLK (PHOTO/TV, CANON GL)	CABIN CONFIG/STOW		
16:00			MEAL	MEAL	MEAL	MEAL	

REPLANNED

STS-127 FD (16)

GMT	Date 07/30 (211)	TDRS W E Z	MET Day 014	CDR POLANSKY	PLT HURLEY	MS2 PAYETTE	NOTES
15:00				MEAL	MEAL	MEAL	
16:00				PUBLIC AFFAIRS EVENT KU AVAIL TDRE (16:14-16:41)	PUBLIC AFFAIRS EVENT KU AVAIL TDRE (16:14-16:41)	PUBLIC AFFAIRS EVENT KU AVAIL TDRE (16:14-16:41)	
17:00				DEORBIT BRIEFING	DEORBIT BRIEFING	DEORBIT BRIEFING	
18:00				CABIN CONFIG/STOW	EXERCISE	CABIN CONFIG/STOW	
19:00				EXERCISE	CABIN CONFIG/STOW	CABIN CONFIG/STOW	
20:00				CABIN CONFIG/STOW			NO EXERCISE [ANDE-2 DEPLOY]

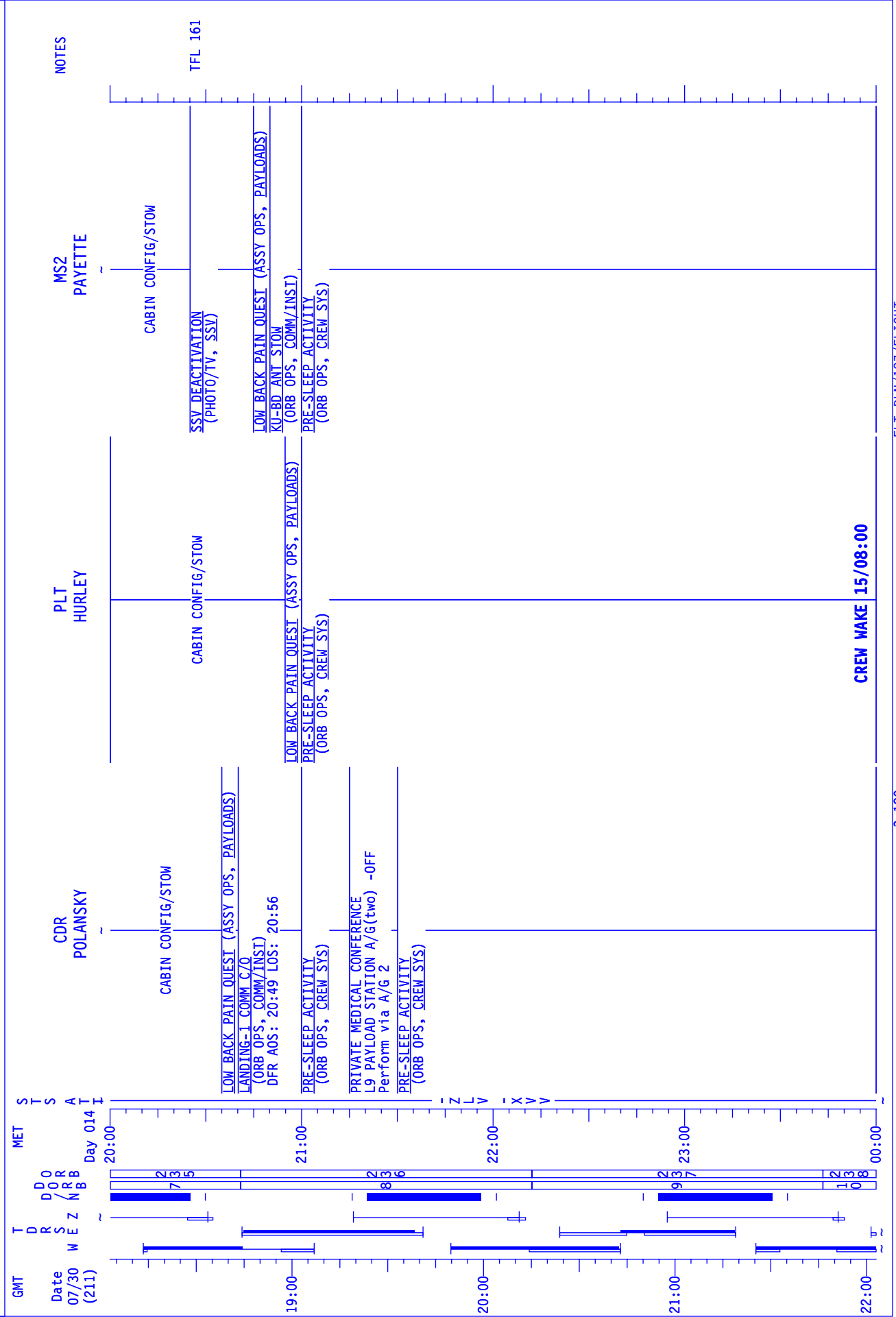
STS-127 FD (16)

GMT	Date 07/30 (211)	MS1 CASSIDY	MS3 MARSHBURN	MS4 WOLF	MS5 WAKATA	NOTES
15:00		MEAL	MEAL	MEAL	MEAL	
16:00		PUBLIC AFFAIRS EVENT KU AVAIL TDRE (16:14-16:41)	PUBLIC AFFAIRS EVENT KU AVAIL TDRE (16:14-16:41)	PUBLIC AFFAIRS EVENT KU AVAIL TDRE (16:14-16:41)	PUBLIC AFFAIRS EVENT KU AVAIL TDRE (16:14-16:41)	
17:00		DEORBIT BRIEFING	DEORBIT BRIEFING	DEORBIT BRIEFING	DEORBIT BRIEFING	
18:00		CABIN CONFIG/STOW	SDBI .1900, INTEGRATED IMMUNE BLOOD COLLECTION (ORB OPS, SDBI) PERFORM BLOOD SAMPLE COLLECTION	SDBI .1900, INTEGRATED IMMUNE BLOOD COLLECTION (ORB OPS, SDBI) PERFORM BLOOD SAMPLE COLLECTION	CABIN CONFIG/STOW	
19:00		ANDE-2 DEPLOY (ASSY OPS, PAYLOADS) Ref. MSG 150	ANDE-2 DEPLOY (ASSY OPS, PAYLOADS) Ref. MSG 150	CABIN CONFIG/STOW	EXERCISE	
20:00		DEACTIVATION & TEARDOWN (ORB OPS, WLES)	ENTRY VIDEO SETUP (P/TV, MINI-CAM)	RECURBENT SEAT KIT INSTALLATION (ORB OPS, CUE CARD)	RECURBENT SEAT KIT INSTALLATION (ORB OPS, CUE CARD)	

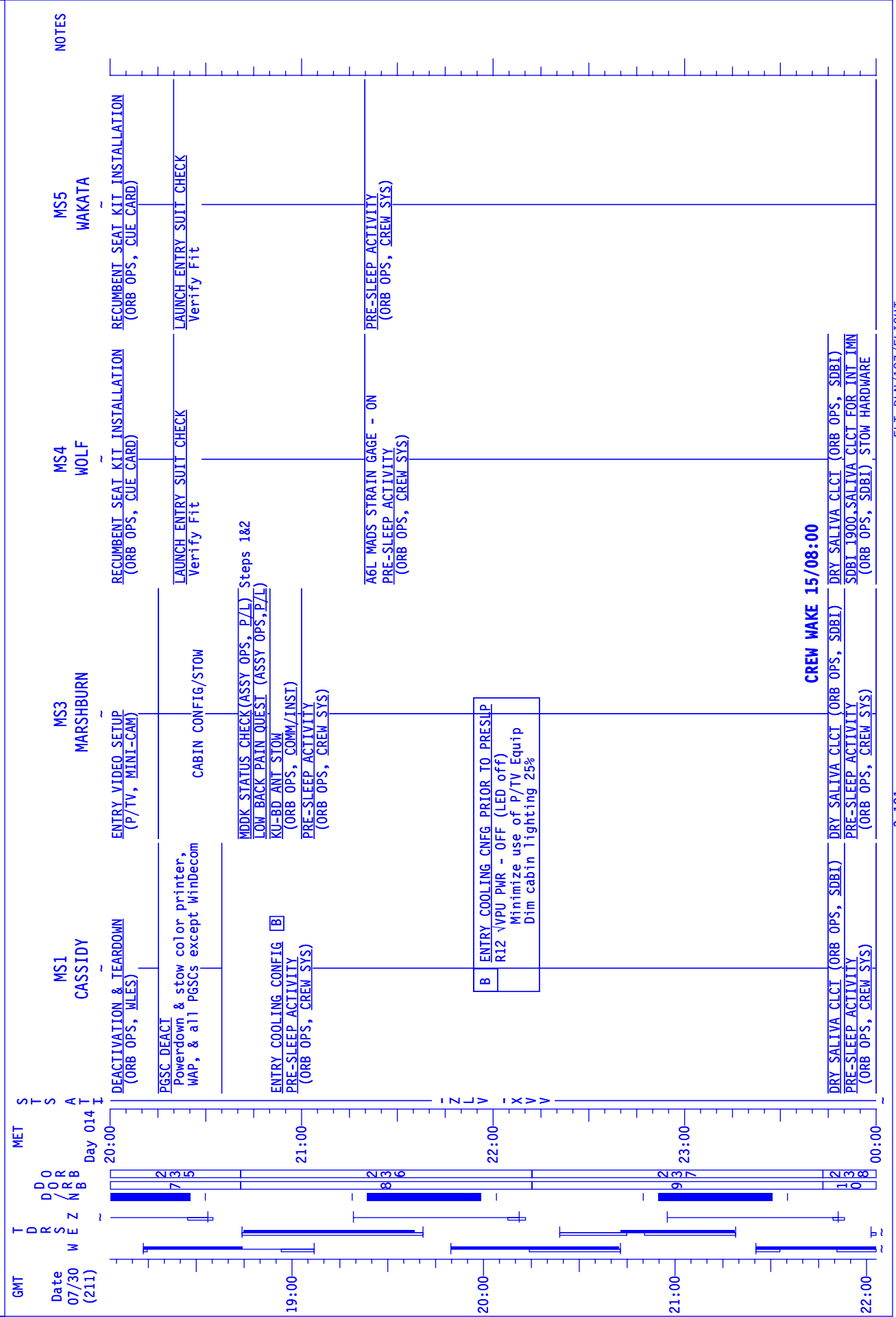
3-179

FLT PLN/127/FLIGHT

STS-127 FD (16)



STS-127 FD (16)



MSG 149 - FD16 MISSION SUMMARY

1
2 Good morning, Endeavour!

3
4 What a long trip it has been! Six million miles so far, give or take a few. This flight's last full
5 day in orbit is going to be a busy one, with multiple payload activities in addition to the
6 customary work of configuring the crew compartment for entry. While we finalize plans for
7 your return, MCC is also standing by to support you to the best of our ability!

8
9
10
11 YOUR CURRENT ORBIT IS: 185 X 177 NM

12
13 NOTAMS:

14
15 EDW - EDW IN USE. EDT ELS DAY / VFR ONLY.
16 EDW - LAKEBED RWY 15/33 - GREEN. RWY 18L - UNUSABLE.
17 NOR - LAKEBED RUNWAYS GREEN.
18 FMH - RWY 05/23 CLOSED.
19 DOV - RWY 01/19 CLOSED.
20 GUA - RWY 24R END LIGHTS OTS.
21 GUA - RWY 06R/24L CLOSED.
22 INN - CLOSED.
23 AMB - CLOSED.
24 ESN - RWY 03R/21L CLOSED.
25 **YHZ - RWY 05/23 CLOSED.**
26 **MRN - RWY 02 THR ID & SFL OTS – RWY 20 SFL OTS.**
27 IKF - NOT USABLE. NO AGREEMENT.
28 BEN - NOT RECOMMENDED/NOT SUPPORTED.
29 **PTN - RWY 14/32 CLOSED 30/2130 TO 31/0130Z.**

30
31 NEXT 2 PLS OPPORTUNITIES:

32
33 EDW22 ORB 235 – 14/20:03 SKC 7 220/07P11
34 EDW22 ORB 250 – 15/18:47 BKN250 7 230/10P16

35
36 OMS TANK FAIL CAPABILITY:

37
38 L OMS FAILS: NO
39 R OMS FAILS: NO

40
41 LEAKING OMS PRPLT BURN:

42
43 L OMS LEAK: ALWAYS BURN RETROGRADE
44 R OMS LEAK: ALWAYS BURN RETROGRADE

45
46 OMS QUANTITIES(%)

47
48 L OMS OX = 33.0 R OMS OX = 32.9
49 FU = 32.6 FU = 32.6

50
51
END OF PAGE 1 OF 2, MSG 149

MSG 149 - FD16 MISSION SUMMARY

1 DELTA V AVAILABLE:

2

3 OMS 335 FPS

4 ARCS (TOTAL ABOVE QTY1) 34 FPS

5

6 TOTAL IN THE AFT 369 FPS

7

8 ARCS (TOTAL ABOVE QTY2) 66 FPS

9 FRCS (ABOVE QTY 1) 12 FPS

10

11 AFT QTY 1 75 %

12 AFT QTY 2 37 %

13

14

15

16

<u>SYSTEM</u>	<u>FAILURE</u>	<u>IMPACT</u>	<u>WORK AROUND</u>
Photo/TV	V10 S/N 1005 has a flickering image	Unit unusable	Unit replaced w/ WVS V10, image flicker no longer present

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END OF PAGE 2 OF 2, MSG 149

MSG 150 - PAYLOAD DEPLOY SUMMARY

1 **PAYLOAD DEPLOY SUMMARY**

2
3 Today is a busy day! We look forward to the science gained from the last two planned
4 freeflight deployable satellites!

5
6 Just a quick reminder that deploy should be targeted for WINDOW OPEN for both satellites.
7

8 **OVERVIEW:**

9 ANDE-2 PHOTO/TV UPDATES

10 ANDE-2 Deploy Notes

11 DRAGONSAT Deploy Notes

12 DRAGONSAT Notes from Students
13

14 **ANDE-2 PHOTO/TV UPDATES**

15 Thank you for the clarification on your concerns for today's timeline. To try and reduce some
16 of the crew workload, the customer has agreed to relax the imagery requirements slightly.
17 We would like to offer you the option to stow the FD CC G1 video camera and the D2X
18 mounted in window 9 after the DRAGONSAT deploy. This will still leave us with one still
19 camera and one G1 camcorder, in addition to the PLB and ELB cameras, for imagery of the
20 ANDE-2 deploy.
21

22 In addition, either MS1 or MS3 could operate the remaining D2X to track the satellite (the
23 switch safing in step 8 can wait until after the imagery is complete) freeing up another
24 crewmember if desired.
25

26 If you would like to update your books to reflect these 2 cameras not in-use for ANDE
27 deploy, we've provided the changes to the ANDE-2 deploy procedure and Photo/TV:
28

29 **Assembly Ops:**

30 Please make the following P&I to page 223 of the Assembly Ops:
31 (PAYLOADS, ICU-ANDE2 DEPLOY)
32

33 Step 5: Delete (strikethrough) the following

34 FD G1 START/STOP pb's - push
35 (PAO) √RED DOT displayed
36
37

38 **P/TV 10 Updates:**

39 Please make the following P&I to Photo/TV:
40 (SCENE 10, DEPLOYABLE PAYLOADS)
41
42

43 Post DRAGONSAT Deploy

44 SETUP

45 p. 1-74, step 3: delete the setup associated with FD CC
46 p. 1-75, delete all of step 4: D2Xs Setup in W9
47

48 OPS

49 p. 1-81

50 Step 1: Delete FD CC from tape install

51 Step 2: Delete D2Xs in W9 setup

END OF PAGE 1 OF 4, MSG 150

MSG 150 - PAYLOAD DEPLOY SUMMARY

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p. 1-82
Step 2: Delete D2Xs in W9 setup

p. 1-83
"Still Imagery" column: Delete D2Xs 28-70mm mounted in W9 windowsill

p. 1-84
Step 3: Delete FD CC from "Rqmts" and "CC" columns
Step 4: Delete row

DEACTIVATION
p. 1-85, delete all of step 3: FD G1

ANDE-2 DEPLOY NOTES:

The **targeted** Deploy Window Open and Close MET times for ANDE-2 are as follows (Assembly Operations, step 1, page 223).

ANDE-2:
DEPLOY WINDOW OPEN MET = 014/19:19:00
DEPLOY WINDOW CLOSE MET = *014/19:44:00

***Note:** Note: For maximum science ANDE-2 should be deployed by Orbiter AOS with the Millstone Hill groundsite (30 deg above horizon) - **014/19:25:44**. However, if this is not met for some reason - the plan is to proceed with the deploy until window close. Lighting constraints for imagery are optimized until **014/19:39:00**, however attempts to deploy will be made up until 5 minutes prior to sunset at **~014/19:44:00**.

The **targeted** vehicle rates for ANDE-2 are as follows (Assembly Operations, step 6, page 224) (no change from preliminary).

ANDE-2 Rates:

	VERN	ALT
Pitch Rate (deg/sec)	-0.074 ≤Rate≤-0.034	-0.124 ≤Rate≤0.016
Roll Rate (deg/sec)	0.018 ≤Rate≤0.058	-0.032 ≤Rate≤0.108
Yaw Rate (deg/sec)	-0.02 ≤Rate≤0.02	-0.07 ≤ Rate ≤ 0.07

DRAGONSAT DEPLOY NOTES:

The **Targeted** Deploy Window Open and Close MET times for DRAGONSAT deploy are as follows (Assembly Operations, step 1, page 227).

DRAGONSAT Window:
DEPLOY WINDOW OPEN MET = 014/14:30:00
DEPLOY WINDOW CLOSE MET = 014/15:10:00

MSG 150 - PAYLOAD DEPLOY SUMMARY

1 The **Targeted** vehicle rates for DRAGONSAT are as follows (Assembly Operations, step 6,
2 page 228) (no change from preliminary)

3
4
5

DRAGONSAT Rates:

	VERN	ALT
Pitch Rate (deg/sec)	-0.074 ≤Rate≤-0.034	-0.124 ≤Rate≤0.016
Roll Rate (deg/sec)	0.018 ≤Rate≤0.058	-0.032 ≤Rate≤0.108
Yaw Rate (deg/sec)	-0.02 ≤Rate≤0.02	-0.07 ≤Rate≤0.07

6
7

DRAGONSAT NOTES FROM STUDENTS:

9 DRAGONSat is an ambitious 8-year, 4-mission, campaign involving NASA, Texas A&M
10 University, and the University of Texas at Austin. The ultimate goal of the campaign is to
11 demonstrate autonomous rendezvous and docking (ARD) between two small satellites. The
12 first mission (aboard STS-127) is designed to test a GPS system developed in-house at
13 JSC and consists of two satellites designed and built by students and faculty at the
14 University of Texas at Austin and Texas A&M University, respectively.

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NASA has faced seemingly insurmountable odds with the development of the International Space Station. Superpowers from all across the world have been brought together peacefully to achieve this monumental task. But perhaps more daunting is the task of getting long-time rivals, Texas A&M and the University of Texas, to come together in peace for the development of DRAGONSat. It is the first mission of its kind, and hopefully, not the last as NASA continues its mission of peace and cooperation with even the most unlikely of partners.

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***Message from the UT-Austin student satellite team
(NOTE: imagine the following text is in burnt orange):***

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*Thanks for deploying the DRAGONSat payload as the first step in developing technologies for achieving autonomous rendezvous and docking on the picosatellite scale. We anxiously await the images of BEVO-1 heading into space. Hook 'em!
- The BEVO-1 Student Satellite Team at the University of Texas at Austin.*

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Messages from Texas A&M AggieSat2 team members to the astronauts (NOTE: imagine the following text is in Aggie Maroon):

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Thanks for the superb ride to orbit. AggieSat2 appreciates it as does the team. Good luck with Kibo and the rest of the mission! - John Graves, Aerospace Engineering Masters Student

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Howdy All!!! Congratulations on a successful launch. Thank you for taking our AggieSat2 satellite as part of the DRAGONSAT payload. Good luck over the next two weeks, and enjoy your time up above it all!!! Come home safely. - Devin Stancliffe, Aerospace Engineering Masters Student

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Howdy! As a Texas A&M student engineer who worked on the A&M side of the DRAGONSAT payload, I send my best wishes to you all! I hope this message finds everyone in good health and spirits. I look forward to watching your mission and the

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MSG 150 - PAYLOAD DEPLOY SUMMARY

1 *deployment of our satellite, AggieSat2, on day 15. Good luck to you all, have a fantastic*
2 *mission! Thanks and Gig'Em! - Becky Sewell, Aerospace Engineering Senior*

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4 *"May you have a wonderful cruise around Earth! We appreciate our satellite, AggieSat2,*
5 *having the privilege to piggy back on your shuttle! Thanks and GIG' EM!" - Hutson Betts,*
6 *Computer Science Masters Student*

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