STS-115 / 12A

FD 12 Execute Package

MSG	Page(s)	Title
132A	1 - 3	FD12 Summary Timeline **(pdf)**
130A	4 - 14	FD12 Flight Plan Revision **(pdf)**
131A	15 - 16	FD12 Mission Summary **(pdf)**
133	17	FD12 Water Summary Message **(pdf)**

Approved by FAO: *M. Scheib*

Last Updated: Sep 20 2006 2:52AM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v2.04.0003*

09/19/06 20:05:24 **REPLANNED**

FD11

GMT 09/19/06 (262) — 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 09/20 | 01 | 02 | 03

MET Day 010 — 010/00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | **FD12** | 11 | 12

STS-115

Crew	Activities
CDR JETT	MAUI (MAUI*) · MNVR · -ZLV · PRE · SLEEP · PMC A/G · PRE SLEEP · SLEEP · LOG · POST SLEEP · SIMO · INIT · POST SLEEP
PLT FERGUSON	MAUI* · ENTRY* · FES ON · PRE SLEEP · SLEEP · LOG · POST SLEEP
MS1 TANNER	PRE SLEEP · SLEEP · SLVA · LOG · POST SLEEP
MS2 BURBANK	PRE SLEEP · SLEEP · LOG · POST SLEEP
MS3 PIPER	PRE SLEEP · KU-BD · STOW · PRE SLEEP · SLEEP · SLVA · LOG · POST SLEEP
MS4 MACLEAN	PRE SLEEP · SLEEP · SLVA · LOG · POST SLEEP

DAY/NIGHT	
ORBIT	159 · 160 · 161 · 162 · 163 · 164 · 165 · 166
DAILY ORBIT	8 · 9 · 10 · 11 · 12 · 13 · 14 · 15 · 16
TDRS	W -171.0 E -46.0 Z -275.0
ORB ATT	-ZLV -XVV · BIAS -ZLV -YVV
GND	DFR · DFR · DFR · DFR · DFR · DFR WSS · WSS · WSS MLA · MLA
NOTES	*BURN *COOLING CONFIG

FD12

GMT 09/20/06 (263): 04 05 06 07 08 09 10 11 12 13 14 15

MET Day 010: 12 13 14 15 16 17 18 19 20 21 22 23 011/00

STS-115

Crew	Activities
CDR JETT	POST · SLEEP · SIMO · TERM · MNVR · -ZLV · POST SLEEP · REG-OP · EXERCISE · REG-CL · MEAL · FES* · WCS · ENTRY* · FES* · PRE SLEEP
PLT FERGUSON	POST SLEEP · RMS SHUTTLE SURVEY · MEAL · CONTINGENCY OBSS UNBERTH · CONTINGENCY OBSS SHUTTLE SURVEY · CONT OBSS BERTH · RMS · PWRDN · PRE SLEEP
MS1 TANNER	POST SLEEP · EXERCISE · MEAL · FILTER CLEANING · ENTRY VIDEO SETUP · PRE SLEEP
MS2 BURBANK	POST SLEEP · RMS SHUTTLE SURVEY · MEAL · CONTINGENCY OBSS UNBERTH · CONTINGENCY OBSS SHUTTLE SURVEY · PGSC STOW PART I · PRE · SLEEP · KU-BD · STOW · PRE · SLEEP
MS3 PIPER	POST SLEEP · ERGO SETUP · EXERCISE · SURVEY DNLK · MEAL · WLES · DEACT · PRE SLEEP
MS4 MACLEAN	POST SLEEP · RMS SHUTTLE SURVEY · MEAL · CONTINGENCY OBSS UNBERTH · CONTINGENCY OBSS SHUTTLE SURVEY · CONT OBSS BERTH · RMS · PWRDN · PRE SLEEP

DAY/NIGHT

ORBIT	166	167	168	169	170	171	172	173	174
DAILY ORBIT	16	1	2	3	4	5	6	7	8

TDRS: W -171.0, E -46.0, Z -275.0

ORB ATT: SURVEYS; -ZLV -XVV

GND: MLA; DFR, WSS; DFR, WSS

NOTES: *Init; *Term, *COOLING CONFIG

09/19/06 20:05:24 **REPLANNED**

FD12

GMT 09/20/06 (263) 011/00 16 17 18 19 20 21 22 23 09/21 01 02 03

MET Day 011 01 02 03 04 05 06 07 08 09 10 11 12

FD13

STS-115

CDR JETT	PRE SLEEP / SLEEP / PMC A/G	PRE SLEEP	SLEEP	LOG	POST SLEEP
PLT FERGUSON		PRE SLEEP	SLEEP	LOG	POST SLEEP
MS1 TANNER		PRE SLEEP	SLEEP	SLVA / LOG	POST SLEEP
MS2 BURBANK		PRE SLEEP	SLEEP	LOG	POST SLEEP
MS3 PIPER		PRE SLEEP	SLEEP	SLVA	POST SLEEP
MS4 MACLEAN		PRE SLEEP	SLEEP	LOG	POST SLEEP

DAY/NIGHT									
ORBIT	174	175	176	177	178	179	180	181	182
DAILY ORBIT	8	9	10	11	12	13	14	15	1
TDRS W -171.0									
TDRS E -46.0									
TDRS Z -275.0									
ORB ATT	-ZLV -XVV								
GND	—DFR	—DFR ·WSS -MLA	—DFR —WSS —MLA	—DFR —WSS	—DFR				
NOTES									

MSG INDEX

MSG NO.	TITLE
130	FD12 Flight Plan Revision
131	FD12 Mission Summary
132	FD12 Summary Timeline
133	FD12 Water Summary Message

1. Please configure the cryo system as follows for post-sleep:

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

2. Pen & Ink for WLES stow location:

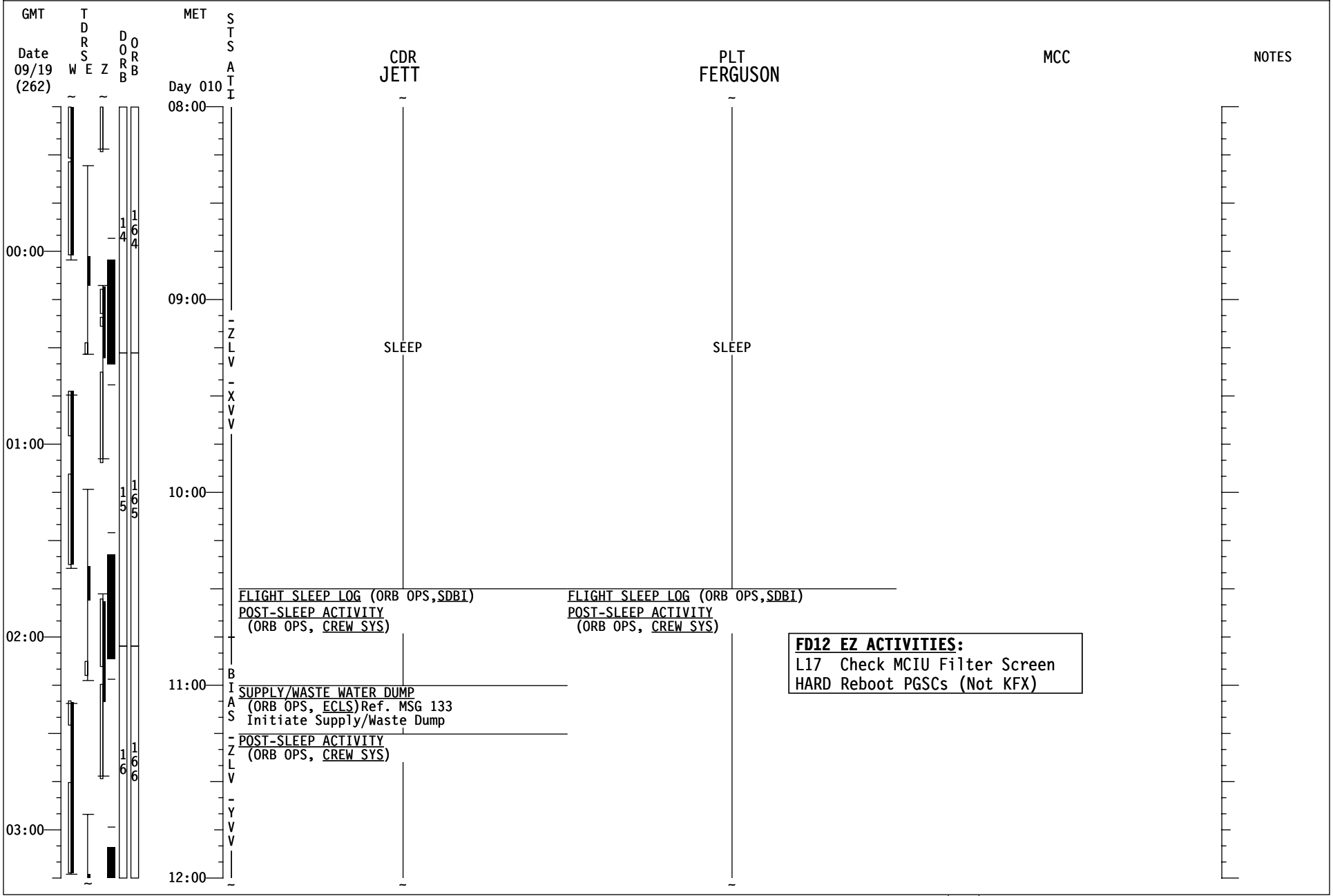
DEACTIVATION AND TEARDOWN (ORB OPS, WLE SENSORS PROCEDURES), FS 8-10, step 3

WAS: MA9D
IS: MF71E

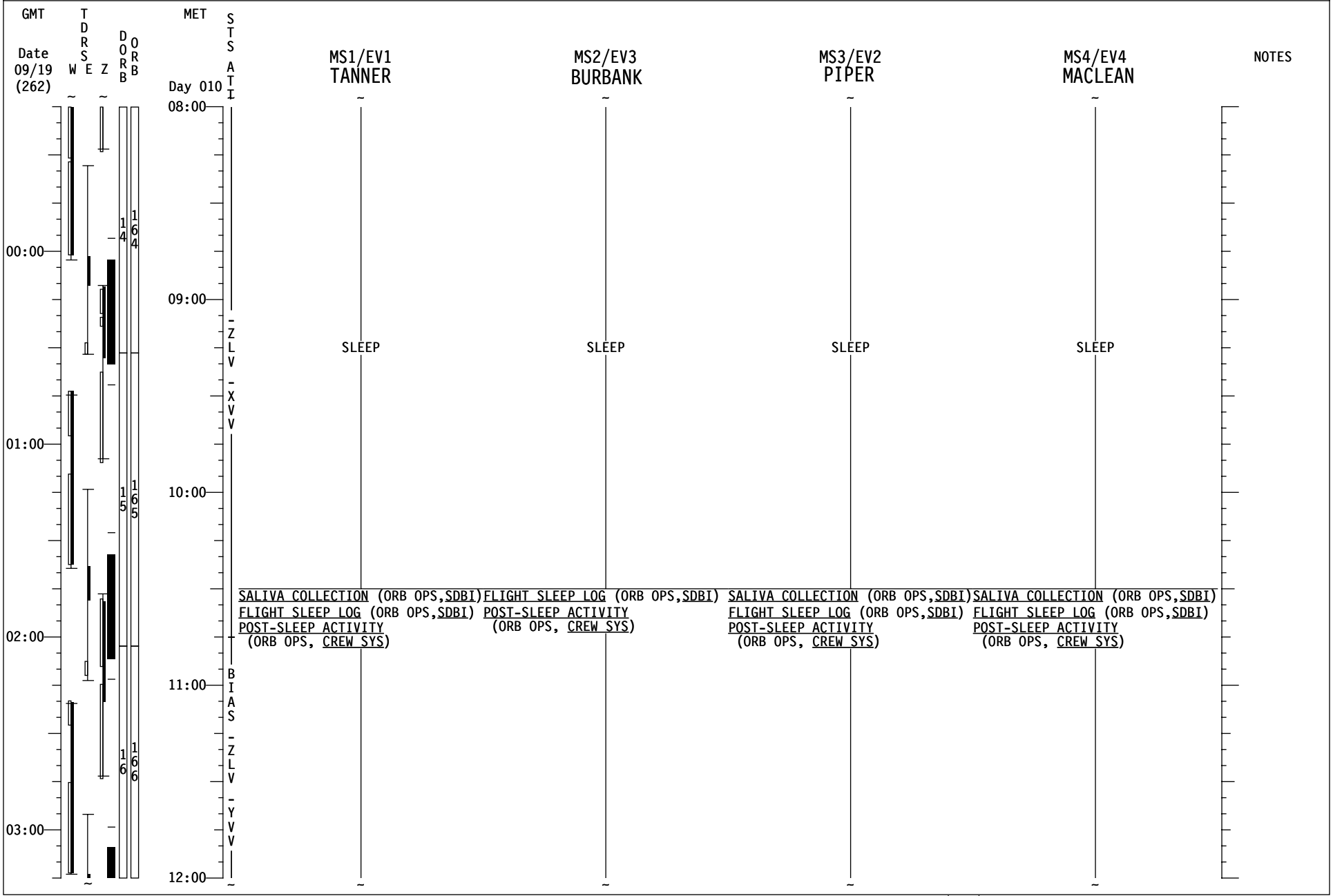
Note: This is the same as the ascent stowage location.

3. REPLACE PAGES 3-126 THROUGH 3-135.

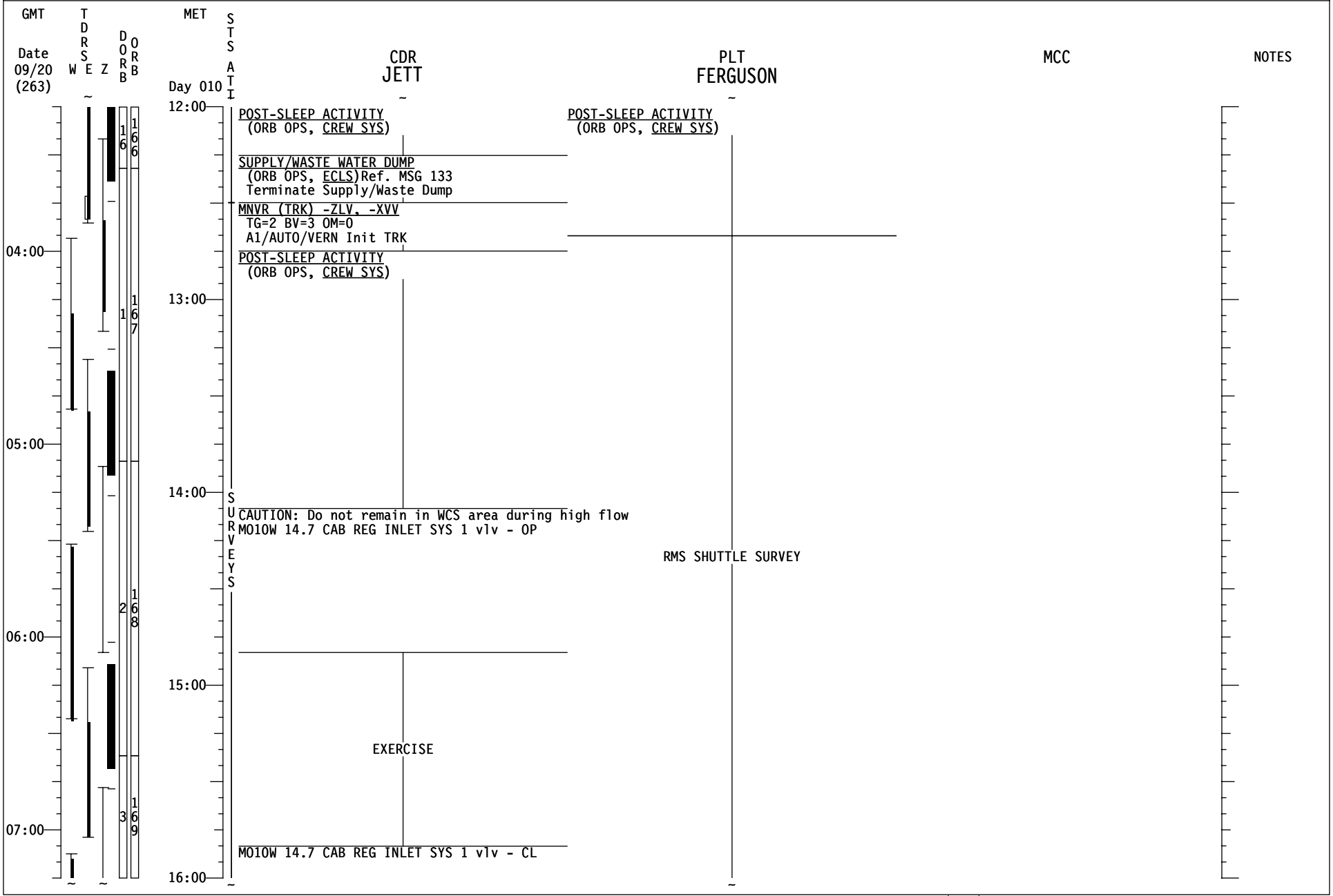
STS-115 (FD12)


GMT
Date
09/19
(262)
TDRS W E Z
DOB
ORB
MET
Day 010
STS ATI
CDR
JETT
PLT
FERGUSON
MCC
NOTES
08:00
09:00
10:00
11:00
12:00
00:00
01:00
02:00
03:00
14
15
16
164
165
166
-ZLV
-XVV
BIAS
-ZLV
-YVV
SLEEP
SLEEP
FLIGHT SLEEP LOG (ORB OPS,SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
FLIGHT SLEEP LOG (ORB OPS,SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)Ref. MSG 133
Initiate Supply/Waste Dump
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
FD12 EZ ACTIVITIES:
L17 Check MCIU Filter Screen
HARD Reboot PGSCs (Not KFX)

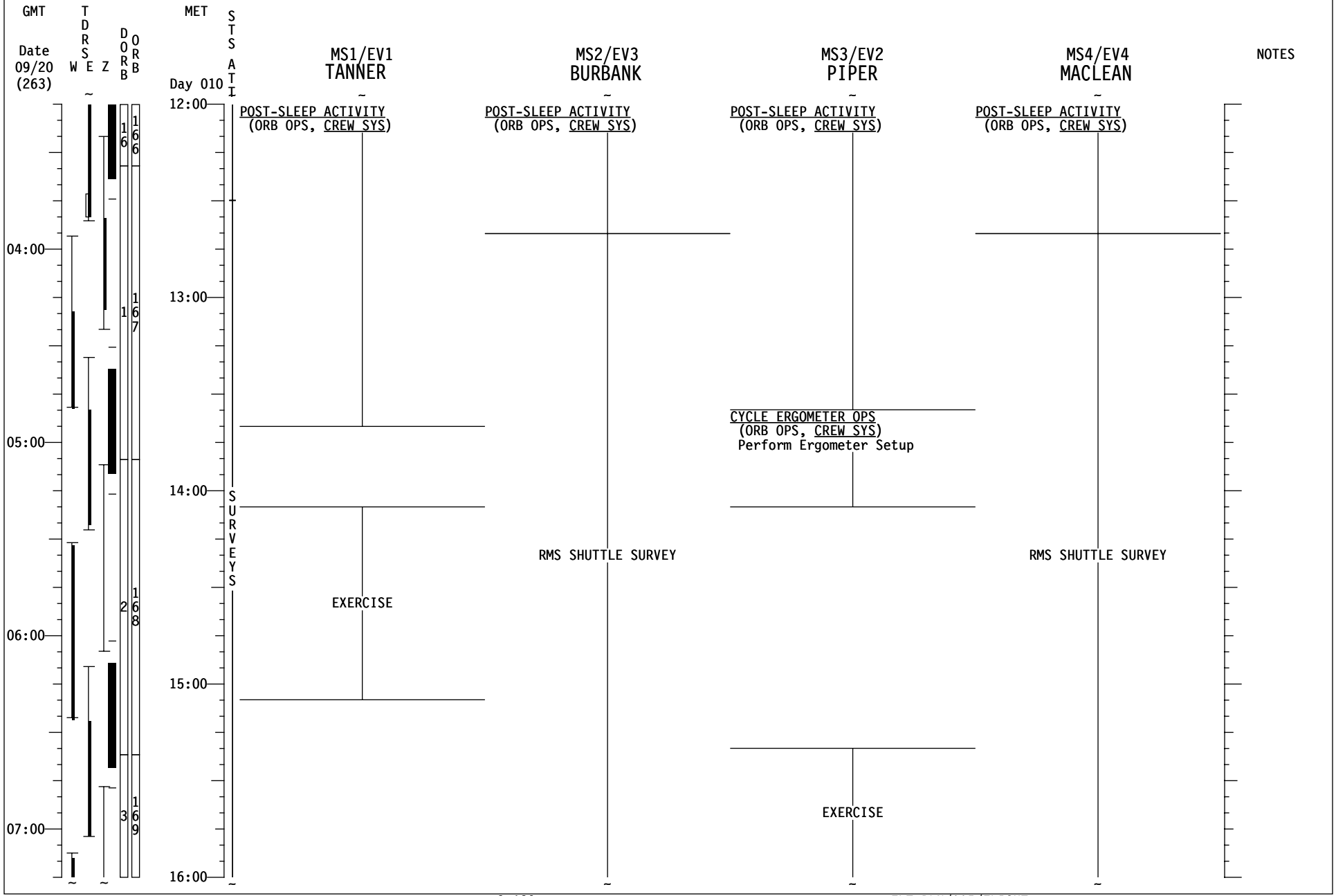
STS-115 (FD12)


GMT
Date
09/19
(262)
TDRS W E Z
DOB 14 15 16
ORB 164 165 166
MET
Day 010
STS ATI
08:00
09:00
10:00
11:00
12:00
00:00
01:00
02:00
03:00
-ZLV -XVV
BIAS -ZLV -YVV
MS1/EV1
TANNER
MS2/EV3
BURBANK
MS3/EV2
PIPER
MS4/EV4
MACLEAN
NOTES
SLEEP
SLEEP
SLEEP
SLEEP
SALIVA COLLECTION (ORB OPS,SDBI)
FLIGHT SLEEP LOG (ORB OPS,SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
FLIGHT SLEEP LOG (ORB OPS,SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
SALIVA COLLECTION (ORB OPS,SDBI)
FLIGHT SLEEP LOG (ORB OPS,SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
SALIVA COLLECTION (ORB OPS,SDBI)
FLIGHT SLEEP LOG (ORB OPS,SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

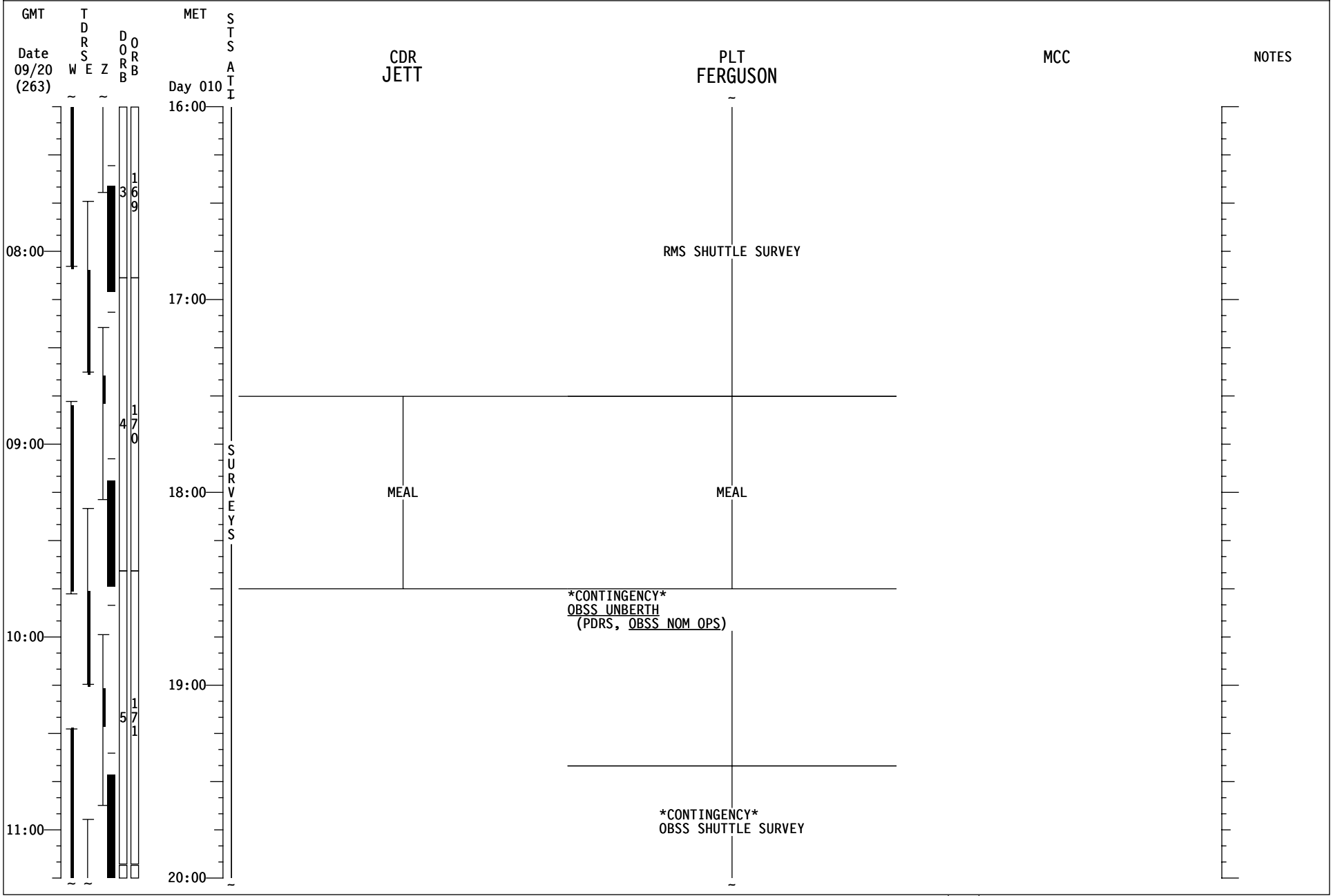
STS-115 (FD12)


GMT
Date
09/20
(263)
TDRS W E Z
DOB
ORB
MET
Day 010
STS ATI
CDR
JETT
PLT
FERGUSON
MCC
NOTES
12:00
04:00
05:00
06:00
07:00
13:00
14:00
15:00
16:00
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)Ref. MSG 133
Terminate Supply/Waste Dump
MNVR (TRK) -ZLV, -XVV
TG=2 BV=3 OM=0
A1/AUTO/VERN Init TRK
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
CAUTION: Do not remain in WCS area during high flow
MO10W 14.7 CAB REG INLET SYS 1 vlv - OP
RMS SHUTTLE SURVEY
EXERCISE
MO10W 14.7 CAB REG INLET SYS 1 vlv - CL
SURVEYS
166
167
168
169

STS-115 (FD12)

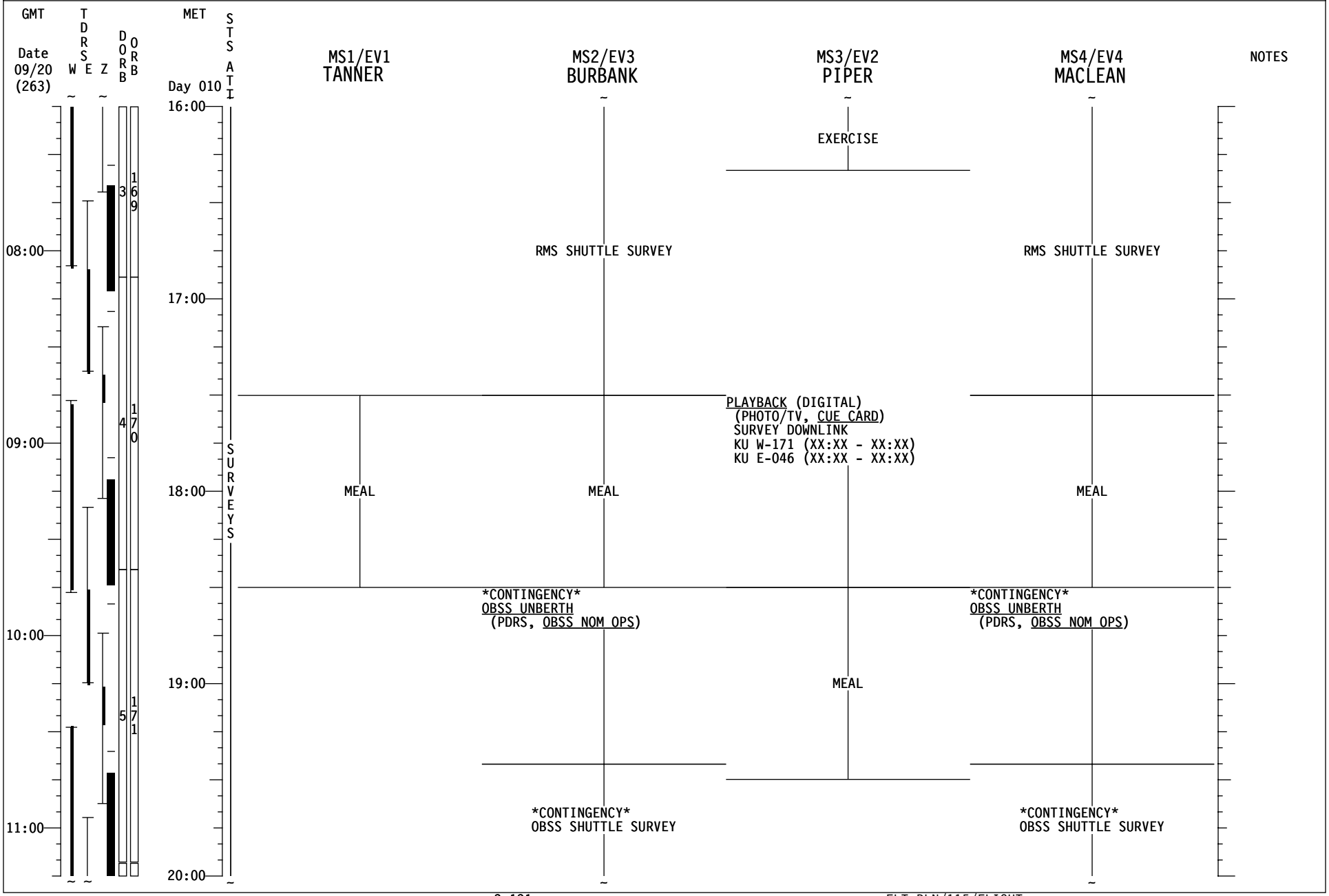

GMT
Date
09/20
(263)
TDRS W
TDRS E
Z
DOB
ORB
MET
Day 010
STS ATI
SURVEYS
MS1/EV1
TANNER
MS2/EV3
BURBANK
MS3/EV2
PIPER
MS4/EV4
MACLEAN
NOTES
12:00
13:00
14:00
15:00
16:00
04:00
05:00
06:00
07:00
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
EXERCISE
RMS SHUTTLE SURVEY
CYCLE ERGOMETER OPS
(ORB OPS, CREW SYS)
Perform Ergometer Setup
1
2
3
166
167
168
169

STS-115 (FD12)


GMT
Date
09/20
(263)
TDRS W
TDRS E
Z
DOB
ORB
MET
Day 010
STS ATI
CDR
JETT
PLT
FERGUSON
MCC
NOTES
16:00
17:00
18:00
19:00
20:00
08:00
09:00
10:00
11:00
3
4
5
169
170
171
SURVEYS
RMS SHUTTLE SURVEY
MEAL
MEAL
CONTINGENCY
OBSS UNBERTH
(PDRS, OBSS NOM OPS)
CONTINGENCY
OBSS SHUTTLE SURVEY

REPLANNED

STS-115 (FD12)



STS-115 (FD12)

GMT Date 09/20 (263) | TDRS W E Z | DORB | ORB | MET Day 010 | STS ATT

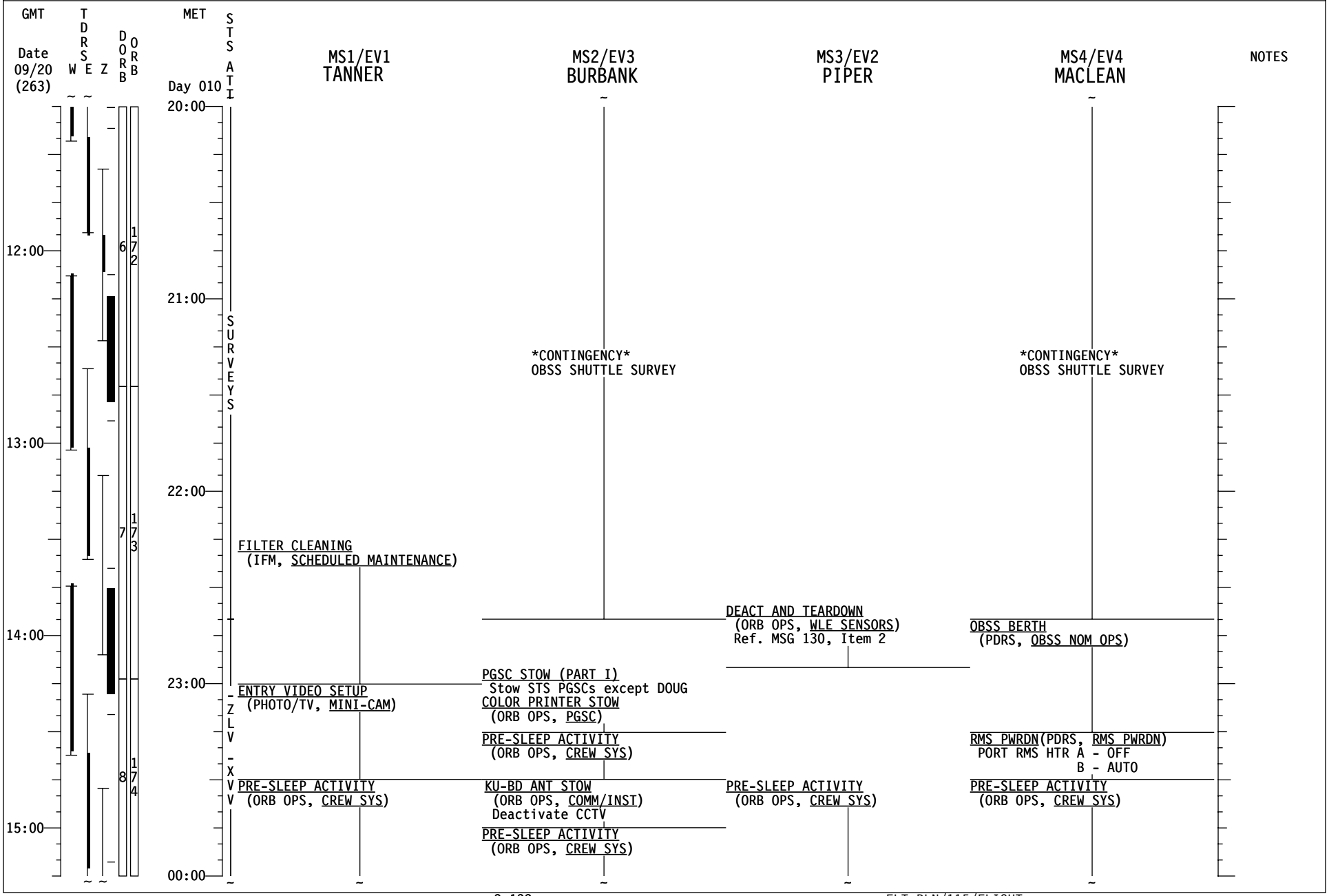
Time marks: GMT 12:00, 13:00, 14:00, 15:00; MET 20:00, 21:00, 22:00, 23:00, 00:00

DORB: 6, 7, 8 — ORB: 172, 173, 174

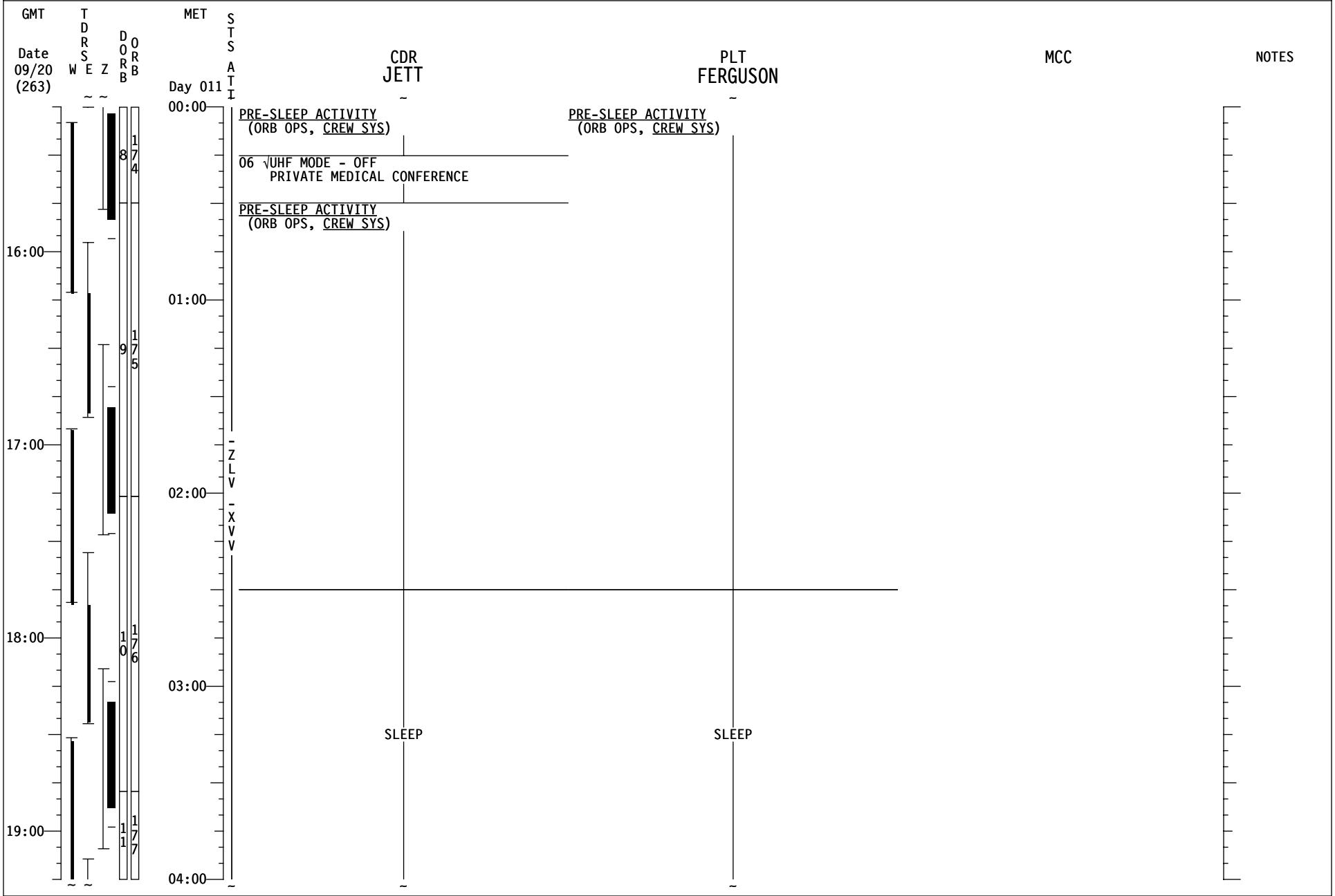
STS ATT: SURVEYS; -ZLV -XVV

MET	CDR JETT	PLT FERGUSON	MCC	NOTES
21:00–23:00		*CONTINGENCY* OBSS SHUTTLE SURVEY		
~21:30	SUPPLY WATER DUMP USING FES (ORB OPS, ECLS)Ref. MSG 133 Step 1, Dump Init, Use FES PRI A			
~22:40		*CONTINGENCY* OBSS BERTH (PDRS, OBSS NOM OPS)		
~23:30	WCS COMPACTOR OPS (DUAL-VANE) (CUE CARD)	RMS PWRDN(PDRS, RMS PWRDN) PORT RMS HTR A - OFF B - AUTO		
	ENTRY COOLING CONFIG [A]		A R12 √VPU PWR - OFF (LED-off) Minimize use of P/TV equipment Dim cabin lighting to 25% L1 CAB TEMP Sel - 10 O'Clock	
	On MCC Call: SUPPLY WATER DUMP USING FES (ORB OPS, ECLS) Step 2, Dump Term, FES PRI A req'd			
	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		

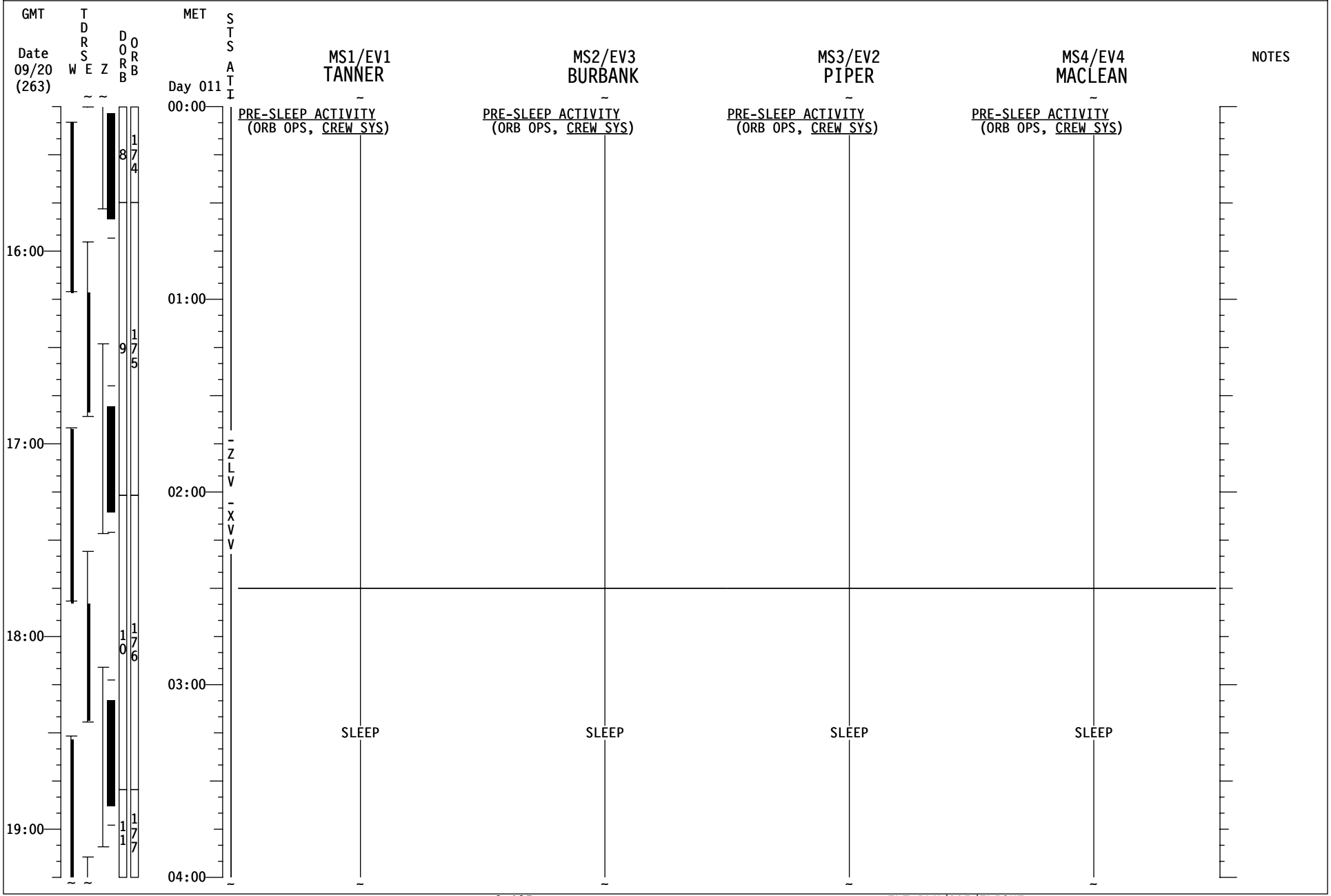
STS-115 (FD12)


GMT
Date
09/20
(263)
TDRS W E Z
DOB
ORB
MET
Day 010
STS ATI
MS1/EV1
TANNER
MS2/EV3
BURBANK
MS3/EV2
PIPER
MS4/EV4
MACLEAN
NOTES
20:00
21:00
22:00
23:00
00:00
12:00
13:00
14:00
15:00
SURVEYS
-ZLV-XVV
6
7
8
172
173
174
CONTINGENCY
OBSS SHUTTLE SURVEY
CONTINGENCY
OBSS SHUTTLE SURVEY
FILTER CLEANING
(IFM, SCHEDULED MAINTENANCE)
ENTRY VIDEO SETUP
(PHOTO/TV, MINI-CAM)
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
DEACT AND TEARDOWN
(ORB OPS, WLE SENSORS)
Ref. MSG 130, Item 2
PGSC STOW (PART I)
Stow STS PGSCs except DOUG
COLOR PRINTER STOW
(ORB OPS, PGSC)
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
KU-BD ANT STOW
(ORB OPS, COMM/INST)
Deactivate CCTV
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
OBSS BERTH
(PDRS, OBSS NOM OPS)
RMS PWRDN(PDRS, RMS PWRDN)
PORT RMS HTR A - OFF
B - AUTO
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

STS-115 (FD12)


GMT
Date
09/20
(263)
TDRS W E Z
DOB
ORB
MET
Day 011
STS ATI
CDR
JETT
PLT
FERGUSON
MCC
NOTES
00:00
16:00
17:00
18:00
19:00
01:00
02:00
03:00
04:00
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
06 √UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
-ZLV
-XVV
SLEEP
SLEEP
8
9
10
11
174
175
176
177

STS-115 (FD12)


GMT
Date
09/20
(263)
TDRS W
TDRS E
Z
DOB
ORB
MET
Day 011
STS ATI
MS1/EV1
TANNER
MS2/EV3
BURBANK
MS3/EV2
PIPER
MS4/EV4
MACLEAN
NOTES
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
SLEEP
-ZLV
-XVV
16:00
17:00
18:00
19:00
00:00
01:00
02:00
03:00
04:00
8
9
10
11
174
175
176
177

MSG 131A - FD12 MISSION SUMMARY

Good morning Atlantis!

We hope that you had a good night's sleep and that you are ready for the extra activities today!

Consumables status above 12+2 (2-2-2 deorbit opportunities) is as follows:

Consumable	Margin	Notes
O2	214 lb	• About 0 days 22 hours • Assumes Group C on wave-offs • If we perform Group B powerdowns on wave-off days the margin is 0 days 20 hours
H2	36 lb	• About 1 day 6 hours • Assumes Group C on wave-offs • If we perform Group B powerdowns on wave-off days the margin is 1 days 4 hours
N2	59 lb	• 10 days
LiOH	0 cans	
FWD RCS Aft RCS OMS	800 lb 700 lb 900 lb	• 5 days (aft propellant limited)

YOUR CURRENT ORBIT IS: 191 X 179 NM

<u>NOTAMS:</u>

EDWARDS (EDW) – 15/33 ELS ONLY – 18L CLOSED
WHITE SANDS (NOR) – RED
AMBERLY (AMB) - CLOSED
ANDERSEN (GUA) - 06L/24R CLOSED, ALTERNATE 06R/24L
ANDERSON BACKUP (UNZ CH 100) VORTAC FREQUENCY CHANGED TO CH 105
ESENBOGA (ESN) 03R/21L - CLOSED
HALIFAX (YHZ) - CLOSED, ALTERNATE GREENWOOD (YZX)
ISTRES (FMI) - RUNWAY 33 DISTANCE MARKERS @ 300, 600, 900M
LAJES (LAJ) – CLOSED DUE TO HURRICANE EVACUATION UNTIL 20 SEPT 1200Z.
LAJES (LAJ) RWY 33 EXTREME CAUTION DUE TO LOOSE ASPHALT 210 AND 400 FT FROM THRESHOLD
LAJES (LAJ CH 45) OUT OF SERVICE
MORON (MRN CH 100) OUT OF SERVICE 1300-1900Z DAILY UNTIL 23 SEPT
ORMOND BEACH (OMN CH 73) AZIMUTH OUT OF SERVICE
OTIS (PVD CH 103) SECONDARY TACAN OUT OF SERVICE
PEASE (PSM) USABLE, BUT CORROSIVE RUBBER REMOVAL CHEMICAL ON RUNWAY
RIO GALLEGOS (AWG) - NOT APPROVED
TINDAL (PTN) 14/32 - CLOSED
SALISBURY (SBY CH 49) OUT OF SERVICE (PRIME TACAN FOR WALLOPS)
WAKE ISLAND (WAK) - CLOSED
WAKE ISLAND (AWK CH 82) OUT OF SERVICE
WILMINGTON (ILM) - CLOSED

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB 172 – 10/20:46 (FEW250, 230@12P18)
EDW22 ORB 188 – 11/21:09 (FEW250, 240@05P08)

OMS TANK FAIL CAPABILITY:

L OMS FAILS: NO
R OMS FAILS: NO

LEAKING OMS PRPLT BURN:

L OMS LEAK: ALWAYS BURN RETRO
R OMS LEAK: ALWAYS BURN RETRO

OMS QUANTITIES(%)

L OMS	OX = 33.5	R OMS	OX = 33.0
	FU = 34.5		FU = 33.7

SUBTRACT I'CNCT COUNTER FOR CURRENT OMS QUANTITIES

DELTA V AVAILABLE:

OMS	337 FPS
ARCS (TOTAL ABOVE QTY1)	28 FPS
TOTAL IN THE AFT	365 FPS
ARCS (TOTAL ABOVE QTY2)	62 FPS
FRCS (ABOVE QTY 1)	43 FPS
AFT QTY 1	85 %
AFT QTY 2	47 %

THERE ARE NO FAILURE/IMPACT/WORK AROUNDS FOR TODAY.

Today there will be a simo dump and a supply water dump using the FES.

Simo Dump Details

Use the following details to perform the simo supply/waste water dump:

Perform SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) p 5-2, steps A, and C through J.

DELETE: Step H. 7. SPLY H2O DUMP ISOL VLV - OP (tb-OP).
This valve will remain closed post dump due to the leaky Supply Water Dump Valve.

Dump supply water for 50 minutes.

The waste tank will be dumped to 5%. Waste dump valve open duration will be approximately 28 minutes.

MCC will TMBU all limits.

Supply Water Dump using FES Details

Dump duration will be approximately 2 hours. The following details will be required for the dump:

SUPPLY WATER DUMP USING FES (ORB OPS, ECLS) p 5-9 step 1, DUMP INITIATION, using FES Pri A.

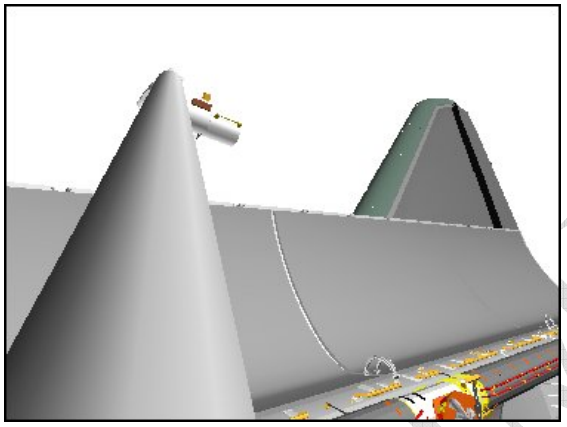
Terminate dump on MCC call.

SUPPLY WATER DUMP USING FES (ORB OPS, ECLS) p 5-9 step 2, DUMP TERMINATION, FES PRI A is req'd.

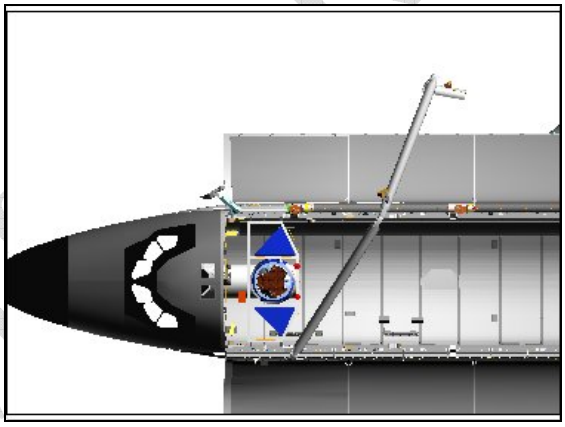
Mnvr to STBD WING posn:

	SY	SP	EP	WP	WY	WR
Elbow Vantage	-20.9	+50.0	-79.8	-2.6	+6.6	+0.3
1: EP +			-60.0			
2: WP –				-114.0		
3: WY +					+110.0	
4: WR +						+119.0
5: SY –	-60.0					
6: SP –		+3.0				
STBD WING	-60.0	+3.0	-60.0	-114.0	+110.0	+119.0

X	Y	Z	PITCH	YAW	ROLL	PL ID
-929	+275	-344	0	11	307	0



RMS Elbow (15,-25)



Overhead

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

NOTE

Minimum clearance during the following maneuver is 23". Monitor clearance with RMS elbow. Note, stop the survey prior to switching to RMS elbow camera.

Drive WY (-) to -38.0 to survey the STBD WING.

L10(VTR) STOP pb – push (no red ●)

3. MANEUVER TO STBD WING INSPECTION 2

MON 1	D (A)
MON 2	RMS ELBOW (B)

NOTE

In line 3 and 4 minimum clearance between the RMS EE and the Stbd door is 32” and can be monitored with CCTV D and the RMS elbow camera. In line 6 of the table clearance to the KU antenna stayout zone is 27”.

At the Stbd wing inspect 2 position, the RMS Upper boom to APDS clearance is 14” and can be viewed with CCTV A. RMS EE to Stbd door is 55” and can be viewed with RMS Elbow. RMS lower boom to Stbd radiator clearance is 46” and can be viewed with RMS Elbow.

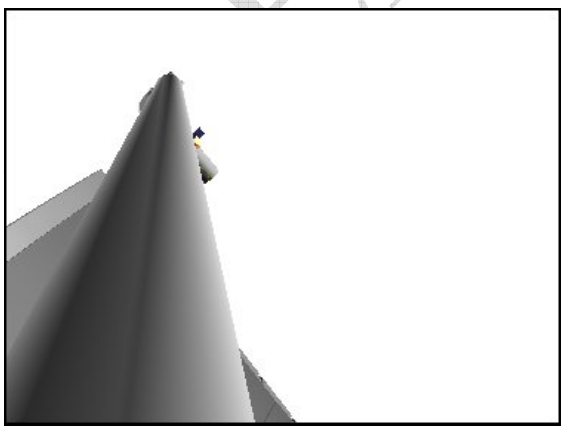
Expect singularity for WY in line 3 of the following table.

RHC RATE – as reqd (VERN within 10 ft)

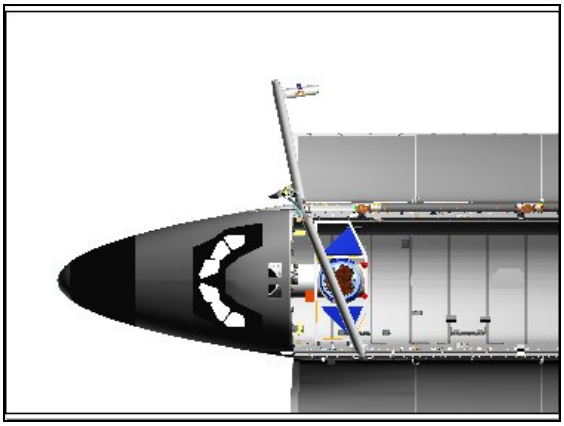
Mnvr to STBD WING 2 posn:

	SY	SP	EP	WP	WY	WR
STBD WING	-60.0	+3.0	-60.0	-114.0	-38.0	+119.0
1: SP +		+7.0				
2: WP +				-90.0		
3: WY +					+78.0	
4: WP –				-105.0		
5: WR +						+180.0
6: SY –	-104.0					
7: EP –			-74.0			
STBD WING 2	-104.0	+7.0	-74.0	-105.0	+78.0	+180.0

X	Y	Z	PITCH	YAW	ROLL	PL ID
-652	+288	-338	359	358	8	0



RMS Elbow (15,-25)



Overhead

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

Drive WY (-) to +55.0 to survey the STBD WING.

L10(VTR) STOP pb – push (no red ●)

4. INHIBIT NOSE JETS

O14:F, O15:F, O16:F √Pri RJDA LOGIC, DRIVER (eight) – ON
√Pri RJDF LOGIC, DRIVER (eight) – OFF

A6U DAP: A6/AUTO/ALT (Tail Only)

NOTE
Expect DAP RECONFIG message after
FRCS manifold 5 status overridden to close

GNC 23 RCS
RCS FWD – ITEM 1 EXEC (*)
MANF VLVS OVRD 1 – ITEM 40 EXEC (CL)
2 – ITEM 41 EXEC (CL)
3 – ITEM 42 EXEC (CL)
4 – ITEM 43 EXEC (CL)
5 – ITEM 44 EXEC (CL)

5. MANEUVER TO STBD NOSE

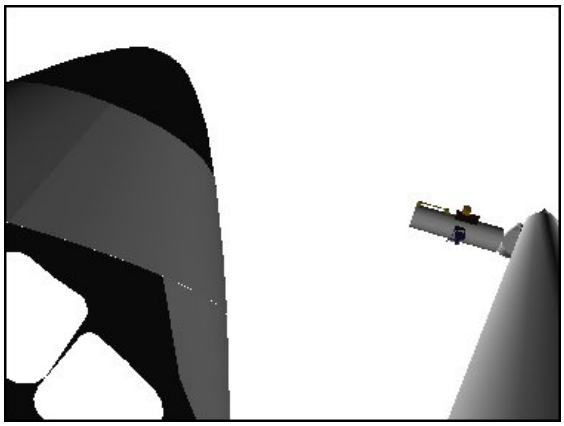
MON 1	D (A)
MON 2	RMS ELBOW (B)

RHC RATE – as reqd (VERN within 10 ft)

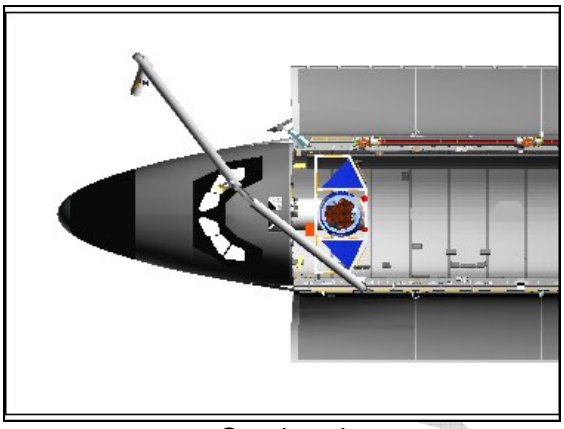
Mnvr to STBD NOSE posn:

	SY	SP	EP	WP	WY	WR
STBD WING 2	-104.0	+7.0	-74.0	-105.0	+55.0	+180.0
1: SP +		+18.0				
2: EP +			-57.0			
3: WP –				-113.0		
4: WY –					-59.0	
5: WR +						+229.0
6: SY –	-135.0					
STBD NOSE	-135.0	+18.0	-57.0	-113.0	-59.0	+229.0

X	Y	Z	PITCH	YAW	ROLL	PL ID
-349	+180	-419	242	53	122	0



RMS Elbow (-35,-5)



Overhead

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

Drive WY (+) to +9.0 to survey the STBD NOSE.

A7U PORT RMS CAMERA – ELBOW
Survey the Top of the Nose Cap with the RMS Elbow camera.
Set Pan/Tilt = (-60, 10)

L10(VTR) STOP pb – push (no red ●)

A7U PORT RMS CAMERA – WRIST

6. MANEUVER TO PORT NOSE

MON 1	C (A)
MON 2	RMS ELBOW (B)

RHC RATE – as reqd (VERN within 10 ft)

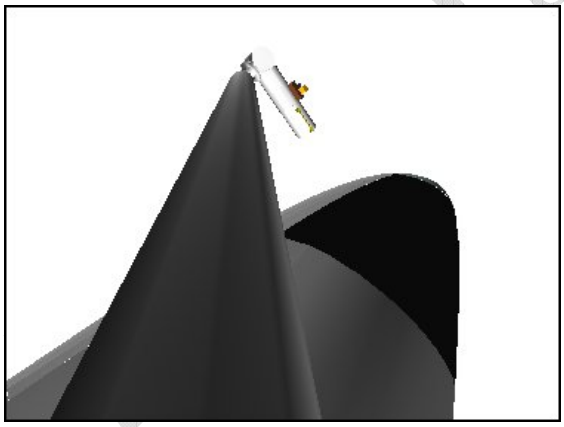
NOTE

Expect singularity for WY in line 5 of the following table.

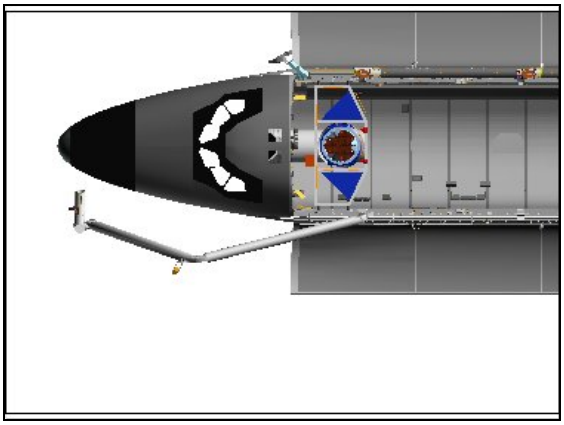
Mnvr to PORT NOSE posn:

	SY	SP	EP	WP	WY	WR
STBD NOSE	-135.0	+18.0	-57.0	-113.0	+9.0	+229.0
1: SP +		+50.0				
2: SY +	+170.0					
3: EP –			-72.0			
4: WP +				+65.0		
5: WY +					+102.0	
6: WR –						-7.0
7: SP –		+15.0				
PORT NOSE	+170.0	+15.0	-72.0	+65.0	+102.0	-7.0

X	Y	Z	PITCH	YAW	ROLL	PL ID
-269	-67	-279	84	288	66	0



RMS Elbow (5,-25)



Overhead

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

Record view for 1 minute

L10(VTR) STOP pb – push (no red ●)

7. MANEUVER TO PORT WING

MON 1	B
MON 2	ELBOW

NOTE

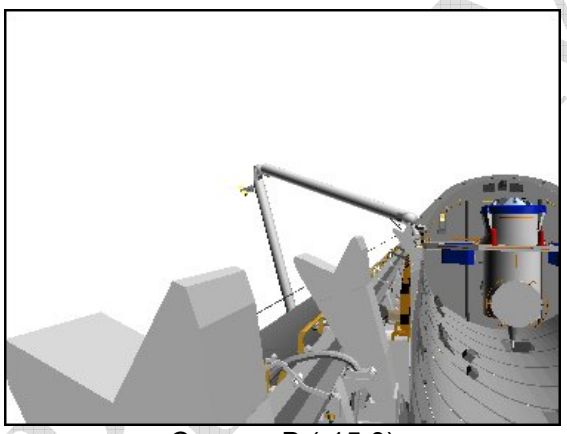
Expect singularity for WY until line 4 of the following table.

RHC RATE – as reqd (VERN within 10 ft)

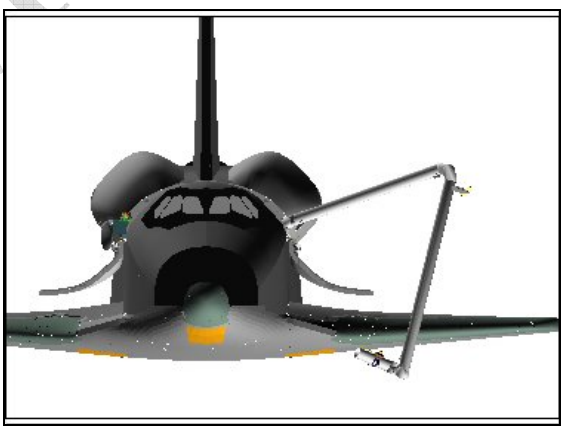
Mnvr to PORT WING posn:

	SY	SP	EP	WP	WY	WR
PORT NOSE	+170.0	+15.0	-72.0	+65.0	+102.0	-7.0
1: SP +		+34.0				
2: SY –	+124.0					
3: WP –				-104.0		
4: WY –					+58.0	
5: WR +						+163.0
6: EP –			-117.0			
PORT WING	+124.0	+34.0	-117.0	-104.0	+58.0	+163.0

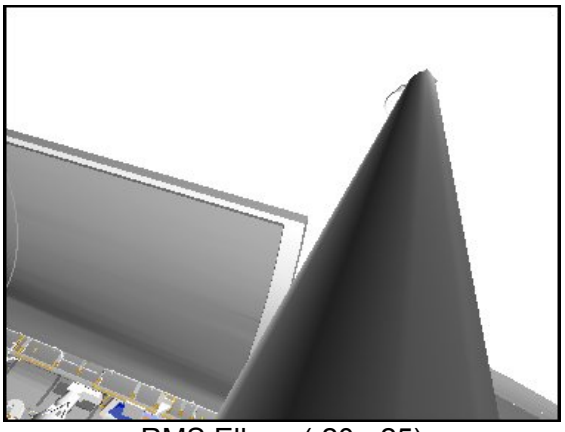
X	Y	Z	PITCH	YAW	ROLL	PL ID
-526	-198	-271	138	303	92	0



Camera B (-15,0)



Bird's Eye



RMS Elbow (-20, -25)

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

Drive WY (-) to -67.0 to survey the PORT WING.

L10(VTR) STOP pb – push (no red ●)

8. ENABLE NOSE JETS

GNC 23 RCS
RCS FWD – ITEM 1 EXEC (*)
MANF VLVS OVRD 1 – ITEM 40 EXEC (OP)
2 – ITEM 41 EXEC (OP)
3 – ITEM 42 EXEC (OP)
4 – ITEM 43 EXEC (OP)
5 – ITEM 44 EXEC (OP)

A6U DAP: as reqd

O14:F, Pri RJDA LOGIC,DRIVER (eight) – OFF
O15:F,
O16:F RJDA 1A L2/R2 DRIVER – ON

9. MANEUVER TO PORT WING 2

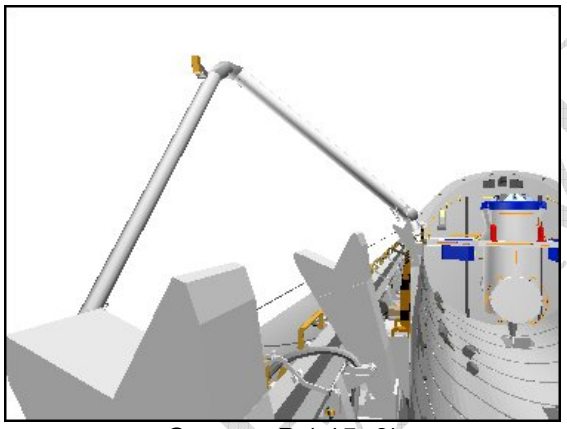
MON 1	B (A)
MON 2	RMS ELBOW

RHC RATE – as reqd (VERN within 10 ft)

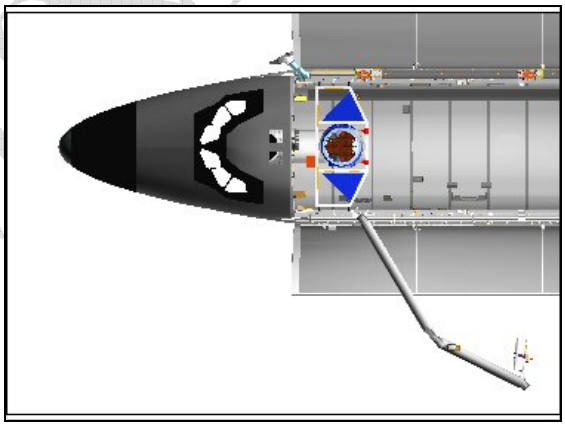
Mnvr to PORT WING 2 posn:

	SY	SP	EP	WP	WY	WR
PORT WING	+124.0	+34.0	-117.0	-104.0	-67.0	+163.0
1: SP +		+53.0				
2: EP +			-100.0			
3: WP +				-88.0		
4: WY +					-39.0	
5: WR –						-39.0
6: SY –	+48.0					
PORT WING 2	+48.0	+53.0	-100.0	-88.0	-39.0	-39.0

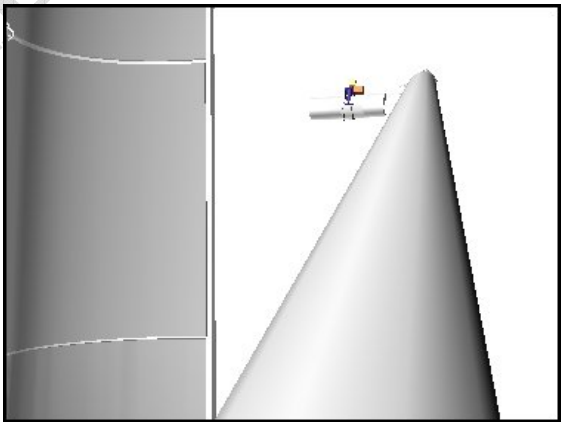
X	Y	Z	PITCH	YAW	ROLL	PL ID
-911	-285	-334	293	285	25	0



Camera B (-15, 0)



Bird's Eye



RMS Elbow (-20, -25)

L10(VTR) REC pb – push, hold

PLAY pb – push, simo (red ●)

Perform the following maneuver to survey the PORT WING:

	SY	SP	EP	WP	WY	WR
PORT WING 2 Start	+48.0	+53.0	-100.0	-88.0	-39.0	-39.0
1: WY +					-5.0	
2: WP –				-110.0		
3: WY +					+30.0	
PORT WING 2 End	+48.0	+53.0	-100.0	-110.0	+30.0	-39.0

L10(VTR) STOP pb – push (no red ●)

10. MANEUVER TO BELLY SCAN

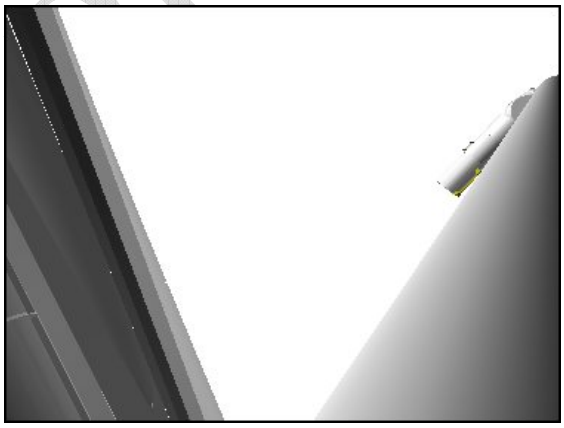
MON 1	A(B)
MON 2	RMS ELBOW (WRIST)

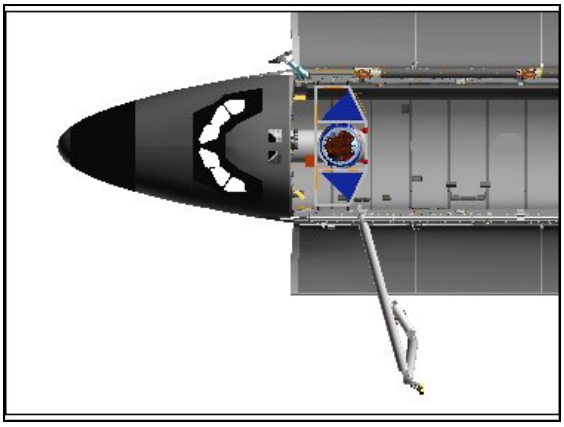
RHC RATE – as reqd (VERN within 10 ft)

Mnvr to BELLY SCAN posn:

	SY	SP	EP	WP	WY	WR
PORT WING 2	+48.0	+53.0	-100.0	-110.0	+30.0	-39.0
1: SY +	+75.0					
2: EP +			-89.0			
3: WP –				-113.0		
4: WY –					+13.0	
5: WR +						+131.0
6: SP –		+6.0				
BELLY SCAN	+75.0	+6.0	-89.0	-113.0	+13.0	+131.0

X	Y	Z	PITCH	YAW	ROLL	PL ID
-724	-233	-151	131	315	57	0





RMS Elbow (-35, -25) Overhead

NOTE

Minimum clearance during the following maneuver is 36" between the RMS lower boom and the port door. Monitor clearance with RMS elbow. Note, stop the survey prior to switching to RMS elbow camera.

Expect singularity for WY in line 1 of the following table.

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

Perform the following maneuver to survey the BELLY:

	SY	SP	EP	WP	WY	WR
BELLY SCAN Start	+75.0	+6.0	-89.0	-113.0	+13.0	+131.0
1: WY –					-95.0	
2: SY –	+47.0					
3: EP –			-102.0			
BELLY SCAN End	+47.0	+6.0	-102.0	-113.0	-95.0	+131.0

11. MANEUVER TO PRE-CRADLE

MON 1	A (RMS Elbow)
MON 2	B

RHC RATE – as reqd (VERN within 10 ft)

Mnvr to PRE-CRADLE posn:

	SY	SP	EP	WP	WY	WR
BELLY SCAN	+47.0	+6.0	-102.0	-113.0	-95.0	+131.0
1: EP +			-25.0			
2: WP +				+5.0		
3: WY +					0.0	
4: WR –						0.0
5: SP +		+25.0				
6: SY –	0.0					
PRE-CRADLE	0.0	+25.0	-25.0	+5.0	0.0	0.0

X	Y	Z	PITCH	YAW	ROLL	PL ID
-1261	-146	-551	5	2	0	0

BRAKES – ON (tb-ON)

L10(VTR) STOP pb – push (no red ●)