STS-128 / 17A

FD 04 Execute Package

MSG	Page(s)	Title
-	-	FD04 Summary Timeline
019A	1 - 11	FD04 Flight Plan Revision
020	12 - 13	FD04 Mission Summary
021	14 - 15	FD04 Transfer Message
017	16	FD04 EVA Deltas
023	17 - 26	MPLM Install: Node 2 NADIR CBM Incremental Capture/ABOLT
024A	27	FD04 Crew Choice Downlink
025A	28 - 29	STS-128 H2O Ops CC
022	---	FD04 PAO Event Summary (JEDI only)

Approved by FAO:
Tobin Melroy

Last Updated: Aug 31 2009 4:04 PM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v3.0*

08/31/09 10:40:01 **REPLANNED**

GMT 08/31/09 (243) 16 17 18 19 20 21 22 23 09/01 01 02 03 04
MET Day 002 12 13 14 15 16 17 18 19 20 21 22 23 003/00

FD04

STS 128

CDR STURCKOW	SLEEP; LOG; POST SLEEP; PWR FILL - MDS; POST SLEEP; IMU; STS O2 P/B CONFIG; CFWCL-I #1; CFWCL-I #2; CFWCL-I #3; CWC-I XFER (3); MEAL; EXERCISE; MDDK XFER
PLT FORD	SLEEP; POST SLEEP; MPLM INSTL GRPL; MPLM UNBERTH INSTALL; MPLM INSTL; LIMP; BRAKE; MPLM UNGRPL; MEAL; SSRMS OPS REVIEW; EXERCISE
MS1 FORRESTER	SLEEP; LOG; POST SLEEP; APCU#; POST SLEEP; APCU*; POST SLEEP; PRLA; MCIU*; GLACR#; ISS LOCKER INSTALL; MDDK XFER; MEAL; EXERCISE; EVA TOOL CONFIG; MDDK XFER
MS2 HERNANDEZ	SLEEP; SLVA; LOG; POST SLEEP; XFER; UPDAT; MDDK XFER; PST DK EVA XFR RCNFG; MEAL; MDDK XFER; PAO EVENT; EXERCISE; XFER#
MS3 OLIVAS	SLEEP; POST SLEEP; P/TV06; PST DK EVA XFR RCNFG; MEAL; REBA*; REBA C/O; EVA TOOL CONFIG; E_LK PREP; EXERCISE
MS4 FUGLESANG	SLEEP; LOG; POST SLEEP; EXERCISE; VERIF; 1ST STG CAP; CBM 2ND STG & ABOLTS; MEAL; MPLM VEST PRESS; MPLM VEST INGRS CNFG; MPLM ACT PART 1

DAY/NIGHT

ORBIT: 41 42 43 44 45 46 47 48

TDRS W E Z

ISS TDRS AVAIL

ORB ATT: BIAS -XLV -ZVV

NOTES: #ACT *DEACT #STATUS CHECK *FILTER CK *INSTALL #MIDDECK

NO EXERCISE (MPLM INSTL/BOLT LOAD)

08/31/09 10:40:01 **REPLANNED**

GMT 09/01/09 (244) 04 05 06 07 08 09 10 11 12 13 14 15 16
003/00 01 02 03 04 05 06 07 08 09 10 11 12
MET Day 003

FD04

STS 128

CDR STURCKOW	MDDK XFER	NLP TERM	EVA PROC RVW	XFER TAGUP	XFER BRIEF	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP							
PLT FORD	EXERCISE	MDDK XFER	EVA PROC RVW	PRE SLEEP	SLEEP											
MS1 FORRESTER	MDDK XFER	EVA PROC RVW	GLACR#	PRE SLEEP	SLEEP											
MS2 HERNANDEZ	XFER#	EVA PROC RVW	PRE SLEEP	MASK PRE BREATHE	PRE SLEEP	SLEEP										
MS3 OLIVAS	EXERCISE	EVA PROC RVW	PRE SLEEP	MASK PREBREATHE	10.2 DPRS	PRE SLEEP	SLEEP									
MS4 FUGLESANG	MPLM ACT PART 1	IMV*	VEST	COLOSE	MPLM	INGR	PRE SLEEP	SLEEP								

ISS A/L Campout at 10.2 psi

DAY/NIGHT
ORBIT 49 50 51 52 53 54 55 56
TDRS W E Z
ISS TDRS AVAIL
ORB ATT BIAS -XLV -ZVV
NOTES #MIDDECK #STATUS CHECK

THIS PAGE INTENTIONALLY BLANK

MSG 019A - FD04 FLIGHT PLAN REVISION

MSG INDEX

MSG NO.	TITLE
017	FD04 EVA Deltas
019	FD04 Flight Plan Revision
020	FD04 Mission Summary
021	FD04 Transfer Message
022	FD04 PAO Event Summary
023	MPLM Install: Node 2 Nadir CBM Incremental Capture/ABOLT
024	FD04 Crew Choice Downlink
025	STS-128 H2O Ops CC

1. Replace pages 3-32 through 3-41

END OF PAGE 1 OF 11, MSG 019A

STS-128/17A FD04

GMT Date 08/31 (243) | W | TDRSE | Z | D/N | ORB | MET Day 002 | ATT | CDR STURCKOW | PLT FORD | MS1 FORRESTER | NOTES

16:00 12:00 17:00 13:00 18:00 14:00 19:00 15:00 20:00 16:00

41 42 43

BIAS-XLV-ZVV

SLEEP

SLEEP

SLEEP

FD04 EZ ACTIVITIES:
√OCAC FILTER
√MDDK DUCT SCREEN
TEPC (STATUS CHECK)
(ORB OPS, CREW SYS)
HARD REBOOT ALL PGSCs EXCEPT:
STS-1(OCA ROUTER), STS-6(WLES)
& STS-5(RPOP2)

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

√HUM SEP FOR H2O ACCUMULATION

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

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

UPDATE TFL 199

ON MCC GO: A15 APCU 1 OUTPUT - ON
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

MPLM PRESSURE CHECK

ON MCC GO: A15 APCU 1 OUTPUT - OFF
POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

UPDATE TFL 184

ROBO: 1.210 BERTHED MPLM GRAPPLE

2

STS-128/17A FD04

GMT Date 08/31 (243) | E | T D R S Z | W | D/N | O R B | MET Day 002 | A T T

MS2 HERNANDEZ | MS3 OLIVAS | MS4 FUGLESANG | NOTES

16:00 / 12:00 — 17:00 / 13:00 — 18:00 / 14:00 — 19:00 / 15:00 — 20:00 / 16:00

ORB: 41, 42, 43

ATT: BIAS -XLV -ZVV

MS2 HERNANDEZ: SLEEP

MS3 OLIVAS: SLEEP

MS4 FUGLESANG: SLEEP

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

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

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

STS-128/17A FD04

GMT Date 08/31 (243) | W | TDRSE | Z | D/N | ORB | MET Day 002 | ATT

20:00 – 21:00 – 22:00 – 23:00 – 00:00

16:00 – 17:00 – 18:00 – 19:00 – 20:00

43 – 44 – 45 – 46

BIAS-XLV-ZVV

CDR STURCKOW

PWR FILL
(ORB OPS, ECLS)
Init PWR Fill 1 (MDS) S/N 1031
Ref. MSG 025
Fill dur ~30 min
Report to MCC when transferred

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

IMU STAR OF OPPTY ALIGN (ORB OPS, GNC)

JOINT OPS: 3.120 PREBREATHE USING SHUTTLE O2 SETUP
Steps 2-6, Ground will perform steps 2.4 and 6.14

CWC-I FILL (ORB OPS,CWC-I FILL) Ref. MSG 025
Fill Init #1

CWC-I FILL (ORB OPS,CWC-I FILL) Ref. MSG 025
Fill Init #2

CWC-I FILL (ORB OPS,CWC-I FILL) Ref. MSG 025
Fill Init #3

CWC-I TRANSFER
Transfer 3 CWC-Is to ISS

PLT FORD

ROBO: 1.210 BERTHED MPLM GRAPPLE

ROBO: 1.220 MPLM UNBERTH TO INSTALL
Steps 1-15

ROBO: 1.220 MPLM UNBERTH TO INSTALL
Steps 16-17
EXERCISE CONSTRAINT

ROBO: 1.220 MPLM UNBERTH TO INSTALL Step 18
EXERCISE CONSTRAINT

ROBO: 1.220 MPLM UNBERTH TO INSTALL Steps 19-20

ROBO: 1.230 MPLM MATED UNGRAPPLE

MS1 FORRESTER

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

ROBO: 1.220 MPLM UNBERTH TO INSTALL
Steps 4-8

L17 Check MCIU filter screen

GLACIER STATUS CHECK (ASSY OPS, P/L)

INSTALLATION OF ISS LOCKERS IN MIDDECK
(ASSY OPS, P/L)
Perform Steps 2-3, 5-12
Ref. Middeck Transfer List:
Items 714, 714.1, 718, 718.1

TRANSFER OPS
Ref. Middeck Transfer List

MEAL

NOTES

NO EXERCISE FROM SSRMS PRE-INSTALL UNTIL BOLT LOADING COMPLETE

4

STS-128/17A FD04

GMT Date 08/31 (243) | E | TDRSZ | W | D/N | ORB | MET Day 002 | ATT

20:00 – 21:00 – 22:00 – 23:00 – 00:00

16:00 – 17:00 – 18:00 – 19:00 – 20:00

43 44 45 46

BIAS - XLV - ZVV

MS2 HERNANDEZ

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

DAILY TRANSFER LIST UPDATE
Ref. Transfer List & MSG 021

TRANSFER OPS
Ref. Middeck Transfer List

POST-DOCKING EVA TRANSFER/RECONFIG
(EVA, AIRLOCK CONFIG)
Ref. Middeck Transfer List:
Items 1, 2, 3 & 28

MS3 OLIVAS

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

P/TV06 ROBOTICS OPERATIONS
(PHOTO/TV, SCENES)
Ops

POST-DOCKING EVA TRANSFER/RECONFIG
(EVA, AIRLOCK CONFIG)
Ref. Middeck Transfer List:
Items 1, 2, 3 & 28

MS4 FUGLESANG

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

EXERCISE

S&M: 1.511 N2 CBM VERIFY PRE-MATE STATUS

MPLM INSTALL: NODE 2 NADIR CBM
INCREMENTAL CAPTURE/ABOLT
Ref. MSG 023 Steps 1-4
EXERCISE CONSTRAINT

MPLM INSTALL: NODE 2 NADIR CBM
INCREMENTAL CAPTURE/ABOLT
Ref. MSG 023 Steps 5-7
EXERCISE CONSTRAINT

MEAL

NOTES

NO EXERCISE FROM SSRMS PRE-INSTALL UNTIL BOLT LOADING COMPLETE

5

STS-128/17A FD04

GMT Date 09/01 (244) | W | TDRSE | Z | D/N | ORB | MET Day 002 | ATT

GMT	MET	CDR STURCKOW	PLT FORD	MS1 FORRESTER	NOTES
00:00	20:00	CWC-I TRANSFER Transfer 3 CWC-Is to ISS	ROBO: 1.230 MPLM MATED UNGRAPPLE		
		MEAL	MEAL	MEAL	
01:00	21:00				
			SSRMS OPS REVIEW	EXERCISE	
02:00	22:00	EXERCISE		EVA 1 TOOL CONFIG (EVA, TIMELINES) Ref. STS-128 Consumables Tracking (Cue Card) Ref. MSG 017	
03:00	23:00	TRANSFER OPS Ref. Middeck Transfer List		TRANSFER OPS Ref. Middeck Transfer List	
			EXERCISE		
04:00	00:00				

46 47 48

BIAS - XLV - ZVV

6

STS-128/17A FD04

GMT Date 09/01 (244) | E | TDRSZ | W | D/N | ORB | MET Day 002 | ATT

00:00 – 01:00 – 02:00 – 03:00 – 04:00

20:00 – 21:00 – 22:00 – 23:00 – 00:00

46 – 47 – 48

BIAS - XLV - ZVV

MS2 HERNANDEZ

MEAL

TRANSFER OPS
Ref. Middeck Transfer List

PUBLIC AFFAIRS EVENT
ISS KU AVAIL (22:25-23:05)
Ref. MSG 022

EXERCISE

TRANSFER OPS
Ref. Middeck Transfer List

MS3 OLIVAS

MEAL

EVA SYSTEMS: 1.307 REBA INSTALLATION
Verify EMU battery and LiOH serial numbers
Ref. STS-128 Consumables Tracking (Cue Card)
Perform for EV1 (Ol) and EV3 (St)

EVA SYSTEMS: 1.403 REBA POWERED HARDWARE CHECKOUT

EVA 1 TOOL CONFIG
(EVA, TIMELINES)
Ref. STS-128 Consumables Tracking (Cue Card)
Ref. MSG 017

EVA SYSTEMS: 1.305 EQUIPMENT LOCK PREP
Steps 1-3 already complete. Step 27,
Use Vacuum Manometer #13.

EXERCISE

MS4 FUGLESANG

MEAL

MPLM: 1.113 N2 TO MPLM VESTIBULE PRESSURIZATION AND LEAK CHECK
Verify CBM bolt loading complete prior to step 5.
Ref. Middeck Transfer List: Item 617

S&M: 1.108 MPLM VESTIBULE-CONFIGURE FOR INGRESS
Steps 1-5

MPLM: 1.103 MPLM ACTIVATION (PART 1)
Perform steps 1,4-7,8 after step 5 of 1.108 MPLM VESTIBULE-CONFIG FOR INGRESS has been completed

NOTES

STS-128/17A FD04

GMT Date 09/01 (244) | W | TDRSE | Z | D/N | ORB | MET Day 003 | ATT

GMT	MET	CDR STURCKOW	PLT FORD	MS1 FORRESTER	NOTES
04:00	00:00	TRANSFER OPS Ref. Middeck Transfer List	EXERCISE	TRANSFER OPS Ref. Middeck Transfer List	
		NLP VACCINE-5 TERMINATION (ASSY OPS, P/L) Terminate GAPs 1-16	TRANSFER OPS Ref. Middeck Transfer List		
05:00	01:00	EVA PROCEDURE REVIEW Ref. EVA 1 BRIEFING CARD (EVA, TIMELINES) Ref. MSG 017	EVA PROCEDURE REVIEW Ref. EVA 1 BRIEFING CARD (EVA, TIMELINES) Ref. MSG 017	EVA PROCEDURE REVIEW Ref. EVA 1 BRIEFING CARD (EVA, TIMELINES) Ref. MSG 017	
06:00	02:00	TRANSFER TAGUP Coordinate with transfer counterparts	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	GLACIER STATUS CHECK (ASSY OPS, P/L) PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
		TRANSFER BRIEF Call down status to MCC			
07:00	03:00	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS) Perform Air Quality Report			
		PRIVATE MEDICAL CONFERENCE L9 PAYLOAD STATION A/G (two) - OFF Perform via A/G2			
08:00	04:00	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			

BIAS-XLV-ZVV

49 50 51

8

STS-128/17A FD04

GMT Date 09/01 (244) | E | TDRSZ | W | D/N | ORB | MET Day 003 | ATT

04:00 05:00 06:00 07:00 08:00

00:00 01:00 02:00 03:00 04:00

49 50 51

BIAS-XLV-ZVV

MS2 HERNANDEZ

TRANSFER OPS
Ref. Middeck Transfer List

EVA PROCEDURE REVIEW
Ref. EVA 1 BRIEFING CARD
(EVA, TIMELINES)
Ref. MSG 017

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT
MASK PREBREATHE

MS3 OLIVAS

EXERCISE

EVA PROCEDURE REVIEW
Ref. EVA 1 BRIEFING CARD
(EVA, TIMELINES)
Ref. MSG 017

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT
MASK PREBREATHE

MS4 FUGLESANG

MPLM: 1.103 MPLM ACTIVATION (PART 1)
Perform steps 1,4-7,8 after step 5 of
1.108 MPLM VESTIBULE-CONFIG FOR INGRESS
has been completed

S&M: 1.108 MPLM VESTIBULE-CONFIGURE
FOR INGRESS
Steps 7-8

S&M: 1.108 MPLM VESTIBULE-CONFIGURE
FOR INGRESS
Steps 9-12

MPLM: 1.104 MPLM INGRESS Steps 1-6
Ref. MPLM Resupply Xfr List:Items 100 & 101
Ref. Middeck Transfer List: Item 610

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

NOTES

6

STS-128/17A FD04

GMT Date 09/01 (244) | W | T D R S E | Z | D / N | O R B | MET Day 003 | A T T

08:00 09:00 10:00 11:00 12:00

04:00 05:00 06:00 07:00 08:00

51 52 53 54

BIAS -XLV -ZVV

CDR STURCKOW	PLT FORD	MS1 FORRESTER	NOTES
PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
SLEEP	SLEEP	SLEEP	

Crew Wake at MET 3/13:00

STS-128/17A FD04

GMT Date 09/01 (244) | E | T D R S Z | W | D/N | O R B | MET Day 003 | A T T

MS2 HERNANDEZ | MS3 OLIVAS | MS4 FUGLESANG | NOTES

08:00 — 09:00 — 10:00 — 11:00 — 12:00

04:00 — 05:00 — 06:00 — 07:00 — 08:00

51 52 53 54

BIAS-XLV-ZVV

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

SLEEP

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

SLEEP

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

SLEEP

Crew Wake at MET 3/13:00

11

MSG 020 - FD04 MISSION SUMMARY

Good Morning Discovery!!!!

Congratulations!!!!!

Yesterday you made the shuttle history book for the first ever, no vern Rendezvous!!!!

To quote the Rendezvous team, “Your rendezvous was fabulous!!!!!”

Have a great transfer day!!!!

YOUR CURRENT ORBIT IS: 193 X 182 NM

NOTAMS:

EDW -	EDW IN USE. EDT DAY ELS ONLY.
EDW -	LAKEBED RWY 15/33 GREEN - ELS ONLY. RWY 18L - UNUSABLE.
NOR -	LAKEBED RUNWAYS GREEN.
ACY -	RWY 13 APPROACH LIGHT SYSTEM OTS.
YJT -	TACAN YJT78 OTS.
YYR -	TACAN UYR40 OTS.
LAJ -	TACAN LAJ45 OTS.
HAW -	RWY 31 LDA = 9024 FT.
GUA -	RWY 24R END LIGHTS OTS.
IKF -	NOT USABLE. NO AGREEMENT.
BEN -	NOT RECOMMENDED/NOT SUPPORTED.

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB 49 – 3/00:59 SKC 7 230/7P11
EDW22 ORB 64 – 3/23:48 SCT100 7 230/7P11

OMS TANK FAIL CAPABILITY:

L OMS FAILS: NO
R OMS FAILS: NO

LEAKING OMS PRPLT BURN:

L OMS LEAK: ALWAYS BURN RETROGRADE
R OMS LEAK: ALWAYS BURN RETROGRADE

OMS QUANTITIES(%)

L OMS OX = 34.4 R OMS OX = 33.4
FU = 33.9 FU = 33.4

END OF PAGE 1 OF 2, MSG 020

MSG 020 - FD04 MISSION SUMMARY

DELTA V AVAILABLE:

OMS	359 FPS
ARCS (TOTAL ABOVE QTY1)	23 FPS
TOTAL IN THE AFT	382 FPS
ARCS (TOTAL ABOVE QTY2)	56 FPS
FRCS (ABOVE QTY 1)	34 FPS
AFT QTY 1	83 %
AFT QTY 2	45 %

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

END OF PAGE 2 OF 2, MSG 020

Good morning Danny, Christer, CJ & Jose

All of you did a great job yesterday with transfer! You are 51 percent complete on Middeck, which puts you right on schedule. Today you will finish up the unconstrained Middeck resupply, begin working on the Middeck return, and you will be adding 6 tiny crewmembers to the ISS!

The Transfer List Excel file, FD04_Transfer_List_STS128.xls, locations are:

- Shuttle: **C:\OCA-up\transfer** (KFX machine)
- Station: **K:\OCA-up\transfer**

Transfer Answers

- **Cue Cards:** You did retrieve the correct ziplock, so we can consider item 32 complete. Regarding the Crewlock Depress/Repress Cue Cards, they are the same version. Per EVA you do not have to swap them.

Transfer Notes

- **LHA:** Mike will be scavenging 1 LHA from the MPLM today. The LHAs are item 103 in the MPLM Resupply Transfer List, but they will not be checked off as complete until all 8 are out of the MPLM on FD10.

FD04 Choreography

- **Item 31:** Transfer MDS Locker per MDS XFER activity
- **Item 801:** Transfer Actiwatch Supply Kit after CCISS-FE2-DNLD activity
- **Item 714, 714.1, 718, & 718.1:** Transfer Lockers and Adapter Plates per ISS LOCKER INSTALL activity
- **Items 1, 2, 3, & 28:** Transfer EVA Hardware per EVA procedure
- **Item 617:** Transfer Scopemeter Pressure Probe after MPLM/N2-VEST-PRESS activity
- **Items 100 & 101:** Deploy PBA and PFE per MPLM INGRESS activity
- **Item 610:** Transfer GSC after MPLM INGRESS activity
- **Item 103:** Scavenge LHA per MPLM LHA SCAVENGE activity
- Complete the remaining unconstrained MDDK resupply items and begin transferring MDDK return items

Please incorporate uplink pages as follows (we've listed the updates in the order they printed out for you):

In the Middeck Transfer List **RESUPPLY** tab
Replace the following page:
Resupply 1

In the Middeck Transfer List **RETURN** tab
Replace the following pages:
Return 1, 3, & 4

Changes to the Transfer List are detailed below:

MIDDECK RESUPPLY
Item 4.1 – updated temp stow location

MIDDECK RETURN
Item 714 – updated notes
Item 714.1 – new item
Item 718 – updated notes
Item 718.1 – new item
Item 613 – updated final location
Item 617 – updated initial location and notes

FD05 Choreography (Broken out by crewmember due to complexity of the day)

- **CJ & Christer**
  - **Items 177, 177.1, 178, 179, 180, & 181:** Transfer ISP bags
    - Gather ISP foam and strap to ISP or temp stow per crew preference
- **Christer & Frank**
  - **Item 227:** Transfer ZSR per ZSR XFER activity
- **CJ & Mike**
  - **Items 108, 109, 117, 118, 154, & 155:** Temp stow all front M-Bags from MPL1A2, MPL1A3, & MPL1F3 in bay 4 and fold the fences
  - **Item 108.2:** Transfer KBARS to support rack transfer activities
- **Christer & Frank**
  - **Item 226:** Transfer T2 Rack per T2 XFER activity
- **Jose, Mike, & Tim**
  - **Item 159:** Transfer Treadmill and stow inside T2 pit
  - **Item 4.1:** Install bungees at MPL1S3
  - **Items 137, 138, 150, & 151:** Temp stow all front M-Bags from MPL1F1 & MPL1F2 at MPL1S3 and fold fences
- **Christer & Frank**
  - **Item 168:** Transfer CQ Rack per CQ XFER activity
- **Jose, Mike, & Tim**
  - **Items 205, 213, & 252:** Transfer cables for CQ Outfitting activities
- **Christer & Frank**
  - **Items 172, 173, 174, 175, & 176:** Transfer ARS Rack, Knee Brace, and handrails per ARS XFER activity
- **Kevin, Jose, Christer, & Frank**
  - Transfer ALL Pre-pack from LAB1S2 and LAB1O3 to Endcone bungee jail
- **CJ, Pat, Christer & Frank**
  - **Items 102 & 244:** Transfer/install pivot pins at MPL1F1, MPL1A3, & MPL1F3
- **Christer**
  - LiOH GATHER activity

Have a great day and let us know if you have any questions!

- The STS-128 Transfer Team

The following changes are required for the EVA Checklist.

EVA TOOL CONFIGURATION

There are two Cheater Bars aboard ISS. Contrary to what is shown in the Toolbox Stowage diagram (EVA FS 8-9) both are stowed internally. One is needed for contingency FGB release from ATA and must be added to the staging bag.

Add "Cheater Bar" to Adj. Fuse Tether #2, Hook #7 in the following procedures:
EVA1 Tool Configuration (EVA, EVA 1 FS 7-7)
EVA2 Tool Configuration (EVA, EVA 2 FS 7-40)
EVA3 Tool Configuration (EVA, EVA 3 FS 7-71)

Cheater Bar S/N 1001 can be found in A/L1O0 behind closeout, CTB s/n 1161, labeled "EVA Misc Tools #2"

EVA GET-AHEADS

Relocating a cheater bar to the Z1 starboard toolbox will be a get-ahead task. This may be convenient to perform at the end of EVA 1 when round torque multiplier board is retrieved. Z1 starboard toolbox diagram can be found on (EVA FS 8-12).

Add *Cheater Bar Stow* to the table on (EVA FS 7-116) after *A/L Handrail Wire Tie Installation* as follows:

Cheater Bar Stow (00:10 duration, EVA1,2,3)
1. Retrieve cheater bar from staging bag and translate to Z1 starboard toolbox
2. Stow cheater bar in starboard door on Panel #8

STS-128 CONSUMABLES TRACKING CUE CARD

Please make the following changes to the cue card, all in the LiOH/Metox (s/n) column:

FD5, EVA 1, OL: **2020**
FD5, EVA 1, ST: **2023**
FD5, Post EVA 1: **Strike Through** “Regenerate Campout Metox”

FD7, EVA 2, OL: **2006**
FD7, EVA 2, FG: **2030**

FD9, EVA 3, OL: **2026**

OBJECTIVE:
Perform capture and initial bolting of the MPLM following translation into ready-to-latch (RTL) position by the SSRMS. Common Berthing Mechanism (CBM) capture latches are driven through an incremental capture sequence, then all 16 bolts are engaged into their respective nut assemblies. Procedure limits CBM torque, drive time, and capture latch shaft positions to reduce loads on the grapple fixture and SSRMS in case of SSRMS Brakes-On failure.

LOCATION:
Lab PCS

DURATION:
1 hour

NOTE

1. Notation "(AOS/M)" indicates that AOS during execution of step is mandatory. If currently LOS, or expecting LOS prior to completion of an AOS/M step, wait for next AOS to perform. If LOS is more than 20 minutes, consideration may be given to proceeding to safe the system.

2. For any failures or attention symbols that appear after RTLs are achieved, {2.201 CBM MATE MALFUNCTION}, all (SODF: S&M: MALFUNCTION: CBM/MATE) can be referenced.

3. For failures prior to RTL (completion of step 1), {2.101 CBM PREP FOR MATE MALFUNCTION}, all (SODF: S&M: MALFUNCTION: CBM/PREP FOR MATE) can be referenced to verify CBM still in a good configuration for initiating capture.

4. Four confirmed RTLs, either by telemetry or direct view, are required for capture initiation.

5. Preflight analysis has shown that a CBM latch can be masked due to a latch failure, and CBM capture completed with only three latches operating, without exceeding load limits.

1. VERIFYING READY-TO-LATCH (RTL) INDICATORS CLOSED

SSRMS operator ⇒ CBM operator, "Maneuver to RTL complete, go for first stage capture."

PCS

Node 2: S&M: [XX] CBM
[XX] CBM
'Functional CBM Representation (External View)'

Verify RTL indications (four) – green

```
*******************************************************************************
*  If any RTL is not green after repeated attempts to gain
*  | ready-to-latch indication
*  | √MCC-H for GO or NO-GO (verifies CBM configuration and
*  |    SSRMS are nominal).
*  |
*  |  Perform {2.501  CBM CREW RTL VISUAL VERIFICATION}, all
*  |    (SODF: S&M: CONTINGENCY & SRMS), then:
*******************************************************************************

*******************************************************************************
*  If any latch is not nominal
*  |  √MCC-H for GO or NO-GO (verifies CBM configuration and
*  |    SSRMS are acceptable).
*  |
*  |  If directed by MCC-H to mask any latch
*  |  |  'Functional CBM Representation (External View)'
*  |  |
*  |  |  sel Latch [X] where [X] = [1] [2] [3] [4]
*  |  |
*  |  |  [Node 2 CBM Latch [X] Details]
*  |  |
*  |  |  sel Commands
*  |  |
*  |  |  [Node 2 CBM Latch [X] Cmds]
*  |  |
*  |  |  cmd Mask Latch [X]  Execute
*  |  |
*  |  |  [XX] CBM
*  |  |  'Functional CBM Representation (External View)'
*  |  |
*  |  |  Verify Latch [X] – Ø
*******************************************************************************
```

2. ENABLING MECHANISM AUTOSAFING SOFTWARE

WARNING
To prevent structural failure of SSRMS and pressurized elements in case of SSRMS Brakes-On, the Mechanism Autosafing software in CCS must be enabled prior to initiating capture commands.

[XX] CBM
'CBM Status'

sel Mechanism Autosafing

Mechanism Autosafing
'Autosafing PPL Version IDs – Safing Cmds'

Verify Primary C&C: 8008
Verify Backup C&C: 8008

'Autosafing PPL Version IDs – Safing Default'

Verify Backup C&C: 8003

'Enable'

cmd Enable **Execute**

Verify Mechanism Autosafing – Enabled

3. VERIFYING STRUCTURAL CONSTRAINTS
Verify all exercise is halted.

√**MCC-H** for stable attitude control configuration

MCG: MCS Safing
MCS Safing
'Station Configuration'

Verify Auto Att Control Handover US to RS – Inh

'Auto Mode to CMG TA'

Verify Desat Request – Inh

4. PERFORMING FIRST STAGE CAPTURE (AOS/M)

CAUTION
To prevent damage to CBM or other hardware, CMG control (with Desat Request and Auto Att Handover to RS inhibited) and/or Free Drift (DAP: FREE for shuttle control) is required from initiation of CBM capture until at least twelve bolts have completed the ABOLTS command and at least four bolts still indicate load greater than zero. SSRMS shall remain grappled to the MPLM until such time. Also, any crew exercise (isolated and unisolated) must be halted until completion of ABOLTs, and during bolt loading.

[XX] CBM
'Commands by Task'

sel Mate

[XX] CBM Mate - SSRMS
'Capture Passive CBM'

cmd Capture First Stage **Execute**

Execution time expected to be < 15 seconds.

[XX] CBM
'CBM Status'

Verify Master Cmd Status – Complete

'Capture Latch Status'

Verify Cmd Code (four) – Capture
Verify Cmd Status (four) – Complete
Verify Posn (four): 185 to 187 deg

'Functional CBM Representation (External View)'

sel RTL Details

[XX] CBM RTL Details

Verify Latch [X] Capture Switch – Open where [X] = 1 2 3 4

Repeat

CBM operator ⇒ SSRMS operator, "Go for SSRMS mode to Limp."

5. PERFORMING SECOND STAGE INCREMENTAL CAPTURE WITH LOW TORQUE (AOS/M)

5.1 Incremental Capture to 130° with Low Torque (AOS/M)

WARNING

Continuation of Second Stage Capture if SSRMS modes to Brakes-On may cause structural failure of SSRMS or primary structure.

NOTE

1. Following SSRMS Mode to Limp, closed RTLs may open due to RTL spring forces. RTL closed indication is not required prior to execution of second stage capture (used for latches during first stage capture).

2. This procedure incorporates an incremental approach to CBM Second Stage Capture based on EBIT loads analysis of the robotics configuration. Second Stage Capture will be incrementally commanded down to 12° with the use of four Template Commands to: 130°, 90°, 50° and 12°.

SSRMS operator ⇒ CBM operator, "SSRMS Mode to Limp complete, go for Second-Stage Capture."

[XX] CBM
'Commands By Type'
sel Template

[XX] CBM Template Commands
'Latch Actuation Templates'

sel Capture (Three Variables)

[XX] CBM Capture 3 Variables Template

input Torque Bias – (-)1 4 2.7 4
input Shaft Position – 1 3 0
input Time Limit 1 – 2

cmd Actuate **Execute**

'Confirmation Request"

Verify Override _____ Command? – Capture

cmd Yes **Execute**

Expected execution time <35 seconds.

[XX] CBM
'CBM Status'

Verify Master Cmd Status – Complete

'Capture Latch Status'

Verify Cmd Code (four) – Capture
Verify Cmd Status (four) – Complete
Verify Posn (four): 129 to 131 deg (monitor for backdrive)

```
*****************************************************************************
*  If any latch Position > 131 degrees due to either latch Cmd Status
*  | – Jammed or Master Cmd Status – Timeout
*  |   cmd Stop  Execute (from any CBM command window) to
*  |     clear error
*
*  Proceed to step 5.5.
*****************************************************************************
```

5.2 Incremental Capture to 90° with Low Torque (AOS/M)

[XX] CBM Capture 3 Variables Template

input Torque Bias – (-)1 4 2.7 4
input Shaft Position – 9 0
input Time Limit 1 – 2

cmd Actuate **Execute**

'Confirmation Request"

Verify Override _____ Command? – Capture

cmd Yes **Execute**

Expected execution time <25 seconds.

[XX] CBM
'CBM Status'

Verify Master Cmd Status – Complete

'Capture Latch Status'

Verify Cmd Code (four) – Capture
Verify Cmd Status (four) – Complete
Verify Posn (four): 89 to 91 deg (monitor for backdrive)

```
*******************************************************************************
*  If any latch Position > 91 degrees due to either latch Cmd Status
*  | – Jammed or Master Cmd Status – Timeout
*  |   cmd Stop  Execute (from any CBM command window) to
*  |     clear error
*
*  Proceed to step 5.5.
*******************************************************************************
```

5.3 Incremental Capture to 50° with Low Torque (AOS/M)

[XX] CBM Capture 3 Variables Template

input Torque Bias – (-)1 4 2.7 4
input Shaft Position – 5 0
input Time Limit 1 – 2

cmd Actuate **Execute**

'Confirmation Request"

Verify Override _____ Command? – Capture

cmd Yes **Execute**

Expected execution time <23 seconds.

[XX] CBM
'CBM Status'

Verify Master Cmd Status – Complete

'Capture Latch Status'

Verify Cmd Code (four) – Capture
Verify Cmd Status (four) – Complete
Verify Posn (four): 49 to 51 deg (monitor for backdrive)

```
*****************************************************************************
*  If any latch Position > 51 degrees due to either latch Cmd Status
*  | – Jammed or Master Cmd Status – Timeout
*  |   cmd Stop  Execute (from any CBM command window) to
*  |     clear error
*
*  Proceed to step 5.5.
*****************************************************************************
```

5.4 Incremental Capture to 12° with Low Torque (AOS/M)

[XX] CBM Capture 3 Variables Template

input Torque Bias – (-)1 4 2.7 4
input Shaft Position – 1 2
input Time Limit 1 – 2

cmd Actuate **Execute**

'Confirmation Request"

Verify Override _____ Command? – Capture

cmd Yes **Execute**

Expected execution time <23 seconds.

[XX] CBM
'CBM Status'

Verify Master Cmd Status – Complete

'Capture Latch Status'

Verify Cmd Code (four) – Capture
Verify Cmd Status (four) – Complete
Verify Posn (four): 11 to 12 deg (monitor for backdrive)

If all latch positions are 11 or 12 degrees, go to step 6.

```
*****************************************************************************
*  If any latch Position > 12 degrees due to either latch Cmd Status
*  | – Jammed or Master Cmd Status – Timeout
*  |   cmd Stop  Execute (from any CBM command window) to
*  |     clear error
*
*  Proceed to step 5.5.
*****************************************************************************
```

5.5 Performing SSRMS -X Translation (AOS/M), If Required

NOTE

1. In step 5.5 SSRMS is commanded in the -X direction (Robotics coordinates: pulling CBM halves together) in an attempt to redistribute the forces built up in the CBM or SSRMS system. While all forces will not be relieved, the resultant force vector will change its affect on the system, enabling the previous CBM command to be reissued.

2. Step 5.5 will be executed up to four times in an attempt to achieve the commanded shaft position on all four latches. If repeating step 5.5 after two or three attempts and little or no progress is made (less than 5 degrees), **MCC-H** will likely direct the crew to the procedure {2.210 CBM MATE - INCREMENTAL CAPTURE - SSRMS}, all (SODF: S&M: MALFUNCTION: CBM/MATE), unless other problems are recognized.

```
*************************************************************************
*  If step 5.5 has already been executed four times
*  | √MCC-H (for GO to repeat step 5.5 additional times or
*  |    possibly to proceed to {2.210  CBM MATE -
*  |    INCREMENTAL CAPTURE - SSRMS}, all (SODF: S&M:
*  |    MALFUNCTION: CBM/CONTINGENCY & SRMS), then:
*************************************************************************
```

RWS

CBM operator ⇒ SSRMS operator, “Go to perform {2.666 CBM LATCH STALL RECOVERY}, all (SODF: RBT FS: CONTINGENCY) to pull CBM halves together,” then:

SSRMS operator ⇒ CBM operator, “Go to reattempt Second Stage Capture, SSRMS Mode to Limp complete.”

PCS

If any latch position is > 131 deg
Go to step 5.1.

If any latch position is > 91 deg
Go to step 5.2.

If any latch position is > 51 deg
Go to step 5.3.

If any latch position is > 12 deg
Go to step 5.4.

6. PERFORMING BOLTS ACQUISITION (AOS/M)

[XX] CBM Mate - SSRMS
'Engage Passive CBM Nuts'

cmd Acquire Bolts **Execute**

Execution time expected to be < 7 minutes.

[XX] CBM
'CBM Status'

Verify Master Cmd Status – Complete

'Powered Bolt Status'

Verify Cmd Code (sixteen) – ABolts
Verify Cmd Status (sixteen) – Complete

Verify at least four bolts indicate load > 0.00 kN

7. INHIBITING MECHANISM AUTOSAFING SOFTWARE

[XX] CBM
'CBM Status'

sel Mechanism Autosafing

Mechanism Autosafing
'Inhibit'

cmd Arm **Execute**

Verify Arm – √

cmd Inhibit **Execute**

Verify Mechanism Autosafing – Inhibited

NOTE
MPLM is now ready for ungrapple. Station can return to desired attitude control configuration, as required. Crew exercise can resume as required when bolts are not actuating.

CBM operator ⇒ SSRMS operator, “Go for SSRMS Brakes ON/Safing, can ungrapple element per timeline.”

MSG 024A - FD04 CREW CHOICE DOWNLINK

Below are your Crew Choice Downlink opportunities based on Ku availability:

TDRS	AOS	LOS	Delta (min)	Notes
W	3/06:06	3/03:15	9	
E	3/03:35	3/03:45	10	
Z	3/04:16	3/04:50	34	Analog Only, Alpha Stop @ 3/04:33

END OF PAGE 1 OF 1, MSG 024A

CWC-I FILLS

	CWC-I No.	Record S/N Used	Sample Kit Ref: Kit Table	CWC Launch Location
☐	1		S/N 1006 (Note A)	MDDK CEIL STBD1, BAG G 2047 ☐ 2051 ☐ MDDK FLOOR PORT2, BAG B (in 1.0 CTB, S/N 1045) 2040 ☐ 2041 ☐ 2042 ☐ 2046 ☐ 2052 ☐ 2053 ☐ 2054 ☐ 2055 ☐ MDDK FLOOR STBD1, BAG C 2039 ☐ 2043 ☐ 2044 ☐ 2045 ☐ 2058 ☐
☐	2		S/N 1006 (Note A)	
☐	3		S/N 1006 (Note A)	
☐	4		S/N 1006 (Note A)	
☐	5		S/N 1006 (Note A)	
☐	6		N/A	
☐	7		S/N 1006 (Note A)	
☐	8		N/A	
☐	9		S/N 1006 (Note A)	
☐	10		N/A	
☐	11		S/N 1006 (Note A)	
☐	12		N/A	
☐	13		S/N 1006 (Note A)	
☐	14		N/A	
☐	15		S/N 1006 (Note A)	

CWC-I Fill Notes:

A. Stow filled sample bags and purge bag (CWC-I Fill Assembly purged only once during the flight) in MF71K.

B. Rough handling may cause leakage.

C. Fill each CWC-I for 11 min or Term CWC-I Fill on MCC call.

Pre-Fill Checklist:

- Disinfect CWC-I QD and CWC-I Fill Assembly (Y-Y hose) QD
  1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐
  9☐ 10☐ 11☐ 12☐ 13☐ 14☐ 15☐

Post-Fill Checklist:

- Take Sample, filling Sample Bag nearly full
  1☐ 2☐ 3☐ 4☐ 5☐ 6☒ 7☐ 8☒
  9☐ 10☒ 11☐ 12☒ 13☐ 14☒ 15☐
- Verify purple label is in all 3 CWC-I windows
  1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐
  9☐ 10☐ 11☐ 12☐ 13☐ 14☐ 15☐
- Report S/N to MCC
  1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐
  9☐ 10☐ 11☐ 12☐ 13☐ 14☐ 15☐
- Transfer CWC-I to:
  JLP1F1 HDP panel front
  1☐ 2☐
  JPM1F6 ZSR panel front
  3☐ 4☐ 5☐
  JPM1A4 HDP panel front
  6☐ 7☐ 8☐ 9☐ 10☐
  11☐ 12☐ 13☐ 14☐ 15☐
- Cap CWC-I Fill Assembly (Y-Y hose) QD between each fill

Kit Table

Kit	S/N	Stowage Location	Undock Location
Sample/Purge Kit	1006	MDDK CEIL (STBD1, BAG G)	MDDK CEIL (STBD1, BAG G)

FINAL

CWC FILLS

	CWC No.	Record S/N Used	Ag Biocide Kit Ref: Kit Table	CWC Label	CWC Launch Location
☐	1		S/N 1002	Green (Tech)	Available Technical S/Ns: In pregathered M-02 bag S/N 1026 (Note D): 1035 ☐ 1066 ☐ 1068 ☐ In pregathered Mesh bag (Note D): 1043 ☐ 1077 ☐
☐	2		S/N 1002	Green (Tech)	
☐	3		S/N 1002	Green (Tech)	
☐	4		S/N 1002	Green (Tech)	
☐	5		S/N 1002	Green (Tech)	

Pre-Fill Checklist:

- Disinfect CWC QD and Transfer Hose QD

  1☐ 2☐ 3☐ 4☐ 5☐

Kit Table

Kit	S/N	Stowage Location	Undock Location
Ag Biocide Kit	1002	Pregathered mesh bag	M-02 bag S/N 1026 at NOD2O2

Post-Fill Checklist:

- Check correct label is in CWC window

  1☐ 2☐ 3☐ 4☐ 5☐

- Check correct decal on CWC end

  1☐ 2☐ 3☐ 4☐ 5☐

- Check correct CWC S/N on end decal

  1☐ 2☐ 3☐ 4☐ 5☐

- Report S/N to MCC

  1☐ 2☐ 3☐ 4☐ 5☐

- Transfer CWC to JPM1F7 panel front

  1☐ 2☐ 3☐ 4☐ 5☐

- Cap Transfer Hose QD between each fill

CWC Fill Notes:

A. Stow filled purge bag (Water Transfer Hose purged only once during the flight) in MF71K.

B. Rough handling may cause leakage.

C. Fill each CWC for 52 min or term CWC Fill on MCC call

D. Pregathered M-02 & Mesh bags originally located in NOD2O2. Some CWCs may still contain residual water (~ 10 lb/bag) and will be located outside of bags. Prior to filling, report if bag has a significant amount of residual water.

PWR FILLS

	PWR No.	PWR S/N	Stowage Location	Actions
☐	1 (MDS)	1031	MDDK CEIL (STBD1, BAG G)	Fill and transfer to NOD2O2
☐	2	1027	A/L1D1_B1	Fill and return to A/L1D1_B1
☐	3	1024	A/L1D1_B2	Post EVA2, fill and return to A/L1D1_B2

PWR Fill Notes: Do not detach PWR (EMU H2O Recharge Bag) QD restraint during PWR ops.

FINAL