



ISS-13A.1/STS-118 ERRATA



NOTE

This Errata pack contains information that is applicable to both the Shuttle & Station Crews & Flight Control Teams.

CONTENTS:

Section A - Procedures That Must Be Uplinked Real Time

Section B - Changes To Be Uplinked Real Time Only If Required

Section C - Changes Made To The Crew's SODF Prior To Launch

Attachment 1 - ODF Status for Flight

Attachment 2 - Change-out Pages

All technical changes to the ISS SODF, as documented in this errata package, have been approved through the US Systems Operations Data File Control Board CR process.

Some of the changes apply to future flights also and will be republished after this flight. These changes are denoted by (¥) following the CR number.

Some of the changes apply to this flight only and will not appear in future publications.

If you choose to incorporate 'flight-specific' changes into your 'generic' book(s), it is recommended that you do so in a manner that allows them to be removed for future flights (e.g., use pencil rather than ink, retain old pages rather than throw them away, etc.).

Refer questions or comments on these changes to the SODF Coordinator, SODF Manager, or Ops Planner.

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SECTION A: PROCEDURES THAT MUST BE UPLINKED REAL-TIME.

The following procedures are needed but were received too late for incorporation into the crew's books for transport on 13A.1. They must be sent to the crews via OCA.

NONE

SECTION B: CHANGES APPROVED FOR REAL-TIME UPLINK IF REQUIRED.

The following changes will be implemented in real-time only if the covered situation arises. Copies of the CRs have been provided to the ODF Console. Each console position should ascertain if his position is affected and be prepared to submit a flight note if uplink is required.

Change Request Number

Change Request Title

NONE

SECTION C: CHANGES MADE TO THE CREW'S SODF PRIOR TO LAUNCH.

The following changes have been incorporated into the crew's flight copies. At the time of printing these changes have not been made in IPV. In order to avoid print driver problems, please print from the 13A.1_Errata.pdf file located at the respective book at the following webpage for Joint Ops and Warning: <http://mod.jsc.nasa.gov/do3/sodf/Products/Products-Gen.html>

The files can also be found at the following location:

\\Jsc-mod-fs9\odf\Flights_and_Expeditions\Expedition_15\13A.1\13A.1_Errata

ISS EVA SYSTEMS (17 JUL 07)

CR	DESCRIPTION	ATT #	FILE NAME
ISS_EVA_SysU520	<p>Pen-and-ink procedure "SSRMS FRGF Release" on page 691 (cuff checklist page 33) as follows:</p> <ol style="list-style-type: none"> In step 1, change the symbol to Ⓛ. In step 2, change the symbol to Ⓡ. 	N/A	N/A

ISS JOINT OPERATIONS

CR	DESCRIPTION	ATT #	FILE NAME
Joint_OpsU623A	<ol style="list-style-type: none"> Replace pages ix thru xii. Add pages 363 and 364, after 364, add 364a thru 364l. 	2	Jnt_Ops_Errata_Attach_2.pdf

STRUCTURES AND MECHANISMS

CR	DESCRIPTION	ATT #	FILE NAME
S&MU427	<p>Pen-and-ink procedure 1.902 as follows:</p> <ol style="list-style-type: none"> Add the following under the Referenced Procedures section: 1.236 CCS Data Load Management In step 6, change the first word of the title from "Giving" to "Receiving". <p>Pen-and-ink procedure 1.904 as follows: Add the following under the Referenced Procedures section: 1.236 CCS Data Load Management</p>	N/A	N/A

WARNING (27 JUL 07)

CR	DESCRIPTION	ATT #	FILE NAME
WarningU554	<i>Pen-and-Ink procedure 5.100 Loss of Attitude Control (LOAC) Powerdown - WARN as follows:</i> <i>On page 60 of 61, in step 131, item 3 in the first note block, change 2.694 to 5.101. Also change (SODF: WARN) to (SODF: WARN: LOAC).</i>	N/A	N/A
Flight Note F017755A	<i>Replace pages 161 thru 164.</i>	3	Warning_Errata_Attach_3.pdf

EMERGENCY (SOYUZ AT SM AFT VERSION, 17 JUL 07)

NOTE: This errata was incorporated into the books launched. A follow-up PCN with the errata changes will be published to update the books on the ground before these books are used on-board.

CR	DESCRIPTION	ATT #	FILE NAME
EmergencyU381	<i>Adds procedures 7.2 and 7.3 to the Soyuz at SM Aft Emer-1 book.</i>	N/A	N/A

PREPARED BY:

Jason Morrow
13A.1 SODF Coordinator

REVIEWED BY:

Michael T. Hurt
US SODF Manager

APPROVED BY:

Neil A. Woodbury
Chairman,
US Systems Operations Data File Control Board

ATTACHMENT 1

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ODF STATUS FOR FLIGHT Expedition 15/13A.1

Start Use: **07 August 07**
E15 Coordinator: Steve Pruzin
13A.1 Coordinator: Jason Morrow

For the latest status of SODF books for 13A.1 please refer to the SODF website and select the E15 Flight Status Sheet.

<http://mod.isc.nasa.gov/do3/sodf/ODFStatus/index.html>

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ATTACHMENT 2

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CONTENTS

ARRIVAL	1
1.104 ODS Volume Preparation for Docking.....	3
1.106 PMA2 Pre-Arrival Configuration	5
1.107 Station-Orbiter Docking Script.....	13
1.108 PMA2 Arrival	15
1.109 PMA2 Post Arrival Configuration.....	19
INGRESS STATION	23
2.101 Post Docking Hatch Leak Check.....	25
2.102 Post Docking Hatch Leak Check – ISS	27
2.103 ODS Volume Preparation for Ingress.....	31
2.104 Hatch Opening and Shuttle/ISS Duct Installation.....	33
2.105 ISS Interim Ingress.....	43
2.106 Hatch Open and Duct Install (Bypass Config).....	49
2.107 Shuttle Airlock/Tunnel Fan Activation (Bypass Duct Installed).....	59
2.108 Shuttle Airlock/Tunnel Fan Deactivation (Bypass Duct Installed)	61
2.109 Capture Latch Manual Release, Hatch Opening, and Duct Install	63
MATED OPERATIONS	75
3.102 Nitrogen Transfer Initiation	77
3.103 Nitrogen Transfer Termination	83
3.104 LAB FWD Hatch Thermal Cover Removal/Installation	87
3.105 O2 Repress	91
3.106 N2 Repress	93
3.107 Generic Depress	95
3.108 Generic Repress	97
3.109 Configure C&W for Ingress/Depress/Repress.....	99
3.110 Handover Attitude Control CMG TA to Orbiter	101
3.111 Handover Attitude Control Orbiter to CMG TA	107
3.112 VDS Shuttle Auto Route – Deroute	113
3.113 VDS Shuttle Manual Route – Deroute.....	119
3.115 Oxygen Transfer Setup	123
3.116 High Pressure Tank O2 Transfer	131
3.117 Low Pressure Tank O2 Transfer	135
3.118 Oxygen Transfer Teardown.....	139
3.119 Radiation Area Monitor Dosimeters - Installation of Dosimeters on ISS ..	147
3.120 Prebreathe Using Shuttle O2 Setup	159
3.121 Prebreathe Using Shuttle O2 Setup (Post O2 Transfer)	167
3.122 Prebreathe Using Shuttle O2 Teardown	175
3.123 O2 Transfer Setup (Post Prebreathe Using Shuttle O2)	181
3.125 Shuttle/ISS Crewlock Depress Using ISS Depress Pump	187
3.126 SSPTS OPCU ISS Input Power Activation.....	197
3.127 SSPTS OPCU ISS Input Power Deactivation	199
3.128 O2 Transfer to Hi P and LO P O2 Tanks	200a

EGRESS STATION	201
4.101 ISS Interim Egress	203
4.102 Shuttle/ISS Duct Removal and Hatch Closing	207
4.103 Duct Removal and Hatch Close (Bypass Config).....	213
4.104 ODS Vestibule/PMA Depressurization and Hatch Leak Check.....	219
DEPARTURE.....	221
5.101 PMA2 Pre-Departure Configuration	223
5.102 PMA2 Departure.....	229
5.103 PMA2 Post Departure Configuration	233
COMM/DATA.....	237
6.101 Audio Loss of Docked Voice	239
6.102 Audio Configuration for Proximity Operations Voice Comm.....	241
6.103 Hardline Audio Configuration (ISS)	243
6.104 Hardline Audio Configuration (ISS) Backout	247
6.105 SSOR Activation.....	253
6.106 SSOR Deactivation	255
6.107 PCS Setup – Shuttle	257
6.108 Hardline Air to Air Audio with Hatch Closed	261
6.109 Hardline ICOM Audio	262a
2.302 Onboard File Transfer	263
2.303 PCS Deactivation	273
2.304 PCS Log File Save	279
2.306 PCS Reconnect.....	285
2.307 PCS Screen Capture.....	287
MALFUNCTION.....	291
HATCH	
1.3.501 Hatch Mechanism Malfunction	293
2.305 PCS Reboot	299
3.301 Loss of PCS Telemetry	301
CONTINGENCY.....	309
8.101 Handover Attitude Control Orbiter to RS Thrusters.....	311
8.102 Handover Attitude Control RS Thrusters to Orbiter.....	313
8.103 PMA2 Pre-Arrival Configuration (Thrusters).....	315
8.104 PMA2 Arrival (Thrusters).....	323
8.105 PMA2 Post Arrival Configuration (Thrusters)	327
8.106 PMA2 Pre-Departure Configuration (Thrusters).....	331
8.107 PMA2 Departure (Thrusters)	337
8.108 PMA2 Post Departure Configuration (Thrusters)	341
8.109 ORCA Safing.....	345

EMERGENCY RESPONSE	347
9.101 Joint Expedited Undocking and Separation	349
9.102 ISS Safing	363
9.103 Utilize ISS Atmosphere	365
9.104 TMAX Determination For Utilize ISS Atmosphere.....	367
CUE CARD	369
10.101 Big Loop Reactivation	371
10.102 Joint Emergency Egress	373
REFERENCE DATA	375
11.103 O2 and N2 Transfer Schematic.....	377

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9.102 ISS SAFING

Select required safing scenario(s) from Table 1 and go to page(s) listed for safing action(s).

Table 1. Activity

Activity	Page
S5 Unberth and Handoff	1 of 13
EVA 1 - S5 Install	3 of 13
OBSS Focused Inspection	5 of 13
EVA 2 - CMG-3 R&R	7 of 13
ESP3 Unberth and Install	8 of 13
EVA 3 - P6 SASA Relocate, CETA Carts	10 of 13
EVA 4	12 of 13
MT Translations	13 of 13

S5 UNBERTH AND HANDOFF

1. Determine phase completed from Table 2 and perform action(s).

Table 2. S5 Unberth and Handoff

Phase Completed	Action(s)	Time to Safe	Notes and Reference
S5 Grapple	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Ungrapple S5	0:10	S5 CONTINGENCY REBERTH, (PDRS, <u>OFF-NOMINAL S5 OPS</u>)
	B. <u>Handoff to SSRMS</u> 1. Complete S5 Handoff 2. MNVR SRMS SY to -35 deg for undock	1:55	
Release PRLAs	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Close PRLAs 2. Ungrapple S5	0:15	S5 CONTINGENCY REBERTH, (PDRS, <u>OFF-NOMINAL S5 OPS</u>)
	B. <u>Handoff to SSRMS</u> 1. Complete S5 Handoff 2. MNVR SRMS SY to -35 deg for undock	1:40	
S5 at Low Hover Posn	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Berth S5 2. Close PRLAs 3. Ungrapple S5	0:25	S5 CONTINGENCY REBERTH, (PDRS, <u>OFF-NOMINAL S5 OPS</u>)
	B. <u>Handoff to SSRMS</u> 1. Complete S5 Handoff 2. MNVR SRMS SY to -35 deg for undock	1:25	

363

9.102 ISS SAFING

Table 2. S5 Unberth and Handoff (cont)

Phase Completed	Action(s)	Time to Safe	Notes and Reference
SSRMS at S5 Pregrapple	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Berth S5 2. Close PRLAs 3. Ungrapple S5	0:25	S5 CONTINGENCY REBERTH, (PDRS, <u>OFF-NOMINAL S5 OPS</u>)
	B. <u>Handoff to SSRMS</u> 1. Complete S5 Handoff 2. MNVR SRMS SY to -35 deg for undock	1:05	
SRMS at S5 STBD Posn	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Berth S5 2. Close PRLAs 3. Ungrapple S5	0:30	S5 CONTINGENCY REBERTH, (PDRS, <u>OFF-NOMINAL S5 OPS</u>)
	B. <u>Handoff to SSRMS</u> 1. Complete S5 Handoff 2. MNVR SRMS SY to -35 deg for undock	0:50	
SRMS at S5 Handoff Posn	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Berth S5 2. Close PRLAs 3. Ungrapple S5	0:40	S5 CONTINGENCY REBERTH, (PDRS, <u>OFF-NOMINAL S5 OPS</u>)
	B. <u>Handoff to SSRMS</u> 1. Complete S5 Handoff 2. MNVR SRMS SY to -35 deg for undock	0:35	
SSRMS S5 Grapple	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Ungrapple SSRMS 2. Berth S5 3. Close PRLAs 4. Ungrapple S5	0:50	S5 CONTINGENCY REBERTH, (PDRS, <u>OFF-NOMINAL S5 OPS</u>)
	B. <u>Handoff to SSRMS</u> 1. Complete S5 Handoff 2. MNVR SRMS SY to -35 deg for undock	0:20	
SRMS S5 Ungrapple	MNVR SRMS SY to -35 deg for undock	0:05	

- Go to {9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION}, step 2b (SODF: JNT OPS: EMERGENCY RESPONSE).

364

9.102 ISS SAFING

EVA 1 - S5 INSTALL

1. Determine phase completed from Table 3, and perform action(s).

Table 3. EVA 1 - S5 Install

Phase Completed	Action(s)	Time to Safe	Notes and Reference
S5 at Intermediate Posn	<u>Options:</u> A. No Action Required	0:00	SSRMS w/S5 at Intermediate posn okay for undock. PVRGF relocate allows BGA Rotation.
	B. <u>Complete S5 Activities</u> 1. Post Depress, Egress, Setup 2. S5 to Launch Lock Removal Posn 3. S5 Install 4. PVRGF Relocate to Keel 5. Clean up, Ingress, Pre-Repress 6. SSRMS Mnvr to MT Translate Posn	4:30	
Egress, S5 at Pre-Install	<u>Options:</u> A. <u>Terminate EVA</u> 1. Return to ISS Airlock	0:20	SSRMS w/S5 at Pre-install posn okay for undock. PVRGF relocate allows BGA Rotation.
	B. <u>Complete S5 Activities</u> 1. Setup 2. S5 to Launch Lock Removal Posn 3. S5 Install 4. PVRGF Relocate to Keel 5. Clean up, Ingress, Pre-Repress 6. SSRMS Mnvr to MT Translate Posn	4:10	
Setup	<u>Options:</u> A. <u>Terminate EVA</u> 1. Clean up, Return to ISS Airlock	0:35	PVRGF relocate allows BGA Rotation.
	B. <u>Complete S5 Activities</u> 1. Setup 2. S5 to Launch Lock Removal Posn 3. S5 Install 4. PVRGF Relocate to Keel 5. Clean up, Ingress, Pre-Repress 6. SSRMS Mnvr to MT Translate Posn	3:40	
	C. Complete EVA 1	5:40	

364a

9.102 ISS SAFING

Table 3. EVA 1 - S5 Install (cont)

Phase Completed	Action(s)	Time to Safe	Notes and Reference
S5 to S4 Launch Lock Removal	<u>Options:</u> A. <u>Terminate EVA</u> 1. GCA SSRMS Clear of SSU 2. Clean up, Return to ISS Airlock 3. MnvR SSRMS back to Handoff Posn	2:00	PVRGF relocate allows BGA Rotation.
	B. <u>Complete S5 Activities</u> 1. S5 Install 2. PVRGF Relocate to Keel 3. Clean up, Ingress, Pre-Repress 4. SSRMS MnvR to MT Translate Posn	3:05	
	C. Complete EVA 1	5:05	
S5 Install	<u>Options:</u> A. <u>Terminate EVA</u> 1. Clean up, Return to ISS Airlock 2. SSRMS MnvR to MT Translate Posn	0:35	BGA Rotation Not Allowed.
	B. <u>Complete S5 Activities</u> 1. PVRGF Relocate to Keel 2. Clean up, Ingress, Pre-Repress 3. SSRMS MnvR to MT Translate Posn	1:35	PVRGF relocate allows BGA Rotation.
	C. Complete EVA 1	3:35	
PVRGF Relocate to Keel	<u>Options:</u> A. <u>Terminate EVA</u> 1. Clean up, Return to ISS Airlock 2. SSRMS MnvR to MT Translate Posn	0:35	PVRGF relocate allows BGA Rotation.
	B. Complete EVA 1	2:35	
Get Aheads	<u>Options:</u> A. Clean up, Return to ISS Airlock, SSRMS MnvR to MT Translate Posn	0:55	
	B. Complete EVA 1	2:20	
S5 Cleanup	<u>Options:</u> A. Return to ISS Airlock, 6. SSRMS MnvR to MT Translate Posn	0:20	
	B. Complete EVA 1	1:45	
P6 Fwd PVR Retract & Cinch	Complete EVA 1	0:35	
Cleanup, Ingress, Pre-Repress	No Action Required	0:00	

364b

2. Go to {9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION}, step 2b (SODF: JNT OPS: EMERGENCY RESPONSE).

9.102 ISS SAFING

OBSS FOCUSED INSPECTION

1. Determine phase completed from Table 4 and perform action(s).

Table 4. OBSS Focused Inspection

Phase Completed	Action(s)	Time to Safe	Notes and Reference
SSRMS OBSS Grapple From WS4	<u>Options:</u> A. <u>Terminate Inspection</u> 1. Ungrapple OBSS 2. Mnv SRMS to Pre-Grapple Posn	0:25	Need to perform OBSS Berth Post-Undock (0:45).
	B. <u>Handoff Only</u> 1. Unberth 2. Mnv to Handoff Posn 3. SRMS Grapple 4. SSRMS Release 5. Mnv SRMS w/OBSS to Undock posn	1:35	
	C. Complete Inspection	5:55	
OBSS Unberth (at Low Hover)	<u>Options:</u> A. <u>Terminate Inspection</u> 1. Berth OBSS 2. Ungrapple OBSS 3. Mnv SRMS to Pre-Grapple Posn	0:45	Need to perform OBSS Berth Post-Undock (0:45).
	B. <u>Handoff Only</u> 1. Mnv to Handoff Posn 2. SRMS Grapple 3. SSRMS Release 4. Mnv to Undock Posn	1:15	
	C. Complete SRMS w/OBSS Inspection	5:35	
OBSS Mnv to Handoff	<u>Options:</u> A. <u>Terminate Inspection</u> 1. Mnv back to Low Hover 2. Berth OBSS 3. Ungrapple OBSS 4. Mnv SRMS to Pre-Grapple Posn	1:25	Need to perform OBSS Berth Post-Undock (0:45).
	B. <u>Handoff Only</u> 1. SRMS Grapple 2. SSRMS Release 3. Mnv SRMS w/OBSS to Undock Posn	0:35	
	C. Complete Inspection	4:55	

364c

9.102 ISS SAFING

Table 4. OBSS Focused Inspection (cont)

Phase Completed	Action(s)	Time to Safe	Notes and Reference
OBSS Handoff from SSRMS to SRMS	<u>Options:</u> A. <u>Terminate Inspection</u> 1. Handoff OBSS back to SSRMS 2. MnvR back to Low Hover 3. Berth OBSS 4. Ungrapple OBSS 5. MnvR SSRMS to Pre-Grapple Posn	1:50	Need to perform OBSS Berth Post-Undock (0:45).
	B. <u>Handoff Only</u> 1. MnvR SRMS w/OBSS to Undock Posn	0:10	
	C. <u>Complete Inspection</u>	4:30	
Focused Inspection in Progress	<u>Options:</u> A. MnvR SRMS w/OBSS to Undock Posn	0:30	Need to perform OBSS Berth Post-Undock (0:45).
	B. <u>Complete Inspection</u> 1. Handoff OBSS to SSRMS 2. Berth OBSS with SSRMS 3. Ungrapple OBSS 4. MnvR SSRMS to Pre-Grapple Posn	4:30	
OBSS Handoff from SRMS to SSRMS	<u>Options:</u> A. Handoff OBSS back to SRMS 1. MnvR to Undock Posn	0:30	
	B. Berth OBSS with SSRMS 1. Berth OBSS with SSRMS 2. Ungrapple OBSS 3. MnvR SSRMS to Pre-Grapple Posn	1:00	
OBSS MnvR to Berth (at Low Hover)	1. Berth OBSS with SSRMS 2. Ungrapple OBSS 3. MnvR SSRMS to Pre-Grapple Posn	0:40	
OBSS Berth	1. SSRMS OBSS Release 2. MnvR SSRMS to Pre-Grapple Posn	0:25	
SSRMS OBSS Release and Backoff	MnvR SSRMS to Pre-Grapple Posn	0:05	

2. Go to {9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION}, step 2b (SODF: JNT OPS: EMERGENCY RESPONSE).

364d

9.102 ISS SAFING

EVA 2 - CMG-3 R&R

1. Determine phase completed from Table 5 and perform action(s).

Table 5. EVA 2 - CMG-3 R&R

Phase Completed	Action(s)	Time to Safe	Notes and Reference
Egress/Setup	<u>Options:</u> A. Cleanup, Return to ISS Airlock B. Complete EVA 2	0:45 5:40	
Remove Failed CMG-3	<u>Options:</u> A. <u>Return to ISS</u> 1. Reinstall Failed CMG on Z1 2. Cleanup, A/L Ingress, Pre-Repress. B. <u>New CMG to ESP2, Reinstall Failed on Z1</u> 1. Transfer New CMG to ESP-2 2. Reinstall Failed CMG on Z1 3. Cleanup, A/L Ingress, Pre-Repress C. Complete EVA 2	1:15 2:45 5:10	CMGs will not be left temp stowed on the ballstack for Rapid Safing Cases. Only in the case of a suit malfunction would a CMG be left temp stowed.
Transfer New CMG/FSE to ESP-2	<u>Options:</u> A. <u>Return to ISS</u> 1. Translate to Z1 2. Reinstall failed CMG on Z1 3. Cleanup, A/L Ingress and Pre-Repress. B. Complete EVA 2	1:30 3:40	Once CMG/FSE is removed from ESP-3, it will not be returned to the payload bay.
Remove New CMG from ESP-2	<u>Options:</u> A. <u>If SSRMS is near ESP-2</u> 1. Reinstall new CMG on FSE/ESP-2 2. Translate to Z1 3. Reinstall failed CMG on Z1 4. Cleanup, A/L Ingress, Pre-Repress. B. <u>If SSRMS is near Z1</u> 1. Complete EVA 2	1:55 2:50	If SSRMS is near Z1 with the new CMG, finish the EVA. At that point it will take roughly the same amount of time to finish the EVA as to return the new CMG to ESP-2 and the failed CMG to Z1.
Install New CMG on Z1	Complete EVA 2	1:55	
Install Failed CMG on ESP-2/FSE	Complete EVA 2	0:45	
Cleanup, Ingress, Pre-Repress	No Action Required	0:00	

2. Go to {9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION}, step 2b (SODF: JNT OPS: EMERGENCY RESPONSE).

364e

9.102 ISS SAFING

ESP3 UNBERTH AND INSTALL

1. Determine phase completed from Table 6 and perform action(s).

Table 6. ESP3 Unberth and Install

Phase Completed	Action(s)	Time to Safe	Notes and Reference
ESP3 Grappled with SRMS	<u>Options:</u> A. Ungrapple ESP-3 B. <u>Complete Handoff through ungrapple</u> 1. Mnv to Low Hover 2. ESP-3 Handoff 3. Mnv SRMS SY to +75 deg for Undock C. Complete ESP-3 Install	0:10 1:30 2:45	
PRLAs Opened	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Close PRLAs 2. Ungrapple ESP-3 B. <u>Complete Handoff through ungrapple</u> 1. Mnv to Low Hover 2. ESP-3 Handoff 3. Mnv SRMS SY to +75 deg for Undock C. Complete ESP-3 Install	0:15 1:15 2:30	
ESP3 at Low Hover	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Berth ESP-3 2. Close PRLAs 3. Ungrapple ESP-3 B. <u>Complete Handoff through ungrapple</u> 1. ESP-3 Handoff 2. Mnv SRMS SY to +75 deg for Undock C. Complete ESP-3 Install	0:30 1:00 2:15	
SRMS at Handoff Posn	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Mnv back to Low Hover 2. Berth ESP-3 3. Close PRLAs 4. Ungrapple ESP-3 B. <u>Complete Handoff through ungrapple</u> 1. ESP-3 Handoff 2. Mnv SRMS SY to +75 deg for Undock C. Complete ESP-3 Install	1:00 0:30 1:45	

364f

9.102 ISS SAFING

Table 6. ESP3 Unberth and Install (cont)

Phase Completed	Action(s)	Time to Safe	Notes and Reference
SSRMS ESP-3 Grapple	<u>Options:</u> A. <u>Return to Orbiter</u> 1. SSRMS Ungrapple 2. MnvR back to Low Hover 3. Berth ESP-3 4. Close PRLAs 5. Ungrapple ESP-3	1:15	
	B. <u>Complete Handoff through ungrapple</u> 1. ESP-3 Handoff 2. MnvR SRMS SY to +75 deg for Undock	0:15	
	C. Complete ESP-3 Install	1:30	
SRMS ESP-3 Ungrapple	<u>Options:</u> A. <u>Return to Orbiter</u> 1. Handoff ESP-3 back to SSRMS 2. MnvR back to Low Hover 3. Berth ESP-3 4. Close PRLAs 5. Ungrapple ESP-3	1:30	
	B. MnvR SRMS SY to +75 deg for Undock	0:10	
	C. Complete ESP-3 Install	1:15	
SSRMS at Pre-Install	A. No action required	0:00	
	B. Complete ESP-3 Install	0:45	
SSRMS at RTL	A. Return to Pre-Install posn	0:05	
	B. Complete ESP-3 Install	0:40	
SSRMS Limping and UCCAS Ops	No Action Required	0:00	

2. Go to {9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION}, step 2b (SODF: JNT OPS: EMERGENCY RESPONSE).

3649

9.102 ISS SAFING

EVA 3 - P6 SASA RELOCATE, CETA CARTS

1. Determine phase completed from Table 7 and perform action(s).

Table 7. EVA 3 - P6 SASA Relocate, CETA Carts

Phase Completed	Action(s)	Time to Complete	Notes and Reference
Egress/Setup	<u>Options:</u> A. <u>Return to ISS</u> 1. Cleanup, A/L Ingress, Pre-Repress	1:00	
	B. <u>Partial Completion</u> 1. Complete SASA, BSP, XPNDR Tasks 2. Cleanup, A/L Ingress, Pre-Repress	2:50	
	C. <u>Partial Completion</u> 1. Complete SASA, BSP, XPNDR, CETA Cart Tasks 2. Cleanup, A/L Ingress, Pre-Repress	4:30	
	D. Complete EVA 3	5:30	
SASA Removed from P6 (EV1) and P1 BSP/XPNDR Dummy Boxes Removed (EV3)	<u>Options:</u> A. <u>Return to ISS</u> 1. Reinstall SASA on P6 2. Cleanup, A/L Ingress, Pre-Repress	1:25	Dummy boxes return to ISS A/L.
	B. <u>Partial Completion</u> 1. Complete SASA, BSP, XPNDR Tasks 2. Cleanup, A/L Ingress, Pre-Repress	1:55	
	C. <u>Partial Completion</u> 1. Complete SASA, BSP, XPNDR, CETA Cart Tasks 2. Cleanup, A/L Ingress, Pre-Repress	3:55	
	D. Complete EVA 3	4:30	
SASA Installation Complete (EV1) and P1 BSP/XPNDR Installation Complete (EV3)	<u>Options:</u> A. <u>Return to ISS</u> 1. Cleanup, A/L Ingress, Pre-Repress	0:55	
	B. <u>Partial Completion</u> 1. CETA Cart Relocations 2. Cleanup, A/L Ingress, Pre-Repress	2:35	
	C. Complete EVA 3	3:35	

364h

9.102 ISS SAFING

Table 7. EVA 3 - P6 SASA Relocate, CETA Carts (cont)

Phase Completed	Action(s)	Time to Complete	Notes and Reference
CETA Cart 1 Removal from P1	<u>Options:</u> A. <u>Return to ISS</u> 1. Reinstall CETA 1 on P1 2. Cleanup, A/L Ingress, Pre-Repress	0:50	
	B. <u>Finish CETA 1</u> 1. Complete CETA 1 Relocation 2. Cleanup, A/L Ingress, Pre-Repress	1:15	
	C. <u>Finish CETA 1, 2</u> 1. Complete CETA 1 and 2 Relocations 2. Cleanup, A/L Ingress, Pre-Repress	2:15	
	D. Complete EVA 3	3:15	
CETA Cart 2 Removal from P1	<u>Options:</u> A. <u>Return to ISS</u> 1. Reinstall CETA 2 on P1 2. Cleanup, A/L Ingress, Pre-Repress	0:50	
	B. <u>Finish CETA 1, 2</u> 1. Complete CETA 2 Relocation 2. Cleanup, A/L Ingress, Pre-Repress	1:15	
	C. Complete EVA 3	2:15	
CETA Cart 1, 2, Relocations Complete	<u>Options:</u> A. <u>Return to ISS</u> 1. Cleanup, A/L Ingress, Pre-Repress	0:35	
	B. Complete EVA 3	1:35	
P6 XPNDR Retrieval (EV3)	EV3: Complete EVA 3	0:35	
Z1 SASA Gimbal Locks (EV1)	<u>EV1 Options:</u> A. <u>Return to ISS</u> 1. Cleanup, A/L Ingress, Pre-Repress	0:35	
	B. Complete EVA 3	1:05	
MISSE 3 Retrieval	<u>EV1 Options:</u> A. <u>Return to ISS</u> 1. Cleanup, A/L Ingress, Pre-Repress	0:35	
	B. Complete EVA 3	0:50	
MISSE 4 Retrieval	1. EV1: Complete EVA 3	0:35	
Cleanup, Ingress, Pre-Repress	No Action Required	0:00	

2. Go to {9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION}, step 2b (SODF: JNT OPS: EMERGENCY RESPONSE).

3641

9.102 ISS SAFING

EVA 4

1. Determine phase completed from Table 8 and perform action(s).

Table 8. EVA 4

Phase Completed	Action(s)	Time to Complete	Notes and Reference
Egress	<u>Options:</u> A. <u>Return to ISS</u> 1. A/L Ingress, Pre-Repress	0:20	No Setup on EVA 4.
	B. <u>Partial Completion</u> 1. Complete OBSS OSE Install 2. A/L Ingress, Pre-Repress	1:30	
	C. Complete EVA 4	6:10	
OBSS Boom Stand Install	<u>Options:</u> A. <u>Partial Completion</u> 1. (EV2) Complete GPS Antenna #4 2. (EV3) Complete P6 Aux Bag 3. Cleanup, A/L Ingress, Pre-Repress	1:25	
	B. Complete EVA 4	5:10	
GPS Antenna #4 Removal (EV2)	<u>Options:</u> A. <u>Partial Completion</u> 1. Complete EWIS Antenna Install 2. Cleanup, A/L Ingress, Pre-Repress	2:15	
	B. Complete EVA 4	4:30	
P6 Aux Bag Relocation (EV3)	<u>Options:</u> A. <u>Partial Completion</u> 1. Complete EWIS Antenna Install 2. Cleanup, A/L Ingress, Pre-Repress	2:25	
	B. Complete EVA 4	4:40	
EWIS Antenna Install	<u>Options:</u> A. <u>Partial Completion</u> 1. Complete LAB MMOD Shield 2. Cleanup, A/L Ingress, Pre-Repress	1:15	
	B. Complete EVA 4	3:00	
LAB MMOD Shield C2-03 Cleanup	<u>Options:</u> A. <u>Partial Completion</u> 1. Complete Node MMOD Shield 2. Cleanup, A/L Ingress, Pre-Repress	1:15	
	B. Complete EVA 4	2:30	

3641

9.102 ISS SAFING

Table 8. EVA 4 (cont)

Phase Completed	Action(s)	Time to Complete	Notes and Reference
Node MMOD Shield C2-02 Cleanup	Options: A. <u>Return to ISS</u> 1. Cleanup, A/L Ingress, Pre-Repress B. Complete EVA 4	0:45 2:00	
S3 WETA Install at CP1	Complete EVA 4	0:45	
Cleanup, Ingress, Pre-Repress	No Action Required	0:00	

2. Go to {9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION}, step 2b (SODF: JNT OPS: EMERGENCY RESPONSE).

MT Translations

1. Determine phase completed from Table 9 and perform action(s).

Table 9. MT Translations

Phase Completed	Action(s)	Time to Safe	Notes/Reference
MT Translation Started	Complete Translation and Latch MT.	1:30	Although undocking is allowed with brakes on, SSRMS maneuvering is not allowed unless the MBS is latched at a worksite
SSRMS Maneuvering to translate at WS 1	Finish maneuver per timeline.	0:20	
SSRMS Walk off to the LAB or MT PDGF 2 started	Complete Mnvr	0:05	

2. Go to {9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION}, step 2b (SODF: JNT OPS: EMERGENCY RESPONSE).

364K

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ATTACHMENT 3

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15-0844 2.606 DCSU XX RBI 6 OVERCURRENT SAFING FAILED - PVM - WARN

(WARN/12A.1 - ALL/FIN 9/Paper on ISS/REAL-TIME) Page 1 of 4 pages

OBJECTIVE:

This procedure will determine if DCSU overcurrent safing failed due to sensor failure or if real condition exists. If real DCSU overcurrent condition exists power will be removed and downstream loads will be unpowered. Critical Bus Loss actions follow-on to this procedure.

Table 1. Power Channel Connectivity

[PVM]	Channel [XX]	BCDU [XXY]	MBSU [Z]	MBSU [RBI]	[PVM]	Channel [XX]	BCDU [XXY]	MBSU [Z]	MBSU [RBI]
S4	1A	1A1	1	RBI 1	P4	2A	2A1	2	RBI 1
	1A	1A2	1	RBI 1		2A	2A2	2	RBI 1
	1A	1A3	1	RBI 1		2A	2A3	2	RBI 1
	3A	3A1	3	RBI 1		4A	4A1	4	RBI 1
	3A	3A2	3	RBI 1		4A	4A2	4	RBI 1
	3A	3A3	3	RBI 1		4A	4A3	4	RBI 1
S6	1B	1B1	1	RBI 8	P6	2B	2B1	2	RBI 8
	1B	1B2	1	RBI 8		2B	2B2	2	RBI 8
	1B	1B3	1	RBI 8		2B	2B3	2	RBI 8
	3B	3B1	3	RBI 8		4B	4B1	4	RBI 8
	3B	3B2	3	RBI 8		4B	4B2	4	RBI 8
	3B	3B3	3	RBI 8		4B	4B3	4	RBI 8

1. DETERMINING RBI CURRENT

[PVM]: EPS: DCSU [XX]: DCSU [XX]

Record current values for RBIs 1 to 6 in Table 2 (retain negative signs).

Table 2.

RBI #	Current, Amps (I_{RBI})	
	(-)	(+)
1		
2		
3		
4		
5		
6		
Total (absolute value)		

Add up all current values in Table 2.

If the difference between (-) and (+) column totals (absolute value) is > 13 amps, then sensor failure >>

If (-) and (+) column totals (absolute value) are each < 96.7 amps, then condition has cleared.

Notify **MCC-H** when comm is available, >>

**15-0844 2.606 DCSU XX RBI 6 OVERCURRENT SAFING FAILED - PVM -
WARN**

(WARN/12A.1 - ALL/FIN 9/Paper on ISS/REAL-TIME)

Page 2 of 4 pages

Shunting SSU [XX]

NOTE

1. The following steps attempt to power down the channel. Caution and Warning in addition to Module Lights can be used as a cue to indicate successful powerdown.
2. Numerous Caution and Warning messages will be expected during the execution of this procedure (no action is required), and comm may be lost with **MCC-H**.

[PVM]: EPS: SSU [XX]:

sel PVCE

'All PVCE Off'

cmd Off (Single step cmd; Arm not required)

Verify PVCE 1, 2, and 3 Error Voltage < 0.6 V

sel LFDP

cmd LFDP 1 Stat Off - Off (Single step cmd; Arm not required)

√LFDP 1 Stat – Off

cmd LFDP 2 Stat Off - Off (Single step cmd; Arm not required)

√LFDP 2 Stat – Off

cmd LFDP 2 Stat Off - Off (Single step cmd; Arm not required)

√LFDP 2 Stat – Off

BCDU [XXY] Converter Off

NOTE

After commanding the first converter off while the short still exist the other two BCDUs may trip.

[PVM]: EPS: Energy Storage [XX]:

15-0844 2.606 DCSU XX RBI 6 OVERCURRENT SAFING FAILED - PVM - WARN

(WARN/12A.1 - ALL/FIN 9/Paper on ISS/REAL-TIME)

Page 3 of 4 pages

'BCDU [XXY]' where [Y] =

sel Conv

'Converter'

cmd Off (single step cmd, off - Arm not required)

√State – Off

'Fault Isolator'

cmd Open (Single step cmd; Arm not required)

√Posn – Op

Repeat

Checking PMCU MDM Integration Counter

CDH: Primary PMCU:

If Frame Count - incrementing

S0: EPS: MBSU [Z]

sel [RBI]

cmd Open – Open (Verify – Op)

For PVM = 2B

With Quick Response Urgency, go to [{6.100 CRITICAL BUS LOSS ACTIONS - WARN}](#), MBSU 2 CH 2A/2B actions (SODF: WARN: CRITICAL BUS LOSS).

For PVM = 2A

With Quick Response Urgency, go to [{6.100 CRITICAL BUS LOSS ACTIONS - WARN}](#), MBSU 2 CH 2A/2B actions (SODF: WARN: CRITICAL BUS LOSS).

For PVM = 4A

With Quick Response Urgency, go to [{6.100 CRITICAL BUS LOSS ACTIONS - WARN}](#), MBSU 4 CH 4A/4B actions (SODF: WARN: CRITICAL BUS LOSS).

For PVM = 4B

With Quick Response Urgency, go to [{6.100 CRITICAL BUS LOSS ACTIONS - WARN}](#), MBSU 4 CH 4A/4B actions (SODF: WARN: CRITICAL BUS LOSS).

For PVM = 1A

With Quick Response Urgency, go to [{6.100 CRITICAL BUS LOSS ACTIONS - WARN}](#), MBSU 1 CH 1A/1B actions (SODF: WARN: CRITICAL BUS LOSS).

**15-0844 2.606 DCSU XX RBI 6 OVERCURRENT SAFING FAILED - PVM -
WARN**

(WARN/12A.1 - ALL/FIN 9/Paper on ISS/REAL-TIME)

Page 4 of 4 pages

For PVM = 3A

With Quick Response Urgency, go to {[6.100 CRITICAL BUS LOSS ACTIONS - WARN](#)}, MBSU 3 CH 3A/3B actions (SODF: WARN: CRITICAL BUS LOSS).