



SPACE SHUTTLE PROGRAM
Space Shuttle KSC Integration Office
NASA Kennedy Space Center, Florida



STS-119 Launch Site Flow Review

Presenter **Kenneth Nowak**

Date **05-15-08**

Program Freeze Point

PRCB Presentation

S115119B



STS-119 Launch Site Flow Review

Presenter **Kenneth Nowak**

Date **05-15-08**

Baseline the STS-119 Mission Specific Requirements and Flow Plans.

The STS-119 Integrated Launch Site Requirements were established by PRCBD S115119A dated 04-03-08. This CR and the Associated Data Package were reviewed at the 05-12-08 FRWG.

Flight Management*

MO3/USA-PI

Orbiter GFE

Requesting Approval

MV5

Payload/Cargo Engineering*

Requesting Approval

USA-PI

Shuttle Processing*

PH-B2

Status in Back Up

KSC Integration*

MK-SIO

Flight Software

USA-FSW

Orbiter Engineering

USA-OE

EVA

XA

Baseline/Status at DLSFR

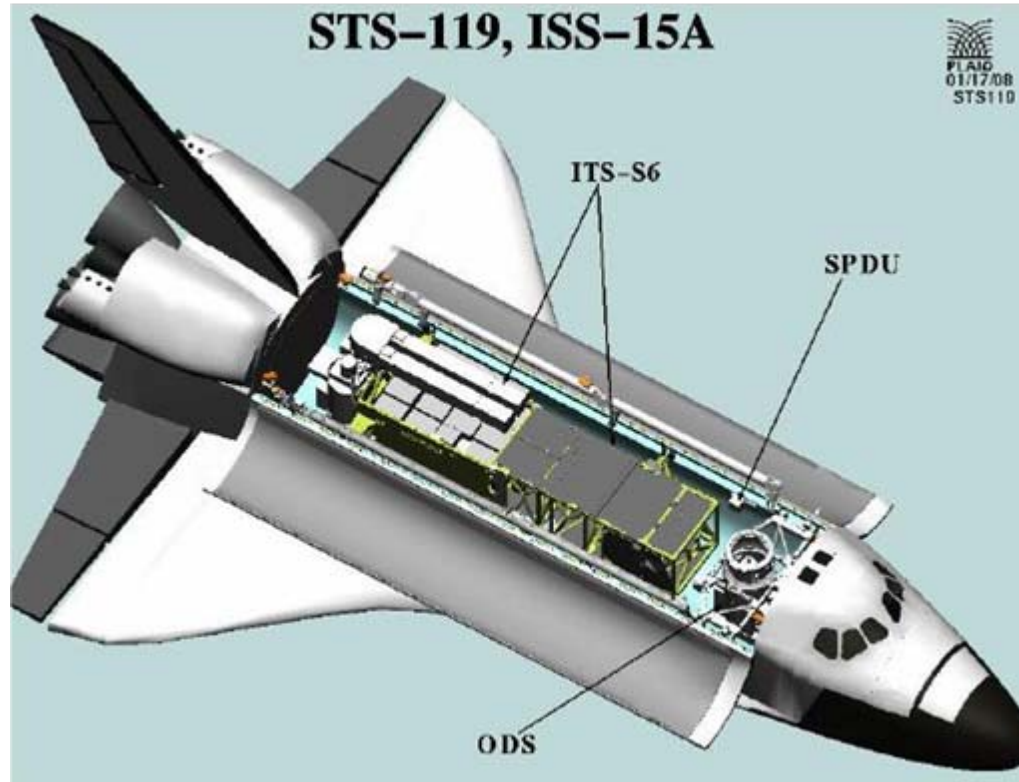
SSME

MP21

KSC ISS & Payload Processing

UB-R3

*BackUp Material



STS-119 (ISS-15A)
Launch Site Flow Review (LSFR)
Mission Requirements Status
May 15, 2008



STS-119 LSFR		Presenter MO3/Todd Hellner	
Flight Requirements Status		Date 5/15/08	Page 2

LAUNCH

12/04/08
 39A/ MLP2
 CREW SIZE: 7 UP / 7 DN
 (1 crew rotation)

ORBIT

51.6 DEG
 122 NM
 DIRECT INSERTION
 DURATION: 13 + 1 + 2 DAYS

CONFIGURATION

OV-103 (36)
 LP01;RP03
 ET-130
 BI-137
 RSRM-105
 SSME (1) TBD (2) TBD (3) TBD
 OI-33
 SRMS,ODS,OBSS,SSPTS

CONSUMABLES

CRYO TANK SETS	5 (OFFLOADED 450 lbs)
GN2 TANKS	6 (OFFLOADED 66 lbs)
FWD RCS	1912# (OFFLOAD)
AFT RCS	4970# (FULL)
OMS	22760# (FULL)

PAYLOAD

ISS 15A (S6), MAUI

LANDING

SITE	KSC
TAL	ZARAGOZA
ALT. TAL	MORON & ISTRES
SCA	911

- **CURRENT BASELINED APM (04/29/08) is +1541 LBS (based on Dec launch)**
- **ORBITER DOWNWEIGHT AND GG's ALL WITHIN LIMITS**



STS-119 LSFR		Presenter MO3/Todd Hellner
Flight Requirements Status		Date 5/15/08 Page 3

PRCB CR Status

#S072119D	Increase Mission Duration to 14+1 Days	Evals Due 5/15/08
# S072119E	Add SEITE as a Payload of Opportunity	Evals Due 5/15/08

NSTS 21510 -15A MIP CR Status

#MIP21510-0013	Update Table 4-2 Mission Task Priorities	In Work – Pending ISS Input
----------------	--	-----------------------------

STS-119 FRD Latest Revision: 004, dated April 23, 2008

Approved CRs against Revision 004

- > NSTS 17462-119-016 – Add Boundary Layer Transition Flight Experiment DTO 854
- > NSTS 17462-119-017 – Change TBD for Minicam Video during Ascent to Aft Looking Forward

LON

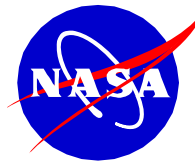
- > Fly STS-119 with LON crew compartment configuration
- > STS-319 may be necessary if STS-119 launch date slips out and becomes greater than 90 days from the STS-126 launch date



SPACE SHUTTLE PROGRAM

Orbiter Project Office

NASA Johnson Space Center, Houston, Texas



Presenter **MV5/ Ken Ruta**

Date **May, 2008**

Page **1**

SRMS End Effector Configuration Change

S165341



SPACE SHUTTLE PROGRAM

Orbiter Project Office

NASA Johnson Space Center, Houston, Texas



End Effector Configuration Change

Presenter **MV5/ Ken Ruta**

Date **May, 2008**

Page **2**

- **As presented at the Launch Site Requirements Review for STS-119, MDA is in the process of upgrading the SRMS End Effector (EE).**
- **The new -13 End Effector incorporates two design modifications:**
 - **1) The Spring Return Assembly was altered to improve the output torque drive efficiency and reliability.**
 - **2) The Energy Absorber shaft material and processing were changed to reduce chipping of the nitride coating.**
- **Revise STS-119 MECSLSI V0720-200198-001 and -002 as follows:**
 - **IS – M072-544502-036**
 - **Was – M072-544502-033**
 - **Mech Instl Remote Manipulator Instl Model MV0082A**

**STS-119
ISS-15A / ITS-S6**

Launch Site Flow Review

Payload Cargo Engineering Status

Yvette Carmona

281-212-6492

05/15/08

Mission Unique Deviation to NSTS 60523

- **Background**

- **NSTS 60523 defines a standard payload avionics configuration for all vehicles and requires PRCB approval for changes or mission unique exceptions**
- **Two standard cables (46P77W880 and 46P77W718) were temporarily removed to provide access during SSPTS mod on OV-103 flt 34. To save ground-processing time and weight, PRCB approved leaving cables out for STS-120/124 (OV-103, flight 34/35) per PRCB CR S063620.**
- **The 46P77W880 cable is used when a flight requires a keel camera. The 46P77W718 cable is used for T-0 access for payloads requiring 1553 data (legacy active Multi-Purpose Logistic Module [MPLM] requirement).**

- **Recommendation**

- **These cables are not required to satisfy any payload or mission requirements on STS-119 (OV-103, flt 36).**
- **Implementing a deviation to leave cables out will save KSC ground-processing time and provide weight savings.**

KSC Launch and Landing Project
STS-119
Launch Site Flow Review

May 15, 2008

Agenda

- OPF Resource Summary S.Stilson / NASA
- Milestone Interface Chart S. Stilson / NASA
- Flight Element Processing W.Bingham / USA



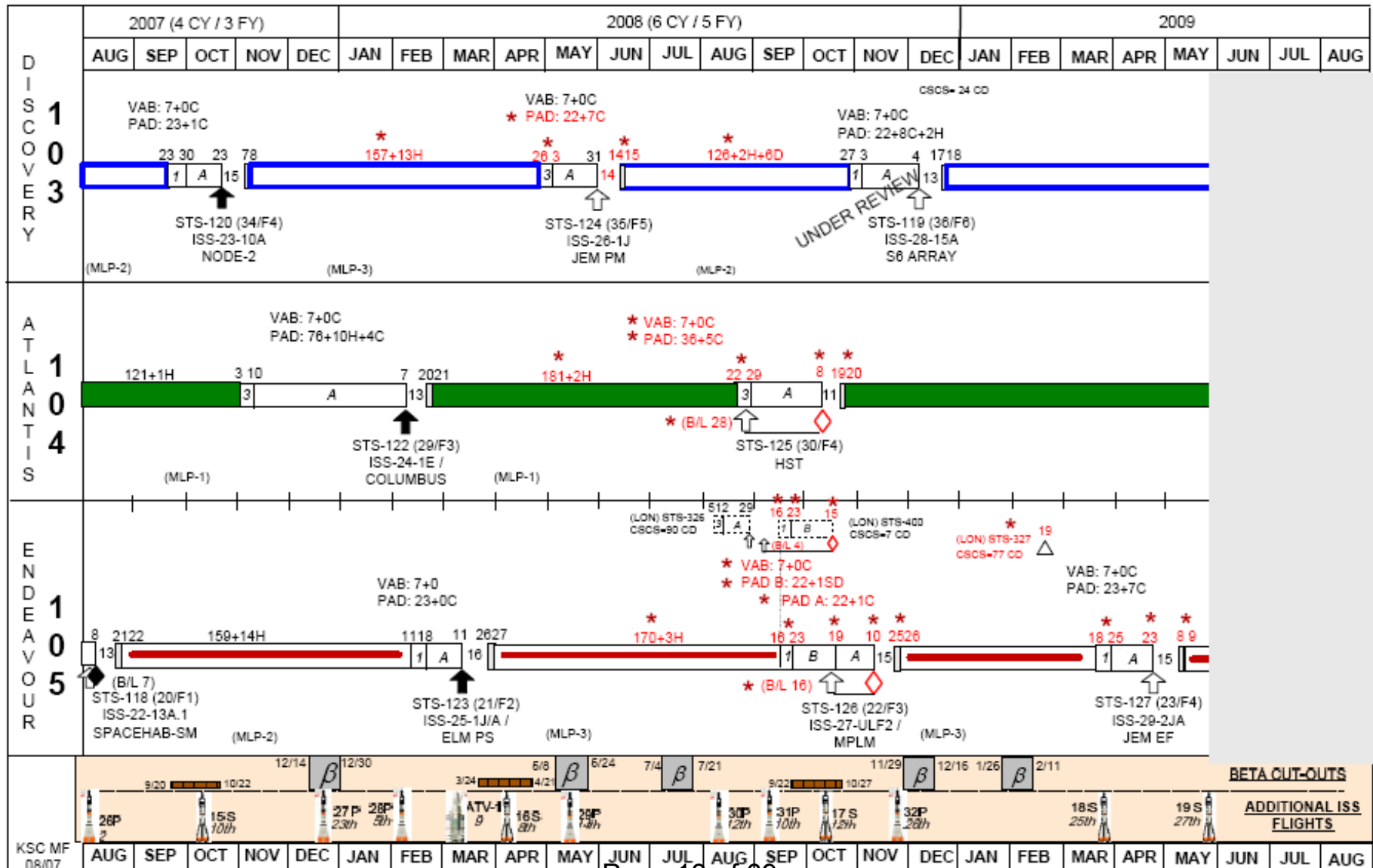
Multi Flow

S.Stilson

KSC ASSESSMENT / ORB MULTI-FLOW

SSP APPROVED MANIFEST (FAWG OPT. 08A-10)

0800 EDT, 9 MAY 2008



LEGEND H = HOLIDAY D = DRYDEN RESERVE C = PAD CONTINGENCY OPF-1 OPF-2 OPF-3 Vehicle out of service S = SOYUZ P = PROGRESS

DFRC OPS VAB OPS PAD OPS MILESTONE LAUNCH MLP TO VAB / START STACK / ET - SRB MATE / ET - MATE CLOSEOUTS COMPLETE

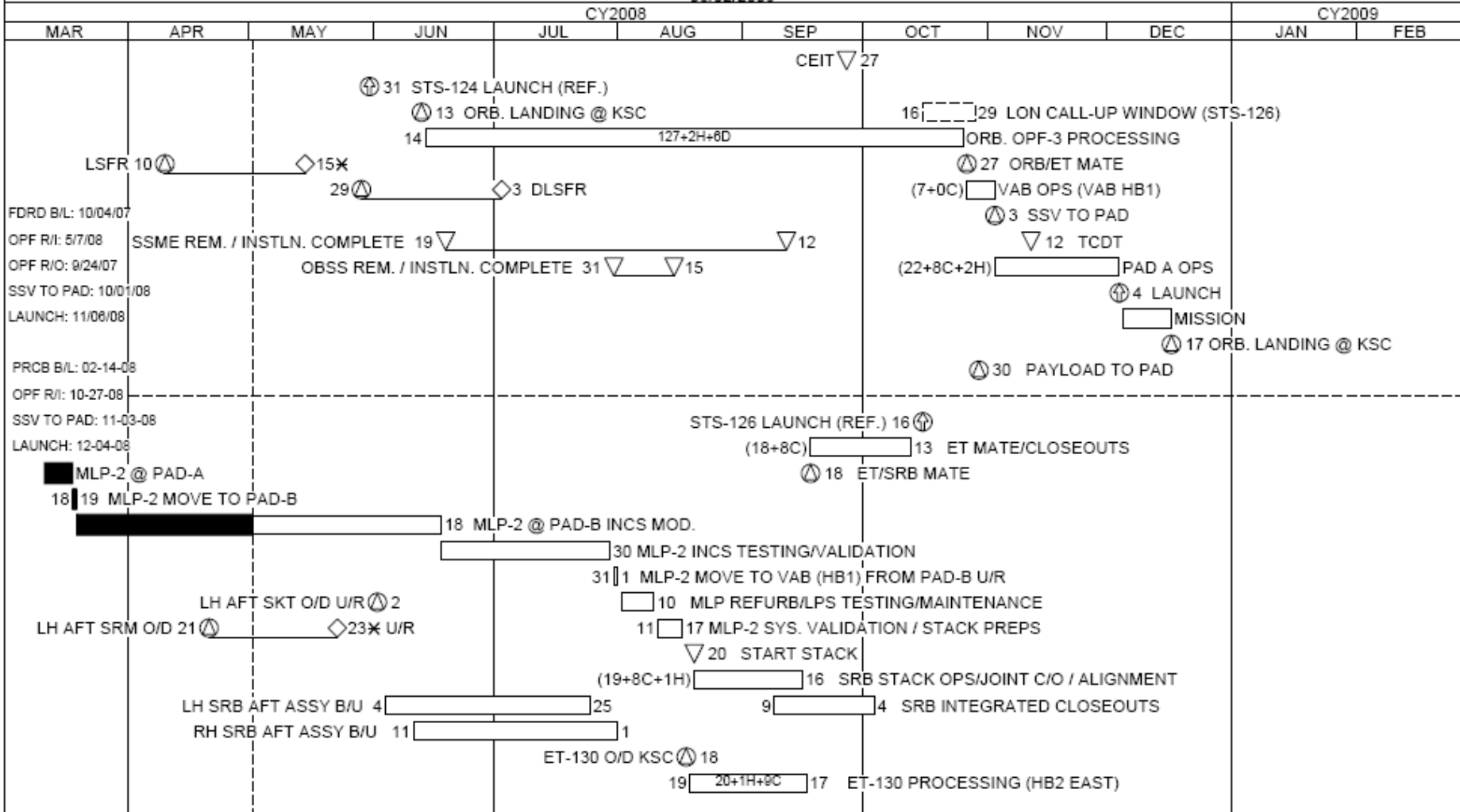
STS-119 KSC Milestone Interface Chart

OPR: USA - R. GILLETTE, INTEG. OPS.
NASA - C. FORD, PH-0

OV-103 / 36 / ISS-28-15A / S6 ARRAY
CREW / DURATION: 7 / 13
ET-130 / BI-137 / RSRM 105 / MLP-2 / PAD-A / VAB HB1

SSP APPROVED MANIFEST 2-14-08 (REF. CR #S042013HD)
Status as of:
05/02/2008

UNDER REVIEW



THREATS: 1. ET DELIVERY

NOTES: 1. TWENTY-EIGHTH ISS/SSP FLIGHT

Flight Element Processing

W. Bingham

Flight Element Processing Overview

- Milestone Summary To Be Presented
- Significant Processing Deltas To Be Presented
- TPS Status To Be Presented
- Issues and Concerns To Be Presented
- Backup Not Presented
- Stoplight Chart Not Presented

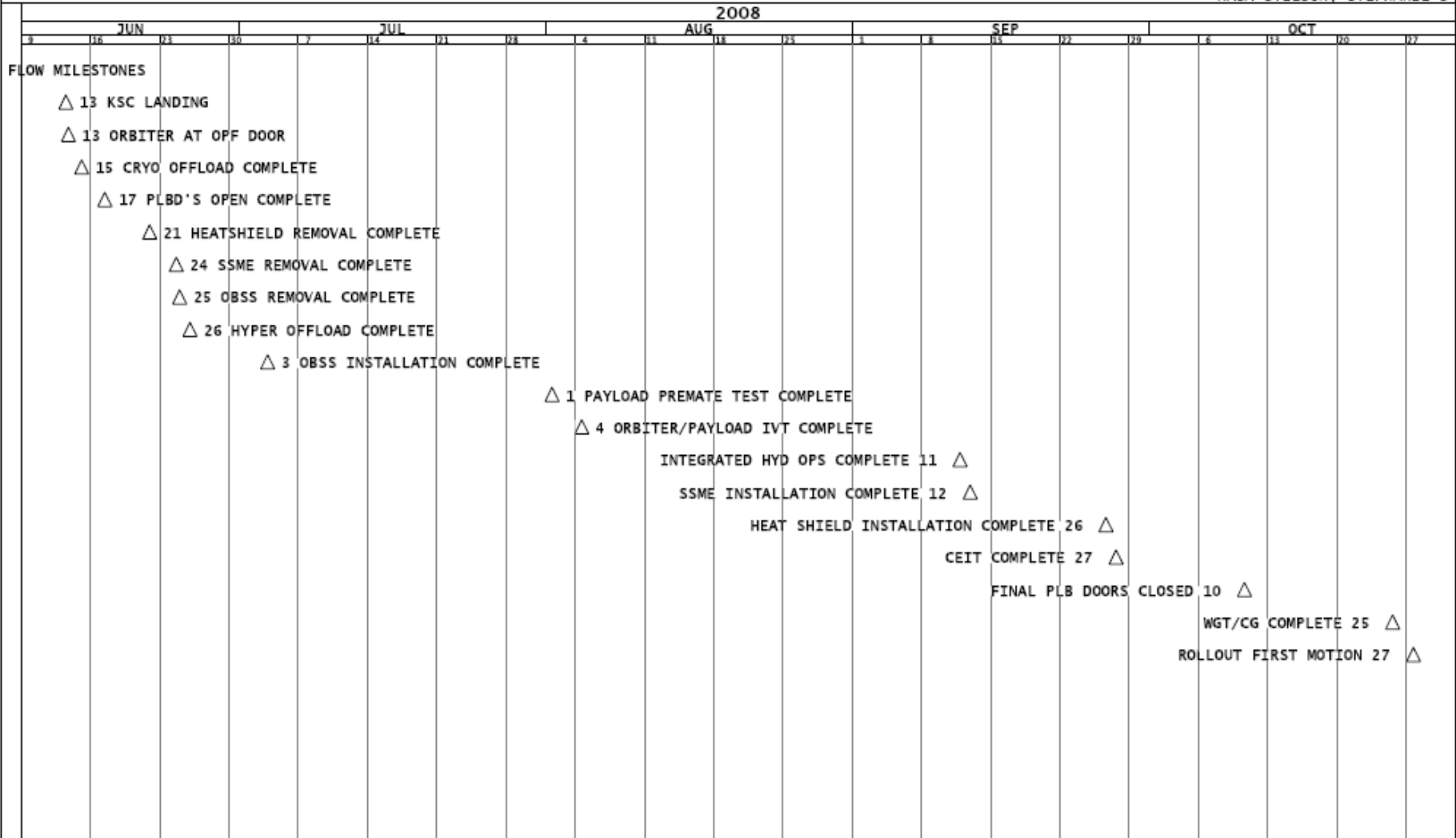
STATUS

USA	NASA
C	C
C=CONCUR	NC=NOT CONCUR

STS-119/OV-103 OPF FLOW MILESTONES
 DOWN PAYLOAD: ISS-26-1J/ UP PAYLOAD: ISS-28-15A

Creation Date: 3-MAR-2008
 Revision Date: 6-MAY-2008
 Revision :A

OPR:USA-BINGHAM, WAYNE W
 NASA-STILSON, STEPHANIE S



△ PLAN/BASELINE ◇ DEVIATION FROM BASELINE ▲ ◆ ACTIVITY CANCELED △_△ ACTIVITY DURATION **** SCHEDULE CHANGE

Significant Processing Deltas

- Major Components Removal / Replacements
 - Russian Actuator Change Out
 - Body Flap PDU R/R
 - Fuel Cell # 3 R/R Depending on Hours (Potential)
 - 2 ASA'S Aft Avionics Bay 6
 - 2 ATVC'S Aft Avionics Bay 6

- MODS
 - 30010 Inertia Reel Mod for Lightweight Crew Seats
 - 30091 Boundary Layer Transition (BLT) Light DTO

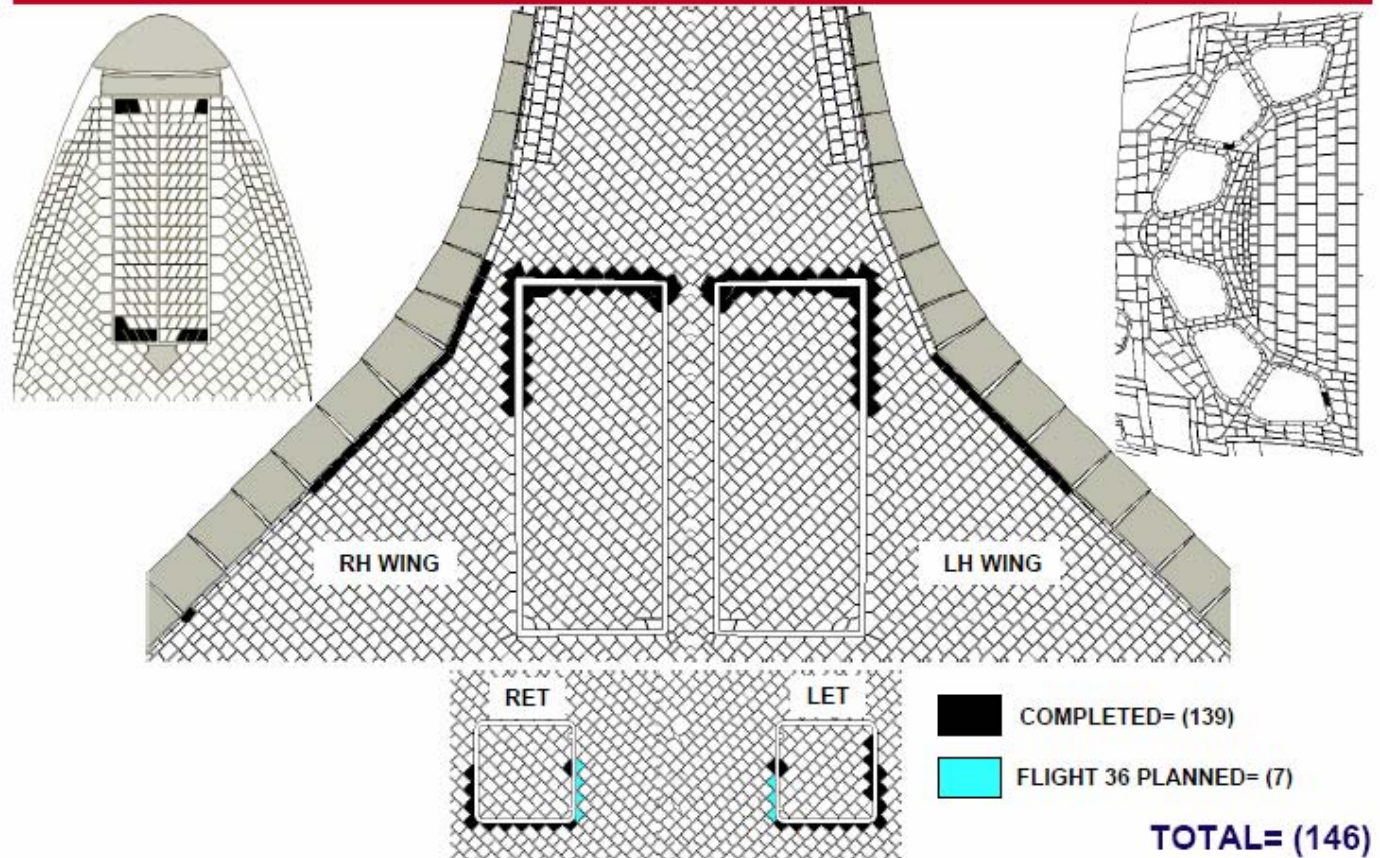
Significant Processing Deltas

- 127 Days Processing Flow
- Shifting Based on 6/2's on Critical Path

- IFA's/TPS In-Flight Damage (Growth Beyond Projection)
- Tile Putty Repairs
 - Potential Spec Change

BRI FUTURE PLANNING (103 FLIGHT 36)

BRI Future Planning (103 Flight 36)



STS-119 Preliminary Cavity Estimate

<u>Priority</u>	<u>Description</u>	<u>LSFR</u>
Mand	Deferred Tile/Fib for 1-Flight	22
Mand	In-Flight Tile/Fib Damage	65*
Mand	Putty Repairs/Grindouts	25*
Mand	Insert Inspections	2*
Mand	Operational (Adj Ops,C/P Ops,Veh Suppt)	30*
Mand	BLT Mod (11-TC,5-Cover,1-Trip,1-Mads, 3-22lb Upgrade, 2 Gap Filler)	23
1-5	TPS Priorities	Complete
6	ET Door Structure-Inboard Side	7
8	I/B 9LB/.090 SIP Tile Inspection	2
9	O/B 9LB/.090 SIP Tile Inspection (pending mand. reduction)	6
TPS Removal TOTAL (* Estimate)		183

Issues and Concerns

- **PLBD Actuator #1 Potential Removal-Parts Availability (DEFFERED)**
- **GFE**

STATUS

OPR: USA - J. Taylor, INTEG FM (1-7420)
NASA - D. Lyons, PH-A2 (1-9221)

STS-119 / OV-103

USA NASA

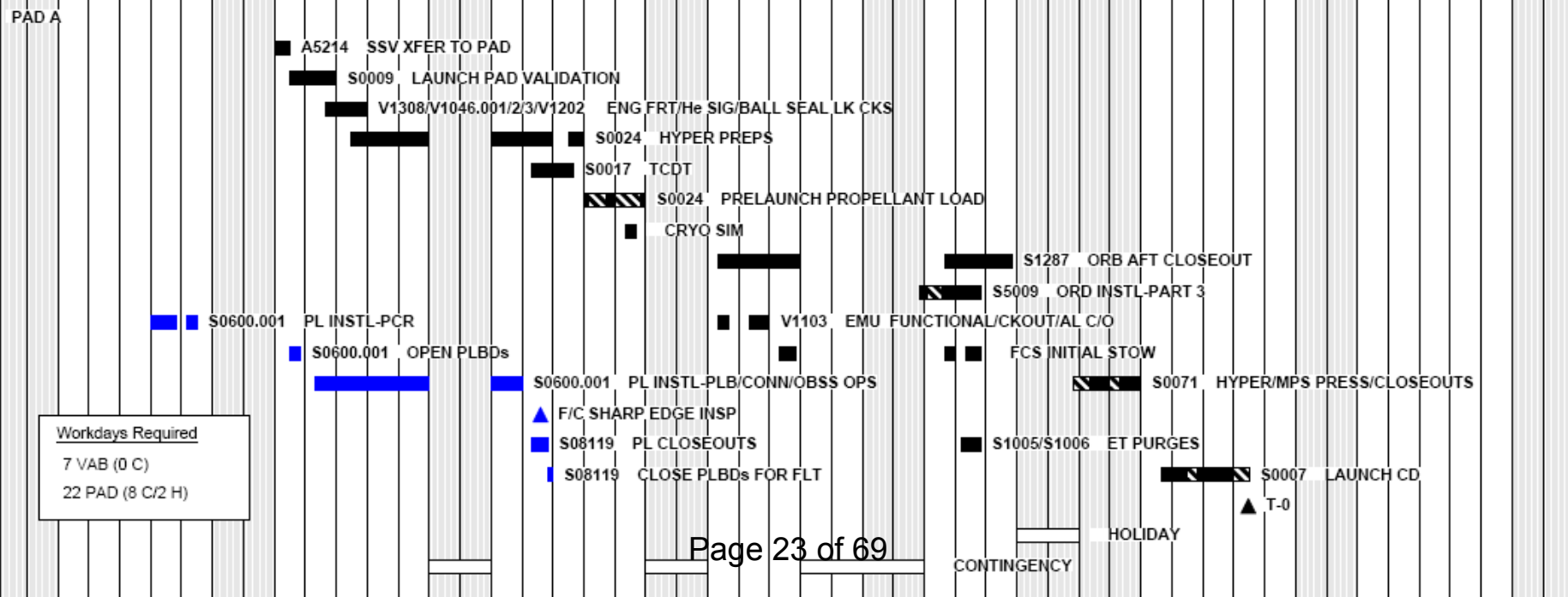
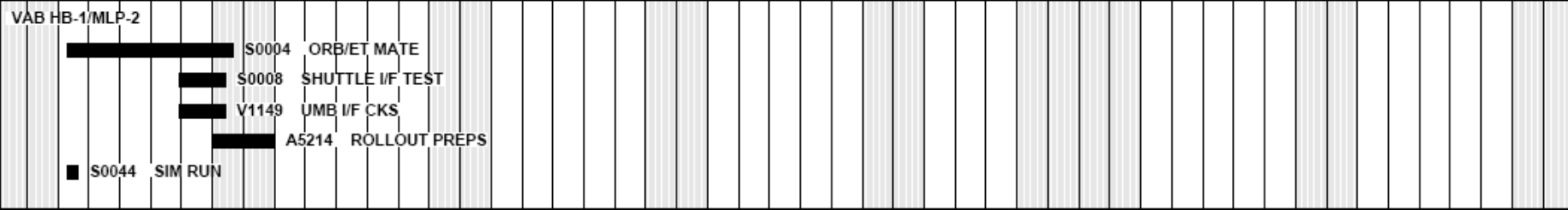
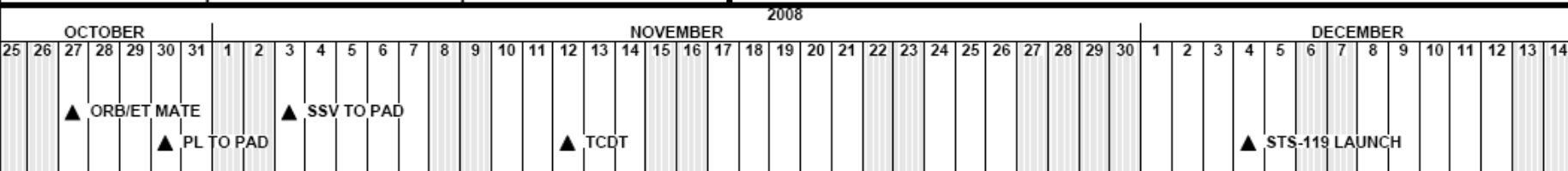
C C

CONCUR

Creation Date: 23 JAN 08
Revision Date: 14 FEB 08
Revision: A

Integrated Operations Assessment Summary

Payloads: ISS-28-15A S6 ARRAY (VERT)



Workdays Required

7 VAB (0 C)
22 PAD (8 C/2 H)



STS-119 Launch Site Flow Review	Presenter Kenneth Nowak
	Date 05-15-08

Backup Material

FRWG Presentation (With Minor Changes)



	Presenter MO3/Todd Hellner	
	Date 5/15/08	Page 4

BACK UP CHARTS



STS-119 LSFR Performance Margin		Presenter MO3/Todd Hellner
Date 5/15/08	Page 5	

- **SIMULATION MARGIN (CIRBF119) +2756**

- **WEIGHT CHANGES SINCE SIMULATION**
 - **PAYLOAD +115**
 - **ORBITER -37**
 - **NPC +150**
 - **CREW COMPARTMENT -195**
 - **OMS -747**
 - **ET +2**
 - **TOTAL WEIGHT CHANGES -712 +712**

- **OTHER PERFORMANCE PROJECTIONS**
 - **PROTECTION FOR DOL DISPERSIONS -700**
 - **12/04/08 LAUNCH DATE (PMBT & ATMOS) -330**
 - **OMS ASSIST ADJ (BASED ON 4030 USAGE) +46**
 - **SRB – M.P. UPDATES -184**
 - **SRB – BR / 0.30 MIL LOWER THAN 0.3705 AVG -108**
 - **PROJ TO 5 MIN WINDOW FROM INPLANE -600**
 - **PERFORMANCE CHANGES ADJUSTMENT -51**

- **CURRENT BASELINED APM (04/29/08) +1541**



SPACE SHUTTLE PROGRAM

Flight Management Office

NASA Johnson Space Center, Houston, Texas



STS-119 LSFR		Presenter MO3/Todd Hellner	
Flight Mass Properties		Date 5/15/08	Page 6

<u>CASE</u>	<u>TOUCHDOWN WEIGHT pounds (LIMIT)</u>	<u>MACH 3.5 X C.G. inches (LIMIT)</u>
NOMINAL	200658 (233000)	1082.4 (1075.7)
RTLS	237921 (245000)	1080.5 (1077.2)
TAL	236544 (244000)	1080.5 (1077.2)
AOA	233161 (242000)	1078.5 (1075.7)
CONT RTRN **	234338 (233000)	1079.8 (1075.7)
(CONT RTRN CASE IS NO DOCK PLS)		

** Contingency Return case exceeds 233K NEOM weight limit. (See Vol. X Bk.1 Sec. 3.3.1.1.9)

NOTE: RTLS INCLUDES 185 SEC ARCS, 25 SEC FRCS DUMPS
TAL INCLUDES 120 SEC ARCS, 65 SEC FRCS DUMPS
104 LBS AFT BALLAST (BOXES ONLY)

ESTIMATES BASED ON TDDP CIRBF119 AND MODIFIED FOR WEIGHT CHANGES THRU 04/29/08.



SPACE SHUTTLE PROGRAM

Flight Management Office

NASA Johnson Space Center, Houston, Texas



STS-119 LSFR		Presenter MO3/Todd Hellner	
Orbiter Ferry Mass Properties		Date 5/15/08	Page 7

STS-119 Orbiter/Ferry Mass Properties Have Been Reviewed by Space Shuttle Program Integration and Are Within Specified Limits

<u>Case</u>	<u>Ferry Weight (LB)</u>	<u>Center of Gravity (inch)</u>		
		<u>X</u>	<u>Y</u>	<u>Z</u>
<u>Nominal</u> - Orbiter c.g. (SCA c.g.) (No CM Ballast, No Fluids Off-Loaded, No Payload Bay Opening)	200830	1119.3 (1414.9)	-0.2 (N/A)	371.4 (513.6)
<u>AOA</u> - Orbiter c.g. (SCA c.g.) (No CM Ballast No Fluids Off-Loaded, No Payload Bay Opening)	230876	1112.1 (1408.0)	- 0.7 (N/A)	375.1 (517.7)
<u>TAL</u> - Orbiter c.g. (SCA c.g.) (3 SSME's Removed, No Fluids Off-Loaded, No Payload Bay Opening, Max Weight 217000 LB)	209637	1071.7 (1367.7)	-0.8 (N/A)	376.3 (521.0)

X c.g. Limits (Orbiter Coordinates)

Nominal	=	1060.0 TO 1129.7
AOA	=	1060.0 TO 1116.0
TAL	=	1060.0 TO 1123.4

Z c.g. Limits (Orbiter Coordinates)

Nominal	=	360.0 TO 380.0
AOA	=	360.0 TO 380.0
TAL	=	360.0 TO 380.0



STS-119 LSFR		Presenter MO3/Todd Hellner	
Flight Requirements Status		Date 5/15/08	Page 8

Recently Approved NSTS 21510 -15A MIP CR's

#MIP21510-0009	Add Section 3.1 reference to OBSS and Clarify Section 5.0 SSPTS Requirements	Approved 5/1/08
#MIP21510-0010	Add ISS Utilization Payload Requirements	Approved 5/1/08
#MIP21510-0011	Update Section 4.2.3.2 – Contamination	Approved 5/1/08
#MIP21510-0012	Update O2 Transfer Requirements	Approved 5/1/08

Back-Up

NSTS 60523 Detailed Deviation

REQUIREMENT: Paragraph 1.3 STANDARDIZATION GROUNDRULES. All Space Shuttle flights must comply with the configuration defined in this document. Services can be added on a flight if it does not impact standard wiring, but items can't be deleted if they will impact the ability to swap vehicles. Permanent changes or mission unique exceptions to this document require PRCB/DPRCB approval.

DEVIATION: Remove the standard payload bay cables 46P77W880 and 46P77W718 from STS-119.

RATIONALE: The 46P77W880 cable is used when a flight requires a keel camera. The 46P77W718 cable is used for T-0 access for payloads requiring 1553 data (legacy active Multi-Purpose Logistic Module [MPLM] requirement). These cables are not required to satisfy any payload or mission requirements on STS-119. The cables were removed during SSPTS modification period and left out for STS-120 and STS-124 (ref. PRCBD S063620). Implementing this deviation to cover STS-119 will save KSC ground processing time and provide weight savings.

ELEMENT/PROJECT: Orbiter

EFFECTIVITY: STS-119 (OV-103 flt 36)

AUTHORITY: Space Shuttle PRCBD TBD, dated TBD.

STS-119 LSFR

Engineering Flight Product Status

<u>Drawing No</u>	<u>Title</u>	<u>Rev</u>	<u>EO</u>	<u>Released</u>
V072-200198	MECSLSI	A	A01	04/28/08
VA72-200198	Cargo Arrangement	Basic	-	01/25/08
VD72-200198	Avionics Diagram	A	A01	04/23/08
VS72-200198	Integrated Schematic	A	A01	04/23/08
VS70-540394	Retention Schematic	Basic	-	01/25/08

Engineering Open Work

- | | <u>ECD</u> |
|--|------------|
| • MECSLSI – Incorporate Orbiter End Effector Upgrade | 05/29/08 |
| • Cargo Arrangement update for latch guide changes | 05/29/08 |

Rescue Flight Status

- STS-119 vehicle for rescue of STS-126 unless 90-day CSCS is violated. STS-319 will fly without payload in cargo bay in this scenario.

STS-119 LSFR

OMRSD

Baselined Files

- None

Open Work

<u>RCN #</u>	<u>Title</u>	<u>RCN Release</u>	<u>ECD</u>
<u>F2V2 (Post Mate)</u>			
• PP16162	P510 - ISS-15A S6 Baseline	03/05/08A	04/23/08A
<u>F2V4 (Premate)</u>			
• DPS12590	STS-119 Mission-Unique List	05/09/08	06/03/08
• DPS12605	FIII MUL	05/09/08	06/03/08
• PSXXX	Adjacent Pin Test	05/09/08	06/03/08
<u>F2V6 (Shuttle Experiments)</u>			
• None			

Issues/Concerns

- None

STS-119 LSFR

Annex 1

- Baselined Files

- NSTS 21510 ISS-15A

- Open Work

- ISS-15A A01 – NSTS 21510

- Safety-Critical Switch
List & Grapple Fixture Update
- Interim Submittal
- Data required: Weight update
- Final Weight Update (L-1M)

Submittal

05/05/08A
07/14/08
10/21/08

CR Release

05/07/08
07/21/08
10/28/08

ECD

05/21/08
08/04/08
11/04/08

- Issues/Concerns

- None

TGHR Status

- Open Work

- Customer Submittal (L-4M)
- Release For Review (L-3M)
- Baseline (L-60 Days)

08/04/08
09/04/08
10/03/08

- Issues/Concerns

- None

STS-119 LSFR

Interface Control Documents

<u>Document</u>	<u>Title</u>	<u>ECD</u>	<u>Status</u>
ICD-A-21342	ODS-ISS		Baselined
ICD-A-21418	RSC		Baselined
ICD-A-21420	VPU		Baselined
ICD-A-21429	DTV		Baselined
ICD-A-21403	SSV		Baselined
ICD-A-21449	Mini-Cam		Baselined
ICD-A-21264	Orbiter Interface Unit		Baselined
ICD-A-21510-S6	ITS-S6		Baselined
A05581*	Bonding Requirements	05/19/08*	In Review
A05582	Update Venting Paragraph	05/19/08	In Review
Forward Work:	Update CE attach point location compatibility; Structural/Dynamics Report numbers; Incorporate ISS IDD IRNs; Update Mechanical figures per CAD model*; Add Section 20(s)		
ICD-A-21510-OOR	On-Orbit Interfaces		Baselined
Forward Work:	Update Thermal Data; Incorporate ISS IDD IRNs; Potential CE deployment violations; Add loads and robotics data (Sect 4, 11, 14)		

STS-119 LSFR

Cargo Close Clearance Process

- No clearances less than 1 inch identified by compatibility assessment
- No measurements required at this time

Cargo Integration Hardware

Delivery Status

- All required CIH has been delivered

Issues/Concerns

- None

BACK UP

STS-119/OV-103 Ground Ops Processing

Overall to Launch Window Opening G

Program Baseline Milestones (Ref Manifest 08A-10)

Critical Path:

- ET-130 Standalone Processing and ET/SRB Integrated Closeouts to Orbiter Mate

Processing Schedule	Milestones	Date	Status
VAB/PAD	LAUNCH	12/4/08	
OPF	ORBITER/ET MATE	10/27/08	
ET/SRB CLOSEOUTS	ORBITER/ET MATE	10/27/08	
SRB STACKING	ET/SRB MATE	9/18/08	
ET STANDALONE	ET/SRB MATE	9/18/08	

ISSUES / POTENTIALS

OPF PROCESSING

139 + 2H

OPF POTENTIALS

ET / SRB PROCESSING

ET-130 on dock is Under Review

LON STS-319 (LON on OV-103)

LON



G No Significant Risk

Y Significant Risk Identified that Threatens a Program Milestone, Recoverable with Mitigation

R Unachievable, Impact to a Program Milestone



➔ Remains Unchanged

⬆ Improving

⬇ Deteriorating

STR/TPS Priorities

Presenter:
PHIL GENDREAU

Organization/Date:
USA Orbiter 5-07-08

Mandatory

- Flight damage, OMRS Rqmts/Chits, LRU access, & deferred work
 - Deferred work may be redeferred with acceptable inspection
- Boundary Layer Transition Modification (*Scheduled OV-103 flt 36 only*)
- Continue G/F R & R on a best effort basis - zones 2B subset

Prioritized Opportunity

- 1. 1 thru 3 complete on all vehicles**
-
-
- 4. BRI-18 Tile - STR side of ET Doors Aft & Outboard (20 Tile)**
- 5. BRI-18 Tile – LESS Carrier Panels 8-10 (24) (OV-103 & OV-104 Only)**
- 6. BRI-18 Tile – STR side of ET Doors Inboard side – AFT 4 Tiles (8 Tile)**
- 7. Inboard Elevon “Hub” Tile Modification – (4 Tiles)**
- 8. I/B Elevon 9lb/90 SIP Upgrade to FRCI-12 – 34 Tiles (17/side) AFT to FWD**
- 9. O/B Elevon 9lb/90 SIP Upgrade to FRCI-12 – 6 Tiles (3/side)**

STR/TPS Priorities Continued

Presenter:
PHIL GENDREAU

Organization/Date:
USA Orbiter 5-07-08

10. **Structural Corrosion Sampling plan** – Heat sink Areas
11. **MLGD – Outboard Middle 1/3** - (6 Door/6 STR)
12. **Nose Area 9lb/90 SIP** Upgrade to FRCI-12 – 14* Tiles (7/side) (*103 16 tiles, *thruster*)
13. **MLGD - Outboard AFT 1/3** (1/3 left) 6/door/6 str)- 24 Tile
14. **Base Heat Shield 9lb/90 SIP** Upgrade to FRCI-12 – 42 Tiles (32/stinger, 10/Box Attach point)
15. **Gap fillers in Subset 2B** (Line across MLGD edge)
16. **BRI-18 Tile – Remaining MLGD** (Top Priority) / **LESS carrier panels/NLGD**
 1. MLGD (Inboard, forward edge working to AFT door edge)
 2. LESS - panels 8, 9, 10, 7, 6, 5, 4, 3, 2, 1, 11, 12, 13 (in that order)
 3. NLGD (attrition – do leading edge first)
17. **Mod work** (WLE sneak flow, WLE Horsecollar Gap Fillers,)
18. **MADS Instrumentation Failures (104 & 105 L/H OMS Pod)**(*place holder*)
19. **Remaining Gap Fillers & Window BRI-18**
 1. Windows 2, 3, 4, & 5 Upper Carrier Panels (top priority)
 2. Window locations 1 & 6 Upper Carrier Panels 1st/Lower C/P's 1 – 6 last

Current Vehicle Status

completed installations

Presenter:
PHIL GENDREAU

Organization/Date:
USA Orbiter 5-07-08

As of 5-5-08	Priority Number	Total	OV-103	OV-104	OV-105
1.	BRI-18 Tile - MLGD FWD O/B Corner	28	complete	complete	complete
2.	BRI-18 Tile - MLGD FWD Edge	22	complete	complete	complete
3.	BRI-18 Tile - MLGD O/B Side	18	complete	complete	complete
4.	BRI-18 Tile - STR side of ET Doors	20	complete	complete	0 (20plan)
5.	BRI-18 Tile – LESS Carrier Panels 8-10	24	complete	6 (I/W18)	2
6.	BRI-18 Tile – STR side of ET Doors I/B	8	1	1	0 (8plan)
7.	Inboard Elevon “Hub” Tile Modification	4	0	2	complete
8.	I/B Elevon 9lb/90 SIP	34	2	5	0
9.	O/B Elevon 9lb/90 SIP	6	4	3	0
10.	Structural Corrosion Sampling Plan	25 Zones	13	8	12
11.	MLGD – Outboard Middle 1/3	24	0	0	3
12.	Nose Area 9lb/90 SIP	14 (16 ^{OV103})	1	0	0
13.	MLGD - Outboard AFT 1/3	24	0	0	1
14.	Base Heat Shield 9lb/90 SIP	42	7	1 (I/W14)	11 (I/W 3)
15.	Gap fillers in Subset 2B	5 Zones	2	1	0
16.	BRI-18 Tile – Remaining MLGD (Top Priority) / LESS carrier panels/NLGD	MLGD 100 NLGD 123 LESS 66	MLGD 0 NLGD 11 LESS 7	MLGD 1 NLGD 19 LESS 2	MLGD 0 NLGD 26 LESS 12
17.	Mod work LESS internal	44 locations	37	25 (I/W14)	complete
19.	Remaining Gap Fillers & Window BRI-18	124	2	2	28



STS-119 Launch Site Flow Review	Presenter Kenneth Nowak
	Date 05-15-08

Overview

- **SSP System Drawings** **No Issues***
- **SSP Authorized Modifications/Non Standard Work** **No Issues***
- **SSP OMRS Changes (RCNs)** **To Be Presented**



STS-119 Launch Site Flow Review	Presenter MK-SIO / A. Swift	
	Date 5-15-08	Page 1

Mandatory RCNs:

KV17641	V76 - AMEC TRANSIENT VOLTAGE VERIFICATION	05/23/08
OV17693	V53 - PASSIVE DOCKING TEST UPDATE	06/6/08

Non-Mandatory Value Added RCNs:

OS17583R1	F2V3 - MPS HELIUM PRESSURE REGULATOR LL UPDATE	06/27/08
------------------	---	-----------------

STS-119 Launch Site Flow Review Flight Software Overview

Judi Powell

Flight Software

FRWG 05/12/2008

PRCB 05/15/2008

STS-119 LSFR (FSW)

- **STS-119/OV-103 Base System is the Second Scheduled Flight of Operational Increment (OI) 33 Flight Software (FSW)**
- **STS-119/OV-103 Flight Software Payload Support:**
 - ISS-15A
 - Orbiter Interface Unit (OIU)
 - Sequential Still Video (SSV)
 - Orbiter Docking System (ODS)
 - Trajectory Control System (TCS)
 - Assembly Power Converter Units (APCUs) & Station to Shuttle Power Transfer System (SSPTS) (generic support for both configurations)
- **Major New Flight Software Support Items:**
 - None

STS-119 LSFR (FSW)

- **STS-119 Source Changes/Edits for Primary Flight Software (Base)**
 - SCR 93211A - Update of SSMEC Vehicle Data Table (VDT) for Enhanced Accelerometer Operations
 - SCR 93215A - Protect Ascent Bearing Spec From MM 104 Retrograde Guidance Solution
 - SCR 93252A - Raise Fwd RCS Tank Temperature Limits
 - DR 124995 - Runway Label Not Displayed Above the Runway
 - DR 124997 - Wrong DEU for Spec 54 Automatic Ascent to Entry Bearing Switch
 - DR 126166 - I-Load Constraint Checker for STS 126 Failed with an Abend
 - DR 126187 - Entry Bearing Display not Displayed on CRTs with Unsupported MF after MM602 Transition
- **STS-119 Patch Implementation for Primary Flight Software**
 - None

STS-119 LSFR (FSW)

- **STS-119 Patch/Edit Implementation for Backup Flight Software (included on the delivered mass memory)**
 - SCR 93223 - Change N2/02 BFS FDA K-Loads to I-Loads
 - DR 121410 - BFS Setting of Unused Bits in Feature Control Words
- **STS-119 Patch Implementation for Backup Flight Software**
 - DR 121418 – BFS – Erratic HSI During Ascent (pending approval)

STS-119 LSFR (FSW)

- **Products**

- **STS-119/OV-103 Base software production schedule (available to field)**

- **Shuttle Data Tape** **May 1, 2008 Actual**

- **Mass Memory Unit Contents** **June 5, 2008**

- **STS-119/OV-103 ADTL software production schedule (available to field)**

- **This cycle may not be required.**

- **Decision to deliver this set of products will be made in June, 2008**

- **Shuttle Data Tape** **August 28, 2008**

- **Mass Memory Unit Contents** **September 12, 2008**

- **Open Items**

- **None**

- **Issues or Concerns**

- **There are no known issues or concerns with Flight Software in supporting STS-119**

ORBITER STS-119 LSFR BACKUP

- Engineering, Hardware and Certification Status
- Mod Record and MECSLSI Updates

Engineering, Hardware and Certification Status

Previously Baselined Mods

MCR NO.	MCR TITLE	Est. Engr Release (MM/DD/YY)	G.O. Engr Need (MM/DD/YY)	Est. Hdwe Delivery (MM/DD/YY)	G.O. Hdwe Need (MM/DD/YY)	MOD/CERT GO / NO-GO	CERT SUBMITTAL DATE	CERT APPROVAL DATE (ESTIMATE)	CERTIFICATION CR / CAR (BOEING)	REMARKS
Mods Previously Baselined										
30091 Dolas	Boundary Layer Transition (BLT) Flight Experiment (FE) Mod / flight experiment consists of an integrated TPS and MADS instrumentation design with a fixed protuberance tile of .025" which will initiate BLT at approximately Mach 15. Current plan calls for the first FE to be flown on OV-103 Flt 36 with a determination made post-flight if BLT FE will be flown a second flight on OV-103 at the same protuberance height. The BLT FE protuberance will be generating a boundary layer transitional cone downstream of the protuberance. A total of thirteen thermocouples will be installed in TPS tiles: eleven will be in the affected wing area downstream of the transitional cone of influence, one in the protuberance tile, and one as a reference upstream of the protuberance. Three tiles aft of the protuberance tile will be changed from LI-900 to LI-2200 as a risk mitigation to eliminate any potential of overheating / slumping of these tiles immediately downstream of the protuberance. Ten temperature measurements of the thirteen will be selected and recorded on the MADS instrumentation system each flight via wiring to a new therm	Released	N/A	5/30/08 (c)	TBD	GO (b,d)	5/16/08 P 5/16/08 P	6/27/08 P 6/27/08 P	CR 07-190001-001Y CAR 33-07-190001-001Y (Wing TPS Certification)	<p>Drawings will be a mix of vehicle (V070) drawings, Orbiter mission kit (M070) drawings and tech order (M072) drawings.</p> <p>(b) OCCB and PRCB have approved proceeding with mod implementation for STS-119.</p> <p>(c) All hardware is provided by KSC USA NSLD / Logistics / TPS Backshop. Wiring, TRJs and TCs will be provided by KSC - tile will be fabricated at the KSC TPS backshop.</p> <p>(d) Arc jet testing results and associated thermal/stress analysis required to certify protrusion tile and heating effects.</p> <p>Note - other equipment will be handled as follows: (1) TRJ & hookup - Orbiter mod (V070 drawings) (2) Structures to mount TRJ and holes for the instrumentation - Orbiter mod (V070 drawings) (3) Instrumented and Protuberance Tiles - Orbiter mission kit (M070 drawings) which stay in the orbiter drawing tree and do not require manifesting on the MECSLSI</p> <p>Mod baselined at STS-119 LSRR.</p>
30010 Groo	Inertia Reel Mod for Lightweight Crew Seats Mod replace the existing LW seat MA-8 Inertia Reels with improved MA-16 Inertia Reels as a result of findings from a NASA Crew Survivability Study conducted to identify key crew survivability improvement areas. One area identified by this study was the Light Weight Seat Restraint System. The currently used MA-8 Inertia Reel only locks from differential acceleration in the forward X direction. The MA-16 Inertia Reel provides differential locking and absolute locking in +/- X, Y, and Z axes.	Released	N/A	7/3/08 (a)	TBD	Go	4/18/08 P	5/23/08 P	CAR 25-39129185-301F CDR & Pilot Seats CAR 25-39126815-301G Mission Specialist Seats	<p>Drawings affected: SED39126815 LW Mission Specialist Seat, SED39129185 LW Pilot/Commander Seat, M072-660225 & M072-660226 tech order installations, mission kit end items K225-000002 & K226-000002 and ML0101-0113 Acceptance Test Procedure.</p> <p>(a) Estimated delivery date of MA-16 inertia reels to Boeing Crew Equipment Houston. Boeing Crew Equipment will mod pilot / commander seats on the vehicle and mission specialist seats will be modified off-line in the FCE lab per KSC GO identified window of opportunity in the flow.</p> <p>Previously program authorized by monthly CCCD Mission Equipment Modification directive S063027Y 3/5/08.</p>

Mod / MECSLSI Records (Information Only)

Previously Baselined Mods

MCR NO.	MCR TITLE	KIT-MOD RECORD / TECH ORDER IMPACT DESCRIPTION	REMARKS
Mods Previously Baselined			
30091 Dolas	Boundary Layer Transition (BLT) Flight Experiment (FE) Mod / flight experiment consists of an integrated TPS and MADS instrumentation design with a fixed protuberance tile of .025" which will initiate BLT at approximately Mach 15. Current plan calls for the first FE to be flown on OV-103 Flt 36 with a determination made post-flight if BLT FE will be flown a second flight on OV-103 at the same protuberance height. The BLT FE protuberance will be generating a boundary layer transitional cone downstream of the protuberance. A total of thirteen thermocouples will be installed in TPS tiles: eleven will be in the affected wing area downstream of the transitional cone of influence, one in the protuberance tile, and one as a reference upstream of the protuberance. Three tiles aft of the protuberance tile will be changed from LI-900 to LI-2200 as a risk mitigation to eliminate any potential of overheating / slumping of these tiles immediately downstream of the protuberance. Ten temperature measurements of the thirteen will be selected and recorded on the MADS instrumentation system each flight via wiring to a new therm	<p>TCTIV1930091REF.0103.0 - TPS Instrumentation for BLT</p> <p>TCTIM1930091REF.0001.0 - TPS Protuberance Tile for Boundary Layer Transition</p> <p>TCTIV8830091REF.0103.0 - BLT Tile Instl</p> <p>VK70-100054-001.0103.0 - Wing Structures Kit for BLT</p> <p>VK70-756013-001.0103.0 - Wing Vehicle Wiring Kit for BLT</p> <p>K426-776103-001.0001.0 - MADS Mission Kit Instrumentation for BLT</p> <p>030091.0103.0 - Placeholder for BLT FE Mod</p> <p>Tech Order and MECSLSI Impact</p> <p>MECSLSI manifested tech orders will be utilized only for instrumentation wiring: (IS) M072-784634-015 (WAS) M072-784634-014 Shelf 8 Harness Instl Model MV0426A (IS) M072-786361-004 (WAS) M072-786361-003 LH Wing Wire Hsrness Instl MV0426A</p>	<p>Drawings will be a mix of vehicle (V070) drawings, Orbiter mission kit (M070) drawings and tech order (M072) drawings.</p> <p>(b) OCCB and PRCB have approved proceeding with mod implementation for STS-119.</p> <p>(c) All hardware is provided by KSC USA NSLD / Logistics / TPS Backshop. Wiring, TRJs and TCs will be provided by KSC - tile will be fabricated at the KSC TPS backshop.</p> <p>(d) Arc jet testing results and associated thermal/stress analysis required to certify protrusion tile and heating effects.</p> <p>Note - other equipment will be handled as follows: (1) TRJ & hookup - Orbiter mod (V070 drawings) (2) Structures to mount TRJ and holes for the instrumentation - Orbiter mod (V070 drawings) (3) Instrumented and Protuberance Tiles - Orbiter mission kit (M070 drawings) which stay in the orbiter drawing tree and do not require manifesting on the MECSLSI</p> <p>Mod baselined at STS-119 LSRR.</p>
30010 Groo	Inertia Reel Mod for Lightweight Crew Seats Mod replace the existing LW seat MA-8 Inertia Reels with improved MA-16 Inertia Reels as a result of findings from a NASA Crew Survivability Study conducted to identify key crew survivability improvement areas. One area identified by this study was the Light Weight Seat Restraint System. The currently used MA-8 Inertia Reel only locks from differential acceleration in the forward X direction. The MA-16 Inertia Reel provides differential locking and absolute locking in +/- X, Y, and Z axes.	<p>K225-000103-001.0001.0 - CDR Seat Inertia Reel Mod</p> <p>K225-000103-001.0002.0 - PLT Seat Inertia Reel Mod</p> <p>K226-000103-001.0002.0</p> <p>K226-000103-001.0003.0</p> <p>K226-000103-001.0005.0</p> <p>K226-000103-001.0006.0</p> <p>K226-000103-001.0008.0</p> <p>K226-000103-001.0010.0</p> <p>K226-000103-001.0012.0 thru 0017.0</p> <p>- Mission Specialist Crew Seats Inertia Reel Mod (Note: specific crew seat end items and associated records for STS-119 will be dependent upon FCE lab manifesting of seats)</p>	<p>Drawings affected: SED39126815 LW Mission Specialist Seat, SED39129185 LW Pilot/Commander Seat, M072-660225 & M072-660226 tech order installations, mission kit end items K225-000002 & K226-000002 and ML0101-0113 Acceptance Test Procedure.</p> <p>(a) Estimated delivery date of MA-16 inertia reels to Boeing Crew Equipment Houston. Boeing Crew Equipment will mod pilot / commander seats on the vehicle and mission specialist seats will be modified off-line in the FCE lab per KSC GO identified window of opportunity in the flow.</p> <p>Previously program authorized by monthly CCD Mission Equipment Modification directive S063027Y 3/5/08.</p>

EVA Status

STS-119/15A

Launch Site Flow Review

David Foltz
EVA Office
Johnson Space Center
May 12, 2008

- **Forward Bulkhead PFR**
 - Portable Foot Restraint, SED33105308-307 installed on forward bulkhead.
 - Released T.O. M072-661568-029
 - Required to protect for contingency EVA TPS inspection
- **Lightweight Port TSA**
 - Port LWTSA installation – Tech Order: M072-660850-005
 - Port LWTSA Tools installation – Tech Order: M072-660853-002
- **No Starboard TSA**
- **Winches**
 - Winch P/N SED33101570-327 on Forward Bulkhead
 - Winch P/N SED33101570-325 on Aft Bulkhead



STS-119 Launch Site Flow Review	Presenter Kenneth Nowak	
	Date 05-15-08	

Backup Material

- **SSP Systems Drawings** **Attachment 1**
- **SSP Authorized Modifications/Non-Standard Work** **Attachment 2**
- **SSP OMRS Waivers and Exceptions** **Attachment 3**
- **Launch Window** **Attachment 4**
- **Open Configuration Waivers** **Attachment 5**



STS-119 Launch Site Flow Review

Presenter **Kenneth Nowak**

Date **05-15-08**

SSP System Drawings

The Drawings Baseline Was Released By PRCB S115119 on 02-12-08

- V072-000001-261 (Rev. VH) Space Shuttle System (Rel. 03-05-08)
 - V072-200198-001 (Rev. A) Mission Equipment Cargo Support (Rel. 04-28-08)
 - SGD32104442-301 (Rev. NC) Crew Compartment Configuration (Rel. 04-09-08)
 - 302 Descent
 - V070-000001-003 Orbiter General Assembly
 - V070-410100-017 SSME Installation
 - 10100-0061-170 Integrated SRB General Assembly (BI-137)
 - 80901000000-529 External Tank Assembly (ET-130)

- STS-119 LSRR + 18 days Mission Configuration Product Plan (MCP) was last published on 04-30-08 and will be republished at ORR -14 days on TBD.



STS-119 Launch Site Flow Review

Presenter **Kenneth Nowak**

Date **05-15-08**

SSP System Drawings – (Continued)

Ferry Configuration

- V072-000001-262 (Rev. VH) Space Shuttle System Drawing (Rel. 03-05-08)
 - V072-200198-002 (Rev. A) Mission Equipment Cargo Support (Rel. 04-28-08)
 - SGD321004442-001 (Rev. NC) Crew Compartment Configuration (Rel. 04-09-08)
 - V072-300055-015 (Rev. BN) Ferry Flight Configuration (Rel. 02-28-08)

SCA 911

LW MAR
8929-324

ML60B 6013
-310
PRIME C/L CAM
GFE TV CONTROL

ML60E TBD
-XXX
PGSC ACCESS

ML60M 6014
-312
B/U C/L CAM
LEAK DETECTOR

VOL B (MA73J) 7436
-TBD
INSTALLED

VOL 3B (MA73J) 7425
-320
QUICK DON
MASKS(2)/CABIN AIR
CLEANER/AUD.DOS.
BTA/LCD MONITOR/
DCS 760 CAM/SPOT-
LIGHT/400MM LENS/
PD100 CAMCDR/FLASH
28-70MM LENS

A16 8706
-314
CAM BAG
PILOT

CDR	LEE J. ARCHAMBAULT
PLT	DOMINIC A. ANTONELLI
M/S #1	JOSEPH ACABA
M/S #2	RICHARD R. ARNOLD II
M/S #3	JOHN PHILLIPS
M/S #4	STEVEN R. SWANSON
M/S #5 (UP)	
M/S #5 (DN)	

MODULAR LOCKER LAYOUT ASCENT

PANTRY FOOD 1622 -308	MF57A 1622 -308 PANTRY FOOD	PANTRY FOOD 1622 -302
--------------------------	-----------------------------------	--------------------------

MIDDECK FORWARD

MF14E 2760 -306 FRESH FOOD	MF28E 0644 -301 GLACIER
MF14G 2761 -308 FRESH FOOD	MF28H XXXX -334 IFM BREAKOUT BOX ALTIMETER
MF14H 2763 -304 MENU FOOD	MF28K 0655 -301 IFM TOOLS
MF14K 2764 -306 MENU FOOD	MF28M 2762 -307 MENU FOOD
MF14M 2765 -304 MENU FOOD	MF28O 2767 -304 MENU FOOD

MF43C 1900 -309 CLOTHING	MF43E 0631 -TBD LOGBOOKS/WATCHES SOMS RESUS/CDM	MF57C 8072 -302 CLOTHING	MF71C 3005 -305 CLOTHING
MF43G 1902 -309 CDR	MF57E 6240 -311 ORBITER FDF SODF	MF57G 8073 -302 M/S #1	MF71E TBD -XXX ISS RESERVE
MF43H 0305 -304 CREW PREF (HCTB)	MF57H 5473 -305 ORBITER FDF	MF71G 1903 -306 PLT	MF71H 0645 -301 ISS PHOTO/TV RSPLY
MF43K 1901 -306 POST INSERTION	MF57K 6291 -311 SODF	MF71M 8965 -311 CONDENSATE COLL SUPA(14) INGRESS HDWR O-RING/BRAYCOTE STS CSA-CP	MF71J 8723 -302 PHOTO/TV STOW-N-GO
MF43M 0641 -301 G-SUITS	MF57M 1908 -309 CREW SUPPORT	MF71O 6299 -318 COAS/FLUOR LT SHIELDS/DCS 760 AUDIO DOSIMETER BTA	MF71N 8965 -311 CREW CARE PKG

LEADER: SEAN BARMORE

DATE: 03-26-08

LAUNCH: 12-4-08

FLIGHT: STS-119/15A

VEHICLE: OV-103

CREW: 7 MAN 13 + 1 + 2 DAYS

RQMTS: SRMS, ERGOMETER,
SORG, NO RCRS,
SLEEPING BAGS

MIDDECK AFT

MA9D/F 9882 -302 TRAD SPARE DTV MUX SPARE DTV DSR SPARE DTV VIP	MA16D XXX -327 IPT RESERVE
MA9G 8737 -306 RCC COLD BAG ASSY	MA16G 8047 -304 DC VAC
MA9J 5962 -303 PRINTER TRAYS	MA16J 8723 -302 PHOTO/TV STOW-N-GO
MA9L 6066 -321 COLOR PRINTER	MA16L 0634 -305 PCS LAPTOP PCS ACCESSORIES PGSC ACCESSORIES CD STOWAGE CASE
MA9N 7432-317 SOFT STWG BAGS	MA16N 3006 -305 MED KITS MAK (2)

MD CEIL (PORT 1) TBD	ISS RESERVE
MD CEIL (PORT 2) 0654 -301	RSK ACES HYGIENE
MD CEIL (STBD 1) 0275 -306	RCC REPAIR TILE REPAIR
MD CEIL (STBD 2) 6665 -343	IELK RUNNING SHOES
MD FLOOR (PORT 2) 0637 -TBD	ANTIMICROB APP OCA CABLE (B/U) CWC(4)/ChEcs ASSY, WATER SAMPLING KIT (5)
MD FLOOR (PORT 1) TBD	HCTB-CLOTHING (6)
MD FLOOR (STBD 2) TBD	CTB LIOH CTB LIOH LIOH-1 HYGIENE
MD FLOOR (STBD 1) 0657 -TBD	2 MLE (IPT RESERVE) ChEcs ALSP VOA KIT HCTB-GSC
MD FLOOR (STBD 1) 0657 -TBD	EMU HDWR

A17 7424
-304
CORE CC SYS BAG
DTV CAMERA BAG
QUICK DON MASK (4)
HATCH TOOL

VOLUME D (MD52C)
NOT INSTALLED

VOLUME F (MD76M)
WET TRASH

VOLUME G (MD80R)
CONT UCDS
WASTE MGMT

VOLUME H (MD23R)
EVA ACCESS (INBD)
EVA ACCESS (OBD)

WMC (MA82H)
TOWELS AND
RESUPPLY ITEMS
WMC DISPENSER
1st DAY CLOTH
SUPA
1641-330

EXT AIRLOCK
2-EMUs
EXT A/L FLOOR
EVA TOOLS

55 LIOH- 29 + 1 ATCO IN LIOH BOX, 2 INSTLD
(7435-320)
7 STOWED PORT FLOOR 1

WINDOW SHADE BAG - WINDOW SHADES
(5548-352)
IFM CABLES & HOSES (4259-343)
MONITOR SHIELDS

L10A1: AVIU (6686-311)
L10A2: DTV MUX
L10A3: DTV VTR/VIP
L1: PDIP 2 OIU 1/2
L12A1: SSP 1
L12A2: SSP 2
L12A3: PDIP 1
R12A1: VPU
R12A2: OBSS/OPP

* NOT APPROVED
LATE LOAD
SWAP
TRANSFER TO ISS
CTB-CARGO TRANSFER BAG
HCTB-HALF CARGO TRANSFER BAG

C/D JSC TBD
P/D JSC TBD
C/D KSC TBD
P/D KSC TBD
CEIT KIT TBD
MDK LBL TBD
DWG NO. SGD32104442
/USR/DWGS/LOCKER/STS119
CCMM: T. HUNT 483-3063

NOTE: LOCKER LAYOUTS ARE FOR REFERENCE ONLY AND ARE NOT RELEASED DRAWINGS.
FOR RELEASED DRAWINGS, REFER TO CCD DRAWING # SGD32104442



<h1>STS-119 Launch Site Flow Review</h1>	Presenter Kenneth Nowak	
	Date	05-15-08

Modification Impact Report

- **Mission Equipment Modifications and Orbiter Modifications analyzed for impacts to OMRSD, LCC, ICD, EMI, Software, and GSE**
- **A total of 3 MCR/TADs have been approved and/or pending mods**
- **Current MCR/TAD impact status:**
 - **NNo impacts for all six disciplines 3**
 - **OOne or more disciplines with impacts, documentation approved and/or pending approval 0**
 - **PPossible impacts still under review 0**

MCR/ECP	STAT	ITEM/KIT NUMBER	SEQ	DESCRIPTION / GENERAL REMARKS	PRCB	PRIO
-----	SITE	TCTI NUMBER	EISN NO.	-----	AUTHDATE	FLT
030091	AUTH KSC	K426-776103-001	0001 000	MOD KIT - BOUNDARY LAYER TRANSITION (BLT), FLT EXPERIMENT ADDED PER KIT EO K426-776103 NEW	S115119A 2008-04-10	MAND 036
	AUTH KSC	TCTIM1930091REF	0001 000	BOUNDARY LAYER TRANSITION (BLT), TPS PROTUBERANCE TILE ADDED PER V880-191011 NEW	S115119A 2008-04-10	MAND 036

TOTAL MODS = 2

MCR/ECP	STAT	ITEM/KIT NUMBER	SEQ	EISN	NO.	DESCRIPTION / GENERAL REMARKS	PRCB	PRIO
-----	SITE	TCTI NUMBER	-----	-----	-----	-----	AUTHDATE	FLT
	AUTH KSC	J6209		0103 SPAR	000	REMOVAL AND REPLACEMENT OF OV-103 BODY FLAP (BF) POWER DRIVE UNIT (PDU)	S-J6209 2007-09-21	MAND 036
	AUTH KSC	J6275A		0103 SPAR	000	ORBITER STRUCTURE IML SURFACE CORROSION SAMPLING INSPECTION CORROSION SAMPLING CAPABILITIES WILL BE PROJECTED AT LSFR AND FINALIZED AT DLSFR FOR EACH FLOW.	S-J6275A 2008-02-26	MAND 036
	AUTH KSC	J6296		0103 SPAR	001	OV-103 IR THERMOGRAPHY REQUEST	S-J6296 2007-11-07	MAND 036
	AUTH KSC	J6327		0103 SPAR	001	WLE RCC JOGGLE INSPECTION	S-J6327 2008-02-14	MAND 036
	AUTH KSC	J6331		0103 SPAR	001	STS-124 ELBOW CAMERA TO JEM PM MEASUREMENT CLEARANCE MEASUREMENTS WILL BE PERFORMED PRE-FLT AND POST-FLT DURING DECONFIGURATION.	S-J6331 2008-03-03	MAND 036
	AUTH KSC	J6334A		0103 SPAR	000	ASA #3 & #4 AND ATVC #3 & 4 R&R FOR OV-103, FLT 36 CURRENT & PROPOSED MANIFESTS WILL PROVIDE FOR THE IMPLEMENTATION OF THIS CHIT AS A PARALLEL EFFORT	S-J6334A 2008-04-04	MAND 036
	AUTH KSC	J6341A		0103 SPAR	000	EVALUATION OF OMS POD LI-900 TILE INSTALLED ON 0.090" SIP LI-900 TILE INSTLD ON .090 SIP WILL BE INSPD FOR DEFECTS PER CHIT ON NEAR TERM FLOWS UNTIL RCN IS	S-J6341A 2008-04-09	MAND 036
	AUTH KSC	J6345		0103 SPAR	000	INSTALLATION OF TEMPERATURE INDICATORS ON MAIN LANDING GEAR (MLG) SHOCK STRUT AXLES	S-J6345 2008-04-09	MAND 036
030091	AUTH KSC	TCTIV1930091REF NOT REQUIRED		0103	000	BOUNDARY LAYER TRANSITION (BLT), TPS INSTRUMENTATION ADDED BY EDS I/F, V070-190001 G05 & -192163 A15	S115119A 2008-04-10	MAND 036
	AUTH KSC	TCTIV8830091REF NOT REQUIRED		0103	000	BOUNDARY LAYER TRANSITION ASSESSMENT, TILE INSTL ADDED BY EDS I/F & V070-190001 G04, REF MCD GYY. W AS FLT 37, IS 36. REPLS 030091,0103,0 IN PART	S115119A 2008-04-10	MAND 036
	AUTH KSC	VK70-100054-001 NOT REQUIRED		0103	000	BRACKET - TRJ (BLT), WING KIT ADDED BY EDS I/F. KIT EO NEW CHGS FLT EFF FROM 35 TO 36	S115119A 2008-04-10	MAND 036
	AUTH KSC	VK70-756013-001 NOT REQUIRED		0103	000	BOUNDARY LAYER TRANSITION (BLT) WIRING MOD KIT ADDED BY EDS I/F & V070-780225 A10	S115119A 2008-04-10	MAND 036
	AUTH KSC	030091 CONTR		0103	000	BOUNDARY LAYER TRANSITION (BLT) FE MOD ADDED PER E. BURKE REQUEST FOR STS-119 LSRR. REPL BY TCTIV8830091REF,0103,0 IN PART	S115119A 2008-04-10	MAND 036

Approved STS-119 OMRS Waivers and Exceptions

WVR EXC	ELEMENT PROJECT	PRCBD NUMBER WAIVER# (STAT) (INITIAL STS)		ABSTRACT RAS REQUIREMENTS	EISN PAYLOAD	STS BEG END
+	E	OMS	S053296YK EK10327 (A)	OMRSD EXCEPTION REQUEST - RIGHT RC SOXIDIZER B-LEG PAD REGULATOR L OCKUPPRESSURE (EK10327)	0023	032 040
			S053297WA EK10452 (A)	OMRSD EXCEPTION REQUEST - RRCS FUEL GHE TANK P1 TRANSDUCER ACCURA CY (EK10452)	0023	032 039
		ORB	S053299DT EV10602-A (A)	OMRSD EXCEPTION REQUEST - WING LEADING EDGE SPAR STRUCTURAL SAMPL INGDEFERRAL (EV10602)	103	035 999
	W	ET	S053293FZ WK03850R1 (A) (STS-093)	L02/LH2 TANK PRESSURE MONITOR FOR MOVE	ET	099 999
		OMS	S053296UM WK10299 (A)	OMRSD WAIVER REQUEST - RP03 TK302 DYNATUBE LEAK RATE (WK10299)	0023	032 040
		ORB	S053297NZ WK10415 (A)	OMRSD WAIVER REQUEST - MADS FDM CALIBRATION MANUAL MODE (WK10415)	103	031 038
			S053298VM WK10557R1 (A)	OMRSD WAIVER REQUEST - FUEL CELL POWERPLANT 3 OXYGEN FLOWMETER LO WERLIMIT (WK10557R1)	103	033 042
			S053299BB WK10603 (A)	OMRSD WAIVER REQUEST - FORWARD OXYGEN REGULATOR	103	034 039

LOCK UP PRESSURE(WK10603)

RCS	S053298VT WK10559 (A)	OMRSD WAIVER REQUEST - RIGHT REACTION CONTROL SYSTEM OXIDIZER B-L EGSECONDARY REGULATOR LOCK UP HIGH (WK10559)	0023	035 043
	S053298VTR1 WK10559 (A)	OMRSD WAIVER REQUEST - RIGHT RCS OXIDIZER B-LEG SECONDARY REGULAT ORLOCK UP HIGH (WK10559R1)	0023	035 043
SRB	S053293WA WK03886 (A) (STS-103)	LH FWD AND RH MID SRB JOINT TEMP SENSORS	BI	099 999

1

Date: 05/05/08 14:31

PCASS

Page: 2

FLIGHT-SPECIFIC

Approved STS-119 OMRS Waivers and Exceptions

	Waivers	Except	Deviat	Cannib	Total
Total Extracted	8	3	0	0	11

-
-
-
-
-
-
-
-
-
-
-
-

ACTIVE WAIVERS FOR
OV-103

Item #	Authority	Date	Waiver Description	Effectivity	Wad
47	S052310A	02/14/91	Fly with FRSI instead of tile	OV-103, Flight 12 & Subs (flight by flight evaluation)	OK TO RETIRE S061954B MV 4-2 RTF-130 Briefing
53	S052428A	03/27/91	Allows specified flights to fly with interim TPS repair after each mission to minimize damage to surrounding tile during ferry flight	STS-37, STS-39, STS-40, STS-42 thru STS-999	STAYS OPEN
101	S076972	11/19/91	Permit the modified GPCs (AP101-S) Battery Back-up Unit to fly with annotated fastener improvements without rolling the LRU Part Number	STS-42, STS-44, STS-47 and STS-49 thru STS-999	STAYS OPEN
327	S115114VR5	03/17/05	Partial installation of M072-784633-014 (harness installation - interface panel - MADS #3). The M072-784663-014 Technical Order was established to incorporate the crossover bracket modification at locations X0863 and X0750. The dash number configuration for the Technical Order was not baselined until January 25, 2005 (PRCBD S115114VR2). This area was closed out before this time and would cause significant impact to verify configuration of this Technical Order dash number -014.	OV-103, Flight 31 OV-103, Flight 32 WAIVER for STS-121	INS-3-28-279 (installed Tech Order)
***** SEE NSTS 07700 VOLUME IV BOOK 2 FOR COMPLETE DETAILS *****					
328	S115114WR1	04/07/05	Partial installation of M072-794500-004, for Integrated Vehicle Health Monitoring (IVHM) harness installation, calls for the removal of the unused IVHM harness and routing hardware. This requirement was manifested after the Bay 13 Longerons Bridge installation was complete. With the installation of the bridge, the removal of the IVHM harness is no longer possible without the removal of the bridge.	OV-103, Flight 31 OV-103, Flight 32 WAIVER for STS-121	OEL-3-31-304 PTL OEL-3-31-4432 PTL
***** SEE NSTS 07700 VOLUME IV BOOK 2 FOR COMPLETE DETAILS *****					

ACTIVE WAIVERS FOR
OV-103

Item #	Authority	Date	Waiver Description	Effectivity	Wad
329	S115114AM	08/15/05	<p>The following requirements are waived to allow OV-103, Flight 31 to fly (ferry) with the following out-of-configuration conditions:</p> <ol style="list-style-type: none">1) V070-391139-025 (blanket under window #1 removed for ferry flight)2) M072-421502-002 (did not perform acetone wipe prior to universal thruster plug assemblies - procedural omission)3) V070-753110-003 (camera mount will not be installed for ferry flight) <p>***** SEE NSTS 07700 VOLUME IV BOOK 2 FOR COMPLETE DETAILS *****</p>	OV-103, Flight 31	Ferry Flight from Dryden
330	S115114VR15	09/16/05	<p>The following requirement is waived to allow OV-103 to ferry from DFRC to KSC with the following out-of-configuration condition:</p> <p>TCS blanket V070-362917-001 located at Door #44 NOT installed.</p> <p>***** SEE NSTS 07700 VOLUME IV BOOK 2 FOR COMPLETE DETAILS *****</p>	OV-103, Flight 31 Ferry Flight	Ferry Flight from Dryden

ACTIVE WAIVERS FOR
OV-103

Item #	Authority	Date	Waiver Description	Effectivity	Wad
331	S115114VR15	09/16/05	<p>The following requirement is waived to allow OV-103 to ferry from DFRC to KSC with the following out-of-configuration condition:</p> <ol style="list-style-type: none"> 1) Two switches on Panel A15 will ferry without switch guards (P/N G070-700904-001). In lieu of switch guards at two locations, tape was installed. 2) Eight GSE switch guards were left installed and not removed as required by Technical Order M072-710700-002 as called out in the ferry flight drawing. 3) Three switch guards are not installed on Panel L4 for TACAN circuit breakers. The procedure does not include the switch guard installation. <p>***** SEE NSTS 07700 VOLUME IV BOOK 2 FOR COMPLETE DETAILS *****</p>	OV-103, Flight 31 Ferry Flight	Ferry Flight from Dryden
332	S115121TR8	05/04/06	<p>The following requirement is waived to allow OV-103 to fly with the following out-of-configuration condition:</p> <p>M072-794500-004 IVHM harness installation Bay 13 called out by MECSLSI V072-200201 NOT removed from OV-103.</p> <p>During STS-114 processing this Tech Order configuration called for the removal of an un-used IVHM harness along with the routing hardware. At the time the Tech Order was made a requirement for Flight 31, the Bay 13 longeron had already been installed for flight. The harness was demated and stowed in place per MR and was deferred to a future flight at which time Bay 13 longeron will be removed since the Bay 13 longeron was not removed this flight, a configuration waiver is needed for STS-121.</p>	OV-103, Flight 32	

ACTIVE WAIVERS FOR
OV-103

Item #	Authority	Date	Waiver Description	Effectivity	Wad
333	S115121TR8	05/04/06	<p>The following requirement is waived to allow OV-103 to fly with the following out-of-configuration condition:</p> <p>Partial installation of M072-784633-014 (harness installation - interface panel - MADS#3). The M072-784633-014 Tech Order was established to incorporate the crossover bracket modification at locations X0863 and X0750. The dash number configuration for the Tech Order was not baselined until January 25, 2005 (PRCBD S115114VR2). This area was closed out before this time and would cause significant impact to verify configuration of this Tech Order dash number -014.</p> <p>***** SEE NSTS 07700 VOLUME IV BOOK 2 FOR COMPLETE DETAILS *****</p>	OV-103, Flight 32	
335	S115116NR2	08/18/06	<p>The following requirement is waived to allow OV-103 to fly with the following out-of-configuration condition:</p> <p>M072-794500-004 IVHM harness installation Bay 13 called out by MECSLSI V072-200195 not removed from OV-103.</p> <p>During STS-114 processing, this Tech Order configuration called for the removal of an unused IVHM harness along with the routing hardware. At the time the Tech Order was made a requirement for Flight 31, the Bay 13 longeron had already been installed for flight. The harness was demated and stowed in place per MR and was deferred to a future flight at which time Bay 13 longeron will be removed since the Bay 13 longeron was not removed this flight, a configuration waiver is needed for STS-116.</p>	OV-103, Flight 33	

ACTIVE WAIVERS FOR
OV-103

Item #	Authority	Date	Waiver Description	Effectivity	Wad
336	S115116NR2	08/18/06	<p>The following requirement is waived to allow OV-103 to fly with the following out-of-configuration condition:</p> <p>M072-794500-004 IVHM harness installation Bay 13 called out by MECSLSI V072-200201.</p> <p>During OMDP, the crossover bracket modification was successfully implemented at all four locations with no technical issues by engineering defined by Orbiter drawings as well as three Tech Orders (M072-794011, M072-794021 and M072-794051). The M072-784633-014 Tech Order was established to incorporate the crossover bracket modification at two locations (X0863 and X0750).</p> <p>At the X0863 location, M072-784633-014 called for the removal of a clamp and six screws to reflect the change harness mounting due to the new wire tray shape. TPS OEL-3-31-245 incorporated the electrical portion of this modification per the vehicle drawings as well as the three tank set harness Tech Orders. During STS-114 processing, the WAD was reviewed and it was determined that an error exists in the M072-784633 engineering. This Tech Order reflects harness routing at the X0863 that does not reflect the as-built configuration on the Orbiter. A one flight configuration waiver was processed and approved for STS-114 and STS-121. All hardware on this Tech Order supports MADS wire routing, there were no observed wire routing violations noted during Flight 31 midbody closeout and all MADS testing will be completed and verified. No technical issue with hardware, installation, or function of MADS. There was no access to this area this flow to perform wire routing as-designed condition. A configuration waiver is needed for STS-116 for this Tech Order.</p>	OV-103, Flight 33	

ACTIVE WAIVERS FOR
OV-103

Item #	Authority	Date	Waiver Description	Effectivity	Wad
337	S115116NR4	10/27/06	<p>Tech Order M072-544501-087 - install, M072-544501-027 - remove, -087 configuration is for the new over-center stops being installed. Mission-unique loads will not require these new stops. Program decision was made to not remove the RMS.</p> <p>This configuration will incorporate the over-center stops mod, the change is to all four MPM locations. The new stops, replace existing GFE stops, incorporate a stronger design to address mission-unique loads that have a potential to exceed the current mechanism capability. The decision was made not to incorporate this mod during STS-116 flow due to the low potential for load exceedence. Since -087 established the over-center stops mod along with other mods that were completed for this flow,a configuration waiver is needed for STS-116. In addition the removal of the -027 from the previous mission was not completed.</p>	OV-103, Flight 33	
338	S115116NR4	10/27/06	<p>Tech Order M072-794021-026 install, M072-794021-019 remove, -026 configuration is for the new over-center stops being installed. The change is rerouting and retaping of the wire harnesses near the over-center stops to alleviate any interference. Program decision was made to not remove the RMS.</p> <p>This configuration would reroute and retape harnesses on the MPMs to support the over-center stops mod. Since -026 established a new configuration in support of the over-center stop mod and this was not worked this flight, a configuration waiver is needed for STS-116. In addition, the removal of the -019 from the previous mission was not completed.</p>	OV-103, Flight 33	

ACTIVE WAIVERS FOR
OV-103

Item #	Authority	Date	Waiver Description	Effectivity	Wad
342	S115120DR3	09/12/07	<p>The following requirement is waived to allow OV-103 to fly with the following out-of-configuration condition:</p> <p>Tech Order M072-784633-015 harness installation - interface panel - MADS#3 called out by MECSLSI V070-200199 was established to re-route MADS harness in support of SSPTS at location X0863. There was no access to this area this flow to re-route harness to meet as-designed congiguration. At this time there is NO plan to ever open up this area again.</p>	OV-103, Flight 34 thru OV-103, Flight 999	
344	S071024MP	12/20/07	<p>During maintenance of an Advanced Master Events Controller (AMEC) it was discovered that the module cards are able to translate upward, away from connectors. The cards are retained by friction applied by wedge-locks. An assessment determined a 0.070 upward card translation, would result in card disengagement from connectors. The wedge-lock system can not assure the cards will not translate upwards. The AMEC vendor (Boeing Autonetics) is no longer on contract supporting SSP. A design proposal is to provide a secondary connector retention using the AMEC covers. The new design new lids will limit the upward translation to 0.055. The new design will reduce the milled section of the cover and add silicone pads to provide shock absorption. Due to the absence of the original vendor and no current alternate drawings available for the AMEC the modification is being requested via a program directed Material Review (MR).</p> <p>P/N MC450-0016-0029</p> <p>S/N U6F0002, U6F0003, U6F0004, U6F0006, U6F0007, U6F0009, U6F0010 and U6F0011</p> <p>***** SEE NSTS 07700 VOLUME IV BOOK 2 FOR COMPLETE DETAILS *****</p>	OV-103, Flight 35 OV-104, Flight 30 OV-105, Flight 21	