

STS-117 Integrated Launch Site Flow Review

Presenter

Stephen Reilly

Date

08-24-06

Program Freeze Point

PRCB Presentation

S115117D

STS-117 Integrated Launch Site Flow Review

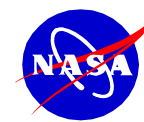
Presenter
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Baseline the STS-117 Mission Specific Requirements and Flow Plans.

The STS-117 Integrated Launch Site Requirements were established by PRCBD S115117C dated 07-19-06. This CR and the Associated Data Package were reviewed at the 08-07-06 FRWG.

KSC Integration*		MK-SIO
<u>Orbiter Engineering*</u>	<u>Requesting Approval</u>	<u>USA-OE</u>
<u>SSME*</u>	<u>Requesting Approval</u>	<u>MP21</u>
ISS/Payload Operations*		UB-1
Shuttle Processing*		PH-B2
	<u>Status in BackUp</u>	
Flight Integration		MO3/USA-PI
Flight Software		USA-FSW
GFE FCE/EVA		MV5/XA
Payload/Cargo Engineering		USA-PI



STS-117 LAUNCH SITE FLOW REVIEW

Presenter Amy Houts-Gilfriche
Date AUGUST 24, 2006

LAUNCH

2/22/07 NET
 39A/ MLP2
 CREW SIZE: 6

ORBIT

51.6 DEG
 122 NM
 DIRECT INSERTION
 DURATION: 11+1+2 DAYS

CONFIGURATION

OV-104 (28)
 LP04;RP01
 ET-124
 BI-129
 RSRM-96
 OI-30
 RMS,ODS,OBSS

PROPOSED: (1) 2059 (2) 2052 (3) 2057

CONSUMABLES

CRYO TANK SETS	5 (FULL)
GN2 TANKS	5 (OFFLOAD)
FWD RCS	1912# (2446# FULL)
AFT RCS	4970# (FULL)
OMS	24300#

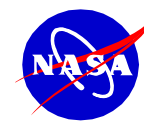
PAYLOAD

ISS 13A ISS 13A
 (ITS S3/S4)

LANDING

SITE	KSC
TAL	ZARAGOZA
ALT. TAL	MORON & ISTRES
SCA	905

NOTE: PRCBD APPROVAL REQUIRED TO MANIFEST SSME's



STS-117 LAUNCH SITE FLOW REVIEW

Presenter Amy Houts-Gilfriche
Date AUGUST 24, 2006

PERFORMANCE MARGIN

• SIMULATION MARGIN (OCFBF117)		+1512
• WEIGHT CHANGES SINCE SIMULATION		
• PAYLOAD	+15	
• ORBITER	-63	
• CREW COMPARTMENT	+65	
• OMS	<u>-100</u>	
TOTAL WEIGHT CHANGES	-83	+83
• OTHER PERFORMANCE PROJECTIONS		
• PROTECTION FOR DOL DISPERSIONS		-700
• SRB M/P UPDATES		-110
• SRB BR / 0.45 MIL HIGHER THAN 0.3705 AVG		+90
• NEW ISP/THST FOR 2 GEN B2 + 2047		+255
• PROJ TO 3 MIN WINDOW FROM INPLANE		-300
• PERFORMANCE CHANGES ADJUSTMENT		<u>-5</u>
• CURRENT BASELINED APM (08/22/06)		+825
• PROPOSED ENGINE SET: 2059*, 2052, 2057		+80
* denotes estimated tag data		
• IPT PROJECTED CHANGES		<u>-92</u>
• PROJ APM		+813

VOLUME III: ASCENT PERFORMANCE MANAGER'S RESERVE GUIDELINE (LSFR) IS 400 LBS



STS-117 LAUNCH SITE FLOW REVIEW

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Date AUGUST 24, 2006

FLIGHT MASS PROPERTIES
CONT RTRN WEIGHT EXCEEDANCE
(Vol. X Bk. 1 Sec. 3.3.1.1.9)

<u>CASE</u>	<u>TOUCHDOWN WEIGHT pounds (LIMIT)</u>		<u>MACH 3.5 X C.G. inches (LIMIT)</u>	
NOMINAL	198945	(233000)	1083.8	(1075.2)
RTLS	242933	(245000)	1080.8	(1076.7)
TAL	240648	(244000)	1080.4	(1076.7)
AOA	235641	(242000)	1076.6	(1075.2)
CONT RTRN	236674	(233000)	1077.8	(1075.2)

NOTE: RTLS 25 SEC FRCS DUMP
TAL 65 SEC FRCS DUMP
102 LBS. AFT FUS BALLAST (BOXES ONLY)

STS-117 LSFR OV-104 FLIGHT 28 CONFIGURATION UPDATES

**Joe Rodriguez
USA Orbiter Element**

August 24, 2006



8-22-06

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STS-117 OV-104 Flight 28 – LSFR Updates

Program Authorization Is Requested For The Following:

- Baseline two (2) modifications

Back-up:

- Modification details

STS-117 OV-104 Flight 28 – Modifications To Be Baselined

MCR 23448 – ECO Point Sensor System Measurement

- Implements wiring harness modification to allow voltage measurements of all four MPS ECO LH2 and LO2 Sensor Transducer Circuits to be monitored during pre-launch and ascent.
 - Will provide additional data to facilitate resolution of Launch Commit Criteria violations. Will also facilitate determination of failed wet ECO sensors during ascent.

MCR 23227 – Connector Saver Modification

- Install redesigned connector savers at Ku-Band and OMS pod interface locations (non-flight specific)
 - Connector savers were installed at these locations during the STS-115 flow, but were subsequently removed due to a design discrepancy that allowed off-axis cocking of the coupling ring
 - Wave washer groove was too large on ME414-0630-7207 & -7208 configurations
 - Connectors were direct-mated by MR, except a previous design saver was installed with tape at RP01 52J406 due to short harness
 - Approval is requested to install replacement savers on a Non-Flight Specific basis when the connectors are demated for another reason

Atlantis STS-117
Launch Site Flow Review
Space Shuttle Main Engine
21-August-2006

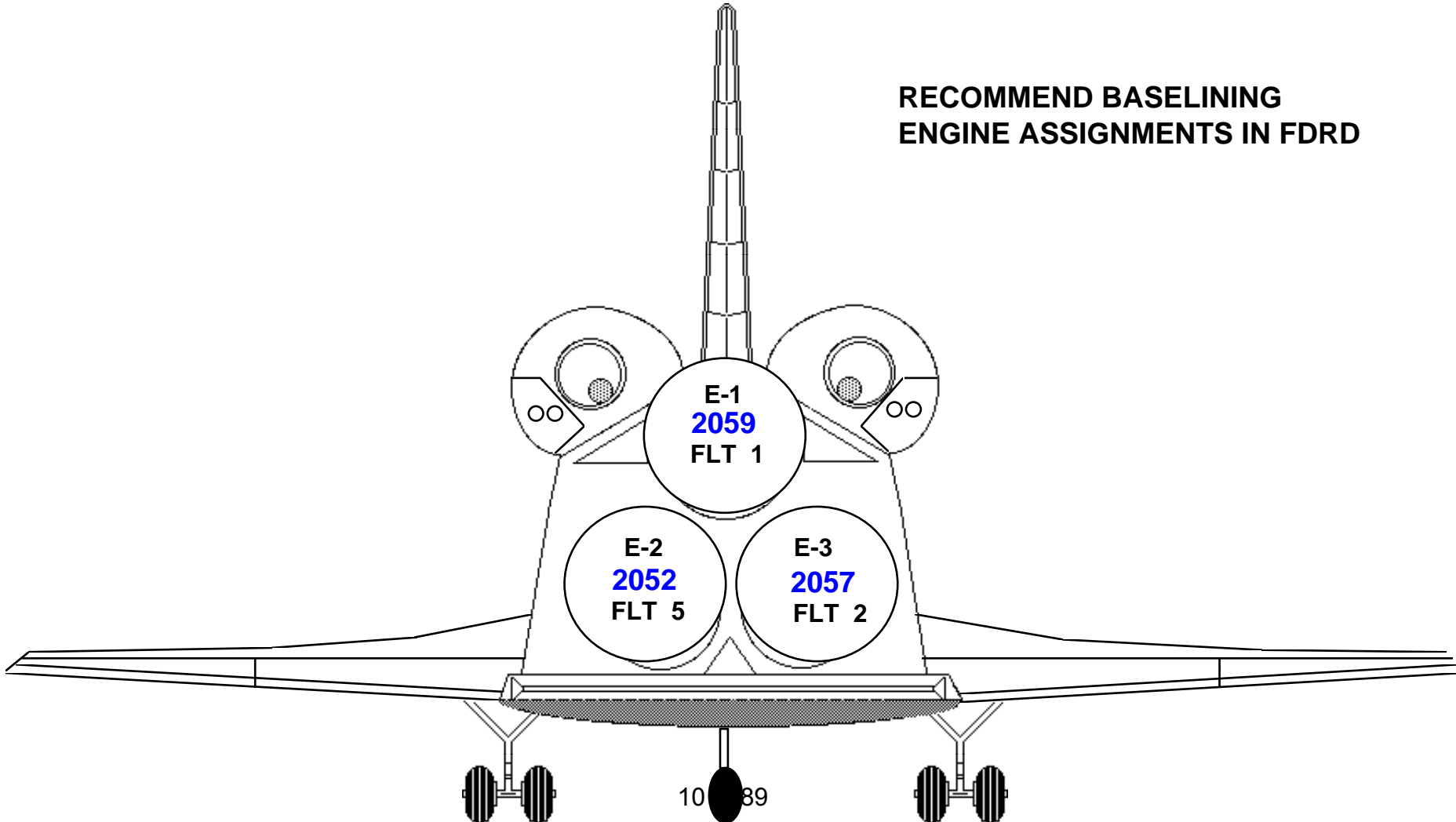
SSME- KSC
Greg Haile
(321) 861-4060
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STS-117 Launch Site Flow Review

SSME Allocations / Locations

**RECOMMEND BASELINING
ENGINE ASSIGNMENTS IN FDRD**





STS-117/ISS-13A Launch Site Flow Review

ISS/Payload Processing, KSC

August 24, 2006



Robbie Ashley
Mission Management Office
321-867-6037



ISS/PAYLOAD PROCESSING AGENDA

Presenter:

Robbie Ashley

Date:

8/24/06

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- Remaining Milestones
- Issues & Concerns
- Master Milestone Schedule (MMS)
- Backup Charts
 - Payload Bay Configuration
 - S3/S4 Integrated Truss Segment (ITS)
 - S3/S4 ITS Components
 - Background Information
 - ISS 13A Stage Configuration





ISS/PAYLOAD PROCESSING REMAINING MILESTONES

Presenter:

Robbie Ashley

Date:

8/24/06

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SSPF

- Lower Deck Battery Installation
- Lower Deck Solar Array Wing Installation
- Flight NH₃ Load
- Lower Deck Retest / Upper Deck Battery Recondition and Capacity Test
- Final Cargo Element Closeouts
- Post Software Load Initialization Test
- Payload Crew Equipment Interface Test (CEIT)
- Start Shuttle Integration in SSPF
- Weight and C.G. / Install in Canister

CRF

- Rotate Canister to Vertical

Integrated Operations

- Payload Transfer to Pad A
- Final Battery Charge at the Pad
- Final Payload Bay Door Closure
- Launch

ECD

- 6 September 2006
- 19 September 2006
- 11 October 2006
- 6 November 2006
- 22 November 2006
- 8 December 2006
- 12 December 2006
- 14 December 2006
- 16 January 2007
- 17 January 2007
- 18 January 2007
- 16 February 2007
- 16 February 2007
- 22 February 2007





ISS/PAYLOAD PROCESSING ISSUES & CONCERNS

Presenter:

Robbie Ashley

Date:

8/24/06

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- Waiting until post-12A launch (L+5 days) to install new batteries on S4 lower deck
 - Very tight processing timeline starting from new battery installation through solar array wing install, NH₃ load, test, and final closeouts, to meet a 1/18/07 payload-to-pad date





ISS/PAYLOAD PROCESSING

STS-117 / ISS-13A

MASTER MILESTONE SCHEDULE

Presenter:

Robbie Ashley

Date:

8/24/06

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STS-117-ISS-21-13A S3 / S4, PV ARRAY,
6 BATT SETS, 4 PAS

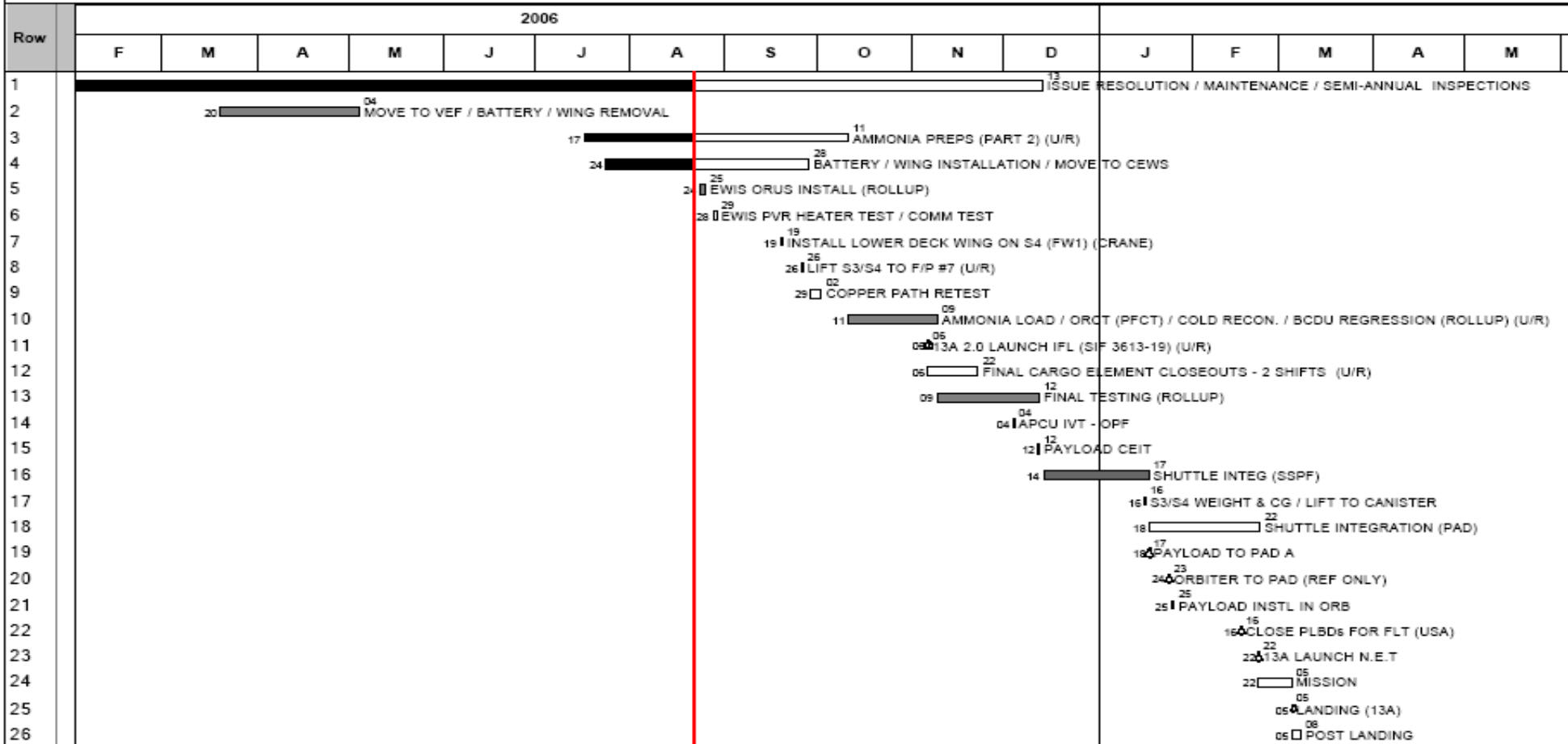
TRUSS 1st
E. BAGLIONI - 08/18/06

OPF BAY: 1 PAD: A
MANIFEST: 05D-13 R2

ORBITER: 104 ATLANTIS
STATUS AS OF: 09/21/2006 REV: BJ

MASTER MILESTONE SCHEDULE

CAPPS 1st
R. ASHLEY - 08/18/06



THREATS:

Activity	[Bar]
Critical Path	[Bar]
Progress	[Bar]
Summary Bar	[Bar]
Project Milestone	[Bar]
Program Milestone Level 1	[Bar]
Program Milestone Level 2	[Bar]
Powerup Testing	[Bar]
Local Clear	[Bar]
Major Clear	[Bar]

KSC Launch and Landing Project
STS-117
Launch Site Flow Review

August 24, 2006



Multi Flow

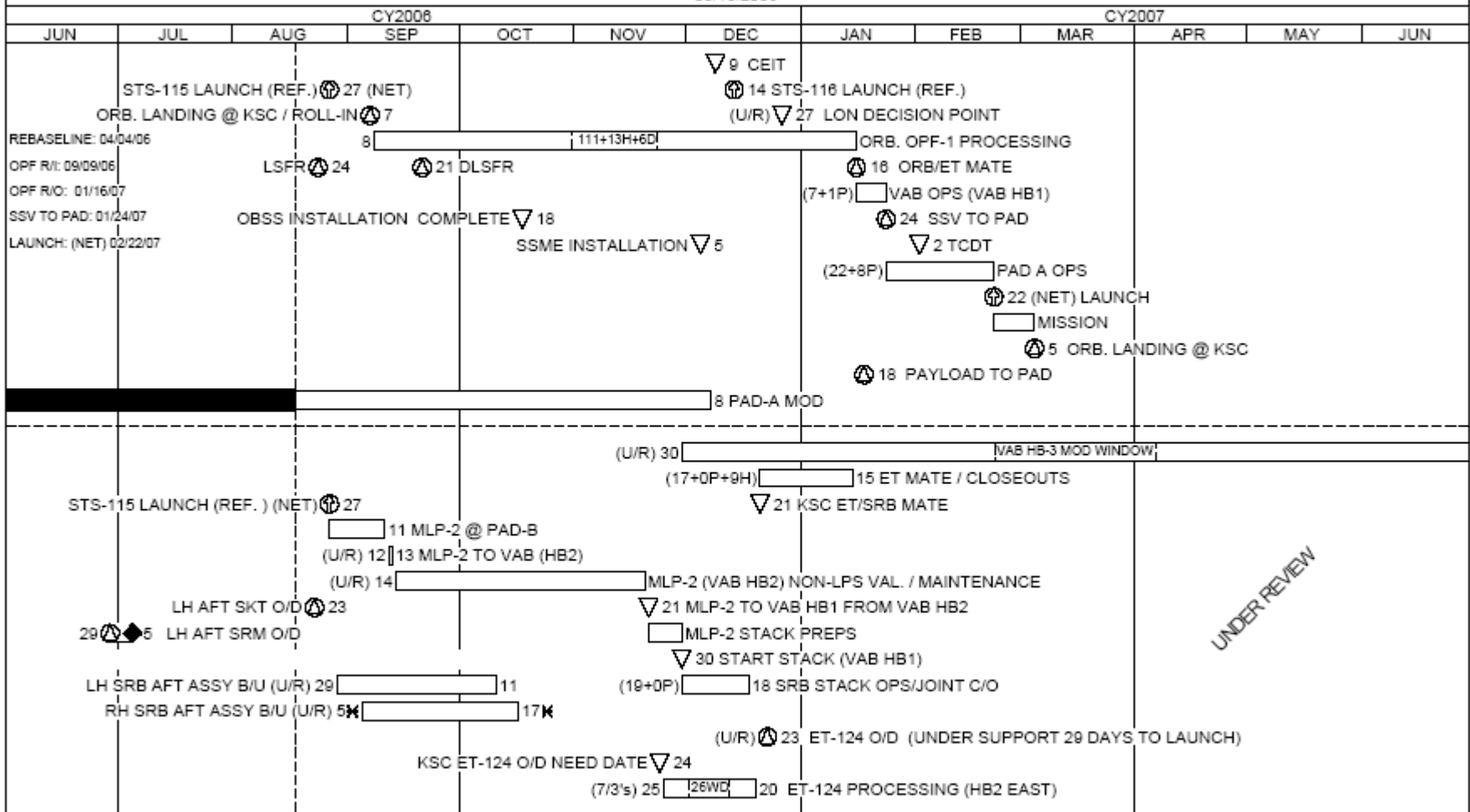
A. Brewer

STS-117 KSC Milestone Interface Chart

OPR: USA - J. HAZELTON, INTEG. OPS.
NASA - A. BREWER, PH-O

OV-104/28/ ISS-21-13A
CREW / DURATION: 8/11
ET 124 / B1129/ RSRM 96 / MLP-2 / PAD-A / VAB HB1

SSP APPROVED MANIFEST (CR #042013FP)
Status as of:
08/18/2006

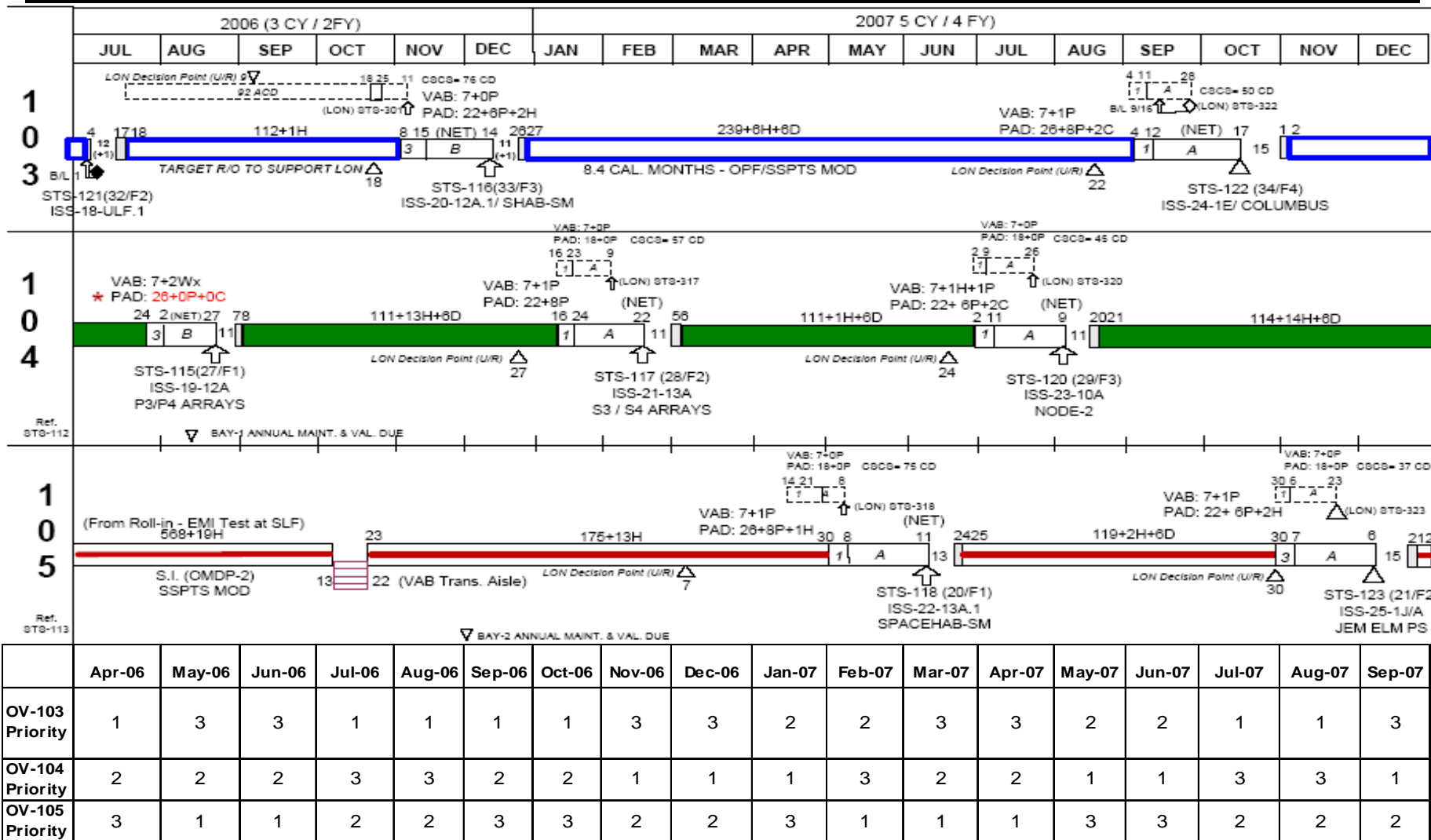


UNDER REVIEW

THREATS:
1. ET DELIVERY AND PROCESSING
2. OPF PROCESSING TIMELINE

NOTES: 1. TWENTY-FIRST ISS/SSP FLIGHT

Vehicle/TPS Manpower Allocation Priority



Flight Element Processing

M. Chappell

Flight Element Processing Overview

- **Significant Processing Deltas** **Presented**
- **Modification Summary** **Presented**
- **Chit Assessment** **Presented**
- **OPF Flow Milestones** **Presented**
- **Issues and Concerns** **Presented**
- **TPS Work Content** **Presented**
- **Stoplight Chart** **Presented**
- **Integrated Operations Summary** **Presented**

Significant Processing Deltas

- **110 Day Processing Flow (7 Days/3 Shifts)**
- **Windows #1-6 Replacement**
- **OBSS Removal/Installation**
- **Tin Whisker Remediation (5 LRUs Planned)**
- **TPS Processing**

Modification Work Summary

Approved

- **MCR-17177-24 Purge Ducts I.D. Tape**
- **MCR-17177-33 Drag Chute Sidewall Blanket Ground Strap**
- **MCR-19768 MPM Guillotine Fastener Change Out**
- **MCR-19835 Elevon Act. Lightning Protection**
- **MCR-23227 T-0 Connector Saver**
- **MCR-23043 Delta P X-Ducer Removal**

Modification Work Summary

Opportunity

- **MCR-19743 BRI-18 Tile MLGD (attrition, no authorization required)**
- **MCR-19874 BRI-18 Tile, Other Locations (attrition, no authorization required)**
- **MCR-23448 ECO Sensor System Instrumentation**

Potential

- **MCR-23452 Fiducial Markings on WLE RCC T-Seals**

Chits Work Summary

- **J5563A RMS MPM Overcenter Stop Gap Measurements**
- **J5574A Video Quality Test Elbow And Spee Cameras Routed To ODC X3 Connector**
- **J5765 WSB Post Flight Tank Quantity Offload**
- **J5805A Orb Docking Mechanism Bayonet Connector Pin Insp.**
- **J5854 TPS Upper Surface Fwd of Windows & RCC Putty Repair Insp.**
- **J5881A Lower Less Carrier Panel Flight Torque Check Verification**
- **J5883 Hub And Drain Hole Tile Manual Deflection Test**
- **J5884 Thermal Barrier Flow Path Inspections**
- **J5885 Arrowhead Tile Inspection**
- **J5897 Mid Fuselage Sampling & Fastener Inspection**
- **J5904 ET Shell Post Demate and Post Flight Inspection**
- **J5919B O-Gauge Protection Flight 27-30**
- **J5926 Body Flap PDU Gearbox Fluid Level**
- **J5930CR1 Orb Structure IML Surface Corrosion Sampling**
- **J5968A Inspection MPS LH2 Feedline Gimbal Joint Flowliners ***

Chits Work Summary

- **J6103** Post Flight Vernier Thruster PC Tube Flush
- **J6104** Post Flight Ames Gap Filler Verification & Pull Testing
- **J6107A** ASA#1 and #3, ATVC #1 and #2 and RJDA #1 R & R
- **J6115** Micro Inspection of Small Width AFRSI Blankets
- **J6116** Ames Gap Filler Removal and Replacement
- **J6117A** Inspection of Putty Repairs for Potential Loss
- **J 6118** ET Door Paint Stripe Post Flight Verification
- **J6119** ET Door Cavity Screed Evaluation
- **J6147** DTV System IVT Requirements *
- **J6149** Rad Retract Hose Halogen Sniff Cks
- **J6150** OBSS Post Flight Inspections *
- **J6151** Replace Windows #1-6 *
- **J6152** Post Flight RCC Thermography Inspection *
- **J6153** MMOD Inspections
- **J6154** Post Flight Damage 3-D Acquisition
- **J6155** TVC Hyd Iso Valve X-Rays
- **J6156** Remove (Payload Bay) Camera "B" for SVS Calibration *

Chits Work Summary

Potentials

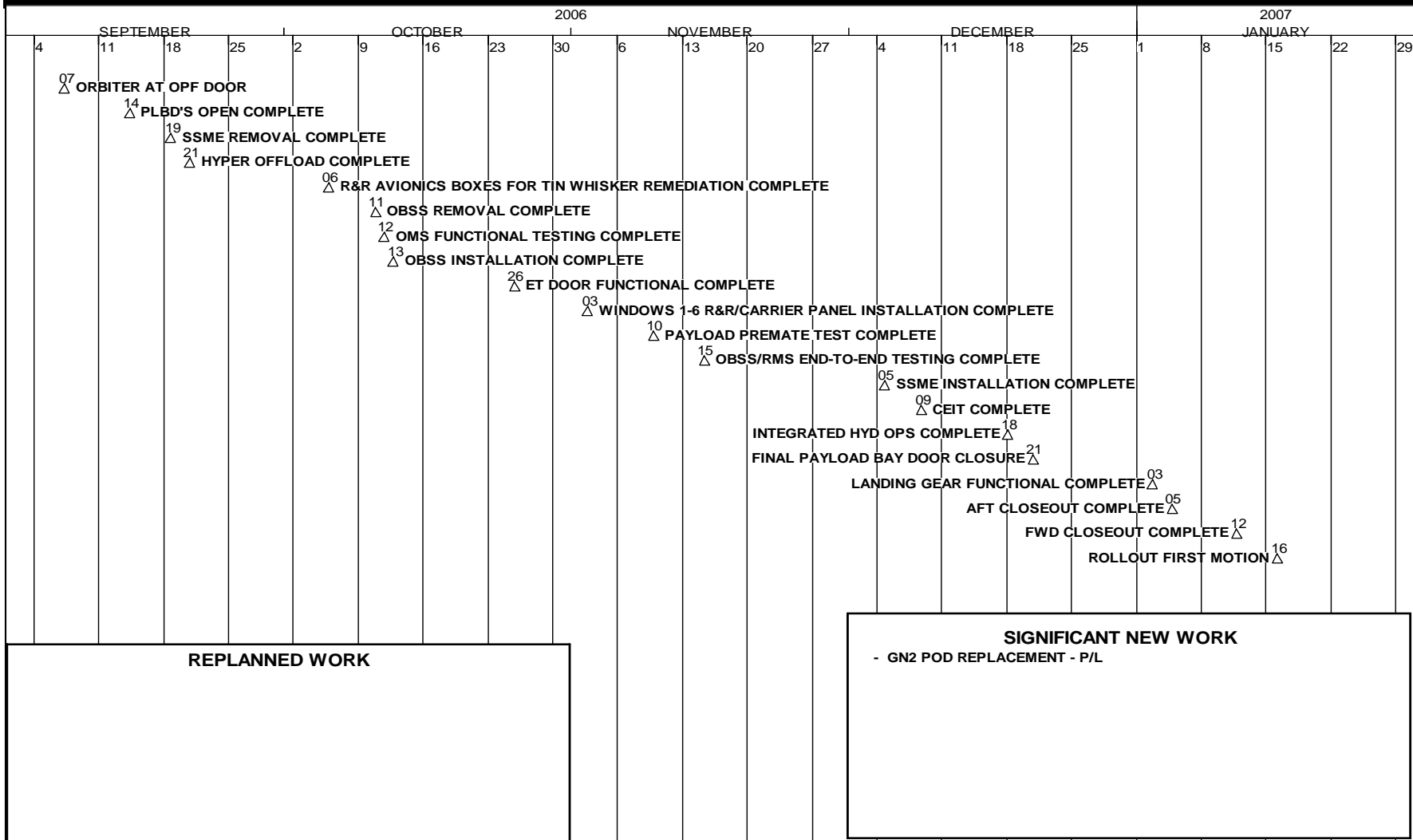
- **JXXXX** **File IX Requirements** **Need Chit**
- **JXXXX** **PGME Load in WSB** **Need Chit**

STATUS	
USA	NASA
C	C
C=Concur	NC=Not-concur

STS-117 / OV-104
OPF FLOW MILESTONES

CONTACT : MIKE CHAPPELL 1-5837
 CREATION DATE : 27-JUL-2006
 REVISION DATE : 16-AUG-2006
 REVISION : F

OPR : USA-CHAPPELL, MIKE, FM
 NASA- BREWER, ANGIE, PH-O



REPLANNED WORK

SIGNIFICANT NEW WORK
 - GN2 POD REPLACEMENT - P/L

Issues and Concerns

- **Work Content Growth**
 - **IFA'S**
 - **IPR'S**
 - **TPS Work Content**
 - **Forecast 121 Cavities**
 - **OV-103/OV-104 Parallel**
- **Tin Whiskers Box R/R Could result in Coldplate Damage / Removal**
 - **Extended Orbiter Power Down Required for Coldplate R/R**
- **DFRC Landing**

Projected TPS Removals

● Deferred Tile/ Fib For 1 Flight (Minimum)	25
● In-flight Tile Damage (Estimate)	45
● Putty Repair Inspections (Estimate)	10
● AFRSI Blanket Inspections (Estimate)	20
● Operational Damage (Estimate)	12
● 800 Gap Fillers -Result In Tile Removal	3
● MLG Door BRI	6
● Projected TPS Removals SUB TOTAL	121

Potential Additional TPS Requirements

● Additional BRI Tile on MLG Door	6
● Lockbolts (Will Assess Based on Access)	TBD
● BRI Tile on LESS	12
● BRI Tile on Windows	4
● BRI Tile on NLG Door	2
● Corrosion Sampling	TBD
● Projected TPS Removals	121
● Potential Additions	24
● Projected / Potential TPS Cavities	145*

* Final TPS Work Content Will Be Baselined At The Delta LSFR

STS-117 Ground Ops Processing

	Program Milestone	Activity / Remarks
STS-117 LAUNCH	R →	Launch on Feb 22, 2007 (NET) (Window extends to TBD)
<u>Issues/Critical Path</u>		OPF Roll Over 1/16/07
OV-104 OPF Overall	R →	OPF Processing 117 CD + 13H, schedule reflects 7 days/3 shifts
TPS Processing	R →	High work content (BRI, G/F, blankets, putty) potential growth could threaten capacity
		ET/SRB Mate 12/21/06
SRB Stacking	U/R	SRB Stacking start target November 2006 (U/R for VAB HB transition, door mod)
ET Standalone C/O	R →	ET-124 On Dock 12/23/07 (under review) Need Date 11/24/06 (4 weeks under support)
		Orbiter Mate 1/16/07
ET/SRB Mate, Closeout	R →	ET/SRB Mate on 12/21/06 (4 weeks under support)
		Launch NET 2/22/07
Integrated VAB/Pad Ops	G →	VAB/Pad Integrated Flow processing to Launch
STS-318, LON for STS-117	LON	STS-318, ET-117 under supports 5 weeks
<u>Potential Significant Growth</u>		
Tin Whiskers Remediation	U/R	Potential extended power down for coldplate R&R (5 LRUs to be replaced)

G

Issue remains on schedule, 67% or better available Contingency Days remain in schedule

Y

Issue encountering concerns/problems which may cause an impact, 34-66% available Contingency Days remain in schedule

R

Issue may impact a specific Program milestone, 33% or less available Contingency Days remain in schedule

STATUS

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

USA NASA

C C

CONCUR

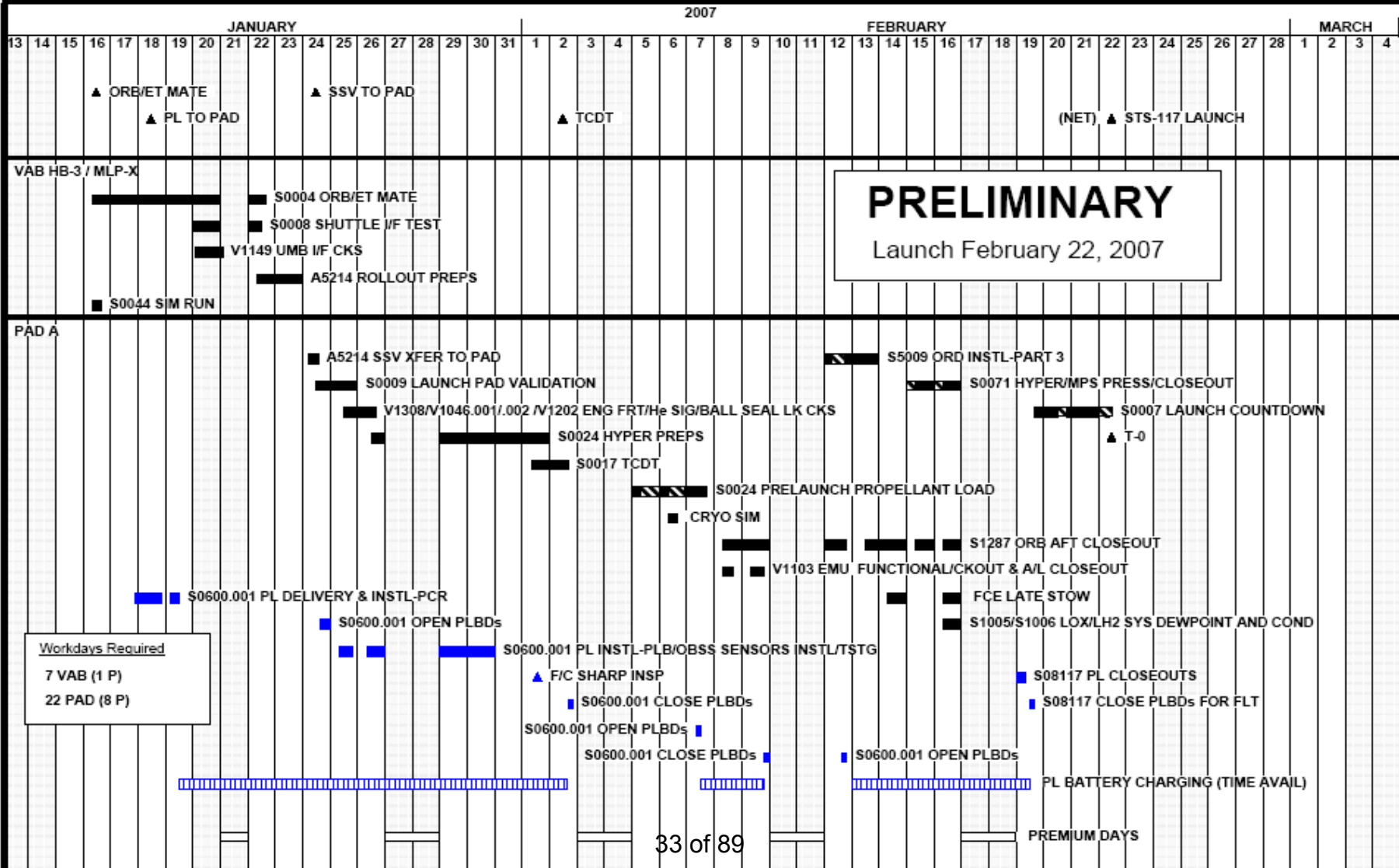
Creation Date: 4 APR 06:
Revision Date: 11APR 06
Revision: A

C=Concur NC=Non-Concur

STS-117 / OV-104

Integrated Operations Assessment Summary

Payloads:ISS-21-13A / S3/S4 ARRAYS (VERT)



STS-117 Integrated Launch Site Flow Review

Presenter

Stephen Reilly

Date

08-24-06

Backup Material

FRWG Presentation (With Minor Changes)



STS-117 Launch Site Flow Review		Presenter	
		MK-SIO / A. Swift	
		Date	Page
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Mandatory RCNs:

MB17098R1	B00 – SRB BOROSCOPE FWD BSM DRAINHOLES	Preliminary
OV17139	V58 – MPS/TVC ISOL VLV X-RAY ANALYS	Preliminary

Non-Mandatory Value Added RCNs:

KV16901R1	V61 - 17 PSI MANF LEAK CHECK	09/1/06
OV17127	V41 – FLOW LINER INSPECTIONS	08/18/06
OV17146	V63 – RADIATOR RETRACT FLEX HOSE UPDATE	09/01/06

STS-117 OV-104 Flight 28 LSFR

Back-up

Modification Records and MECSLSI Update Summary

MCR NO.	MCR TITLE	KIT / MOD RECORD & DESCRIPTION	TECH ORDER IMPACT	REMARKS
Mods To Be Baseline				
23227	Connector Saver Redesign Re-install connector savers at locations removed by MR due to wave washer groove being too large.	<u>K598-430017-001.0014.1</u> - Install Connector Saver, E. I. 14 OMS Pod locations. <u>K598-430018-001.0021.1</u> - Install Connector Saver, E. I. 21 OMS Pod locations. <u>VK70-703164-001.0104.1</u> - Install Connector Saver at Ku-Band locations.	No Tech Order Impact	No MECSLSI Impact
23448	ECO Point Sensor System Measurement Implement voltage measurements for all four MPS ECO LH2 and LO2 Sensor Transducer Circuits.	<u>TCTIV7023448REF.0104.0</u> - Replaces converter with DC amplifier <u>TCTIV3523448REF.0104.0</u> - Implements wiring harness change in Bays 5 and 6 <u>TCTIV7923448REF.0104.0</u> - Inter-bay wiring change, Bays 5 and 6	No Tech Order Impact	No MECSLSI Impact

Engineering, Hardware and Certification Status

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	CERTIFICATION CR / CAR (BOEING)	REMARKS
<u>Mods To Be Baselined</u>										
23227	Connector Saver Redesign Install connector savers at T-0 locations, and re-install connector savers at locations removed by MR due to wave washer groove being too large.	Released	N/A	Delivered	N/A	Go	Submitted	Approved	CAR 08-21-770000K	
23448	ECO Point Sensor System Measurement Implement voltage measurements for all four MPS ECO LH2 and LO2 Sensor Transducer Circuits.	Released	N/A	N/A	N/A	Go	8/31/06	TBD	CR 21-770000L CR 03-350013-001	

Modification Records and MECSLSI Update Summary

MCR NO.	MCR TITLE	KIT / MOD RECORD & DESCRIPTION	TECH ORDER IMPACT	REMARKS
Previously Approved Mods				
17177	Drag Chute Compartment TCS Blanket Mod Modifies two drag chute compartment blankets to accommodate recessed structure on LH side and adds ground strap.	TCTIV2017177REF.0104.1 - Fabricates and installs two TCS blankets and installs grounding strap	No Tech Order Impact	No MECSLSI Impact
17177	Purge Duct ID Tapes Add provisions for ID tapes (direction of flow, commodity, physical danger, etc.) on aft fuselage purge circuit no. 3 ducts.	TCTIV3817177REF.0104.3 - Adds ID tapes	No Tech Order Impact	No MECSLSI Impact
19835	Wing/Elevon Harness Lightning Protection Adds clamp and ground strap to the elevon actuator wire harness overbraided to mitigate lightning ground concern. ("Accessible" 24 of 32 locations.)	VK70-776054-001.0104.0 - Installs clamping band to connector adapter boot to overlap metal overbraided by at least 50%	No Tech Order Impact	No MECSLSI Impact
23043	MPS Delta P Transducer Removal Removes the delta-P transducers and their associated components/wiring as a safety improvement / risk reduction action.	TCTIV3523043REF.0104.0 - Remove ΔP S/C-1 (56P158) connector and stow wiring. TCTIV7023043REF.0104.0 - Remove ΔP transducer signal conditioner from avionics bay 6. TCTIV7923043REF.0104.0 - Remove O2 & H2 ΔP transducers, 50P786 & 50P785 connectors and stow wiring. VK70-410467-001.0104.0 - Add new tubing to bridge the gaps left by the removed transducers.	No Tech Order Impact	No MECSLSI Impact AUTH (S115116C) – Engineered for flight 28. Potential de-baseline.
23227	Connector Saver Redesign Install connector savers at T-0 locations.	TCTIV7923227REF.0104.0 - T-0 Locations	No Tech Order Impact	No MECSLSI Impact
Previously Approved Mission Requirements				
19768	MPM Pedestal Guillotine Bolt Replacement Replaces the guillotine retention fasteners with bolts of sufficient length to ensure engagement of the threaded insert locking feature. Adds MIP for proper torque and thread engagement of locking feature.	N/A	M072-544501-089 (IS) -067 (WAS) MODEL MV0082A M072-544505-014 (IS) -008 (WAS) MODEL MV0092A	MECSLSI Impact
Potential Mods				
19735	WLE Spar "Sneak Flow" Protection Adds a flow restrictor to limit allowable plume flow to 50% across the flow restrictor. Also adds insulation to bare areas of wing front spar surface to maintain spar temperature gradients at certification levels.	TCTIV1919735REF.0104.1 - Installs front spar thermal protection (Class 1 SIP and AB312 ceramic fabric)	No Tech Order Impact	No MECSLSI Impact Panels 1-4 & 14-22 remaining. Partially deferred from flight 27 (S115121ER12).
19763	WLE Lower Access Panel "Horsecollar" Gap Filler Redesign Horsecollar Gap Filler redesigned to add additional 0.50 dia sleeving at IML end of the horsecollar.	TCTIV1919763REF.0104.1 - Replaces gap filler with redesigned gap filler that adds ceramic fabric sleeving	No Tech Order Impact	No MECSLSI Impact Panels 1-4 & 14-22 remaining. Partially deferred from flight 27 (S115121ER12, S115121NR2).
23452	Fiducial Markings on WLE RCC T-Seals Implement fiducial markings on WLE RCC T-Seals to facilitate on-orbit imagery X-Y-Z coordinate location identification on RCC areas of interest.	023452.0104.X - Applies Sharpie™ permanent ink as fiducial marker	No Tech Order Impact	No MECSLSI Impact

Engineering, Hardware and Certification Status

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	CERTIFICATION CR / CAR (BOEING)	REMARKS
Previously Approved Mods										
17177	Drag Chute Compartment TCS Blanket Mod Modifies two drag chute compartment blankets to accommodate recessed structure on LH side and adds ground strap.	Released	N/A	N/A	N/A	Go	Submitted	Approved	CAR 03-09-363900-001B	
17177	Purge Duct ID Tapes Add provisions for ID tapes (direction of flow, commodity, physical danger, etc.) on aft fuselage purge circuit no. 3 ducts.	Released	N/A	N/A	N/A	Go	N/A	N/A	N/A	
19835	Wing/Elevon Harness Lightning Protection Adds clamp and ground strap to the elevon actuator wire harness overbraid to mitigate lightning ground concern. ("Accessible" 24 of 32 locations.)	Released	N/A	Delivered	N/A	Go	Submitted	Approved	CAR 07-21-770000J	
23043	MPS Delta P Transducer Removal Removes the delta-P transducers and their associated components/wiring as a safety improvement / risk reduction action.	Released	N/A	Delivered	N/A	Go	Submitted	Approved	CAR 02-10-449-0164-0001E	Previously authorized at STS-116 (OV-104 flt 28) LSRR. Potential de-baseline.
23227	Connector Saver Redesign Install connector savers at T-0 locations.	Released	N/A	Delivered	N/A	Go	Submitted	Approved	CAR 08-21-770000K	
Previously Approved Mission Requirements										
19768	MPM Pedestal Guillotine Bolt Replacement Replaces the guillotine retention fasteners with bolts of sufficient length to ensure engagement of the threaded insert locking feature. Adds MIP for proper torque and thread engagement of locking feature.	Released	N/A	N/A*	N/A	Go	Submitted	8/25/06	CAR 08-44-000002-001K	* Available on site.
Potential Mods										
19735	WLE Spar "Sneak Flow" Protection Adds a flow restrictor to limit allowable plume flow to 50% across the flow restrictor. Also adds insulation to bare areas of wing front spar surface to maintain spar temperature gradients at certification levels.	Released	N/A	Delivered	N/A	Go	Submitted	Approved	CAR 146-05-100004-002J	
19763	WLE Lower Access Panel "Horsecollar" Gap Filler Redesign Horsecollar Gap Filler redesigned to add additional 0.50 dia sleeving at IML end of the horsecollar.	Released	N/A	Delivered	N/A	Go	Submitted	Approved	CAR 39-08-199200-003T	
23452	Fiducial Markings on WLE RCC T-Seals Implement fiducial markings on WLE RCC T-Seals to facilitate on-orbit imagery X-Y-Z coordinate location identification on RCC areas of interest.	10/5/06	TBD	N/A	N/A	Go	10/17/06	TBD	CAR 39-08-199200-003T	



STS-117 Launch Site Flow Review

SSME Planned Modifications

- Work authorized by Shuttle Project Action Request (SPAR) or Level II Change Request (CR)

ECP	Kit No	Description	Weight Impact	SPAR No./ CR No.	Engine	Status
1289R9	2R053812-10	BLOCK II MODS	+0 LB	ME-0191 R0B	2052	Complete
1355	2R053812-60	BLOCK II LAI	+0 LB	ME-0191 R0B	2052	Complete
1361	2R053812-50	BLOCK II G6 Shim	+0 LB	ME-0191 R0B	2052	Complete
1362	2R053812-40	BLOCK II Flow Req Chg	+0 LB	ME-0191 R0B	2052	Complete
1379	2R091522-10	MFV End Cap	+0 LB	ME-0191 R0B	2052	Complete
1388	2R091532-10	Relocate Accel to G6	+0 LB	ME-0191 R0B	2052	Complete
1402	2R091538-10	PCA Aft Attch Inst	+0 LB	ME-0191 R02	2052	Complete
1414	2R091543-10	HPFTP Mass Prop	+0 LB	ME-0191 R10	2052	Complete
1439	2R091548-10	HPFTP 1 Piece Sensor	+0 LB	ME-0191 R11	2052	Complete
1440R2	2R091544-10	Frac Crit Bolts	41 of 89 +0 LB	ME-0191 R11	2052	Complete



STS-117 Launch Site Flow Review

SSME Planned Modifications

- Work authorized by Shuttle Project Action Request (SPAR) or Level II Change Request (CR)

ECP	Kit No	Description	Weight Impact	SPAR No./ CR No.	Engine	Status
1473	2R091567-10	Incorp -19 Controller	+0 LB	ME-0191 R08	2052	Complete
1477	2R091569-10	LAI Covers	+0 LB	ME-0216 R21 ME-0191 R13	2057 2052	In-Work In-Work
1507	2R091599-10	LAI Tape Req'ts	+0 LB	ME-0216 R02 ME-0191 R15	2057 2052	In-Work In-Work



STS-117 Launch Site Flow Review

Rocketdyne Action Requests (RAR)

RAR	Title	Engine(s)	SPARs / CRs	Status
KLO-1451R1	Reallocate Block II HPFTP 8020 from ME2052 to ME 2049.	2052	ME-0191R01	Complete
KLO-1520	Inspect POGO Accumulator Lines.	2052	ME-0191 R03	Complete
KLO-1523	Perform LPFTP Discharge Duct Ovality Checks	2052	ME-0191 R04	Complete
KLO-1524	Inspect LAI on HPFTP	2057	ME-0216 B	Complete
KLO-1531	Inspect Bolts at Joints N2.4, N8, N9, & O7.1.	2052	ME-0191 R05	Complete
KLO-1534	X-Ray Nozzle	2052	ME-0191 R06	Complete
KLO-1535	Borescope Inspect Selected Welds on the LPFTP.	2052	ME-0191 R06	Complete
KLO-1540	Perform In-field X-Rays of engine 2052 Nozzle Aft Manifold	2052	ME-0191 R07	Complete
KLO-1549	Inspect ME2057 Controller Coolant Duct	2057	ME-0216 B	Complete



STS-117 Launch Site Flow Review

Rocketdyne Action Requests (RAR)

RAR	Title	Engine(s)	SPARs / CRs	Status
KLO-1552	Dye Penetrant Inspect HPFTP Speed Sensor (post STS-114).	2057	ME-0216 B	Complete
KLO-1554	Measure HPFTP LAI Thickness.	2052	ME-0191 R12	Complete
KLO-1559R1	Measure Controller NISIS Interface Area	2052 2057	ME-0191 R14 ME-0216 R1	Complete Complete



ISS/PAYLOAD PROCESSING BACKUP

Presenter: Robbie Ashley	
Date: 8/24/06	Page 5

BACKUP CHARTS





STS-117/ISS-13A PAYLOAD BAY CONFIGURATION

Presenter:

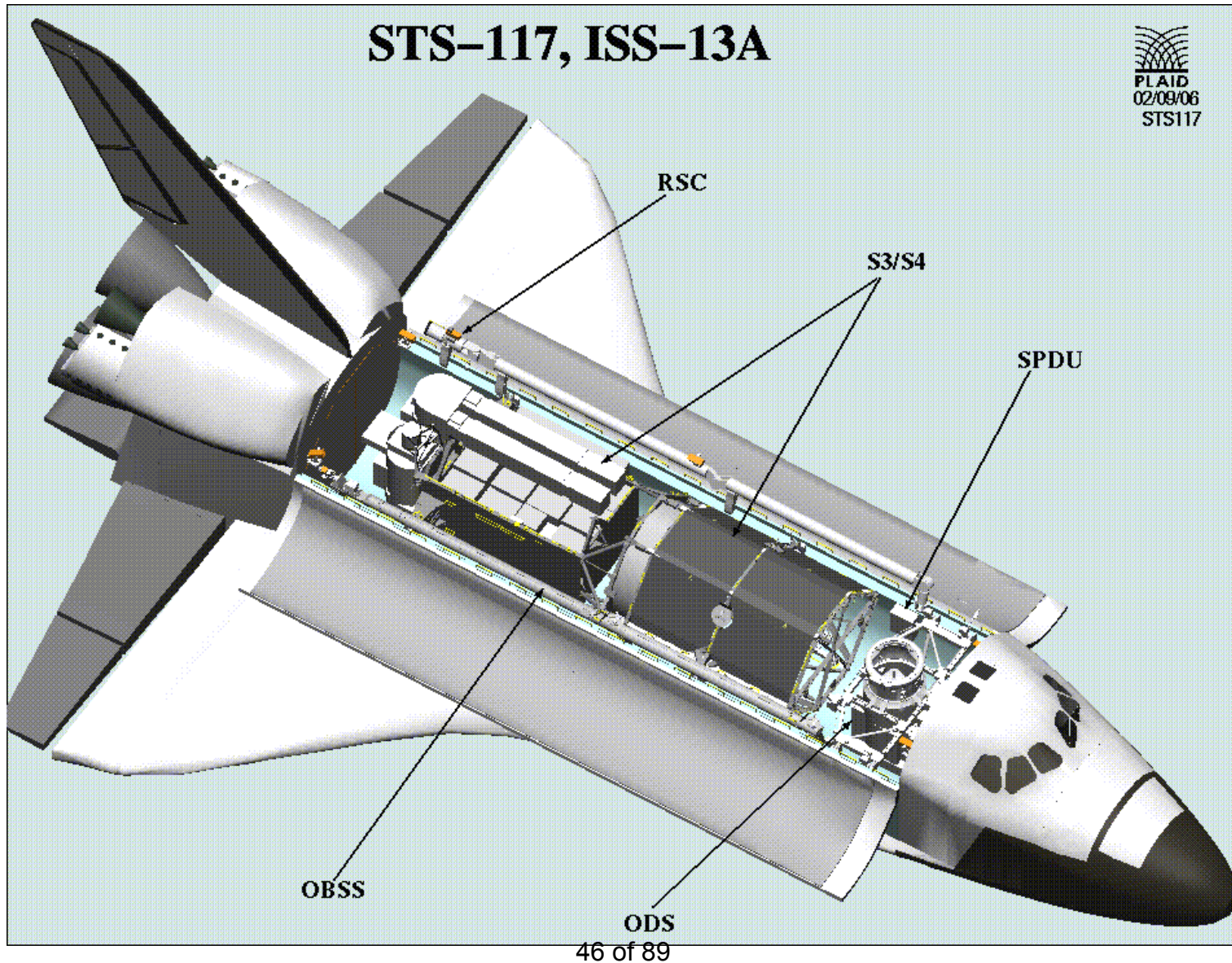
Robbie Ashley

Date:

8/24/06

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S3 / S4 INTEGRATED TRUSS SEGMENT (ITS)

Presenter:

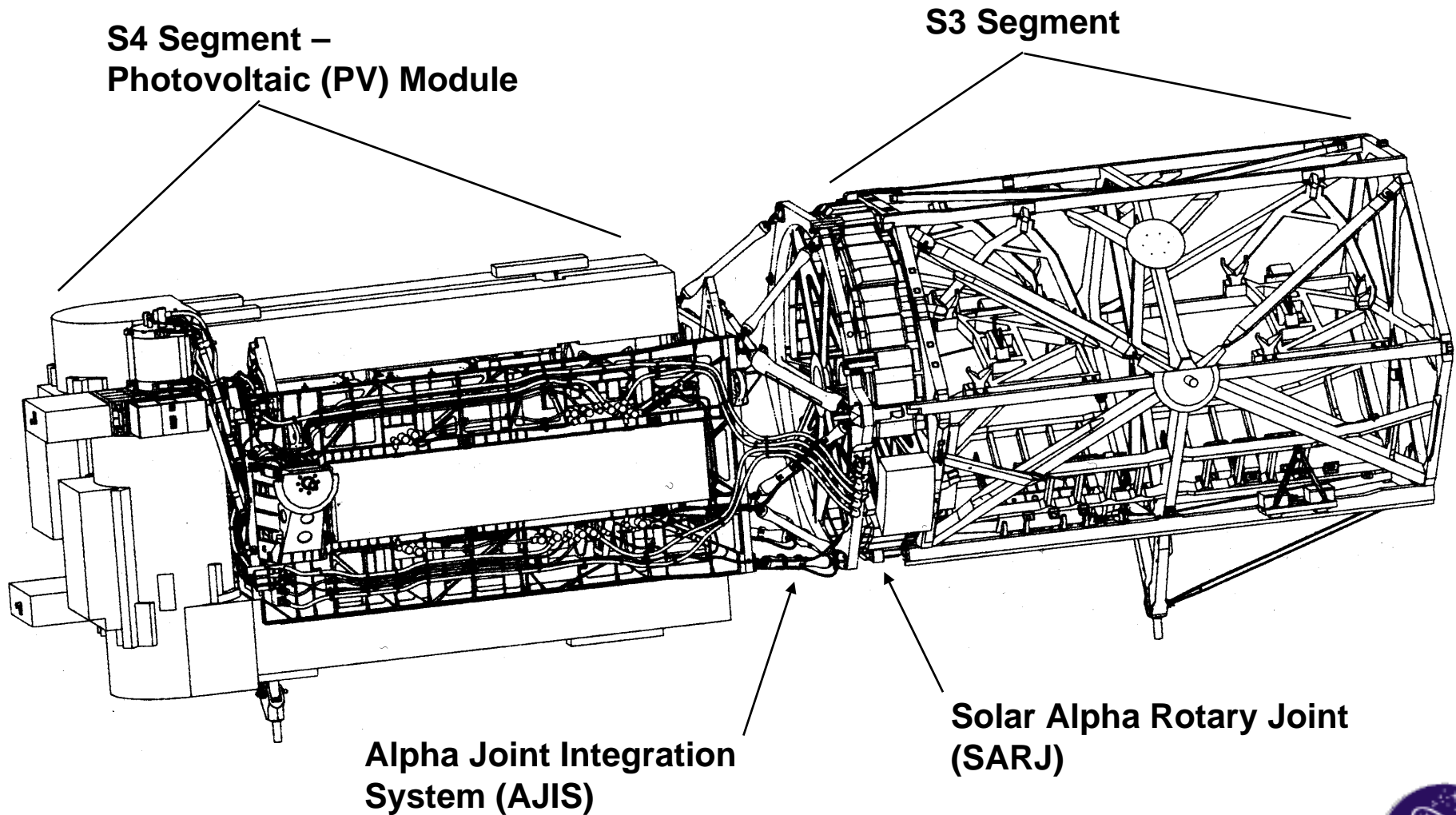
Robbie Ashley

Date:

8/24/06

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Presenter:

Robbie Ashley

Date:

8/24/06

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S3/S4 ITS COMPONENTS

S3 Segment

- Starboard Solar Alpha Rotary Joint (SARJ)
 - Provides alpha gimbal for S4 and S6 solar arrays
- Alpha Joint Integration System (AJIS)
 - Attaches S4 to SARJ
- Other
 - 4 Payload Attachment Systems (PAS)
 - 1 External TV Camera Group (ETVCG) port
 - 1 Mobile Transporter (MT) worksite

S4 PV Module

- 2 Solar Array Wings (SAW)
 - Power Channels 1A & 3A
- 2 Beta Gimbal Assemblies (BGA)
- Integrated Equipment Assembly (IEA)
 - Batteries and associated electronics
- Photovoltaic Radiator (PVR)

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ISS/PAYLOAD PROCESSING BACKGROUND INFORMATION

Presenter:

Robbie Ashley

Date:

8/24/06

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- S3 and S4 delivered to KSC in December 2000 and January 2001 respectively
- S3/S4 assembly and test originally completed in 2003, flight closeouts completed in 2004
- Decision in June 2004 to add Photovoltaic Radiator (PVR) to 13A flight
 - NH_3 offloaded in June 2004 in preparation for PVR installation
 - PVR installation completed in November 2005
- Decision in February 2006 to replace S4 lower deck flight batteries
 - Lower deck solar array wing removed
 - Old batteries removed and returned to vendor
 - New batteries are at KSC awaiting installation
- Currently waiting until post-12A launch (L+5 days) to install new batteries on 13A





ISS 13A STAGE CONFIGURATION

Presenter:

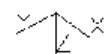
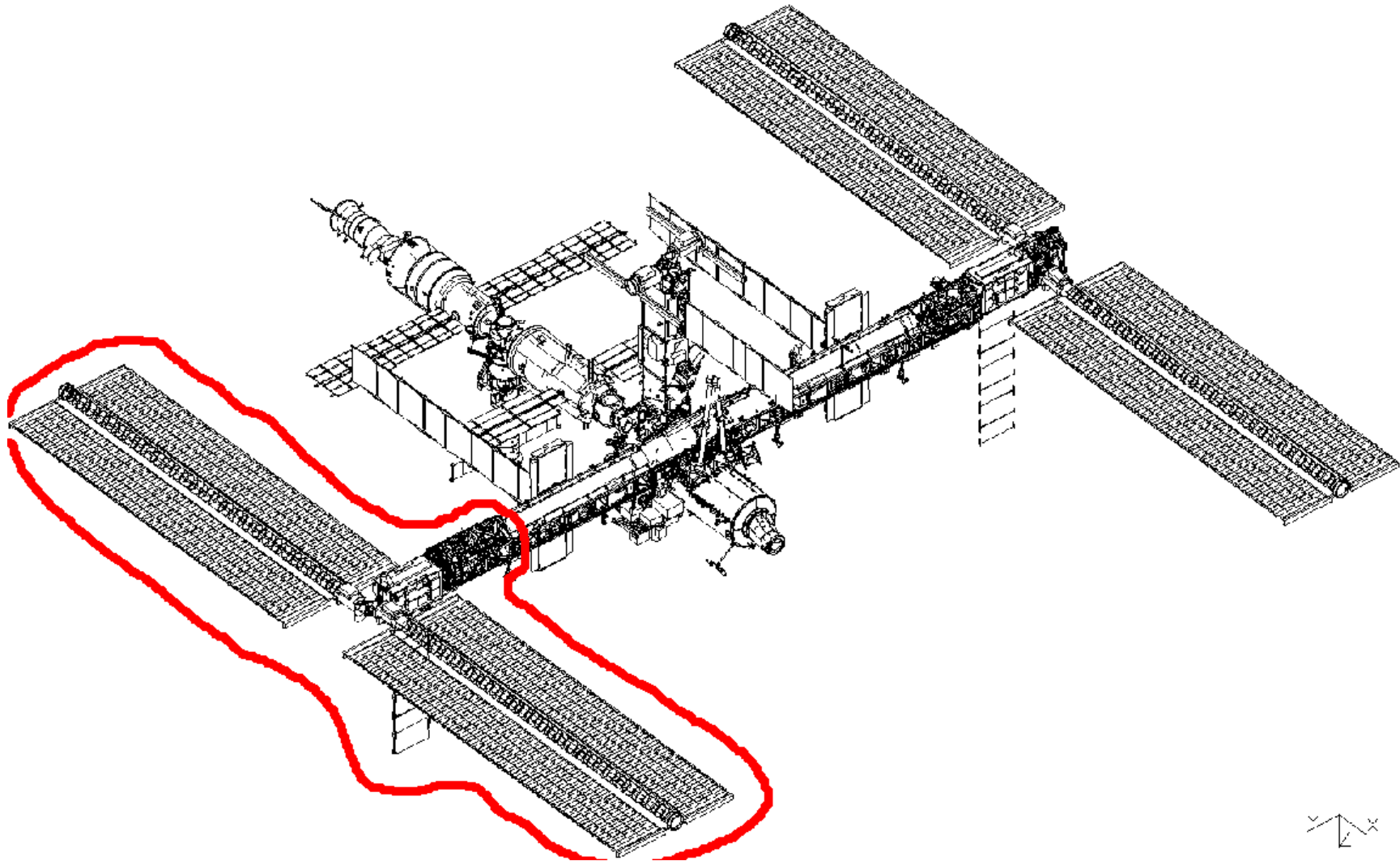
Robbie Ashley

Date:

8/24/06

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STS-117 (13A) LSFR

Flight Requirements/Documents Status

MO3/J. J. Conwell/Mission Integration Manager
USA/Patrick LeMoine/ USA Flight Manager



Requirements Documents Status	Presenter	MO3/J. J. Conwell USA/Patrick LeMoine	
	Date	8/24/06	Page

Flight Requirements Documents

NSTS 17462-117, Revision 009: Published July 13th, 2006

Approved CRs for Revision 10

- #0057 – Add back offloaded Cryogenics**
- #0058 – Add back some offloaded Mid-deck Items**
- #0059 – Delete DSO 500**
- #0060 – Editorial Update**

NSTS 17462-317, Revision Basic, Approved 8/16/06

No Open CR's



<h1>Requirements Documents Status</h1>	Presenter	MO3/J. J. Conwell USA/Patrick LeMoine	
	Date	8/24/06	Page 3

13A MIP (NSTS 21509)

Current version available on PILS: Revision A, Chg 2, 5-4-06

MIP CRs currently in review: 13A battery charging requirements

MIP CRs in work:

Scheduled and unscheduled EVA requirements

STS-117/317 Launch Site Flow Review Flight Software Overview

Tom Stansel

PRCB 8/24/2006

STS-117/317 LSFR (FSW)

- **STS-117/OV-104 is the Fifth Scheduled Flight of Operational Increment (OI) 30 Flight Software (FSW)**
- **STS-117/OV-104 Base 2 software production schedule (available to field)**
 - **Shuttle Data Tape** **July 18, 2006 Actual**
 - **Mass Memory Unit Contents** **Aug 08, 2006 Actual**
- **STS-317 is the Rescue Mission for STS-116**
- **STS-317/OV-104 deliveries (to be defined in SCR 98090) will be consistent with the STS-300 products defined in SCR 98079B**
 - **Plus post call-up changes (current list)**
 - **STS-317 flight specific I-Load patches available scheduled for Jan 08, 2007**
 - **SCR 93102, STS-115 Main Landing Gear (MLG) Level-C Patch**

STS-117/317 LSFR (FSW)

- **Open Items**

- STS-117/OV-104 Ascent/Entry flight specific I-Load DCRs are scheduled for SASCBC approval on Oct 26, 2006.
 - I-Load patch availability expected Nov 9, 2006
- MCR 23448 ECO Sensor System Instrumentation approval
 - If approved for STS-117 and STS-317, FSW will implement with a telemetry correlation table
 - TFL formats 129 and 160
 - DCR will map existing spare slots to actual measurements
- SASCBC approval of SCR 98090 (STS-317 Flight Software Configuration)

- **Concerns/Issues**

- No FSW issues exist at this time that would impact launch site flow activities or flight.

STS-117/317 LSFR (FSW) Backup

- STS-117/OV-104 Flight Software Payload Support:
 - ISS-13A
 - Orbiter Interface Unit (OIU)
 - Sequential Still Video (SSV)
 - Orbiter Docking System (ODS)
 - Trajectory Control System (TCS)
 - Assembly Power Converter Units (APCUs)
- Major New Flight Software Support Items:
 - None

STS-117/317 LSFR (FSW) Backup

- **STS-117 Source Changes/Edits for Primary Flight Software (Base 2)**
 - **Changes Implemented on STS-116 plus**
 - **First time implementation on STS-117**
 - **None**
- **STS-117 Patch Implementation for Primary Flight Software (Base 2)**
 - **Changes Implemented on STS-116 plus**
 - **First time implementation on STS-117**
 - **None**
- **STS-117 Patch Implementation for Backup Flight Software (Base 2)**
 - **Changes Implemented on STS-116 plus**
 - **First time implementation on STS-117**
 - **SCR 93020 - LT/RT Main Landing Gear Door Uplock Discrete Correction**



STS-117 LSFR Flight Crew Equipment/GFE	Presenter MV5/Bruce Sauser	
	Date August 24, 2006	Page 1

STS-117 LSFR

FCE/GFE Status

Bruce Sauser
Manager, GFE & Flight Crew Equipment Office
Johnson Space Center
August 24, 2006



STS-117 LSFR Flight Crew Equipment/GFE	Presenter MV5/Bruce Sauser	
	Date August 24, 2006	Page 2

- **Currently, no hardware certification issues for STS-117 hardware**
- **Same tech order configuration as STS-115**
 - **Camera B (port aft) selected as an SVS camera - will require SVS calibration at JSC**
- **Need dates and delivery dates have been partnered**
- **Anticipate no issues delivering hardware**
- **Tech orders and hardware list noted in backup charts**



STS-117 LSFR Flight Crew Equipment/GFE	Presenter MV5/Bruce Sauser	
	Date August 24, 2006	Page 3

BACKUP



STS-117 LSFR
Flight Crew Equipment/GFE

Presenter MV5/Bruce Sauser	
Date August 24, 2006	Page 4

Tech Order numbers are identified for reference only. Report generated 8/11/2006.

Hardware	Tech Order	Eng(TO) Release	In MEC	Cert O/C	KSC HDW Need	JSC HDW Planned	KSC Remarks	JSC Remarks	JSC Contact
A (port forward)	M072-750025-058	03/24/05	07/24/06	C				This hardware stays installed from STS-115.	Randall Moore
B (port aft)	M072-750025-067	03/24/05	07/24/06	C				Same hardware as STS-115. Note: For STS-117 only, Camera B requires to be returned to JSC for SVS calibration per CHIT TBD.	Randall Moore
C (starboard aft)	M072-750025-060	03/24/05	07/24/06	C				This hardware stays installed from STS-115.	Randall Moore
D (starboard forward)	M072-750025-061	11/24/04	07/24/06	C				This hardware stays installed from STS-115.	Randall Moore
SRMS elbow camera	M072-544504-001	01/24/05	07/24/06	C				This hardware stays installed from STS-115.	Randall Moore
SRMS wrist camera	M072-544504-003	03/04/05	07/24/06	C				This hardware stays installed from STS-115.	Randall Moore
Centerline Airlock Camera (stowed)	M072-660828-002, plus C CCD stow	03/17/99	07/24/06	C	11/26/06			Same hardware as STS-115.	Randall Moore
Lefthand Umbilical Camera (forward)	M072-705001-017	10/28/04	07/24/06	C	01/12/07	01/12/07		Hardware must be returned to JSC for pressurization and will be returned to KSC 3 days prior to OPF roll to VAB.	Randall Moore
Lefthand Umbilical Camera (aft)	M072-705001-016	10/28/04	07/24/06	C	01/12/07	01/12/07		Hardware must be returned to JSC for pressurization and will be returned to KSC 3 days prior to OPF roll to VAB.	Randall Moore
Righthand Umbilical Camera	M072-705001-024	10/28/04	07/24/06	C	01/12/07	01/12/07		Hardware must be returned to JSC for pressurization and will be returned to KSC 3 days prior to OPF roll to VAB.	Randall Moore



STS-117 LSFR
Flight Crew Equipment/GFE

Presenter MV5/Bruce Sauser	
Date August 24, 2006	Page 5

Tech Order numbers are identified for reference only. Report generated 8/11/2006.

Hardware	Tech Order	Eng(TO) Release	In MEC	Cert O/C	KSC HDW Need	JSC HDW Planned	KSC Remarks	JSC Remarks	JSC Contact
Digital Television (DTV)	M072-710570-007		07/24/06	O				Installed.	Russel Yates
EVA Safety Tethers	M072-661618-014	10/26/04	07/24/06	C	11/01/06	11/01/06	Tether container remains installed.	Hardware must be replaced.	Mickey McElroy
MCIU/RMS Situational Awareness Display (RSAD)	M072-710543-001	03/07/00	07/24/06	O				Installed Hardware.	Russel Yates
Orbiter Space Vision System (OSVS)	M072-340077-013 M072-340077-014 M072-340077-015 M072-340077-016 M072-340077-021 M072-340077-022 M072-340077-023 M072-340077-024 M072-340077-030 M072-340077-031	08/03/99 08/03/99 08/03/99 08/03/99 08/03/99 08/03/99 08/03/99 08/03/99 08/03/99 08/03/99	07/24/06	C				Installed hardware.	Larry Schmidt
Portable Foot Restraint (PFR)	M072-661568-029	03/11/05	07/24/06	C	11/01/06	11/01/06		Hardware must be replaced.	Mickey McElroy
Sequential Still Video (SSV)	STOWED		07/24/06	C				Installed hardware.	Russel Yates
Slidewire(s)	M072-544700-016	03/31/05	07/24/06	C				This hardware stays installed from STS-115.	Mickey McElroy
Video Processing Unit (VPU)	M072-710338-006	07/05/01	07/24/06	C				Installed hardware.	Russel Yates



STS-117 LSFR
Flight Crew Equipment/GFE

Presenter MV5/Bruce Sauser	
Date August 24, 2006	Page 6

Tech Order numbers are identified for reference only. Report generated 8/11/2006.

Hardware	Tech Order	Eng(TO) Release	In MEC	Cert O/C	KSC HDW Need	JSC HDW Planned	KSC Remarks	JSC Remarks	JSC Contact
Winches	V070-650007-085	11/19/04	07/24/06	C				This hardware stays installed from STS-115.	Mickey McElroy
Wireless Video System (WVS)	M072-744007-001 UHF M072-344828-001 mount M072-744004-014 S-BAND M072-744004-013 S-BAND M072-744004-012 S-BAND M072-744004-015 S-BAND M072-744004-017 S-BAND M072-744004-018 S-BAND M072-744004-016 S-BAND		07/24/06	C				Installed hardware.	Justin Kerr
Space to Space Orbiter Radio (SSOR)	M072-344828-002 M072-740828-002 antenna		07/24/06	C				Installed hardware.	Justin Kerr
RMS Sideview Camera (RSC)	M072-710281-002 M072-000416-004 camera	11/24/04	07/24/06	C	11/01/06	11/01/06		Hardware is config 2. Must be returned to JSC for pressurization.	Randall Moore
Wing Leading Edge (WLE) Instrumentation - Left Wing	M072-756111-003		07/24/06	C				Installed hardware.	Justin Kerr
Wing Leading Edge (WLE) Instrumentation - Right Wing	M072-756111-004		07/24/06	C				Installed hardware.	Justin Kerr
OBSS Sensor Package 1 (OPF)	M072-710282-001		07/24/06	O	04/01/09	10/30/06		Hardware resides at KSC.	Kim Ess



STS-117 LSFR
Flight Crew Equipment/GFE

Presenter MV5/Bruce Sauser	
Date August 24, 2006	Page 7

Tech Order numbers are identified for reference only. Report generated 8/11/2006.

Hardware	Tech Order	Eng(TO) Release	In MEC	Cert O/C	KSC HDW Need	JSC HDW Planned	KSC Remarks	JSC Remarks	JSC Contact
OBSS Sensor Package 2 (OPF)	M072-710282-005		07/24/06	O	10/30/06	10/30/06		Hardware resides at KSC.	Kim Ess
TCS	M072-730021-017	03/09/05	07/24/06	C				Installed.	Russel Yates
Aft Thrust Structure Micro-SGU	M072-755110-006	04/15/05	07/24/06	O				Installed.	Justin Kerr
OMS POD Micro-SGU	M072-755111-001	03/19/02	07/24/06	O				Installed.	Justin Kerr
Wing Leading Edge Batteries	M072-756111-003 M072-756111-004		07/24/06	C	12/01/06	12/01/06	Note: 12/01 is currently a preliminary date.		Justin Kerr
OBSS Sensor Package 1 (Pad)	M072-710282-001		07/24/06	C				Hardware resides at KSC.	Kim Ess
OBSS Sensor Package 2 (Pad)	M072-710282-005		07/24/06	C				Hardware resides at KSC.	Kim Ess
Aft Thrust Structure Micro-SGU Batteries			07/24/06	O	10/01/06	10/01/06	Note: The preliminary KSC OD date may change to 11/01/2006.		Justin Kerr
OMS POD Micro-SGU Batteries			07/24/06	O	10/01/06	10/01/06	Note: The preliminary KSC OD date may change to 11/01/2006.		Justin Kerr

EVA Status STS-117 LSFR

**David Foltz
EVA Office
Johnson Space Center
August 24, 2006**



EVA Status

STS-117 LSFR



- **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
- **Slidewire**
 - Port - Slidewire deleted per EVA CCB decision to protect limited inventory. Future use of slidewire will be determined on a case by case basis.
 - Starboard - Slidewire deleted due to OBSS interference
- **Tether Container and Routing**
 - Requirement deleted because of deleted slidewire requirement.
- **Lightweight Port TSA removed**
 - EVA contingency tools will be stowed in the middeck
- **Winches**
 - Winch P/N SED33101570-327 on Forward Bulkhead
 - Winch P/N SED33101570-325 on Aft Bulkhead

**STS-117
ISS – 13A S3/S4
LAUNCH SITE FLOW REVIEW**

PAYLOAD CARGO ENGINEERING STATUS

Martin Garcia

281-212-6066

August 24, 2006

STS-117 LSFR

ENGINEERING FLIGHT PRODUCT STATUS

<u>DRAWING NO.</u>	<u>TITLE</u>	<u>REV</u>	<u>EO</u>	<u>RELEASED</u>
V072-200197	MECSLSI	C	C01	07/24/06
VA72-200197	CARGO ARRANGEMENT	C	C01	07/21/06
VD72-200197	AVIONICS CABLE DIAGRAM	B	C01	07/26/06
VS72-200197	INTEGRATED SCHEMATIC	B	C01	07/26/06
VS70-540305	RETENTION SCHEMATIC	A	A01	01/30/06

RESCUE FLIGHT STATUS

- STS-317 RECONFIGURATION ENGINEERING PRODUCTS WILL BE DEVELOPED BY THE ENGINEERING ORDER TO FOLLOW (EOTF) PROCESS.

ENGINEERING OPEN WORK

- NONE

STANDARDIZATION

- MISSION CONFIGURATION COMPLIES WITH ORBITER/PAYLOAD INTEGRATION STANDARDIZATION DOCUMENT NSTS 60523

STS-117 LSFR

OMRS STATUS

BASELINED FILES

- P509 ISS-13A LAUNCH PACKAGE TO ORBITING ISS
- P321 AUXILIARY POWER CONVERTER UNIT (APCU)

OPEN WORK

ECD

- BASELINE OMRS
 - FII, V2 POST MATE - NONE
 - FII, V4 PRE-MATE
 - PS17150 MISSION UNIQUE LIST 08/29/06
 - PS17151 FIII MUL UPDATE 08/29/06
 - PS17152 ADJACENT PIN TEST UPDATE 08/29/06
 - FII, V6 SHUTTLE EXPERIMENTS - NONE

ISSUES/CONCERNS

- NONE

STS-117 LSFR

ANNEX 1

BASELINED FILES

- NSTS 21509 ISS-13A

OPEN WORK

- INTERIM WEIGHT SUBMITTAL
- FINAL WEIGHT UPDATE

ECD

06/01/06A

01/22/07

ISSUES/CONCERNS

- NONE

TGHR STATUS

CUSTOMER SUBMITTAL

10/22/06

RELEASE FOR REVIEW

11/22/06

BASELINE

12/22/06

ISSUES/CONCERNS

- NONE

STS-117 LSFR

PAYLOAD ICD's/PIRN's

ALL PAYLOAD-UNIQUE ICDS ARE BASELINED

PIRNS THAT IMPACT FLIGHT PRODUCTS

- NONE

ISSUES/CONCERNS

- NONE

STS-117 LSFR

CARGO CLOSE CLEARANCE PROCESS

- NO CLOSE CLEARANCE AREAS HAVE BEEN IDENTIFIED AT THIS TIME
- A CHIT TO TAKE CLOSE CLEARANCE MEASUREMENTS IS NOT EXPECTED TO BE REQUIRED

CARGO INTEGRATION HARDWARE STATUS

DELIVERY STATUS

- ALL REQUIRED CIH HAS BEEN DELIVERED

ISSUES/CONCERNS

- NONE



STS-117 Launch Site Flow Review

Presenter	Amy Houts-Gilfriche	
Date	08-24-06	

SSP System Drawings

- **The Drawings Baseline Was Released By PRCB S115117A on 01-06-03.**
 - **V072-000001-257** (Rev. UM01) Space Shuttle System (Rel. 4-21-06)
 - **V072-200197-003** (Rev. C01) Mission Equipment Cargo Support (Rel. 7-24-06)
 - **SGD32104440-401** (Rev. C) Crew Compartment Configuration (Rel. 7-5-06)
 - **-402** Descent
 - **V070-000001-004** Orbiter General Assembly
 - **V070-410100-018** SSME Installation
 - **10100-0061-163** Integrated SRB General Assembly (BI-129)
 - **80901000000-510** External Tank Assembly (ET-124)

• **STS-117 LSRR + 18 days Mission Configuration Product Plan (MCP) was published on 8-7-2006 and will be republished at ORR - 14 days on 12-21-2006.**



STS-117 Launch Site Flow Review

Presenter	Amy Houts-Gilfriche	
Date	08-24-06	

SSP System Drawings - Cont'd

- Ferry Configuration
 - V072-000001-258 (Rev. UM01) Space Shuttle System (Rel. 04-21-06)
 - V072-200197-004 (Rev. C01) Mission Equipment Cargo Support (Rel. 07-24-06)
 - SGD32104440-001 (Rev. C) Crew Compartment Configuration (Rel. 7-5-06)
 - V072-300055-023 (Rev. BL01) Ferry Flight Configuration (Rel. 6-21-06)

 - SCA 905

ASCENT MODULAR LOCKER LAYOUT

CDR FREDERICK STURCKOW
 PLT LEE ARCHAMBAULT
 M/S 1 PATRICK FORRESTER
 M/S 2 STEVE SWANSON
 M/S 3 JOHN OLIVAS
 M/S 4 JAMES REILLY

PANTRY FOOD	1622 -308	MF57A PANTRY FOOD	1622 -308	PANTRY FOOD	1622 -302
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LEADER: CELESTE NITCH
 DATE: 06/03/2006
 LAUNCH: 02/22/2007
 FLIGHT: STS-117/13A
 VEHICLE: OV-104
 CREW: 6 CREW, 11 + 1 + 2 DAYS
 RQMTS: SRMS, ERGOMETER,
 SORG, NO RCRS, SLEEPING BAGS
 NO LW MAR, NO VOL B

MD CEIL (PORT 1)	TBD
<input checked="" type="checkbox"/> ISS PHOTO/VID EQUIP ASSY KIT	
WATER TRANSFER	
1 CTB HYGIENE	
MD CEIL (PORT 2)	7552 -TBD
ARM KITS (8)	
ARM SIZE RINGS (1)	
LCVG (3)	
LEG ASSY (2)	

MIDDECK FORWARD

MF14E 2767 -304 MENU FOOD	5962 MF28E 6269 -303 -307 PRINTER TRAYS	6066 MF43E 6629 -320 -305 COLOR PRINTER & PAPER	MF43C TBD GFE TV CONTROL PGSC ACCESS BAG	MF57C 6697 TBD HH LIDAR W/NIGHTSCOPE (TRAD)/SSV *BPSMU	MF71C 8039 -301 PRIME C/L CAM
MF14G 2762 -307 MENU FOOD	6300 MF28G 6250 -343 -343 IFM TOOLS	MF43G 1900 -308 CDR	MF43H TBD SODF SODF	MF57E RESERVE	MF71E 1901 -305 PLT
MF14H 2763 -304 MENU FOOD	MF28H 6684 -TBD MED KITS ALTIMETER	MF43K 2760 -306 FRESH FOOD	MF43M 6299 -311 COAS FLUOR LT LIGHT SHIELDS DCS 760/BTA/AUDIO DOS/AA BATS	MF57F 5473 -305 ORBITER FDF	MF71F 8723 TBD STOW-N-GO
MF14K TSA TOOLS	MF28K 6231 336 POST INSERTION	MF43L 2760 -306 FRESH FOOD	MF43N 6299 -311 COAS FLUOR LT LIGHT SHIELDS DCS 760/BTA/AUDIO DOS/AA BATS	MF57G TBD CHECS: PDK CREW CARE PACKAGE ULTRASONIC LEAK DET. HCTB	MF71G 6068 -TBD MINI WORK STATIONS/TETHERS
MF14M TSA TOOLS	MF28M 6015 -325 *D/C VACUUM CLEANER CTB	MF43O 2760 -306 FRESH FOOD	MF43P 6299 -311 COAS FLUOR LT LIGHT SHIELDS DCS 760/BTA/AUDIO DOS/AA BATS	MF57H 5473 -305 ORBITER FDF	MF71H 8723 TBD STOW-N-GO
MF14O 8737 TBD RCC COLD BAG ASSY	MF28O 5452 -324 IFM BREAKOUT BOX TURNBUCKLES AIR BOTTLES WWD FLT RMS IFM KIT	MF43Q 2760 -306 FRESH FOOD	MF43R 6299 -311 COAS FLUOR LT LIGHT SHIELDS DCS 760/BTA/AUDIO DOS/AA BATS	MF57I 6240 TBD ORBITER FDF *CREW SUPPORT	MF71I 1902 -308 M/S #1
VOL 3B 7425 (MA73) -308 CABIN AIR CLEANER SPOTLIGHT/LCD MON PD100 CC/FLASH DSC 760/400MM 28-70MM LENS		MF43S 2760 -306 FRESH FOOD	MF43T 6299 -311 COAS FLUOR LT LIGHT SHIELDS DCS 760/BTA/AUDIO DOS/AA BATS	MF57J 6240 TBD ORBITER FDF *CREW SUPPORT	MF71J 1902 -308 M/S #1
A16 8706 -301 DTV CC BAG 35 MM CAMERA BAG PILOT HAND CONTRL	A17 7424 -302 CORE CC SYS BAG CC SYS BAG QUICK DON MASKS (4) HATCH TOOL	VOLUME D 8750 (MD52C) TBD TILE OVERLAY	VOLUME F 1403 (MD76M) -306 WET TRASH	VOLUME G 1800 (MD86R) -343 CONT UCDS WASTE MGMT	VOLUME H 8068 (MD23R) -TBD EVA ACCESS (INBD) EVA ACCESS (OBD) 8065 -TBD

MIDDECK AFT

MA9D ENTRY GARMENTS COMMUNITY PHK HYGIENE	MA16D 8708 TBD A31P LAPTOPS (2) /ACCESSORIES
MA9F 8708 TBD A13P LAPTOPS (3) /ACCESSORIES	MA16F 1904 -307 M/S #3 CLOTHING
MA9G TBD 760XD PGSC (2) (W/EXPANSION)	MA16G TBD PGSC ACCESS
MA9J TBD 760XD PGSC (1) (W/EXPANSION/ACCESSORIES)	MA16J 1903 -305 M/S #2 CLOTHING
MA9L 7248 -TBD PCS COSS	MA16L TILE REPAIR HAND TOOLS
MA9N 7432-310 SOFT STWG BAGS PHKS (6) 4980-309 BRKTS/ISS/CKK LIGHT STICKS 8071-308 RSTRNTS/REN-ENT FIBERSCOPE 8070-302	MA16N 6020 -TBD G-SUIT (6)

MD CEIL (STBD1) B/U CENTERLINE CAMERA B/U EMU EQUIP SPARE DTV VTR SPARE DTV MUX/TOOLS SPARE VIP	MD CEIL (STBD2) SSP EVA TOOLS EMU ACCESSORIES TSA TOOLS (1.5 MLE) 3 POINT/CENTERLINE LATCH TOOLS
MD FLOOR (STBD 2) 7539 -TBD EMU BATT/COMM CAPS ECOK-TBD + MT EMU ACCESS/LCVG (1) CCC(4) GLOVES(4)	MD FLOOR (STBD 1) ERGOMETER SHOE BAG 1.5 CTB: RCC HAND TOOLS 1.0 CTB: CRACK REPAIR
MD FLOOR (PORT 2) RESERVE	MD FLOOR (PORT 1) LOWER TORSO ASSEMBLY (2)

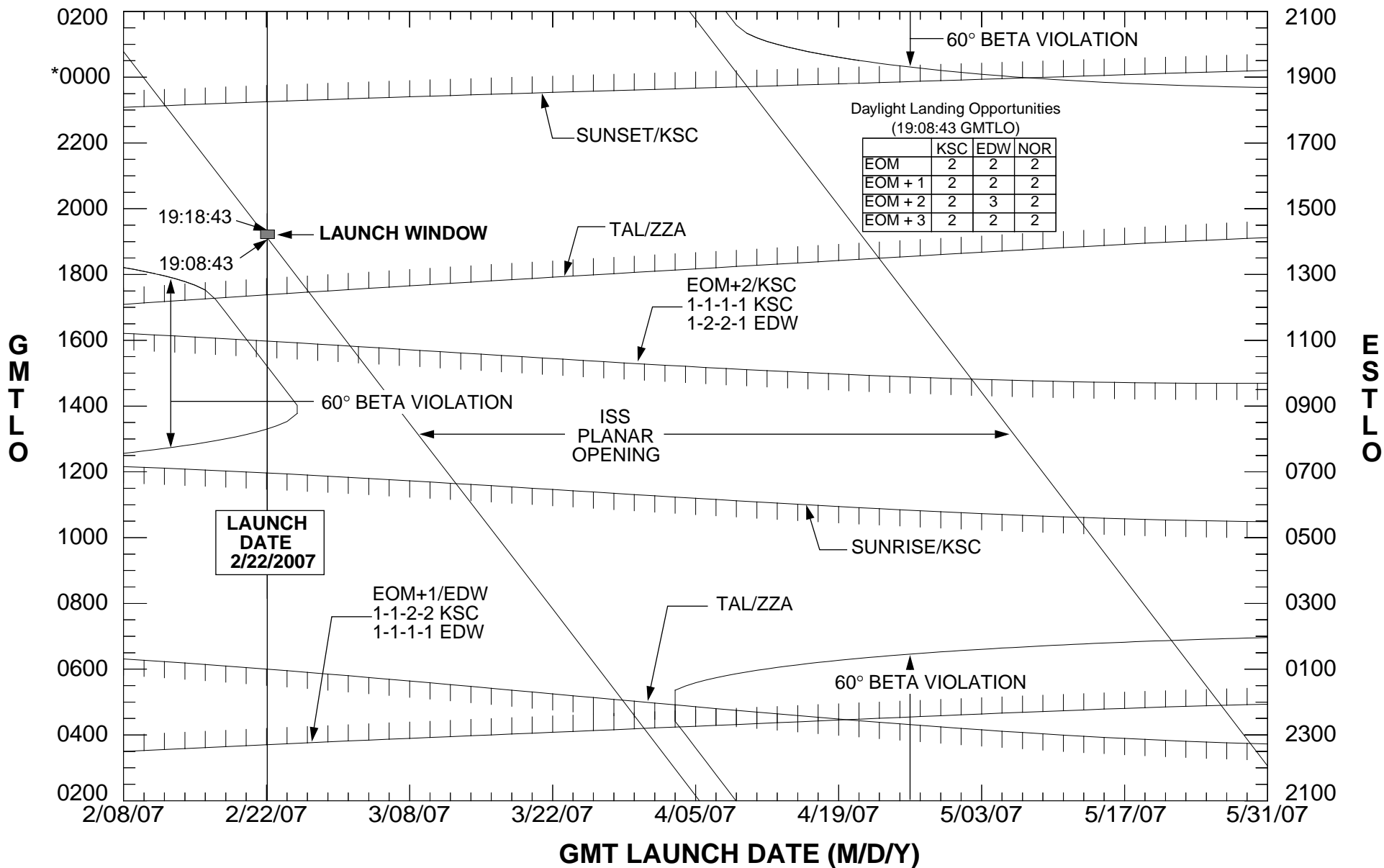
VOL 3B 7425
(MA73) -308
CABIN AIR CLEANER
SPOTLIGHT/LCD MON
PD100 CC/FLASH
DSC 760/400MM
28-70MM LENS

TOTAL LIOH (22) 6446 -TBD 20 LIOH IN LIOH BOX 1 ATCO IN LIOH BOX 2 INSTALLED	WINDOW SHADE BAG: 5548-340 1. WINDOW SHADES 2. IFM CABLES & HOSES (4259-340) 3. PANEL COVER (3)	L10A1: AVIU (6686-TBD) L10A2: DTV MUX L10A3: DTV VTR/VIP L11A1: PDIP 2 L11A2/A3: OIU PANELS	L12A1: SSP 1 L12A2: SSP 2 L12A3: PDIP 1 R12A1: VPU/WIB R12A2: VPU/OPP/SPASP R12A3: CLOSEOUT PANEL
NOTE: LOCKER LAYOUTS ARE FOR REFERENCE ONLY AND ARE NOT RELEASED DRAWINGS. FOR RELEASED DRAWINGS, REFER TO CCDD DRAWING # SGD32104440		76 of 89	CTB HALF= CTB SINGLE=
		* NOT APPROVED ● L-24 LATE LOAD ⊗ TRANSFER TO ISS CTB CARGO TRANSFER BAG HCTB HALF CARGO TRANS. BAG ⊠ SWAP	DWG NO. SGD32104440 /USR/DWGS/LOCKER/STS117 CCMM: DELLA WYLIN (281) 483-9790

Mission Duration = 11+1+2
 Inclination = 51.6°
 OMS2 ha/hp = 124 x 85 nmi.
 Target ha/hp = 184 x 177 nmi.

STS-117 OCF R2 LAUNCH WINDOW

N. Wortham/USH-483L
 P. Gentry/USH-483L
 August 1, 2006



Note: EOM lighting lines, based on an OMS2 phase angle of 269 deg, are representative only.
 The ISS beta angle ($|\beta| < 60^\circ$) for mated operations is beginning ~1/27/07 MET (FD3 Rendezvous) and ending ~9/19/12 MET.
 * Indicates the dateline. Launch times above this point are on subsequent days from the date indicated on the corresponding date axis.



STS-117 Launch Site Flow Review	Presenter Amy Houts-Gilfriche	
	Date	08-24-06

Modification Impact Report

- **Mission Equipment Modifications and Orbiter Modifications analyzed for impacts to OMRSD, LCC, ICD, EMI, Software, and GSE**
- **A total of 6 MCRs have been approved or are pending approval**
- **Current MCR impact status:**
 - **No impacts for all six disciplines** **5**
 - **One or more disciplines with impacts, documentation approved and/or pending approval** **1**
 - **MCR 23043**
 - **Possible impacts still under review** **0**

MCR/ECP	STAT SITE	ITEM/KIT NUMBER TCTI NUMBER	SEQ EISN NO.	DESCRIPTION / GENERAL REMARKS	PRCB AUTHDATE	PRIO FLT
	AUTH KSC	J5563A	0104 001 SPAR	OV-104 MPM MEASUREMENTS WITH RMS INSTALLED - MEASURE ALL CRANK STOP GAPS AT OVERCENTER	ORB-0072R01 2002-11-22	MAND 028
	XXX KSC	J5568	0104 000 SPAR	MAGR-S3S LRU ROTATION AT BATTERY CHANGEOUT OBSOLETE. CLOSURE SUBMITTED 12/14/04.	ORB-0072 R02 2003-01-07	MAND 028
	AUTH KSC	J5574A	0104 001 SPAR	OV-104 VIDEO QUALITY TEST OF THE ELBOW AND SPEE CAMERA'S VIDEO ROUTED TO THE ODS X3 CONNECTOR	ORB-0072 R16 2006-04-27	MAND 028
	PLND KSC	J5765	0104 000 SPAR	WSB POST FLIGHT TANK OFFLOAD QUANTITY	ORB-0072 R03 2005-03-09	MAND 028
	AUTH KSC	J5805A	0104 000 NSW	ORB DOCKING MECHANISM BAYNOTE CONNECTOR PINS INSPECTION APP'VD @ 8/26 DAILY	S052923QFR1 2005-08-26	SCHD 028
	AUTH KSC	J5854	0104 001 NSW	TPS UPPER SURFACE FWD OF WINDOWS & RCC PUTTY REPAIR INSPECT APP'VD OSB DAILY PRCB	S052923TH 2005-03-07	SCHD 028
	AUTH KSC	J5881A	0104 000 SPAR	LOWER LESS ACCESS CARRIER PANEL POST FLT TORQUE CHECK VERIF	ORB-0072R17 2006-06-05	MAND 028
	AUTH KSC	J5883	0104 000 SPAR	HUB AND DRAIN HOLE TILE MANUAL DEFLECTION TEST	ORB-0072R09 2005-08-16	MAND 028
	AUTH KSC	J5884	0104 000 SPAR	THERMAL BARRIER FLOW PATH INSPECTIONS	ORB-0072R10 2005-08-16	MAND 028
	AUTH KSC	J5885	0104 000 SPAR	ARROWHEAD TILE INSPECTION	ORB-0072R11 2005-08-16	MAND 028
	AUTH KSC	J5897	0104 000 NSW	MID FUSELAGE SAMPLING AND FASTENER REPLACEMENT	S052923UZ 2005-06-09	MAND 028
	AUTH KSC	J5897	0104 001 NSW	MID FUSELAGE SAMPLING AND FASTENER REPLACEMENT	S052923UZ 2005-06-09	MAND 029
	AUTH KSC	J5904	0104 000 NSW	ET SHELL "POST DE-MATE" & "POST FLIGHT" INSPECTION PLAN APP'VD @ 5/26 DAILY	S059223UY 2005-05-27	SCHD 028
	AUTH KSC	J5911	0104 001 SPAR	AMES GAP FILLER TRACKING	ORB-0072R06 2005-08-02	MAND 028
	AUTH KSC	J5919B	0104 001 SPAR	0-GAUGE PROTECTION FOR OV-103 FLIGHT 32-35 AND OV-104 FLIGHT 27-30	ORB-0072R15 2005-11-09	MAND 028

AUTH KSC	J5926	0104 000 SPAR	BODY FLAP PDU GEARBOX FLUID LEVEL INSPECTION	ORB-0072R07 2005-08-11	MAND 028
AUTH KSC	J5928A	0104 000 SPAR	POSTFLIGHT DAMAGE 3-D DATA ACQUISITION	ORB-0072R08 2005-08-16	MAND 028
AUTH KSC	J5930B	0104 000 NSW	ORBITER STRUCTURE IML SURFACE CORROSION SAMPLING INSPECTION	S052923WQ 2006-02-10	MAND 028

MCR/ECP	STAT SITE	ITEM/KIT NUMBER TCTI NUMBER	SEQ EISN NO.	DESCRIPTION / GENERAL REMARKS	PRCB AUTHDATE	PRIOR FLT
	AUTH KSC	J5930CR1	0104 000 NSW	ORBITER STRUCTURE IML SURFACE CORROSION SAMPLING INSPECTION	S052923WQR1 2006-08-01	MAND 028
	AUTH KSC	J5968	0104 000 SPAR	INSPECTION OF MPS LH2 FEEDLINE GIMBAL JOINT FLOWLINERS ON OV-103, OV-104, AND OV-105	ORB-0072R14 2005-10-11	MAND 028
	AUTH KSC	J6103	0104 000 SPAR	POST FLIGHT VERNIER THRUSTER PC TUBE FLUSH	ORB-0072R18 2006-06-20	MAND 028
	AUTH KSC	J6104	0104 000 SPAR	POST FLIGHT AMES GAP FILLER VERIFICATION AND PULL TESTING	ORB-0072R24 2006-08-01	MAND 028
	AUTH KSC	J6107A	0104 000 SPAR	ASA #1 & #3, ATVC #1 & #2, AND RJDA #1 R&R FOR OV-104 FLT 28	ORB-0072R23 2006-08-01	MAND 028
	AUTH KSC	J6115	0104 000 SPAR	MICRO INSPECTION OF SMALL WIDTH AFRSI BLANKETS	ORB-0072R22 2006-07-27	MAND 028
	AUTH KSC	J6117A	0104 000 SPAR	INSPECTION OF PUTTY REPAIRS FOR POTENTIAL LOSS	ORB-0072R21 2006-07-26	MAND 028
	AUTH KSC	J6118	0104 000 SPAR	EXTERNAL TANK (ET) DOOR PAINT STRIPE POSTFLIGHT VERIFICATION	ORB-0072R20 2006-07-19	MAND 028
011620	APPD KSC	TCTIVXX11620REF	0104 020	SHUTTLE TURNAROUND PROCESSING (EOTF BUCKET FOR FLT28) RESERVE SEQ # FOR FLT 28	NOT REQD	MAND 028
017177	AUTH KSC	TCTIV2017177REF	0104 001	DRAG CHUTE L/H SIDEWALL BLANKET INSTALLATION ADDED PER V070-200002 H05- STS-117 LSRR ITEM MOVED TO STS- 115 FROM STS-116 PER REMANIFEST	S115117C 2006-07-28	MAND 028
	AUTH KSC	TCTIV3817177REF NOT REQUIRED	0104 003	PURGE DUCTS I.D. TAPES ADDED BY EDS I/F/REF. REMAN PRCBD S042013EG MOVED TO STS- 115 FROM STS-116 PER REMANIFEST.	S115117C 2006-07-28	MAND 028
019835	AUTH KSC	VK70-776054-001 NOT REQUIRED	0104 000	MOD KIT - WING ELEVON HARNESS LIGHTNING PROTECTION (OV-104) ADDED BY EDS I/F PER EO VK70-776054 NEW MOVED TO FLT 28 FROM FLT 27	S115117C 2006-07-28	MAND 028
023043	AUTH KSC	TCTIV3523043REF NOT REQUIRED	0104 000	DELTA-P TRANSDUCER REMOVAL-WIRING INSTLN MOVED TO STS-117 FROM STS-115 PER REMANIFEST REF. PRCBD S042013EG.	S115116C 2003-01-29	MAND 028
	AUTH KSC	TCTIV7023043REF NOT REQUIRED	0104 000	DELTA-P TRANSDUCER REMOVAL-AV BAY 6 SIGNAL CONDITIONER REMVL ADDED PER MCR BASIC. MOVED TO STS-115 FROM STS-116 PER REMANIFEST (REF. PRCBD S042013EG)	S115116C 2003-01-29	MAND 028

AUTH	TCTIV7923043REF 0104 000	DELTA-P TRANSDUCER REMOVAL-AVIONICS AFT FUSE WIRING	S115116C	MAND
KSC	NOT REQUIRED	ADDED PER MCR BASIC/MOVED TO STS-117 FROM TBD, (REF. PRCBD S042013EG)	2003-01-29	028
AUTH	VK70-410467-001 0104 000	DELTA-P TRANSDUCER REMOVAL MPS MOD INSTLN	S115116C	MAND
KSC	NOT REQUIRED	ADDED PER MCR BASIC/MOVED TO STS-115 FROM STS-116 PER REMANIFEST (REF. PRCBD S042013EG)	2003-01-29	028

MCR/ECP	STAT	ITEM/KIT NUMBER	SEQ	DESCRIPTION / GENERAL REMARKS	PRCB	PRIOR
-----	SITE	TCTI NUMBER	EISN NO.	-----	AUTHDATE	FLT
023227	AUTH	TCTIV7923227REF	0104 000	CONNECTOR SAVER REDESIGN (T-0)	S115117C	MAND
	KSC	NOT REQUIRED		ADDED BY EDS I/F	2006-07-28	028

TOTAL MODS = 35

MCR/ECP	STAT	ITEM/KIT NUMBER	SEQ	DESCRIPTION / GENERAL REMARKS	PRCB	PRIOR
-----	SITE	TCTI NUMBER	EISN NO.	-----	AUTHDATE	FLT
	AUTH	FEC A-10352R1	B129 000	ASSEMBLED ETA STUB MOISTURE PROTECTION	S083852B	
	KAS				2006-07-11	

TOTAL MODS = 1

Approved STS-117 OMRS Waivers and Exceptions

WVR EXC	ELEMENT PROJECT	PRCBD NUMBER WAIVER# (STAT) (INITIAL STS)	ABSTRACT RAS REQUIREMENTS	EISN PAYLOAD	STS BEG END
+	E	ORB	S053297AU EV10331R1 (A)	OMRSD EXCEPTION REQUEST - V30 INTERVAL EXTENSION TO 6 YEARS (EV10 331R1)	104 027 030
			S053297BP EK10355 (A)	OMRSD EXCEPTION REQUEST - V31 MID FUSELAGE ZONAL INTERNAL SURVEIL LANCINSPECTIONS (EK10355)	104 027 030
			S053297UW EK10450 (A)	OMRSD EXCEPTION REQUEST - ODS AVIONICS TIME AND CYCLE (EK10450)	104 103 027 028 031 032
			S053298FM EK10492 (A)	OMRSD EXCEPTION REQUEST - OV-104 VENT DOOR ZONAL INSPECTIONS (EK1 0492)	104 027 029
	W	ET	S053296PP WK10270 (A)	OMRSD WAIVER REQUEST - ET DOOR DRIVE PDU LIMITER SLIP TEST (WK10 270)	102 104 105 028 028 027 028 019 020
		OMS	S053296BP WK10122R1 (A)	OMRSD WAIVER REQUEST - LRCS OXIDIZER REGULATOR RESPONSE DATA OUT OFBAND (WK10122R1)	0014 024 028
			S053296GY WK10188R1 (A)	OMRSD WAIVER REQUEST - LRCS OXIDIZER GHE ISOLATION VALVE LEAK(WK 10188R1)	0014 025 032
			S053296YG WK10318R1 (A)	OMRSD WAIVER REQUEST - RIGHT RCS OXIDIZER GHE SYSTEM INTERNAL LEA	0021 034 042

KAGE(WK10318R1)

ORB	S053296YT	OMRSD WAIVER REQUEST - PV6	104	027 031
	WK10332R2 (A)	PREVALVESCREEEN PARTICLES (WK10332R2)		
	S053297WE	OMRSD WAIVER REQUEST -	104	027 028
	WK10456R1 (A)	DRAG CHUTE DEPLOY STSTEM 2 LIGHT FAILURE(W K10456R1)		

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Date: 08/15/06 14:34

PCASS

Page: 2

FLIGHT-SPECIFIC

Approved STS-117 OMRS Waivers and Exceptions

	Waivers	Except	Deviat	Cannib	Total
Total Extracted	6	4	0	0	10

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ACTIVE WAIVERS FOR
OV-104

Item #	Authority	Date	Waiver Description	Effectivity	Wad
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
325	S061956	07/15/03	Blanket on the Control Moment Gyro (CMG) Orbital Replacement Unit (ORU) on the Lightweight MPESS Carrier (LMC) will NOT be re-installed on-orbit per configuration defined in ICD-A-21494. It will be secured around the FSE and attached to the aft bulkhead.	OV-104, Flight 27	
334	S115115JR1	07/19/06	<p>The following requirement is waived to allow OV-104 to fly with the following out-of-configuration condition:</p> <p>Tech Order M072-544501-067 (RMS, MPM over-center stop and MPM pedestal insulation cover fasteners) will be implemented in total, less the requirement to perform bench rigging per updated specification requirements for for OV-104, Flight 27 and subsequent OV-104 flights until such time that all MPMs can be removed and bench rigging can be performed.</p>	OV-104, Flight 27 thru OV-104, Flight 999	STAYS OPEN

BACKUP

CONFIGURATION / Facilities

- **OV-104: Flight 28**
- **OMS Pods: LP04 / RP01**
- **ET: 124**
- **SRB: BI – 129**
- **SSME: 2059 (#1), 2052 (#2), 2057 (#3)**
- **Payload: ISS-21-13A/53-54 Arrays**
- **Flight Software: OI-30**
- **Firing Room: 1**
- **OPF Bay: 1**
- **MLP: 2**
- **VAB High Bay: 1**
- **Pad: A**