

STS-117 Integrated Delta Launch Site Flow Review

Presenter	Stephen Reilly
Date	PRCB 11-09-06

Program Freeze Point

PRCB Presentation

S115117E

STS-117 Integrated Delta Launch Site Flow Review

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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 S115117CR1 dated 09-01-06. This CR and the Associated Data Package were reviewed at the 11-06-06 FRWG.

KSC Integration*

MK-SIO

Orbiter Engineering*

Requesting Approval

USA-OE

Shuttle Processing*

PH-B2

Status in Backup

Flight Integration

MO3/USA-PI

Flight Software

USA-FSW

GFE FCE/EVA

MV5/XA

Payload/Cargo Engineering

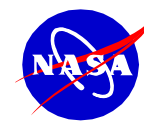
USA-PI

SSME

MP21

ISS/Payload Operations

UB-N



STS-117 DELTA LAUNCH SITE FLOW REVIEW

Presenter Amy Houts Gilfriche
Date NOVEMBER 9, 2006

LAUNCH

3/16/07 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
 (1) 2059 (2) 2052 (3) 2057
 OI-30
 RMS,ODS,OBSS

CONSUMABLES

CRYO TANK SETS	5 (FULL)
GN2 TANKS	5 (OFFLOAD)
FWD RCS	1912# (2446# FULL)
AFT RCS	4970# (FULL)
OMS	24200#

PAYLOAD

ISS 13A
 (ITS S3/S4)

LANDING

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

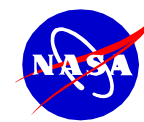


STS-117 DELTA LAUNCH SITE FLOW REVIEW

Presenter Amy Houts Gilfriche
Date NOVEMBER 9, 2006

PERFORMANCE MARGIN

• SIMULATION MARGIN (OCFBF117)		+1512
• WEIGHT CHANGES SINCE SIMULATION		
• PAYLOAD	+3	
• OPERATOR	-155	
• ORBITER	-62	
• NPC	+48	
• CREW COMPARTMENT	+77	
• OMS	<u>-100</u>	
TOTAL WEIGHT CHANGES	-189	+189
• OTHER PERFORMANCE PROJECTIONS		
• PROTECTION FOR DOL DISPERSIONS		-700
• 3/16/07 LAUNCH DATE (PMBT&ATMOS)		+170
• SRB M/P UPDATES		-111
• SRB BR / 1.35 MIL HIGHER THAN 0.3705 AVG		+270
• NEW ISP/THST FOR ENG SET 2059, 2052, 2057		+335
• PROJ TO 3 MIN WINDOW FROM INPLANE		-300
• PERFORMANCE CHANGES ADJUSTMENT		<u>-13</u>
• CURRENT BASELINED APM (11/07/06)		+1352
• IPT PROJECTED CHANGES		<u>-382</u>
• PROJ APM		+970



STS-117 DELTA LAUNCH SITE FLOW REVIEW

Presenter Amy Houts Gilfriche
Date NOVEMBER 9, 2006

FLIGHT MASS PROPERTIES

<u>CASE</u>	<u>TOUCHDOWN</u>		<u>MACH 3.5</u>	
	<u>WEIGHT pounds (LIMIT)</u>		<u>X C.G. inches (LIMIT)</u>	
NOMINAL	198778	(233000)	1084.1	(1075.2)
RTLS	242779	(245000)	1081.0	(1076.7)
TAL	240494	(244000)	1080.6	(1076.7)
AOA	235487	(242000)	1076.8	(1075.2)
CONT RTRN**	236520	(233000)	1078.0	(1075.2)

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

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



STS-117 Delta Launch Site Flow Review

Presenter **Amy Houts-Gilfriche**

Date **11-9-2006** Page **1**

- **STS-117 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 - Orbiter c.g.</u> (SCA c.g.) (No CM Ballast, No Fluids Off-Loaded, No Payload Bay Opening)	198456	1122.0 (1417.6)	-0.4 (N/A)	371.4 (513.4)
<u>AOA - Orbiter c.g.</u> (SCA c.g.) (No Fluids Off-Loaded, No Payload Bay Opening)	232661	1110.0 (1405.9)	-0.7 (N/A)	375.6 (518.3)
<u>TAL - Orbiter c.g.</u> (SCA c.g.) (3 SSME's Removed, No Fluids Off-Loaded, No Payload Bay Opening, Max Weight 217000 LB)	212887	1073.8 (1369.9)	-0.7 (N/A)	378.3 (522.9)

X c.g. Limits (Orbiter Coordinates)

Nominal = 1060.0 TO 1131.3
 AOA = 1060.0 TO 1116.0
 TAL = 1060.0 TO 1121.0

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-117 DELTA LSFR OV-104 FLIGHT 28 CONFIGURATION UPDATES

**Joe Rodriguez
USA Orbiter Element**

November 9, 2006



11-7-06

Page 7 of 106



STS-117 OV-104 Flight 28 – Delta LSFR Updates

Program Authorization Is Requested For The Following:

- Baseline three (3) modifications for STS-117
- Authorize three (3) modifications as “Non-Flight Specific”
- Authorize two (2) mission equipment engineering records
- Debaseline one (1) modification for STS-117

Information Only:

- Modifications approved since LSFR

Back-up:

- Modification details

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

MCR 17177 – Dome Heat Shield Pivot Tube Re-ID

- Re-ID dome heat shield blanket attach pivot tubes with new dash numbers to reflect hole enlargement to accommodate installation of cotter pins
- No access was available to re-ID during the STS-115 flow due to the installed configuration of the domes (partial deferral per PRCBD S115121ER13)

MCR 19476 – IMLG Wheel Environmental Seal

- Improved Main Landing Gear (IMLG) mod worked on OV-104 during the STS-115 flow, however the environmental seal (RTV) was not applied to the temperature sensor mounted to the wheel (partial deferral per PRCBD S115115GR6)
- Seal to be applied during the STS-117 flow

MCR 19903 – Aft Flight Deck Overhead Closeout Panel Modification

- Modifies overhead panels utilizing studs with a thicker base plate to achieve positive margins for certification loads

STS-117 OV-104 Flight 28 – Modifications To Be Authorized As NFS

MCR 11620 – Wire Tray Cover Gap Filler Faying Surface Rework

- Mid-fuselage wire tray covers currently have incorrect corrosion protection applied to gap filler faying surfaces (is primer and topcoat, should be chem-film per drawing)
- A resistance test at the discrepant areas (bays 5, 7 & 9) has verified that the covers and gap fillers are currently grounded (ref. MR STR-4-A0414)
- Covers are not typically removed during standard processing; therefore, non-flight-specific (NFS) authorization is requested to permit return to print when the wire tray covers are removed for other reasons

MCR 19735 – WLE Spar “Sneak Flow” Protection

- Adds flow restrictor between box beam and removable insulator to reduce forward to aft flow path and protect the wing front spar against unacceptable temperature limits
- Also adds insulation to bare areas of wing front spar surface to maintain spar temperature gradients at certification levels

MCR 19763 – WLE Lower Access Panel “Horse Collar” Gap Filler Redesign

- Adds additional 0.50 diameter sleeving at IML end of the horse collar for additional sealing capability in the event of partial tile loss, preventing early ingestion of flow into LESS lower spar
- Access and opportunity to incorporate these modifications at previously un-planned locations is provided when WLE panels are removed for post-flight repairs

STS-117 OV-104 Flight 28 – MRCS Records To Be Authorized

Mission Equipment Requirements:

- Replacement of the guillotine retention bolts on the RMS and OBSS pedestal MPMs with longer bolts to ensure proper engagement of insert locking feature was approved at the LSRR (ref. PRCBD S115117C, MCR 19768)
 - Authorized update of STS-117 MECSLSI V072-200197-003/-004
- Authorization is requested for the associated MRCS mission equipment engineering records:
 - TCTIM0019768REF,0006,1 (RMS end item drawing parts list update)
 - TCTIM0019768REF,0002,0 (OBSS end item drawing parts list update)

STS-117 OV-104 Flight 28 – Modification to be Debaselined

MCR 23043 – MPS Delta-P Transducer Removal

- Background: Modification was approved at the STS-116 (OV-104 flight 28) LSRR on 1/23/03
 - Modification removes the delta-P transducers and their associated components / wiring as a safety improvement / risk reduction action
 - The delta-P transducers have criticality 1 CILs for structural failure, but are no longer used
 - Used early in the program to constantly monitor propellant levels during tanking (not used during flight)
 - ET loading is now accomplished by timers and other system parameters based on experience of over 200 tankings
 - Brings OV-104 in line with OV-105 original build configuration; OV-103 modified prior to STS-114
- Prior to the STS-117 LSRR, MPS PRT concurred with de-baseline / deferral of this modification to accommodate turnaround processing priorities
 - Modification was not incorporated into OPF flow planning, with intent to de-baseline

STS-117 OV-104 Flight 28 – Modification to be Debaselined (Cont.)

MCR 23043 – MPS Delta-P Transducer Removal (Cont.)

- NASA Engineering and OPO agreed with the deferral pending evaluation of the LH2 delta-P transducer removed from OV-103
 - A suspect braze was noted on the transducer
 - GH2 pressurization port connector fitting braze showed little braze material connecting the tube, which is discrepant per MIL-B-7883B as required by OEM drawings
 - Braze joint observation creates a concern for the same joint on OV-104
 - All other inspections and D&I of the transducer showed positive results
- Due to Ground Operations concerns with implementing a significant mod late in the flow, MPS and OEL Design Engineering were requested to assess other options which result in removal of the suspect delta-P transducers
- Option selected is the removal of the transducers, installation of flight plugs, and stowage of electrical connectors from the transducer
 - Eliminates potential Crit 1 failure due suspect braze on the transducer
 - Minimizes the impacts to the existing integrated MPS/SSME schedules
 - Eliminates electrical retest impacts

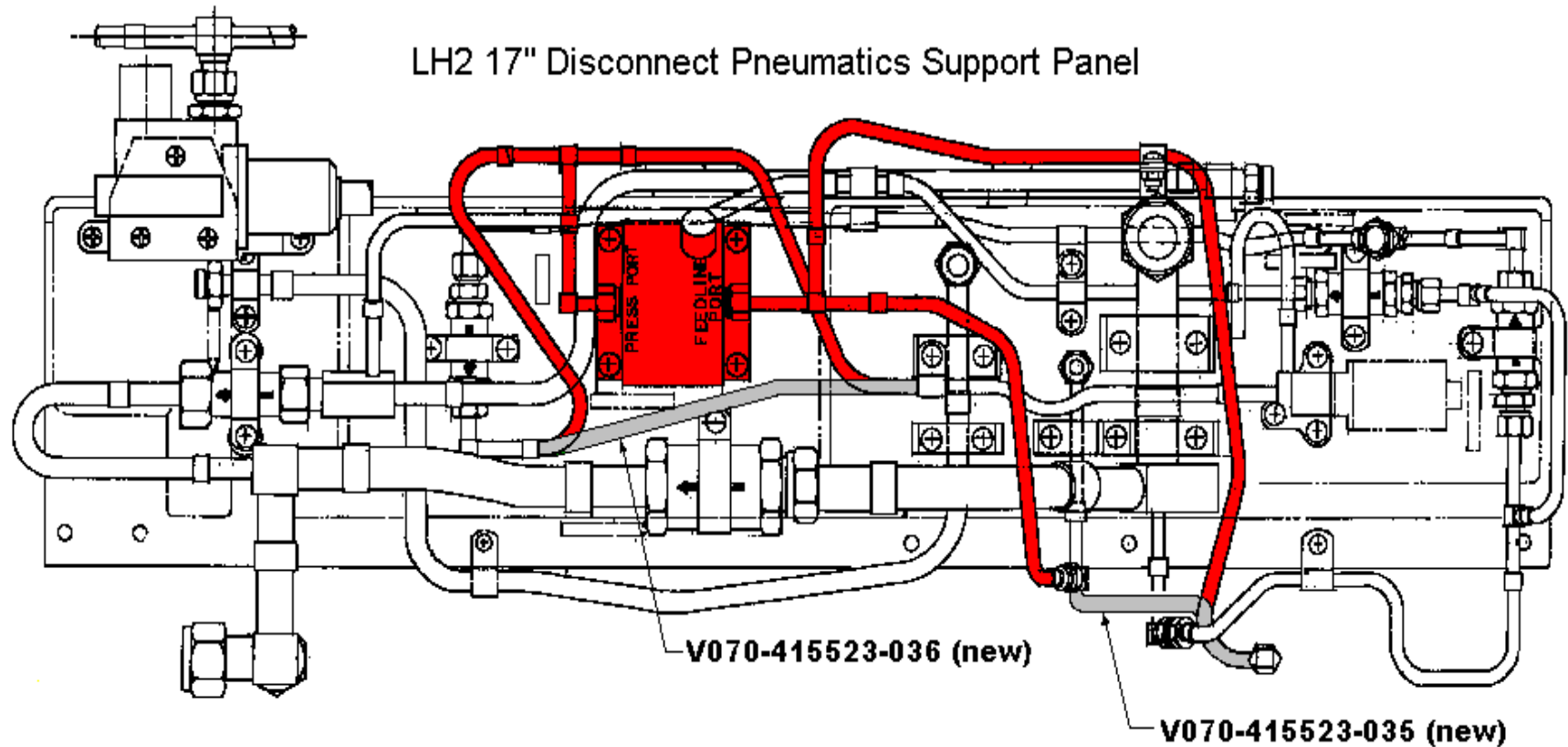
STS-117 OV-104 Flight 28 – Modification to be Debaselined (Cont.)



MCR 23043 – MPS Delta-P Transducer Removal

- Results of the OPO Tag up held on 11/06/06
 - NASA OPO and Engineering concurred with the noted option
 - The work will be accomplished on the PR's that document the suspect braze

STS-117 OV-104 Flight 28 – Modification to be Debaselined (Cont.)

DELTA P TRANSDUCER REMOVAL FOR LH2 DISCONNECT PNEUMATICS SUPPORT PANEL



-  New Lines Added
-  Lines/Parts Removed

- Net reduction of 19 braze joints
- 9 lbs weight reduction

STS-117 OV-104 Flight 28 –Modifications since the LSFR

MCR 19780 – MADS PCM Harness Installation

- Replace harness in avionics bay 1 and route through bottom clamp per drawing (V070-793821 G53)
 - Partial deferral from MADS Interim Data Capture (IDC) modification installed for STS-115 due to harness being too short
 - No effect on IDC modification capability to downlink MADS PCM ascent data during a mission
- Troubleshooting of MADS PCM data dropouts (IFA STS-115-V-04) presented opportunity to return harness to print
- Modification approved at 10/11/06 DPRCB (CR S115117F)

OBSS ISA1/ISA2 Plate Fastener Lock-wire Installation

- Install lock-wire on Integrated Sensor Assembly plate fasteners to meet secondary retention requirement
 - Installed by MR for STS-121 and STS-115, new lock-wire configuration for STS-116 and subsequent flights approved at 10/4/06 DPRCB (CR S063475)
 - Authorized update of STS-117 MECSLSI to reflect MV0092A tech order M072-710282-007 & -006 (was -001 & -005, respectively)

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

November 09, 2006



Agenda

- Multi Flow A. Brewer/NASA
- Flight Element Processing M. Chappell/USA

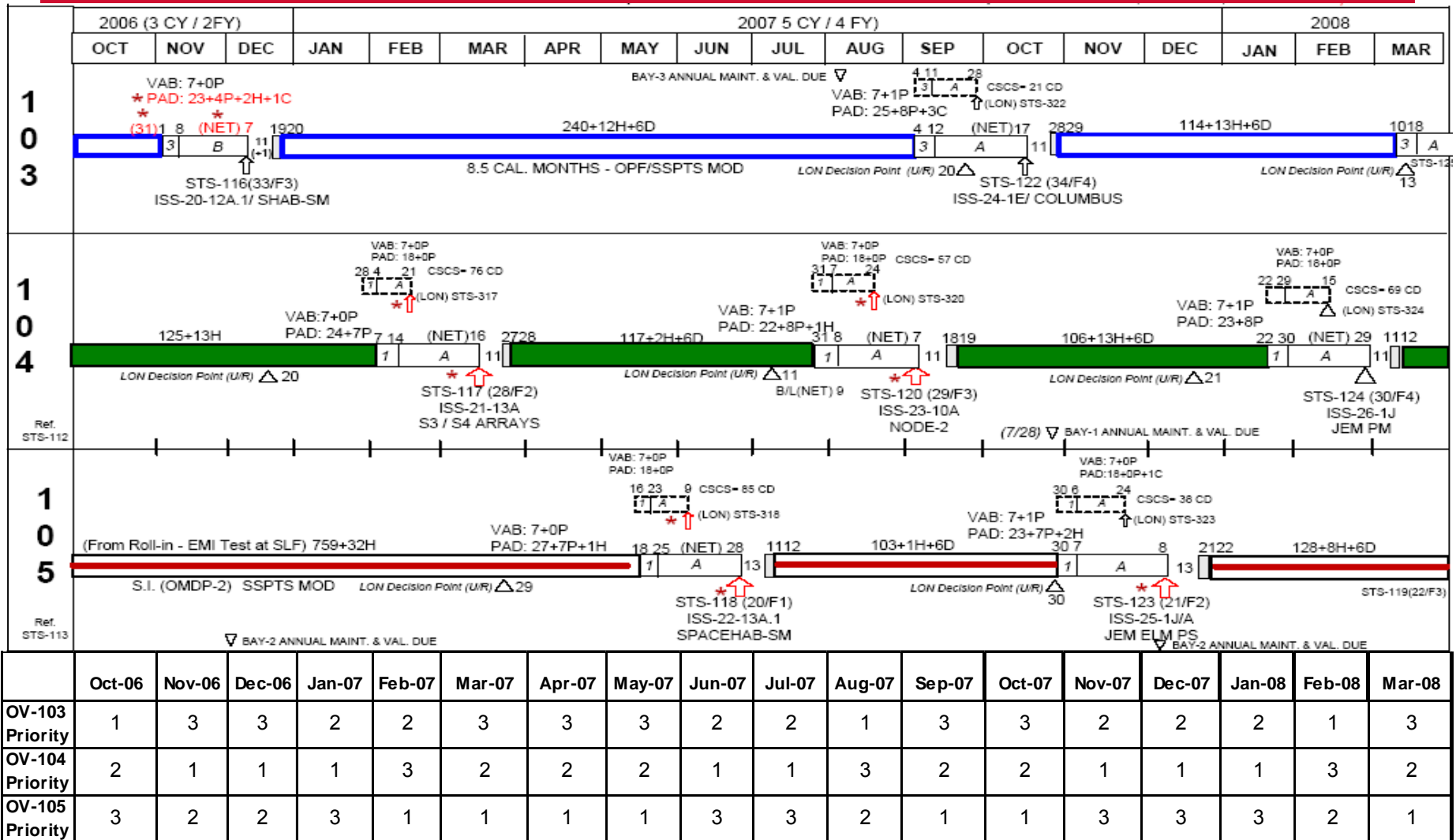


Multi Flow

A. Brewer



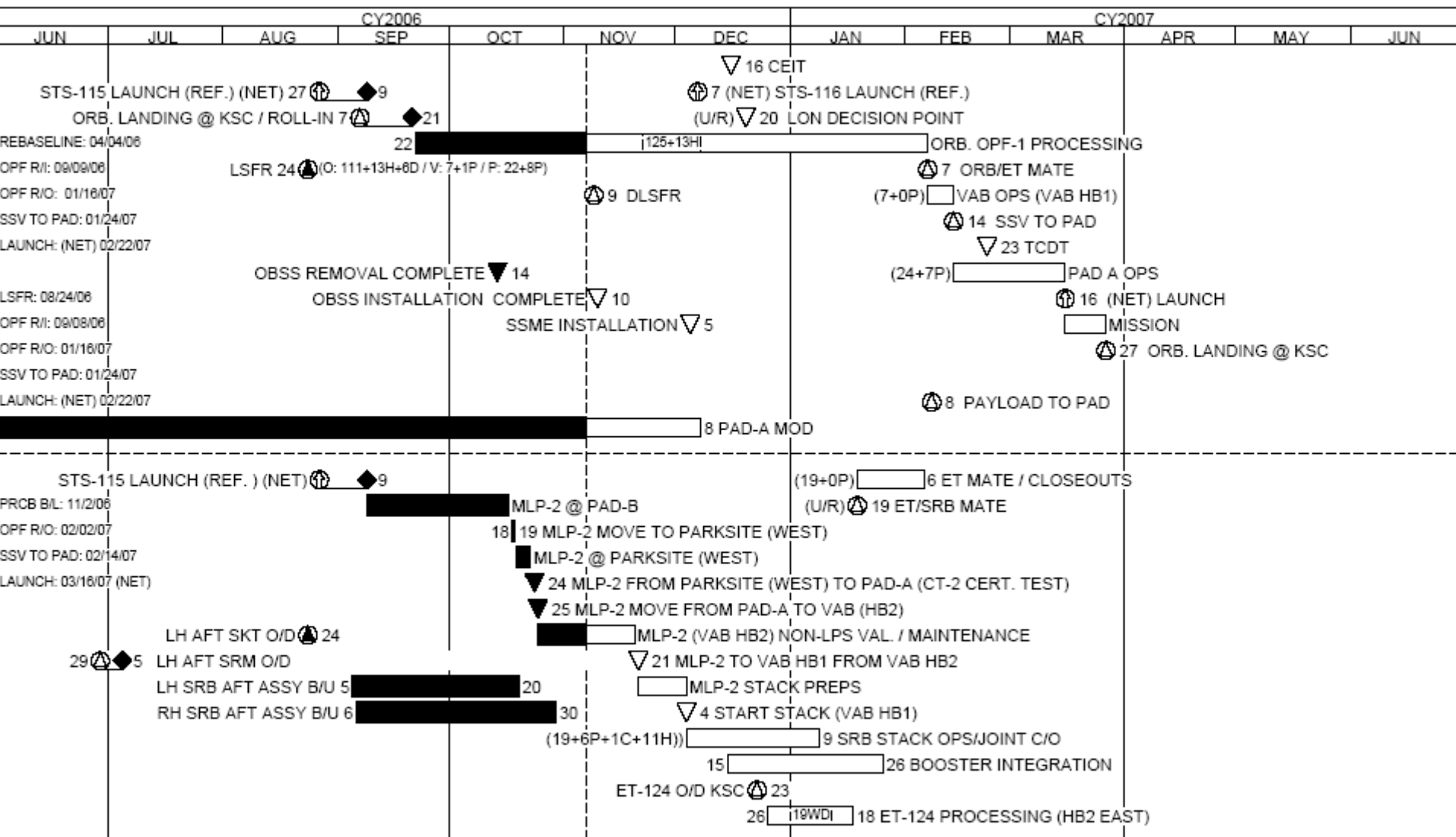
Vehicle/TPS Manpower Allocation Priority



STS-117 KSC Milestone Interface Chart

OV-104/28/ ISS-21-13A
CREW / DURATION: 6/11
ET 124 / BI129/ RSRM 96 / MLP-2 / PAD-A / VAB HB1

SSP APPROVED MANIFEST (REF. CR #S042013FZ)
Status as of:
11/06/2006



THREATS: 1. NOSE CAP REPAIR
2. CHIN PANEL R&R

NOTES: 1. TWENTY-FIRST ISS/SSP FLIGHT

Flight Element Processing

M. Chappell



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
- Stoplight Chart To Be Presented
- Backup Not Presented
 - Configuration/Facilities
 - Non-Standard Work Summary



Significant Processing Deltas

- **Processing Flow**
 - **Shifting Is Based on 7/3's**
 - **Overtime Required to Achieve Manifest Resources Allocation**
 - **Fuel Cell # 1/3 R&R**
 - **Nose Cap/Chin Panel Repairs**
 - **Window #7 R&R**
 - **-Z Startracker R&R**
 - **RP01 Manifold 4 Thruster R&R's**
 - **Lockbolts Wing Carry Thru**
 - **TPS Insert Inspection/Pull Test**
 - **Gap Filler Boundary Zonal Inspections**



TPS Status

- **TPS Inspections 100% Complete**
 - 110 Open Cavities
 - < 1100 Open WADS

- **Gap Fillers**
 - ET Doors – 100%
 - Priority 2A – 100% Complete (Zones 23 & 24)
 - Integrity Test R/R (~130) – 88% Complete
 - Approximately 400 Installations Completed To Date
 - Current Focus on Boundary Zonal Inspections



LSFR/ Δ LSFR TPS Comparison

	LSFR	DLSFR
• <u>Standard Work</u>		
• Deferred Tile/ Fib for 1 Flight	25	20*
• In-Flight Damage	45	50*
• Putty Repair Inspections	10	15*
• FIB Inspections	20	15*
• Operational Damage/Processing Support	12	15*
• Tile Removal from Gap Filler R/R	3	3*
• MLG Door BRI (Pre Planned)	6	6
	Subtotal 121	124
• <u>Additional Work</u>		
• Additional BRI Tile on MLG Door	4	7
• Lockbolts	TBD	16
• BRI Tile on LESS	12	4
• BRI Tile on Windows	4	1
• BRI Tile on NLG Door	2	3
	Total 145	155

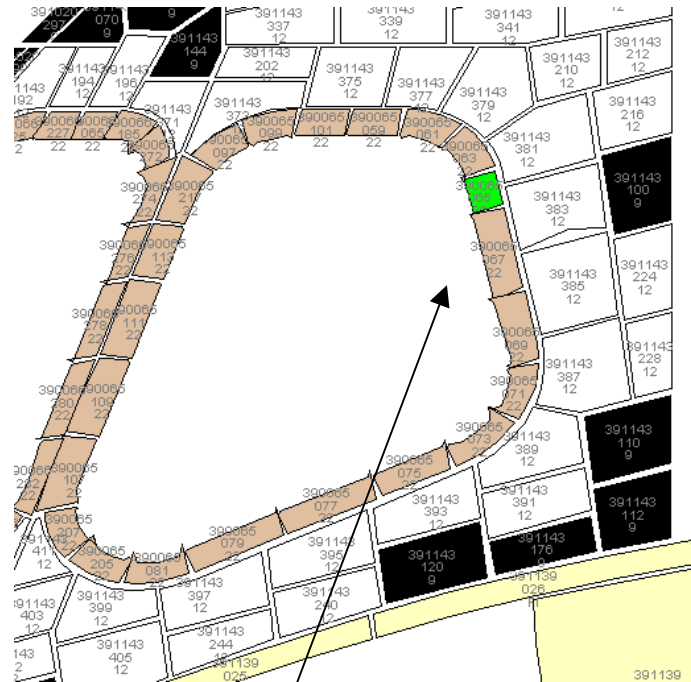
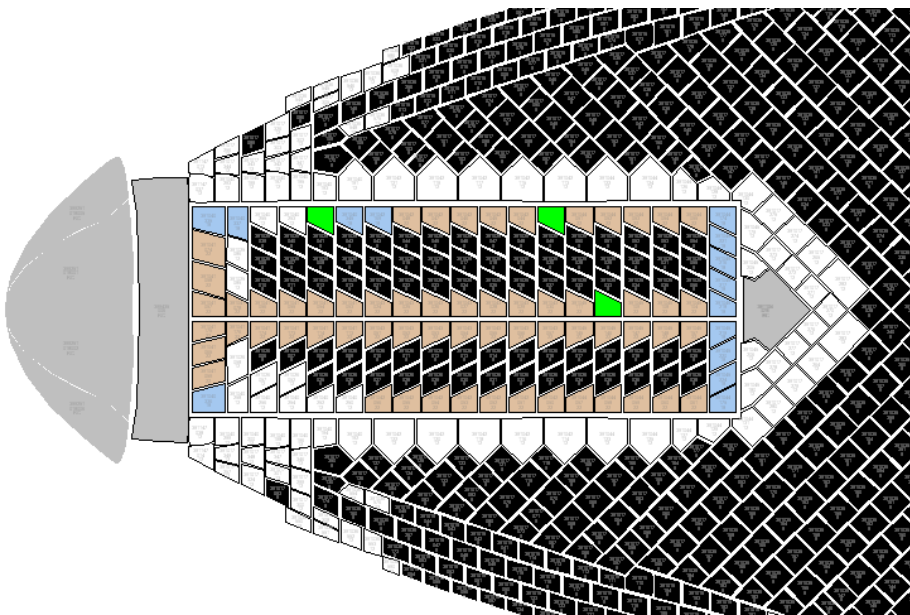
* Estimate



OV-104 BRI Tile Implementation

• **FWD AREA= (18) BRI TILE**

**NLGD= (17) TILE
TO DATE**



Window-1= (1) TILE

 **BRI TILES (14)
(STS-115)**

 **BRI TILES (Current Flow) (3)**

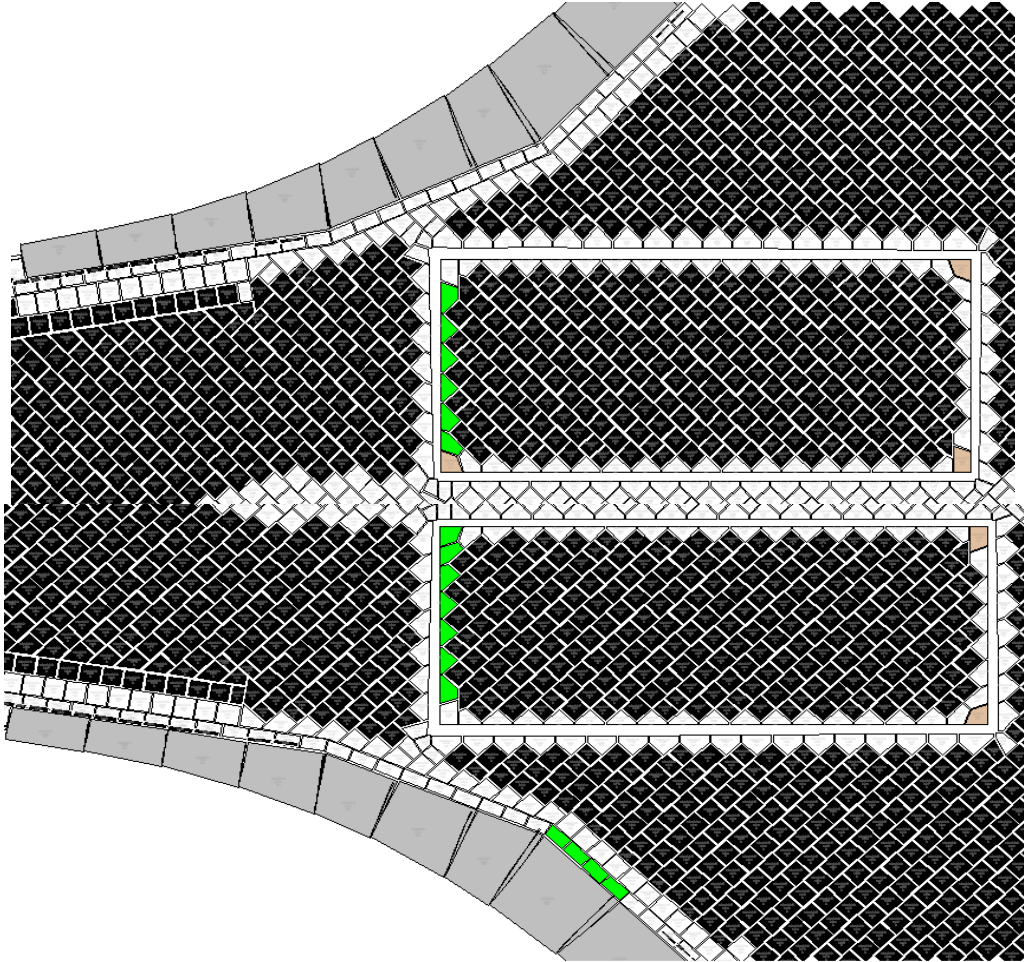
OV-104 BRI Tile Implementation

• MID AREA= (17) BRI TILE TO DATE

MLGD= (13) TILE

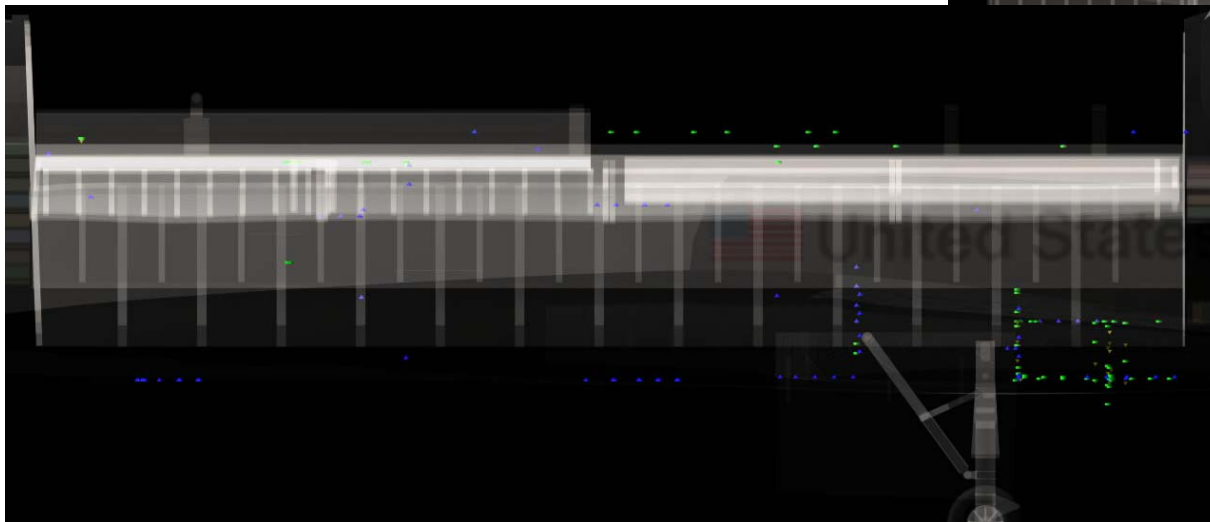
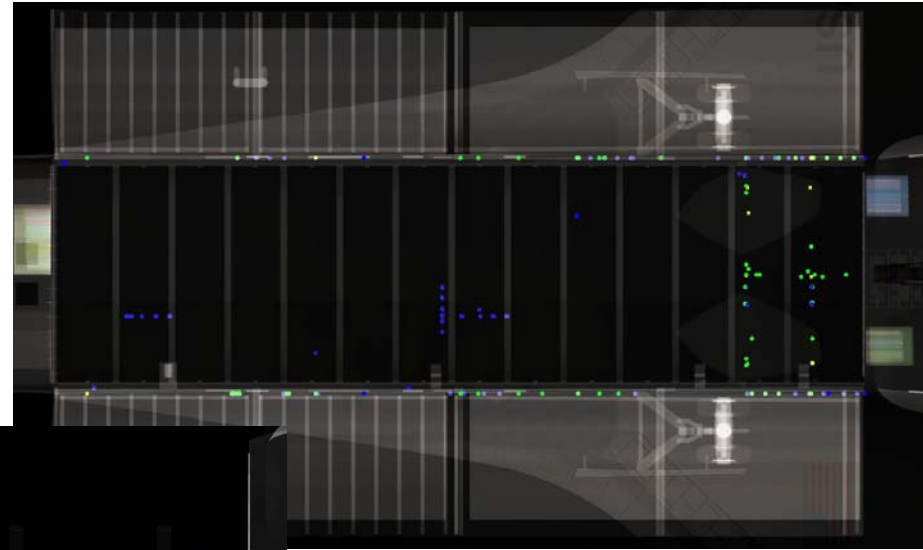
RH LESS= (4) TILE

 BRI TILES (Current Flow)



OV-104 Lockbolt Status

- Chit J5897 complete – 94 Lockbolts Removed & Routed for Analysis
 - 176 total lockbolts removed
- Wing Carry Thru Suspect PR
 - Opening Bays 11,12 & 13 L/R
 - Harvesting ~100 Lockbolts



Issues and Concerns

- **TPS Cavity Count > Capacity**
- **Work Content Growth**
 - IPR's
 - Additional Chits
 - Delta P Transducer Mod Implementation



STS-117/OV-104 Ground Ops Processing

	Program Milestone	Activity / Remarks
STS-117 LAUNCH	Y →	Launch on March 16, 2007 (Window extends to TBD)
<u>Issues/Critical Path</u>	OPF Roll Over 2/7/07	
OV-104 OPF Overall	Y →	OPF Processing 125 CD + 13H, schedule reflects 7 days/3 shifts
TPS Processing	R →	High work content (BRI, G/F, blankets, putty, insert inspection) potential growth could threaten capacity
IFA's and IPR's	Y →	FC1 R&R required, MADS PCM, Comm S-Band, Thruster R4
Nose Cap/Chin Panel	Y →	Requires repairs/adjustments for in flight damage, nose cap repair in work
	ET/SRB Mate 1/19	
SRB Stacking	G	SRB Stacking start target December 4, 2006 (post VLD Transfer to HB3)
ET Standalone C/O	Y →	ET-124 On Dock 12/23/07, 83 days On Dock to launch
	OPF Roll Over 2/7/07	
ET/SRB Mate, Closeout	R →	ET/SRB Mate on 1/19/06, Red for contingency
	Launch 3/16/07	
Integrated VAB/Pad Ops	G →	VAB/Pad Integrated Flow processing to Launch
STS-318, LON for STS-117	LON	ET-117 supports, Assessed LON Launch June 9, 2007 (ET-117 on dock date of 4/10/07)
<u>Potential Significant Growth</u>		
MPS Delta P Xducer Mod	U/R	Assessment in work
S-Band Antenna R/R (IPR 024)	U/R	Potential ~ 15 TPS removals

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 - A. Brewer, PH-A2 (1-9104)

USA NASA

C C

CONCUR

Creation Date: 11 OCT 06:
Revision Date:
Revision:NEW

STS-117 / OV-104

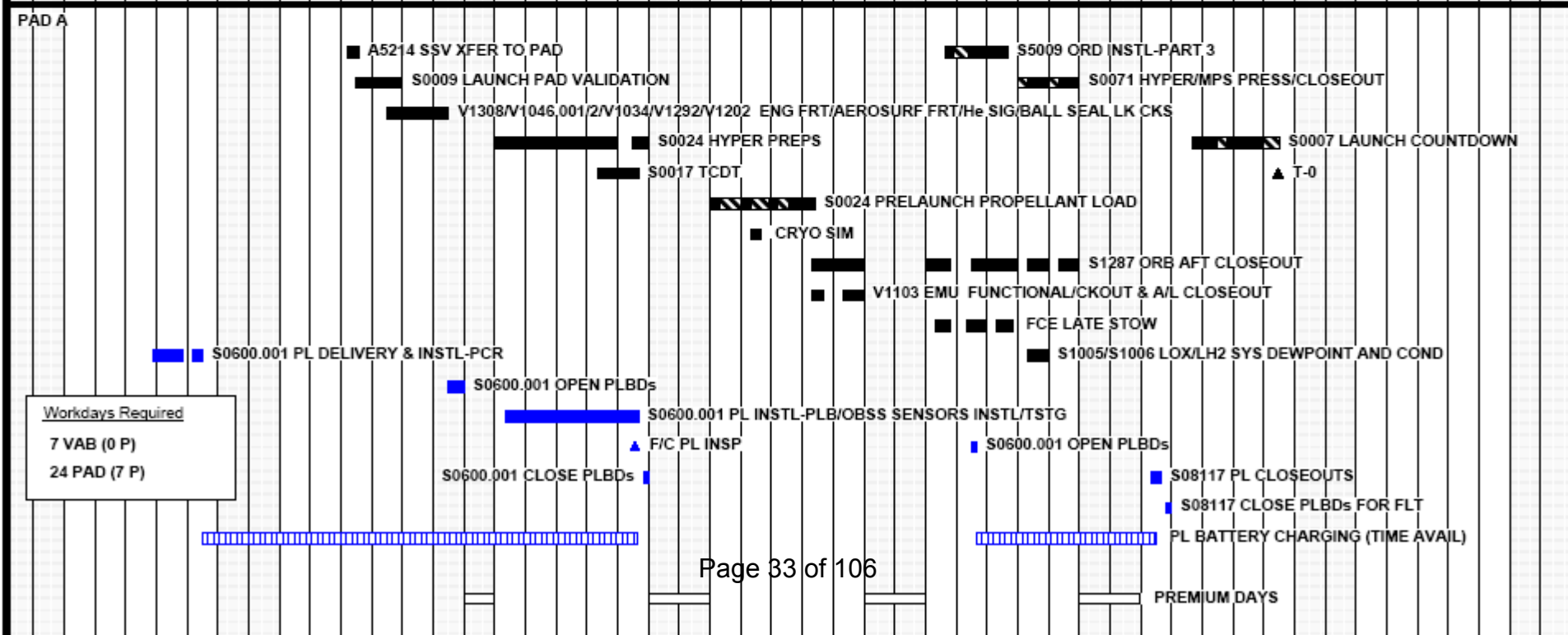
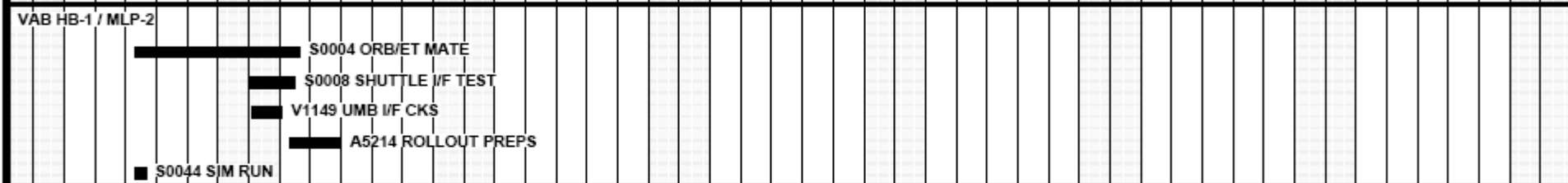
Integrated Operations Assessment Summary

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

2007

FEBRUARY

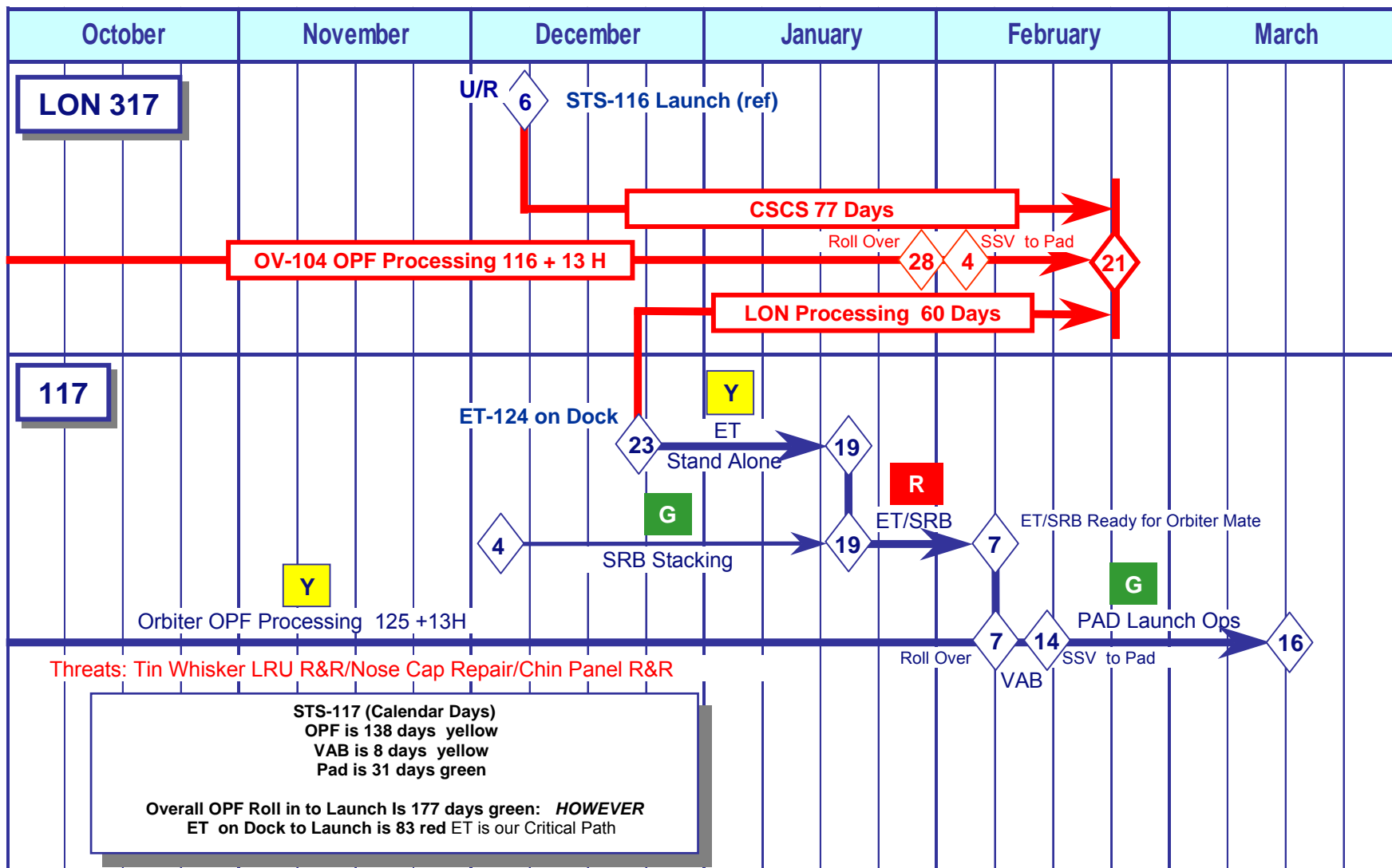
MARCH



Workdays Required
7 VAB (0 P)
24 PAD (7 P)

PREMIUM DAYS

STS-117/OV-104 Ground Ops Processing



STS-117 Integrated Delta Launch Site Flow Review

Presenter	Stephen Reilly
Date	PRCB 11-09-06

Backup Material

FRWG Presentation (With Minor Changes)



STS-117 Delta Launch Site Reaquirement Review		Presenter	
		MK-SIO / A. Swift	
		Date	Page
		11-09-06	1

Mandatory RCNs:

MT17181R1	T00 - ET CAMERA BATTERY CHARG	10/25/06
SS17213	S00 - CRAWLER TRANSPORTER SPEED	Preliminary

Non-Mandatory Value Added RCNs:

SS17185	S00 - INTEGRATED WALKDOWNS	11/15/06
SS17204	S00 - SSV/PAD CLEARANCES	Preliminary
OV17146R1	V63 - RADIATOR RETRACT FLEX HOSE U/D	Preliminary
KV16936	V73 - PAYLOAD BAY LIGHT VERIF	Preliminary
MB17098R	B00 - SRB BORESCOPE FWD BSM DRAIN HOLE	Preliminary



STS-117 (13A) Delta 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	11/09/06	Page 2

Flight Requirements Documents

NSTS 17462-117, Revision 011: Published October 27, 2006

Open CRs for Revision 012

#0066 – Update # of LiOH Canisters in Middeck

#0069 - Baseline the STS-117/STS-317 Plug-in-Plan

Approved CRs for Revision 012

#0070 - Update Launch Date

NSTS 17462-317, Revision 001, Published October 27, 2006

Open CRs for Revision 002

#0069 - Baseline the STS-117/STS-317 Plug-in-Plan

Approved CRs for Revision 002

#0005 - Update Launch Date



<h1>Requirements Documents Status</h1>	Presenter	MO3/J. J. Conwell USA/Patrick LeMoine	
	Date	11/09/06	Page 3

13A MIP (NSTS 21509)

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

MIP CRs currently in review: Task priorities and late inspection

MIP CRs in work:

Scheduled and unscheduled EVA requirements

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

Tom Stansel

PRCB 11/09/2006

STS-117/317 Delta 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-117/OV-104 Flight Specific I-Load Patch Nov 09, 2006
- **STS-317 is the Rescue Mission for STS-116**
 - I-Load Patch approval scheduled for 11/30/06
- **STS-317/OV-104 deliveries (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
 - SCR 93102, STS-115 Main Landing Gear (MLG) Level-C Patch

STS-117/317 Delta LSFR (FSW)

- **FSW will utilize a telemetry correlation table for ECO Sensor support**
 - DCR 46245 maps existing spare slots to actual measurements for TFL formats 129 and 160

- **Open Items**
 - None

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

STS-117/317 Delta 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 Delta LSFR (FSW) Backup

- **STS-117 Source Changes/Edits for Primary Flight Software (Base 2)**
 - Changes Implemented on STS-116 Were Applied
 - There Were No First Time Implementation Source Changes on STS-117
- **STS-117 Patch Implementation for Primary Flight Software (Base 2)**
 - Patches Implemented on STS-116 Were Applied
 - There Were No First Time Implementation Patches on STS-117
- **STS-117 Patch Implementation for Backup Flight Software (Base 2)**
 - Patches Implemented on STS-116 Were Applied
 - First Time Implementation on STS-117
 - **SCR 93020 - LT/RT Main Landing Gear Door Uplock Discrete Correction**

Back-up

Modification Records and MECSLSI Update Summary

MCR NO.	MCR TITLE	KIT / MOD RECORD & DESCRIPTION	TECH ORDER IMPACT	REMARKS
Modifications To Be Baselined				
17177	Dome Heat Shield Pivot Tube Re-ID Re-ID dash numbers of dome heat shield blanket attach pivot tubes to reflect hole enlargement to accommodate installation of cotter pins	ICTIV8517177REF.0104.5 - Re-ID DHS pivot tubes	No Tech Order Impact	No MECSLSI Impact
19476	IMLG Wheel Environmental Seal Apply environmental seal (RTV) to the temperature sensor mounted to the wheel	TCTIV1019476REF.0104.1 - Apply environmental seal to IMLG wheel temperature sensor	No Tech Order Impact	No MECSLSI Impact
19903	Aft Flight Deck Overhead Closeout Panel Modification Modifies overhead panels utilizing studs with a thicker base plate to achieve positive margins for certification loads	019903.0104.1 - Overhead panel with thicker stud base	No Tech Order Impact	No MECSLSI Impact
Modifications To Be Authorized As Non-Flight-Specific				
11620	Wire Tray Cover Gap Filler Faying Surface Rework Return mid-fuselage wire tray covers to per-print corrosion protection on gap filler faying surfaces (is primer and topcoat, should be chem-film per drawing)	TCTIV3411620REF.0104.15 - Remove primer and topcoat; apply chem-film	No Tech Order Impact	No MECSLSI Impact
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.	TCTIV1019735REF.0104.1 - Adds SIP to WLE front spar 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).
Modification To Be De-baselined				
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.
Previously Approved Modifications				
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
19780	MADS PCM Harness Installation Replace harness in avionics bay 1 and route through bottom clamp per drawing	VK70-773604-001.0104.1 - Replace wire harness with longer harness and route per print	No Tech Order Impact	No MECSLSI Impact
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.)	VK70-776054-001.0104.0 - Installs clamping band to connector adapter boot to overlap metal overbraid by at least 50%	No Tech Order Impact	No MECSLSI Impact
23227	Connector Saver Redesign Install connector savers at T-0 locations.	TCTIV7923227REF.0104.0 - T-0 Locations	No Tech Order Impact	No MECSLSI Impact
23227	Connector Saver Redesign (Non-Flight Specific) Re-install connector savers at locations removed by MR due to wave washer groove being too large.	K598-430017-001.0014.1 - Install connector savers, OMS pod LP04 locations K598-430018-001.0021.1 - Install connector savers, OMS pod RP01 locations VK70-703164-001.0104.1 - Install connector saver at Ku-Band EA-1 location	No Tech Order Impact	No MECSLSI Impact
23448	ECO Point Sensor System Measurement Implement voltage measurements for all four MPS LH2 and LO2 Sensor Transducer Circuits	TCTIV3523448REF.0104.0 - Implements wiring harness change in avionics bays 5 & 6 TCTIV7023448REF.0104.0 - Replaces converter with DC amplifier TCTIV7923448REF.0104.0 - Inter-bay wiring change, bays 5 & 6	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.	TCTIM0019768REF.0006.1 - Replaces RMS pedestal MPM guillotine mounting bolts TCTIM0019768REF.0002.0 - Replaces OBSS pedestal MPM guillotine mounting bolts	M072-544501-089 (Is) -067 (Was) Model MV0082A M072-544505-014 (Is) -008 (Was) Model MV0092A	MECSLSI Impact (Incorporated at Revision C released 7/24/06)

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
Modifications To Be Baselined										
17177	Dome Heat Shield Pivot Tube Re-ID Re-ID dash numbers of dome heat shield blanket attach pivot tubes to reflect	Released	N/A	N/A	N/A	Go	Submitted	Approved	CAR 03-351900-010	
19476	IMLG Wheel Environmental Seal Apply environmental seal (RTV) to the temperature sensor mounted to the wheel	Released	N/A	Delivered	N/A	Go	Submitted	Approved	CAR 07-26-621-0051-0010T	
19903	Aft Flight Deck Overhead Closeout Panel Modification Modifies overhead panels utilizing studs with a thicker base plate to achieve positive margins for certification loads	Released	N/A	N/A*	N/A	Go	Submitted Submitted	Approved 11/22/06	CAR 148-04-331002H CAR 09-25-660007-001R	* H/W to be modified on site.
Modifications To Be Authorized As Non-Flight-Specific										
11620	Wire Tray Cover Gap Filler Faying Surface Rework Return mid-fuselage wire tray covers to per-print corrosion protection on gap filler faying surfaces (is primer and topcoat, should be chem-film per drawing)	Released	N/A	N/A	N/A	Go	N/A	N/A	N/A	
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	
Modification To Be De-baselined										
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 ft 28) LSRR S115116C.
Previously Approved Modifications										
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	
19780	MADS PCM Harness Installation Replace harness in avionics bay 1 and route through bottom clamp per drawing	Released	N/A	N/A*	N/A	Go	Submitted	Approved	CAR 03-20-476-0251-0001D	* H/W to be fabricated on site.
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	
23227	Connector Saver Redesign Install connector savers at T-0 locations.	Released	N/A	Delivered	N/A	Go	Submitted	Approved	CAR 08-21-770000K	
23227	Connector Saver Redesign (Non-Flight Specific) 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 LH2 and LO2 Sensor Transducer Circuits	Released	N/A	N/A*	N/A	Go	12/15/06 12/15/06	1/31/07 1/31/07	CAR 168-03-350013-001L CAR 10-21-770000M	* Available on site.
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	11/22/06	CAR 08-44-000002-001K	* Available on site.

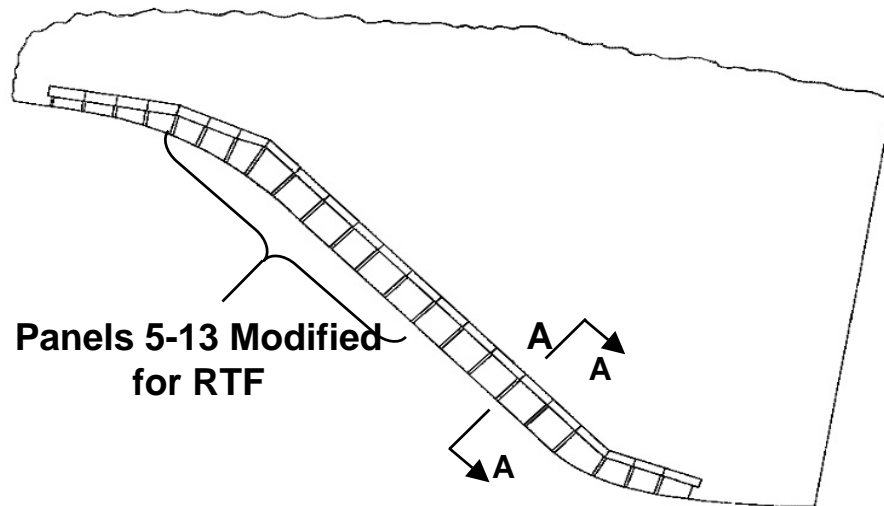
STS-117 OV-104 Flight 28 – Mods To Be Authorized As NFS (Cont.)

MCR 19735 – WLE Spar “Sneak Flow” Protection

MCR 19763 – WLE Lower Access Panel “Horsecollar” Gap Filler Redesign

- Two wing leading edge hardening modifications implemented to improve survivability based on findings from STS-107 investigation
- Both LESS mods implemented on critical panels 5-13 for STS-115
 - Remaining panels 1-4 and 14-22 to be completed during future flows

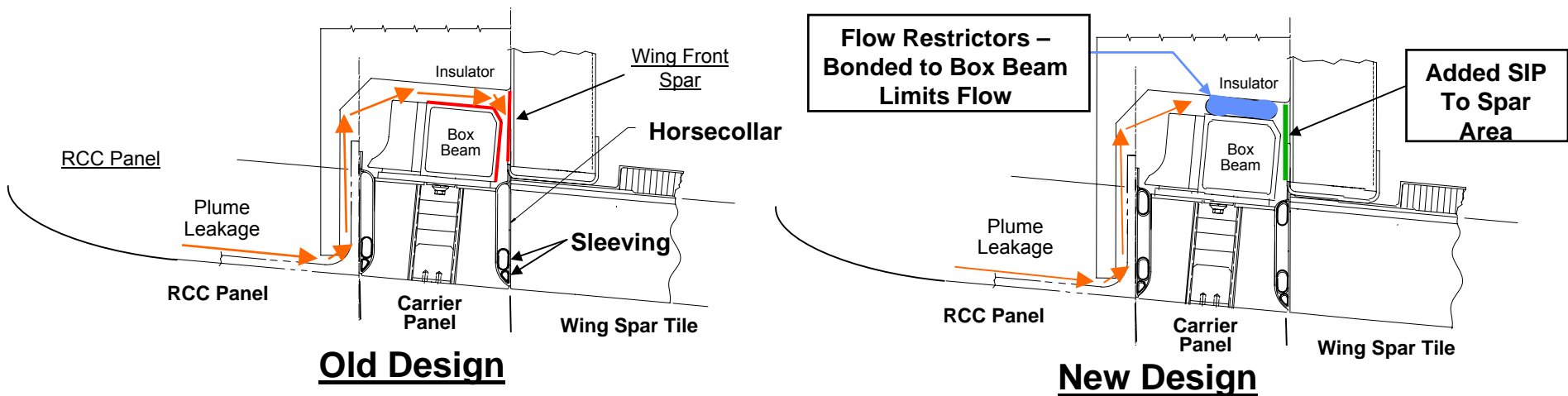
Orientation Views – Wing Leading Edge



View A-A

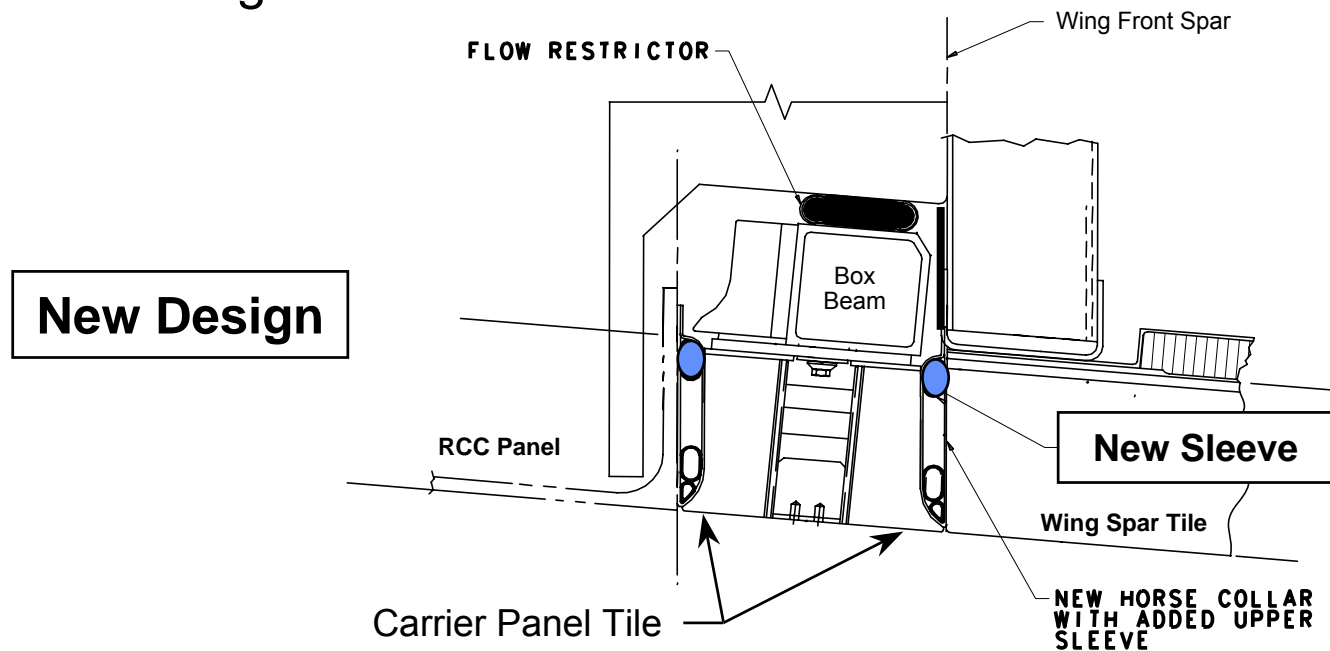
STS-117 OV-104 Flight 28 – Non-Flight-Specific Modifications

- **MCR 19735 WLE Spar Sneak Flow Protection** addresses the wing spar vulnerability to sneak flow from plume ingestion into RCC cavity
 - Adds flow restrictor to limit plume flow to 50% across the flow restrictor
 - Bonded to top of box beam and sandwiched between the beam and the removable insulator
 - Spans the width of removable access panel between attach points
 - Flow restrictors reduce forward to aft flow path and protect the spar against unacceptable temperature limits
 - Also adds insulation to bare areas of wing front spar surface to maintain spar temperature gradients at certification levels
 - Strain Isolator Pad (SIP) bonded to the lower spar cap (0.090”) and to the forward facing corrugations of the spar (0.160”)



STS-117 OV-104 Flight 28 – Non-Flight-Specific Modifications (Cont.)

- **MCR 19763 WLE “Horsecollar” Gap Filler Redesign adds redundancy to lower LESS access panel horsecollar gap filler**
 - Horsecollar Gap Filler redesigned to add additional 0.50 DIA sleeving at IML end of the horsecollar
 - Existing horsecollar has two sleeves at OML
 - New design adds additional sealing capability in the event of partial tile loss, preventing early ingestion of flow into LESS lower spar
 - Utilizes existing certified Nextel fabrics



STS-117 OV-104 Flight 28 – Modification to be Debaselined

MCR 23043 – MPS Delta-P Transducer Removal (Cont.)

- Evaluation criteria and results for removed OV-103 transducer (fleet leader in terms of operational use with 30 flights):
 - Pass internal and external leakage tests
 - Transducer passed all internal and external leakage tests (performed by ESTA at JSC using original ATP pass/fail criteria)
 - Pass in-house review of the original vendor stress analysis
 - NASA stress personnel reviewed the methods used to analytically evaluate the hardware and agreed with the assumptions and analysis employed
 - Pass NDE / DE to screen for potential manufacturing defects or starter cracks on the brazes, the EB weld, and the diaphragm
 - NDE (x-ray) of brazed tubes, EB weld, and diaphragm inconclusive due to thickness of back-up plates and external housing
 - Back-up plates were removed from housing and sectioned, revealing good condition of EB weld and diaphragm with no signs of crack formation
 - Brazed joints (4) were sectioned and polished to reveal braze joint quality
 - GH2 pressurization port connector fitting braze showed little braze material connecting the tube, which is discrepant per MIL-B-7883B as required by OEM drawings
 - Braze joint observation creates concerns for the potential of similar or worse joints on OV-104



STS-117 DLSFR Flight Crew Equipment/GFE	Presenter MV5/Bruce Sauser	
	Date November 9, 2006	Page 1

STS-117 Delta LSFR

FCE/GFE Status

Bruce Sauser
Manager, GFE & Flight Crew Equipment Office
Johnson Space Center
November 9, 2006



STS-117 DLSFR Flight Crew Equipment/GFE	Presenter MV5/Bruce Sauser	
	Date November 9, 2006	Page 2

- **Open hardware certifications to be completed prior to STS-116**

- **Changes since LSFR:**
 - **Orbiter Boom Sensor System (OBSS) Sensor Packs 1 and 2 tech orders updated to include lock wire as secondary locking feature of Integrated Boom Assembly fasteners**
 - **Tools for Rendezvous And Docking (TRAD) recently updated in FRD to encompass Hand Held Lasers (HHLs), Payload and General Support Computer (PGSC) and Trajectory Control Sensor (TCS)**
 - **TCS removed from FRD as separate call-out**
 - **Orbiter Space Vision System removed from tracking**
 - **Due to database code error this item was erroneously tracked (no hardware configuration change)**
 - **Sequential Still Video removed from tracking**
 - **Stowage items not tracked in GFE database/telecon (no hardware configuration change)**

- **All need dates and delivery dates have been partnered**
 - **Camera B recently failed ATP but alternative camera will ship to KSC by 11/10/06 in support of scheduled installation**

- **Tech orders and hardware list noted in backup charts**



STS-117 DLSFR
Flight Crew Equipment/GFE

Presenter MV5/Bruce Sauser	
Date November 9, 2006	Page 3

Tech Order numbers are identified for reference only. Report generated 10/31/2006.

Hardware	Tech Order	KSC Eng Need	Eng(TO) Release	In MEC	Cert O/C	KSC HDW Need	JSC HDW Planned	JSC Remarks	JSC Contact
A (port forward)	M072-750025-058		3/24/05	7/24/06	C			This hardware stays installed from STS-115.	Randall Moore
B (port aft)	M072-750025-067	10/3/06	3/24/05	7/24/06	C	11/10/06	11/10/06	Same hardware as STS-115. Note: For STS-117 only, Camera B requires to be returned to JSC for SVS calibration per CHIT J6156. Decision to meet the 11/03 delivery date or delay will be made at the 10/31/06 MRB. Apparently, there was a hot spot in the view caused by debris on the photo cathode (the debris has disappeared). Also a bad pixil was discovered which should not delay the delivery.	Randall Moore
C (starboard aft)	M072-750025-060		3/24/05	7/24/06	C			This hardware stays installed from STS-115.	Randall Moore
D (starboard forward)	M072-750025-061		11/24/04	7/24/06	C			This hardware stays installed from STS-115.	Randall Moore
SRMS elbow camera	M072-544504-001		1/24/05	7/24/06	C			This hardware stays installed from STS-115.	Randall Moore
SRMS wrist camera	M072-544504-003		3/4/05	7/24/06	C			This hardware stays installed from STS-115.	Randall Moore
Centerline Airlock Camera (stowed)	M072-660828-002, plus CCCD stow	10/26/06	3/17/99	7/24/06	C	11/26/06		Same hardware as STS-115.	Randall Moore
Lefthand Umbilical Camera (forward)	M072-705001-017	12/12/06	10/28/04	7/24/06	C	1/12/07	1/12/07	Hardware will be returned to KSC 3 days prior to OPF roll to VAB.	Randall Moore
Lefthand Umbilical Camera (aft)	M072-705001-016	12/12/06	10/28/04	7/24/06	C	1/12/07	1/12/07	Hardware will be returned to KSC 3 days prior to OPF roll to VAB.	Randall Moore
Righthand Umbilical Camera	M072-705001-024	12/12/06	10/28/04	7/24/06	C	1/12/07	1/12/07	Hardware will be returned to KSC 3 days prior to OPF roll to VAB.	Randall Moore



STS-117 DLSFR
Flight Crew Equipment/GFE

Presenter MV5/Bruce Sauser	
Date November 9, 2006	Page 4

Tech Order numbers are identified for reference only. Report generated 10/31/2006.

Hardware	Tech Order	KSC Eng Need	Eng(TO) Release	In MEC	Cert O/C	KSC HDW Need	JSC HDW Planned	JSC Remarks	JSC Contact
Digital Television (DTV)	M072-710570-007			7/24/06	O			Installed.	Larry Schmidt
MCIU/RMS Situational Awareness Display	M072-710543-001		3/7/00	7/24/06	O			Installed Hardware.	Larry Schmidt
Portable Foot Restraint (PFR)	M072-661568-029	10/10/06	3/11/05	7/24/06	C	11/10/06	11/10/06	Hardware must be replaced.	Sandy Peterson
Tools for Rendezvous and Docking (TRAD)	M072-730021-017		3/9/05		O				Larry Schmidt
Video Processing Unit (VPU)	M072-710338-006		7/5/01	7/24/06	C			Installed hardware.	Larry Schmidt
Winches	V070-650007-085		11/19/04	7/24/06	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			7/24/06	C			Installed hardware.	Randall Moore
Space to Space Orbiter Radio (SSOR)	M072-344828-002 M072-740828-002 antenna			7/24/06	C			Installed hardware.	Larry Schmidt
RMS Sideview Camera (RSC)	M072-710281-002 M072-000416-004 camera		11/24/04	7/24/06	C			Hardware is config 2. Must be returned to JSC for pressurization . There is no need for an OPF test for STS-117. Also Larry Schmidt need to change the effectivity for CHIT J5574A	Randall Moore



STS-117 DLSFR
Flight Crew Equipment/GFE

Presenter MV5/Bruce Sauser	
Date November 9, 2006	Page 5

Tech Order numbers are identified for reference only. Report generated 10/31/2006.

Hardware	Tech Order	KSC Eng Need	Eng(TO) Release	In MEC	Cert O/C	KSC HDW Need	JSC HDW Planned	JSC Remarks	JSC Contact
Wing Leading Edge (WLE) Instrumentation -	M072-756111-003			7/24/06	O			Installed hardware.	Gary Cox
Wing Leading Edge (WLE) Instrumentation - Right Wing	M072-756111-004		10/17/05	7/24/06	C			Installed hardware.	Gary Cox
OBSS Sensor Package 1 (OPF)	M072-710282-007	9/29/06		7/24/06	O	10/30/06	10/30/06	Hardware resides at KSC.	Randall Moore
OBSS Sensor Package 2 (OPF)	M072-710282-006	9/29/07		7/24/06	O	10/30/06	10/30/06	Hardware resides at KSC.	Larry Schmidt
Aft Thrust Structure Mico-SGU	M072-755110-006		4/15/05	7/24/06	O			Installed.	Gary Cox
OMS POD Micro-SGU	M072-755111-001		3/19/02	7/24/06	O			Installed.	Gary Cox
RMS Sidewiew Camera (RSC)	M072-710281-002		11/24/04		C			Pad Installation camera.	Randall Moore
WING LEADING EDGE BATTERIES	M072-756111-003 M072-756111-004	11/1/06		7/24/06	C	12/1/06	12/1/06		Gary Cox
OBSS Sensor Package 1(PAD)	M072-710282-007			7/24/06	O			Hardware resides at KSC.	Randall Moore
OBSS Sensor Package 2(PAD)	M072-710282-006			7/24/06	O			Hardware resides at KSC.	Larry Schmidt
Aft Thrust Structure Micro-SGU Batteries		9/1/06		7/24/06	O	10/1/06	10/1/06		Gary Cox
OMS POD MICRO-SGU Batteries		9/1/06		7/24/06	O	10/1/06	10/1/06		Gary Cox



EVA Status STS-117 Delta LSFR

**David Foltz
EVA Office
Johnson Space Center
November 9, 2006**



EVA Status

STS-117 Delta 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
DELTA LAUNCH SITE FLOW REVIEW (dLSFR)
PAYLOAD CARGO ENGINEERING STATUS**

**Kellee Ash
281-280-6517
11/9/06**

STS-117 dLSFR

ENGINEERING FLIGHT PRODUCT STATUS

<u>DRAWING NO.</u>	<u>TITLE</u>	<u>REV</u>	<u>EO</u>	<u>RELEASED</u>
V072-200197	MECSLSI	D	D01	10/25/06
VA72-200197	CARGO ARRANGEMENT	D	D01	10/25/06
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

OPEN WORK

- MECSLSI UPDATE
 - dLSFR UPDATES

ECD

11/27/06

RESCUE FLIGHT STATUS

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

STANDARDIZATION

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

STS-117 dLSFR

OMRS STATUS

BASELINED FILES - FII V2

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

BASELINE OMRS - FII V4

- MISSION UNIQUE LIST
- FIII MISSION UNIQUE LIST
- ADJACENT PIN TEST

OPEN WORK

- NONE

ISSUES/CONCERNS

- NONE

STS-117 dLSFR

PAYLOAD ICD's/PIRN's

- ALL PAYLOAD-UNIQUE ICDS ARE BASELINED

PIRNS THAT IMPACT FLIGHT PRODUCTS

- NONE

ISSUES/CONCERNS

- NONE

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

- ALL REQUIRED CIH HAS BEEN DELIVERED

Atlantis STS-117
Delta Launch Site Flow Review
Space Shuttle Main Engine
9-November-2006

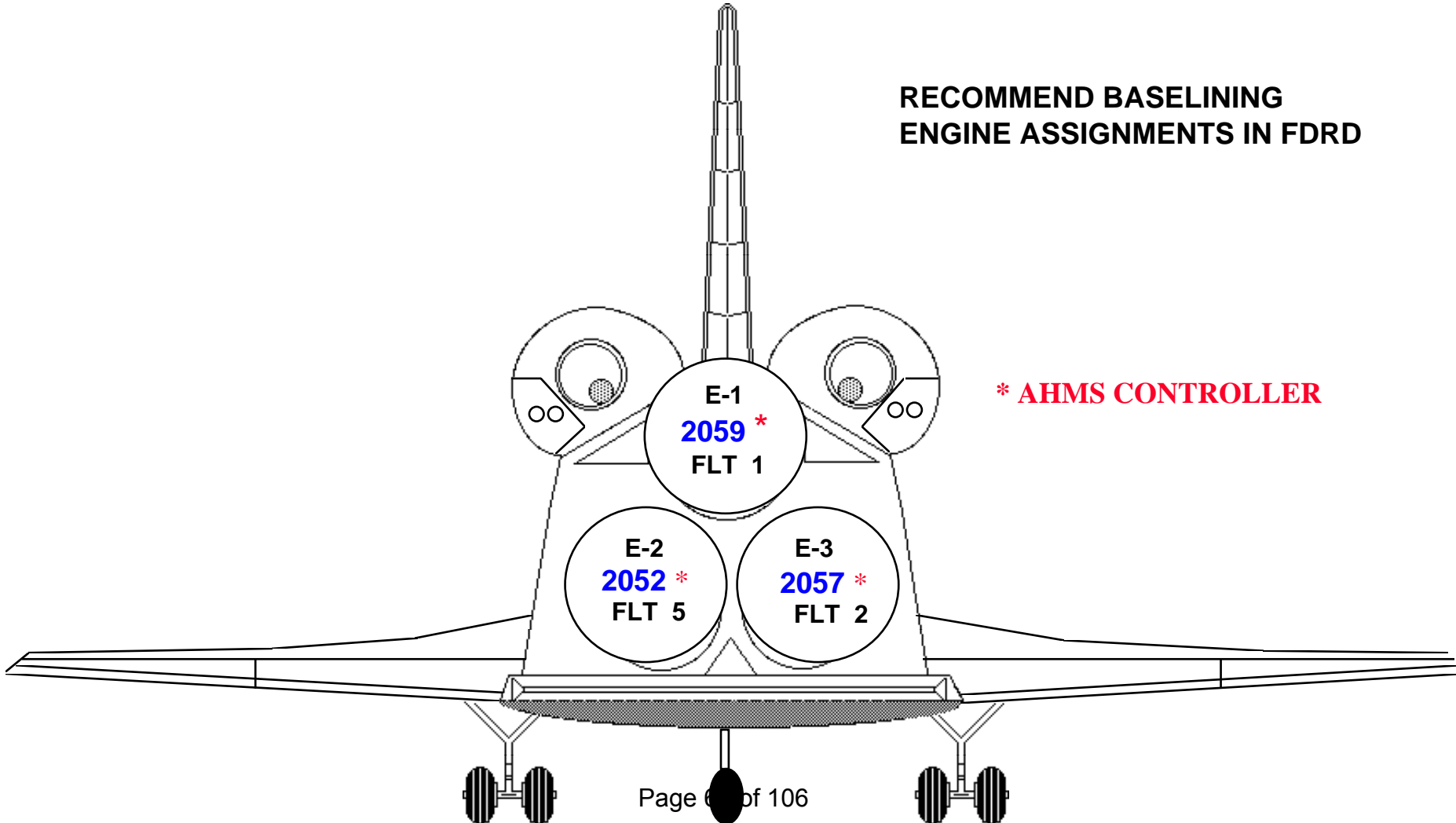
SSME- KSC
Greg Haile
(321) 861-4060
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STS-117 Delta Launch Site Flow Review

SSME Allocations / Locations

**RECOMMEND BASELINING
ENGINE ASSIGNMENTS IN FDRD**





STS-117 Delta 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	+0 LB	ME-0191 R11	2052	Complete



STS-117 Delta 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
1480	2R091575-10 2R091575-20	AHMS Controller	-3 LB -3 LB	ME-0191 R16 ME-0216 R3	2052 2057	In-Work Complete
1507	2R091599-10	LAI Tape Req'ts	+0 LB	ME-0216 R02 ME-0191 R15	2057 2052	In-Work In-Work
1511	2R091613-10	AHMS Weight Updates	+0 LB	ME-0216 R4 ME-0191 R16	2057 2052	Complete In-Work



STS-117 Delta 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 Delta 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



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

ISS/Payload Processing, KSC

November 9, 2006



Robbie Ashley
Mission Management Office
321-867-6037



ISS/PAYLOAD PROCESSING AGENDA

Presenter:

Robbie Ashley

Date:

11/9/06

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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: 11/9/06	Page 2

SSPF

- 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

ECD

- 22 November 2006
- 8 December 2006
- 12 December 2006
- 14 December 2006
- 16 January 2007

CRF

- Rotate Canister to Vertical
- 17 January 2007

Integrated Operations

- Payload Transfer to Pad A
 - Final Battery Charge at the Pad
 - Final Payload Bay Door Closure
 - Launch
- 18 January 2007 (U/R)
16 February 2007 (U/R)
16 February 2007 (U/R)
22 February 2007 (U/R)





ISS/PAYLOAD PROCESSING ISSUES & CONCERNS

Presenter: Robbie Ashley	
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- None





ISS/PAYLOAD PROCESSING

STS-117 / ISS-13A

MASTER MILESTONE SCHEDULE

Presenter:

Robbie Ashley

Date:

11/9/06

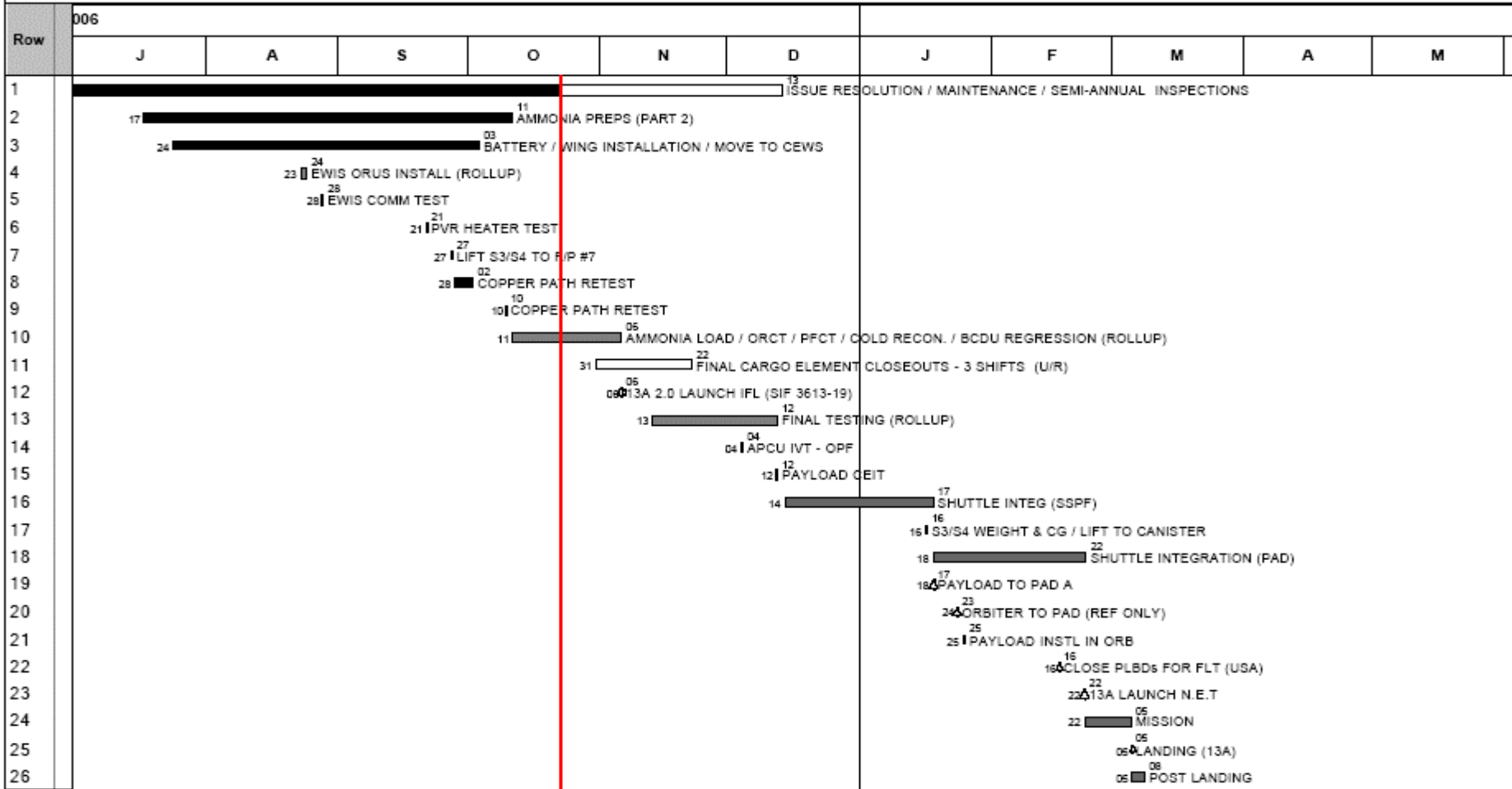
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STS-117-ISS-21-13A S3 / S4, PV ARRAY, 6 BATT SETS, 4 PAS

Boeing CAPPS _____ /s/ _____
E. BAGLIONI - 10/23/06

OPF BAY: 1 PAD: A ORBITER: 104 ATLANTIS **INTEGRATED MASTER PLAN** NASA _____ /s/ _____
MANIFEST: 06B-31 (CR 9949) STATUS AS OF: 10/23/2006 REV: BM R. ASHLEY - 10/23/06



THREATS:

Activity

Critical Path

Progress

Summary Bar

Project Milestone

Program Milestone Level 1

Program Milestone Level 2

Powerup Testing

Local Clear

Major Clear



ISS/PAYLOAD PROCESSING BACKUP

Presenter: Robbie Ashley	
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BACKUP CHARTS





STS-117/ISS-13A PAYLOAD BAY CONFIGURATION

Presenter:

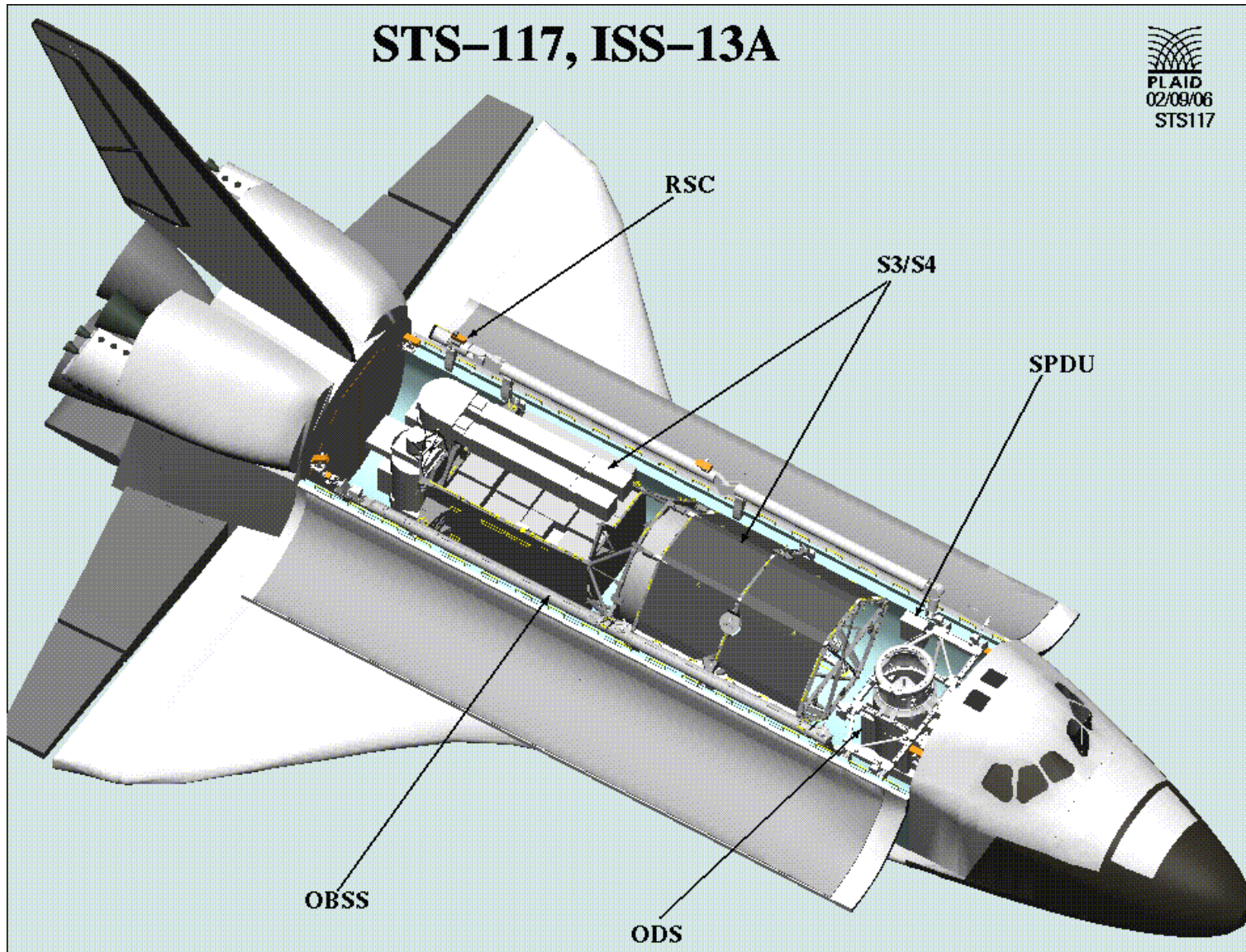
Robbie Ashley

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11/9/06

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S3 / S4 INTEGRATED TRUSS SEGMENT (ITS)

Presenter:

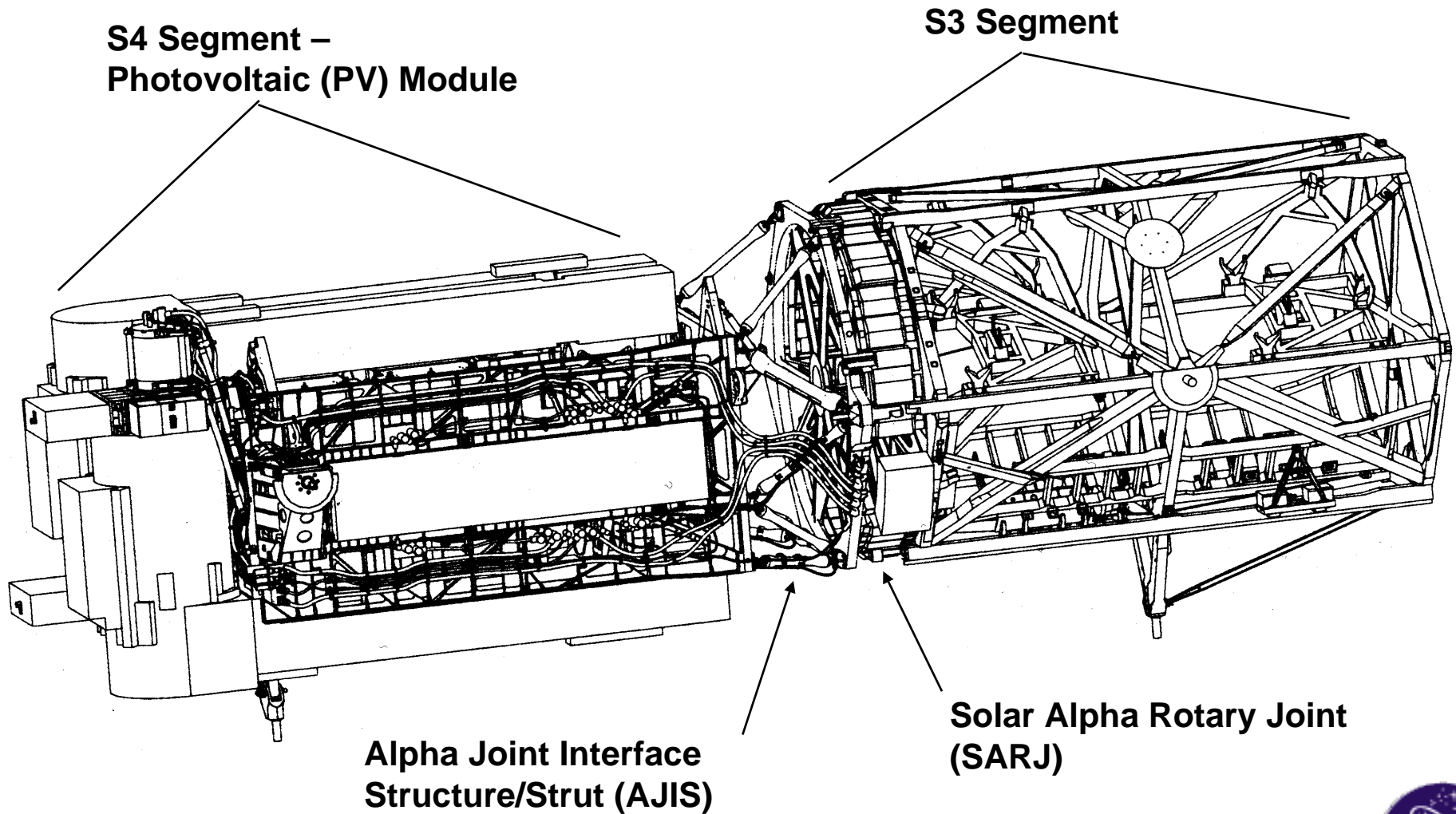
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S3/S4 ITS COMPONENTS

S3 Segment

- Starboard Solar Alpha Rotary Joint (SARJ)
 - Provides alpha gimbal for S4 and S6 solar arrays
- Alpha Joint Interface Structure/Strut (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:

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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
 - NH₃ 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 on 13A have been installed





ISS 13A STAGE CONFIGURATION

Presenter:

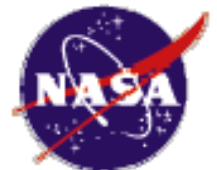
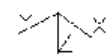
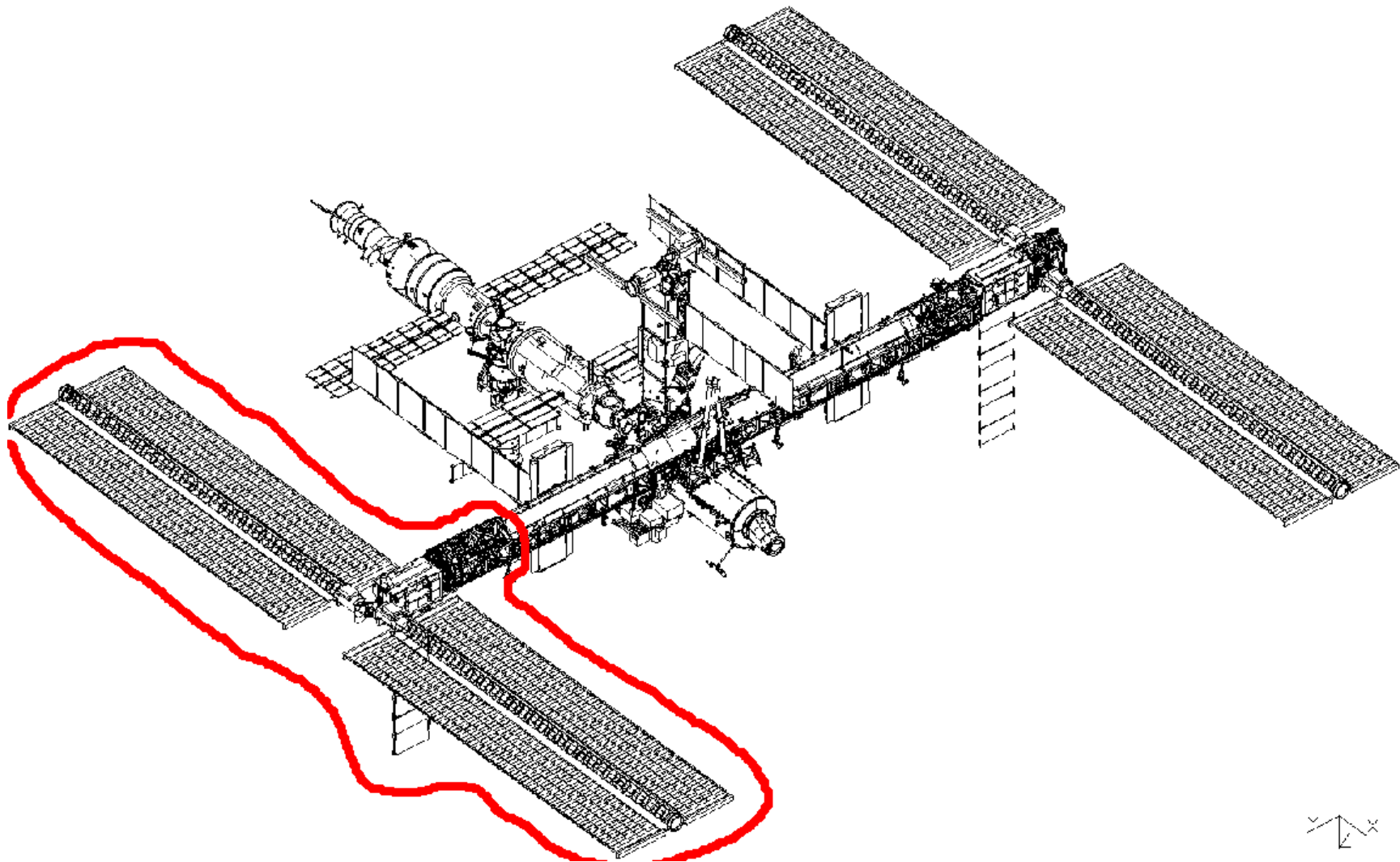
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BACK UP



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/S3-S4 Arrays**
- **Flight Software: OI-30**
- **Firing Room: 1**
- **OPF Bay: 1**
- **MLP: 2**
- **VAB High Bay: 1**
- **Pad: A**



STS-117/OV-104

Non-Standard Work Summary

- Total Chits to Date: 40
- Total MCR's to Date: 16





STS-117 Delta Launch Site Flow Review

Presenter	Amy Houts-Gilfriche	
Date	11-09-06	

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-117 Delta Launch Site Flow Review

Presenter	Amy Houts-Gilfriche	
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SSP System Drawings

- **The Drawings Baseline Was Released By PRCB S115117A on 01-06-03.**
 - **V072-000001-257** (Rev. UT01) Space Shuttle System (Rel. 09-28-06)
 - **V072-200197-003** (Rev. D01) Mission Equipment Cargo Support (Rel. 10-25-06)
 - **SGD32104440-401** (Rev. C01) Crew Compartment Configuration (Rel. 10-25-06)
 - **-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 - 22 days on 12-21-2006.**



STS-117 Delta Launch Site Flow Review

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SSP System Drawings - Cont'd

- **Ferry Configuration**

- **V072-000001-258** (Rev. UM01) Space Shuttle System (Rel. 04-21-06)
 - **V072-200197-004** (Rev. D01) Mission Equipment Cargo Support (Rel. 10-25-06)
 - **SGD32104440-001** (Rev. C01) Crew Compartment Configuration (Rel. 10-25-06)
 - **V072-300055-023** (Rev. BL01) Ferry Flight Configuration (Rel. 06-21-06)

- **SCA 905**



STS-117 Delta Launch Site Flow Review

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SSP LCC Changes

The Following LCC Open Work is designated STS-117 Mandatory:

LCN 01184 – SSME Advanced Health Management System Anomaly

ECD: 02-05-07

- This change adds a new SSID (SSME-45) to monitor the AHMS prior to engine start

ASCENT MODULAR LOCKER LAYOUT

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

LEADER: ROSARIO AGNO
 DATE: 10/27/2006
 LAUNCH: 03/16/2007
 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

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

MIDDECK FORWARD

5962 MF14E 6269 -303 -307 PRINTER TRAYS IODINE REMOVAL 6256-303	MF28E/G TBD -TBD TRAD	6066 MF43E 6629 -320 -305 COLOR PRINTER & PAPER	MF57C 6697 -TBD HH LIDAR W/NIGHTSCOPE (TRAD)/SSV *BPSMU *HH LIDAR
6300 MF14G 6250 -343 -343 IFM TOOLS 2163-302 2161-305 2162-306		MF43G 1900 -308 CDR CLOTHING	MF57E RESERVE
MF14H 2763 -304 MENU FOOD MENU FOOD	MF28H 7521 -316 ALTIMETER CSA-CP/CONDENSATE DOCK MECH KIT SUPA/OHS (12) O-RINGS/BRAYCOTE	MF43H TBD -TBD SODF	MF57H 5473 -305 ORBITER FDF
MF14K TBD -TBD POST INSERTION 2	MF28K 6231 -342 POST INSERTION 1	MF43K 2760 -306 FRESH FOOD FRESH FOOD	MF57K 6240 -311 ORBITER FDF SODF
MF14M 2767 -304 MENU FOOD MENU FOOD	6015 MF28M 8047 325 -301 D/C VACUUM CLEANER CTB	MF43M 6299 -313 COAS FLUOR LT LIGHT SHIELDS DCS 760/BTA/ AUDIO DOS/AA BATS	MF57M 3005 -304 M/S #4 CLOTHING
VOL 3B 7425 (MA75J) -308 QUICK DON MASK(2) CABIN AIR CLEANER SPOTLIGHT/LCD MON PD100 CC/FLASH DSC 760/400MM 28-70MM LENS	MF14O 2762 -307 MENU FOOD MENU FOOD	MF28O 5452 -324 IFM BREAKOUT BOX TURNBUCKLES AIR BOTTLES WWD FLT RMS IFM KIT	MF71C 7248 -TBD PCS COSS

MIDDECK AFT

MA9D 8737 -TBD RCC COLD BAG ASSY (NOAX)	MA16D 1908 -309 CREW SUPPORT	MA9F 8708 -TBD STS-1 OCA STS-3 KFX ACCESS POINT	MA16F 1904 -307 M/S #3 CLOTHING
MA9G TBD -TBD STS-5 DOUG STS-6 RSAD STS-7 WLES	MA16G TBD -TBD PGSC ACCESS	MA9J TBD -TBD STS-2 WINDECOM/ ACCESSORIES	MA16J 1903 -305 M/S #2 CLOTHING
MA9L TBD -TBD WLES CRUs (3) LRUs (2)	MA16L 8708 -TBD STS-4 SPARE STS-8 PILOT	MA9N 7432-310 SOFT STWG BAGS PHK (6) 4980-309 BRKT(S)/CCK LIGHT STICKS 8071-308 RSTRNTS/FIBERSCOPE RE-ENTRY 8070-302	MA16N 6684 -TBD MED KITS

A16 8706 -305 DTV CC BAG 35 MM CAMERA BAG PILOT HAND CONTROL	A17 7424 -302 CORE CC SYS BAG CC SYS BAG QUICK DON MASKS (4) HATCH TOOL	VOLUME D 7450 (MD52C) -TBD TSA TOOLS	VOLUME F 1403 (MD76M) -306 WET TRASH	VOLUME G 1800 (MD80R) -346 CONT UCDS WASTE MGMT	VOLUME H 8068 (MD23R) -TBD EVA ACCESS (INBD) EVA ACCESS (OBD) 8065 -TBD	4575 WMC 0914 -309 (MA82H) -331 TOWELS AND RESUPPLY ITEMS WMC DISPENSER 1st DAY CLOTH 1641-325	EXT AIRLOCK TBD -TBD EMU (2) EXT A/L FLOOR CCC (4)/CCA (2) ECOK (2) - FR & SW LCVG (2) FR & SW GLOVES (2) EMU BATT
--	--	--	--	--	---	--	--

TOTAL LIOH (22) 7435 -306 20 LIOH IN LIOH BOX 1 ATCO IN LIOH BOX 2 INSTALLED * ADDITIONAL LIOH (9)	WINDOW SHADE BAG: 5548-338 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	CTB HALF= CTB SINGLE=	* NOT APPROVED ● L-24 LATE LOAD ⊗ TRANSFER TO ISS CTB CARGO TRANSFER BAG HCTB HALF CARGO TRANS. BAG ⊠ SWAP

NOTE: LOCKER LAYOUTS ARE FOR REFERENCE ONLY AND ARE NOT RELEASED DRAWINGS.
 FOR RELEASED DRAWINGS, REFER TO CCCD DRAWING # SGD32104440

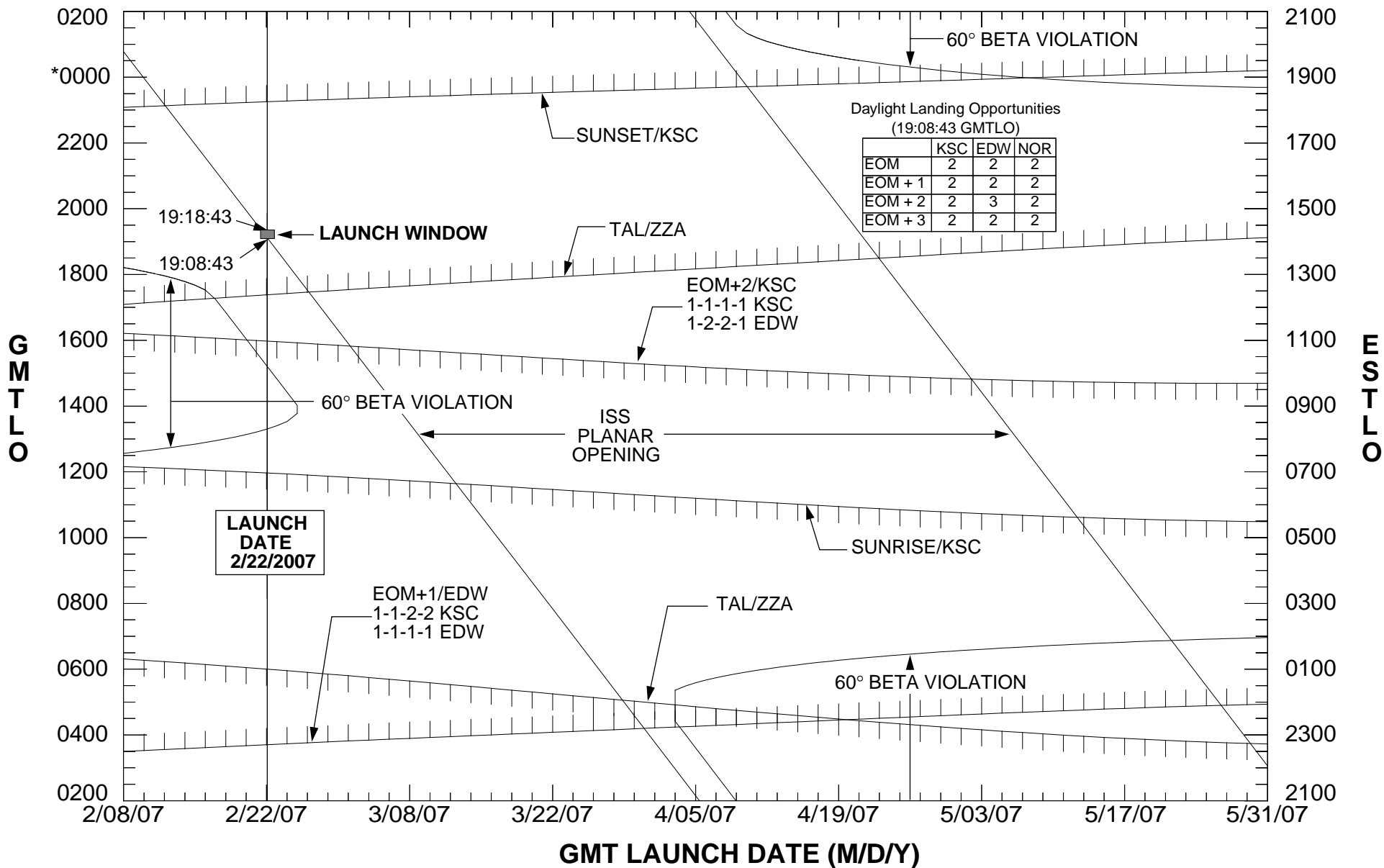
MD CEIL (PORT 1) 9886 -301 CCA (1) ARM KITS (6) LCVG (4) GLOVES (4) SAFER CTRL 85 FT TETHER (2)	MD CEIL (PORT 2) 9887 -301 MICRON FILTER (4) MINI WORK STATION DIBD (14) B/U C/L CAMERA
MD CEIL (STBD 1) 9885 -301 CRACK REPAIR RCC HAND TOOLS SPARE DTV VTR SPARE DTV MUX/TOOLS SPARE VIP 1 LCVG (1) B/U	MD CEIL (STBD 2) 9883 -301 TILE OVERLAY (TPL CTB) EWAs (2) GEO BRUSH KIT (2)
MD FLOOR (STBD 2) TBD -TBD RESERVE COLLAPSE EMPTY	MD FLOOR (STBD 1) TBD -TBD COLLAPSE EMPTY
MD FLOOR (PORT 2) TBD -TBD COLLAPSE EMPTY	MD FLOOR (PORT 1) TBD -TBD ISS PHOTO/VID EQUIP ASSY KIT WATER TRANSFER HYGIENE (2 CTBs)

E
F
G
H
B
A
D
C

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 1/29/07 MET (03 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 Delta Launch Site Flow Review

Presenter	Amy Houts-Gilfriche	
Date	11-09-06	

Modification Impact Report

- **Mission Equipment Modifications and Orbiter Modifications analyzed for impacts to OMRSD, LCC, IDC, EMI, Software, and GSE.**
- **A total of 13 MCRs have been approved or are pending approval.**
- **Current MCR impact status:**
 - **No impacts for all six disciplines** **9**
 - **One or more disciplines with impacts, documentation approved and/or pending approval** **3**
 - **MCR 19476 – Improved MLG Tire and Wheel Assembly, S/W Impact**
 - **MCR 19780 – Vehicle Health management System, OMRSD Impact**
 - **MCR 23043 – Delta-P Transducer Removal, OMRSD Impact**
 - **Possible impacts still under review** **1**
 - **MCR 23448 – ECO Sensor System instrumentation is being reviewed for EMI impacts**

MCR/ECP	STAT SITE	ITEM/KIT NUMBER TCTI NUMBER	SEQ EISN NO.	DESCRIPTION / GENERAL REMARKS	PRCB AUTHDATE	PRIO FLT
	PLND 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
	PLND KSC	J5765	0104 000 SPAR	WSB POST FLIGHT TANK OFFLOAD QUANTITY	ORB-0072 R03 2005-03-09	MAND 028
	PLND KSC	J5805A	0104 000 NSW	ORB DOCKING MECHANISM BAYNOTE CONNECTOR PINS INSPECTION APP'VD @ 8/26 DAILY	S052923QFR1 2005-08-26	SCHD 028
	PLND 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
	PLND KSC	J5881A	0104 000 SPAR	LOWER LESS ACCESS CARRIER PANEL POST FLT TORQUE CHECK VERIF	ORB-0072R17 2006-06-05	MAND 028
	COMP 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
	PLND KSC	J5885	0104 000 SPAR	ARROWHEAD TILE INSPECTION	ORB-0072R11 2005-08-16	MAND 028
	PLND 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
	PLND 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	J5904A	0104 000 NSW	ET SHELL "POST DE-MATE" AND "POST FLIGHT" INSPECTION PLAN	S052923UYR1 2006-10-02	MAND 028
	PLND 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	J5930CR1	0104 000	ORBITER STRUCTURE IML SURFACE CORROSION SAMPLING INSPECTION	S052923WQR1	MAND
KSC		NSW		2006-08-01	028
PLND	J5968	0104 000	INSPECTION OF MPS LH2 FEEDLINE GIMBAL JOINT FLOWLINERS ON	ORB-0072R14	MAND
KSC		SPAR	OV-103, OV-104, AND OV-105	2005-10-11	028
PLND	J6103	0104 000	POST FLIGHT VERNIER THRUSTER PC TUBE FLUSH	ORB-0072R18	MAND
KSC		SPAR		2006-06-20	028

MCR/ECP	STAT SITE	ITEM/KIT NUMBER TCTI NUMBER	SEQ EISN NO.	DESCRIPTION / GENERAL REMARKS	PRCB AUTHDATE	PRIOR FLT
-----	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
	PLND KSC	J6115	0104 000 SPAR	MICRO INSPECTION OF SMALL WIDTH AFRSI BLANKETS	ORB-0072R22 2006-07-27	MAND 028
	PLND KSC	J6116	0104 000 SPAR	AMES GAP FILLER REMOVAL AND REPLACEMENT	ORB-0072R26 2006-08-16	MAND 028
	PLND 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
	PLND KSC	J6119	0104 000 SPAR	ET DOOR CAVITY SCREED EVALUATION	ORB-0072R28 2006-08-22	MAND 028
	AUTH KSC	J6149	0104 000 SPAR	INSPECTION OF OV-104 RADIATOR RETRACT CONTAINER ASSEMBLIES	ORB-0072R29 2006-08-22	MAND 028
	PLND KSC	J6150	0104 000 SPAR	INSPECTION BOOM ASSEMBLY (IBA) POST FLIGHT INSPECTION	ORB-0072R33 2006-08-29	MAND 028
	PLND KSC	J6151A	0104 000 SPAR	REMOVAL & REPLACEMENT OF OV-104 WINDOWS THERMAL PANE 1 - 6 FOR OV-104 FLT28 & NEW INSPN TECHNOLOGY EVALUATION	ORB-0072 R35 2006-09-18	MAND 028
	PLND KSC	J6152	0104 000 SPAR	POSTFLIGHT THERMOGRAPHY INSPECTION ON RCC	ORB-0072R36 2006-09-26	MAND 028
	PLND KSC	J6153	0104 000 SPAR	MMOD POSTFLIGHT INSPECTION	ORB-0072R30 2006-08-22	MAND 028
	PLND KSC	J6154	0104 000 SPAR	POSTFLIGHT DAMAGE 3-D ACQUISITION	ORB-0072R31 2006-08-23	MAND 028
	AUTH KSC	J6155	0104 000 SPAR	MC284-0469-0027 HYD THRUST VECTOR CONTROL ISO VALVE X-RAYS	ORB-0072R32 2006-08-23	MAND 028
	PLND KSC	J6156	0104 000 SPAR	OV-104 PLB CAMERA B REMOVAL AFTER STS-115	ORB-0072R34 2006-09-06	MAND 028
	PLND	J6162	0104 000	PERFORM MEASUREMENTS ON OBSS MPM SHOULDER & X-GUIDE ON IBA	ORB-0072 R38	MAND

KSC		SPAR		2006-10-23	028
AUTH	J6164R1	0104 000	REMOVAL OF SOLID STATE STAR TRACKER S/N 4 FROM OV-104	S052923ZH	MAND
KSC		NSW		2006-10-23	028
AUTH	J6173	0104 000	EVALUATION OF CERAMIC INSERT PLUGS	ORB-0072 R39	MAND
KSC		SPAR		2006-10-26	028

MCR/ECP	STAT	ITEM/KIT NUMBER	SEQ	DESCRIPTION / GENERAL REMARKS	PRCB	PRIO
-----	SITE	TCTI NUMBER	EISN NO.	-----	AUTHDATE	FLT
011620	APPD KSC	TCTIVXX11620REF	0104 020	SHUTTLE TURNAROUND PROCESSING (EOTF BUCKET FOR FLT28) RESERVE SEQ # FOR FLT 28	NOT REQD	MAND 028
017177	PLND KSC	TCTIV2017177REF	0104 001	DRAG CHUTE L/H SIDEWALL BLANKET INSTALLATION ADDED PER V070-200002 H05- STS-117	S115117C 2006-07-28	MAND 028
	PLND KSC	TCTIV3817177REF	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
019780	AUTH KSC	VK70-773604-001	0104 001	MADS PCM TO SSR INTERIM DATA CAPTURE WIRING MOD ADDED BY EDS I/F PER EO V070-778418 E04 REPLACES PLACE HOLDER 019780,0104,0	S115117CR2 2006-10-11	MAND 028
019835	PLND KSC	VK70-776054-001	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	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	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 KSC	TCTIV7923043REF	0104 000	DELTA-P TRANSDUCER REMOVAL-AVIONICS AFT FUSE WIRING ADDED PER MCR BASIC/MOVED TO STS-117 FROM TBD, (REF. PRCBD S042013EG)	S115116C 2003-01-29	MAND 028
	AUTH KSC	VK70-410467-001	0104 000	DELTA-P TRANSDUCER REMOVAL MPS MOD INSTLN ADDED PER MCR BASIC/MOVED TO STS-115 FROM STS-116 PER REMANIFEST (REF. PRCBD S042013EG)	S115116C 2003-01-29	MAND 028
023227	PLND KSC	TCTIV7923227REF	0104 000	CONNECTOR SAVER REDESIGN (T-0) ADDED BY EDS I/F	S115117C 2006-07-28	MAND 028
023448	PLND KSC	TCTIV3523448REF	0104 000	ECO SENSOR SYSTEM INSTRUMENTATION - BAY 5 & 6 RE-WIRING ADDED BY EDS I/F AND EO V070-775461#D12	S115117CR1 2006-09-01	MAND 028
	PLND KSC	TCTIV7023448REF	0104 000	ECO SENSOR SYSTEM INSTRUMENTATION - DSC OA-C CARD CHANGE ADDED BY EDS I/F AND EO V070-755262#D04, REPLACES PLACE HOLDER 023448,0104,0	S115117CR1 2006-09-01	MAND 028
	PLND KSC	TCTIV7923448REF	0104 000	ECO SENSOR SYS INSTRUMENTATION - INTER-BAY WIRING, BAYS 5 & 6 ADDED BY EDS I/F	S115117CR1 2006-09-01	MAND 028

TOTAL MODS =

49

MCR/ECP	STAT	ITEM/KIT NUMBER	SEQ	DESCRIPTION / GENERAL REMARKS	PRCB	PRIORIO
-----	SITE	TCTI NUMBER	EISN NO.	-----	AUTHDATE	FLT
008385	APPD	TCTIM7108385REF	0001 000	ADDITION OF ELEC. BONDING CABLE REQUIREMENTS	NOT REQD	028
	KSC	NOT REQUIRED				

TOTAL MODS = 1

MCR/ECP	STAT	ITEM/KIT NUMBER	SEQ	DESCRIPTION / GENERAL REMARKS	PRCB	PRIOR
-----	SITE	TCTI NUMBER	EISN NO.	-----	AUTHDATE	FLT
	PLND	B470ECP3789R000	B129 000	RSRM AFT SEGMENT STIFFENER RING FOAM APPLICATION TCTI	S170809R2	
	KAS				2006-08-15	
	INC	FEC A-10352R1	B129 000	ASSEMBLED ETA STUB MOISTURE PROTECTION	S083852B	
	KAS				2006-07-11	
	PLND	FEC RSRM-114	B129 000	ENGR CLARIFICATION OF FIELD JOINT INSULATION J-JOINT	S171216	
	KAS				2006-08-17	

TOTAL MODS = 3

MCR/ECP	STAT	ITEM/KIT NUMBER	SEQ	DESCRIPTION / GENERAL REMARKS	PRCB	PRIO
-----	SITE	TCTI NUMBER	EISN NO.	-----	AUTHDATE	FLT
KLO-1520	COMP KSC	KLO-1520	2052 000 SPAR	INSPECT POGO ACCUMULATOR SUPPLY LINES SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R03 2004-09-21	SCHD 005
KLO-1523	COMP KSC	KLO-1523	2052 000 SPAR	PERFORM LPFTP DISCHARGE DUCT OVALITY CHECKS SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R04 2004-10-19	SCHD 005
KLO-1524	AUTH KSC	KLO-1524	2057 001 SPAR	DYE PENETRANT INSPECT HPFTP SPEED SENSORS (POST STS-114) SSME REMANIFEST, PER PRCBD S115117CR1, 9/1/06	ME-0216B 2005-09-12	SCHD 002
KLO-1531	COMP KSC	KLO-1531	2052 000 SPAR	INSPECT BOLTS AT JOINTS N2.4, N8, N9 & O7.1 SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R05 2004-12-21	SCHD 005
KLO-1534	COMP KSC	KLO-1534	2052 000 SPAR	PERFORM X-RAYS OF THE NOZZLES ON ENGINES SSME REMANIFEST PER PRCBD S0115117CR1, 09/01/06	ME-0191R06 2005-01-07	SCHD 005
KLO-1535	COMP KSC	KLO-1535	2052 000 SPAR	BORESCOPE INSP SELECTED WELDS ON REMAINING LPFTP DISC DUCTS SSME REMANIFEST PER PRCBD S115117CR1, 09/01/06	ME-0191R06 2005-01-07	SCHD 005
KLO-1540	COMP KSC	KLO-1540	2052 000 SPAR	X-RAY ENGINE 2052 NOZZLE AFT MANIFOLD SSME REMANIFEST PER PRCBD S115117CR1, 09/01/06	ME-0191R07 2005-04-27	SCHD 005
KLO-1549	COMP KSC	KLO-1549	2057 000 SPAR	INSPECT ENGINE 2057 CONTROLLER COOLANT DUCT (POST STS-114) SSME REMANIFEST, PER PRCBD S115117CR1, 9/1/06	ME-0216B 2005-09-12	SCHD 002
KLO-1552	COMP KSC	KLO-1552	2057 000 SPAR	DYE PENETRANT INSPECT HPFTP SPEED SENSORS (POST STS-114) SSME REMANIFEST, PER PRCBD S115117CR1, 9/1/06	ME-0216B 2005-09-12	SCHD 002
KLO-1554	COMP KSC	KLO-1554	2052 000 SPAR	INSPECT LIQUID AIR INSULATION ON SELECTED HPFTPS SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R12 2005-09-12	SCHD 005
	COMP KSC	KLO-1559R1	2052 000 SPAR	MEASURE CONTROLLER/NISIS INTERFACE AREA ON SELECTED ENGINE SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R14 2006-02-10	SCHD 005
	COMP KSC	KLO-1559R1	2057 000 SPAR	MEASURE CONTROLLER/NISIS INTERFACE AREA ON ENGINES DATA NO LONGER REQUIRED. SSME REMANIFEST, PER PRCBD S115117CR1, 9/1/06	ME-0191R14 2006-02-10	SCHD 002
	COMP KAR	RS007001-441	2052 000	POSITION 1 OR 2 BLK II FLIGHT ENGINE NOZZLE CONFIGURATION SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191B 2001-10-12	SCHD 005
	AUTH KAR	RS007001-441	2059 000	POSITION 1 OR 2 BLK II FLIGHT ENGINE NOZZLE CONFIGURATION	ME-0223B 2006-10-02	SCHD 001
	COMP KAR	RS007001-451	2057 000	POSITION 1 OR 3 BLK II FLIGHT ENGINE NOZZLE CONFIGURATION ENGINE 2057 RE-ID TO -451 PER PRCBD S060983T.	S060983TR1 2006-06-06	002

1289	INC KAR	2R053812-010	2052 000	INSTALL HPFTP/AT AND ASSOCIATED HARDWARE & MODIFICATIONS SSME REMANIFEST, PER PRCBD S0115117CR1 DTD 009/01/06	ME-0191B 2001-10-12	SCHD 005
1362	INC KAR	2R053812-040	2052 000	OPOV FLOW REQUIREMENT CHANGE AND PROCESS IMPROVEMENTS INITIATED PER TCTI E41-01362-01 SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191B 2001-10-12	SCHD 005

MCR/ECP	STAT SITE	ITEM/KIT NUMBER TCTI NUMBER	SEQ EISN NO.	DESCRIPTION / GENERAL REMARKS	PRCB AUTHDATE	PRIO FLT
1361	INC KAR	2R053812-050	2052 000	SSME BLOCK II MODIFICATIONS, G6 SHIM SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191B 2001-10-12	SCHD 005
1355	AUTH KAR	2R053812-060	2052 000	BLOCK II LOOSE LIQUID AIR INSULATOR REDESIGN SSME REMANIFEST, PER PRCBD S115117CR1, DTD 09/01/06	ME-0191B 2001-10-12	SCHD 005
1379	INC KAR	2R091522-010	2052 000	MAIN FUEL VALVE CAP TO HOUSING JOINT REDESIGN SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191B 2001-10-12	SCHD 005
1388	INC KAR	2R091532-010	2052 000	OPB ACCELEROMETER RELOCATION TO HPFTP/AT G6 PUMP FLANGE SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191B 2001-10-12	SCHD 005
1402	INC KAR	2R091538-010	2052 000	PCA AFT ATTACHMENT NUT INSTALLATION REQUIREMENTS SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R02 2002-03-27	SCHD 005
1414	COMP RKDN	2R091543-010	2052 000	UPDATE ENGINE ADP FOR REVISED HPFTP MASS CHARACTERIATICS AUTHORIZED PER TCTI E41-01414-01. SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R10 2005-06-29	SCHD 005
1440R2	INC KAR	2R091544-030	2052 000	BLOCK II HPFTP 2 PIECE INSPECTED SPEED SENSOR SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R11 2005-06-29	SCHD 005
	INC KAR	2R091545-010	2052 000	HPFTP BEARING COVER LAI REDESIGN SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R09 2005-04-28	SCHD 005
1439	INC KAR	2R091548-010	2052 000	HPFTP SINGLE PIECE SPEED SENSOR RETROFIT SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R11 2005-06-29	SCHD 005
	INC KAR	2R091567-010	2052 000	RETROFIT KIT SSME BLOCK II CONTROLLER RFI FILTER UPGRADE SSME REMANIFEST PER PRCBD S115117CR1, 09/01/06	ME-0191R08 2005-04-27	SCHD 005
1477	INC KAR	2R091569-010	2052 000	LIQUID AIR PROTECTIVE COVERS SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R13 2005-12-20	SCHD 005
	INC KAR	2R091569-010	2057 000	LIQUID AIR PROTECTIVE COVERS SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0216R02 2006-04-26	SCHD 002
1480	AUTH KAR	2R091575-010	2052 000	ADVANCED HEALTH MANAGEMENT ENGINE CONTROLLER	ME-0191R16 2006-09-29	MAND 005
	INC KAR	2R091575-020	2057 000	ADVANCED HEALTH MANAGEMENT ENGINE CONTROLLER	ME-0216R03 2006-09-19	MAND 002
1507	INC KAR	2R091599-010	2052 000	AL TAPING REQUIREMENTS FOR LN2 PRESSURE TRANSDUCER COVERS SSME REMANIFEST, PER PRCBD S115117CR1, 09/01/06	ME-0191R15 2006-04-26	SCHD 005

	INC	2R091599-010	2057 000	AL TAPING REQUIREMENTS FOR LN2 PRESSURE TRANSDUCER COVERS SSME REMANIFEST, PER PRCBD S115117CR1, 9/1/60	ME-0216R02 2006-04-26	SCHD 002
1511	COMP	2R091613-010	2057 000	WEIGHT UPDATES FOR AHMS ENGINE CONTROLLER REF TCTI E41-01511-01	ME-0216R04 2006-09-22	SCHD 002
	AUTH	2R091613-010	2052 000	WEIGHT UPDATES FOR AHMS ENGINE CONTROLLER REF TCTI E41-01511-01	ME-0191R16 2006-09-29	MAND 005

TOTAL MODS = 35

FLIGHT-SPECIFIC
Approved STS-117 OMRS Waivers and Exceptions

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

S053298HY OMRSD WAIVER REQUEST -
WK10502 (A) BODY FLAP DRIVE RATE TEST
(WK10502)

104

027 031

Approved STS-117 OMRS Waivers and Exceptions

WVR	ELEMENT	PRCBD NUMBER WAIVER# (STAT)	ABSTRACT RAS REQUIREMENTS	EISN PAYLOAD	STB END
+	W	RCS	S053298JF WK10503 (A)	OMRSD WAIVER REQUEST - RRCS OX TANKOUTLET TRANSDUCER ACCURACY (WK 10503)	0021 034 042

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+-----+
| °                ° Waivers ° Except ° Deviat ° Cannib ° Total ° |
+-----+-----+-----+-----+-----+-----+
| ° Total Extracted °      8 °      4 °      0 °      0 °      12 ° |
+-----+

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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