Item # 3

Schwarz-1, Henry

From: Breznik-1, Greg
Sent: Wednesday, December 18, 2002 1:17 PM
To: Alexander-1, Tamara; Aragona-1, Peter; Beil-1, Bob J.; Boatright, Les J.; Cahalan, Pat; Cline-1, Zach K.; DeHart, Don E.; Diaz-1, Al; Dibbern-1, Andreas; Galas-1, Scott; Glochick, Greg; Houts-Gilfriche-1, Amy; Huff, Joy N.; Koenn-1, Robert; Livermore, Steve F.; Lockwood-1, Scott; Luther, Brian; McClellan, Wayne W.; Menendez-1, Alfredo; Najarro-1, Julio; Nguyen-1, Hung T.; Nguyen-1, Johnny; Poffenberger-1, Brad; Rivera, Jorge; Rosado-1, Pete; Speece-1, Bob; Stees-1, Diane S.; Stevens-1, Richard; Summers-1, Rob; Swichkow-1, Steve; Townsend-1, Steve (NASA); Zapata-1, Edgar; Blackwelder-1, Rick; Bundy, Andy; Bursian, Henry; Chitko, Pete J.; England-1, Douglas A; Hawkins, Tyrell; Kelley-1, David; Mizell-1, Richard; Postell-1, Arnold; Schechter-1, David R; Sullivan-1, Steve; Thompson-1, Gary; Velez-1, Ivan; Wilhoit-1, Mike; Wilson-1, Tami
Subject: FW: STS-107 S0017 L-1 Crew briefing

The L-1 Briefing will be tomorrow, Thursday the 19th in O&C room 1055. A bus will be provided for those interested and will arrive at the OSB about 8:10. Attached is a copy of the briefing.

-----Original Message-----
From: Coyne, James M [mailto:james.m.coyne@usago.ksc.nasa.gov]
Sent: Wednesday, December 18, 2002 8:34 AM
To: Breznik, Greg S ; Hampton, John O; Glass, James R
Subject:

STS-107 S0017 L-1 Final.ppt

USAGO Shuttle Engineering

Kennedy Space Center, Florida

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0017)

System / Presenter

INTG: Jim Coyne
NASA: Greg Breznik

The purpose of this briefing is to provide the STS-107 Flight Crew with a summary of the OV-102 Test Engineering items that have occurred since completion of Flight 27, STS109. This includes the STS-109 In-Flight Anomalies and major problems which occurred during landing, OPF, VAB, and Pad testing to date. Also included are any new unexplained anomalies, both closed and potential, that were encountered this flow. Because this package is intended specifically for the Flight Crew, only those items which were thought to be of interest to the crew are included. All questions concerning this briefing should be coordinated through the Vehicle Integration Test Team (VITT) and the USA Test Project Engineering office/NASA Project Engineering offices.

Jim Coyne
USA Test Project Engineer
OV-102

Greg Breznik
NASA Orbiter Project Engineer
OV-102

United Space Alliance

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0017)

System / Presenter

INTG: Jim Coyne
NASA: Greg Breznik

SYSTEM REPRESENTATIVES (* DENOTES SYSTEMS WHO WILL MAKE PRESENTATIONS)

	SYSTEM	USA	NASA
*	INTEGRATION (TPE)	Jim Coyne	Greg Breznik
*	PAYLOADS	John Graves	Mike Bruder
*	APU	Jason Bachelor	Al Garces
*	COMM	Amir Helmy	Chris Sally
	DPS	Roy Uyematsu	Bob Panzak
*	ECLSS	Tim Saunders	Harry Johnson
*	EFC	Dan Biechler	Al Menendez
	EPDC	David Watts	Hung Nguyen
	FLIGHT CREW SYSTEMS	Kevin Cunningham	Brad Poffenberger
	FLIGHT SOFTWARE	Paul Rahnefeld	Steve Livermore
	FUEL CELLS/PRSD	Tom Mears	Mike Squire
*	G&N	Steve Pancoast	Al Menendez
*	HYD	Steve Seberger	Andreas Dibbern
	INST	Russ Heinbockel	Bill Fuerman
*	MEQ	Beth Kline	Les Boatright

STS-107 / OV-102 / FLT 28
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INTG: Jim Coyne
NASA: Greg Breznik

SYSTEM REPRESENTATIVES (* DENOTES SYSTEMS WHO WILL MAKE PRESENTATIONS)

	SYSTEM	USA	NASA
*	MPS	Mike Palmer	Tammy Alexander
*	NAV / KuBAND	Dave Mickler	Peter Aragona
*	OMS/RCS	Steve Barnhardt	Johnny Nguyen
	ORBITER ENGINEERING	Steve Anderson	Greg Breznik
	PAYLOAD TEST	Cedric Perry	James Minnear
	PVD	Susan Hunt	Pete Rosado
	PYRO	Mike Palmer	Steve Townsend
	RMS	Rick Cohen	Al Diaz
	RSS	Craig Chesko	Jim Silviano
*	SRE	Jim Glass	Jim Silviano
	SSME	E.W. Hall	Tammy Alexander
	SSMEC	John McClelland	Brian Luther
*	ROCKETDYNE	Mike Cosgrove	Brian Luther
	STR	Jeff Lembeck	Rob Summers
	TCS	Manny Falero	Joy Huff
	TPS	Bill Bailey	Jennifer Gill

USAGO Shuttle Engineering

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MLP 2 / PAD 39A

ET-93

FLT S/W VERSION
PASS: OI-29

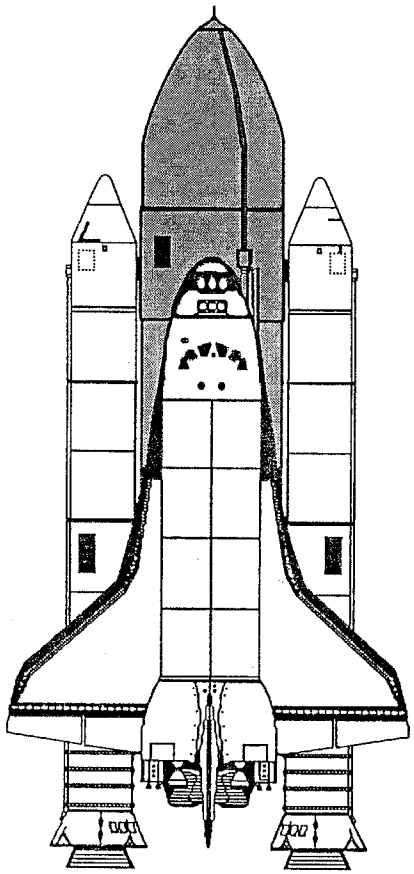
SRB: BIO-116
RSRM: 88

OMS/RCS LOAD INFO (Projected Load)

	FUEL	OXID
LOMS	3260 lbs (66.6%)	5410 lbs (67.2%)
ROMS	3260 lbs (66.6%)	5410 lbs (67.2%)
LRCS*	962 lbs (100.4%)	1523 lbs (100.4%)
RRCS*	962 lbs (100.4%)	1523 lbs (100.4%)
FRCS*	832 lbs (81.5%)	1343 lbs (82.7%)

*Includes Manifold Quantities

FRC2: FLT 28
LP05: FLT 17
RP05: FLT 16



TACAN 1: GOULD
TACAN 2: GOULD
TACAN 3: GOULD

NO RMS

2 EMUs (Planned)
Internal Airlock

FUEL CELL	RUN TIME (HRS) STACK	RUN TIME (HRS) REG
FC 1, s/n 117	1709	342
FC 2, s/n 111	1419	1419
FC 3, s/n 103	1702	342

(OPERATIONAL LIFE - 2700 HRS)
PRSD TANK SETS: 9

SSME	FLT	LAST FLOWN
1 - 2055-2	1	SSC
2 - 2053-2	5	STS-109
3 - 2049-2	7	STS-108

STS-107 / FLT 28 INTEGRATED STACK

USA
United Space Alliance

STS-107/SpaceHab RDM/Freestar L-1 Day Crew Briefing (S0017)

PIE: John Graves
NASA: Mike Bruder

PAYLOAD CONFIGURATION DURING TCDT

- SpaceHab RDM and Freestar are installed for S0017.
- There are 14 payload Launch Commit Criteria (LCC). RDM 01-03 are safety critical and are called by KSC, while RDM 04-14 are mission success and called by SpaceHab.
- The PTC, DLES, and PTD will support TCDT.

LOST AND FOUND ITEMS

- SpaceHab FOD bag lost

  Multiple extensive investigations of the SpaceHab RDM module did not reveal the FOD bag. The bag was misplaced during the powered up experiment operations during a time of high traffic into and out of the module. SpaceHab's internal PR investigated the issue and was closed as "No Constraint to Flight" with the problem most likely being an error in bookkeeping the ingress/egress log

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW

Problem: Unexpected activation of SpaceHab RDM DMU during DTV activation.
Cause: DTV activation to support the Freestar IVT required the activation of the Orbiter P/L Aux A bus. The P/L Aux A bus is also used by SpaceHab RDM, along with PL Aft B to provide unswitched power to the SpaceHab RDM emergency bus. Activation of the SpaceHab RMD emergency bus resulted in the unexpected (but explained) activation of the RDM DMU.
Resolution: Post test switch tag-out protocols for P/L Aux A and PL Aft B were implemented to preclude application of power to the SpaceHab RDM emergency bus.
Impact: None, RDM functioned as designed

Problem: MEIDEX/SEKAI video on wrong AFD monitor, MEIDEX cable labeling incorrect.
Cause: MEIDEX/SEKAI video was displayed on AFD Monitor #2 instead of AFD Monitor #1
Resolution: Troubleshooting determined that the connections of flight cable 528-21156-1 to Orbiter panel O19 and panel M058F were swapped due to incorrect harness labeling on connectors. The connectors were swapped and the testing was successfully completed.
Impact: None. Flight crew equipment relabeled the harness prior to flight.

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW

Problem: AUX 2 DC ON command did not work as expected.
Cause: Command data words incorrectly defined in the ground and flight software
Resolution: In conjunction with SpaceHab, the correct command data word was determined and issued manually from the C1 console. The correct command produced the expected result and the response was verified.
Impact: Low. The command is not required for mission operations. The capability is in place to issue the correct command word from the ground should the need arise during flight. Flight software DR # 108940 submitted to JSC for assessment and correction on follow-on flights.

Problem: SPEC 225 Item 10 (SE WPP 2 ORB AFT) did not produce the expected results.
Cause: Command data words incorrectly defined in the flight and ground software
Resolution: In conjunction with SpaceHab, the correct command data words were identified then issued manually from the C1 console and the response was verified.
Impact to Flight: Low. The command is not required for mission operations. The capability is in place to issue the correct command word from the ground should the need arise during flight. Flight software DR # 108940 submitted to JSC for assessment and correction on follow-on flights

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW

Problem: SpaceHab RDM forward link not received at SpaceHab RDM.

Cause: During the verification of the interface between Orbiter KuSP Channel 2 and the SpaceHab RDM , the uplink commands were not received at the RDM Experiment Data System Main Unit (EDSMU)

Resolution: Troubleshooting discovered that the clock signal from the Orbiter KuSP to the forward link had reversed polarity. SpaceHab engineering modified the J13 connector on the harness to the EDSMU to swap the pins for the clock signal. The retest of the interface was successful, and the SpaceHab drawings were updated for this flight.

Impact: None. The forward link system is operating properly. SpaceHab's review of their as-built drawings did not indicate the swapped clock signal was in their side of the interface. PR VT-STS-107-PLD-P010 was opened to continue to track this issue. SpaceHab will perform testing at ESTL approximately one week prior to launch that may indicate where the clock signal swapping occurred. Pending the resolution of the ESTL testing, this PR will be deferred and testing at the SIP interface will be performed post flight to determine the location of the signal swapping. The forward link system is fully functional and ready for flight.

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0017)

System / Presenter

APU: Jason Bachelor
NASA: Al Garces

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

Problem: On orbit, APU 3 fuel pump seal cavity drain line pressure began to decay **(MER-05)**.
Cause: Problem isolated to chloride corrosion on the APU #3 drain line.
Resolution: Drain line removed, replaced and new line successfully leak checked.
Impact: None

Problem: During re-entry APU #2 exhaust gas temp #1 (EGT) was erratic **(MER-18)**.
Cause: Problem isolated to intermittent open circuit in sensor.
Resolution: EGT was removed, replaced and successfully retested.
Impact: None

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW

None

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW

None

MISCELLANEOUS SYSTEM ITEMS

None

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

None

SIGNIFICANT SYSTEM MODIFICATIONS

Description: For this mission Camera D has been mounted on the SpaceHab aft bulkhead on the port side.
Reason: This will allow viewing of FREESTAR during on orbit operations.
Impact: Camera's A and D will not be facing each other during the mission.

Description: The 7 WVS S-Band antenna have been removed from the PLB for this mission.
Reason: The power consumption to keep the heaters from damage due to the environment on this flight is prohibitive.
Impact: The WVS transceivers are installed but their heaters will remain powered off via the Wireless Video Heater switch on panel A7U.

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW

None

MISCELLANEOUS SYSTEM ITEMS

None

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

Problem: On orbit the FCL1 Aft Cold plate flow decreased from 304 lb/hr to 226 lb/hr **(MER-01)**
Cause: Problem was isolated to gold braze preform FOD blockage at AVBAY6 inlet orifice.
Resolution: The freon system was deserviced and line FOD removed. FCL's were re-serviced and successfully leak checked.
Impact: None

Problem: On orbit the FES Accumulator/HI-Load Feed line B heater failed off **(MER-14)**.
Cause: Problem was isolated a thermal switch failure
Resolution: The switch was removed, replaced and successfully retested.
Impact: None

Problem: On orbit FCL1 and 2 Evaporator Outlet Temperature Diverged **(MER-20)**
Cause: Occurred during FES water dumps in-flight
Resolution: FCL2 FES outlet sensor replaced due to damage caused during FCL flow degradation troubleshooting. Ambient status check confirmed temperature transducers meet requirements to be accurate within +/-3% full scale. Ramp test indicated no response lag and both transducers tracked at the same rate.
Impact: None

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0017)

System / Presenter
ECLSS: Tim Saunders
NASA: Harry Johnson

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW

Description: The H2O PACK Line has been installed.
Reason: To support SpaceHab Cooling.
Impact: None

Description: Airlock/Tunnel Adaptor Ducting installed.
Reason: SpaceHab Cooling air cooling.
Impact: In-flight reconfiguration will be required.

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW

None

MISCELLANEOUS SYSTEM ITEMS

None

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0017)

System / Presenter
EFC: Dan Biechler
NASA: Al Menendez

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

Problem: On Orbit during NC2 burn, Channel C output from the forward Translation Hand Controller (THC) dropped from ON to OFF before channels A and B causing RM to deselect Channel C **(MER-10).**
Cause: The THC had not been firmly pulled out to the hard stop and was consequently released slowly, allowing the THC switches to loose contact at different times.
Resolution: After extensive testing of other THC's, this was found to be a characteristic of all THC's. The ON-to-OFF switch tracking time variation is larger than the OFF-to-ON requirement and is a normal characteristic of the THC's. All THC's switch normally when the grip is moved to hard stop and released cleanly. A note was added to the SODB to document the possibility of significant switching time differences if the grip is held somewhere between null and hard stop.
Impact: None

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW
None

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW
None

MISCELLANEOUS SYSTEM ITEMS
None

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0017)

System / Presenter

EMU: Krisine Wilson
NASA: Greg Breznik

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

Problem: During EVA Preps the Crew reported EMU #1 had a water leak into the PLSS **(MER-19).**
Cause: Voltage transients from the dual power supply and DPSB battery charger resulted in the feedwater shutoff solenoid valve inadvertently energizing and opening.
Resolution: EMU Battery charger replaced with redesigned –0004 model which has additional clamping circuitry.
Impact: None

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW

None

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW

None

MISCELLANEOUS SYSTEM ITEMS

None

DISPOSITION OF STS-102 IN-FLIGHT ANOMALIES

None

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW

None

SIGNIFICANT PROBLEMS / DEFERRALS / UNEXPLAINED ANOMALIES THIS FLOW

None

MISCELLANEOUS SYSTEM ITEMS

Description: During teardown inspections of a body flap power drive unit (PDU) actuator removed from OV-104 in 1998 internal corrosion has been discovered.
Impact: It is currently planned to remove an OV-103 PDU actuators (fleet leader) this week and send it for inspections.

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

None

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW

Description: The Digital Television (DTV) system was installed on Panel L10. During testing it was revealed that if DTV MUX is powered down in Active mode (labeled VTR DNLK for this mission) 30 seconds is required in VTR DNLK mode upon it is power up before switching it to Bypass mode (labeled SH PL DATA for this mission).

Reason: Updates orbiter video to new digital standards.

Impact: New video capability using KU P/L MAX on KU Channel 3. Channel 3 will be shared with SpaceHab for this mission.

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES THIS FLOW

None

MISCELLANEOUS SYSTEM ITEMS

None

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

Problem: On Orbit the crew attempted to open the internal airlock hatch, or "A" hatch, they reported difficulty moving the actuator locking tab out of the locked position, and could not unlatch the hatch. Crew troubleshooting with actuator handle was able to unlatch the hatch **(MER-02).**
Cause: Ground inspections found binding was in the handle release/lock tabs. The handle was disassembled and severe gouging from the ball detents was found on the release that was the cause of the binding.
Resolution: The A-hatch actuator was removed, replaced, re-rigged and successfully retested.
Impact: None.

Problem: During de-orbit preps, right vent door 3 was closed and a closed indication was received initially and then went to off when it should have stayed on. The problem repeated during post landing operations **(MER-17)**.
Cause: It is believed that thermal affects in flight along with marginally rigged limit switches can cause an intermittent deactivation of the limit switch.
Resolution: Ground troubleshooting could not repeat the anomaly. This has deferred until a PDU is available for replacement.
Impact: The does not affect the ability of the motor to operate. Once the door is closed, the motor would slip the torque limiter in the actuator (~5 seconds) until the commands were turned off. Motor 2 of the actuator operates nominally.

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0017)

System / Presenter

MEQ: Beth Kline
NASA: Les Boatright

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW

None

SIGNIFICANT PROBLEMS / DEFERRALS / UNEXPLAINED ANOMALIES THIS FLOW

None

MISCELLANEOUS SYSTEM ITEMS

None

DISPOSITION OF STS-102 IN-FLIGHT ANOMALIES

Problem: Post MECO SSME-1 LH2 Prevalve Open A Indicator failed off **(MER-6).**
Cause: Troubleshooting could not repeat the anomaly.
Resolution: This was deferred 1 flight as an unexplained anomaly with the most probable cause an intermittent open circuit. Similar anomalies have occurred on OV102 E-3 LH2 Open B Indicator (two occurrences) and OV104 E1 LH2 Open B Indicator (three occurrences).
Impact: Indicator is redundant to the Open B Indicator. RSLS commands the LH2 prevalves open at T-9.6 seconds and Open A and B Indicators are verified on at T-7 seconds for Engine Ready (one of two is required). Should a failure of the Open A Indicator occur at the time, accompanied by a simultaneous failure of the Open B indicator, a cutoff would occur. These measurements are not used after this point. To date, all failures of this nature have occurred during ascent, post MECO or while personnel were working in the aft fuselage in the area of the subject valve.

Problem: Post MECO the LH2 4" Recirc disconnect slow to close when commanded and the mechanical backup closed it **(MER-07).**
Cause: Problem isolated to mechanical failure of the valve.
Resolution: The LH2 4" Recirc disconnect was removed, replaced and successfully retested. Failure analysis of the valve found damaged bushing causing the valves spring mechanism to hang up.
Impact: None. Should the new valve experience the same failure, the impact would be a backup mechanical closure of the valve during ET separation.

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW

None

SIGNIFICANT PROBLEMS / DEFERRALS / UNEXPLAINED ANOMALIES THIS FLOW

A crack was found in a LH2 engine feedline flowliner on OV104 during SSME installation. Subsequent inspections revealed three cracks on OV102 engine 2 LH2 downstream flowliner. The cracks were weld repaired and the flowliner slots were polished to reduce stress risers that could lead to further cracks. During flowliner inspections, three additional shallow cracks were found on the gimbal to flange weld for two of the LH2 engine feedlines (two on engine 1 and one on engine 2). The cracks were polished out and the polished areas will be re-inspected next flow.

MISCELLANEOUS SYSTEM ITEMS

Description: A crack has been found in the ball of the LO_2 17 inch feedline manifold end ball-strut-tie-rod assembly (BSTRA) on OV103 during routine OMDP inspections.
Impact: This same inspection was performed on OV102 prior to last flight (STS-109) while the vehicle was at Palmdale for OMDP and no anomalies were noted. As a result of the cracked ball, all BSTRA joints on OV103 and OV104 have been inspected (18 total per vehicle, 3 each on the LO_2 and LH_2 17 inch feedlines & 2 each on the LO_2 and LH_2 12 inch SSME feedlines). The LO_2 and LH_2 17 inch feedlines for OV105 have been inspected and the LO_2 and LH_2 12 inch SSME feedlines will be inspected once engines are removed. So far, no other cracks in the fleet have been observed. Design is working on a flight rationale based on these inspections and also performing tests to understand the properties of the materials involved.

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

Problem: On orbit the left OMS quantity gages failed to zero percent **(MER-03).**
Cause: Problem isolated to the LP05 OMS Totalizer power supply failure.
Resolution: Totalizer was removed, replaced and successfully retested. Performance during propellant servicing was nominal.
Impact: None.

Problem: During on orbit RCS hot fire, thruster R3R failed off **(MER-16).**
Cause: Problem isolated to R3R thruster valve failure
Resolution: All RP05 manifold 3 thrusters were removed, replaced and successfully retested.
Impact: None.

SIGNIFICANT SYSTEM MODIFICATIONS

None

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES

None

MISCELLANEOUS SYSTEM ITEMS

None

DISPOSITION OF STS-102 IN-FLIGHT ANOMALIES

None

SIGNIFICANT SYSTEM MODIFICATIONS COMPLETED THIS FLOW

None

SIGNIFICANT PROBLEMS / DEFERRALS / UNEXPLAINED ANOMALIES THIS FLOW

None

MISCELLANEOUS SYSTEM ITEMS:

Description: Post STS-113 launch video review shows an external fire in the 10th bay of SSME-1 nozzle (2050). Fire is thought to be caused by coldwall leakage at a previously accepted location. Coldwall leak fires will extinguish in ~50 seconds due to lack of oxygen. No engine performance degradation was noted during ascent. Post flight visual inspection of coolant tubes and TPS show no anomalies.
Impact: SSME-1 has been removed form OV-105 and is now in the engine shop were leak checks are scheduled. STS-107 nozzles do not have any coldwall leakage.

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

None

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES

None

SIGNIFICANT SYSTEM MODIFICATIONS

None

MISCELLANEOUS SYSTEM ITEMS

Problem: Suspect intermittent Amphonal connector socket contacts on the aft Integrated Electronic Assemblies (IEA). Two connector on each left and right SRB which carry power to SRB Power Busses A and B.
Cause: Manufacturer process anomaly.
Resolution: Demate 4 connectors from AFT Integrated Electronics Assy at PAD-A and inspect (visual with 10x magnification pin insertion/retention test using test pin). Re-mate and perform retest if no anomalies are noted.
Impact: Unknown at this time.

BACKUP CHARTS

USAGO Shuttle Engineering

Kennedy Space Center, Florida

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0017)

System / Presenter

FLT S/W: Steve Velligan
NASA: Steve Livermore

Expected Flight Software Alerts and Messages after Crew Ingress

MMU: Flight Software is OI29 PASS FSW version is 38.01 BFS FSW version is 38.24.B.10 MEDS: IDP S/W Version = 03.01 MDU S/W Version = 04.00

T-TIME	ALERT/MSG	CAUSE OF MESSAGE	CLASS	DETECTED BY: PFS	DETECTED BY: BFS	SEEN DURING: TCDT	SEEN DURING: LCD
T-1H 20Min	SM1 CABIN PRESS	Any or all of these messages can be triggered due to the varying pressure in the crew compartment during the cabin leak checks.	2		X		X
	SM1 CABIN FAN		2		X		X
	SM1 CABIN PP02		2		X		X
	SM1 CABIN IMU		3		X		X
	SM2 AV BAY FAN		3		X		X
T-19 Min (PASS OPS 1 transition)	GNC GRD CK ENA	GNC Ground C/O is enabled for TCDT.	3	X		X	
	BCE STRG 1/2/3 MLS	All 3 MSBLSs are powered off for launch.	3	X		X	X
	F/L/R RCS PVT	The OMS/RCS prop tanks are not at flight pressures for TCDT. The lower pressure causes the PVT and quantity calculations to be outside flight S/W limits.	3	X		X	
	L/R OMS QTY		3	X		X	
T-18 Min (BFS to Run)	206 PL CL 2	Both CL2 and CL3 alarms will occur if Spacehab is powered down for TCDT. Spacehab will be powered up for flight.	2		X	X	
	206 PL CL 3		3		X	X	
T-17 Min (BFS OPS 1 transition)	BCE STRG 1 NSP	NSP 1 is powered off for launch.	3		X	X	X
	SM1 CABIN dp/dt BU	Messages can be triggered if cabin leak checks are continuing.	3		X		X
	SM1 CABIN dp/dt EQ		3		X		X
	F/L/R RCS TK P	OMS/RCS prop tanks not at flight pressures for TCDT.	2		X	X	
	L/R OMS TK P		2/3		X	X	
	MPS PNEU P TK	The MPS pneumatic configuration for TCDT is different than that for flight .	3		X	X	
	MPS PNEU P REG		3		X	X	
	MPS PNEU P ACCUM		3		X	X	
	MPS HE P C/L/R		3		X	X	

United Space Alliance

"Off-Nominal" Cockpit Indications for OV-102/flight 28

This is a chart listing all known or possible OV-102 meter, switch, LRU or display irregularities that the crew may see during the flight. All are caused by deferred hardware problems, operating system peculiarities or by Unexplained Anomalies picked up on this or previous flows.

DESCRIPTION	COCKPIT LOCATION/INDICATION	CAUSE
APU #2 Ready-to-Start TB may be B/P if WSB #2 steam vent temp is less than 130 degf	Panel R2	**Deferred hardware problem:** Heater performance has been marginal
Pushbutton rotary switch plunger may hesitate or bind and requires to be pulled up	Panel R13	**Known hardware funny**

STS-107 / OV-102 / FLT 28
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System / Presenter

INTG: Jim Coyne
NASA: Greg Breznik

Major LRU's replaced due to failure or equipment upgrade during flow 28 processing

System	Component	Reason for Removal & Replacement
COM	Airlock ATU	Low audio during ICOM testing
	Tacan #2	Test status monitor failure
	Comsec #2	Mission key loading problem
	Lexan Covers	CCTV #1 and #2 covers scratched
ECL	AV Bay 4 C/Plate	Coldplate dinged
	IR CO2 sensor	Suspect calibration
EPD	Mid deck F/Light #6	Bulb failure
MEQ	LH & RH ET door PDU's	Low slip torque
	A-Hatch actuator	Faulty actuator
OMS	LOMS Totalizer	Faulty power supply
STR	Windows #5 & #7	Window damaged

LOST/NOT FOUND (FORWARD/MID ONLY)

Item: FWD/Strap
Size: 14.5" Length x .2" Wide

Item: MID/Backshell Tang
Size:

Item: MID/Flashlight pieces (cap, spring, plate)
Size:

Item: MID/Hinge pin from inspection mirror
Size:

Item: MID/14 Blanket buttons
Size: .9" diameter