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STS-090 (OV-102,FLT #25) INFLIGHT ANOMALY REPORT

08/26/98

PAGE 1

IFA NUMBER> STS-90-D-01

TITLE:SLUGGISH WORKSTATIONS (ERROR IN SCRIPT STARTUP FILE)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00

 IFA DATE:

IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00

PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00

PRCBD NUMBER: S062130 PHASE:

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
M	GC-02		

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: B.LEGLER JSC-DA8

 2:

0 DESCRIPTION:

PROBLEM DESCRIPTION:

Sluggish workstations throughout the MCC on 4/28/98 (0300L) due to degradation on prime read/write server and MCC LAN segments for approximately two hours

RESOLUTION:

Documented as AR# 659162

A modification during the flight to the startup script for the performance monitoring tool spawned multiple data collection queries on all OPS workstations and servers

All queries from the monitoring program were stopped and service returned to normal

Performance monitoring tool was not reactivated for the remainder of the flight

FORWARD PLAN

A management initiated review with all employees will reemphasize facility operational support and CM procedures
User scripts/datafiles and facility scripts were not under "physical" configuration management control
Planning to lockdown "facility" scripts (Performance, OS) for this flight

LONG TERM

Investigation in work to categorize all MCC scripts and ensure CM procedures are in place for each category
A follow-up review of all MCC Policies and Procedures will be completed after STS-94

RECOMMENDATION:

Track as a Program IFA-MCAR to be initiated and worked with MOD

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IFA NUMBER> STS-90-P-01

TITLE:VFEU ERROR LIGHTS

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00

IFA DATE:

IFA STATUS: OPEN

ELAPSED TIME: 000 : 00.00.00

PRACA STATUS: UNKNOWN

HOUSTON TIME: 00.00.00

PRCBD NUMBER: S062130

PHASE:

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER

P P-01

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: E.JUNG JSC-MT

2:

0 DESCRIPTION:

The four fish package TDPU alarm lamps are illuminated on the Data Interface Unit (DIU). These lights are illuminated when the receiver loses the signal from the transmitter located on the fish. Data gathered over the past day indicates that all transmitters and receivers are working. The reason for the missing data is that the fish are not within a specific contact zone where the receiver will not pickup the transmitter signal.

Partial loss of science due to intermittent data collection.

The VFEUs will be monitored and any actions or IFMs to help the situation will be based on future observation of VFEU activity. Track the VFEU IFA in the SSP Payload Certification of Flight Readiness (COFR) data base to assure final resolution prior to the next planned flight of the VFEU experiment on the STS-95 flight. Action assigned to Ames Research Center/SLO.

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IFA NUMBER> STS-90-P-02

TITLE:VFEU FISH PACKAGE #3 OVER CURRENT/AIR PUMP FAILURE

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 000 : 00.00.00
		IFA DATE:
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN		HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062130		PHASE:

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
P	PYD-02		

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: E.JUNG JSC-MT

2:

0 DESCRIPTION:

The motor current of fish package #3 (inside VFEU #2) air pump increased over nominal limit. The current was slowly climbing and approaching 2 amps.

At approximately MET 01/01:00 the fish package #3 air pump failed and the fish package #4 air pump went from 1/3 duty cycle to 100% duty cycle.

A current draw over 2 amps would cause a "HIGH CURRENT" alarm to be sounded resulting in VFEU shutdown by the current limiter. If the shutdown occurred during crew sleep, the crew would have to get up and reconfigure the VFEU. The reconfiguration would require the crew to disconnect the jumper plug on the VFEU control panel (port J14). This action would override the system software to allow the pump to run at 1/3 duty cycle.

The air pump failure results in no airflow through the fish package #3 artificial lung for replenishing oxygen to the fish water.

The jumper cable reconfiguration was performed prior to crew sleep to drop the air pump duty cycle to 1/3. The result was a decrease in current draw to 1.5 amps (still above nominal) where it has stabilized. This action will prevent the "CURRENT HIGH" alarm from sounding during crew sleep.

The lack of airflow in FP #3 caused by the air pump failure will be resolved by installing a crossover tube from the FP #4 air outlet to the FP #3 air inlet and cutting the interface to the failed pump in

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FP#3. This IFM will allow the FP #4 air pump to provide air circulation in FP #3. The fish packages will be monitored ensuring the fish have an acceptable environment. Actions will be discussed real-time if it is determined that the fish environment needs to be improved.

The VFEU Air Pump Crossover Tube Installation IFM was successfully completed at MET 1/23:25, and subsequent fish package data looks good.

Track the VFEU IFA in the SSP Payload COFR data base to assure final

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IFA NUMBER> STS-90-P-02

TITLE:VFEU FISH PACKAGE #3 OVER CURRENT/AIR PUMP FAILURE

0 DESCRIPTION: (Continued from previous page).

resolution prior to the next planned flight of the VFEU experiment on the STS-95 flight. The failure of the VFEU air pump will require repair or replacement of the air pump prior to re-flight. Action assigned to Ames Research Center/SLO.

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IFA NUMBER> STS-90-P-03

TITLE:VFEU DR ERROR

0 MISSION CONSTRAINT:

SUBS

IFA TIME GMT: 000 : 00.00.00

IFA DATE:

IFA STATUS: OPEN

ELAPSED TIME: 000 : 00.00.00

PRACA STATUS: UNKNOWN

HOUSTON TIME: 00.00.00

PRCBD NUMBER: S062130

PHASE:

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0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER

P PYLD-017

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: E.JUNG JSC-MT

2:

0 DESCRIPTION:

At Met 14:00:18, data recorder (DR) ERROR message number 003 was received from the VFEU Data Recorder. This error caused the DR to run continuously. Nominal operations has the DR operating intermittently to take data sample. THE DR recorded continuously until the end of the tape. The reason for the DR ERROR enunciation is unknown.

Loss of up to 2.75 hours of data collection time for VFEU data. The recorder ran out of tape because the continuous play consumed tape faster than planned.

The DR went back into a nominal data collection cycle after the power was cycled and the tape changed.

Track the VFEU Data Recorder IFA in the SSP Payload COFR data base to assure final resolution prior to the next planned flight of the VFEU experiment on the STS-95 flight. The failure of the VFEU Date Recorder will require repair or replacement of the Data Recorder prior to re-flight. Action assigned to Ames Research Center/SLO.

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IFA NUMBER> STS-90-V-01

TITLE: NSP 2 FAILURE

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IFA STATUS: OPEN IFA DATE: 04/17/1998
PRACA STATUS: UNKNOWN ELAPSED TIME: 000 : 00.03.31
PRCBD NUMBER: S062130 HOUSTON TIME: 13.22.30
PHASE: ASCENT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
K	IPR 93V-0004	M	MER-03
P	CAR 90RF01		

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: J.KREMER/BNA-D/5629221445
2: M.PICKENS BNAH/2812825425

0 DESCRIPTION:

The engine 1 LH2 inlet pressure shifted up about 3 to 4 psia at approximately 107:18:22:30 G.m.t. Similar signatures have been observed on previous flights on other Orbiters. This measurement is primarily used for engineering data during loading. However, it is also used during ascent in the event of a premature engine shutdown to determine if an LH2 dump can be performed through that engine. As a result, this measurement is listed as criticality 1R2 for aborts. There was no impact to the remainder of the flight.

KSC will troubleshoot and the transducer will probably be removed and replaced.

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IFA NUMBER> STS-90-V-03

TITLE:RCRS SHUTDOWN

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 115 : 03.49.46
IFA DATE: 04/24/1998

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IFA STATUS: OPEN ELAPSED TIME: 007 : 09.30.47

PRACA STATUS: UNKNOWN HOUSTON TIME: 22.49.46

PRCBD NUMBER: S062130 PHASE: ON-ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER

K IPR 93V-0013 M EECOM-02

M MER-14 P CAR 90RF03

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: D.SANDERSFELD/BNAD/3772

2: C.HOFFMAN/BNAH/5121

0 DESCRIPTION:

The RCRS shutdown while on controller 2. The crew reconfigured the RCRS to controller 1, but it too shut down. The crew was told to use LiOH canisters for carbondioxide removal during their upcoming sleep period. Flight data was reviewed and a fault tree was developed to investigate the cause of the shutdown. An IFM was subsequently developed to recover usage of the RCRs. The IFM isolated a check valve which was believed to be leaking cabin air into the RCRS system. The isolation was regained by disconnecting the outlet hose from the check valve and covering the fitting with aluminum tape. In addition, power was removed from the compressor since it is in the flow path blocked by the IFM procedure. Following the IFM, the RCRS was activated at 115:20:43 G.m.t. using controller 1. RCRS performance was as expected in light of the IFM modifications. The loss of the RCRS ullage save operations resulting from the compressor being unpowered had no mission impact.

The RCRS will be removed from the vehicle and shipped to the vendor for repair. The RCRS is not being flown on STS-93.

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IFA NUMBER> STS-90-V-04

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TITLE:FES SHUTDOWNS

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 111 : 02.06.00
 IFA DATE: 04/20/1998
 IFA STATUS: OPEN ELAPSED TIME: 003 : 07.47.01
 PRACA STATUS: UNKNOWN HOUSTON TIME: 21.06.00
 PRCBD NUMBER: S062130 PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
K	IPR 93V-0012	M	EECOM-01
M	MER-08	P	CAR 90RF04

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: S.NGUYEN/BNAD/1327
 2: D.VESSELKA/BNAH/40126

0 DESCRIPTION:

The flash evaporator system (FES) primary A controller shut down at approximately 111:02:06 G.m.t. At that time, the FES inlet temperatures were averaging around 48 deg F. The crew restarted the FES primary A controller 4 minutes after the shutdown occurred. The restart was successful, and the FES went into standby at 111:02:35 G.m.t.; however, the FES failed to come out of the standby mode. At 111:03:13 G.m.t., the crew switched from the primary A to the primary B controller. The FES gained control for 9 minutes on the primary B controller and then shut down. The FES core flush procedure was implemented. After the flush procedure was completed, the FES primary B controller was successfully restarted. The FES topping duct heaters were placed on heater string A/B for the duration of the crew sleep period and was reconfigured to heater string A following the sleep period.

It is believed that the most probable cause of the shut-down was a rapid FES heat-load transient that occurred while in the -ZLV+YVV water-dump attitude. The FES heat load approached 30,000 Btu/hr, the on-orbit SODB

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limit, and dropped off rapidly, This transient resulted in the initial formation of ice in the FES topper core which grew in size and eventually lead to the shut-down. Note that the FES is certified to handle a transient of the magnitude seen. The Orbiter water-dump attitudes were changed from -ZLV+YVV to +ZLV+YVV to preclude the FES shut-down conditions from recurring. Also, a planned 14 hour period of -ZLV+YVV near the end of the mission was modified.

A FES primary A controller water dump test was begun at 122:15:33 G.m.t. The test lasted 2 hours 7 minutes. There was no indication of water carryover in the core or icing during the dump. A FES core flush procedure was performed, being completed at 122:18:50 G.m.t. Again, there was no indication of icing. During entry, the FES performed nominally on the primary B controller.

Postflight actions at KSC will include the normal every flow borescope of the FES core. A water sample will be taken from a test port on the topping water valve/nozzle assembly. The test port is located between the isolation valve and the spray valve. If the borescope and water

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IFA NUMBER> STS-90-V-04

TITLE:FES SHUTDOWNS

0 DESCRIPTION: (Continued from previous page).

sample find nothing anomalous, based on the STS-90 performance of the FES, the unit will be considered acceptable to support the STS-93 mission.

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IFA NUMBER> STS-90-V-05

TITLE:WASTE WATER DUMP FAILURE

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 119 : 21.21.00
IFA DATE: 04/29/1998
IFA STATUS: OPEN ELAPSED TIME: 012 : 03.02.01
PRACA STATUS: UNKNOWN HOUSTON TIME: 16.21.00
PRCBD NUMBER: S062130 PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
K	IPR 93V-0010	M	EECOM-03
M	MER-15	P	CAR 90RF05

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: D.SANDERSFELD/BNAD/3772
 2: T.RIVERMAN/BANH/X30004

0 DESCRIPTION:

During a waste water dump, the dump rate declined from about 2% per minute (normal) to about 0.5 %/min, while the nozzle temperatures remained relatively constant (about 75 deg F). The dump was stopped and a nozzle bake-out performed. During the bakeout, the temperature signature did not appear to indicate ice in the nozzle. The dump was re-initiated and the dump rate remained at about 0.5 %/min.

An in-flight maintenance (IFM) procedure was performed at 120:15:08 G.m.t to bypass a potentially clogged urine solids filter located in the waste water dump line. The initial dump rates appeared normal (1.73%/min); however, at 120:15:19 G.m.t the dump rate decreased to near zero. The dump was stopped and the dump nozzle bake out was performed. An additional 17% of quantity was dumped before the dump stopped. A second cycle was attempted, with no corresponding change in tank quantity. A bakeout of the supply and waste water dump nozzles was initiated to determine if ice was present on either nozzle assembly.

No ice was indicated.

In an effort to further confirm the lack of ice on the supply and waste dump nozzles, the Orbiter was placed into a +ZLV+YVV water-dump attitude for two orbits. The nozzle temperature profiles in response to environmental heating were then compared to those under similar conditions earlier in the flight and prior to the dump problems. Again no evidence of ice was indicated.

At approximately 122:10:40 G.m.t, waste water was transferred from the waste tank to a CWC to create enough ullage in the tank to support EOM + 2 days. This transfer was nominal.

A troubleshooting plan for the contingency dump/collection hardware and the vehicle hardware is in place. The plan includes visual inspections, the taking of samples for chemical and particulate analysis, flow testing, and a leak test. If necessary, a nozzle spray test will be performed.

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IFA NUMBER> STS-90-V-06

TITLE:WSB 3 FAILED TO COOL

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 107 : 18.30.00
		IFA DATE: 04/17/1998
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.11.01
PRACA STATUS: UNKNOWN		HOUSTON TIME: 13.30.00
PRCBD NUMBER: S062130		PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
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K IPR 93V-0009

M MER-02

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M MMACS-01

P CAR 90RF02

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: B.VANMETER/BNAD/2228

2: J.WILTZ/BNAH/5343

0 DESCRIPTION:

During ascent, WSB 3 experienced an undercool of the APU 3 lube oil. The APU 3 lube oil return temperature reached 334 deg F (spec is NGT 275 deg F) when the APU was shut down. The controller was switched from A to B when the lube oil reached approximately 300 deg F (107:18:30:46 G.m.t) with no spray cooling observed at that time. APU 3 was shut down at 107:18:32:12 G.m.t., approximately 2 minutes earlier than planned. Data review indicate that no spraying was achieved on either controller.

No cooling and undercools during ascent have been seen previously on this and other WSBS. Typically, this behavior is believed to be caused by ice forming on the WSB spray bars. As a result APU 3 was run during FCS checkout to verify WSB 3 operation. Spraying was not seen on either the WSB A or B controllers. During entry, APU 3 was started at TAEM with WSB 3 configured on the B controller. No spraying was seen on entry and APU 3 was shut down 2 minutes and 28 seconds after touchdown when the lube oil return temperature reached its FDA limit of 290 deg F.

A troubleshooting plan has been developed. Troubleshooting will include visual inspection, OMRSD checkout of the lube oil spray valve, hydraulic spray valve, and the temperature sensors, checkout of the feedline heater circuit, and offload of water from the tank. The WSB will probably be removed and replaced.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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IFA NUMBER> STS-91-E-01

TITLE:MCC PRESSURE CH A FAILED QUAL IN ASCENT

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 000 : 00.00.00
		IFA DATE:
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN		HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062131		PHASE:

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
A	A034085		

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: W.TRAVIS MSFC SSME
 2:

0 DESCRIPTION:
 Main Combustion Chamber (MCC) Channel A failed the qualification check for engine control at engine start +39.16 seconds. This put the engine one failure away from electrical lockup.

Due to this "smart" failure the disqualified channel remained qualified for the MCC Pc low redline. This nullified the redline for the remainder of the flight since the disqualified channel could not go below the low redline if there had been a reason for that response. Sensor disqualification is expected to be caused by a fully shorted or open electrical circuit or one bridge of the same sensor drifting away from the other by 125 psi or more.

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IFA NUMBER> STS-91-K-01

TITLE:SOUND SUPPRESSION LAUNCH DAMAGE

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00

IFA DATE:

IFA STATUS: OPEN

ELAPSED TIME: 000 : 00.00.00

PRACA STATUS: UNKNOWN

HOUSTON TIME: 00.00.00

PRCBD NUMBER: S062131

PHASE:

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER

* *****NONE FOUND***** * *****NONE FOUND*****

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: T.HERST-KSC PRCESS ENGR

2:

0 DESCRIPTION:

Post-launch damage inspections found one of the two clam-shell platforms severely damaged by the SRB blast. These platforms are mounted on the SRB side flame deflectors. Preliminary inspections and analysis indicate that the cause of the damage was due to a retainer pin not being installed. This pin holds the platform in the retracted position required for launch. The platform was free to move out of the stowed position and into the blast.

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IFA NUMBER> STS-91-V-01

TITLE:PRIMARY THRUSTER R2U FAILED

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 153 : 22.15.07

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IFA DATE: 06/02/1998

IFA STATUS: OPEN

ELAPSED TIME: 000 : 00.08.43

PRACA STATUS: UNKNOWN

HOUSTON TIME: 17.15.07

PRCBD NUMBER: S062131

PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
K	RP03-26-0989	M	MER-01
M	PROP-01	P	CAR 91RF01

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: D.PERRY BNA-D 922-4018

2: B.MANHA BNA-H 282-5416

0 DESCRIPTION:

Primary RCS thruster R2U failed off during its first commanded firing following External Tank (ET) separation. During the firing, the chamber pressure did not rise above 12 psia and the thruster was deselected due to this low Pc indication. Both the fuel and oxidizer injector temperatures dropped indicating some flow of both propellants. Full flow is suspected for one propellant and only pilot valve flow from the other propellant. The thruster will remain deselected for the remainder of the mission. The loss of this thruster will not impact the flight.

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IFA NUMBER> STS-91-V-02

TITLE:PRIMARY THRUSTER F2U FAILED OFF

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 153 : 22.15.20
		IFA DATE: 06/02/1998
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.08.56
PRACA STATUS: UNKNOWN		HOUSTON TIME: 17.15.20
PRCBD NUMBER: S062131		PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
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K FRC3-25-0642

M MER-02

M PROP-02

P CAR 91RF02

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: D.PERRY BNA-D 922-4018

2: B.MANHA BNA-H 282-5416

0 DESCRIPTION:

Primary RCS thruster F2U failed off during its first commanded firing following External Tank (ET) separation. During the firing, the chamber pressure did not rise above 18 psia and the thruster was deselected due to this low Pc indication. Both the fuel and oxidizer injector temperatures dropped indicating some flow of both propellants. Full flow is suspected for one propellant and only pilot valve flow from the other propellant. The thruster will remain deselected for the remainder of the mission. The loss of this thruster will not impact the flight.

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IFA NUMBER> STS-91-V-03

TITLE:KU-BAND FAILED TO RADIATE IN CMM MODE

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 154 : 00.15.00

IFA DATE: 06/02/1998

IFA STATUS: OPEN

ELAPSED TIME: 000 : 02.08.36

PRACA STATUS: UNKNOWN

HOUSTON TIME: 19.15.00

PRCBD NUMBER: S062131

PHASE: ON-ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER

K IPR 95V-0004

M INCO-01

M MER-03

P CAR 91RF03

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: B.STEPHENS/BNA-D 53882

0 DESCRIPTION:

After activation, the Ku-Band failed to radiate any RF when placed in the Comm Mode. The operate bit was low. The Ku-Band system power was cycled to off and the activation procedure was performed again with no success. The system operates properly in the Radar Mode. An IFM procedure was performed in an unsuccessful attempt to recover operation of the Ku-Band system in the Comm Mode. The IFM determined that the transmit enable signal, which is produced by the Ku-Band signal processor, was present. It was speculated that this signal may not have been present and the IFM was designed to inject this signal. This indicates that the failure is probably in the deployed electronics assembly.

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IFA NUMBER> STS-91-V-04

TITLE:CAMERA C UNABLE TO PAN AND TILT

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 156 : 02.00.00
IFA DATE: 06/04/1998
IFA STATUS: OPEN ELAPSED TIME: 002 : 03.53.36
PRACA STATUS: UNKNOWN HOUSTON TIME: 21.00.00
PRCBD NUMBER: S062131 PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
K	IPR 95V-0006	M	INCO-02
M	MER-06		

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: B.EMBREY/EV2/X30184
2: E.SANCHEZ KSC 280-5931

0 DESCRIPTION:

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The ground was commanding camera C and observed that it would not pan or tilt. The crew confirmed that the pan/tilt circuit breaker on panel R14:D was in. The crew also confirmed that they could not pan or tilt camera C. The crew cycled the pan/tilt power circuit breaker 5 times in an attempt to clear potential corrosion/oxidation from the circuit breaker contacts. They also cycled the pan/tilt heater circuit breaker. These actions did not recover the pan/tilt function of camera C. Camera D was to be used during the MIR survey instead of Camera C.

KSC will perform on-vehicle troubleshooting then remove and send to the Space Station Processing Facility for checkout.

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IFA NUMBER> STS-91-V-05

TITLE:EXCESSIVE GPC ERROR COUNTS

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 160 : 05.50.00
 IFA DATE: 06/09/1998
IFA STATUS: OPEN ELAPSED TIME: 006 : 07.43.36
PRACA STATUS: UNKNOWN HOUSTON TIME: 12.50.00
PRCBD NUMBER: S062131 PHASE: ON-ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 M DPS-01 M MER-08
 P CAR 91RF07

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: M.WARD BNA-D/922-3372
 2:

0 DESCRIPTION:
 GPC 1 began logging errors at a high rate. In addition, on the next

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hardover from TDRS-W to TDRS-E, the SM GPC (GPC 4) was unable to point antennas to the correct satellite. The antennas continued to be pointed at TDRS-W. The miniature airborne global positioning system receiver (MAGR) was commanded to self-test with anomalous results. The MAGR was powered cycled but did not recover, and the MAGR was powered off. An operations (OPS) transition was performed and it was unsuccessful in that no change in GPC error rate nor any change in the systems management (SM) transferred state vector occurred. Software dumps were performed for GPC's 1 and 4. GPC 1 was then powered off and the G2 freeze-dried GPC (GPC 2) was activated and operated as the single G2 GPC. As soon as GPC 2 took over the guidance, navigation and control (GNC) function, the state vector in the SM GPC began updating. When this occurred the antenna management software resumed selecting the correct antenna and TDRS satellite. The positional vector was previously frozen in the SM GPC, and the antenna management software continuously selected tracking and data relay satellite (TDRS) west. At 160:17:30: G.m.t , an OPS transition was performed to ensure the GPS software was moded to off.

The data analysis determined that once per minute GNC to GPS "aiding" function was halted (see MER-04, MAGR Mission Anomalies). This allowed the GPS vector within the GPC to propagate unbounded, eventually exceeding the maximum limits of an internal software library routine and generating the GPC error counts. As a result, the GNC GPC 1 quit sending state vector data to the SM computer (GPC 4), thus freezing the antenna management software's pointing function.

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STS-091 (OV-103,FLT #24) INFLIGHT ANOMALY REPORT

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IFA NUMBER> STS-91-V-06

TITLE:LOMS BIPROPELLANT VALVE 1 OPEN INDICATION
Page 7

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0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 162 : 16.30.00
IFA DATE: 06/11/1998
IFA STATUS: OPEN ELAPSED TIME: 008 : 18.23.36
PRACA STATUS: UNKNOWN HOUSTON TIME: 11.30.00
PRCBD NUMBER: S062131 PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
K	IPR 95V-0007	M	MER-11
M	PROP-03	P	CAR 95RF08

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: D.PERRY/BNA-D 922-4018
2: S.ARRIETA/BNA-H 282-5436

0 DESCRIPTION:

A dual engine, straight feed OMS burn (OMS-7 for SIMPLEX) was performed. During the burn, the valve 1 position was indicated as 99% open, as expected. At burn completion, the left OMS engine ball valve 1 position indicator only declined to the 96% open position, should be 0% open. It remained at 96% until the next usage of the engine during the deorbit burn. At the beginning of this burn, the valve 1 position indication increased to 98.4% It remained at 98.4% after the burn was terminated.

KSC troubleshooting found the valve to be closed, indicating that there is a failure of the LVDT valve position instrumentation.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 1

IFA NUMBER> STS-92-K-01
TITLE:PIP PIN DEBRIS DOUND ON LO2 FEEDLINE

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 284 : 10.17.00
 IFA DATE: 11/02/2000
 IFA STATUS: CLOSED : 11/02/2000 ELAPSED TIME: 000 : 00.00.00
 PRACA STATUS: CLOSED : CLOSE HOUSTON TIME: 04.17.00
 PRCBD NUMBER: S062159D PHASE: LAUNCH COUNT DOWN
 0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 K IPR 92V-0109
 0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: TERRI HERST - NASA/KSC
 2:

0 DESCRIPTION:
 During the ice/debris team final walkdown, a PIP Pin and tether were seen on the LO2 feedline foam inboard support bracket. The PIP Pin was retrieved after the launch was scrubbed and access was established. A formal investigation team has been established to determine the source of the PIP Pin and to address corrective action for all vertical debris walkdowns.

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STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 2

IFA NUMBER> STS-92-V-01
TITLE:KU-BAND SYSTEM FAILED

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 286 : 14.07.00
 IFA DATE: 11/02/2000
 IFA STATUS: OPEN ELAPSED TIME: 000 : 14.50.00
 PRACA STATUS: UNKNOWN HOUSTON TIME: 08.07.00
 PRCBD NUMBER: S062159D PHASE: ORBITER
 0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 C MER-03 K IPR 102V-0003
 P SPR/CAR92RF03
 0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: RASIK PATEL/BRSS-HB
 2: MARTY O'HARE/BRSS-H

0 DESCRIPTION:
 The Ku-Band system failed to transmit or receive in the communications mode. Troubleshooting consisted of power cycling the Ku-Band system and performing self tests. The power cycle did not recover transmit or receive capabilities and the self-tests failed. During the rendezvous operations, the Ku-Band system did not work in the radar mode. The hardware was configured with gimbals locked and powered off. The antenna was stowed following the EVAs. KSC will perform post flight troubleshooting.

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STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 3

IFA NUMBER> STS-92-V-02
TITLE:ODS C/L CAMERA MISALIGNMENT (CONTRAIINT TO FLIGHT)

0 MISSION CONSTRAINT: STS- 0098 SUBS IFA TIME GMT: 286 : 15.17.00
 IFA DATE: 11/02/2000
 IFA STATUS: OPEN ELAPSED TIME: 000 : 16.00.00
 PRACA STATUS: UNKNOWN HOUSTON TIME: 09.17.00

STS0092.txt

PRCBD NUMBER: S062159D	PHASE:	ORBITER
0 TYPE TRACKING NUMBER	TYPE	TRACKING NUMBER
C MER-04	P	SPR/CAR 92RF04

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: D. T. TO/BRSS-HB
 2: KEN BROWN - NASA/JSC

0 DESCRIPTION:
 Prior to docking the crew called down that the primary ODS C/L camera was misaligned. The monitor generated crosshair varied/moved as the camera was zoomed. A back-up camera installed, and the problem was worse. The primary camera was reinstalled, and the crew found raised paint around the mounting holes. The primary camera was acceptable for rendezvous and docking. The crew took digital pictures of the system for later troubleshooting. Post flight KSC will perform the normal alignment checks.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT 05/11/01
 PAGE 4

IFA NUMBER> STS-92-V-03
 TITLE:CABIN PAYLOAD 3 BUS LOSS

0 MISSION CONSTRAINT: NONE	SUBS	IFA TIME GMT: 288 : 12.57.18
		IFA DATE: 11/02/2000
IFA STATUS: OPEN		ELAPSED TIME: 002 : 13.40.18
PRACA STATUS: UNKNOWN		HOUSTON TIME: 06.57.18
PRCBD NUMBER: S062159D		PHASE: ORBITER

0 TYPE TRACKING NUMBER	TYPE	TRACKING NUMBER
C MER-06	K	IPR 102V-0005

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: RICHARD PHAN/BRSS-HB
 2: LARRY MINTER/BRSS-H

0 DESCRIPTION:
 A 14 amp current increase was noted on MID MAIN BUS B, followed by 20 amp drop. Several systems were lost due to the current drop - Orbiter Interface Unit (OIU) 1, Orbiter Space Vision System (OSVS), cabin payload 3 bus, keel camera, RMS side view camera, ODS C/L camera, payload timing buffer, and DDCU starboard system B heater. A work around on back-up system was available for each lost system. KSC will perform post flight troubleshooting on the vehicle.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT 05/11/01
 PAGE 5

IFA NUMBER> STS-92-V-04
 TITLE:WSB 3 VENT TEMPERATURES ERRATIC ON CONTROLLER B

0 MISSION CONSTRAINT: NONE	SUBS	IFA TIME GMT: 295 : 14.27.00
		IFA DATE: 11/02/2000
IFA STATUS: OPEN		ELAPSED TIME: 009 : 15.10.00
PRACA STATUS: UNKNOWN		HOUSTON TIME: 08.27.00
PRCBD NUMBER: S062159D		PHASE: ORBITER

0 TYPE TRACKING NUMBER	TYPE	TRACKING NUMBER
C MER-15	K	IPR 102V-009
P SPR/CAR 92RF07		

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: SHAHRAM NAMVARI/BRSS-HB
 2: JEFF GOZA/BRSS-H

0 DESCRIPTION:
 During the WSB 3 vent heater operation prior to FCS checkout, slightly off nominal heater cycling was observed while on the B controller. WSB 3 was switched to the A controller, and the heater cycle were normal. The B controller was subsequently reselected and normal heater cycle

STS0092.txt

continued. The B controller was again selected on FD 14 during deorbit preparation and the vent did not come up to temperature. The A controller was selected and the heater performed nominally. Hardware removal and replacement is planned.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT 05/11/01
PAGE 6
IFA NUMBER> STS-92-V-05
TITLE:WSB 2 VENT TEMPERATURE DROPPED OFF ON CONTROL A

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 298 : 20.04.33
IFA DATE: 11/02/2000
IFA STATUS: OPEN ELAPSED TIME: 012 : 20.47.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 14.04.33
PRCBD NUMBER: S062159D PHASE: OPEN
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-16 K IPR 102V-0016
P SPR/CAR 92RF08
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: SHAHRAM NAMVARI/BRSS-HB
2: JEFF GOZA/BRSS-H

0 DESCRIPTION:
WSB #2 vent nozzle temperature dropped off prior to APU/HYD system #2 start up. Normally the vent temperature decreases after spray cooling is observed on the corresponding boiler. The drop in temperature was slower than what is typically observed during spray cooling initiation. Hardware removal and replacement is planned.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT 05/11/01
PAGE 7
IFA NUMBER> STS-92-V-06
TITLE:FES SHUTDOWNS ON PRIMARY B CONTROLLER

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 296 : 14.19.00
IFA DATE: 11/02/2000
IFA STATUS: OPEN ELAPSED TIME: 010 : 15.02.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 08.19.00
PRCBD NUMBER: S062159D PHASE: ORBITER
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-14 K IPR 102V-0008
P SPR/CAR 92RF09
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: SON N. NGUYEN/BRSS-HB
2: CARMELO ASUNCION/BRSS-H

0 DESCRIPTION:
After the radiator bypass and Flash Evaporator System (FES) check-out, the FES primary B controller shut down in full up mode. A restart on the primary B controller in full up mode was attempted resulting in a second shutdown. The FES was then successfully restarted on the primary A controller.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT 05/11/01
PAGE 8
IFA NUMBER> STS-92-V-07
TITLE:DEDICATED SIGNAL CONDITIONER (DSC) OM2 CARD 22 FAILED

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 292 : 14.28.00
IFA DATE: 11/02/2000
IFA STATUS: OPEN ELAPSED TIME: 006 : 15.11.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 08.28.00

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PRCBD NUMBER: S062159D PHASE: ORBITER
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-11 P SPR/CAR 92V06
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: BILL MCKEE/BRSS-H
2: KEN BROWN/NASA-JSC

0 DESCRIPTION:
DSC OM2 card 22 failed causing 4 measurement to go off scale low at -75F. The measurements are three hydraulic system temperatures and one APU temperature measurement. There was no impact from the loss of insight into the operation of this heater.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT 05/11/01
PAGE 9

IFA NUMBER> STS-92-X-01
TITLE:EMU MID DECK BATTERY INDICATOR FAILURE

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 288 : 15.21.43
IFA DATE: 11/02/2000
IFA STATUS: OPEN ELAPSED TIME: 002 : 16.04.33
PRACA STATUS: OPEN HOUSTON TIME: 09.21.43
PRCBD NUMBER: S02159D PHASE: ORBITER

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
M EVA-002

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: GLENN C. LUTZ - NASA/JSC
2: A. JARUS - NASA/JSC

0 DESCRIPTION:
Ready lights during initial lamp test apparently were intermittent. Charge complete light on "Side A" on both charger apparently would not illuminate.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT 05/11/01
PAGE 10

IFA NUMBER> STS-92-X-02
TITLE:APFR/IAPFR INTERFERENCE WITH FLUSH SIDE MOUNTED WIF

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 288 : 15.21.43
IFA DATE: 11/02/2000
IFA STATUS: OPEN ELAPSED TIME: 002 : 16.04.33
PRACA STATUS: OPEN HOUSTON TIME: 09.21.43
PRCBD NUMBER: S062159D PHASE: ORBITER

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
M EVA-003

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: T. GONZALES-TORRES
2:

0 DESCRIPTION:
WIF location 21 (flush side mount) would not allow for installation. Thermal shield attachment bolt found to be the cause. Shield removed post EVA#2 and APPR and IAPFR successfully installed on EVA#3. Corrective Action team formed to address process issues that allowed this escape.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT 05/11/01
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IFA NUMBER> STS-92-X-03
TITLE:MODULAR MINI WORKSTATION ANOMALY

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 288 : 15.21.43

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IFA STATUS: OPEN
PRACA STATUS: OPEN
PRCBD NUMBER: S062159D

IFA DATE: 11/02/2000
ELAPSED TIME: 002 : 16.04.33
HOUSTON TIME: 09.21.43
PHASE: ORBITER

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
M EVA-004-013

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: JOHN HAENSLY
2:

0 DESCRIPTION:
Intermittent "locking-up" of T-Bar during EVA#1. At end of EVA MMWS
would not lock. Neither cause EVA impacts.

1 STS-092 (OV-103,FLT #28) INFLIGHT ANOMALY REPORT

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IFA NUMBER> STS-92-X-04
TITLE:PISTOL GRIP TOOL (PGT) CHATTER

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 288 : 15.21.43
IFA DATE: 11/02/2000
IFA STATUS: OPEN ELAPSED TIME: 002 : 16.04.33
PRACA STATUS: OPEN HOUSTON TIME: 09.21.43
PRCBD NUMBER: S062159D PHASE: ORBITER

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
M EVA-010

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DINA BARCLAY/DX32
2: MICHELLE HOLLINGER/DX32

0 DESCRIPTION:
Pistol Grip Tool (PGT) exhibited chattering (clunky motion) at 22.9
ft-lbs. Later "pulsing" of PGT resulted in acceptable torque.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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STS-093 (OV-102,FLT #26) INFLIGHT ANOMALY REPORT

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PAGE 1

IFA NUMBER> STS-93-B-01
TITLE:ELEVATE ERRATIC TVC HYDRAULIC FLUID PRESSURE MEASUREMENT

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
IFA DATE:
IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062132 PHASE:
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
* *****NONE FOUND***** * *****NONE FOUND*****
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: LISA MORTON/USBI - KSC
2:

0 DESCRIPTION:
RH Tilt hydraulic pressure measurement became erratic twice during ascent. Worst case impact of this type failure would be launch scrub. Launch commit redline requires that hydraulic pressure remain between 2800 and 3486 psia between T-17 and T-10 seconds. Investigation ongoing.

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STS-093 (OV-102,FLT #26) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 2

IFA NUMBER> STS-93-E-01
TITLE:HYDROGEN LEAK ON THE NOZZLE HOT WALL SURFACE

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
IFA DATE:
IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062132 PHASE:
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
* *****NONE FOUND***** * *****NONE FOUND*****
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: JACK VAUTIN/RDTDYN-CAN PK
2:

0 DESCRIPTION:
Approximately five seconds after main engine start on E2019, a Hydrogen leak developed on the nozzle hot wall surface. The leak resulted in an increased propellant consumption and contributed to the initiation of the low level cutoff with MECO 0.15 seconds earlier than planned. The engine system reacted to this leak as expected and adequate redline and structural margins were maintained throughout the flight. Failure investigation concluded that Hydrogen leak was the result of rupturing 3 nozzle coolant tubes. The tube ruptures were caused by impact damage as a result of expulsion of a main injector LOX post deactivation pin previously felt to be a benign failure based on previous hot-fire history. Recommendation for any other engine which has been pinned including the Phase II engine still in the fleet will be made as a part of the closure of this IFA. This should not be considered a constraint for flight to either STS-99 or STS-103.

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STS-093 (OV-102,FLT #26) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 3

IFA NUMBER> STS-93-V-01
TITLE:AC1 PHASE A SHORT (ORB)

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0 MISSION CONSTRAINT:

SUBS

IFA TIME GMT: 204 : 04.31.05

IFA STATUS: OPEN

IFA DATE: 07/22/1999

PRACA STATUS: UNKNOWN

ELAPSED TIME: 000 : 00.00.12

PRCBD NUMBER: S062132

HOUSTON TIME: 23.31.05

PHASE: ASCENT

0 TYPE TRACKING NUMBER

TYPE TRACKING NUMBER

A IV6-352814

A PV6-352814

C MER-01

K OEL-2272436

K 107V-0003

M EGIL-001

P 93RF01-0

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: RICHARD PHAN/B-RSS DOWNEY

2: MARK FUGIT/B-RSS HOU

0 DESCRIPTION:

At approximately T+5 seconds a momentary short (~500ms) on AC1 Phase "A" was detected. A current spike in excess of 20 amps and a voltage drop from 114 to 21 VAC was observed on AC1 Phase A. The anomaly coincided with SSME controller Digital Computer Unit (DCU) power failures. SSME-1 controller primary DCU "A" and SSME-3 controller secondary DCU "B" failed. Data evaluation determined that there was no loss of function in any of the Orbiter equipment that was powered by AC1 during ascent. Postflight troubleshooting isolated the short to a damaged wire in the port wire tray at the midbody bay 11/12 frame. The wire damage was apparently caused by chaffing against the head of a torque-set screw used to secure the wire tray to the frame. At the short location, the screw head showed obvious signs of arcing. Wire damage at a second screw head (about 2 inches away) was also observed, but there was no evidence of arcing.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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STS-094 (OV-102,FLT #23) INFLIGHT ANOMALY REPORT

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PAGE 1

IFA NUMBER> STS-94-K-01

TITLE:MISSING RH ETA RING BOLT

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 000 : 00.00.00
		IFA DATE:
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN		HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062124		PHASE: PRE-LAUNCH

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
*	*****NONE FOUND*****	*	*****NONE FOUND*****

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: ED MANGO KSC/PEO
 2:

0 DESCRIPTION:
 During post flight assessment of the STS-94 Booster Set at Hangar AF, a missing fastener was noted on the aft side to the right-hand ET Attach, ETA Ring adjacent to the diagonal strut.

All ETA Ring foam was removed by standard Hydrolase operation and all other bolts were verified installed. Suspect PR-SB-BI089-0002 (STS-85) was initiated to remove insta-foam from both left and right SRB Aft ETA Ring Flange in the three suspect locations having a bolt pattern transition with an obstructed view due to the cable bracket location.

The results from the inspection verified all fasteners were installed at these locations.

Sts0094.txt

THE FOLLOWING OBSERVATIONS WERE MADE BY THE TEAM:

1. The missing hole location occurs at a point where the ETA Ring flange hole pattern transitions from approximately every two degrees to every one degree.
2. The Motor Case Stub Ring has 287 hole locations in an evenly spaced pattern. Only 266 Stud Ring holes are utilized for ETA Ring installation.
3. The missed hole location on the Motor Case Stub Ring at the ETA Ring interior is partially obscured from view by an electrical tie bracket.
4. During normal assembly process, technicians are seated in roll-around seats that place the AFT ETA Ring web approximately waist height. In this orientation, the Aft flange segment to stud bolt holes are not visible.

The suspected areas of the missing bolt have been inspected and verified installed. This clears BI089 for flight and is ready to support STS-85 Mission Requirements. KSC Engineering continuing to investigate processing root cause and implement corrective action.

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STS-094 (OV-102,FLT #23) INFLIGHT ANOMALY REPORT

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PAGE 2

IFA NUMBER> STS-94-P-01

TITLE:BROKEN LOCKER FASTENER RETAINER

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
IFA DATE:
IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062124 PHASE:

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER

M STS-94-IFM-01

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: F.MORENO MT2

2:

0 DESCRIPTION:

During the transfer exchange of the ASTRO-PGBA to the EXPRESS Rack and two middeck lockers from the EXPRESS Rack to the middeck, the crew reported that the lower port locker fastener housing (of locker L6G) had sheared off. This occurred after a customer-provided locker tool had become stuck inside the fastener retainer housing and had to be pried off using vice grips and a pry bar. However, the fastener, spring, and spring cup had been engaged and helped secure the contents (DC Vacuum Cleaner) to locker location MF28K on the avionics wire tray. The exchange was part of the proof-of-concept demonstration for the International Space Station (ISS) EXPRESS Rack.

When the ASTRO-PGBA was installed in the EXPRESS Rack, only 5 of 8 fasteners could be engaged. Tethering was required to provide a safe configuration in the event of rapid safing. ASTRO-PGBA occupies the volume of two middeck lockers and is fastened to two SSP-provided Payload Mounting Panels (PMP's) that provide the payload interface to the counting structure (middeck wire trays or the EXPRESS Rack). When the ASTRO-PGBA was returned to the middeck prior to deorbit all eight fasteners were secured with no problem; both lockers returned to the EXPRESS Rack were each secured with minimal effort.

The impact is possible Foreign Object Damage (FOD) if the fastener, spring, and spring cup were not retrieved when the locker was removed for transfer back to the EXPRESS Rack prior to deorbit.

The damaged fastener was the first removed and all loose parts were recovered and bagged; the locker was reinstalled in the EXPRESS Rack

Sts0094.txt

with only 3 fasteners after customer structural assessments indicated that a minimum of two fasteners diagonally installed would provide a safe entry configuration.

The customer-provided tool was built to provide adequate clearance from the ASTRO-PGBA handles when used to install/remove the unit on the EXPRESS Rack. Preflight fit checks for the ASTRO-PGBA in both the middeck and the EXPRESS Rack using the customer locker tool were conducted with no significant problems noted. Although the customer-provided tool was made to SSP locker tool specs, a softer metal

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STS-094 (OV-102,FLT #23) INFLIGHT ANOMALY REPORT

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PAGE 3

IFA NUMBER> STS-94-P-01

TITLE:BROKEN LOCKER FASTENER RETAINER

0 DESCRIPTION: (Continued from previous page).

was used and it is suspected that this caused the tool to become struck when torqued. The crew had also reported difficulty when removing the ASTRO-PGBA from the EXPRESS Rack.

The recommendation is to track EXPRESS anomaly through payload recurrence control, and to add longer locker tools to SSP inventory.

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STS-094 (OV-102,FLT #23) INFLIGHT ANOMALY REPORT

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IFA NUMBER> STS-94-V-01

TITLE:HI-LOAD FES INBOARD DUCT TEMP RESPONSE DURING ASCENT

0 MISSION CONSTRAINT:

SUBS

IFA TIME GMT: 182 : 18.14.00

Sts0094.txt

IFA DATE: 07/01/1997

IFA STATUS: OPEN

ELAPSED TIME: 000 : 00.12.01

PRACA STATUS: CLOSED : 1997-07-31

HOUSTON TIME: 13.14.00

PRCBD NUMBER: S062124

PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
M	MER-02	P	SPR/CAR 94RF04

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: N.CERNA EC3/X39045

2: D.VESSELKA BNA/X40126

0 DESCRIPTION:

On 2 of the 3 previous flights of OV-102, the FES high-load duct temperatures have dropped off sharply during ascent (STS-78) and (STS-83). As a result, STS-94 was launched with both the system A and B high-load duct heaters activated. During this mission, the inboard duct temperature dropped to 175 deg F by 182:18:14 G.m.t. (approximately 12 minutes MET). The temperature normally remains above 190 deg F with only one heater activated. Throughout the occurrence, the evaporator outlet temperatures were stable. It is suspected that excess water carryover is the cause of the duct temperature drop. The cause of the carryover is under investigation. No mission impact is expected.

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STS-094 (OV-102,FLT #23) INFLIGHT ANOMALY REPORT

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PAGE 5

IFA NUMBER> STS-94-V-02

TITLE:FUEL CELL 3 SUBSTACK 2 CPM OUTPUT SHIFT

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 182 : 18.37.00
		IFA DATE: 07/01/1997
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.35.01
PRACA STATUS: CLOSED : 1998-02-13		HOUSTON TIME: 13.37.00
PRCBD NUMBER: S062124		PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
M	EGIL-01	M	MER-07
P	SPR/CAR 94RF03		

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: H.WAGNER EP2/X3904

2: K.ADAMS BNA/X37571

0 DESCRIPTION:

A data review indicates that the fuel cell 3 (s/n 118) substack 2 CPM measurement increased 32 mV in 23 minutes, from 2 mV at 182:18:37 G.m.t.(00:00:35 MET) to 34 mV at 182:19:00 G.m.t. (00:00:58 MET). There is the potential that this channel of the fuel cell 3 CPM is not functioning properly. A failure mode in the CPM circuitry exists that could cause incorrect CPM output signals that would not be detected by the self-test (the self-tests have been good on this channel). A memorandum by IFC (SIM 038) states that a failure of resistor R115 would read 37 mV(0.375V) if open for a positive bias voltage differential. It would remain at this value until the actual value increased to 185 mV, then it would jump to 500 mV. The CPM output that is displayed in downlist is an even value with a 2 mV data bit. With instrumentation accuracy the output could read 36 +/- 6 mV. Through 193:18:02 G.m.t (11:00:00 MET), the measurement had been primarily toggling between 36 and 38 mV, with readings as high as 40 to 42 mV prior to fuel cell purges. If the reading rises above 42 mV, or goes down to below 30 mV, then the CPM would be declared to be operating satisfactorily.

The Flight Rules for a failed CPM are to bus tie that fuel cell to another fuel cell and monitor the difference in current. This was already down as part of the preplanned configuration, so that fuel cells 2 and 3 could share some of the load from the payloads.

IFA NUMBER> STS-94-V-03

TITLE:ASA 4 REDUNDANT POWER LOSS

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 189 : 15.54.00
 IFA DATE: 07/08/1997
IFA STATUS: OPEN ELAPSED TIME: 006 : 21.52.01
PRACA STATUS: CLOSED : 1997-10-27 HOUSTON TIME: 10.54.00
PRCBD NUMBER: S062124 PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
M	GNC-01	M	MER-10
P	SPR/CAR 94RF05		

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: R.MOORE EV2/X31719
 2: A.FARKAS BNA/2825318

0 DESCRIPTION:

The ASA 4 power on command C (switch scan measurement - V79S4143E) and the associated RPC (powered by MNC APC3) output discrete measurement (V76X4210E) went from ON to OFF, indicating loss of redundant power to ASA 4. This contact of the ASA 4 switch receives its power from one contact of the FCS channel 4 switch (powered by CNTLCA2), which also provides power to a contact of the ATVC 4 power switch. A separate contact of the ASA 4 switch, which provided control power to a redundant power RPC (powered by MNS APC1) continued to indicate ON, maintaining power to ASA 4. At 189:18:05:03 G.m.t (07:00:03:03 MET), affected switch scan and RPC output discrettes returned to the normal ON state. At 189:21:42:44 G.m.t (07:03:40:44 MET), the measurements returned to the OFF state.

At 190:17:39:52 G.m.t. (07:23:37:52 MET). The ground had the crew cycle the ATVC 4 power switch ON for about 15 seconds to determine if the FCS

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channel 4 contact was supplying CNTLCA2 power to the ASA 4 and ATVC 4 switches. When the ATVC 4 switch was placed to ON, it transferred power properly; at the same time, the ASA 4 power on command C and the associated RPC output discrete both changed to ON and are still indicating ON. Although there are several theories, it is not understood how the ATVC 4 switch actuation could have affected the ASA 4 power.

The possible causes of this failure are intermittent failures within the FCS channel 4, ASA 4 power, or ATVC 4 power switch, intermittent wiring or an intermittent on MDM OA3. The failure impact is the possible loss of redundant power to ASA 4.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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STS-095 (OV-103,FLT #25) INFLIGHT ANOMALY REPORT

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IFA NUMBER> STS-95-D-01
TITLE:SPARTAN GROUND COMMAND SOFTWARE ERROR

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
IFA DATE:
IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062133 PHASE:
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
K STS-95-P-13
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: TANDY BRUCE/JSC-MT2
2:

0 DESCRIPTION:
After SPARTAN deploy, the SPARTAN POCC attempted to command the Health Check through the PI resulting in Ground Data Rejects (GDR) from the Generic Command Server (GCS), <command did not leave the ground>. The error stated that the command words did not match the command count. Error in POCC requirements. The inability to command SPARTAN from the ground was impacted.

Troubleshooting revealed that the Spartan command length is 34 words, but SPARTAN POCC command software told GCS command length was 37 words. The backup software was corrected and recompiled resulting in successful commanding. The primary software was similarly modified, also resulting in successful commanding.

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STS-095 (OV-103,FLT #25) INFLIGHT ANOMALY REPORT

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PAGE 2

IFA NUMBER> STS-95-K-01
TITLE:UNEXPECTED CAUTION & WARNING MASTER ALARM DELAYED THE COUNTDOWN

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
IFA DATE:
IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062133 PHASE:
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
K IFA KSC-95-001
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: TERRI HERST/KSC
2:

0 DESCRIPTION:
An unexpected caution and warning master alarm delayed the countdown clock from resuming from the hold at T-9 minutes. Discussions concluded that the master alarm was produced by the cabin delta pressure and was an expected alarm.

EXCEPTIONS: EKG0190 HGDS Sample Leak Checks MLP

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STS-095 (OV-103,FLT #25) INFLIGHT ANOMALY REPORT

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PAGE 3

IFA NUMBER> STS-95-P-01
TITLE:AUDIO VOLUME MISMATCH BETWEEN ORBITER AND SPACEHAB

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
Page 1

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IFA STATUS: OPEN IFA DATE:
PRACA STATUS: UNKNOWN ELAPSED TIME: 000 : 00.00.00
PRCBD NUMBER: S062133 HOUSTON TIME: 00.00.00
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
K IFA KSC-95-001
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: TERRI HERST
2:

0 DESCRIPTION:
In the post flight debrief, the crew reported that the Ku-BD radar data was much noisier than they had experienced on any previous flight. within the last 600 feet of rendezvous, the data jumped in magnitude and between opening and closing rates. The noise in the data was significant enough that the crew didn't trust it and relied on the hand-held laser range finder instead. The Deployed Assembly (DA-102) has flown numerous flights, but it was just installed in this vehicle since Ku-bd had failed on STS-91.

1 STS-095 (OV-103,FLT #25) INFLIGHT ANOMALY REPORT 06/03/99
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IFA NUMBER> STS-95-V-01
TITLE:LOSS OF DRAG CHUTE DOOR (ORB)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
IFA DATE:
IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062133 PHASE:
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-01 K IPR 96V-0001
O MMACS-01 P SPR/CAR 95RF-01
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: MIKE PORTER/BNA-DNY
2: JEFF GOODMARK/BNA-DNY

0 DESCRIPTION:
During Main Engine ignition at approximately T-5 seconds, ground-based photography showed the drag chute door detach from the Orbiter and impact the rim of SSME bell#1 during its downward descent. In-flight evaluation of the condition led to a decision to not deploy the chute for landing. Initial postlanding inspection showed that the drag chute remained in place undisturbed throughout the flight. Follow-on inspection to determine the condition of the chute and other components in the drag chute compartment is in work, as is an investigation and failure analysis to determine the cause of the door failure.

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PAGE 5

IFA NUMBER> STS-95-V-02
TITLE:THRUSTER L3L FAILED OFF, FAILED LEAK (ORB)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
IFA DATE:
IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
PRCBD NUMBER: S062133 PHASE:
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-06 K IPR 96V-0002
K STS-95V-02 O PROP-01
P SPR/CAR 95RF-03
0 CLOSURE INITIATED BY:

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RESPONSIBLE MANAGERS 1: DAVE PERRY/BNA-DNY
2: STEVE ARRIETA/BNA-DNY

0 DESCRIPTION:

During the RCS Hot Fire, DAP was configured to fire thruster L3L for 320 msec. The operation was, however, only sustained for 240 msec at which point RM deselected the thruster because of low chamber pressure. Subsequent analysis of the data signature indicated that the oxidizer pilot valve may have only partially opened. After the failure, the thruster's oxidizer and fuel temperatures dropped to 28 degF and 42 degF respectively, indicating leakage through the oxidizer valve. This leak was confirmed by a subsequent divergence between the fuel and oxidizer quantities, and the left manifold 3 isolation valve was closed to prevent further propellant loss.

This thruster was installed during the last OMDP of OV-103 after nominal processing through white sands for checkout and flush. Since OMDP, the thruster had flown 4 flights including STS-95 and had accumulated 35 firings totaling 20 seconds of operation, typically operating in 3rd priority. The thruster will be R&R'd for repair. The two other left manifold 3 thrusters will also be R&R'd, per standard procedures invoked whenever a manifold is opened.

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STS-095 (OV-103,FLT #25) INFLIGHT ANOMALY REPORT

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PAGE 6

IFA NUMBER> STS-95-V-03
TITLE:FRCS FUEL TANK TEMPERATURE DECREASED (ORB)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
IFA STATUS: OPEN IFA DATE:
PRACA STATUS: UNKNOWN ELAPSED TIME: 000 : 00.00.00
PRCBD NUMBER: S062133 HOUSTON TIME: 00.00.00
 PHASE:

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 C MER-08 K IPR 96V-0003, 96V-0004
 K STS-95-V-03 O PROP-02
 P SPR/CAR 95RF05

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: ALEX MURASHKO/BNA-DNY
 2: BILL MCKEE/BNA-HOU

0 DESCRIPTION:

FRCS fuel tank temperature began to decrease unexpectedly during entry. This indicated temperature decrease could have been caused by a propellant leak, so post wheelstop the FRCS was secured as a precaution. After 30 minutes of sniff checks and monitoring of system parameters failed to indicate any propellant leakage, the FRCS tank ISO valves were opened in order to partially relieve manifold pressures ranging from 570 - 670 psia. This action left the manifold pressures 50 to 60 psi higher than the tank pressure. After an additional 80 minutes, the FRCS manifold 1-4 were opened when the manifold pressures were nearly equal to those in the tank. This was done to preclude thruster valve bounce. Low manifold pressures resulting from post entry cool down can result in manifold pressures that are lower than the tank pressure, leading the possibility of thruster valve bounce when the manifold valves are opened. The vernier manifold was left closed, however, because this manifold has no pressure measurement. Post landing, the tank temperature measurement eventually reached, and continued to erroneously indicate, 3 to 4 degF.

IPR's were written to investigate the temperature measurement problem and to check out the system because of the high manifold pressures that were allowed to occur post landing. KSC is currently investigating the condition prior to the scheduled removal of the FRCS module for

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the STS-96 flow. Subsequent troubleshooting and systems checkout will be performed under the HMF as necessary.

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STS-095 (OV-103,FLT #25) INFLIGHT ANOMALY REPORT

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IFA NUMBER> STS-95-V-04
TITLE:TPS PROTRUSION ON LEFT OMS POD (ORB)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
 IFA DATE:
 IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
 PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
 PRCBD NUMBER: S062133 PHASE:
 0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 C MER-02 K TTLP-01-29-2116
 O MMACS-01 P SPR/CAR 95-RF-02
 0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: ALI MIRDAMADI/BNA-DNY
 2: JIM SMITH/BNA-HOU

0 DESCRIPTION:
 The crew reported that a portion of the TPS on the left OMS pod was protruding 45 degrees from its normal position. This was later confirmed by RMS cameras in the stowed position. A subsequent RMS payload bay survey identified the protrusion as a piece of TPS blanket, along with its attached carrier panel, approximately 3" x 10" in size and located at X=1506, Z=480. In-flight evaluation of the condition determined that the entry heating effects in this area would not impact flight operations or safety. Post landing inspection of the area is planned when access is available.

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STS-095 (OV-103,FLT #25) INFLIGHT ANOMALY REPORT

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PAGE 8

IFA NUMBER> STS-95-V-05
TITLE:FAILURE OF SIGI/PDI DECOM RS232 DATA CABLE (GFE)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 000 : 00.00.00
 IFA DATE:
 IFA STATUS: OPEN ELAPSED TIME: 000 : 00.00.00
 PRACA STATUS: UNKNOWN HOUSTON TIME: 00.00.00
 PRCBD NUMBER: S062133 PHASE:
 0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 C MER-03 O GNC-02
 0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1:
 2:

0 DESCRIPTION:
 Communication between the SIGI (DTO 700-15) PGSC and the Payload Data interleaver (PDI) Decommutator (DECOM) PGSC could not be established via the RS232 data cable. The back-up cable stowed in a middeck locker was used to replace the original cable and nominal data transfer was established. No KSC action required.

-JFDP012: NORMAL TERMINATION OF PROCESSING

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STS-096 (OV-103,FLT #26) INFLIGHT ANOMALY REPORT

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PAGE 1

IFA NUMBER> STS-96-V-01
TITLE:F4R THRUSTER FAILED LEAK

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 147 : 11.18.00
		IFA DATE: 05/27/1999
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.28.25
PRACA STATUS: UNKNOWN		HOUSTON TIME: 06.18.00
PRCBD NUMBER: S062134		PHASE: ON-ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
A	IV6-350941	A	PV6-350941
C	MER-01	K	FRC3-27-0683
K	103V-0002	M	PROP-001
P	96RF01-0		

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DAVID PERRY/B-RSS DOWNEY
2: STEVE ARRIETA/B-RSS HOU

0 DESCRIPTION:
RCS thruster F4R, s/n 653, was declared fail leak by redundancy management. The thruster pulsed 5 times with the fuel injector temperature dropping below the RM limit of 20 deg F, reaching a minimum of 10.7 deg F, then recovering to a nominal range. The temperature dropped after each firing and was recovering slowly when the last firing dropped the temperature below the RM. The thruster was reselected at 148:00:54 G.m.t. (00:14:05 MET) but placed in second priority. After undocking and the separation maneuver, thruster F4R was manually deselected for the remainder of the mission. The thruster will be removed and replaced during the next flow.

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STS-096 (OV-103,FLT #26) INFLIGHT ANOMALY REPORT

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PAGE 2

IFA NUMBER> STS-96-V-02
TITLE:RIGHT OMS ENGINE BALL VALVE SLUGGISH OPERATION

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 147 : 10.51.56
		IFA DATE: 05/27/1999
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.02.21
PRACA STATUS: UNKNOWN		HOUSTON TIME: 05.51.56
PRCBD NUMBER: S062134		PHASE: ASCENT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
A	PV6-351439	C	MER-03
K	RP03-28-1017	P	96RF02-0

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DAVID PERRY/B-RSS DOWNEY
2: STEVE ARRIETA/B-RSS HOU

0 DESCRIPTION:
At the start of the OMS Assist burn, shortly after SRB separation, the Right OMS engine (s/n 114) ball valve #2 displayed sluggish behavior. During the mission the opening time was determined to be between 0.8 seconds and 1.0 seconds. The File IX opening requirement is no more than 0.8 sec. The subsequent OMS-2, OMS-3, and OMS-4 burns showed improved valve performance, and were within the File IX requirement. Post mission review of the data determined the File IX requirement had not been violated. However, review of the opening time data compared to the opening times of other OMS engines revealed that s/n 114 opening time was out of family. with this data and the problem on STS-88, a decision was made to remove and replace the engine.

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STS-096 (OV-103,FLT #26) INFLIGHT ANOMALY REPORT

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PAGE 3

IFA NUMBER> STS-96-V-03

TITLE:VESTIBULE PRESSURE LOSS DURING THE EVA

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 150 : 02.42.00
 IFA DATE: 05/29/1999
 IFA STATUS: OPEN ELAPSED TIME: 002 : 15.52.25
 PRACA STATUS: UNKNOWN HOUSTON TIME: 21.42.00
 PRCBD NUMBER: S062134 PHASE: ON-ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 A IV6-350944 A PV6-350944
 C MER-10 K MEQ-3-27-1153
 K 103V-0003 M EECOM-002
 P 96RF04-0

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: ART ORDONEZ/B-RSS DOWNEY
 2: JEFF GOODMARK/B-RSS HOU

0 DESCRIPTION:

During the 24 hour period prior to the EVA, when the vestibule was pressurized and isolated from the airlock, no loss of pressure from the vestibule was detected. During the subsequent airlock depressurization for the EVA, when the delta pressure between the airlock and the vestibule reached 8.97 psid, the leakage began. The vestibule pressure at the time was 10.4 psi. When the delta pressure decreased to 8.00 psid, the leakage stopped. This data indicates the transfer of gas across the hatch, from the vestibule into the airlock. The most probable cause of the airlock D hatch leakage is that the sealing surfaces separated slightly due to the high negative delta pressure which exceeded the capability of the latches as rigged. KSC will perform troubleshooting.

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STS-096 (OV-103,FLT #26) INFLIGHT ANOMALY REPORT

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PAGE 4

IFA NUMBER> STS-96-V-04

TITLE:HUMIDITY SEPARATOR B WATER CARRYOVER

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 148 : 12.19.00
 IFA DATE: 05/28/1999
 IFA STATUS: OPEN ELAPSED TIME: 001 : 01.29.25
 PRACA STATUS: UNKNOWN HOUSTON TIME: 07.19.00
 PRCBD NUMBER: S062134 PHASE: ON-ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 A PV6-351082 C MER-05
 K ECL-3-27-1289 M EECOM-001
 P 96RF05-0

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: SON NGUYEN/B-RSS DOWNEY
 2: CHRIS HOFFMANN/B-RSS HOU

0 DESCRIPTION:

At approximately 001:01:30 MET, during the humidity separator in-flight checkout, the crew observed about a quarter of water below the middeck floor at the outlet screen of the starboard (B) humidity separator. The crew cleaned up the water and switched from humidity separator B to A. Data review indicated no leakage in all water related systems. Flight data shows no indication of slugging flow (a condition resulting from either a rapid build-up of condensation or a sudden jump in air flow through the heat exchanger which sweeps out excess water build up in the heat exchanger). Therefore the cause of the problem is believed to be a clogging of the humidity separator's water flow path by debris. The lower than normal waste water collection rate during the sleep period

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when this humidity separator was running this flight is evidence of some type of clogging. The removal and replacement of the humidity separator after the mission will be required.

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STS-096 (OV-103,FLT #26) INFLIGHT ANOMALY REPORT

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PAGE 5

IFA NUMBER> STS-96-V-05

TITLE:SPACE TO SPACE COMMUNICATION SYSTEM (SSCS) EVA COMMUNICATION PROBLEM

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 150 : 03.30.00
IFA DATE: 05/27/1999
IFA STATUS: OPEN ELAPSED TIME: 002 : 16.40.25
PRACA STATUS: UNKNOWN HOUSTON TIME: 22.30.00
PRCBD NUMBER: S062134 PHASE: ON-ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-19 M EVA-010

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: PAUL SHACK
2: DAVID LEE

0 DESCRIPTION:

During the EVA, EV2 reported a full volume high pitch squeal three times. Each occurrence was heard by the ground and at least once also reported by EV1. The squeal duration was approximately 5 to 10 seconds long.

The ground noted many instances during the EVA in which EV-IV communications degraded to choppy, garbled, or total loss of signal. One case occurred near the beginning of the EVA, when EV1 was positioned on the zenith side of the ISS stack. Another case resulted in communications with significant background static noise. The condition was described like a signal that becomes gradually weaker, first choppy and garbled, until at some point it completely drops out.

The above two problems will be tracked in the overall SSCS corrective action plan along with the preflight predicted problems that did occur during flight. SSCS team was given an official action by the PRCB to develop a plan for resolution of the problems and how to support the upcoming missions.

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STS-096 (OV-103,FLT #26) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 6

IFA NUMBER> STS-96-X-01

TITLE:DIFFICULTY IN ATTACHING SCU1 TO EMU1

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 150 : 12.44.00
IFA DATE: 05/27/1999
IFA STATUS: OPEN ELAPSED TIME: 003 : 01.54.25
PRACA STATUS: UNKNOWN HOUSTON TIME: 07.44.00
PRCBD NUMBER: S062134 PHASE: ON-ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-13 K RDR B-EMU-300-FO
M EVA-003

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: BILL SPENNY
2: ROBERT BOYLE

0 DESCRIPTION:

During EVA Pre-repress the crew had difficulty attaching SCU1 to EMU1's DCM. Inspection of the SCU by the crew did not show any obvious reason for the problem. Post flight testing at KSC showed that SCU1 was difficult to operate and jammed easily. SCU1 showed signs of wear and damage. SCU1 will be returned to Houston for repair. No additional KSC

work is required.

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STS-096 (OV-103,FLT #26) INFLIGHT ANOMALY REPORT

08/21/00

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IFA NUMBER> STS-96-X-02
TITLE:LOST/LOOSE EVA HARDWARE

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 150 : 03.25.00
IFA STATUS: OPEN IFA DATE: 05/29/1999
PRACA STATUS: UNKNOWN ELAPSED TIME: 002 : 16.35.25
PRCBD NUMBER: S062134 HOUSTON TIME: 22.25.00
0 TYPE TRACKING NUMBER TYPE PHASE: ON-ORBIT
C MER-16 M EVA-004

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DALE ROBERTS
 2: CHI-MIN CHANG

0 DESCRIPTION:

During the EVA a retractable tether which was attached to a fish stringer using an equipment hook came free from and was lost. Another retractable tether with two equipment hooks which was hooked to the EV2's MWS D-ring and a 35mm camera came loose from the MWS but was captured by EV2 before it was lost. No KSC work is required. XA will reconstitute the lost hardware investigation team to resolve this issue.

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STS-096 (OV-103,FLT #26) INFLIGHT ANOMALY REPORT

08/21/00

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IFA NUMBER> STS-96-X-03
TITLE:SAFER POST FLIGHT ANOMALIES

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 161 : 21.17.00
IFA STATUS: OPEN IFA DATE: 06/10/1999
PRACA STATUS: UNKNOWN ELAPSED TIME: 014 : 10.27.25
PRCBD NUMBER: S062134 HOUSTON TIME: 16.17.00
0 TYPE TRACKING NUMBER TYPE PHASE: POST LANDING
C MER-18 M

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: ANH HUYNH
 2: CHUCK WOOLEY

0 DESCRIPTION:

During STS-96 post flight processing, SAFER unit#1005 (worn by EV1) was found to have a fired NSI pyrotechnic valve and an open manual isolation valve. There was 16% GN2 in the SAFER. This issue is being tracked at FIAR JSC-ER0022. XA and ER are investigating the problem.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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STS-097 (OV-105,FLT #15) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 1

IFA NUMBER> STS-97-B-01
TITLE:LOWER STRUT SRB NSI PRESSURE CARTRIDGE DID NOT FIRE.

0 MISSION CONSTRAINT: OYES SUBS IFA TIME GMT: 343 : 19.00.00
 IFA DATE: 12/15/2000
 ELAPSED TIME: 004 : 13.00.00
 HOUSTON TIME: 13.00.00
 PHASE: POST FLIGHT
 0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 Z SQUAWK-97-007
 0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: ROGER ELLIOTT
 2: ROBERT WRIGHT
 0 DESCRIPTION:
 During disassembly at Hanger AF, technicians discovered that System A LH SRB lower strut NSI did not fire during ET/SRB separation. The investigation team has discovered open conductor in the J2 end of the firing line extender cable in the ETA ring. Also the shield for this cable was open and showed signs of tensile overload. System B functioned nominally.

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STS-097 (OV-105,FLT #15) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 2

IFA NUMBER> STS-97-V-01
TITLE:VERNIER THRUSTER F5R FUEL INJECTOR TEMPERATURE SENSOR FAILED OFF SCALE HIGH

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 338 : 17.00.00
 IFA DATE: 12/15/2000
 ELAPSED TIME: 002 : 13.54.00
 HOUSTON TIME: 11.00.00
 PHASE: ORBIT
 0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 C MER-10 P SPR 97RF02
 0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: BRIAN WERNER
 2: STEVE ARRIETA
 0 DESCRIPTION:
 Following undocking from the ISS, the F5R thruster LSD injector temp failed off-scale high. As a result, the vernier was not used for attitude control for the remainder of the mission. KSC will troubleshoot the electronic prior to forward module removal to replace the thruster.

-JFDP012: NORMAL TERMINATION OF PROCESSING

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STS-098 (OV-104,FLT #23) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 1

IFA NUMBER> STS-98-v-01
TITLE: LH2 ENGINE 1 PREVALVE (PV4) OPEN POSITION INDICATOR B FAILED OFF (USA)

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 038 : 23.15.43
		IFA DATE: 02/22/2001
IFA STATUS: OPEN		ELAPSED TIME: 000 : 00.02.42
PRACA STATUS: UNKNOWN		HOUSTON TIME: 17.15.43
PRCBD NUMBER: S062136		PHASE: ASCENT
0 TYPE TRACKING NUMBER	TYPE TRACKING NUMBER	
K IPR 104V-0003	P 98RF01	

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: TIM REITH
2: PAT KAVANAUGH

0 DESCRIPTION:
The LH2 Engine 1 Prevalve (PV4) open position indicator B failed off between liftoff and MECO. The indication went off at 038:23:15:43 G.M.T (000:00:02:41 MET) and recovered at 038:23:17:47 G.M.T (000:00:04:45 MET). After completion of the LH2 dump, the position indicator failed off again at 038:23:28:30 G.M.T (000:00:15:28 MET). The measurement has subsequently recovered. The measurement has subsequently recovered. The prevalves will remain in the open position for the remainder of the mission, and this failure has no effect on MPS operations. Postflight troubleshooting plans are in work. No impacts to Ferry Flight.

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STS-098 (OV-104,FLT #23) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 2

IFA NUMBER> STS-98-v-02
TITLE: COMMANDER AND PILOT HUD MISALIGNMENT (USA)

0 MISSION CONSTRAINT:	SUBS	IFA TIME GMT: 051 : 00.00.00
		IFA DATE: 02/22/2001
IFA STATUS: OPEN		ELAPSED TIME: 051 : 00.00.00
PRACA STATUS: UNKNOWN		HOUSTON TIME: 17.15.43
PRCBD NUMBER: S062136		PHASE: ASCENT
0 TYPE TRACKING NUMBER	TYPE TRACKING NUMBER	
P SPR 98RF04		

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DAVE SMITH - 714.372.5838
2: ANDY FARKAS- 281.853.1564

0 DESCRIPTION:
During entry both the commander and pilot observed a runway misalignment with their HUD. The pilot HUD was about 600 feet to the right of the runway and the commander HUD was about 300 feet to the right of the runway. At the crew debrief, the pilot stated that the misalignment was observable down to 7000 feet and was off by 400 feet.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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STS-099 (OV-105,FLT #14) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 1

IFA NUMBER> STS-99-V-01
TITLE:GPC I/O ERROR AND EMEC PREFLIGHT BITE ERROR

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 042 : 17.43.33
 IFA DATE: 03/02/2000
 IFA STATUS: OPEN ELAPSED TIME: 053 : 23.23.23
 PRACA STATUS: UNKNOWN HOUSTON TIME: 11.43.33
 PRCBD NUMBER: S062137 PHASE: PRELAUNCH
 0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 A PV6-359155 B BOOST-01
 C MER-01 K OEL-5-14-2099
 K 99V-0169 P 99RF01-0
 0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: PHAT VU/BRSS-H
 2: DON PECK/BRSS-H

0 DESCRIPTION:
 GPC I/O error and EMEC preflight BITE error. The anomalous EMEC which was removed following the 01/31/00 LAUNCH attempt is undergoing TT&E at NSLD, and to date the failure has not been duplicated.

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STS-099 (OV-105,FLT #14) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 2

IFA NUMBER> STS-99-V-02
TITLE:SUPPLY WATER DUMP NOZZLE BLOCKAGE

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 042 : 17.43.33
 IFA DATE: 03/02/2000
 IFA STATUS: OPEN ELAPSED TIME: 053 : 23.23.23
 PRACA STATUS: UNKNOWN HOUSTON TIME: 11.43.33
 PRCBD NUMBER: S062137 PHASE: ON ORBIT
 0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 C MER-13 K UA-5-A0016
 M PROP-02 P 99RF07-0
 0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: STEVE ARRIETA/BRSS-H
 2: BILL MCKEE/BRSS-H

0 DESCRIPTION:
 On flight day 9 decrease in either nozzle temperature or tank quantity was noted during the supply water dump, indicating no water was being dumped. Dump valve was recycled with no response. Changes in the dump nozzle heater profile indicated that ice was being ejected from the line and/or the nozzle. The dump nozzle was opened again and the supply water dump was performed nominally.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

IFA Search Report

IFA NUMBER:
STS-0100-B-001TITLE:
UNBURNED PROPELLANT IN RH FORWARD BOOSTER SEPARATION MOTOR
(USA)(CONSTRAINT TO FLIGHT)MISSION CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: OPEN PRCBD NUMBER:
S061686
SUBS:
IFA TIME GMT:
16.50.00 IFA DATE:
10-MAY-01 ELAPSED TIME:
10.00.19
HOUSTON TIME:
11.50.00 PHASE:
ON-ORBIT CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: STEVE GORDON
2:

DESCRIPTION:
SRB post-flight inspection observed to have a significant quantity of unburned propellant remaining in the RH forward BSM. Investigation is on going.

IFA NUMBER:
STS-0100-V-001TITLE:
FES STARBOARD FEEDLINE ZONE 3 HEATER SYSTEM 1 FAILED OFF (USA)MISSION
CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: UNKNOWN PRCBD NUMBER:
S061686
SUBS:
IFA TIME GMT:
04.41.00 IFA DATE:
10-MAY-01 ELAPSED TIME:
10.00.19
HOUSTON TIME:
23.41.00 PHASE:
ON-ORBIT CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: SON NGUYEN (714)372-5058
2: C. ASUNCION (281)853-1635
TYPE: & TRACKING NUM:
K IPR 108V-0004

DESCRIPTION:
On flight day 1, the Flash Evaporator System (FES) starboard feedline zone

Sts0100.txt

3 heater system 1 failed off. System 2 was activated and operated nominally for the rest of the mission. System 2 is being used for ferryflight and KSC will troubleshoot system 1.

IFA NUMBER:
STS-0100-V-002TITLE:
RMS RHC CAPTURE/RELEASE SWITCH STICKY (USA)MISSION CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: UNKNOWN PRCBD NUMBER:
S061686
SUBS:
IFA TIME GMT:
14.41.00 IFA DATE:
10-MAY-01 ELAPSED TIME:
10.00.19
HOUSTON TIME:
09.41.00 PHASE:
ON-ORBIT CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: G. GLENN (281)483-1516
2: G.JORGENSEN (281)226.5214
TYPE: & TRACKING NUM:
K IPR 108V-0006

DESCRIPTION:
During the End Effector (EE) portion of the RMS checkout, the RHC capture/release switch appeared to stick while the EE snares were commanded closed in the EE manual mode, resulting in an extended stall period of the EE motor. Crew recycled the RHC and the problem cleared with no further problems. Crew reported that the switch had a sticky feel. KSC will troubleshoot.

IFA NUMBER:
STS-0100-V-003TITLE:
WSB 3 ANOMALOUS TEMPERATURE WHEN OPERATING ON CONTROLLER B (USA)MISSION CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: UNKNOWN PRCBD NUMBER:
S061686
SUBS:
IFA TIME GMT:
17.21.00 IFA DATE:
10-MAY-01 ELAPSED TIME:
10.00.19

Sts0100.txt

HOUSTON TIME:
12.21.00 PHASE:
ON-ORBIT CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: S. NAMVARI (714)934-0523
2: JEFF GOZA (281)853-1612
TYPE: & TRACKING NUM:
K IPR 108V-0009

DESCRIPTION:
while on-orbit, after the WSBs were configured to the "B" controller, the WSB 3 core water tank and GN2 tank temperature gradually increased. WSB 3 "A" controller was selected and system temperatures returned to nominal values. A partial heater failure is possible cause of the anomaly. A KSC troubleshooting plan, which consists of instrumenting WSB components with temperature sensors and powering the "B" controller, has been developed. The "A" controller is powered for the ferry flight.

IFA NUMBER:
STS-0100-V-004TITLE:
VERNIER THRUSTER R5D LOW CHAMBER PRESSURE (USA)MISSION CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: UNKNOWN PRCBD NUMBER:
S061686
SUBS:
IFA TIME GMT:
16.50.00 IFA DATE:
10-MAY-01 ELAPSED TIME:
10.00.19
HOUSTON TIME:
11.50.00 PHASE:
ON-ORBIT CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: B. WERNER (714)934-0542
2: S. ARRIETA (281)853-1554
TYPE: & TRACKING NUM:
P SPR 100RF07

DESCRIPTION:
Prior to orbiter separation from the ISS, vernier thruster R5D exhibited low chamber pressure, which continued during each firing of the thruster. Signature is indicative of combustion by products blocking the sense tube. KSC will inspect the thruster chamber/injector. Probable R&R of the thruster.

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STS-101 (OV-104,FLT #21) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 1

IFA NUMBER> STS-101-I-01
TITLE:SRB HOLD DOWN POST (HDP) LOADS

0 MISSION CONSTRAINT: STS- 0106 SUBS IFA TIME GMT: 140 : 10.11.03
IFA DATE: 06/08/2000
IFA STATUS: OPEN ELAPSED TIME: 150 : 06.21.17
PRACA STATUS: UNKNOWN HOUSTON TIME: 05.11.03
PRCBD NUMBER: S062139D PHASE: ASCENT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
U UNEXPLAINED

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: CURT LARSEN/USA-H
2:

0 DESCRIPTION:
During post-launch flight data review and launch loads reconstruction an unusual high frequency response was noted in strain gage data from HDP #2 and #4. Response is a sustained ~60Hz oscillation beginning 4 seconds earlier. No similar response found on hold down studs, nor on HDPs #1 or #3 also on right SRB. No similar response on left SRB HDPs. Investigation team formed.

1

STS-101 (OV-104,FLT #21) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 2

IFA NUMBER> STS-101-M-01
TITLE:STS101 RH S&A DEVICE DAMAGED A-M ACTUATOR ARMATURE ASSEMBLY

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 140 : 10.11.03
IFA DATE: 06/08/2000
IFA STATUS: CLOSED : 07/06/2000 ELAPSED TIME: 150 : 06.21.17
PRACA STATUS: CLOSED : CLOSED HOUSTON TIME: 05.11.03
PRCBD NUMBER: S062139D PHASE: ASCENT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
T PFA 360L074B-01

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: TERRY BOARDMAN/THIOKOL
2:

0 DESCRIPTION:
During postflight electrical safing of the RH safety and Arming Device (S&A) Arming-Monitor (A-M) S/N 32, rotation of the rotor drive train stopped prior to obtaining a safe indication. Subsequent disassembly showed that the RH S&A A-M motor armature had significant damage. Scraped wires just forward of commutator bars. Two locations were wires were severed. Postflight observation noted washer laying in the motor housing. Investigation team has concluded an out-of-place spring washer caused the damage found on STS-101 (RSRM-74) S&A Arming-Monitor S/N 32 armature which resulted in a failure to electrically rotate. All S&A assemblies at KSC, including those currently installed in RSRM-75 (STS-106), are being returned to Thiokol for X-ray examination. STS-106 (RSRM) is safe to fly.

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STS-101 (OV-104,FLT #21) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 3

IFA NUMBER> STS-101-V-01
TITLE:LOME BIROPELLANT VALVE 2 INDICATES OPEN

0 MISSION CONSTRAINT: OSTS 0106 SUBS IFA TIME GMT: 140 : 10.11.03

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IFA STATUS: OPEN
PRACA STATUS: UNKNOWN
PRCBD NUMBER: S062139D

IFA DATE: 06/08/2000
ELAPSED TIME: 150 : 06.21.17
HOUSTON TIME: 05.11.03
PHASE: ASCENT

0 TYPE TRACKING NUMBER
C MER-03
M PROP-02

TYPE TRACKING NUMBER
K IPR 106V-0005
P SPR/CAR 101RF02

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: BRIAN WERNER/BRSS-HB
2: STEVE ARRIETA/BRSS-H

0 DESCRIPTION:

Following the NC2 burn, the Left Orbital Maneuvering Engine (LOME) Bipropellant Valve 2 (BPV-2) continued to indicate open. The first 2 burns were nominal, per the Flight Rules, the engine were not used until the de-orbit burn where it performed nominally. The (6/11/00) post-flight ball valve cavity drain will confirm if the valve is actually failed or just indicating open. If the anomaly is determined to be an indication problem, the LVDT can be replaced without R&R'ing the OME.

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STS-101 (OV-104,FLT #21) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 4

IFA NUMBER> STS-101-V-02

TITLE:LOME GN2 REGULATOR PRESSURE LOW DURING POST-BURN PURGES

0 MISSION CONSTRAINT: STS- 0106 SUBS

IFA TIME GMT: 140 : 10.11.03

IFA STATUS: OPEN
PRACA STATUS: UNKNOWN
PRCBD NUMBER: S062139D

IFA DATE: 06/08/2000
ELAPSED TIME: 150 : 06.21.17
HOUSTON TIME: 05.11.03
PHASE: ASCENT

0 TYPE TRACKING NUMBER
C MER-04
M PROP-01

TYPE TRACKING NUMBER
K IPR
P SPR/CAR 101RF02

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: BRIAN WERNER/BRSS-HB
2: STEVE ARRIETA/BRSS-H

0 DESCRIPTION:

During the OMS assist start transient and post-dump purge and the OMS 2 post-burn purge, the LOME GN2 regulator indicated 296,295 and 297 psia respectively, which are below the FDA limit of 299 psia. Upon completion of the start transients and purges, the regulated pressure returned quickly to a nominal value of 312 psia. There was no mission impact. Regulator will be R&R'd in place without removing the OME.

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STS-101 (OV-104,FLT #21) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 5

IFA NUMBER> STS-101-V-03

TITLE:KU-BAND RADIATING WITHIN THE RF PROTECT BOX

0 MISSION CONSTRAINT: STS- 0106 SUBS

IFA TIME GMT: 140 : 10.11.03

IFA STATUS: OPEN
PRACA STATUS: UNKNOWN
PRCBD NUMBER: S062139D

IFA DATE: 06/08/2000
ELAPSED TIME: 150 : 06.21.17
HOUSTON TIME: 05.11.03
PHASE: ASCENT

0 TYPE TRACKING NUMBER
C MER-12

TYPE TRACKING NUMBER
M INCO-06

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: RASIK PATEL/BRSS-HB
2: MARTY O'HARE/BRSS-H

0 DESCRIPTION:

while the Orbiter was docked to the ISS, on two occasions the Ku-band
Page 2

Sts0101.txt

traveling tube (TWT) radiated into the RF protect box. On each occasion, the duration was approximately 1 to 2 seconds. The radiation took place when the antenna was driving from the TDRS East satellite to the TDRS West satellite. In order to prevent future occurrences, the ground is turning the transmitter off if the TDRS is predicted to be within the box at TDRS AOS. The cause of these occurrences is being investigated.

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STS-101 (OV-104,FLT #21) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 6

IFA NUMBER> STS-101-V-04

TITLE:PRSD O2 TANK 4A HEATER TEMPORARILY FAILED

0 MISSION CONSTRAINT: STS- 0106 SUBS IFA TIME GMT: 140 : 10.11.03
IFA DATE: 06/08/2000
IFA STATUS: OPEN ELAPSED TIME: 150 : 06.21.17
PRACA STATUS: UNKNOWN HOUSTON TIME: 05.11.03
PRCBD NUMBER: S062139D PHASE: ASCENT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
C	MER-06	M	EGIL-02

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: LLOYD MUSTIN/BRSS-HB
2: KEN ADAMS/BRSS-H

0 DESCRIPTION:

During the flight day 2 post sleep cryo reconfiguration, the O2 tank 4 A and B heater were placed in auto. Following the first heater cycle, which was nominal, the A heater did not come on during subsequent cycles. The heater switch was cycled to the off position and then back to auto, both the A and B heaters cycled, and the functionality of the heater was regained. The heaters performed nominally for the remainder of the mission. KSC performed troubleshooting on 06/02/00. The data is being evaluated.

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STS-101 (OV-104,FLT #21) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 7

IFA NUMBER> STS-101-V-05

TITLE:COLLIN TACAN BITE FAULTS

0 MISSION CONSTRAINT: STS- 0106 SUBS IFA TIME GMT: 140 : 10.11.03
IFA DATE: 06/08/2000
IFA STATUS: OPEN ELAPSED TIME: 150 : 06.21.17
PRACA STATUS: UNKNOWN HOUSTON TIME: 05.11.03
PRCBD NUMBER: S062139D PHASE: ASCENT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
C	MER-22	K	IPR 106V-0018
P	SPR/CAR 101RF08		

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: EMAD FARAG/BRSS-HB
2: LANCE BORDEN/BRSS-H

0 DESCRIPTION:

The Collins TACAN in position 3 experienced 2 BITE faults during landing. The two BITE faults lasted for 3 seconds and for 10 seconds. This BITE signature is the first occurrence for a Collins TACAN.

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STS-101 (OV-104,FLT #21) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 8

IFA NUMBER> STS-101-V-06

TITLE:SLUMP TITLE AT THE WING LEADING EDGE WITH INTERNAL FLOW

0 MISSION CONSTRAINT: STS- 0106 SUBS IFA TIME GMT: 140 : 10.11.03
Page 3

Sts0101.txt

IFA STATUS: OPEN
PRACA STATUS: UNKNOWN
PRCBD NUMBER: S062139D

IFA DATE: 06/08/2000
ELAPSED TIME: 150 : 06.21.17
HOUSTON TIME: 05.11.03
PHASE: ASCENT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-23

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: KARRIS HINKLE
2:

0 DESCRIPTION:
During post-landing tile inspection it was noted that the LH leading edge structural system (LESS) #7 tile had a significant slump on the forward outboard edge. More detailed inspection will be performed when the reinforced carbon (RCC) panels have been removed.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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STS-102 (OV-103,FLT #29) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 1

IFA NUMBER> STS-102-V-01
TITLE:DEGRADED FREON COOLANT LOOP (FCL) 1 DUE TO RADIATOR ICING (USA)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 067 : 11.42.09
 IFA DATE: 03/08/2001
IFA STATUS: OPEN ELAPSED TIME: 008 : 21.58.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 05.42.09
PRCBD NUMBER: S061657 PHASE: ASCENT
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 K IPR 105V-0007 P SPR 102RF06
0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: SON NGUYEN
 2: CARMELO ASUNCION

0 DESCRIPTION:

During a Flash Evaporator System (FES) water dump, Freon Coolant Loop (FCL) apparently experienced a flow blockage due to freezing in the radiator with ice collecting in the port radiator flow controller inlet filter. This condition resulted in reduced flow rates in FCL 1. Automatic radiator bypass occurred when normal radiator temperature control was restarted and a radiator under-temperature condition occurred (<33 deg F). The condition persisted and eventually the radiator bypass mode was switched to manual, equipment was powered on to increase the heat load, and the attitude was changed to increase the heat load on the radiator. These actions recovered nominal operation of FCL 1. KSC troubleshooting will consist of a Freon sample from loop 1. Also, thermal analysis of the event is being performed.

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STS-102 (OV-103,FLT #29) INFLIGHT ANOMALY REPORT

05/11/01
PAGE 2

IFA NUMBER> STS-102-V-02
TITLE:RIGHT OMS VAPOR ISOLATION VALVE #2 DID NOT INDICATE OPEN (USA)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 067 : 11.42.09
 IFA DATE: 03/08/2001
IFA STATUS: OPEN ELAPSED TIME: 011 : 19.44.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 05.42.09
PRCBD NUMBER: S061657 PHASE: ASCENT
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 K IPR 105V-00005 P SPR 102RF07
0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: BRIAN WERNER
 2: STEVE ARRIETA

0 DESCRIPTION:

When the crew configured the OMS vapor isolation valve #2 did not indicate OPEN. The valve also did not indicate OPEN at the start of the burn when the computer sent out OPEN commands. This could either be an actual valve failure, or a limit switch failure. There is no close indicator because the valves are spring loaded closed. Data review indicates the valve did not give an OPEN indication during the prior orbit adjust burn; the valve had worked all previous times it was commanded to open. This is the second flight for this particular valve; it is the replacement for a valve whose position indicator had been intermittent. KSC will troubleshoot the problem.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

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STS-103 (OV-103,FLT #27) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 1

IFA NUMBER> STS-103-K-01

TITLE:KSC TACAN TRANSPONDER #2 FAILED DURING LANDING

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 354 : 00.45.12
 IFA DATE: 01/07/2000
 IFA STATUS: OPEN ELAPSED TIME: 362 : 00.01.35
 PRACA STATUS: UNKNOWN HOUSTON TIME: 18.45.12
 PRCBD NUMBER: S062141 PHASE: LANDING

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
*	*****NONE FOUND*****	*	*****NONE FOUND*****

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: ED MANGO/KSC
 2:

0 DESCRIPTION:
 After OMS Burn 1 of 2 Transponders indicated failed. Landing requirements is for 2 active transponders. KSC Transponder #1 was still primary, with Ormond Beach selected as alternate for entry and landing. Troubleshooting post landing in work.

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STS-103 (OV-103,FLT #27) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 2

IFA NUMBER> STS-103-V-01

TITLE:RMS EE BACKUP RELEASE INITIAL FAILURE TO FULLY OPEN

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 354 : 00.45.12
 IFA DATE: 01/07/2000
 IFA STATUS: OPEN ELAPSED TIME: 362 : 00.01.35
 PRACA STATUS: UNKNOWN HOUSTON TIME: 18.45.12
 PRCBD NUMBER: S062141 PHASE: ON ORBIT

0 TYPE	TRACKING NUMBER	TYPE	TRACKING NUMBER
A	IV6-358243	A	PV6-358243
C	MER-01	C	RMS-001
K	RMS-301-0095	K	092V-0006
P	SPR/CAR DN 16310		

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: GEORGE GLENN/ER
 2: KENNETH BROWN/JSC

0 DESCRIPTION:
 During Remote Manipulator System (RMS) checkout, the end effector (EE) grapple fixture snares failed to fully open during the backup release test. During the test, power was applied for 19 seconds and downlink video showed that there were two periods of 3 to 4 seconds each where the snares tried to open. When power was removed, the snares did not appear to have opened enough to allow a grapple pin to be released from the EE. The crew repeated the test and release occurred in approximately 15 seconds. The manual and auto EE release modes worked properly and there was no mission impact. Following the release of the Hubble Space Telescope (HST), the backup release test was rerun 5 times. Each of the releases appeared nominal and the times were 17, 16, 16, 16 and 15 seconds. Post-Flight trouble shooting at KSC is TBD.

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STS-103 (OV-103,FLT #27) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 3

IFA NUMBER> STS-103-V-02

TITLE:MISSING RIGHTHAND INBOARD ELEVON TILE

Sts0103.txt

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 354 : 00.49.53
IFA DATE: 01/07/2000
IFA STATUS: OPEN ELAPSED TIME: 362 : 00.01.35
PRACA STATUS: UNKNOWN HOUSTON TIME: 18.49.53
PRCBD NUMBER: S062141 PHASE: ON ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
A PV6-358325 C MER-22
K STR-3-28-6902 P 103RF02-0

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: KARRIE HINKLE/BRSS
2: KENNETH BROWN/JSC

0 DESCRIPTION:

The tile missing is the R/H inboard elevon drain hole tile (Part Number v070-193009-468) and was installed per WAD RSI-3-J2-295 on 06/08/96. This was the 6th flight of the tile since it was installed. This tile contains a two piece SIP to accommodate the drain hole and drain path. The forward piece of SIP is completely missing showing only remnants of SIP fibers in the bonding adhesive. RTV is dark red in color and appears to be bubbled. Perimeter of SIP area had dark outgassing deposits. Aft SIP is mostly intact. There are a few areas where the tile dense layer is still adhered to the SIP. A large area of the SIP papers to be intact with some of the membrane still in place. Membrane and surface of SIP where membrane is missing is charred. Remainder of SIP (mostly along bottom and aft edges is charred and eroded. Filler bar around perimeter of tile cavity exhibits CAT II/III charring. FRSI edge member along top surface is degraded and bubbled. Gap filler along forward edge of cavity (adjacent to -373 tile) is in place with only minor damage. Gap filler along (adjacent to lower surface tiles) is missing though there is residue gap filler material on filler bar in several locations along the bondline. Gap filler along aft edge of cavity (adjacent to the v070-193022-011 corner tile) is missing. Gap filler between the 193022-011 (corner tile) and the 193007-142 (upper surface trailing edge tile) is missing with no signs of charring at IML. The elevon trailing edge honeycomb section is under the aft piece of SIP so it was somewhat protected. There are two damages to the tiles aft of the missing tile. The 193007-142 has a small damage to the corner (approx. 0.7 x .4 x .2) and the silica is not glazed. The 193022-011 tile has a small damage along the forward edge near the top (approx. 0.5 x 0.2 x 0.2) and the silica is not glazed. The lower forward corner of the tile has a slumped area (approx. 1.5 x 1.0 x 2.0) with molten gap filler material evident on the surface. Interior of drain hole exhibits only minor outgassing deposits. The part number of the damaged tile of the aft fuselage sidewall at the lower fsurface interface is 195006-534. Damage is inline with missing tile and was most likely caused by the 193009-468 impacting this tile when it came off. Constraint to STS-99 flight.

1

STS-103 (OV-103,FLT #27) INFLIGHT ANOMALY REPORT

08/21/00
PAGE 4

IFA NUMBER> STS-103-V-03
TITLE:DAMAGE LEFTHAND RCC PANEL 8

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 354 : 00.49.53
IFA DATE: 01/07/2000
IFA STATUS: OPEN ELAPSED TIME: 362 : 00.01.35
PRACA STATUS: UNKNOWN HOUSTON TIME: 18.49.53
PRCBD NUMBER: S062141 PHASE: ON ORBIT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
A PV6-358144 C MER-24
K TES-3-28-0622 P 103RF03-0

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: AL ROBERTSON/BRSS

2: KENNETH BROWN/JSC

0 DESCRIPTION:

The Lefthand RCC panel #8 of OV-103 was found to be damaged. The damage was not reported on the initial runway inspection. The damage location is 2 inches below apex on leading edge of panel. Substrate is visible. The RCC panel may be a possible scrapped item. Constraint to STS-99 Flight.

1

STS-103 (OV-103,FLT #27) INFLIGHT ANOMALY REPORT

08/21/00

PAGE 5

IFA NUMBER> STS-103-X-01

TITLE:EMU 2 FAILURE DURING POWER-UP

0 MISSION CONSTRAINT:

SUBS

IFA TIME GMT: 354 : 00.49.53

IFA DATE: 01/07/2000

IFA STATUS: OPEN

ELAPSED TIME: 362 : 00.01.35

PRACA STATUS: UNKNOWN

HOUSTON TIME: 18.49.53

PRCBD NUMBER: S062141

PHASE: ASCENT

0 TYPE

TRACKING NUMBER

TYPE

TRACKING NUMBER

C MER-12

M EVA-009

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: BILL SPENNY/EC5

2: ALLEN FLYNT/JSC

0 DESCRIPTION:

During EVA 3 preparation, the crew reported that when EMU 2 power was switched to battery the DCM displayed a "No Power Restart" message and a BITE light. Also, a caution and warning tone was sounded. The crew placed the EMU 2 power switch to SCU and all signatures repeated and the message could not be cleared. The crew was directed to take the airlock Power Mode switch and Bus Select switch for EMU2 to OFF. The crew repeated the EMU 2 DCM power switch throws with the same results. Then the crew powered down the airlock Power mode and Bus Select switches, disconnected and reattached the SCU, repeated the EMU 2 DCM switch throw with same results. Constraint to the next HST flight.

1

STS-103 (OV-103,FLT #27) INFLIGHT ANOMALY REPORT

08/21/00

PAGE 6

IFA NUMBER> STS-103-X-02

TITLE:EMU 3 DCM BENT PIN

0 MISSION CONSTRAINT:

SUBS

IFA TIME GMT: 354 : 00.49.53

IFA DATE: 01/07/2000

IFA STATUS: OPEN

ELAPSED TIME: 362 : 00.01.35

PRACA STATUS: UNKNOWN

HOUSTON TIME: 18.49.53

PRCBD NUMBER: S062141

PHASE: ON ORBIT

0 TYPE

TRACKING NUMBER

TYPE

TRACKING NUMBER

C MER-15

M EVA-011

0 CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS 1: BILL SPENNY

2: ALLEN FLYNT

0 DESCRIPTION:

Prior to airlock repress at the end of EVA 3, the Airlock Power Supply (ALPS) would not power EMU3 with the SCU connected. A repeat of the airlock wall switch throws produced the same results. The repress was performed with EMU3 on battery power. Inspections of the DCM and SCU electrical connectors post repress found two pins bent on the DCM side connector. The location description from the crew along with downlinked photos helped to determine that the pin numbers were 12 and 13, which are SENSE+ and SUIT POWER.

-JFDP012: NORMAL TERMINATION OF PROCESSING

IFA Search Report

IFA NUMBER:
 STS-0104-I-001TITLE:
 HIGH ENGINE 2 LH2 INLET PRESSURE POST MECO (NASA) (CONSTRAINT TO NEXT B II
 SSME FLIGHT)MISSION CONSTRAINT:

SORT NUMBER:
 IFA STATUS:
 Open: PRACA STATUS:
 Closed: UNKNOWN PRCBD NUMBER:
 S061717
 SUBS:
 IFA TIME GMT:
 01.09.14 IFA DATE:
 12-JUL-01 ELAPSED TIME:
 01.08.24
 HOUSTON TIME:
 20.09.14 PHASE:
 ORBITER CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS:
 1: LARRY PIRTLE - BOEING
 2:
 TYPE: & TRACKING NUM:
 C MER-11

DESCRIPTION:
 during a review of MPS ascent data, the post MECO engine 2 inlet pressure
 was higher than normal. Max 12" feed line pressure was ~ 78 psia at MECO + ~
 10 seconds, vs <65 psia prior flights. Max 17" feed line pressure was ~ 43
 psia vs <35 psia prior flights. Team formed to continue investigation into
 causes and effects.

IFA NUMBER:
 STS-0104-V-001TITLE:
 FORWARD BULKHEAD FLOODLIGHT COLDPLATE RETURN LINE LOW
 TEMPERATURE(USA)MISSION CONSTRAINT:

SORT NUMBER:
 IFA STATUS:
 Open: PRACA STATUS:
 Closed: UNKNOWN PRCBD NUMBER:
 S061717
 SUBS:
 IFA TIME GMT:
 01.10.20 IFA DATE:
 12-JUL-01 ELAPSED TIME:
 01.01.17
 HOUSTON TIME:
 20.10.20 PHASE:
 ORBITER CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS:
 1: KENNETH BROWN SSEVO/NASA
 2:
 TYPE: & TRACKING NUM:

C MER-04

DESCRIPTION:

Temperature of the coldplate return line reached 36 F during rendezvous and docking. Data indicates that there may be a configuration problem with the water loop insulation being improperly installed and/or the sensor being incorrectly located. Post flight inspection trouble-shooting will determine cause of the anomaly.

IFA NUMBER:

STS-0104-X-001

TITLE: EMU 3 ELECTROLYTE LEAKAGE (KOH) (NASA) MISSION CONSTRAINT:

SORT NUMBER:

IFA STATUS:

Open: PRACA STATUS:

Closed: UNKNOWN PRCBD NUMBER:

S061717

SUBS:

IFA TIME GMT:

01.11.04 IFA DATE:

15-JUL-01 ELAPSED TIME:

01.14.00

HOUSTON TIME:

20.11.04 PHASE:

ORBITER CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS:

1: GLEN LUTZ - EVA/NASA

2:

TYPE: & TRACKING NUM:

M EVA-001

DESCRIPTION:

During the first pre-EVA checkout on STS-104, the Increased Capacity Battery (ICB) installed in EMU#3 was found to have leaked potassium hydroxide (KOH) outside the containment packaging of the battery. Post-flight troubleshooting planned to isolate the problem.

IFA NUMBER:

STS-0105-P-001

TITLE: METAL SHAVINGS FOUND IN MPLM (NASA) MISSION CONSTRAINT:

SORT NUMBER:

IFA STATUS:

Closed: PRACA STATUS:

Closed: OPEN PRCBD NUMBER:

S062143

SUBS:

IFA TIME GMT:

20.01.00 IFA DATE:

20-SEP-01 ELAPSED TIME:

sts0104.txt

23.20.00

HOUSTON TIME:

15.01.00 PHASE:

ORBITER CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS:

1: ED JUNG

2:

TYPE: & TRACKING NUM:

J MER-00519

DESCRIPTION:

During MPLM crew operation the crew reported metal shavings floating within the MPLM volume. If the metal shavings are not removed there is a possibility of shorting hazard and crew contact. The source of the contamination is currently under investigation.

IFA NUMBER:

STS-0104-V-002TITLE:

FLASH EVAPORATOR SYSTEM (FES) HI-LOAD AND ACCUMULATOR FEED LINE A SYSTEM1

HEATER FAILED OFF (USA)MISSION CONSTRAINT:

SORT NUMBER:

IFA STATUS:

Open: PRACA STATUS:

Closed: UNKNOWN PRCBD NUMBER:

S061717

SUBS:

IFA TIME GMT:

01.12.16 IFA DATE:

12-JUL-01 ELAPSED TIME:

03.13.00

HOUSTON TIME:

20.12.16 PHASE:

ORBITER CLOSURE INITIATED BY:

RESPONSIBLE MANAGERS:

1: KENNETH BROWN SSEVO/NASA

2:

TYPE: & TRACKING NUM:

C MER-05

DESCRIPTION:

FES Hi-load and accumulator feed line "A" system 1 heater failed to cycle "ON" when expected. Typically the accumulator line temp sensor indicates no less than 64 F prior to the heater cycling "ON". Two redundant heater strings provide water line temperature control to prevent freezing. Hi-load line temperatures cycle between 150 F and 180F. Accumulator line temperatures typically between 75 F and 95 F. Linetemperatures dropped to 90 F and 53 F respectively. Crew switched to redundant heater string which performed nominally for the rest of the misson. Post-flight troubleshooting will be performed to isolate the cause of the anomaly.

sts0104.txt

IFA NUMBER:
STS-0104-V-003TITLE:
LOSS OF KU-BAND FORWARD LINK (USA)MISSION CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: UNKNOWN PRCBD NUMBER:
S061717
SUBS:
IFA TIME GMT:
01.19.42 IFA DATE:
20-JUL-01 ELAPSED TIME:
01.10.39
HOUSTON TIME:
20.19.42 PHASE:
ORBITER CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: KENNETH BROWN SSEVO/NASA
2:
TYPE: & TRACKING NUM:
C MER-10

DESCRIPTION:
Ku-Band failed to acquire the forward link communication, which resulted in loss of voice and command. The Anomaly occurred on eight separate occasions. Review of flight data suggests that the problem is most likely associated with the Electronic Assembly-1 (EA-1) LRU located in avionics bay 3A. Post-flight troubleshooting planned to isolate the problem.

IFA NUMBER:
STS-0104-V-004TITLE:
LEFT HAND (LH) VENT DOOR 8 & 9 MOTOR 2 OPEN INDICATION FAIL OFFMISSION CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: UNKNOWN PRCBD NUMBER:
S061717
SUBS:
IFA TIME GMT:
01.15.39 IFA DATE:
24-JUL-01 ELAPSED TIME:
03.40.36
HOUSTON TIME:
20.15.39 PHASE:
LANDING CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: KENNETH BROWN SSEVO/NASA
2:
TYPE: & TRACKING NUM:
C MER-12

DESCRIPTION:
When the vent doors were opened during post-entry interface the LH vent door 8 & 9 "closed" indication went "OFF" and the motor 1 "OPEN" indication came "ON" as expected; however the motor 2 "OPEN" indication

sts0104.txt

fail "OFF" and the motor continued to run. Motor was turned off by the software after driving for 10 seconds and the motor 2 "OPEN" indications came "ON" approx 1 minute 45 seconds later.

IFA Search Report

IFA NUMBER:
STS-0105-P-001TITLE:
METAL SHAVINGS FOUND IN MPLM (NASA)MISSION CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Closed: PRACA STATUS:
Closed: OPEN PRCBD NUMBER:
S062143
SUBS:
IFA TIME GMT:
20.01.00 IFA DATE:
20-SEP-01 ELAPSED TIME:
23.20.00
HOUSTON TIME:
15.01.00 PHASE:
ORBITER CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: ED JUNG
2:
TYPE: & TRACKING NUM:
J MER-00519

DESCRIPTION:
During MPLM crew operation the crew reported metal shavings floating within the MPLM volume. If the metal shavings are not removed there is a possibility of shorting hazard and crew contact. The source of the contamination is currently under investigation.

IFA NUMBER:
STS-0105-V-001TITLE:
LEFT OMS LOW POINT OXIDIZER DRAIN LINE B HEATER STOPPED CYCLINGMISSION
CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: UNKNOWN PRCBD NUMBER:
S062143
SUBS:
IFA TIME GMT:
23.18.03 IFA DATE:
20-SEP-01 ELAPSED TIME:
20.53.00
HOUSTON TIME:
18.18.03 PHASE:
ORBITER CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: DON L. MCCORMACK
2: KEN BROWN
TYPE: & TRACKING NUM:
J MER-14
DESCRIPTION:

sts0105.txt

At approximately (010:20:53 MET), the left OMS low point oxidizer drain line temperature dropped below the expected heater turn-on temperature of 63 deg F. When the temperature dropped to 41 deg F, the crew switched the cross feed line heaters from system B to system A. Nominal heater operation was observed after the heater reconfiguration. Post flight inspection/troubleshooting will determine cause of the anomaly.

IFA NUMBER:
STS-0105-V-002 TITLE:
LOSS OF AC2 PHASE A DURING MANIPULATOR POSITIONING MECHANISM (MPM) STOW
(USA) MISSION CONSTRAINT:

SORT NUMBER:
IFA STATUS:
Open: PRACA STATUS:
Closed: UNKNOWN PRCBD NUMBER:
S062143
SUBS:
IFA TIME GMT:
16.42.00 IFA DATE:
20-SEP-01 ELAPSED TIME:
07.31.46
HOUSTON TIME:
11.42.00 PHASE:
ON-ORBIT CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS:
1: DON L. MCCORMACK
2: KEN BROWN
TYPE: & TRACKING NUM:
J MER-12

DESCRIPTION:
During MPM Stow the AC2 motor drove for dual time with motor 2 Phase "A" missing. Also during Payload Bay Door (PLBD) Closure the AC2 motor drove for dual time with phase "A" current missing. During PLBD opening in the OPF, Phase "A" current was still missing from the prot PLBD drive motor 2. The circuit breaker (CB) was cycled and the Phase "A" recovered. The CB will be R&R and a failure analysis will be performed on the suspect CB.

Sts0106.txt
K IPR 98V-0005

C MER-11
0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DON MCCORMACK/NASA
2: EMAD FARAG/BRSS-HB

0 DESCRIPTION:
The microwave scanning beam landing system (MSBLS) 2 initially locked on in range for a few seconds, and then lost lock for the remainder of the landing. The unit provided nominal azimuth and elevation data during landing operations. The other MSBLS units operated satisfactorily in providing nominal range, azimuth and elevation data. This problem did not impact the landing operations. The MSLBS consists of two LRU's, the RF assembly and the decoder assembly. The failure signature indicates that the problem is most likely in the RF assembly. KSC will perform postflight troubleshooting. There are 3 spare RF assemblies available on site.

1 STS-106 (OV-104,FLT #22) INFLIGHT ANOMALY REPORT 09/29/00
PAGE 4

IFA NUMBER> STS-106-V-04
TITLE:LEFT HAND VENT DOORS 8 AND 9 MICROSWITCH

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 264 : 06.25.00
IFA DATE: 09/25/2000
IFA STATUS: OPEN ELAPSED TIME: 011 : 17.39.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 01.25.00
PRCBD NUMBER: S062144D PHASE: DEORBIT
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-10 K IPR 98V-0007
P SPR/CAR 106RF05

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DON MCCORMACK/NASA
2: JEFF GOODMARK

0 DESCRIPTION:
During the major mode 301 vent door close operations in deorbit prep, the left vent doors 8 and 9 close microswitch 2 failed to indicate closed. As a result, drive motor 2 remained on until the software terminated operation after approximately 10 seconds. The left vent doors 8 and 9 were subsequently opened prior to the deorbit burn. When the doors were once again closed during major mode 304, the microswitch performed nominally. Postflight troubleshooting is being planned.

1 STS-106 (OV-104,FLT #22) INFLIGHT ANOMALY REPORT 09/29/00
PAGE 5

IFA NUMBER> STS-106-V-05
TITLE:ODS C/L CAMERA HARNESS ASSEMBLY FAILURE

0 MISSION CONSTRAINT: NONE SUBS IFA TIME GMT: 253 : 14.47.00
IFA DATE: 09/25/2000
IFA STATUS: OPEN ELAPSED TIME: 001 : 02.01.00
PRACA STATUS: UNKNOWN HOUSTON TIME: 09.47.00
PRCBD NUMBER: S062144D PHASE: ORBIT
0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-004

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DON MCCORMACK/NASA
2: TODD POCKLINGTON/BRSS-HB

0 DESCRIPTION:
The crew reported that upon initial power-up of the ODS centerline camera that the camera failed to power up. The crew switched from the primary to the backup harness assembly and the camera was successfully powered up. Note that the backup camera was not used. The harness will
Page 2

Sts0106.txt

be checked out post flight. Also, the preflight checkout process of the cameras and harness is being reviewed to determine if changes to the process are required.

-JFDPO12: NORMAL TERMINATION OF PROCESSING

1
1
1

STS-108 (OV-105,FLT #17) INFLIGHT ANOMALY REPORT

01/16/02
PAGE 1

IFA NUMBER> STS-108-K-01

TITLE:ET GH2 VENT LINE ANOMALY (USA - CONTRAINT TO NEXT FLIGHT)

0 MISSION CONSTRAINT: NEXT FLGT SUBS IFA TIME GMT: 220 : 19.28.02
 IFA DATE: 01/10/2002
 IFA STATUS: OPEN ELAPSED TIME: 000 : 19.08.00
 PRACA STATUS: OPEN HOUSTON TIME: 13.28.02
 PRCBD NUMBER: S062146 PHASE: ASCENT

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 Z ZPR PAD B-2539

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: TERRI HERST
 2:

0 DESCRIPTION:

The Gaseous Hydrogen vent line did not latch on the Fixed Support Structure (FSS) latching mechanism. The vent line contacted the south side of the FSS structure preventing the latch back and caused substantial damage to the saddle structure. The south side bridle cable sheared from the southern tang on the yoke. Pieces of debris (bolts and clevis leg) were found on the grating and vent line structure.

1

STS-108 (OV-105,FLT #17) INFLIGHT ANOMALY REPORT

01/16/02
PAGE 2

IFA NUMBER> STS-108-V-01

TITLE:RCS THRUSTER R4U FAIL OFF (USA)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 339 : 22.28.09
 IFA DATE: 01/10/2002
 IFA STATUS: CLOSED ELAPSED TIME: 000 : 00.08.41
 PRACA STATUS: CLOSED : CLOSE HOUSTON TIME: 16.28.09
 PRCBD NUMBER: S062146 PHASE: ORBITER

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 C MER-03

0 CLOSURE INITIATED BY:
 RESPONSIBLE MANAGERS 1: DON MCCORMACK
 2:

0 DESCRIPTION:

Primary RCS Thruster R4U fail off when first commanded to fire and was auto-deselected by RCS Redundancy Management during mated coast. The thruster injector temperature and chamber pressures suggest a problem with a thruster pilot-operated valve. The thruster remained deselected for the duration of the flight. The thruster will be removed and replaced.

1

STS-108 (OV-105,FLT #17) INFLIGHT ANOMALY REPORT

01/16/02
PAGE 3

IFA NUMBER> STS-108-V-02

TITLE:RCS THRUSTER F3F FAIL OFF

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 339 : 22.28.09
 IFA DATE: 01/10/2002
 IFA STATUS: CLOSED ELAPSED TIME: 001 : 21.43.58
 PRACA STATUS: CLOSED : CLOSE HOUSTON TIME: 16.28.09
 PRCBD NUMBER: S062146 PHASE: ORBITER

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
 C MER-05

sts0108.txt

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DON MCCORMACK
2:

0 DESCRIPTION:

Primary RCS Thruster F3F fail off following a series of three 0.080 second pulses and was auto-deselected by RCS Redundancy Management. The thruster injector temperature and chamber pressures suggest a problem with a thruster pilot-operated valve. The thruster remained deselected for the remainder of the flight. The thruster will be removed and replaced.

1

STS-108 (OV-105,FLT #17) INFLIGHT ANOMALY REPORT

01/16/02
PAGE 4

IFA NUMBER> STS-108-V-03
TITLE:IMU 2 Z-AXIS/REDUNDANT RATE ANOMALY (USA)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 347 : 05.39.00
IFA DATE: 01/10/2002
IFA STATUS: CLOSED ELAPSED TIME: 007 : 07.20.12
PRACA STATUS: CLOSED : CLOSE HOUSTON TIME: 23.39.00
PRCBD NUMBER: S062146 PHASE: ORBITER

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-08

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DON MCCORMACK
2:

0 DESCRIPTION:

IMU 2 experienced a platform fail and redundant rate fail BITES. The redundant rate fail BITE was the result of a high redundant axis drift rate (up to 3 deg/hr) in the IMU 2 Z-Axis/redundant axis gyro. IMU 1 was activated and IMU 2 was deselected and the BITE was masked. Subsequently IMU 2 was reselected for entry and the BITE was unmasked. Its performance during entry and landing were nominal. IMU 2 has been removed and will be sent to the JSC ISL for testing and evaluation.

1

STS-108 (OV-105,FLT #17) INFLIGHT ANOMALY REPORT

01/16/02
PAGE 5

IFA NUMBER> STS-108-V-04
TITLE:FES SECONDARY HI-LOAD NOT CONTROLLING (USA)

0 MISSION CONSTRAINT: SUBS IFA TIME GMT: 347 : 05.39.00
IFA DATE: 01/10/2002
IFA STATUS: CLOSED ELAPSED TIME: 007 : 07.20.12
PRACA STATUS: CLOSED : CLOSE HOUSTON TIME: 23.39.00
PRCBD NUMBER: S062146 PHASE: ORBITER

0 TYPE TRACKING NUMBER TYPE TRACKING NUMBER
C MER-12

0 CLOSURE INITIATED BY:
RESPONSIBLE MANAGERS 1: DON MCCORMACK
2:

0 DESCRIPTION:

During the FES checkout prior to the de-orbit burn, the secondary controller failed to control the evaporator outlet temperature within the specified range of 62 +/-2 degree F. The outlet temperature oscillated in a range of approximately 45 to 80 degree F. After several cycles, the FES topping evaporator was selected and the outlet temperature control was good on the secondary controller. Checkout of the FES in the full-up mode on the primary B controller was also good. The FES performed nominally during entry. Troubleshooting of the controller and the control sensor is in work.

sts0108.txt

-JFDPO12: NORMAL TERMINATION OF PROCESSING

IFA NUMBER: STS-0109-V-001	TITLE: FREON COOLANT LOOP 1 DEGRADED AFT COLD PLATE FLOW (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062147
SUBS:	IFA TIME GMT: 17.22.00	IFA DATE: 01-MAR-02	ELAPSED TIME: 05.59.39
HOUSTON TIME: 11.22.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRENDA ELIASON NASA/JSC 2:
TYPE: & TRACKING NUM: C MER-01			
DESCRIPTION: Several seconds after MECO, the Freon Coolant Loop (FCL) 1 AFT cold plate flow rate decreased from 304 lb/hr to 226 lb/hr. Analysis performed determined that despite the degraded flow, FCL 1 would provideadequate cooling during entry in the event of a failure of FCL 2. Post-flight X-Ray revealed a 0.5 object at the orifice upstream of the AFT cold plate.			

IFA NUMBER: STS-0109-V-002	TITLE: AIRLOCK "A" HATCH LOCKING DEVICE DIFFICULT TO ACTUATE (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062147
SUBS:	IFA TIME GMT: 15.57.00	IFA DATE: 01-MAR-02	ELAPSED TIME: 05.59.39
HOUSTON TIME: 09.57.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRENDA ELIASON NASA/JSC 2:
TYPE: & TRACKING NUM: C MER-02			
DESCRIPTION: On flight day 1, when the crew attempted to open the internal airlock, or "A", hatch, they reported difficulty moving the actuator locking tab out of the locked position, and therefore could not unlatch the hatch. Jiggling the actuator handle and pressing back against the actuator allowed them to move the locking lever and unlatch the hatch. For the duration of the flight, the crew left the "A" hatch actuator unlocked. Post flight inspection revealed that the ball detent handle release button does not spring back when they are pushed down to remove the handle.			

IFA NUMBER: STS-0109-V-003	TITLE: MPS LH2 4-INCH RECIRCULATION DISCONNECT SLOW-TO-CLOSE (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062147
SUBS:	IFA TIME GMT: 15.57.00	IFA DATE: 01-MAR-02	ELAPSED TIME: 05.59.39
HOUSTON TIME: 09.57.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRENDA ELIASON NASA/JSC 2:
TYPE: & TRACKING NUM: C MER-07			
DESCRIPTION:			

IFA NUMBER: STS-0109-V-004	TITLE: FORWARD TRANSLATOR HAND CONTROLLER (THC) -X CONTACT LOST DURING ONE BURN(USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062147
SUBS:	IFA TIME GMT: 05.12.00	IFA DATE: 01-MAR-02	ELAPSED TIME: 05.59.39
HOUSTON TIME: 23.12.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRENDA ELIASON NASA/JSC 2:
TYPE: & TRACKING NUM: C MER- 010			
DESCRIPTION:			

IFA NUMBER: STS-0109-V-005	TITLE: FLASH EVAPORATOR SYSTEM (FES) ACCUMULATOR/HI-LOAD FEEDLINE B HEATER SYSTEM 2 FAILURE (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062147
SUBS:	IFA TIME GMT: 09.22.00	IFA DATE: 01-MAR-02	ELAPSED TIME: 05.59.39
HOUSTON TIME: 03.22.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRENDA ELIASON NASA/JSC 2:
TYPE: & TRACKING NUM: C MER- 14			
DESCRIPTION:			

IFA NUMBER: STS-0109-V-006	TITLE: PRIMARY RCS THRUSTER R3R FAIL OFF (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062147
SUBS:	IFA TIME GMT: 08.19.00	IFA DATE: 01-MAR-02	ELAPSED TIME: 05.59.39
HOUSTON TIME: 02.19.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRENDA ELIASON NASA/JSC 2:
TYPE: & TRACKING NUM: C MER-16			
DESCRIPTION:			

IFA NUMBER: STS-0109-V-007	TITLE: SUSPECT DUAL POWER SUPPLY AND BATTERY CHARGER VOLTAGE SPIKE (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062147
SUBS:	IFA TIME GMT: 08.19.00	IFA DATE: 01-MAR-02	ELAPSED TIME: 05.59.39
HOUSTON TIME: 02.19.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRENDA ELIASON NASA/JSC 2:
TYPE: & TRACKING NUM: C MER-19			
DESCRIPTION:			

STS-110 Total Items Meeting Search Condition = 7

STS #	IFA #	Element	Orbiter #	IFA Date	Title	Status
0110 SavePrint	001	K	104	08-04-2002	LH2 LEAK ON HYDROGEN VENT LINE ON MLP 3 SIDE 4	.
0110 SavePrint	002	K	104	08-04-2002	LDBA SWITCHED FROM BUS 1 TO BUS 2 UNEXPECTEDLY (USA)	.
0110 SavePrint	003	K	104	08-04-2002	EXECUTION OF S0007 VOLUME 5 RF DATA INTERRUPTION RECOVERY PROCEDURE	.
0110 SavePrint	001	V	104	09-04-2002	PRIMARY RCS THRUSTER L1A FAILED OFF (USA)	.
0110 SavePrint	002	V	104	10-04-2002	LOW CHAMBER PRESSURE ON PRIMARY RCS F1D (USA)	.
0110 SavePrint	003	V	104	17-04-2002	LOW CHAMBER PRESSURE ON PRIMARY RCS THRUSTER (USA)	.
0110 SavePrint	004	V	104	08-04-2002	MEDS IDP2 MSU BITE AND FCW BUFFER OVERFLOW ERROR (USA)	.

IFA NUMBER: STS-0110-K-001		TITLE: LH2 LEAK ON HYDROGEN VENT LINE ON MLP 3 SIDE 4		MISSION CONSTRAINT: 0111	
SORT NUMBER:		IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062148G	
SUBS:		IFA TIME GMT: 20.44.18	IFA DATE: 08-APR-02	ELAPSED TIME: 00.00.00	
HOUSTON TIME: 15.44.18		PHASE: ASCENT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: TERRI HERST 321.861.3982 2:	
TYPE: & TRACKING NUM: K IPR 110-V-0121					
DESCRIPTION: During ET Cryogenic Loading approximately 13 minutes into LH2 fast fill, the MLP Hydrogen Vent Line exhibited a significant leakage of H2 and LH2 loading was safed. The launch countdown was aborted to repair the H2 vent line. The 16" MLP H2 Vent line was the origin of the vapor cloud. A clamshell welded over the failed weld was performed and successfully supported launch. All findings will be presented at the STS-					

111 FRR.

IFA NUMBER: STS-0110-K-002	TITLE: LDBA SWITCHED FROM BUS 1 TO BUS 2 UNEXPECTEDLY (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062148G
SUBS:	IFA TIME GMT: 20.44.18	IFA DATE: 08-APR-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 15.44.18	PHASE: ASCENT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: TERRI HERST 321.861.3982 2:
TYPE: & TRACKING NUM: K IPR 110- V-0122			
DESCRIPTION: During cryogenic drain operation the Launch Data Bus switched from Bus 1 to Bus 2 unexpectedly. Attempts to switch from Bus 2 to Bus 1 were unseccessful. The LCC, LPS-17, requires 2 of 2 LDB's until T-9 minutes. Testing of the DBIA and associated orbiter wiring will be performed.			

IFA NUMBER: STS-0110-K-003	TITLE: EXECUTION OF S0007 VOLUME 5 RF DATA INTERRUPTION RECOVERY PROCEDURE		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062148G
SUBS:	IFA TIME GMT: 20.44.18	IFA DATE: 08-APR-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 15.44.18	PHASE: ASCENT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: TERRI HERST 321.861.3982 2:
TYPE: & TRACKING NUM: X S0007- 121			
DESCRIPTION: At T-0007/03, the LPS system detected consecutive synchronization errors in all three standby PCM FEPS (OI, GPC, PLD). The countdown clock held at T-5 minutes for the execution of the S0007 Volume 5 procedures. The FEP resynchronization procedure is executed any time after the stand by FEPs are on the RF data source and an RF data interruption occurs prior to T-5 minutes. An engineering team is reviewing the actions, requirements, and procedures taken as a result of this event, results will be presented at the FRR.			

IFA NUMBER: STS-0110-V-001	TITLE: PRIMARY RCS THRUSTER L1A FAILED OFF (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062148G
SUBS:	IFA TIME GMT: 21.18.00	IFA DATE: 09-APR-02	ELAPSED TIME: 00.33.42
HOUSTON TIME: 16.18.00	PHASE: ON-ORBIT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRIAN WERNER 714.934.0542 2:
TYPE: & TRACKING NUM: J MER-01			
DESCRIPTION: Primary RCS thruster L1A failed off when first commanded to fire during NC3 maneuver and auto-deselected by RCS RM. The chamber pressure reached max value of 20 psia. Fuel and ox flow was evident by drop in injector temps. Fifth flight of this thruster since last installation/flushing. Most likely cause is fuel valve seal extrusion			

IFA NUMBER: STS-0110-V-002	TITLE: LOW CHAMBER PRESSURE ON PRIMARY RCS FID (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062148G
SUBS:	IFA TIME GMT: 11.15.00	IFA DATE: 10-APR-02	ELAPSED TIME: 14.31.00
HOUSTON TIME: 06.15.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRIAN WERNER 714.934.0542 2:
TYPE: & TRACKING NUM: J MER-02			
DESCRIPTION: Primary RCS thruster F1D experienced low chamber pressure during three 80-millisecond pulses. The pressure was high enough that RM did not declare the thruster failed off and deselected it. The crew reprioritized F1D to priority 2 to prevent further firings. Orbiter acceleration rates during the firings were evaluated and it was concluded that F1D did not produce full thrust. The thruster will be R&R along with the remainder of the thrusters on that manifold.			

IFA NUMBER: STS-0110-V-003	TITLE: LOW CHAMBER PRESSURE ON PRIMARY RCS THRUSTER (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062148G
SUBS:	IFA TIME GMT: 19.07.00	IFA DATE: 17-APR-02	ELAPSED TIME: 22.22.42
HOUSTON TIME: 14.07.00	PHASE: ON-ORBIT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: BRIAN WERNER 714.934.0542 2:
TYPE: & TRACKING NUM: J MER-09			
DESCRIPTION: Low chamber on primary RCS thruster F3L during the ISS fly around. It was noted that primary RCS thruster F3L had a low chamber pressure on an 80-millisecond pulse similar to the STS-110-V-02 thruster. Thruster was deselected for the remainder of the mission. All thrusters on the F3 manifold will be R&R.			

IFA NUMBER: STS-0110-V-004	TITLE: MEDS IDP2 MSU BITE AND FCW BUFFER OVERFLOW ERROR (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062148G
SUBS:	IFA TIME GMT: 21.10.00	IFA DATE: 08-APR-02	ELAPSED TIME: 00.25.42
HOUSTON TIME: 16.10.00	PHASE: ON-ORBIT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: JAMES NEWSOME281.483.1542 2:
TYPE: & TRACKING NUM: J MER-03			
DESCRIPTION: The Integrated Display Processor (IDP) 2 annunciated a single buffer overflow error. Error indicates that more than 16 FCW display fill messages have been received without being processed by the IDP SW. The anomaly has not reoccurred in subsequent post-flight vehicle operations. The MEDS community is considering a change to the IDP software to eliminate the potential effects of MSU related anomalies on the updating of DPS CRT displays.			

IFA NUMBER: STS-0111-E-001	TITLE: ME-3 HPFTP SPEED SENSOR CH-B FAILED TO SHOW PUMP SPEED (NASA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062149
SUBS:	IFA TIME GMT: 21.22.42	IFA DATE: 05-JUN-02	ELAPSED TIME: 22.42.00
HOUSTON TIME: 16.22.42	PHASE: SSME	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: TAB CHOATE 256.544.56830 2:

DESCRIPTION:

During engine start the Main Engine 3 (ME-3) High Pressure Fuel Turbo Pump (HPFTP) Speed Sensor CH-B failed to show pump speed and was disqualified from the software logic for the engine start confirm redline. The sensor began to recover at engine start plus 42 (E/S+42) seconds with very noisy recover after E/S+63 seconds with nominal operation after E/S+136 seconds. Possible causes for this problem are; a sensor failure, wire harness failure, problem in the connection of the harness to the sensor or controller, or the Pulse rate Counter inside of the Controller.

IFA NUMBER: STS-0111-V-001	TITLE: LEFT OME GN2 REGULATOR LEAKAGE (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062149
SUBS:	IFA TIME GMT: 22.19.31	IFA DATE: 29-MAY-02	ELAPSED TIME: 23.30.23
HOUSTON TIME: 17.19.31	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: S. ARRIETA 281.853.1554 2:
TYPE: & TRACKING NUM: C MER-02			
DESCRIPTION: Following activation of the OME Arm/Pressurization (A/P) switches during the first launch attempt, the left OME GN2 regulator leaked at a rate of approximately 680 cc/min as evidenced by an abnormal GN2 accumulator pressure increase (pressure rise rate = ~32 psi/min) Subsequent to this event, the launch attempt was scrubbed due to the weather. During the stand-down for the weather, the decision was made to top off the GN2 tank and perform an additional functional test of the regulator. The regulator again leaked, failing to lock-up. The regulator was removed and replaced, and nominal performance was subsequently observed in flight.			

IFA NUMBER: STS-0111-V-002	TITLE: FES FAILURE ON PRIMARY B CONTROLLER (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062149
SUBS:	IFA TIME GMT: 10.44.00	IFA DATE: 07-JUN-02	ELAPSED TIME: 13.21.00
HOUSTON TIME: 05.44.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: SON NGUYEN 714.372.5058 2:
TYPE: & TRACKING NUM: C MER-05			
DESCRIPTION: The Flash Evap (FES) failed to come out of stand-by when operating in the topping mode on the primary B controller. A restart of the FES was attempted on the primary B controller and it was not successful. The FES was restarted nominally on the primary A controller. No additional troubleshooting or checkouts were performed using the primary B controller for the remainder of the mission. KSC will perform post-flight troubleshooting.			

IFA NUMBER: STS-0111-V-003	TITLE: PORT AFT PLBD READY-TO-LATCH INDICATION FAILED ON (USA)		MISSION CONSTRAINT:
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062149
SUBS:	IFA TIME GMT: 15.58.00	IFA DATE: 17-JUN-02	ELAPSED TIME: 18.35.00
HOUSTON TIME: 10.58.00	PHASE: ORBITER	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: PAUL REESE 714.372.5062 2:
TYPE: & TRACKING NUM: C MER-12			
DESCRIPTION: Following the landing wave-off on the nominal end of mission day, when the port payload bay door (PLBD) was driven open all three port aft ready-to-latch (R-T-L) indications remained on. Several hours later, the three R-T-L indications turned off. The problem repeated when the doors were re-opened following the landing wave-off on the following day. After return of the vehicle to KSC, the switch module will be replaced and sent to NSLD for troubleshooting and repair.			

IFA NUMBER: STS-0112-D-001	TITLE: SSRMS/PLBD CLERANCE ISSUE		MISSION CONSTRAINT: 00NO
SORT NUMBER:	IFA STATUS: Closed:	PRACA STATUS: Closed: CLOSED	PRCBD NUMBER: S062151
SUBS:	IFA TIME GMT: 14.34.00	IFA DATE: 09-OCT-02	ELAPSED TIME: 15.15.00
HOUSTON TIME: 08.34.00	PHASE: ORBIT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: GAIL SCHNEIDER NASA/JSC 2:
TYPE: & TRACKING NUM: M MOD			
DESCRIPTION: During EVA 1 free-space maneuvering, the SSRMS came within very close proximity to the Shuttle Starboard Payload Bay Door.			

IFA NUMBER: STS-0112-K-001	TITLE: GROUND PIC SYSTEM A DID NO FIRE AT T-0		MISSION CONSTRAINT: 0YES
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: S062151
SUBS:	IFA TIME GMT: 19.45.51	IFA DATE: 07-OCT-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 13.45.51	PHASE: LAUNCH	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: TERRI HERST NASA/KSC 2:
TYPE: & TRACKING NUM: K IPR114V-0004			
DESCRIPTION: The post launch data review determined that none of the system A pyros (NSI) for the SRB hold down posts or ET Vent Arm System (ETVAS) discharged. The data indicate that the PICs were properly armed but then had a gradual bleed-off of voltage, which is indicative of no firing. The eight pyros associated with the SRB hold down posts, one for the release of the ET vent arm and one for the ETVAS lanyard did not fire. The KSC team has been working the troubleshooting plan to evaluate the suspect hardware.			

IFA NUMBER: STS-0112-V-001	TITLE: PRIMARY THRUSTER L4D FILED OFF		MISSION CONSTRAINT: 00NO
SORT NUMBER:	IFA STATUS: Closed:	PRACA STATUS: Closed: CLOSED	PRCBD NUMBER: S062151
SUBS:	IFA TIME GMT: 19.54.00	IFA DATE: 07-OCT-02	ELAPSED TIME: 00.08.30
HOUSTON TIME: 13.54.00	PHASE: ORBIT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: KENNETH BROWN NASA/JSC 2:
TYPE: & TRACKING NUM: C MER 01			
DESCRIPTION: Immediately prior to ET separation, the RCS primary thruster L4D failed off because of the low chamber pressure on its initial firing. The maximum pressure reached was 16 psia, which is indicative of the fuel valve main stage not opening. The remaining two down-firing thrusters performed nominally during ET separation. The thruster remained deselected for the mission with no impact to the mission. The thruster will be removed and replaced. This will include the removal and replacement of all thrusters on the L4 manifold.			

STS-113

IFA NUMBER: STS-0113-K-001	TITLE: INTERNAL HYDRAULIC LEAKAGE IN OAA SYSTEM (USA)	MISSION CONSTRAINT: NONE	
SORT NUMBER:	IFA STATUS: Closed: 10-JAN-03	PRACA STATUS: Closed: CLOSED	PRCBD NUMBER: SO62151AR1
SUBS:	IFA TIME GMT: 00.50.00	IFA DATE: 23-NOV-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 18.50.00	PHASE: PRELAUNCH	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: TERRI HERST NASA/KSC 2:
TYPE: & TRACKING NUM: K IPR 113V-0077			
DESCRIPTION: During system monitoring, the OAA hydraulic system exhibited an increase in hydraulic usage by decrease in accumulator pressure. A review of the procedure found steps to close the valves were missing. The procedure has been modified.			

IFA NUMBER: STS-0113-T-001	TITLE: PRIMARY AND SECONDARY HELIUM BUBBLING DIFFERENTIAL PRESSURE IS ERRATIC (NASA)		MISSION CONSTRAINT: NONE
SORT NUMBER:	IFA STATUS: Closed: 23-JAN-03	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: SO62151AR2
SUBS:	IFA TIME GMT: 00.50.00	IFA DATE: 23-NOV-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 18.50.00	PHASE: PRELAUNCH	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: TERRY GREENWOOD NASA/MSFC 2:
TYPE: & TRACKING NUM: K IPR 113V-0075			
DESCRIPTION: During LOX helium bubbling activation, both primary and secondary differential pressure measurement were erratic. These transducers measure delta pressure across a 0.162-inch Venturi flow meter. Both measurements stabilized with OMRS limits after approximately 37 minutes of helium flow.			

IFA NUMBER: STS-0113-V-001	TITLE: O2 CONCERNTRATION IN THE MID BODY ABOVE EXPECTED BASELINE (USA)		MISSION CONSTRAINT: NONE
SORT NUMBER:	IFA STATUS: Closed: 09-JAN-03	PRACA STATUS: Closed: CLOSED	PRCBD NUMBER: S062151AD
SUBS:	IFA TIME GMT: 00.00.00	IFA DATE: 10-NOV-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 00.00.00	PHASE: PRE LAUNCH	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: KENNETH BROWN NASA/MV 2:
TYPE: & TRACKING NUM: C MER-1			
DESCRIPTION: High O2 level detected by midbody and payload hazardous detection system(HGDS) during STS-113 pre-launch. HGDS sample lines measured 130 to 150PPM of O2 during prelaunch should be approximately zero. First launch attempt aborted. Inspection found blowing leak in the Xo576 bulkhead flex hose near the bulkhead fitting. The leaking O2 flex hose was R&R'dand failure analysis was performed on the removed flex hose.			

IFA NUMBER: STS-0113-X-001	TITLE: EVI BOOT FIT (NASA)		MISSION CONSTRAINT: NONE
SORT NUMBER:	IFA STATUS: Closed:	PRACA STATUS: Closed: CLOSED	PRCBD NUMBER: SO62151AD
SUBS:	IFA TIME GMT: 00.00.00	IFA DATE: 26-NOV-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 00.00.00	PHASE: ORBIT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: GLENN LUTZ NASA/JSC 2:
TYPE: & TRACKING NUM: M MER-IFI-01026			
DESCRIPTION: EMU Boot Fit first surfaced on STS-92 (Lopez-Alegria). Sizing suit too long in a critical dimension caused Lopez Alegria's STS-113 boot issue.			

IFA NUMBER: STS-0113-K-002	TITLE: RETRACTABLE PLATFORM CONTACTED RMS (USA)		MISSION CONSTRAINT: NONE
SORT NUMBER:	IFA STATUS: Open:	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: SO62151AD
SUBS:	IFA TIME GMT: 00.00.00	IFA DATE: 11-NOV-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 00.00.00	PHASE: PRELAUNCH	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: TERRI HERST NASA/KSC 2:
TYPE: & TRACKING NUM: K IPR 113V-0067			
DESCRIPTION: During platform operations in the PCR, a retractable platform impacted the RMS. A visible tear in the protective blanket was noted. The Kevlar and honeycomb layer were removed to provide access for ultrasound. Ultrasound inspection indicates that there is a 2" by 2.25" delamination near the GY-70 and T-30 layer in the carbon composite. The vendor performed testing on a representative boom section of the arm at ultimate flight loads. The unit fully reacted to loads and remained structurally intact. No further delamination or crack growth was noted. The arm was MR'd use as is for one flight.			

IFA NUMBER: STS-0113-V-002	TITLE: RIGHT OMS ENGINE BI-PROPELLANT VALVE 2 INDICATES OPEN (USA)		MISSION CONSTRAINT: NONE
SORT NUMBER:	IFA STATUS: Closed: 09-JAN-03	PRACA STATUS: Closed: CLOSED	PRCBD NUMBER: S062151AD
SUBS:	IFA TIME GMT: 00.53.00	IFA DATE: 23-NOV-02	ELAPSED TIME: 00.03.00
HOUSTON TIME: 18.53.00	PHASE: ASCENT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: KENNETH BROWN NASA/MV 2:
TYPE: & TRACKING NUM: C MER-3			
DESCRIPTION: At the end of the OMS assist burn, the right OMS ball valve 2 continued to indicate open. The indication dropped only 0.5% so the reading was 95.8% and should be 0%. Per the flight rule, the right OMS may be used for deorbit only. The remaining OMS burns were performed single engine using left OMS. At KSC the troubleshooting will verify valve position during ball valve drain.			

IFA NUMBER: STS-0113-X-002	TITLE: EVI BIOMED PIGTAIL HAD FRAYED WIRE (NASA)		MISSION CONSTRAINT: 0YES
SORT NUMBER:	IFA STATUS: Closed: 19-DEC-02	PRACA STATUS: Closed: OPEN	PRCBD NUMBER: SO62151AR1
SUBS:	IFA TIME GMT: 00.00.00	IFA DATE: 26-NOV-02	ELAPSED TIME: 00.00.00
HOUSTON TIME: 00.00.00	PHASE: ORBIT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: GLENN LUTZ NASA/JSC 2:
TYPE: & TRACKING NUM: M MER-IFI-01025			
DESCRIPTION: After EVA #2 on STS-113/11A troubleshooting a loss of Bio Med Cable was found to have frayed wires. Preliminary material flammability data indicate materials in EMU are flammable at higher pressures (19.0 psia),if sufficient energy is present. Completion of energy qualification testing will be correlated to material data to confirm ignition source inside EMU is not present.			

IFA NUMBER: STS-0113-V-003	TITLE: RMS WRIST ROLL SLUGGIST JOINT RESPONSE (USA)		MISSION CONSTRAINT: NONE
SORT NUMBER:	IFA STATUS: Closed: 12-DEC-02	PRACA STATUS: Closed: CLOSED	PRCBD NUMBER: S062151AD
SUBS:	IFA TIME GMT: 20.37.00	IFA DATE: 24-NOV-02	ELAPSED TIME: 19.47.00
HOUSTON TIME: 14.37.00	PHASE: ORBIT	CLOSURE INITIATED BY:	RESPONSIBLE MANAGERS: 1: KENNETH BROWN NASA/MV 2:
TYPE: & TRACKING NUM: C MER-11			
DESCRIPTION: At the start of the payload bay survery following the RMS checkout, the wrist roll joint stalled and a payload deployment retrieval system control point resolution fault message was annunciated. The sluggish joint performance was thought to be caused by dry lube in the gearbox orpossible FOD. The RMS will be removed and the joint will be disassembled to determine the cause.			