

SSVEO IFA List

Date:02/27/2003

STS - 95, OV - 103, Discovery (25)

Time:03:56:PM

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 1	MET: 000:00:00:00	Problem	FIAR	IFA STS-95-V-01 STR,MECH
MMACS-01	GMT: 302:19:19		SPR IPR 96V-0001	UA PR Manager: Mike Porter 562-922-3887 Engineer: Jeff Goodmark 281-483-0347

Title: Loss of Drag Chute Door (ORB)

Summary: 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.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 6	MET: 007:18:50	Problem	FIAR	IFA STS-95-V-02 RCS
PROP-01	GMT: 310:14:10		SPR IPR 96V-0002	UA PR Manager: Dave Perry 562-922-4018 Engineer: Steve Arrieta 281-282-5436

Title: Thruster L3L Failed Off, Failed Leak (ORB)

Summary: 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? F and 42? F 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.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 8	MET: 008:21:10	Problem	FIAR	IFA STS-95-V-03 RCS
PROP-02	GMT: 311:16:30		SPR	UA
			IPR 96V-0003, 96V-0004	PR Manager: Alex Murashko 562-922-3078 Engineer: Bill Mckee 281-282-5386

Title: FRCS Fuel Tank Temperature Decreased (ORB)

Summary: 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 manifolds 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? F.

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 the STS-96 flow. Subsequent troubleshooting and systems checkout will be performed under IPR 96V-0004 in the HMF as necessary.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 2	MET: 000:09:04	Problem	FIAR	IFA STS-95-V-04 TPS
MMACS-02	GMT: 303:04:24		SPR	UA Manager: Ali Mirdamadi

IPR

PR TLP-01-29-2116

562-922-2331

Engineer: Jim Smith

281-282-5402

Title: TPS Protrusion on Left OMS Pod (ORB)

Summary: The crew reported that a portion of the TPS on the left OMS pod was protruding about 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"x10" 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.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>		<u>Documentation</u>	<u>Subsystem</u>
MER - 3	MET: 000:22:46	Problem	FIAR	IFA STS-95-V-05	FCE,MECH
GNC-02	GMT: 303:18:05		SPR	UA	Manager: Jim Travlos
			IPR	PR	281-280-5903
					Engineer:

Title: Failure of SIGI/PDI DECOM RS232 Data Cable (GFE)

Summary: 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. This condition would have impacted the availability of Orbiter state vector data from the PDI DECOM to the SIGI. The backup cable stowed in a middeck locker was used to replace the original cable and nominal data transfer was established. No KSC action required.