

SSVEO IFA List

Date:02/27/2003

STS - 96, OV - 103, Discovery (26)

Time:03:55:PM

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 1	MET: 000:00:29:03	Problem	FIAR	IFA STS-96-V-01 RCS
PROP-001	GMT: 147:11:18		SPR	UA Manager: David Perry
			IPR 103V-0002	PR Engineer: Steve Arrieta

Title: F4R Thruster Failed Leak (ORB)

Summary: 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.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 3	MET: 000:00:02:14	Problem	FIAR	IFA STS-96-V-02 OMS
	GMT: 147:10:51:56		SPR	UA Manager: David Perry
			IPR	PR RP03-28-1017 Engineer: Steve Arrieta

Title: Right OMS Engine Ball Valve Sluggish Operation (ORB)

Summary: 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.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 10	MET: 002:15:56	Problem	FIAR	IFA STS-96-V-03 MECH
EECOM-002	GMT: 150:02:42		SPR	Manager: Art Ordonez
			IPR 103V-0003	562-922-1246
				Engineer: Jeff Goodmark
				281-282-5455

Title: Vestibule Pressure Loss During the EVA (ORB)

Summary: 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.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 5	MET: 001:01:30	Problem	FIAR	IFA STS-96-V-04 ECLSS
EECOM-001	GMT: 148:12:19		SPR	Manager: Son Nguyen
			IPR	PR ECL-3-27-1289
				Engineer: Chris Hoffmann

Title: Humidity Separator B Water Carryover (ORB)

Summary: At approximately 001:01:30 MET, during the humidity separator in-flight checkout, the crew observed about a quart 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 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.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 19	MET: 002:16:41	Problem	FIAR	IFA STS-96-V-05
EVA-010, EVA-011	GMT: 150:03:30		SPR	UA
			IPR	PR
				Manager: Paul Shack
				Engineer: David Lee

Title: Space to Space Communication System (SSCS) EVA Communication Problems (GFE)

Summary: 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 up coming missions. No KSC action required.
