

SSVEO IFA List

Date:02/27/2003

STS - 80, OV - 102, Columbia (21)

Time:04:03:PM

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 1	MET: Prelaunch GMT: 324:19:53	Problem	FIAR SPR IPR 83V-0005	IFA STS-80-V-01 UA PR Manager: Chris Popp x39014 Engineer: Tim Reith x39064

Title: Aft H2 Concentration High (ORB)

Summary: Following the initiation of LH2 prepress at T-1 minute 57 seconds, the aft H2 concentration exceeded the 300-ppm LCC limit (HAZ-03). As a result of this exceedence, the preplanned contingency procedure was invoked, which was to hold for 2 minutes and confirm that the concentration did not exceed 600-ppm. An equilibrium concentration of approximately 600-ppm was observed and, after a hold of approximately 2 minutes 47 seconds, the decision was made to launch the vehicle as planned.

Post flight troubleshooting found no anomalies within the aft compartment.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 9	MET: 09:06:34	Problem	FIAR	IFA STS-80-V-02 AIRLOCK
MMACS-03	GMT: 334:02:30		SPR IPR IPR 83V-0006	Manager: Carlisle Campbell x38948 Engineer: Steve Sharp x38929

Title: Airlock Outer Hatch Failure To Unlatch (ORB)

Summary: The crew reported that they were unable to unlatch the outer hatch of the airlock when they attempted to open the hatch for the extravehicular activity scheduled

for flight day 10. This was the first attempt to unlatch this hatch during this mission. The crew's description of the difficulty, video downlink of the payload-bay side and airlock side of the hatch, and airlock qualification hardware were analyzed to determine what may have caused the failure to open the hatch. Further attempts to turn the handle past about 30 deg. were unsuccessful. The mission's planned EVAs were cancelled.

Post mission inspection determined that the cause of the failure was a loose screw within the hatch actuator mechanism. The screw had backed out and was lodged within the actuator's gears.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>		<u>Documentation</u>	<u>Subsystem</u>
MER - 11	MET: 14:13:25	Problem	FIAR	IFA STS-80-V-03	GNC
GNC-01	GMT: 339:09:21		SPR	UA	Manager: Scott Murray
			IPR	PR GNC-2-22-0123	x38242
					Engineer: Phil Perkins

Title: IMU 1 Failure (ORB)

Summary: At approximately 339:09:21 G.m.t. (14:13:25 MET), shortly after rendezvous with the ORFEUS-SPAS, the inertial measurement unit (IMU) 1 (s/n 215) attitude began degrading and the IMU was deselected by the crew. Several built-in test equipment (BITE) indications were annunciated (redundant rate fail, platform fail, IMU good, and platform temperature) and the IMU was taken to standby at 339:10:09 G.m.t. (14:14:13 MET). Data review indicates that the IMU failure occurred for a period of about 28 minutes and then recovered and remained operational for the remaining 20 minutes that the unit was in the operate mode.

Because IMU 1 appeared to have recovered before it was transitioned to standby, it was transitioned to OPERATE at 340:03:58 G.m.t. (15:08:02 MET), aligned, and left deselected for the flight day 16 landing attempt. The IMU performed nominally but was taken back to standby when the decision was made to wave-off landing due to unacceptable weather. During the crew sleep period, an inner roll null BITE was annunciated and the ground asked the crew to take IMU 1 to off. However, analysis determined that the BITE resulted from the way the software operates when the IMU is commfaulted. This is a known condition and has user note DR 47741. A DEU equivalent was sent to mask the BITEs for IMU 1 during crew sleep. The following day the crew again transitioned IMU 1 to OPERATE for the flight day 17 landing attempt. The IMU was left deselected with its BITEs masked. The landing attempt was waved-off due to unacceptable weather; however, IMU 1 operated faultlessly. For sleep, the ground had the crew turn the IMU off and its BITEs remained masked. For the FD18 entry, IMU 1 was powered on, put in OPERATE, and left deselected. It performed nominally during entry and landing. Postflight, IMU s/n 215 was replaced by s/n 202.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>	
MER - 12	MET: 14:16:49	Problem	FIAR	IFA STS-80-V-04	MECH
MMACS-04	GMT: 339:12:45		SPR	UA	Manager: Robert Davis
			IPR 83V-0011	PR	x38946
					Engineer: Steve Sharp
					x38929

Title: SPAS Keel Latch Trunnion-In-Place System 2 Indication Failed (ORB)

Summary: During berthing of the ORFEUS-SPAS, the keel latch trunnion-in-place system 2 indication did not transfer on as required. The keel latch trunnion-in-place system 1 indication was on and the keel latch was subsequently latched (both latch indications were received). The system 2 trunnion-in-place indication remained off.

Problem was found postflight to be in the keel latch. It was removed and shipped to NSLD for repair.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>	
MER - 14	MET: 15:18:36	Problem	FIAR	IFA STS-80-V-05	GN&C
GNC-02	GMT: 340:14:32		SPR	UA	Manager: Scott Murray
			IPR	PR GNC-2-22-0124	x38242
					Engineer: Phil Perkins

Title: -Y Star Tracker Pressure BITE (ORB)

Summary: During star tracker (ST) reactivation following the flight day 16 entry wave-off, the -Y ST (S/N 5) annunciated a pressure BITE for approximately 5 minutes beginning at 340:14:32:10 G.m.t. (15:18:36:23 MET). After the BITE cleared, the ST functioned nominally, successfully acquiring stars. The same thing occurred after the FD 17 entry wave-off. It is expected that the BITE is real and that the pressure is near its lower BITE limit of 15.44. The ST is normally pressurized with argon gas to 17.58 psia to prevent moisture and contamination from entering the ST during entry and ground operations. The ST continued to operate nominally with no impact to flight operations.

Postflight the ST was purged and repressurized. Will fly-as-is.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>	
MER - 16	MET: 017:16:11:24	Problem	FIAR	IFA STS-80-V-06	MECH, LDGR
MMACS-05	GMT: 342:12:07:11		SPR	UA	Manager: Robert Davis

IPR 83V-0009

PR

x38946

Engineer: Paul Diggings

x30347

Title: LMG Down & Locked Indication Toggled (ORB)

Summary: Over a minute after post landing APU shutdown, the left main gear down and locked indication (V51X0125E) changed from ON to OFF. 78 seconds later it toggled back to the ON position where it remained. The indication is a proximity-type sensor. The proximity switch was R&Red.
