SSVEO IFA List **Date:02/27/2003**

STS - 106, OV - 104, Atlantis (22) **Time:03:54:PM**

Tracking No	Time	Classification	Documentation		Subsystem
MER - 1	**MET:** 000:00:08:48.000	Problem	**FIAR** JSC EV 1244F	**IFA** STS-106-V-01	EPD&C - Hardwar
EGIL-01	**GMT:** 252:12:54:35.000		**SPR** 106RF03	**UA**	**Manager:** Richard Phan
			IPR 98V-0002	**PR**	714-372-5859
					Engineer: Mark Fugitt
					281-853-1566

Title: Aft Main Bus B Current Spike (ORB)

Summary: A current spike of about 60 amps and 0.16-second duration was noted on aft main bus B and was also seen on all three of the fuel cell currents at 252:12:54:35.6 G.m.t. (000:00:08:48.6 MET). There was no evident loss of function as a result of the spike.

A list of the Orbiter equipment (functions) powered by the bus was developed to aid in determining the cause of the spike. Criteria to exonerate functions were developed and the analysis indicated that all but three functions could be exonerated. Those functions were ET 16-mm camera 2, the APU 1 and 2 GG injector water B heaters, and the OMS crossfeed line B heaters. The ET camera was not powered for the remainder of the mission. There was no restriction on using the APU GG injector water B heaters since power could not be removed from the suspect portion of the circuit. The APU system B heaters were selected at 257:10:50 G.m.t. (004:22:05 MET), and the APU GG injector water B heaters performed nominally. This exonerated the APU heaters as a cause of the spike. The OMS crossfeed B heaters were not to be used unless the A heaters failed or insight into heater operation was lost. The OMS crossfeed B heaters were not used during the mission. Post flight troubleshooting for the aft main B bus current spike was performed on 9/22/00. The PCA fuse was found blown and camera resistance readings were nominal. The camera was removed and returned to JSC. Troubleshooting at JSC determined that the film had jammed the camera. The jam resulted in the high current draw which was interrupted when the fuse blew. SPR/CAR 106RF03 has been closed (not an Orbiter EPDC problem). FIAR JSC EV 1244F has been opened against the centerline camera.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 2	**MET:** 000:01:56:13.000	Problem	**FIAR**	**IFA** STS-106-V-02	Star Tracker
GNC-01	**GMT:** 252:14:42:00.000		**SPR** 106RF01	**UA**	**Manager:** Wayne Ancher
			IPR 98V-0001	**PR**	714-372-5884

Engineer: Phil Perkins

Phil Perkins

Title: -Z Star Tracker Failure (ORB)

Summary: During post-insertion star tracker activation, the -Z star tracker (IDT S/N 08) annunciated a Power Supply Fail BITE indication, along with a Tracker Fail BITE and a Magnitude Error BITE. The star tracker was not bypassed but showed signs of off-nominal operation (no target suppression or bright object indications while pointed at the lit earth). The BITE indications cleared simultaneously without any action from the crew. A self-test was performed and it failed with indications that the bright object sensor / shutter close functions were not operating. The star tracker was powered off to prevent possible sunlight damage during subsequent maneuvers.

On FD 2, the star tracker was activated during a scheduled IMU alignment and similar BITE indications were once again observed and the star tracker failed to scan when attempting to acquire a star. The star tracker was powered down and the CDR's HUD was calibrated and verified to obtain a backup for IMU alignments. The -Y star tracker, a solid state unit, performed nominally throughout the mission. The mission impact from the failed -Z star tracker was minimal. KSC troubleshooting on 9/27/00 was unable to repeat the fight anomaly. Three self tests were performed and all were passed. A spare solid state star tracker is available. TT&E will be performed on the failed star tracker but it will not be repaired.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 11	**MET:** 011:19:08:41.000	Problem	**FIAR**	**IFA** STS-106-V-03	C&T - Navaids
GNC-03	**GMT:** 264:07:54:28.000		**SPR** 106RF06	**UA**	**Manager:** Emad Farag
			IPR 98V-0005	**PR**	714-372-5893
					Engineer: Lance Borden
					281-853-1558

Title: MSBLS 2 Range Failure (ORB)

Summary: 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 LRUs, the RF assembly and the decoder assembly. The failure signature indicates that the problem is most likely in the RF assembly. The KSC post-flight troubleshooting on 9/26/00 duplicated the anomaly after 30 minutes of on time. The decoder and the RF unit will be removed for further troubleshooting on the bench. There are 3 spare RF assemblies available on site.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 10	**MET:** 011:17:39:13.000	Problem	**FIAR**	**IFA** STS-106-V-04	MECH
MMACS-02	**GMT:** 264:06:25:00.000		**SPR** 106RF05	**UA**	**Manager:** Jeff Goodmark
			IPR 98V-0007	**PR**	281-853-1570
					Engineer: Paul Reese
					714-372-5062

Title: Left Hand Vent Doors 8 and 9 Microswitch Failures (ORB)

Summary: 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 (single motor time). The left vent doors 8 and 9 were subsequently opened prior to the deorbit burn. When the doors where once again closed during the major mode 304 transition prior to EI, the microswitch performed nominally. However, during post-landing vent door purge positioning, the left vent doors 8 and 9 purge microswitch 1 did not indicate the purge position. As a result, drive motor 1 continued to drive the doors until the closed position was reached. This problem had no impact on post-landing operations, since the right vent doors 8 and 9 were placed in the purge position.

Postflight troubleshooting was performed on 9/28/00, but the anomaly could not be repeated. There are no spare PDUs available on site.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 4	**MET:** 001:02:01:13.000	Problem	**FIAR**	**IFA** STS-106-V-05	CCTV
IFM-01	**GMT:** 253:14:47:00.000		**SPR**	**UA**	**Manager:** Todd
			IPR	**PR**	Pocklington
					714-372-5861
					Engineer:

Title: ODS C/L Camera Harness Assembly Failure (ORB)

Summary: 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 cameras (prime and backup) are GFE and are stowed in the MAR during launch and landing. The harness assemblies (prime and backup) are CFE that are also stowed in the MAR during launch and landing. At the PRCB on September 25, 2000, the chairman requested this problem be elevated to IFA status. The MV0828-774057-003

primary centerline camera cable (ocn MN0013131) was continuity and hi-pot tested in the Flight Kit Facility and was found bad. There was an open at P9473 pin 11 which is the camera power line to the standard switch panel. A loose back shell was also discovered. The other cable that was sent with the suspect cable is still in flight kits. It will also be tested.