

## SSVEO IFA List

Date:02/27/2003

STS - 91, OV - 103, Discovery ( 24 )

Time:03:56:PM

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>		<u>Documentation</u>	<u>Subsystem</u>
MER - 1	<b>MET:</b> 000:00:08:43	Problem	<b>FIAR</b>	<b>IFA</b> STS-91-V-01	RCS
PROP-01	<b>GMT:</b> 153:22:15:07		<b>SPR</b>	<b>UA</b>	<b>Manager:</b> Dave Perry
			<b>IPR</b>	<b>PR</b> RP03-26-0989	562-922-4018
					<b>Engineer:</b> Bill Manha 281-282-5416

**Title:** Primary Thruster R2U Failed Off (ORB)

**Summary:** 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.

The thruster will be R&Red.

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>		<u>Documentation</u>	<u>Subsystem</u>
MER - 2	<b>MET:</b> 000:00:08:56	Problem	<b>FIAR</b>	<b>IFA</b> STS-91-V-02	RCS
PROP-02	<b>GMT:</b> 153:22:15:20		<b>SPR</b>	<b>UA</b>	<b>Manager:</b> Dave Perry
			<b>IPR</b>	<b>PR</b> FRC3-25-0642	562-922-4018
					<b>Engineer:</b> Bill Manha 281-282-5416

**Title:** Primary Thruster F2U Failed Off (ORB)

**Summary:** 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.

The thruster will be R&Red.

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 3	<b>MET:</b> 000:02:08	Problem	<b>FIAR</b>	<b>IFA</b> STS-91-V-03 C&T
INCO-01	<b>GMT:</b> 154:00:15		<b>SPR</b> <b>IPR</b> 95V-0004	<b>UA</b> <b>PR</b> <b>Manager:</b> Bill Stephens 562-922-5388 <b>Engineer:</b> Marty O'Hare 281-282-5398

**Title:** Ku-Band Failed to Radiate in Comm Mode. (ORB)

**Summary:** 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.

Postflight troubleshooting is required prior to the payload coming out.

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 6	<b>MET:</b> 002:03:54	Problem	<b>FIAR</b>	<b>IFA</b> STS-91-V-04 CCTV
INCO-02	<b>GMT:</b> 156:02:00		<b>SPR</b> <b>IPR</b> 95V-0006	<b>UA</b> <b>PR</b> VJCS-3-25-0525 <b>Manager:</b> Bernie Embrey x30184 <b>Engineer:</b>

**Title:** Camera C Unable to Pan and Tilt (GFE)

**Summary:** At approximately 156:02:00 G.m.t. (002:03:54 MET), 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 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. Contact is Ernest Sanchez 280-5931.

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 8	<b>MET:</b> 006:07:44	Problem	<b>FIAR</b>	<b>IFA</b> STS-91-V-05 FSW,GNC
DPS-01	<b>GMT:</b> 160:05:50		<b>SPR</b> <b>IPR</b>	<b>UA</b> <b>PR</b> <b>Manager:</b> Mark Ward 562-922-3372 <b>Engineer:</b>

**Title:** Excessive GPC Error Counts (ORB)

**Summary:** At approximately 160:05:50 G.m.t. (006:07:44 MET), GPC 1 began logging errors at a high rate. In addition, on the next handover 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 approximately 160:17:30 G.m.t (06:19:24 MET), 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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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>	
MER - 11	<b>MET:</b> 008:18:24	Problem	<b>FIAR</b>	<b>IFA</b> STS-91-V-06	OMS
PROP-03	<b>GMT:</b> 162:16:30		<b>SPR</b>	<b>UA</b>	<b>Manager:</b> Dave Perry
			<b>IPR</b> 95V-0007	<b>PR</b>	562-922-4018
					<b>Engineer:</b> Steve Arrieta
					281-282-5436

**Title:** LOMS Bipropellant Valve 1 Open Indication (ORB)

**Summary:** A dual engine, straight feed OMS burn (OMS-7 for SIMPLEX) was performed at 162:16:30 G.m.t. (008:18:24 MET). 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.

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