

## SSVEO IFA List

Date:02/27/2003

STS - 87, OV - 102, Columbia ( 24 )

Time:03:57: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> Prelaunch <b>GMT:</b> 323:18:48	Problem	<b>FIAR</b> <b>SPR</b> <b>IPR</b> 87V-0164	<b>IFA</b> STS-87-V-01 <b>UA</b> <b>PR</b> ECL-2-24-1189 <b>Manager:</b> Carlisle Campbell x38948 <b>Engineer:</b> Duke Tran

**Title:** Side Hatch Test Port Seal Came Off During Cabin Leak Check (ORB)

**Summary:** During the prelaunch cabin leak checks, the KC103-24 teflon seal at the end of the orbiter test port used to pressurize the cabin came off. The seal was replaced and the cabin leak check was completed satisfactorily. The problem delayed the cabin leak check, thus initiating a concern over the residual O2 concentration in the aft compartment. However, the aft compartment O2 readings did drop below the 500-ppm level just prior to the end of the planned hold period, and the countdown was resumed at the planned time.

The seal was recovered and it looked good. Dimensional inspections of the other Orbiters' test ports will be performed.

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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> 000:19:05 <b>GMT:</b> 324:14:51	Problem	<b>FIAR</b> <b>SPR</b> <b>IPR</b> 90V-0001	<b>IFA</b> STS-87-V-02 <b>UA</b> <b>PR</b> <b>Manager:</b> Bill Stevens 562-922-5388 <b>Engineer:</b> Marty O'Hare

**Title:** Ku-Band RF Power Output Telemetry Erratic (ORB)

**Summary:** The Ku-Band RF power output telemetry measurement (V74E2511A) was erratic from 324:14:51 G.m.t. (000:19:05 MET) to 324:15:38 G.m.t (000:19:52 MET), and from 324:16:50 G.m.t. (000:21:04 MET) to 324:17:13 G.m.t. (000:21:27 MET). During these time periods the White Sands Ground Station reported a good Ku-Band downlink signal. This parameter should be relatively stable at about 4.5 Vdc; however, during the cited times the uncalibrated signal varied from 0 to 4.3 Vdc. The

erratic output repeated a third time for several minutes starting at approximately 326:23:43 G.m.t (003:03:57 MET).

A similar signature occurred on this same DA (s/n 107) on STS-43 and STS-45. CAR 43RF05 recorded repairs made that were thought to have fixed the problem. These repairs included the repair of a broken shield on a coaxial cable and the repair of a connector that had excessive bonding material resulting in an improperly mated condition. It then flew on STS-83 and -94 with no problems. KSC will troubleshoot.

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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> 003:12:14	Problem	<b>FIAR</b>	<b>IFA</b> STS-87-V-03 RCS
PROP-01	<b>GMT:</b> 327:08:00		<b>SPR</b>	<b>UA</b> <b>Manager:</b> Samuel Jones
			<b>IPR</b> 90V-0003	<b>PR</b> RP05-0281 x39031 <b>Engineer:</b> Bill Manha

**Title:** Primary Thruster R2D Heater Failed Off (ORB)

**Summary:** At approximately 327:08:00 G.m.t. (003:12:14 MET), it was determined that the primary thruster R2D heater had failed off. A review of the data indicate that the heater had probably been failed off throughout the mission and the thruster injector temperatures had been maintained above 75 ?F by the external environment and thruster firings. Throughout the mission, the injector temperatures were maintained above 45 ?F by the external environment and the RCS stinger heater.

Thruster valves are certified for operation down to 40 ?F (32 ?F injector), but failure history indicates increased risk of thruster valve leakage below 50 ?F. Injector temperatures are expected to be at approximately 42 ?F when the thruster valve temperature equals 50 ?F. RM will deselect the thruster as failed leak if the oxidizer injector temperature drops below 30 ?F or the fuel injector temperature drops below 20 ?F. Postflight troubleshooting found the heater was bad.

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 4	<b>MET:</b> 000:06:34	Problem	<b>FIAR</b>	<b>IFA</b> STS-87-V-04 ECLSS
EECOM-01	<b>GMT:</b> 324:02:20		<b>SPR</b>	<b>UA</b> <b>Manager:</b> Don
			<b>IPR</b>	<b>PR</b> WWM-2-25-0036 Sandersfeld 562-922-3772 <b>Engineer:</b> Tracey Riverman x30004

**Title:** Tank A/B Check/Relief Valve High Cracking Pressure (ORB)

**Summary:** The supply water inlet pressure reached 39.58 psia when supply water tank A reached full quantity and tank A/B check/relief valve cracked open. The supply water storage inlet pressure increased from 33.21 psia to 39.58 psia over a 5 minute period before the relief valve opened. The pressure rise to crack the check valve was around 6 psid, where past flights show a range from 0.4 to 0.8 psid for crack pressure. The relief valve cracking specification is between 0.8 and 2.5 psid and the valve reseats at 0.8 psid. The check/relief valve will stay open until the tank A quantity level drops below full. During the time that the A/B check/relief valve was stuck closed, fuel cell water flowed through the alternate path into tank B.

At MET 15/11:21:09, the supply water inlet pressure went from 31.65 psia to 33.00 psia in 33 seconds before the check/relief valve was reopened. This is a 1.35 psid cracking pressure. The valve will be replaced.

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