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

STS - 108, OV - 105, Endeavour (17) **Time:03:43:PM**

Tracking No	Time	Classification	Documentation		Subsystem
MER - 3	**MET:** 000:00:08	Problem	**FIAR**	**IFA** STS-108-V-01	RCS
PROP-01	**GMT:** 339:22:28		**SPR** 108RF01	**UA**	**Manager:** Brian Werner
REV - C			**IPR**	**PR** RP01-32-1216	714-934-0542
					Engineer: Steve Arrieta
					281-853-1554

Title: RCS Thruster R4U Failed Off (ORB)

Summary: Primary RCS thruster R4U failed off when first commanded to fire and was auto-deselected by RCS RM during mated coast. The RJD output was nominal, however, the chamber pressure reached only 15.8 psia prior to the thruster being deselected. The thruster did not leak propellant following the fail-off. The thruster injector temperatures and chamber pressures suggest a problem with a thruster pilot-operated valve. From the data, it cannot be determined which of the valves failed. Since there were no additional failures of right RCS up-firing thrusters, the thruster remained deselected for the duration of the flight.

The thruster will be removed and replaced post flight. This will include the removal and replacement of all thrusters on the R4 manifold. The removal of the ROMS pod will not be required. Spares are available on-site.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 5	**MET:** 001:21:43	Problem	**FIAR**	**IFA** STS-108-V-02	RCS
PROP-02	**GMT:** 341:20:03		**SPR** 108RF02	**UA**	**Manager:** Brian Werner
REV - C			**IPR**	**PR** FRC5-18-0268	714-934-0542
					Engineer: Steve Arrieta
					281-853-1554

Title: RCS Thruster F3F Failed Off (ORB)

Summary: Primary RCS thruster F3F failed off following a series of three 0.080-second pulses. The chamber pressure reached a maximum value of 6.4 psia on the first 80-

msec pulse. The next two pulses peaked at 5.6 psia. RM software deselected the thruster at 341:20:03:25 G.m.t. (01:21:43:58 MET), after it failed to reach the minimum threshold pressure (~26 psia) within the allotted time (3 cycles). These three pulses were the first use of this thruster on STS-108. The thruster is last priority and fires just prior to capture when thrusters F1F and F2F are deselected. The thruster did not leak propellant following the fail-off. The thruster injector temperatures and chamber pressures suggest a problem with a thruster pilot-operated valve. From the data, it cannot be determined which of the valves failed. Primary thruster F3F remained deselected for the remainder of the flight and there was no mission impact.

The thruster will be removed and replaced post flight. This will include the removal and replacement of all thrusters on the F3 manifold. FRC5 will be removed on 1/16/02 and sent to the HMF for the thruster replacements. Spares are available on-site.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 8	**MET:** 007:07:20	Problem	**FIAR**	**IFA** STS-108-V-03	IMU
GNC-01	**GMT:** 347:05:40		**SPR** 108RF03	**UA**	**Manager:** Dave Heidmann
REV - A			**IPR** 111V-0007	**PR** GNC-5-18-0094	714-372-5898
					Engineer: Phil Perkins
					281-853-1599

Title: IMU 2 Z-Axis/Redundant Rate Anomaly (ORB)

Summary: At approximately 347:05:40 G.m.t. (07:07:20 MET), IMU BITE fault messages were annunciated against IMU 2 when the IMU experienced platform fail and redundant rate fail BITEs. The redundant rate fail BITE was the result of a high redundant axis drift rate (up to 3 deg/hr) in the IMU 2 Z-axis/redundant axis gyroscope. The Z-axis drift increased to approximately 0.7 deg/hr. The crew reactivated IMU 1, which had previously been deactivated to conserve cryo, to increase redundancy. IMUs 1 and 2 were aligned to IMU 3. The crew then deselected IMU 2 and masked the BITE to prevent nuisance alarms during the crew sleep period. Approximately 45 minutes later, the excessive rate decreased to nominal values, and the BITE cleared.

IMU 2 remained in operate but deselected until a "go" was given for the deorbit burn. There were no additional problems with the IMU and it was reselected for entry and the BITE was unmasked. Its performance during entry and landing were nominal The IMU has been removed and will be sent to the JSC ISL. A read of the EPROM will be performed in an attempt to determine the cause of the platform fail BITE. Additional testing of the IMU will also be performed.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 12	**MET:** 011:15:32	Problem	**FIAR**	**IFA** STS-108-V-04	Active Thermal Control

EECOM-01 **GMT:** 351:13:52 **SPR** 108RF04 **UA** Subsytem

REV - C **IPR** 111V-0008 **PR** **Manager:** Kevin Kelly

714-372-5068

Engineer: Carmelo Asuncion

281-853-1635

Title: FES Secondary Hi-Load Not Controlling (ORB)

Summary: During the FES checkout beginning at 351:13:52 G.m.t. (011:15:32 MET), with the FES hi-load evaporator enabled, the secondary controller failed to control the evaporator outlet temperature within the specified range of 62 +/-2 ?F. The outlet temperature oscillated in a range of approximately 45 to 80 ?F, slightly increasing with time. After several cycles, the FES topping evaporator was selected and the outlet temperature control was good on the secondary controller. Checkout of the FES in the full-up mode on the primary B controller was also good. The FES performed nominally during entry.

Troubleshooting of the anomaly has been performed. A visual inspection of the FES did not identify an obvious problem. The secondary hi-load control sensor was checked at a single point and looked good. A check-out of the controller also produced nominal results. A ramp test of the control sensor was performed. An approximate 2-second delay was observed between the secondary hi-load control sensor and the Pri A and Pri B midpoint sensors that are located in the same block. The PRT will determine if the sensor should be removed and replaced or re-packed.