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

STS - 110, OV - 104, Atlantis (25) **Time:03:42:PM**

Tracking No	Time	Classification	Documentation		Subsystem
MER - 1	**MET:** 001:00:33	Problem	**FIAR**	**IFA** STS-110-V-01	RCS
PROP-01	**GMT:** 099:21:18		**SPR** 110RF01	**UA**	**Manager:** Brian Werner
REV - C			**IPR**	**PR** LP03-30-0733	714-934-0542
					Engineer: Steve Arrieta
					281-853-1554

Title: Primary RCS Thruster L1A Failed Off (ORB)

Summary: During the NC3 maneuver, primary RCS thruster L1A failed off when first commanded to fire and was auto-deselected by RCS RM. The RJD output was nominal, however, the chamber pressure reached only 20 psia prior to the thruster being deselected. The thruster did not leak propellant following the fail-off. The thruster injector temperatures indicate at least some propellant flow through each (fuel and oxidizer) pilot-operated valve. The thruster remained deselected for the remainder of the flight.

The thruster will be removed and replaced post flight. This will include the removal and replacement of all thrusters on the L1 manifold.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 2	**MET:** 001:14:31	Problem	**FIAR**	**IFA** STS-110-V-02	RCS
PROP-02	**GMT:** 100:11:15		**SPR** 110RF02	**UA**	**Manager:** Brian Werner
REV - F			**IPR**	**PR** FRC4-26-0608	714-934-0542
					Engineer: Steve Arrieta
					281-853-1554

Title: Low Chamber Pressure on Primary RCS Thruster F1D (ORB)

Summary: At approximately 100:11:15 G.m.t. (01:14:31 MET), primary RCS thruster F1D exhibited low chamber pressure (Pc) during three consecutive 80-millisecond pulses. These low-Pc pulses occurred approximately 20 minutes after a nominal 160-millisecond pulse. Prior to this nominal pulse, a fourth low Pc 80-millisecond pulse

was found in the data review. The maximum Pc during the anomalous pulses was approximately 65 psia (nominal Pc is ~150 psia). The Pc was high enough that redundancy management (RM) did not declare the thruster failed-off and deselect it. The crew reprioritized F1D to priority 2 to prevent further firings. To determine if this was an instrumentation problem, Orbiter acceleration rates during the firings were evaluated. This evaluation concluded that the rates were low indicating that F1D did not produce full thrust for all four suspect pulses.

Since the failure mode of the thruster was unknown, the decision was to deselect the thruster from nominal undocking operations to end of mission with the following exception. If primary RCS thruster F3D failed inside of a safe breakout range of the ISS (150 feet) during undocking and separation, thruster F1D would be reselected. Once the breakout was completed, the thruster would again be deselected and would remain deselected for the remainder of the mission. The thruster will be removed and replaced post flight. This will include the removal and replacement of all thrusters on the F1 manifold. During post-flight troubleshooting, FID inspection revealed residue from incomplete combustion all over the chamber wall, also in fuel injectors and acoustic cavities. Video borescope was taken and two wipe samples also taken.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 9	**MET:** 008:22:22	Problem	**FIAR**	**IFA** STS-110-V-03	RCS
PROP-03	**GMT:** 107:19:07		**SPR** 110RF05	**UA**	**Manager:** Brian Werner
REV - A			**IPR**	**PR** FRC4-26-0609	714-934-0542
					Engineer: Steve Arrieta
					281-853-1554

Title: Low Chamber Pressure on Primary RCS Thruster F3L (ORB)

Summary: During the ISS flyaround at 107:19:07:13 G.m.t. (08:22:22:54 MET), it was noted that primary RCS thruster F3L had a low chamber pressure (Pc) of 65 psia on an 80-millisecond pulse (should be ~150 psia). After evaluation of the thruster pulse profile, it was agreed to watch its performance on subsequent pulses. Thruster F3L subsequently had a second low Pc of 68 psia during an 80-millisecond pulse at 107:19:31:55 G.m.t. (08:22:47:36 MET). After this pulse, the crew placed the thruster in last priority at 107:19:34:21 G.m.t. (08:22:50:02 MET). The thruster was deselected and will not be fired for the remainder of the mission.

The thruster will be removed and replaced post flight. This will include the removal and replacement of all thrusters on the F3 manifold.

Tracking No	Time	Classification	Documentation		Subsystem
MER - 3	**MET:** 000:00:26	Problem	**FIAR**	**IFA** STS-110-V-04	MEDS
DPS-01	**GMT:** 098:21:10		**SPR** 110RF03	**UA**	**Manager:** James Newsome

REV - A **IPR** 112V-0005 **PR** 281-483-1542

Engineer:

Title: MEDS IDP2 MSU BITE and FCW Buffer Overflow Error (ORB)

Summary: At 098:21:10:41 G.m.t. (00:00:26:22 MET), the integrated display processor (IDP) 2 annunciated a single buffer overflow error. This error is reported when more display data is received from a general purpose computer (GPC) than can be processed in one cycle. Thirty-four seconds later, at 098:21:11:15 G.m.t (00:00:26:56 MET), IDP 2 annunciated built-in test equipment (BITE) messages indicating that the IDP experienced errors when accessing its mass storage unit (MSU). The BITE fail message cleared 55-seconds later.

The most probable cause of these errors is a glitch on the SCSI control line during MSU access. Reoccurrence of this event has a very low likelihood of repeating during the remainder of the mission. The event has a finite time-out recovery of less than 1 minute. The MSU access during critical time-frames is unlikely. With the performance experienced thus far in the mission, there is no mission impact. Post-flight troubleshooting include using the MEDS Portable Loader to retrieve a copy of the MSU error logs from IDP2. The IDP3 logs was retrieved also for comparison. The logs are analyzed and reviewed by the vendor to determine if the unit will be removed or replaced.