

STS-107 MISSION MANAGEMENT TEAM (MMT) MINUTES

Tuesday, January 21, 2003

The MMT was convened by the chairman, Ms. Linda Ham at 8:00 a.m. CST. All members were in attendance at JSC or via teleconference.

Mr. Phil Engelauf of the Mission Operations Directorate (MOD) reported that the Orbiter and crew were doing well. The current non-propulsive cryo margin is trending towards 2 days, 4 hours by the end of the mission and is projected to put the Orbiter ~ 150 lb. above the Nominal End of Mission (EOM) downweight limit. A CHIT will be submitted to the MER for analysis and the operations community will investigate methods for reducing the Orbiter weight. An Orbiter ergometer load adjustment anomaly was determined to be a switch position error that has been corrected.

During a FD3 SPACEHAB water condensate transfer from the Water Separator Assembly (WSA) condensate storage tank that required subfloor panel access, approximately 2 quarts of water leakage was discovered and attributed to a malfunction of Rotary Separator 1 (RS1). The water was cleaned and a swap to RS2 was implemented. Yesterday, electrical spikes on all three phases of the SPACHAB aft inverter were seen. Sub-floor inspection revealed that Aft Power Distribution Unit (APDU) circuit breakers CB 8 Phase B & C, that power the WSA, were found to be tripped off. As a precaution the Phase A CB was set to off and both RS's were commanded off. Orbiter Flow Proportioning Valves (FPV) and the SPACEHAB Air Bypass Valve (ABV) have been reconfigured to respectively allow the Orbiter to provide more cooling and humidity control and to prevent module condensation. It is believed that water did not penetrate the conformal-coated APDU and that RS1 may be operable, but requires drying and unclogging. The flight control teams are developing a new IFM that would inspect the WSA, clean residual water, and dry RS1 by running it without load for approximately one hour. Currently Orbiter and module heat loads have been stabilized and the crew reports that the temperatures are within acceptable limits. A pre-flight approved IFM that adjusts the module Water Flow Control (WFC) valve is available to increase cooling capability for module payloads. Mr. Engelauf recommended proceeding with the development of the new IFM. The community believes that new IFM will not be required and that the adjustment to the WFC will provide sufficient cooling. Ms. Ham stated that the new IFM should not be implement and the RS's should not be repowered with prior approval of the MMT. If required, the MMT chairman will convene a special MMT to review the procedures prior to implementation.

Mr. Don McCormack, Shuttle MER Manager, reported a 70 mm Hasselblad film advance anomaly had been traced to a bad motor drive. The fuel cell monitoring system (FCMS) data take anomaly was corrected by replacing the FCMS cable interfaced to the Windecom PGSC, with a backup cable. Mr. McCormack also reported that the DTV DSR220 recorder had failed and that the V10 recorder was being used in its place. O2 tank 7 A heaters operation in the in the AUTO mode is satisfactory and there is no mission impact. Regarding the sluggish AC2 phase B current anomaly, a similar signature was seen when cycling vent doors 8 and 9. Continued data review has uncovered several occurrences of "miniature" signatures of the same type. Most of these occurrences were less than one-second in duration and the phase B drop was between 0.2 and 0.3 amps. There is also evidence of the signature in data pulled by KSC from STS-107 flow processing. From the data pulled to date, the problem appears to be in the AC2 phase B inverter or the wiring between the AC2 phase B inverter and panels L4 and MA 73C.

Ms. Vanessa Ellerbe, STS-107 Flight Manager, reported that nearly all SPACEHAB Payloads are accomplishing their science objectives except the U.S. Air Force MSTRS payload that is experiencing telemetry and command problems. Two experiment runs for the Combustion Module -2 have not been completed and may not be rescheduled. The next run for the ISS Vapor Compression Distillation Flight Experiment (VCD FE), that requires water-cooling of 65° F (+ 5°), will be rescheduled for no earlier than FD7. SPACEHAB Experiment Ground Data Assembly (EGDA) crashes related to the Ku CH 2 anomaly are being managed and occurring less frequently. Eight of twenty-eight payloads utilize Ku CH 2 downlink.

A software patch to implement a spare EGDA configuration that isolates payload Experiment Ground Support Equipment (EGSE) from the EGDA crashes is expected to be ready later this evening. The FREESTAR experiments continue to get excellent data including MEIDEX viewing of thunderstorm phenomena, Sprites and Elves. A Turkish cyclone is currently inhibiting dust storm data collection but opportunities are expected on January 22nd.

Mr. Loren Shriver, representing United Space Alliance, reported that after further analysis there was no damage to the SRB left forward skirt as previously reported.

Mr. Lambert Austin, representing Space Shuttle Integration, reported there are film quality from the long-range tracking film that is being reviewed for potential debris damage during ascent. On this flight there was a report of ET foam debris that appears to have hit the left wing leading edge. This foam may have come from the forward attach bipod area. The ET project is aware of this situation. Integration and Vehicle Engineering will continue to analysis this situation.

Ms. Ham closed the meeting and announced the next MMT meeting is scheduled for Friday, January 24, 2003 at 8:00 a.m. CST.

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Ms. Linda Ham
Chairman, Mission Management Team