



Deceleration Subsystem (DSS)

Ares I-X Main Parachute Investigation

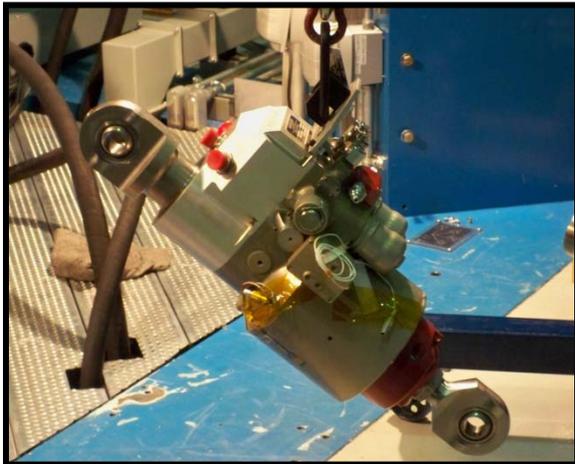
Final Status: Alliant Techsystems, Inc. and United Space Alliance (ATK/USA) presented the final findings this week of the Ares I-X main parachute investigation to the Ares First Stage Element Control Board (ECB). Serial number 4M3, the first chute to fail, inflated directly to its second reef stage which created an overload condition on the suspension system and a subsequent failure of a Sea Water Activated Release (SWAR). The investigation verified that the failed SWAR and reefing line cutter exhibited no evidence of defective hardware. The root cause is attributed to a premature firing of a reefing line cutter on the first reef stage. The most probable cause of premature firing is from parachute movement within the chute pack during reentry which inadvertently pulled the firing pin lanyard. Serial number 4M1, the second chute to fail, performed nominally until its dis-reef to full open, at which time it experienced a failure in its suspension system. This root cause is also attributed to an overload condition. Reconstruction of loads from onboard accelerometers and load cells verified that this chute experienced an overload condition due to the previous failure of one chute. The ECB concurred with these investigation results. The failure investigation team is completing the fault tree closure documentation and generating the final reports.



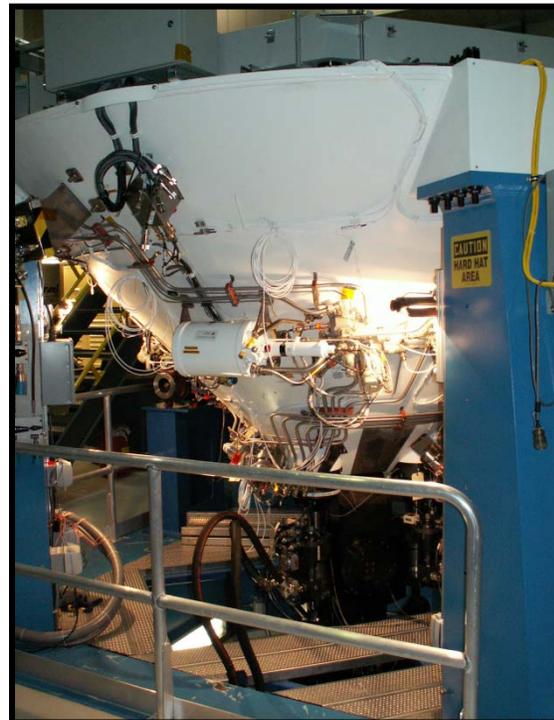
Ares I-X under main parachute just before water impact

Upper Stage (US)

US Thrust Vector Control Subsystem (TVC): TVC Actuators and three Data and Control Units (DCUs) were delivered to NASA Glenn Research Center (GRC) on January 28, 2010, under the Moog Advanced Development Contract. Bench testing on the DCUs has begun. All of the hardware will be installed and tested in the two-axis rig over the next 7 months.



TVC actuator at GRC



TVC 2-axis rig at GRC with integrated TVC system



TVC DCU bench testing at GRC

The Ares Projects look forward to the launch of STS-131, Space Shuttle Discovery (another possible night launch!) planned for April 5.