



Deceleration Subsystem (DSS) Drogue Drop Test (DDT-1) Test Configuration Review (TCR): The TCR was successfully conducted last week at Kennedy Space Center (KSC) in support of the first drop test of the new Ares I drogue parachute scheduled for July 23 in Yuma, AZ. This first test will utilize the newly built Jumbo Drop Test Vehicle (JDTV). The JDTV will be released from a C-17 aircraft at an altitude of 25,000 feet and will have an extracted weight of 46,000 pounds for this first test. This test will measure the basic performance characteristics of the drogue parachute such as drag area and peak inflation loads at various reefed positions. The JDTV can be ballasted up to a maximum of 90,000 pounds for future design overload tests.



The JDTV leaves for July 23 test in Yuma, AZ.

Recent activities specific to the Elements include:

- **Upper Stage (US)**
 - **US Integrated Test Subsystem:** The decision has been made to have NASA/Glenn Research Center (GRC) accelerate the fabrication of the Instrument Unit (IU) Structural Test Simulator for the Ares I Upper Stage Common Bulkhead Structural Development Test (designated SD03). The early fabrication of this structural simulator will be a “pathfinder” for GRC, which will need to produce numerous subsequent structural simulators in support of the Upper Stage test program. The associated designs and drawings of this IU simulator will be correspondingly accelerated. The team will also be studying the possibility that this simulator could be reused, following the SD03 tests, for the Upper Stage Core Stage Structural Qualification Test (designated SQ02A), which would save the US test program the cost of producing one simulator.
 - **US Small Solids Subsystem:** The Upper Stage Small Solids team is preparing for the first hot-fire test of a Heavy Weight Motor (HWM) in July. On June 30, the team completed final assembly of HWM #1 at the Aviation and Missile Research, Development, and Engineering Center (AMRDEC) (B7349) on Redstone Arsenal in Huntsville, AL. All motor components went together as planned, aligned easily, and fit correctly; components that were checked



included carbon fiber rope, o-rings, bolted joints, and torques. Internal bore scope images were taken of the nozzle joints and case insulation/carbon fiber rope/aft closure interface. Nitrogen/helium leak checks were performed on the assembled motor; no leaks were detected. HWM #1 will be hot-fire tested in the Marshall Space Flight Center (MSFC) Test Area.



Heavy Weight Motor (HWM) # 1

- **First Stage (FS)**
 - **Ares I-X Development Test Instrumentation (DFI) Integrated Product and Process Development (IPPD) Review:** ATK led reviews of DFI cable and sensor installation on Ares I-X motors, integrated stage, and forward assembly at their Promontory site in Utah from June 24–26. Participation included representatives from Langley Research Center (LaRC), MSFC, Jacobs, United Space Alliance (USA), Lockheed Martin (LM), and ATK. The meeting integrated design drawings, routing paths, attachment procedures, and delivery schedules. Streamlining opportunities were identified in many areas. The DFI IPPD review of aft assemblies will be scheduled at a later date.

- **Flight and Integrated Test Office (FITO) and Ares I-X**
 - **Ares I-X Roll Control System (RoCS) Element:** Teledyne has the two flight panels boxed up awaiting GRC's completion of doubler re-work and welding to support match drilling operations. Teledyne has completed the propellant tank fill valve cap welding procedure development and is awaiting material for practice procedures. Concerns over lot acceptance and/or aging and surveillance data on the Peacekeeper heritage ordnance appear to be diminishing with the comparison of on-hand components versus availability of extra components for test that can be used for rationale for acceptance of the waiver. The Ordnance Firing Unit for the ordnance ground tests has shipped from White Sands to Teledyne. The White Sands testing overrun from the bi-prop valve testing this spring has been captured in a Task Agreement revision and has been approved. The Constellation Engineering and Safety Review Panel (CSERP)/Hypergolic Maintenance Facility (HMF) RoCS Processing presentation was supported, with no actions received.

- **Upper Stage Engine (USE)**

- **Chemical Steam Generator (CSG) Water Flow Tests:** Low-pressure water flow tests of a CSG main-stage injector assembly were performed at NASA Stennis Space Center (SSC) in late June. During the tests, water was run through the Liquid Oxygen (LOX) and Isopropyl Alcohol (IPA) passages to ensure none of the holes were left blocked by the machining process. No problems were observed.



LOX and IPA Injector Assembly



CSG Injector Face



CSG Chamber



Water flow test of the CSG injector assembly, LOX passage

- **Project Integration (PI)**

- **Ares Outreach Exhibit at the Folklife Festival:** The Ares Projects integration team and Ares Projects managers and engineers helped staff the Ares exhibit at the Smithsonian Folklife Festival on the National Mall in Washington, DC, on June 25–29 and July 2–6. More than 1 million people attended the festival, a NASA 50th Anniversary event. The NASA presence,



which included exhibits on Ares and NASA's exploration plans, featured living presentations, hands-on activities, exhibits, and more from across the Agency. This is another example of a non-typical NASA event where outreach efforts are increasing public awareness of the Nation's space program.



Ares exhibit at the Folklife Festival



Increasing public awareness about Ares

The Ares Project looks forward to the kickoff of the Ares I PDR on July 28.

...and as of this Ares Projects Weekly Summary, there are only 278 days until the first Ares I test flight, Ares I-X!!!