



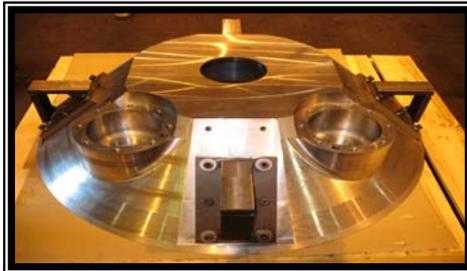
Upper Stage (US) Thrust Vector Control (TVC): Work continues on the two-axis test rig facility for the Ares I US TVC Subsystem at the Glenn Research Center (GRC). The two-axis test rig simulating US engine gimbaling dynamics will be used to test the engineering model TVC subsystem. Completion of the two-axis test rig fabrication and assembly is planned for November 2008.



Completed second concrete foundation pour



Thrust cone preparing for hole drilling



Base of thrust cone w/actuator mounts



Integrated Vehicle Ground Vibration Test (IVGVT) – Construction of Special Test Equipment for the IVGVT: The IVGVT requires the stacking of inert and empty first stage segments of the solid rocket motors. To accomplish this at Marshall Space Flight Center (MSFC), the IVGVT Task Team is constructing a set of segment staging stands. The stacking operation will include a skirt and five segments, all of which are heritage with the overall stack design supporting the Ares Projects.



Segment staging stand



First stage aft segments with completed staging stand at Kennedy Space Center (KSC)



IVGVT – New Construction for Historic Test Stand (TS) 4550 at MSFC: Having recently completed the removal of Apollo and Shuttle structures in TS 4550, new bridge work is underway for the support of the IVGVT. The large steel components needed to fabricate the new bridge have arrived and work has begun to fit and weld the tubes and I-beams. This bridge will be located between the seventh and eighth levels of the facility. In addition to providing personnel access to the test articles, the bridge will also support a mast climber assembly that will allow access to the second stage of the IVGVT article.



Recent activities specific to the Elements include:

- **Upper Stage (US)**
 - **US – Stage Operations (SO):** The Ares I-Y Upper Stage Working Group met recently at the Stennis Space Center (SSC) and the Michoud Assembly Facility (MAF) to focus on the development and processing of the Upper Stage for the I-Y vehicle. The mix of personnel represented different levels and NASA Centers involved within Ares I-Y, resulting in a vibrant dialogue. The content of the presentations contained logistical approaches, manufacturing details, previous interfaces work, project development and expectations, and testing facilities, capabilities, and testing interface requirements needed at SSC. Special topics focused on the Certification of Flight Readiness process and procedures and the maturity of the Ares I-Y vehicle.



- **Flight and Integrated Test Office (FITO) and Ares I-X**
 - **Ares I-X Roll Control System (RoCS) Element:** Activities specific to the RoCS Element include:
 - Helium pressurization systems and engine feedline support brackets were installed on the flight panels.
 - The helium regulator/relief valve test rig was demonstrated to MSFC Engineering, and selected components are now out for final precision cleaning, in preparation of functional testing of flight helium systems.
 - Hazards analysis data was delivered for the Constellation Safety and Engineering Review Panel (CSERP) Phase III Hazards Analysis Working Group (HAWG) review.
 - The RoCS Lead Engineer supported the monthly Lead Engineer face-to-face meeting at the Langley Research Center.
 - The RoCS installation drawing update draft was sent out for review, and the RoCS assembly drawing has been re-released.
 - The Pre-ship Review presentation is still targeted for November 18.

- **First Stage (FS)**
 - **FS Review of Post-Separation Loads and Environments:** A review of the FS post-separation loads and environments was held at KSC on October 7–8 with representatives from the First Stage Element, Engineering, ATK, USA, and other support contractors. The review was held from a project perspective rather than a technical review of results at this time. The focus was on status of discipline analyses (i.e., aero, thermal, dynamics, etc.), any issues, and forward plans/schedules in preparation for the Critical Design Review (CDR) loads cycle.

 - **Deceleration Subsystem (DSS) Ares I-X Drogue Reefing Positions:** At last week's drogue post-test Technical Interchange Meeting (TIM), the DSS team reviewed the test data from drogue test DDT-1 and agreed on the drag coefficient and the opening load factors for each reefed stage. The DSS trajectory analysts have plugged this data into the Ares I-X reentry model to determine the optimal reefing positions for balancing the loads on the Ares I-X mission. This effort was also coordinated with the Ares I-X structures group to make sure that loads being generated are within positive structural margins of the drogue attach fittings. USA is now proceeding with converting these reefing percentages into actual reefing line lengths and generating engineering drawing for fabrication.



- **Project Integration (PI)**

- ***Ares Outreach:*** The Ares Projects outreach team staffed the NASA booth and presented the Ares Integrated Concept of Operations (ICON) simulation program on October 17–20 to museum and science center staff attending the Association of Science-Technology Centers (ASTC) Annual Conference in Philadelphia, PA. The association is a worldwide organization of science centers, museums, and companies that offer related products and services. ASTC has more than 540 members in 40 countries. This is an example of leveraging Ares outreach resources to reach millions of students through these science centers. The team also presented the Ares I-X flight test story October 17 at Con*Stellation, a science fiction convention held in Huntsville.

The Ares Projects look forward to the friction stir welding “confidence welds” on actual US dome gorges in MSFC Building 4755 in late October; the J-2X CDR Pre-Board on October 29–30; and the J-2X CDR Board on November 13.

...and as of this Ares Projects Weekly Summary, there are only 260 days until the first Ares I test flight, Ares I-X!!!