



Ares

WEEKLY SUMMARY



Kennedy Space Center's (KSC) Ground Operations completed the stacking of the Ares I-X test demonstration vehicle at KSC in the Vehicle Assembly Building (VAB). The stacking of five major segments began July 30 with placing the SuperStack (including the interstage and the first stage forward assemblies) on top of the First Stage Reusable Solid Rocket Motor (RSRM). The final section, consisting of the Crew Module/Launch Abort System, was stacked onto the vehicle on August 13.



Assembled Ares I-X vehicle in the VAB



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Space Shuttle Main Engine (SSME) 0525 was lowered from Test Stand (TS) A-2 (left-hand photo) on August 17 following the last test of an SSME. This marks the end of one era and the beginning of another in NASA primary liquid rocket engines. This is symbolized in the right-hand photo where the A-3, the main test stand for the J-2X, can be seen rising as the SSME is lowered. In addition to TS A-3, Test Stands A-1 and A-2 are being modified for J-2X testing.



SSME being lowered from TS A-2 for the final time



SSME 0525 being lowered from TS A-2 with TS A-3 in the background

Recent activities specific to the Elements include:

Upper Stage (US)

- US Manufacturing & Assembly (M&A) Subsystem:*** The Common Bulkhead Automated Testing System (CBATS) was recently installed in Building 4705 to inspect Common Bulkhead spun-form aluminum-lithium (Al-Li) 2014 domes. The AS20/Facilities Services Office support contractor, ePro, performed the rigging, lifting, and testing of the tool. Quality/QD11 and Safety/QD12 personnel were in attendance to witness the initial testing of the tool. One of the



Spun-formed Al-Li 2014 dome installed in the CBATS



received spun-formed domes was then installed in the system by test engineers from EM20 and inspected on the outside surface, which was found to be free of any defects. Next, the dome will be turned upside down and inspected from the inside. Five other spun-formed domes will subsequently be received and inspected.



MDA Barrel in Vertical Weld Tool

- US Manufacturing & Assembly (M&A) Subsystem:** A Manufacturing Demonstration Article (MDA) barrel was recently welded in Building 4755 using conventional friction stir welding. Three longitudinal welds were made to complete the barrel and were subsequently phased-array ultrasonically inspected. Two welds were all clear, while a third weld showed some surface indications which are being resolved. The barrel will be trimmed at the edges on a vertical trim tool and then passed on to the Thermal Protection System product team to practice spraying foam with a new blowing agent.

Upper Stage Engine (USE)

- Test Stand A-3:** Delivery and installation of the Chemical Steam Generation (CSG) system tanks continues. Four tanks, two of two Isopropyl Alcohol (IPA) tanks, and two of nine water tanks have been installed. IPA tanks are stainless steel and sit in a concrete retainer to protect the environment in the event of a spill.



Installation of the third of 14 CSG tanks



Project Integration

- **Digital Learning Network:** The Ares outreach team supported an Ares presentation to students in 8th–12th grade participating in the Science, Engineering, Mathematics, and Aerospace Academy (SEMAA) at the University of the District of Columbia's Science and Engineering Center via the Digital Learning Network (DLN) at Marshall Space Flight Center (MSFC) on August 11. The students were introduced to the Ares I and Ares V and their missions and given the chance to ask questions about the project. The DLN extends the range of Ares outreach efforts at minimal cost.
- **Space Camp/Aviation Challenge:** The Ares outreach team supported an Ares presentation to Space Camp and Aviation Challenge students at the U.S. Space and Rocket Center on August 13. Members of the public were also invited to attend the presentation with their admission to the museum. The combination was an efficient use of an Ares outreach opportunity.

The Ares Projects look forward to the First Stage DM-1 static test at ATK in Promontory, Utah, on August 27.