

**Ares Upper Stage Engine (USE)**

***Progress on Test Stands A-1 and A-2 at Stennis Space Center (SSC):*** Progress continues on the development/modifications to the A-1 and A-2 test stands at SSC. The A-2 Thrust Frame Assembly fabrication, proof loading and installation are complete. In addition, the A-2 Space Shuttle Main Engine (SSME) Clam Shell/T-Ring and Gimbal Block have been removed, as shown in Figures 1 and 2.



**Figure 1**



**Figure 2**

There has been much activity on the A-1 Test Stand. Pump capture discharge valves, stainless steel piping and supports are all complete, and thrust drum pneumatics/purge tubing, hydraulic tubing and electrical systems continue to be installed. Figure 3 shows the Engine Fluid Interface Panel being attached to the Thrust Measurement System.



**Figure 3**

***J-2X Build Stands at SSC:*** Progress continues on the J-2X Build Stands at SSC. Figure 4 shows the overhead booms installed to provide commodities (Nitrogen, Helium, missile-grade air) to the engines during assembly. The Engine Assembly dollies (pictured in Figure 5) continue in their fabrication and are expected to be delivered to SSC by the end of October.



**Figure 4**



**Figure 5**

Additionally, significant progress has been made toward development of the J-2X engine, as shown in the following photos.



**Figure 6 – Nozzle coolant discharge duct being inspected.**



*Figure 7 – The liquid oxygen discharge duct being polished.*



*Figure 8 – The fuel turbopump discharge duct being placed on the horizontal boring machine.*



*Figure 9 – The second completed nozzle coolant discharge duct prepared to be sent for deburring.*

**Figure 10 – Inlet duct weld trials were performed to determine the proper parameters before proceeding with welds on good hardware.**



**Ares Upper Stage (US)**

**Stage Operations:** Exterior siding panel installation has been completed on the Michoud Assembly Facility (MAF) Building 103 Vertical Assembly and Weld High Bay Addition. Work is still in progress on exterior utility tie-ins and interior platform utilities for the building, as shown in Figures 11 and 12.



**Figure 11 – MAF Building 103 exterior utility work.**



**Figure 12 – MAF Building 103 platform utility installation.**

**Ares Flight and Integrated Test Office (FITO)**

*Ares I Scale Model Acoustics Test (ASMAT):* The vehicle model and launch tower have been installed in the test stand. The water supply system for the sound suppression system has been installed and water flow tests have been performed to validate the sound suppression system operation. The test readiness review for the vertical test firings is slated to occur on October 22, 2010, and the first test firing will occur on November 4, 2010.



**Figure 13 – Ares I Vehicle model and launch complex Test Stand 116.**



**Figure 14 – Ares I Vehicle model installed in Test Stand 116.**



**Figure 15 – Ares I Vehicle model installed in Test Stand 116 during water flow testing.**

***The Ares Projects look forward to the launch of STS-133, Space Shuttle Discovery, on November 1.***