



The Ares I-X Vehicle Stabilization System (VSS) is installed at Kennedy Space Center (KSC) on the LC-39 Pad B Fixed Service Structure, with its large white damper arms in the vehicle capture position during testing in September 2009. The VSS will latch onto the Ares I-X vehicle after it arrives to Pad B in order to help dampen vehicle movement to allow personnel access and limit bending at the base of the Ares I-X during its stay at the pad. For launch day, the latches will be released and the damper arms swung back into their retracted position to provide clearance for the Ares I-X vehicle during liftoff and ascent. The VSS was designed and constructed by the KSC Ares I-X Ground Systems Integrated Product Team as one of several upgrades to Pad B to accommodate the Ares I-X mission.



Pad B I-X Stabilizer Arms



The main parachute test article and the other test support parachutes completed packing at KSC last week and have been shipped to the Yuma Proving Grounds (YPG) in preparation for the MDT-3 drop test scheduled for October 7. Installation of the test support electronics and instrumentation into the Jumbo Drop Test Vehicle (JDTV) has started and will finish this week. Final installation and rigging of the test parachutes into the JDTV will be completed next week. Following checkout of the completed test setup, the MDT-3 Test Readiness Review (TRR) will be conducted at YPG on October 5.

Upper Stage (US)

- US Manufacturing & Assembly (M&A) Subsystem:** Engineers and technicians with Ingersoll Machine Tools of Rockford, IL, performed a “circle, diamond, square” acceptance test of the new 7-axis Ares Vertical Milling Machine in Building 4705 on September 28. The purpose of the test was to check each axis for accuracy by milling three different shapes within a tolerance of 0.0005 inches of each other to qualify the machine for use. The acceptance test process checked out all of the parameters of the machine for proper function, and the machine has now been certified by Marshall Space Flight Center (MSFC) Safety & Mission Assurance (S&MA) and the Marshall Engineering Technicians and Trade Support (METTS) contract as fully operational.



Ares Vertical Milling Machine during initial “circle, diamond, square” acceptance test in 4705

The machine, which is equipped with a 2-axis milling head for rotary positioning of the machine tool and a 100-horsepower spindle capable of reaching speeds of 24,000 rpm, will be the world’s largest horizontal multi-access milling machine for machining large, complex parts and will greatly broaden the horizon of what can be manufactured from metal. Ingersoll Machine Tools built this 7-axis milling machine for MSFC and will build a second identical machine for Michoud Assembly Facility (MAF) in New Orleans. The machines will primarily machine domes for the Ares I upper stage, cylindrical support tubes, and bulkheads.

Ares V

- Ares V Face-to-Face:** Ares V held a week long face-to-face meeting to review the progress of the PA-C2 (Phase A Cycle 2) study configuration. This study configuration supported advancement of the Operational Concept as well as development of a set of requirements and the validation process for the associated Level III requirements. The meeting provided a tremendous communication and integration forum with attendance from MSFC, KSC, Glenn Research Center, Langley Research Center, Johnson Space Center, Ames Research Center, and Jet Propulsion Laboratory, as well as the Altair and Ground Systems Projects.



Upper Stage Engine (USE)

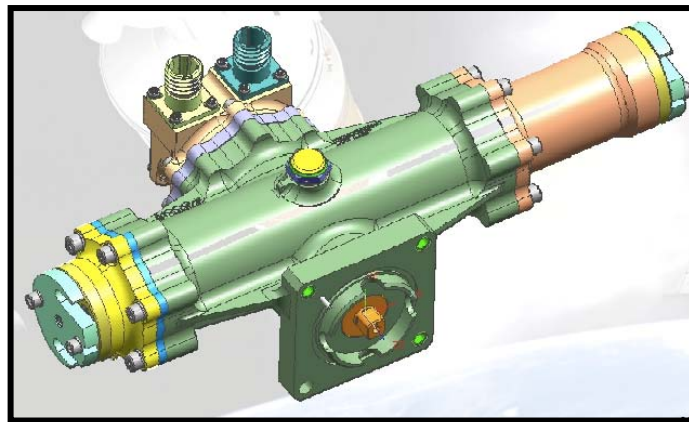
- USE Critical Design Review (CDR):*** On September 22, a CDR was conducted for the USE main valve actuators. The review was successful with the vendor given approval to move forward with their design and to start procuring hardware for further development testing. The actuators are located on five of the main valves on the USE. The actuators control the positions of the main valves allowing them to open and close when commanded.



Actuator Housing



Actuator Rack n' Pinion



Pro-E Model of Main Oxidizer Valve Actuator (MOVA)

First Stage (FS)

- Ares I-X Pyrotechnics Requirements Compliance Paper Close-Out:*** All pyrotechnics waivers associated with Ares I-X have been processed through and approved by the Ares I-X First Stage Engineering Review Board and Element Control Board. Associated major Problem Reports will be reviewed and signed by the Super-Senior Material Review Board on Friday. The remaining Verification Requirement Definition Sheets associated with these closures will be processed no later than mid-October in support of the current launch date of October 27.



Project Integration

- ***Ares Quarterly Progress Report (QPR) #13 Video:*** The Ares outreach team released the Ares QPR #13 video to the public via the NASA portal, YouTube, and iTunes on September 29. Links were also to be posted on Facebook and Twitter. Social media such as these outlets remain a key outreach effort for the Ares Projects, with 50,000 hits in the past month, and approximately 2,500 people following Ares progress via YouTube and Facebook.



This screen grab from the Ares YouTube page featuring Development Motor 1 is an example of the Ares Projects social media outreach efforts.

The Ares Projects look forward to the First Stage main parachute drop test #3 at the U.S. Army Proving Grounds in Yuma, AZ, in October.

...and as of this Ares Projects Weekly Summary, there are only 25 days until the first Ares I test flight, Ares I-X.