



Ares I Rocket Successfully Completes Preliminary Design Review (PDR): NASA has taken a major step toward building the nation's next generation launch vehicle with the successful completion of the Ares I PDR on September 10.

The review is the first such milestone in more than 35 years for a U.S. rocket that will carry astronauts into space. The review was conducted at NASA's Marshall Space Flight Center (MSFC) in Huntsville, Ala. It examined the current design for the Ares I launch vehicle to assess that the planned technical approach will meet NASA's requirements for the fully integrated vehicle and ensures all components of the vehicle and supporting systems are designed to work together.



The PDR included over 1,100 reviewers from seven NASA field centers and multiple industry partners. The review is the final step of this design process.



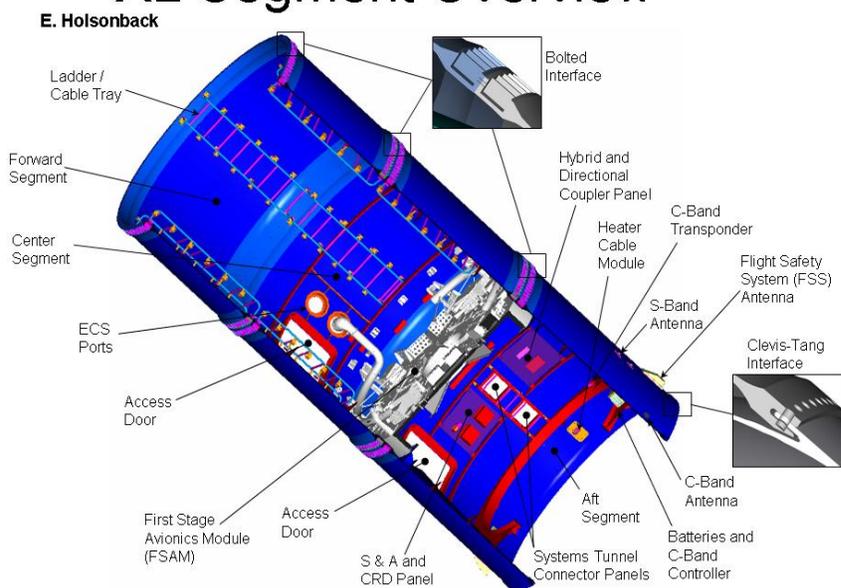
J-2X Critical Design Review (CDR) Kickoff: The Upper Stage Engine (USE) element conducted 4 days of the NASA milestone J-2X CDR kickoff presentations ending on September 11, in Huntsville, Ala. The J-2X contractor, Pratt & Whitney Rocketdyne (PWR), presented the status and details of the J-2X system, subsystem, and component designs as well as technical plans for J-2X manufacture, assembly, vehicle integration operations, design requirements verification, and engine certification. NASA Stennis Space Center (SSC) personnel presented the status of the designs for the J-2X engine test facilities, including the modifications of existing facilities A1 and A2, plus A3, which is the new altitude-simulation test stand currently under construction. Over the course of the next 9 weeks, the J-2X CDR will proceed as all aspects of the engine design and development effort are reviewed and evaluated with the process culminating on November 13 with the formal J-2X CDR Board. The J-2X will provide second stage propulsion for the Ares I launch vehicle and Earth Departure Stage (EDS) propulsion for the Ares V launch vehicle in support of the NASA space exploration initiative.



Recent activities specific to the Elements include:

- **First Stage (FS)**
 - **Ares I-X Fifth Segment Simulator Assembly Drawing Review and Release:** The final assembly drawings for the Ares I-X Fifth Segment Simulator Aft Assembly and the Ares I-X Fifth Segment Simulator Full Assembly were reviewed for final green-lines on September 2, at Kennedy Space Flight Center (KSC). This review verified all corrections needed to the drawings and the notes. The Aft Assembly drawing is due for release by September 12, and the Full Assembly drawing is scheduled to be released to NASA on October 8, and the Full Assembly drawing will include several supporting sub-level drawings and analysis reports.

XL Segment Overview



Forward XL in-work



Aft XL forward ring

- **Frustum Developmental Flight Instrumentation (DFI) Drawing Review:** Discussions on routing and installation of DFI cabling on the frustum were conducted at KSC on September 3–4. These discussions allowed for clarification of Assembly and Refurbishment Facility (ARF) procedures for sensor installation and avoidance of cable/interference. A final review leading to the release of this drawing is scheduled for September 16.
- **Constellation Program Pyrotechnic Specification:** The Ares First Stage (FS) Element has evaluated Change Request (CR) 000315 for impacts against the current configuration. This CR rolls the former Johnson Space Center (JSC) 62809 Rev C to the next revision and also re-titles and renumbers the document. Fifty-nine comments were received from MSFC

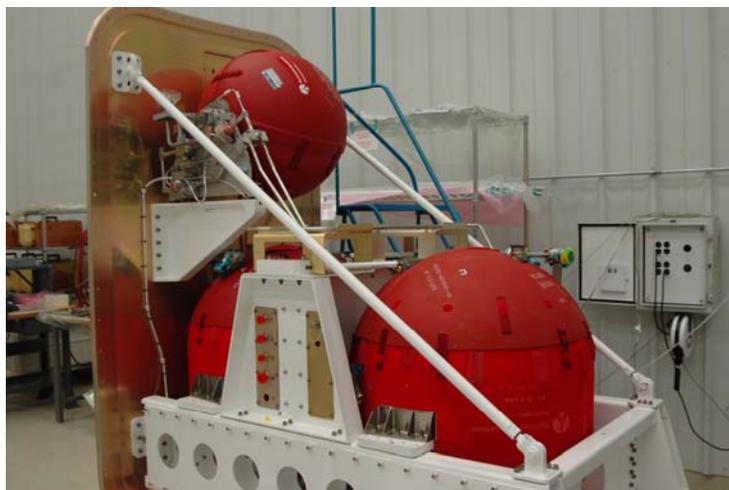


Engineering, MSFC Safety and Mission Assurance (S&MA), and ATK. These comments will be presented to the FS Engineering Review Board. Four cost threats have been identified and will be presented to the FS Element Control Board.

- **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:

- The team has responded to comments against three Deviation Requests under review, and final presentation packages are ready to schedule into an Ares I-X Control (XCB) session. The Pyro Lot Acceptance Test waiver request and Bi-Prop Valve Maximum Expected Operating Pressure (MEOP) Proof Pressure Test Level waiver requests are nearing completion to go to System Engineering Review Forum (SERF) or XCB, respectively.
- Dimensional inspection is underway on match drilled panels received from Glenn Research Center (GRC).
- Inner installation tables were re-painted and components are being assembled. Transfer table wheel dolly components have been received and dollies have been assembled.
- The orifice flow bench has been instrumented, ready to start propellant line flow tests.
- All tubing (pressurization and propellant tubes) have been fit-checked on the cold flow unit, which will allow proceeding with final welding of the flight tubing.



Cold flow unit with helium pressurization and propellant lines installed



- RoCS Work Authorization Document (WAD) reviews and approvals have started, primarily for Shuttle procedures being transcribed for facility preparations at the Hypergolic Maintenance Facility (HMF) for RoCS.

- **Project Integration (PI)**
 - **American Association of Retired Persons (AARP) Annual Convention:** The Ares Projects outreach team staffed exhibits at the AARP annual convention held September 4–6 in Washington, DC. Ares exhibits included the 1:100 Ares I cutaway, the 1:100 Ares I and Ares V model set, and the Interactive Constellation Experience. This year marks the 50th anniversary of both AARP and NASA. There were approximately 24,000 attendees at this event.

The Ares Project looks forward to the I-X Forward Skirt Extension on dock at ARF on September 23; the launch of STS-125, Space Shuttle Atlantis, on October 10; and Friction Stir Welding “confidence welds” on actual US dome gores, in Building 4755, in late October.

...and as of this Ares Projects Weekly Summary, there are only 215 days until the first Ares I test flight, Ares I-X!!!