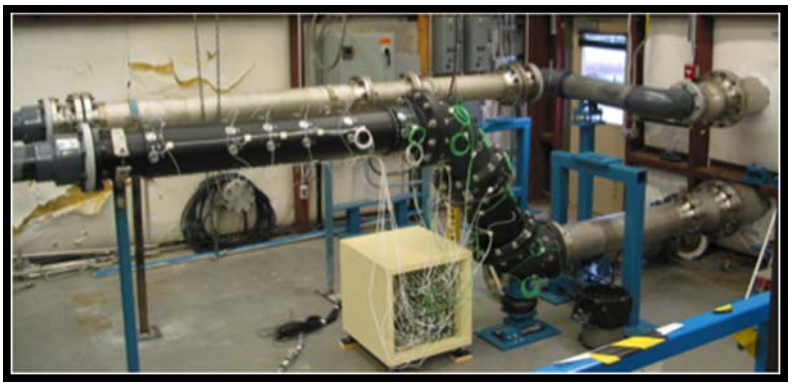
The Review of Human Space Flight Plans Committee led by Norman Augustine visited Huntsville, AL, this week. A public meeting was held at the U.S. Space and Rocket Center/Davidson Center on July 29, during which the Ares Management Team presented the progress over the past four years on the development of the Ares launch vehicles.

Recent activities specific to the Elements include:

Upper Stage (US)

- ***US Main Propulsion System (MPS) Subsystem:*** The US MPS recently completed liquid oxygen (LO_2) feedline waterflow testing at MSFC building 4777c. Test data will be used to anchor a Computational Fluid Dynamics (CFD) model that was used to assess J-2X inlet flow conditions and drive LO_2 feedline design. Preliminary feedback indicates test data correlate well to CFD analysis.



MPS LO_2 Feedline Waterflow Test Facility

- ***US – Stage Operations:*** During the week of July 20–24, the US Element, in conjunction with the Level III Flight and Integrated Test Office (FITO) and Kennedy Space Center (KSC) Ground Operations (GO), conducted a Technical Interchange Meeting (TIM) to discuss "First Time Through" planning for the Constellation Program (CxP). The CxP, in addition to the Ares Projects and US Element Offices, was well represented and added the total team effort aspect to the conversations, as well as gaining insight into US approaches and planning.

  Among the important topics discussed at the TIM were developmental flight instrumentation, Range Safety requirements, risk analysis and expectations, inline testing requirements, validations objectives, US-to-Ground interfaces, Certificate of Flight Readiness and US acceptance reviews and products needed prior to nominal operations. The strides made during this meeting will be used to further develop integrated test vehicle needs for the initial unmanned flight testing portion of the Constellation Program.

First Stage (FS)

- ***Deceleration Subsystem (DSS) Cluster Drop Test (CDT-1) Data TIM:*** The DSS engineering team conducted a post CDT-1 data TIM last week at KSC. All recorded loads, pressure, and acceleration instrumentation data from the test, were reviewed and accepted for incorporation into the final data analysis. The analysis will determine the cluster degradation factor for the main parachute drag area while in a cluster configuration, as well as the inflation loading characteristics. While at KSC, the DSS IPT also conducted a Critical Design Review (CDR) planning meeting by reviewing the current design status of the major DSS components and making recommendations for changes going forward to CDR.

Flight and Integrated Test Office (FITO) and Ares I-X

- ***Ares I-X Avionics Acceptance Reviews:*** The Ares I-X Avionics Integrated Product Team (IPT) held successful acceptance reviews for the Ground Configuration Item (CI) and Airborne CI on July 21–22. After presentation of the Acceptance Data Package by the IPT, recommendations of acceptance were given by Marshall Space Flight Center (MSFC) Safety and Mission Assurance, MSFC Chief Engineer, Ares Projects Office, and Langley Research Center Software Independent Verification and Validation. A Certificate of Acceptance was signed by the Ares I-X Mission Manager, the MSFC Center Representative, and the Avionics IPT Manager. Each letter was accompanied by a list of open work items that will be tracked by the Ares I-X Control Board. The final Avionics Acceptance Review for Flight Software will be held in Denver, CO, August 5–6.

Project Integration

- ***Marshall's Apollo 11 40th Anniversary Celebration:*** The Ares outreach team supported the Ares, Ares I-X, History, and Children's Activities areas of Marshall's Apollo 11 40th Anniversary Celebration at the U.S. Space & Rocket Center on July 20. Several Ares models were on display as well as an Ares launch animation. The "New Beginnings" exhibit, which features the Ares/Space Exploration story, had its unveiling at the Celebration. This exhibit informs the public about the process, tools, and testing NASA uses for the development of the next generation launch vehicles. The exhibit will also highlight Ares accomplishments as milestones are met. Approximately 7,000 government and contractor employees, their families and retirees attended the free afternoon event and learned about NASA's current exploration plans while celebrating its past successes.

NASA employees, retirees, and their families get a glimpse of past and future exploration

- ***Space Academy for Teachers:*** The Ares outreach team supported an Ares presentation to educators attending the Space Academy at the U.S. Space & Rocket Center on July 23. The educators learned about NASA's mission to expand lunar exploration and the benefits of space exploration. They can take this information back to their classrooms to show students how studying math and science are used in aerospace careers.

- ***Louisiana Distance Learning Network (DLN) Presentation:*** A member of the Ares outreach team spoke to people in Louisiana via DLN on July 22. Participants learned about the Ares launch vehicles, Ares exhibits, NASA's lunar exploration plans, and Marshall's Speakers Bureau. The DLN is an efficient tool to reach educators and provide them with Ares information with minimal investment of money and time.

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