



The First Stage (FS) Avionics Module (FSAM) is delivered to Kennedy Space Center (KSC):
The FSAM departed the Lockheed Martin facility in Denver, CO, on February 10, 2009, and arrived at KSC on February 13. Receiving and inspection was successfully performed in the Vehicle Assembly Building (VAB) on February 16. The FSAM is a secondary structure used to house the majority of the Ares I-X Avionics assemblies provided by Jacobs/Lockheed Martin. The FSAM will undergo final assembly and integration into the First Stage 5th segment simulator. The FSAM has followed an accelerated manufacturing schedule since the completion of its Critical Design Review on May 13 and 14, 2008.



FSAM Departure from Denver and Arrival at KSC

Recent activities specific to the Elements include:

- **Upper Stage (US)**
 - **US Logistics Support Infrastructure (LSI) Subsystem Concept Design Review (CDR):** The Ares I US LSI subsystem participated in an External Tank (ET) Transporter Modifications CDR with Lockheed Martin on February 10. The event, held at Michoud Assembly Facility (MAF) in New Orleans, was a 10% Concept Design Review on modifying the ET Transporter for use as an Upper Stage Transporter. Attendees discussed the current modification schedule position, received updates on the conceptual design for dolly, tow bar, utility cart, and control console, and participated in open discussions on the future direction

of the modification effort. The Upper Stage LSI subsystem is teamed with the ET Transition Office on the transporter re-design effort. Lockheed Martin is to be commended on the innovative recommendations and focus on long-term supportability.

- **US Test Subsystem Pre-Ship Review:** On February 4, Marshall Space Flight Center (MSFC) personnel attended a pre-ship review at the NASA Glenn Research Center (GRC) for the Special Test Equipment (STE) for the Ares I Upper Stage large aluminum-lithium panel development test, designated SD02. The STE for SD02 consists of large steel support fixtures, designed to support the SD02 panels during structural buckling tests at MSFC. The panels to be tested are over 7 feet tall and wide. GRC was responsible for the fabrication of this STE per design drawings provided by MSFC. The pre-ship review verified that the STE was complete and compliant with all MSFC requirements. Following the pre-ship review, the STE hardware was shipped and received in MSFC Building 4619 on February 10 without issue and with all paperwork. SD02 testing is currently scheduled to start in late 2009.



One of two US 7,500 lb STE Base Supports

- **Upper Stage Engine (USE)**

- **J-2X A-3 Test Stand Construction Update:** The J-2X A-3 Altitude Test Stand at Stennis Space Center (SSC) continues to reach for the sky through February. The first photograph (Fig. 1) shows the first Sequence 9 members being installed, roughly equivalent to where the engine deck will be located once the stand is complete. The second photograph (Fig. 2) shows progress on the fuel and Liquid Oxygen (LOX) barge docks as concrete walls are starting to be constructed.



Figure 1



Figure 2



- **Flight and Integrated Test Office (FITO) and Ares I-X**
 - **Ares I-X RoCS Element:** Activities specific to the RoCS Element include:
 - The Acceptance Review Plan V2.0 was accepted at the Ares I-X Control Board, with agreement to proceed to a data drop and review February 19 and February 26, respectively. No Decisional Presentation will be planned to precede these dates in order to go forward with propellant loading.
 - Module B fit checks in the Interstage were supported at KSC. Module B was then transferred to the Hypergolic Maintenance Facility (HMF). RoCS is currently supporting Module A fit checks in the interstage.



RoCS Module Fit Checks at KSC

- It was agreed within RoCS that vibration tests should slip in ahead of cold flow from a criticality of data for supporting waivers and verification closures. There is also a limited negotiated test window at the vibration test vendor which must be met.
- Discussions with Systems Engineering and Integration (SE&I) on fairing loads and component vibration levels revealed that the models run by ATA (vibration analysis contractor to SE&I) in developing vibro-acoustic environments for RoCS assumed aluminum fairings instead of titanium. Updated information has been re-cycled back through ATA, and it is hoped that the stiffer titanium model will result in a lower vibration environment against which to perform the structural assessment. RoCS will forward the data to Wyle to start the testing of the Peacekeeper components. ATA is also supporting TBE on the stress contour development for the fairing modifications.

The Ares Projects looks forward to the FS Drogue drop test in February 26th and Cluster drop test in April.

...and as of this Ares Projects Weekly Summary, there are only 141 days until the first Ares I test flight, Ares I-X!!!