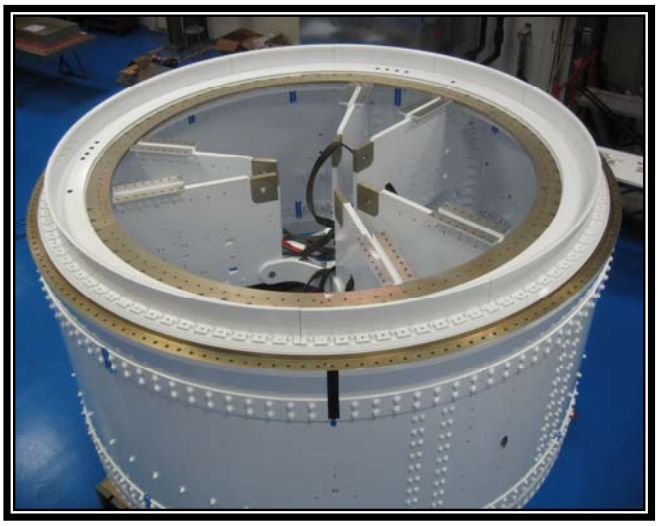
Ares I-X Forward Skirt Extension (FSE): The Ares I-X FSE has completed manufacturing at Major Tool Machine in Indianapolis, Indiana, who is a subcontractor to ATK, in Promontory, Utah. The primary role of the FSE is to house the parachute assemblies that are used for recovery of the Ares I-X first stage (FS) hardware. The FSE was shipped via truck to the Assembly Refurbishment Facility (ARF) at Kennedy Space Center (KSC) earlier this week for further launch processing prior to the Ares I-X flight in July 2009. The remainder of the forward structure assemblies are being completed at Major Tool and will also be shipped in coming weeks.



Ares I-X forward skirt extension being completed at Major Tool

Recent activities specific to the Elements include:

- **First Stage (FS)**

  - **Deceleration Subsystem (DSS) Jumbo Drop Test Vehicle (JDTV) Modification:** The DSS Integrated Product Team (IPT) conducted a design and analysis review last week of the proposed modifications to the JDTV. The JDTV was used for the first time last summer for the drogue parachute drop test and sustained buckling damage to parts of the tail section during ground impact as this impact loading was more severe than anticipated. The primary modifications are to increase the strength of the buckled components and produce break-away fins since these pieces have to be re-manufactured prior to the next test. Stress analysis for these redesigned components has been performed to the impact loads recorded on the last test. The DSS IPT is in agreement that this is the most economical way to minimize the risk of similar damage on future tests while still maintaining a manufacturing and reassembly schedule that will support our next test date.

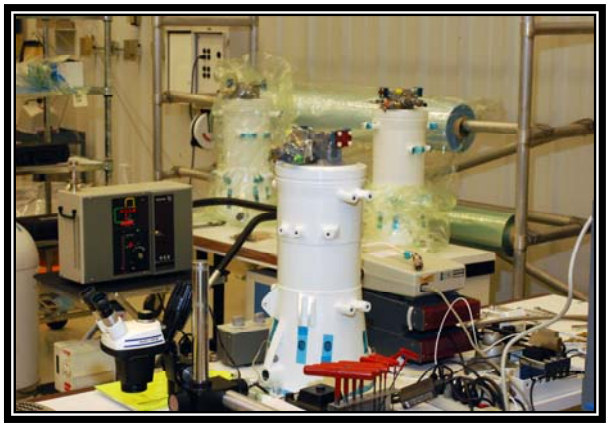
- **Flight and Integrated Test Office (FITO) and Ares I-X**

  - ***Ares I-X Roll Control System (RoCS) Element:*** Activities specific to the RoCS Element include:

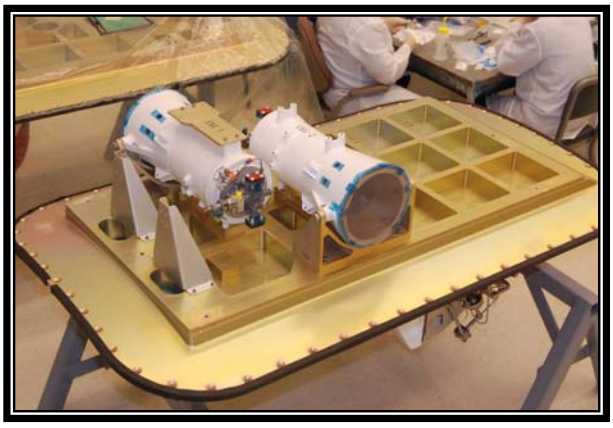
    - RoCS successfully completed its Constellation Safety and Engineering Review Panel (CSERP) Phase III Hazards Reports Presentations. CSERP-recommended modifications

will be captured in a Change Request and run back though the Ares I-X Control Board (XCB).

- Changes to the RoCS Verification Requirements Document, as directed by the XCB, have been incorporated and the document sent to the Ares I-X Configuration Management release desk for a one-week review.
- The much anticipated modified Development Flight Instrumentation (DFI) has been received at Teledyne for integration into flight Fairing A.
- The first iteration of the fuel orifice plate hole size was appropriate, coming close to hitting the desired pressure drop. Teledyne will adjust the orifice size one more time and then finalize the data with the Marshall Space Flight Center (MSFC)-calibrated flowmeter.
- The Inner Installation Tables were received at KSC for integration in the Interstage 1 and 2 stacking operation.
- The assembly of the pre-ship review data package has continued. The hardcopy review will be changing to Teledyne inasmuch as the MSFC RoCS Project Manager will be unable to monitor the MSFC reading room, and Teledyne-sensitive data is involved.
- Three of four flight engines have completed functional tests; two engines have been installed on the Module A outer panel. The fourth primary engine is a bit leaky, and Teledyne will run the modified manifold back through machining, while working parallel preparation of the backup engine and manifold assembly for application on Module B. There is no schedule impact at this time.



Engines #2 and #4 in functional checkout flow. Engine 2 (foreground) is ready for installation on outer panel



Engines #1 and #2 installed on outer panel

Upper Stage (US)

- ***US Stage Definition (SD) Manager:*** The second Stage Definition Quarterly for the Upper Stage Element was conducted on December 9 at the Boeing facility in Research Park. The primary objective of the SD team is to develop, understand, and control all aspects of the upper stage hardware integration effort and piece-part interactions. More than 120 participants, including representatives from the Upper Stage Project Office, Boeing Upper Stage Production and Instrument Unit Avionics Contracts, and NASA Engineering Support, received a status on the SD schedule, products, and milestones; design integration; stage assembly; configuration, mass, and integrated analysis updates; schematics; and avionics as related to hardware integration for the Upper Stage.

The Ares Projects looks forward to the US Element friction stir weld of the actual US dome gores in MSFC's Building 4755 in December. This will be a follow-up to the successful welding of two Shuttle External Tank dome gores in August.

…and as of this Ares Projects Weekly Summary, there are only 211 days until the first Ares I test flight, Ares I-X!!!