

# Ares I Five Segment Development Motor on the Move

April 20 2009

---



The forward Segment of DM-1 for NASA's Ares I program, is moved into the test stand at ATK facility in Promontory, Utah. Four remaining segments will arrive and be integrated over the next four weeks. Image Credit: ATK

(PhysOrg.com) -- On April 16, NASA moved the first segment of the Ares I rocket's five segment development motor, or DM-1, from ATK Space System's production facility in Promontory, Utah, to the nearby test stand, in preparation for the first ground test, targeted for August.

The Development Motor 1, or DM-1, is the Constellation Program's first five-segment, test motor for the Ares I first stage. The Ares I rocket's first stage [solid rocket](#) motor will launch astronauts on future missions of exploration beyond [Earth orbit](#).

The motor is being developed by ATK Space Systems, a division of

Alliant Techsystems of Brigham City, Utah, the prime contractor for the Ares I first stage. The DM-1 includes several solid rocket motor upgrades designed to achieve NASA's Constellation Program's directive to transport astronauts to the [International Space Station](#), the moon and beyond in coming decades.

"The casting and move of the first Ares development motor segment to the test area signals our team's progress and allows us to proceed with testing the design and moving to the next step of our development plan," said Alex Priskos, first stage manager for Ares Projects at the Marshall Space Flight Center in Huntsville, Ala. "As we move to the first ground-based test firing of a five-segment motor for the Constellation Program we expect to continue meeting our development milestones for the Ares I [propulsion system](#)."

The static firing of the solid rocket motor will provide NASA with valuable thrust, roll-control, acoustics and vibration data as engineers continue to design the Ares I rocket. Seven ground tests are scheduled for the five-segment booster.

The casting process for the five DM-1 motor segments began in November 2008 and concluded in February 2009. After casting, each segment underwent an inspection process that included a thorough X-ray of the segment to ensure quality requirements were met.

The motor showcases a series of technology improvements implemented by NASA engineers and the ATK team, including the evolution from the shuttle's four-segment booster to the new five-segment reusable solid [rocket motor](#).

The five-segment Ares I first stage motor -- larger than the solid rocket boosters used on the shuttle -- required modifications to the ATK test stand to accommodate its greater length. Upgrades implemented between

August 2007 and April 2009 includes the addition of a mid-span support.

The Marshall Center manages the Ares Projects and is responsible for design and development of the Ares I rocket and Ares V heavy cargo launch vehicle. NASA's Johnson Space Center in Houston manages the Constellation Program, which includes the Ares I rocket, the [Ares V](#) vehicle, the Orion crew module and the Altair lunar lander. NASA's Kennedy Space Center, Fla., is responsible for ground and launch operations. The program also includes multiple project element teams at NASA centers and contract organizations around the United States.

Provided by JPL/NASA ([news](#) : [web](#))

Citation: Ares I Five Segment Development Motor on the Move (2009, April 20) retrieved 13 March 2024 from <https://phys.org/news/2009-04-ares-segment-motor.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--