

# From Shuttle to Orion

October 2 2006

---



Photo credit: NASA

NASA is marking a historic moment in the life of the nation's largest rocket engine test complex. The Stennis Space Center conducted the final space shuttle main engine test on its A-1 Test Stand on Friday, Sept. 29. Although this ends the stand's work on the Space Shuttle Program, it will soon be used for the rocket that will carry America's next generation human spacecraft, Orion.

The A-1 Test Stand was the site of the first test on a shuttle main engine in 1975. Stennis will continue testing shuttle main engines on its A-2 Test Stand through the end of the Space Shuttle Program in 2010.

The A-1 stand begins a new chapter in its operational history in October. It will be temporarily decommissioned to convert it for testing the J-2X

engine, which will power the upper stage of NASA's new crew launch vehicle, the Ares I. The J-2X will also power the Earth departure stage of the Ares V new cargo launch vehicle. The Ares I and V vehicles will provide the thrust, while the Orion crew capsule will be future astronauts' home in space.

"This is truly an important milestone for Stennis," said Don Beckmeyer, space shuttle main engine project manager in the Test Projects Office of Stennis' Project Directorate. "As we transition the A-1 Test Stand from testing shuttle main engines to testing J-2X engines, we are entering into some exciting years ahead where our work force and the center as a whole will be key in the development of this new engine. Until the shuttle engines are retired in 2010, we will have two critical test programs running side by side."

Beckmeyer and other engineers have praised the foresight of NASA's early management, whose vision still allows the rugged structures to meet current and future rocket engine testing needs.

"Reaching these milestones is really a testament to the designers and builders of the test stands back in the 1960s," Beckmeyer said. "They were built to last, and their longevity and flexibility are key assets to the agency. We are about to embark on the third generation of rocket engines to be tested on A-1, and we fully expect this test stand to be instrumental in developing and certifying these engines for years to come."

A-1 and its sister stand A-2 were built in the 1960s to test the stages of the Apollo Program's rocket engines, then modified in the 1970s to test-fire and prove flight-worthy all main engines for NASA's space shuttle fleet.

According to Beckmeyer and Gary Benton, Stennis' J-2X engine project

manager, A-1 is set to be reactivated in the spring of 2007.

The J-2X is a modification of the Apollo Program's J-2 engine, which helped send the first Americans to the moon. The original J-2s were also tested at Stennis.

As the A-1 Test Stand moved into the shuttle era, it handled more than 1,000 shuttle main engine tests, which have been crucial to the flight record of the orbiter's powerful engines. In the 116 launches logged by the shuttle fleet, no main engine has ever experienced a major problem.

Source: NASA

Citation: From Shuttle to Orion (2006, October 2) retrieved 10 April 2024 from <https://phys.org/news/2006-10-shuttle-orion.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>
--