



NASA STENNIS PROPULSION TESTING

- Since the 1960s, NASA's Stennis Space Center has grown into the **NATION'S LARGEST ROCKET ENGINE TEST SITE**, featuring facilities collectively valued at more than \$2 billion and considered national assets.
- NASA Stennis is recognized by the agency as the **CENTER OF EXCELLENCE** for large propulsion system testing.
- Test facilities at NASA Stennis include A, B and E complexes, where propulsion tests can be conducted on rocket stages, full-scale engines and engine components.
- The **A TEST COMPLEX** at NASA Stennis includes two single-position stands – the Fred Haise and A-2 stands – both built in the 1960s.
- The **FRED HAISE AND A-2 STANDS** have been used to conduct full flight-stage and engine component tests, as well as single-engine tests at sea level and simulated altitudes.
- The Fred Haise Test Stand is designed for sea-level testing. It is now testing RS-25 rocket engines, which will power the core stage of NASA's new **SLS (SPACE LAUNCH SYSTEM)**.
- The A-2 stand at NASA Stennis can test rocket engines at simulated altitudes up to **60,000 FEET** to provide data on how they will operate as they head to space.
- The A Test Complex at NASA Stennis also features the **A-3 STAND**, completed in 2012. The stand is designed to allow testing in simulated altitudes up to 100,000 feet.
- The **B TEST COMPLEX** at NASA Stennis features the Thad Cochran Test Stand with dual, vertical-firing positions, designated B-1/B-2, built in the 1960s. The B-1 position supports single-engine testing. The B-2 position accommodates rocket stage testing.
- First stages of the Saturn V rocket were fired at the B-2 side from 1967 to 1970. The stages helped power **APOLLO PROGRAM** lunar missions, including the Apollo 11 flight that carried the first humans to the surface of the Moon.
- The core stage of NASA's SLS (Space Launch System) rocket that will carry astronauts on **ARTEMIS MISSIONS** to the Moon and power eventual missions to Mars was tested on the Thad Cochran Test Stand during 2020-21. Testing of the stage's integrated systems culminated with the simultaneous firing of its four RS-25 engines to produce 1.6 million pounds of combined thrust, just as during an actual launch.
- The **E TEST COMPLEX** at NASA Stennis was constructed in the late 1980s and early 1990s. The three-stand complex includes seven separate test cells capable of supplying ultra high-pressure gases and cryogenic fluids, using a variety of rocket propellants.
- The E Test Complex offers particularly versatile options for testing engines and engine components, including those for **COMMERCIAL COMPANIES**, including Blue Origin, Firehawk, Launcher, Relativity Space, Stratolaunch, Ursa Major, and Vast.
- NASA Stennis test stands are linked by a seven-and-one-half-mile canal system used for transporting rocket stages and liquid propellants.
- Support facilities for NASA Stennis test stands a test control center for each complex; data acquisition facilities; a large **HIGH-PRESSURE GAS FACILITY** to supply pressurized nitrogen, helium, hydrogen and air; an electrical generation facility to help power the test complex in the event of disruptions in the power grid; and a **HIGH-PRESSURE INDUSTRIAL WATER FACILITY** that features large diesel pumps and a 66-million gallon reservoir.