



FSB-1 STATIC TEST

Boosting NASA's Space Launch System

The largest solid rocket motor ever built for flight will help launch NASA's Space Launch System (SLS) on deep space exploration missions. SLS is an advanced, heavy-lift launch vehicle that provides an entirely new capability for science and human exploration beyond Earth's orbit.

SLS is designed to be flexible and evolvable to meet a variety of crew and cargo mission needs. SLS utilizes Northrop Grumman's five-segment rocket boosters to propel the rocket off of the launch pad to escape Earth's gravity and for the first two minutes of flight.

The twin rocket boosters will provide more than 75% of initial thrust to propel SLS into space. The FSB-1 test motor will fire for just over two minutes, and will qualify new

suppliers of propellant ingredients.

- The FSB-1 motor is 154 feet in length and 12 feet in diameter
- The nozzle is 12.7 feet in diameter
- The test will have more than 302 channels of data recorded
- The motor weighs 1.6 million pounds and will produce 3.6 million pounds max thrust

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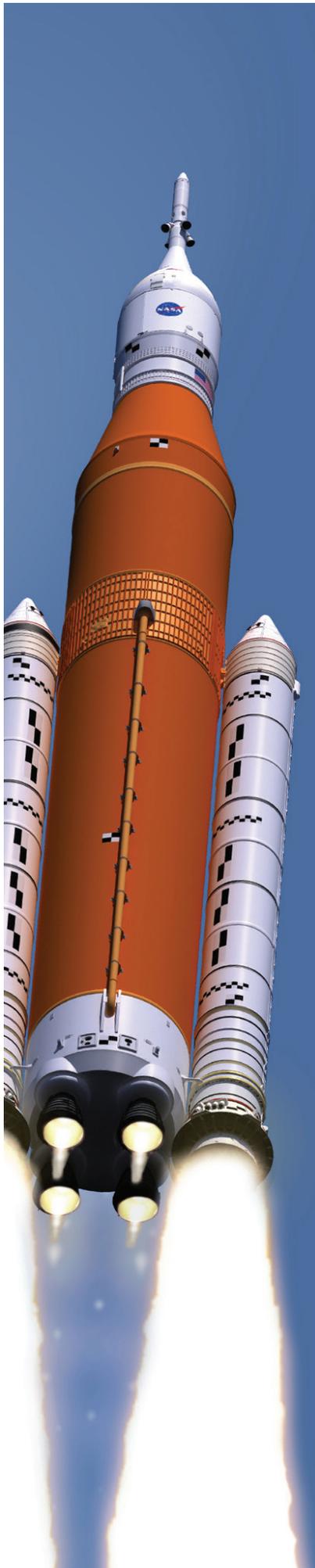
PRIMARY OBJECTIVE

QUALIFY ADDITIONAL SUPPLIERS OF PROPELLANT INGREDIENTS

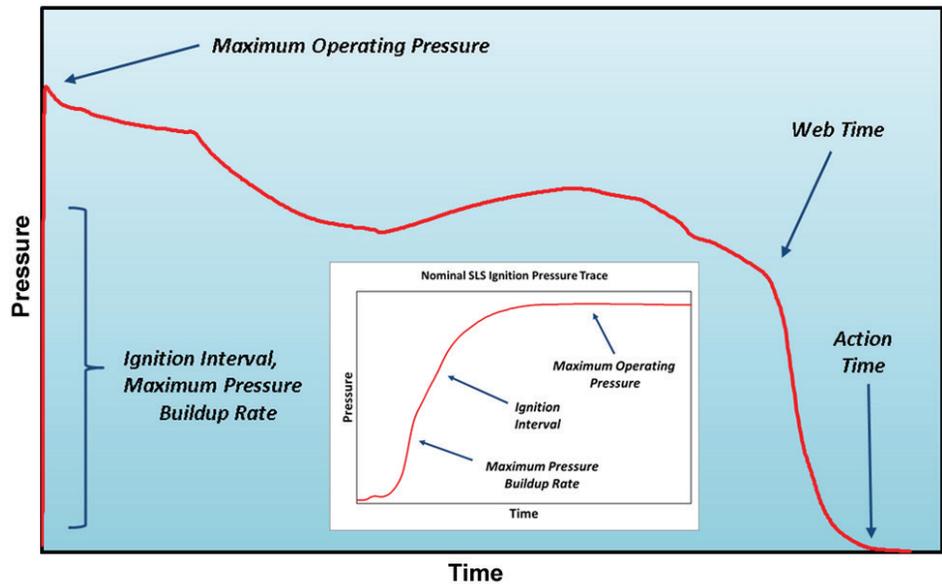
- Evaluate all ballistic parameters and performance
 - Ignition interval
 - Pressure build-up rate
 - Thrust build-up rate
 - Performance tolerances and limits
 - Maximum oscillatory energy allowable
- Bore pressure drop against the baseline database to verify new propellant materials will perform as expected in a full scale motor

SECONDARY OBJECTIVES

- Perform replacement segment igniter lot acceptance test
- Evaluate nozzle throat plug debris against vehicle debris requirements
- Target propellant mean bulk temperature of $60 +10/-0$ deg F
- Demonstrate nozzle forward exit cone housing that was incorporated on Artemis II (post demonstration objective)
- Measure nozzle load response to sound suppression water in the nozzle at ignition



Nominal SLS Pressure Trace and Related Requirements



Note: FSB-1 will not have an active TVC system

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DS-26

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