A powerful new hydrogen-fueled American rocket was fired in a recent ground test by Blue Origin. Mounted on a test stand at the company's West Texas facility, the engine performed a full simulated suborbital mission profile, igniting, throttling and restarting on command.

Controller: Four, three, two, one, ignition.

(Engine fire)

The engine fired at full power for over two minutes to simulate the launch phase, then paused for about four minutes, mimicking a coast through space before it re-ignited for a brief final burn. The last phase of the test covered the work the engine could perform in landing the booster back softly on Earth.

The BE-3 reusable engine generates 110,000 pounds of thrust by burning a mixture of liquid oxygen and liquid hydrogen, the same propellants used by the space shuttle's main engines.

Blue Origin's Orbital Launch Vehicle will use the BE-3 engine and eventually could be
used to launch the company's Space Vehicle into orbit.

The Mission Duty Cycle test is the latest step in maturing the BE-3 engine and comes less than a year after the engine's thrust chamber was successfully tested at NASA's Stennis Space Center in Mississippi.

Developing a new rocket engine is one of the most difficult aspects of space launch because of the dynamics involved with creating a very powerful machine that can safely operate over a wide range of temperatures. To achieve its power, the BE-3 engine operates from minus -423 degrees fahrenheit, the temperature of liquid hydrogen, to more than 6,000 degrees during firing.

Blue Origin is an American company working with NASA's Commercial Crew Program to test new rockets and spacecraft designs to carry crews to low-Earth orbit.