

Prototype of SpaceX's future Starship rocket flies short hop to 500 feet

Just two days after returning its first astronauts back to Earth, SpaceX successfully flew a prototype of its next-generation, deep-space rocket in south Texas, sending the vehicle up to 500 feet and then landing it back down on Earth. It's the largest test version of the massive spaceship to see some air.

The prototype is that of SpaceX's Starship, a spacecraft the company wants to build to transport people to deep-space worlds like the Moon and Mars. The final version of the spaceship would stand at nearly 400 feet high and 30 feet wide, and be capable of sending more than 100 tons of cargo into low Earth orbit, according to SpaceX. Starship is designed to fly to space mounted on top of a giant rocket booster, known as Super Heavy, and both vehicles will be powered by SpaceX's new powerful rocket engine, called Raptor.

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The prototype that flew today is still a far cry from Starship's final form. Only one Raptor engine, mounted on the base of the vehicle, carried it into the air, whereas the final version of Starship is designed to host six main Raptor engines. Starship will also sport a nosecone at its top, while this prototype had a weighted block on its head to simulate mass.

However, today's success marks a big turning point for SpaceX, which had not been having good luck with its Starship testing

over the past year. Prior to this test, four of SpaceX's previous Starship prototypes either exploded, burst, or imploded before they could actually fly. This is the first larger-scale prototype to not only take flight but to survive early testing.

Today's flight, often referred to as "hop," is meant to test out controlled takeoff and landing of the vehicle. Starship is designed to do propulsive landings on other worlds, using its onboard engines to gently lower itself down to the surface of the Moon or perhaps Mars one day. It's a technique similar to how SpaceX lands its Falcon 9 rockets after flight. This short hop showed that vehicle similar in size and shape to Starship could launch and then land back down again, at least from a low altitude.

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SpaceX has actually flown a Starship prototype on a short hop before, though it was very different than the one that flew today. A little less than a year ago, the company sent a much smaller version of Starship, nicknamed Starhopper, up to 500 feet before landing it back down again. That vehicle had a significantly different shape, with CEO Elon Musk likening it to a water tower. Today's Starship prototype resembles more of a grain silo.

It's possible that this prototype could fly again after today. However, SpaceX has already created a sixth prototype, and the company has been quickly developing new vehicles for testing every few months. Eventually, SpaceX will attempt to perform flights that go much higher than 500 feet, and the company will add more hardware to its prototypes, including more Raptor engines.

<https://www.theverge.com/2020/8/4/21353439/spacex-starship-prototype-test-flight-hop>