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# SpaceX Catches Huge Booster Back at Launchpad

Super Heavy booster flies back to firm's site in Texas, where it touches down between mechanical arms attached to launch tower

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SpaceX caught a towering booster rocket back at its launchpad in south Texas, an engineering milestone for the Starship vehicle at the center of Elon Musk's plans for deep-space exploration.

The Super Heavy booster, the first stage of Starship, lifted off from south Texas on Sunday morning and propelled the Starship craft into space. Shortly after the launch, SpaceX made the call to return the booster back to the pad from which it had launched.

A livestream from SpaceX showed the device zipping back toward the facility, and, as it approached a tower, its engines slowed the enormous device down, allowing for the catch around 8:30 a.m. ET. The vehicle latched down on mechanical arms sticking out of the tower.

It was SpaceX's first attempt at the catch, a feat that the company and Musk, its chief executive, have said is key to reducing the cost of rocket launches.

"I don't know what to say!" Gwynne Shotwell, president at SpaceX, said in a post on X.

The catch grabbed the attention of the space industry, as well as government officials who work closely with SpaceX. Bill Nelson, the administrator of the National Aeronautics and Space Administration, congratulated the company in a post on X.

Musk thanked the NASA chief for his support and said SpaceX was looking forward to serving the agency in returning humanity to the moon.

Starship is contracted to transport astronauts to the lunar surface on a NASA mission that relies on numerous U.S. companies, from SpaceX to Lockheed Martin. NASA earlier this year delayed that mission, part of its Artemis exploration program, to late 2026. Officials pushed back the flight in part because contractors needed more time to address technical challenges.

Catching the booster was a primary goal of Sunday's launch, the fifth time SpaceX has conducted a test flight of Starship and one that came after the company criticized the Federal Aviation Administration for its pace in approving Starship missions. The FAA, which licenses private space launches, said Saturday it had approved the Starship test.

Officials at the FAA have said they must fully analyze safety and environmental considerations before giving a green light to SpaceX flights of the still-experimental rocket.

Starship, which consists of the Super Heavy booster and Starship spacecraft, stands about 400 feet tall when it is launched.



SpaceX's mega rocket Starship lifted off for a test flight from Starbase in Boca Chica, Texas, on Sunday.  
PHOTO: ERIC GAY/ASSOCIATED PRESS

Musk has said that he wants Starship to be fully and rapidly reusable. Other rocket operators, both historically and today, use what are called expendable boosters, meaning that the rocket is used once, to get other craft carrying satellites or astronauts into proper orbits. Expendable boosters have their own advantages, being capable of blasting payloads deep into space on a single launch, some rocket executives say.

SpaceX has long pushed reusability in rockets, including on its current operational vehicles, Falcon 9 and Falcon Heavy.

The idea behind catching the booster is that SpaceX could, in the future, stack the Starship spacecraft back on top of one that landed at a pad and quickly launch again.

Multiple Starship launches will be important for lunar operations for NASA. For those missions, including the one currently set for about two years from now, a Starship spacecraft would be launched into space, and take on significant amounts of fuel before flying to an orbit at the moon. Orbital fuel transfers have never been proven at the scale the operation requires.

Executives at SpaceX have said they want to fly many Starship missions before taking onboard any astronauts.

The spacecraft that the Super Heavy booster launched on Sunday, meanwhile, later landed in the Indian Ocean, according to SpaceX. The company wants to make that vehicle, which would carry satellites or astronauts on operational flights, reusable as well. Doing so will present its own set of issues, as the ship will face intense heat when re-entering Earth's atmosphere.

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## **Videos**

