

SpaceX mile-high escape test will feature 'Buster' the dummy

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In this May 29, 2014 file photo, The SpaceX Dragon V2 spaceship is unveiled at its headquarters in Hawthorne, Calif. SpaceX is just days away from shooting up a crew capsule to test a launch escape system designed to save astronauts' lives.

Buster, the dummy, is already strapped in for Wednesday, May 6, 2015, nearly mile-high ride from Cape Canaveral, Florida. He'll be alone as the capsule is fired from a ground test stand and soars out over the Atlantic, then parachutes down. (AP Photo/Jae C. Hong)

SpaceX is just days away from shooting up a crew capsule to test a launch escape system designed to save astronauts' lives.

Buster, the dummy, is already strapped in for Wednesday's nearly mile-high ride from Cape Canaveral, Florida. He'll be alone as the mock-up capsule is fired from a ground test stand and soars out over the Atlantic, then parachutes down.

SpaceX is working to get astronauts launched from Cape Canaveral again, as is Boeing. NASA hired the two companies to ferry astronauts to the International Space Station to reduce its reliance on Russian rockets.

"It's our first big test on the crew Dragon," SpaceX's Hans Koenigsmann, vice president for mission assurance, told reporters Friday.

The California-based SpaceX is aiming for a manned flight as early as 2017. It's already hauling groceries and other supplies to the space station via Dragon capsules; souped-up crew Dragons will be big enough to carry four or five—and possibly as many as seven—astronauts.

NASA is insisting on a reliable launch abort system for crews—something its space shuttles lacked—in case of an emergency. That's one of the hard lessons learned from the now retired, 30-year shuttle program, said Jon Cowart, a manager in NASA's commercial crew program.

The 1986 Challenger accident occurred during liftoff, the 2003 Columbia disaster during re-entry. There was no way to escape, and each time, seven astronauts died.

NASA's early Mercury and Apollo spacecraft had launch escape systems; the two-man Gemini capsules had ejection seats. The first four space shuttle flights also had ejection seats for the two-man crews, but those seats were removed as the crew numbers grew and the system was declared operational.

The Russian Soyuz spacecraft have long had escape backup in case of a rocket explosion or fire at the pad. The system saved two cosmonauts' lives in 1983.

Wednesday's test is expected to last barely 1½ minutes. "I can hold my breath the entire time probably," Koenigsmann noted.

The eight rocket engines on the Dragon will fire in unison to propel the capsule off the makeshift stand, just as they would fire atop a rocket on the pad or in flight. The stand occupies a launch pad at Cape Canaveral Air Force Station.

Called SuperDracos, the engines were made from 3-D printing. It will be the first time that SpaceX fires all eight of them at the same time.

The capsule—rigged with sensors and cameras—is expected to soar more than 4,500 feet (1,370 meters) high and come down 6,000 feet (1,830 meters) offshore, due east. Buster will be subjected to four to 4½ times the force of Earth's gravity.

Koenigsmann said the escape system is designed for use throughout a Dragon's climb to orbit on a SpaceX Falcon 9 rocket, giving astronauts the ability to save themselves all the way up.

"Whatever happens to Falcon 9, you will be able to pull out the astronauts and land them safely on this crew Dragon," he said. "In my opinion, this will make it the safest vehicle that you can possibly fly."

There will be nothing to discard if the escape system is unneeded, which simplifies the operation, according to Koenigsmann.

"It's innovative," Cowart said, "and that's really part of the whole reason we're doing commercial crew."

SpaceX plans an in-flight abort test sometime later this year from California.

More information: SpaceX: www.spacex.com/

NASA: www.nasa.gov/exploration/commercial/crew/

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