

The company with the world's largest aircraft now has a hypersonic rocket plane



“Demonstrating the reuse of fully recoverable hypersonic test vehicles is an important milestone for MACH-TB,” said George Rumford, director of the Test Resource Management Center, in a statement. “Lessons learned from this test campaign will help us reduce vehicle turnaround time from months down to weeks.”

Krevor said Talon-A carried multiple experiments on each mission but did not offer any details about the nature of the payloads, citing proprietary reasons and customer agreements.

“We cannot disclose the nature of those payloads, other than to say typical materials, instrumentation, sensors, etc.,” he said. “The customers were thrilled with their ability to recover the payloads shortly after landing.”

Stratolaunch completed the first powered flight of a Talon-A vehicle last year, when the rocket plane launched over the

Pacific Ocean and fired its liquid-fueled Hadley engine—produced by Ursa Major—for about 200 seconds. The Talon-A1 vehicle accelerated to just shy of hypersonic speed, then fell into the sea as planned and was not recovered.

That set the stage for Talon-A2's first flight in December.

Military officials previously stated they set up the MACH-TB program to enable more frequent flight testing of hypersonic weapon technologies, including communication, navigation, guidance, sensors, and seekers. Stratolaunch aims for monthly flights of the Talon-A rocket plane by the end of the year and eventually wants to ramp up to weekly flights.

"These flights are setting the stage now to increase the cadence of hypersonic flight testing in this country," Krevor said. "The ability to have a fully reusable hypersonic flight architecture enables a very high cadence of flight along with a lot of responsiveness. The DoD can call Stratolaunch if there's a priority program, and we can have a hypersonic flight next week, assuming the readiness of all the other technologies and payloads."

Pentagon officials in 2022 set a goal of growing US capacity for hypersonic testing from 12 to 50 flight tests per year. Krevor believes Stratolaunch will play a key part in making that happen.

Catching up

So, why is hypersonic flight testing important?

The Pentagon seeks to close what it views as a technological gap with China, which US officials acknowledge has become the world's leader in hypersonic missile development. Hypersonic weapons are more difficult than conventional missiles for aerial defense systems to detect, track, and destroy. Unlike ballistic missiles, hypersonic weapons ride at the top of the

atmosphere, enhancing their maneuverability and ability to evade interceptors.

Hypersonic flight is an unforgiving environment. Temperatures outside the Talon-A vehicle can reach up to 2,000° Fahrenheit (1,100° Celsius) as the plane plows through air molecules, Krevor said. He declined to disclose the duration, top speed, and maximum altitude of the December and March test flights but said the rocket plane performed a series of “high-G” maneuvers on the journey from its drop location to Vandenberg.

<https://arstechnica.com/space/2025/05/stratolaunch-successfully-flies-a-modern-replacement-for-the-x-15-rocket-plane/>