Contact lost with hypersonic glider after launch (Update)

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This Aug. 3, 2011 photo released by Vandenberg Air Force Base shows a Minotaur IV rocket standing beside Space Launch Complex-8 at Vandenberg Air Force Base, Calif. A hypersonic glider is scheduled for launch atop the Minotaur rocket, Thursday, Aug. 11, 2011. The Hypersonic Test Vehicle-2 is an experiment in extremely high speed flight technologies by the U.S. Defense Advanced Research Projects Agency. (AP Photo/U.S. Air Force, Staff Sgt. Scottie McCord)

An unmanned hypersonic glider developed for U.S. defense research into super-fast global strike capability was launched atop a rocket early Thursday but contact was lost after the experimental craft began flying on its own, the Defense Advanced Research Projects Agency said.

The problem occurred during the critical point of transition to aerodynamic flight, DARPA said in a statement that described the mission as an attempt to fly the fastest aircraft ever built.

"More than nine minutes of data was collected before an anomaly caused loss of signal," it said. "Initial indications are that the aircraft impacted the Pacific Ocean along the planned flight path."

The 7:45 a.m. launch from Vandenberg Air Force Base, 130 miles northwest of Los Angeles, was the second of two planned flights of a Falcon Hypersonic Technology Vehicle-2. Contact was also lost during the first mission.

Shaped like the tip of a spear, the small craft is part of a U.S. military initiative to develop technology to respond to threats at 20 times the speed of sound or greater, reaching any part of the globe in an hour.

An artist rendering from the US Defense Advanced Research Projects Agency (DARPA) shows the Falcon Hypersonic Technology Vehicle 2 (HTV-2). US military scientists on Thursday launched the Falcon HTV-2 aircraft but lost contact with the experimental plane in its second test flight, officials said.

The HTV-2 is designed to be launched to the edge of space, separate from its booster and maneuver through the atmosphere at 13,000 mph before intentionally crashing into the ocean.

Defense analyst John Pike of Globalsecurity.org wasn't surprised with the latest failure because the hypersonic test flight program is still in its infancy.

"At this early stage of the game, if they did not experience failures, it's because they're not trying very hard," he said.

Pike said it's possible for engineers to still glean useful information about what worked and what didn't, despite the flight ending prematurely. The key is to analyze what happened in the final five seconds before contact was lost.

DARPA used Twitter to announce the launch and status of the flight.

The agency said the launch of the Minotaur 4 rocket was successful and separation was confirmed via a camera. Communication was then lost.

DARPA's statement quoted Air Force Maj. Chris Schulz, the HTV-2 program manager, on the challenge of flight in "virtually uncharted territory."

"We know how to boost the aircraft to near space," he said. "We know how to insert the aircraft into atmospheric hypersonic flight. We do not yet know how to achieve the desired control during the aerodynamic phase of flight. It's vexing; I'm confident there is a solution. We have to find it."

A team of experts will examine information gathered by more than 20 air, land, sea and space data collection systems, DARPA said.

The HTV-2 is intended to put theory, simulations and wind tunnel experience to the test in real flight conditions at speeds producing temperatures in the thousands of degrees and requiring extremely fast control systems, according to DARPA.

The first HTV-2 was launched on April 22, 2010. It returned nine minutes of data, including 139 seconds of aerodynamic data at speeds between 17 and 22 times the speed of sound, DARPA said.

That craft detected an anomaly, aborted its flight and plunged into the ocean, the agency said.

The Falcon HTV-2 is an unmanned, rocket-launched, maneuverable aircraft. US military scientists on Thursday launched the Falcon HTV-2 but lost contact with the experimental plane in its second test flight, officials said.

The military and NASA have also been working on powered aircraft capable of flying at speeds greater than five times the speed of sound, or Mach 5.

In 2004, NASA's unmanned X-43A reached Mach 9.6 on a flight off California. Powered for 10 seconds by a supersonic combustion ramjet, or scramjet, that set a speed record for jet-powered flight.

The X-43A also set the previous record of Mach 6.8 earlier that year.

The unmanned X-51A Waverider, a demonstrator, developed by the Air Force, DARPA, Pratt & Whitney Rocketdyne and Boeing, has been tested twice.

Powered by a scramjet, the first X-51A reached about Mach 5 for 140 seconds after being dropped from the wing of a B-52 in May 2010, according to Boeing. Last June, a second craft had problems in a flight off the California coast and the test was

terminated. Two more flights are planned for the X-51A program.

The HTV-2 was launched atop a Minotaur 4 rocket built by Orbital Sciences Corp. from decommissioned Peacekeeper intercontinental ballistic missiles. The Minotaur 4 made its debut last year carrying the first HTV-2.

"From what we can tell based on preliminary data, it looked like the rocket did its job," said Orbital spokesman Barry Beneski.

Minotaur 4 is part of the Minotaur rocket family. There have been 22 Minotaur launches since 2000 - a 100 percent success rate. The price of a single flight ranges from $15 million to $30 million depending on the rocket style, according to the company.