U.S. military hypersonic aircraft trial set for 2013

Mary Slosson, Reuters

(Reuters) - The last of four unmanned experimental U.S. military aircraft designed to fly at six times the speed of sound is expected to be tested next year, the program manager said on Wednesday, months after its predecessor broke up during a trial.

The third test flight of the craft, known as the Waverider or X-51A, broke apart over the Pacific Ocean seconds into a test flight in August. U.S. Air Force officials said at the time they did not know if or when their fourth aircraft would fly.

Preliminary results from an investigation into what went wrong during the August flight indicate that a "random vibration issue" caused one of the control fins to deploy early, the X-51 program manager at the Air Force Research Laboratory, Charlie Brink, told reporters on a conference call.

"I can't say conclusively that's it, but it's looking more and more like the cause," Brink said, adding that investigators quickly ruled out a software or power malfunction as a cause of the aircraft's break up.

The Waverider was designed to reach speeds of Mach 6 or above, six times the speed of sound and fast enough to zoom from New York to London in less than an hour.

Analysts say the military has its eye on using the Waverider program to develop missiles with non-nuclear warheads that could strike anywhere in the world within an hour.

Results from the investigation into the third aircraft's failed test flight are expected to be complete in mid-December, Brink said.

"I'm fairly confident that in the next couple of months we'll have the investigation complete and we'll move on. We're already preparing the fourth flight vehicle. We're doing those things in parallel," he said.

Engineers are already modifying the final test X-51A to be ready in late spring or early summer of 2013, he said.

PROGRAM DETAILS CLASSIFIED

The aircraft is known as the Waverider because it stays airborne, in part, with lift generated by the shock waves of its own flight. The Boeing Co's Phantom Works division performed design and assembly on the aircraft, according to the military.

Four X-51A aircraft were built for the military, one of which flew for more than three minutes at nearly five times the speed of sound during a 2010 test flight, the Air

Force said.

The experimental aircraft are expected to crash at the end of test flights in any case, and are not considered retrievable.

Pratt & Whitney Rocketdyne designed the X-51A's "scramjet" engine, which uses the forward motion of the craft to compress air for fuel combustion, according to a description of the project from the military.

After being dropped from a B-52 bomber, a solid-rocket booster is used in the initial phase of the plane's flight to bring it up to speeds that can allow its engine to take over, by drawing in air through the craft's forward momentum.

The cost of the experimental aircraft has not been disclosed because many details of the program are classified.

In 2004, NASA reached a speed of Mach 9.6, or nearly 7,000 miles per hour, with a jet-powered aircraft. But that vehicle, known as X-43, only flew for a few seconds and its copper-based engine was not designed to survive the flight.

Engineers have hoped to see the hypersonic X-51A travel for five minutes of powered flight. For protection from extreme heat, it uses insulation tiles, similar to those on the NASA space shuttle orbiters, according to a 2011 military description of the project.

Hypersonic flight is normally defined as beginning at Mach 5, which is five times the speed of sound.

(Editing by Tim Gaynor and Christopher Wilson)