

# X-60A hypersonic flight research vehicle program completes critical design review

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Illustration of X-60A launch. Credit: Air Force Office of Scientific Research

The Air Force Research Laboratory, Aerospace Systems Directorate, High Speed Systems Division, in partnership with Generation Orbit

Launch Services, Inc., is developing the X-60A vehicle. It is an air-dropped liquid rocket specifically designed for hypersonic flight research.

X-60A program completed its Critical Design Review, a major milestone in the program. The program now moves into the fabrication phase. The initial [flight](#) of the vehicle, scheduled in about a year, is based out of Cecil Spaceport in Jacksonville, Florida.

A key part of the X-60A program is that the U.S. Federal Aviation Administration-licensed Cecil Spaceport provides a diversification in hypersonic flight testing to traditional Department of Defense flight test ranges. Additionally, this is the first Air Force Small Business Innovative Research program to receive an experimental "X" designation, in a long line of historical X-planes that includes hypersonic vehicles such as the X-15 and X-51A.

AFRL's motivation for the X-60A [program](#) is to increase the frequency of flight testing while lowering the cost of maturing hypersonic technologies in relevant flight conditions. While hypersonic ground test facilities are vital in technology development, we must also test those technologies with actual hypersonic flight conditions.

The X-60A rocket [vehicle](#) propulsion system is the Hadley liquid rocket engine, which utilizes liquid oxygen and kerosene propellants. The system is designed to provide affordable and regular access to high dynamic pressure flight conditions above Mach 5.

Provided by Air Force Research Laboratory

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