Boeing to Use X-43A Flight Test Results for Future Hypersonic Applications

Information gained from Tuesday's record-setting flight of NASA's Hyper-X research vehicle will be used by Boeing [NYSE: BA] as it designs the future of flight.

Powered by an air-breathing supersonic combustion ramjet engine, or "scramjet," NASA's 12.3-foot-long Hyper-X (or X-43A) flew close to Mach 10, or about 7,200 miles per hour, on Nov. 16, after being launched from a B-52 off the Pacific coast after liftoff from Edwards Air Force Base, Calif. The flight broke a previous speed record for air-breathing aircraft set in March by another X-43A at Mach 6.83, or about 5,000 mph.

"This flight is a key milestone and a major step toward the future possibilities for producing boosters for sending large and critical payloads into space in a reliable, safe, inexpensive manner," said NASA Administrator Sean O'Keefe. "These developments will also help us advance the Vision for Space Exploration, while helping to advance commercial aviation technology."

As part of the team that developed and built the X-43A for NASA, the Boeing Phantom Works advanced R&D unit designed the vehicle, the airframe thermal protection systems, and flight control and navigation systems.

"Breaking speed records with this new scramjet technology is very exciting for us," said George Orton, Phantom Works manager for hypersonic design and application. "But, the true importance of these pioneering flights is that we're learning some important lessons that we can apply to aerospace systems of the future."

Because scramjet engines have significantly fewer moving parts than traditional turbojet engines and do not, like conventional rocket engines, require oxidizer to be carried onboard for combustion, they will allow for the design of smaller, simpler, more reliable and affordable reusable vehicles for potential space, military and civil applications.

Boeing has been exploring the realms of hypersonic flight (defined as Mach 5 and above) since the 1950s, from the X-15 to the Space Shuttle to the X-43A. Today, Phantom Works is also working on the Scramjet Engine Demonstrator?WaveRider program for the U.S. Air Force in a teaming arrangement with Pratt & Whitney, as well as the HyFly Hypersonic Missile Demonstrator program for the U.S. Navy and Defense Advanced Research Projects Agency.

Phantom Works teamed with prime contractor ATK [NYSE: ATK] to develop and build the X-43A for NASA. ATK was responsible for vehicle fabrication, assembly, systems integration and testing in addition to providing the scramjet engine. The booster is a modified Pegasus rocket built by Orbital Sciences Corp.

NASA's Langley Research Center in Hampton, Va., and Dryden Flight Research Center near Edwards, Calif., jointly conduct the Hyper-X program.

Boeing Phantom Works is the advanced R&D unit and a catalyst of innovation for the Boeing enterprise. It provides advanced solutions and innovative, breakthrough technologies that reduce cycle time and cost while improving the quality and performance of aerospace products and services.

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