

X-45A, X-43A pass tests with 'flying' colors

EDWARDS AIR FORCE BASE, Calif. — March proved to be a big month for researchers here as the Joint-Unmanned Combat Air System X-45A successfully performed an inert-weapons release and NASA launched its record-breaking unpiloted X-43A.

X-45A

Along with successfully releasing an inert, unguided smart bomb, the testing of the X-45A demonstrated the aircraft's maximum "envelope" of about 495 mph and 35,000 feet. It also verified proper operation of the weapons bay door and tested its ability to transmit a radar image to the ground operator within time and bandwidth constraints, said 2nd Lt. **Devon Christensen**, Air Force Flight Test Center X-45A deputy program manager.

The unmanned aircraft completed a separate test flight earlier in the month where the X-45A was unexpectedly redirected around a flight pattern to allow another aircraft, which declared an in-flight emergency, to safely land. This demonstrated the X-45A's ability to fly with manned aircraft, Boeing Co. officials said.

The X-45A began flight testing in May 2002.

courtesy NASA



NASA's X-43A made aerospace history when it reached speeds of about 5,000 mph, the fastest speed ever for a craft powered by a jet engine. NASA plans to attempt a flight at close to 7,000 mph by the end of this year.

by Lori Losey



The Joint-Unmanned Combat Air System X-45A successfully completed the first weapons release from its internal bay at Edwards Air Force Base, Calif., in March.

X-43A

The X-43A flight began when the aircraft, mounted on a modified Pegasus booster rocket, was launched from a B-52B over the Pacific Ocean about 50 miles off the California coast at about 40,000 feet. The booster propelled the 12-foot-long X-43A up to its test altitude of about 95,000 feet,

where it separated and the supersonic combustion ramjet, or scramjet, engine ignited as planned.

The scramjet engine is an ultra-high-speed engine that draws oxygen for combustion from the atmosphere rather than having to carry it like a rocket. Not carrying the oxygen saves fuel weight and allows spacecraft to carry more equipment. The Air Force is interested in the technology for developing ultra-fast aircraft that can reach any spot in the world within a couple hours.

"The data clearly shows, without question, that scramjets work," said **Griff Corpening**, NASA Dryden Flight Research Center's X-43A chief engineer.

The X-43A hit speeds of about 5,000 mph, about seven times the speed of sound and the fastest speed ever for a craft powered by a jet engine. The fastest known jet is the SR-71 Blackbird, which flew at speeds of about 2,200 mph.

NASA plans to attempt its third and final X-43A flight at close to 7,000 mph by the end of this year.

— information courtesy Air Force Flight Test Center Public Affairs, Boeing Co. and Defense Advanced Research Projects Agency