

## Two Boeing X-45As Complete Graduation Combat Demonstration

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Two Boeing [NYSE: BA] Joint Unmanned Combat Air Systems (J-UCAS) X-45A unmanned aircraft successfully completed a graduation exercise when they flew their most challenging simulated combat mission today at NASA's Dryden Flight Research Center, Edwards Air Force Base, Calif.

"We pushed the X-45As to their limits and they responded brilliantly," said Darryl Davis, Boeing Global Strike Solutions vice president. "This incredible X-45A program made aviation history and laid the foundation for our X-45C, which will become a critical weapon in our military's arsenal."

For test flights 63 and 64, the X-45As departed from the base, climbed to altitude, and autonomously used their on-board decision-making software to determine the best route of flight within the "area of action" or AOA. The pilot on the ground approved the plan and the two unmanned vehicles entered the AOA, a 30 by 60 mile area within the test range, ready to perform a simulated Preemptive Destruction-Suppression of Enemy Air Defenses mission. The mission involved identifying, attacking and destroying pre-identified ground-based radars and associated missile launchers before they could be used to launch surface-to-air missiles.

During the test flight, the X-45A unmanned aircraft faced a simulated "pop-up" threat, used evasive maneuvers to avoid it, and autonomously determined which vehicle held the optimum position, weapons and fuel to attack the higher priority simulated target. Once the pilot authorized the attack, the unmanned aircraft simulated dropping weapons on the target. After engaging and destroying a second simulated target, the two X-45As completed their mission and safely returned to Edwards.

The next step for Boeing is to build and flight test three X-45C aircraft, two mission control elements, and integrate the J-UCAS Common Operating System (the software used and tested on the X-45A may be offered as a candidate for functionality in the development of the J-UCAS Common Operating System ). The first X-45C will be completed in 2006, with flight test scheduled to begin in 2007. It will be 39 feet long with a 49-foot wingspan, cruise at 0.80 Mach at an altitude of 40,000 feet, carry a 4,500 pound weapon payload, and be able to fly a combat radius of more than 1,200 nautical miles.

Winner of a 2005 Flight International Aerospace Industry Award, the J-UCAS X-45 program is a DARPA/U.S. Air Force/U.S. Navy/Boeing effort to demonstrate the technical feasibility, military utility and operational value of an unmanned air combat system for the Navy and Air Force. Operational missions for the services may include persistent strike; penetrating electronic attack; suppression of enemy air defenses; and intelligence, surveillance and reconnaissance.

A unit of The Boeing Company, Boeing Integrated Defense Systems is one of the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a \$30.5 billion business. It provides network-centric system solutions to its global military, government, and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance systems ; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer and a leading provider of space-based communications; the primary systems integrator for U.S. missile defense; NASA's largest contractor; and a global leader in sustainment solutions and launch services.

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