



News Release

Defense Advanced Research Projects Agency

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IMMEDIATE RELEASE

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X-45A DEMONSTRATES FIRST MULTI-VEHICLE OPERATIONS

The Joint Unmanned Combat Air Systems (J-UCAS) program again made aviation history during an August 1, 2004, flight test that demonstrated the first-ever control of two unmanned aircraft by a single operator/pilot.

At 10:40 a.m. Pacific Daylight Time, the first Boeing X-45A J-UCAS technology demonstrator took off from the NASA Dryden Flight Research Center on Edwards Air Force Base, Calif. Four minutes later, the second X-45A followed. Both vehicles flew simultaneously under the supervision of a single operator.

Upon the X-45A operator's command, the two unmanned aircraft joined up in a preset formation using the same mission plan. Both aircraft maintained their position relative to a simulated third aircraft that was considered the "virtual lead." This unprecedented demonstration was enabled by the X-45A's four-dimensional navigation capability, the ability to position a vehicle at a particular location in space at a designated time.

The two aircraft flew at approximately 15,000 feet and at Mach 0.6 (about 390 mph). For this initial demonstration, lateral separation of more than a mile was maintained as the test team explored coordinated flight. Various maneuvers were demonstrated, with the two X-45A vehicles maintaining precise position relative to the virtual lead. Aircraft state information was shared between the aircraft using an inter-vehicle data link (Link-16).

"Sunday's first-ever control of two unmanned aircraft by a single operator/pilot was a significant step in the demonstration of multi-vehicle operational capabilities," said Captain Ralph N. Alderson, USN, X-45 Program Manager. "This is an important step toward the collaborative mission execution that is essential to the success of J-UCAS."

In the future, at least four operational J-UCAS vehicles are envisioned to be monitored by a single operator, with the ability to fly in much closer formation. Demonstration of accurate position-keeping between multi-vehicle strike packages is essential to the collaborative operations expected for operational systems.

The J-UCAS program is a joint Defense Advanced Research Projects Agency (DARPA)/Air Force/Navy effort to demonstrate the technical feasibility, military utility, and

operational value of a networked system of high-performance, weaponized, unmanned air vehicles to effectively and affordably prosecute 21st century combat missions. The Boeing X-45A vehicles are demonstrating the initial technical feasibility of the J-UCAS concept. Boeing and Northrop Grumman are now developing the next generation of vehicles (the X-45C and X-47B, respectively) to demonstrate the military utility and operational value of the J-UCAS concept. The J-UCAS Common Operating System will allow the two systems to intra-operate with each other and with the Global Information Grid.

More information on the J-UCAS program and photos of the demonstration can be found at <http://www.darpa.mil/j-ucas>. To see or download photos, click on the link to “X-45 System” and then click on “Gallery.”

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Media with questions on the demonstration or the J-UCAS program, please contact Jan Walker at (703) 696-2404 or jwalker@darpa.mil. Media with questions on NASA Dryden Flight Research Center, please contact Gray Creech at (661) 276-2662.