

X-36 Remotely-Piloted Aircraft Tested [press release]

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Subject: X-36 Remotely-Piloted Aircraft Tested [press release]

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Date: Wed, 21 May 1997 12:35:48 -0400 (EDT)
From: NASAnews@hq.nasa.gov
Subject: Remotely-Piloted Tailless Aircraft Completes First Flight

REMOTELY-PILOTED TAILLESS AIRCRAFT COMPLETES FIRST FLIGHT

A NASA/McDonnell Douglas remotely piloted, tailless aircraft successfully completed its first flight on May 17 at NASA's Dryden Flight Research Center, Edwards, CA. The lack of vertical tails greatly enhances the stealthy characteristics of the airplane, and holds promise for greater agility than is currently available in existing military fighter aircraft.

Called the X-36, the subscale research aircraft lifted off from Rogers Dry Lake at 7:08 a.m., PDT. The aircraft flew for five minutes and reached an altitude of approximately 4,900 feet. An additional 24 test flights of the X-36 are scheduled at Dryden during the next six months.

"We thought the flight was outstanding; we are beginning to show what the fighter aircraft of the future will look like," said Rod Bailey, X-36 program manager. When we saw this airplane lift off, we saw the shape of airplanes to come."

NASA's Ames Research Center, Moffett Field, CA, leads the X-36 program, and has technical responsibility for continued development of some of the critical technologies needed for future tailless, stealthy fighter aircraft.

There are two 28-percent-scale X-36s, which are remotely piloted jets built by the McDonnell Douglas Corporation's Phantom Works division in St. Louis, MO, and are designed to fly without the traditional vertical and horizontal tails found on most aircraft. Each aircraft measures 18 feet long, 3 feet high, has a 10-foot wing span, and weighs 1,250 pounds. Each aircraft is powered by a Williams Research F112 turbofan engine that provides 700 pounds of thrust.

The X-36 aircraft are remotely controlled by a pilot in a ground station cockpit, complete with a heads-up display. The pilot-in-the-loop approach eliminates the need for expensive and complex autonomous flight control systems. The design reduces weight and drag of the aircraft and explores new flight control technologies. The aircraft use split ailerons to provide yaw control, as well as raising and lowering in a normal fashion to provide roll control. The X-36 also incorporates a thrust vectoring system.

"The flight control system functioned flawlessly and we look forward to subsequent flights to demonstrate the full range of maneuverability of the aircraft," said Mark Sumich, X-36 project manager.

"We knew within five to ten seconds into the flight that we had a good flying airplane," said Gary Jennings, McDonnell Douglas X-36 program manager. "Flying in a simulator is one thing, but until you actually fly the airplane, you don't really know how it will handle. Today we found out that it handled extremely well."

NASA Ames and McDonnell Douglas developed the technologies required for a tailless fighter beginning in 1989. In 1993, McDonnell Douglas proposed the remotely piloted aircraft technology demonstration to validate the technologies in a real flight environment. In 1994, McDonnell Douglas began fabrication

of the two aircraft in their rapid prototyping facility in St. Louis. The project was jointly funded under a roughly 50/50 cost-sharing arrangement between NASA and McDonnell Douglas. The combined program cost for the development, fabrication, and flight testing of the two prototype aircraft is approximately \$20 million.

"The first flight went very well; it was just textbook perfect," said Larry Walker, X-36 Project pilot. "It was a nice takeoff and the handling was great. I knew instantly that it was a nice flying airplane. I see no obstacles in the future for this type of technology."

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Photos are available from NASA Ames Research Center's Public Affairs' homepage at URL:

<http://ccf.arc.nasa.gov/dx>

and also are available from the NASA Dryden Photo Archive on the World Wide Web at URL:

<http://www.dfrc.nasa.gov/PhotoServer/photoserver.html>

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