

Vector X-31 lands with 24 degrees AoA (Angle of Attack)

Notice how the AoA was reduced just before touch down---a reverse flare....

Thrust my sweet butt. With the computer landing the aircraft, the only thing keeping this thing from making a hole in the ground is EPF (Extreme Pucker Factor) on the part of the pilot who's just along for the ride --- and can't see sh..... !!!!!!!!!!!

This may be the future of Carrier Aircraft Landing "as long as you got the balls". What I like about this is that you don't have to fly the ball because you can't SEE the ball. You can't even see the ship!

I'm not believing the 8,000 ft to 1,700 ft,

On April 29 at NAS Patuxent River, Maryland, the unique Vector X-31 made the world's first fully automated, 24-degree angle of attack (AoA) thrust-vectored landing. The high AoA landing marked the final flight in the Vector's three-year ESTOL (extremely short takeoff and landing) program. The project was designed to demonstrate the viability of ESTOL thrust vectoring and was carried out with a collaboration of the U.S. Navy, Germany's Federal Office of Defense Technology and Procurement, the European Aeronautic Defense and Space Company (EADS) and Boeing Aerospace..

The 24-degree ESTOL landing also ended the X-31's career. It was first flown in October 1990 as part of NASA's Enhanced Fighter Maneuverability Program (EFM) that demonstrated the advantages of "post-stall" maneuvering using vectored thrust. EFM was continued until 1995, when the X-31 was put into storage. In 1999, the U.S. and German governments signed a "memorandum of understanding" to relaunch the Vector under the ESTOL program.

Though the program's main mission was to prove the feasibility of high AoA, thrust-vectored landings, the effort yielded other benefits: EADS was able to test and validate its Flush Air Data System (FADS). Consisting of 12 tiny sensors arranged around the X-31's nose cone, FADS replace traditional pitot static-air measurement systems, which can be rendered ineffective at high AoAs.

The X-31 usually lands at 12 degrees at 175 knots. The automated ESTOL landing with 24 degrees AoA reduced its landing speed by 31 percent to 121 knots and shortened the rollout from 8,000 to 1,700 feet.

Marine Corps Maj.Cody Allee (one of the program's two test pilots) flew the final ESTOL landing and described the approach as "almost sedate" in comparison to a conventional X-31 landing.

The lower approach speeds made possible by ESTOL technology could increase airframe life, lower wind-over-deck requirements for carrier landings and result in greater bring-back capabilities for ordnance and fuel. Unmanned aerial vehicles and the latest generation of manned tactical aircraft could also benefit from the program's technology, including its GPS-based Integrity Beacon Landing System and sophisticated flight-control software.

The X-31, perhaps the last of the true "X" airplanes, is now retired and will likely go to one of Europe's or the U.S.'s many aviation museums.