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HISTORIC NASA AIRCRAFT RETIRES TO STAR IN NEW MUSEUM

It's been blasted by more than 700 lightning strikes, simulated a supersonic transport and tested a wing design for future fighters. Now "NASA 816" -- a specially modified Convair F-106B -- has retired after more than 3 decades of flight research. NASA 816 made its last flight on April 30. It was the last known piloted Convair F-106 still flying.

In a May 17 ceremony at Langley Research Center, Hampton, Va., NASA 816 will be symbolically transferred to the new 110,000 square-foot Virginia Air & Space Center, Hampton. The aircraft will move to its new home this summer and go on display with other civilian and military aircraft in time for the center's grand opening in the spring of 1992.

In 30-plus years of service, NASA 816 flew in support of U.S. Air Force research and development testing (9 years), assisted research on the U.S. supersonic transport program of the 1970s at NASA's Lewis Research Center, Cleveland (13 years) and conducted storm hazards and vortex flap programs at Langley (12 years).

The F-106 design has special significance for Langley Research Center. Dr. Richard Whitcomb, a distinguished Langley retiree, played a key role in developing the "area ruled" fuselage used on the Convair F-106 and its predecessor, the F-102A. The Coke-bottle-like shape was a revolutionary advance in aircraft design that made supersonic speed in level flight practical. An F-106 set a world speed record of 1,525 mph in 1959 and still holds the record as the fastest single-engine turbojet-powered airplane. NASA 816 is a two-seat F-106B. The second seat allowed flight test engineers to ride along, operating test equipment and making observations.

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For the Air Force, the aircraft tested new modifications before the modifications were incorporated in the F-106 fighter fleet. It served at Edwards, McClellan, Tyndall and Holloman Air Force Bases, Geiger Field, Spokane, Wash. and Convair/General Dynamics, Fort Worth.

The F-106B was a one-of-a-kind workhorse at Lewis. Under its left wing, it carried an extra engine to study how the propulsion system interacts with the highly-swept wing of a supersonic airplane. Under its right wing was a comparison

engine. In more than 300 flights from 1966 to 1979, researchers collected valuable information that contributed to the understanding of supersonic aerodynamics and engine noise.

At Langley, NASA 816 was "lightning hardened" and purposely flown into thunderstorms to be struck by lightning. The storm hazards program learned much about the fundamental nature of in-flight lightning that will benefit designers of future aircraft.

Today's aircraft are relatively immune to the effects of lightning. But future aircraft may be more susceptible as a result of increased use of nonconductive composite materials in their structure. They also may have more lightning-sensitive electronic control and display systems.

For its next series of flights, NASA 816's wings were reshaped for best aerodynamic performance at times when a supersonic airplane must fly at subsonic speeds. These times can be critical for a military airplane in aerial combat or for a supersonic transport attempting an efficient, relatively quiet takeoff. The NASA-developed modification, a thin downward pointing flap added to the wing leading edge, greatly reduced drag and proved the "vortex flap" idea.

NASA 816 was manufactured in 1958 by the Convair Division of General Dynamics. In all, 277 F-106A and 63 F-106B "Delta Dart" airplanes were built at a cost of about \$5 million each. Each F-106 was powered by a single Pratt and Whitney J75-P-17 turbojet engine. Developed as a Mach-2 interceptor, its mission was to intercept unidentified aircraft as they entered U.S. airspace. The F-106 served with the USAF Command, Tactical Air Command and the Air National Guard.

The Air Force has retired the F-106, once called the "ultimate interceptor," from active squadron service after a long and distinguished career dating from the late 1950s. Remaining aircraft fly as drone targets during air-to-air missile training for the current generation of fighter aircraft.

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NOTE: Still photos and a short video clip are available to illustrate this release by calling 202/453-8373. Color photograph numbers are: 91-HC-103, 91-HC-306 and 91-HC-307; black & white numbers are: 91-H-111, 91-H-358 and 91-H-359.