

Convair F-102A *Delta Dagger*

1956



General History

Unlocking Ability

Designed at a time when supersonic flight was relatively new and full of unknowns, the radical delta-wing F-102 was beset with troubles from the start. Built to launch at a moment's notice, climb thousands of feet at full speed, and combat enemy bombers, it was bad news when the prototype F-102 crashed on its seventh flight, and far worse when the second prototype aircraft couldn't be coaxed over the sound barrier. The U.S. Air Force worried that Convair's fearsome interceptor was nothing more than the world's largest lawn dart!

A 117-day radical redesign unlocked the ability that Convair knew and the Air Force hoped was there. Known as the "Deuce" by pilots, the F-102 carried no guns, but had an array of missiles and rockets. More than 850 of the planes became the mainstay of U.S. Air Force and Air National Guard units from June of 1955 into the early 1970s.

The "Delta Dog" Becomes Dynamite

How did Convair turn their "dog" prototypes into a winner? Their redesign included a more powerful engine and a longer, more streamlined nose. But the real change came in the form of something called the "area rule." If you look closely at this F-102, you'll see that the fuselage gets thinner in the middle, like the shape of a Coke bottle. With a little bulge here and a bit of a tuck there, the "Deuce" was transformed into its new wasp-waist shape. By reducing the fuselage cross section where it joined with the wings, the plane's sub-sonic drag was greatly reduced. The same concept is still used on many high-performance aircraft today.

About This Aircraft

The Museum's F-102 is on loan from the United States Air Force Museum loan program. Built by the Convair Division of General Dynamics in San Diego, California, the aircraft was delivered to the United States Air Force on October 25, 1957. The *Delta Dagger* was first stationed at George Air Force Base, near Victorville, California. The following summer, the F-102 was sent to Thule Air Force Base in Greenland. The Convair fighters were staged at the remote base, about 800 miles from the North Pole, to guard against the threat of Soviet bombers.

In May of 1960, the F-102 left the cold climate of Greenland behind, and touched down at Tyndall Air Force Base near Panama City, Florida. The aircraft later was based in Alabama and Massachusetts. In February of 1963, this F-102 was transferred to the 337th Fighter Group based at Portland International Airport. Nearly three years later, the plane flew with the 142nd Fighter Group of the Air National Guard, still based in Portland. In 1971, the plane was retired, and transferred into the Air Force's Museum loan program.

In 1998, the F-102 was brought to the Museum from the Oregon Museum of Science and Industry in Portland. Today, the canopy rails carry the names of two people, one on each side. Major Bill Avolio, a retired Oregon Air National Guard pilot, flew numerous types of military aircraft, including this F-102. He has donated much of his time maintaining many of the aircraft in the Museum's collection. The name on the opposite side is Brigadier General Patrick O'Grady, the Commander of the Oregon Air National Guard from August of 1962 to May of 1978. O'Grady flew 107 different types of aircraft including many hours in Convair F-102s.

Known as the "Deuce" by pilots, the F-102 carried no guns, but had an array of missiles and rockets.

Specifications

Type:	Fighter Aircraft
First Flight:	YF-102 on October 24, 1953
Wingspan:	38 feet 1.5 inches
Length:	68 feet 3 inches
Height:	21 feet 2.5 inches
Wing Area:	661.5 square feet
Weight, Empty:	19,350 pounds
Weight, Loaded:	27,000 pounds
Power:	One Pratt & Whitney J57-P-35, 17,000 pounds static thrust (with afterburning) engine
Normal Crew:	One
Typical Armament:	Six Hughes GAR-1D or -2A Falcon missiles; 24 unguided 2.75 inch folding fin rockets

Performance

Cruise Speed:	605 miles per hour
Top Speed:	Mach 1.25 at 36,000 feet (One and one-fourth times the speed of sound)
Range:	1000 miles
Service Ceiling:	54,000 feet