

# Northrop F-5 “Tiger II”

The Hickory Aviation Museum’s F-5E Bureau Number 141540 is on loan from the National Museum of Naval Aviation. It arrived in January of 2008. There is at least one local Hickory resident that flew her. Coordinated by Kyle & Kraig Kirby.



<b>Role</b>	Light Fighter
<b>National origin</b>	United States of America
<b>Manufacturer</b>	Northrop Corporation
<b>First flight</b>	F-5A: 30 Jul 1959 F-5E: 11 Aug 1972
<b>Introduction</b>	1962
<b>Status</b>	In Service
<b>Primary users</b>	United States Navy Republic of China Republic of Korea Islamic Republic of Iran
<b>Produced</b>	1959–1987
<b>Number built</b>	2246 (F5-A thru E Variants)
<b>Propulsion</b>	2 × GE J85-GE-21B turbojet
<b>Unit cost</b>	~\$2.1 million (F-5E)
<b>Developed from</b>	Northrop T-38 Talon
<b>Developed into</b>	Northrop F-20 Tigershark

The Northrop F-5A and F-5B Freedom Fighter and the F-5E and F-5F Tiger II are part of a supersonic light fighter family, initially designed in the late 1950s by Northrop Corporation. Being smaller and simpler than contemporaries such as the McDonnell Douglas F-4 Phantom II, the F-5 cost less to both procure and operate, making it a popular export aircraft. The F-5 started life as a privately funded light fighter program by Northrop in the 1950s. The design team wrapped a small, highly aerodynamic fighter around two compact and high-thrust General Electric J85 engines, focusing on performance and low cost of maintenance. Though primarily designed for the day air superiority role, the aircraft is also a capable ground-attack platform. The F-5A entered service in the early 1960s. During the Cold War, over 800 were produced through 1972 for U.S. allies.

<p><b>General characteristics</b></p> <p><b>Crew:</b> 1</p> <p><b>Length:</b> 47 ft 4¾ in (14.45 m)</p> <p><b>Wingspan:</b> 26 ft 8 in (8.13 m)</p> <p><b>Height:</b> 13 ft 4½ in (4.08 m)</p> <p><b>Wing area:</b> 186 ft² (17.28 m²)</p> <p><b>Empty weight:</b> 9,558 lb (4,349 kg)</p> <p><b>Loaded weight:</b> 15,745 lb (7,157 kg)</p> <p><b>Max. takeoff weight:</b> 24,722 lb (11,214 kg)</p> <p><b>Dry thrust:</b> 3,500 lbf (15.5 kN) each</p> <p><b>Thrust with afterburner:</b> 5,000 lbf ea</p> <p><b>Internal fuel:</b> 677 U.S. gal, <b>Ext</b> 275 gal x 3 tanks</p>	<p><b>Performance</b></p> <p><b>Maximum speed:</b> 917 kn (Mach 1.6, 1,060 mph, 1,700 km/h); at altitude</p> <p><b>Range:</b> 760 nmi (870 mi, 1,405 km)</p> <p><b>Ferry range:</b> 2,010 nmi (2,310 mi, 3,700 km<sup>[160]</sup>)</p> <p><b>Service ceiling:</b> 51,800 ft (15,800 m)</p> <p><b>Guns:</b> 2× 20 mm (0.787 in) M39A2 Revolver cannons in the nose, 280 rounds/gun</p> <p><b>Hardpoints:</b> 7 total. <b>Missiles/Bombs/Other:</b> Air-to-air missiles:, AIM-7 Sparrow, AIM-9 Sidewinder, AMRAAM, MK80, Rockets, Walleye, Maverick, Napalm and Unguided munitions, Fuel</p>
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## Operational history

### United States

After winning the International Fighter Aircraft competition in 1970, a program aimed at providing effective low-cost fighters to American allies, Northrop introduced the second-generation F-5E Tiger II in 1972. This upgrade included more powerful engines, higher fuel capacity, greater wing area and improved leading edge extensions for a better turn rate, optional air-to-air refueling, and improved avionics including a radar.

The F-5 was also adopted as an opposing forces (OPFOR) "aggressor" for dissimilar training role because of its small size and performance similarities to the Soviet MiG-21. In realistic trials at Nellis AFB in 1977, the F-14 reportedly scored slightly better than a 2:1 kill ratio against the simpler F-5, while the F-15 scored slightly less. There is some contradiction of these reports, another source reports that "For the first three weeks of the test, the F-14's and F-15's were hopelessly outclassed and demoralized"; after adapting to qualities of the F-5 and implementing rule changes to artificially favor long range radar-guided missiles, "the F-14's did slightly better than breaking even with the F-5's in non-1 v 1 engagements; the F-15's got almost 2:1". A 2012 Discovery Channel documentary *Great Planes* reported that in USAF exercises, F-5 aggressor aircraft were competitive enough with more modern and expensive fighters to only be at small disadvantage in Within Visual Range (WVR) combat.

The F-5E served with the U.S. Air Force from 1975 until 1990, in the 64th Aggressor Squadron and 65th Aggressor Squadron at Nellis Air Force Base in Nevada, and with the 527th Aggressor Squadron at RAF Alconbury in the UK and the 26th Aggressor Squadron at Clark Air Force Base in the Philippines. The U.S. Marines purchased used F-5s from the Air Force in 1989 to replace their F-21s, which served with VMFT-401 at Marine Corps Air Station Yuma. The U.S. Navy used the F-5E extensively at the Naval Fighter Weapons School (TOPGUN) when it was located at NAS Miramar, California. When TOPGUN relocated to become part of the Naval Strike and Air Warfare Center at NAS Fallon, Nevada, the command divested itself of the F-5, choosing to rely on VC-13 (redesignated VFC-13 and which already used F-5s) to employ their F-5s as adversary aircraft. Former adversary squadrons such as VF-43 at NAS Oceana, VF-45 at NAS Key West, VF-126 at NAS Miramar, and VFA-127 at NAS Lemoore have also operated the F-5 along with other aircraft types in support of Dissimilar Air Combat Training (DACT).

The U.S. Navy F-5 fleet continues to be modernized with 36 low-hour F-5E/Fs purchased from Switzerland in 2006. These were updated as F-5N/Fs with modernized avionics and other improved systems. Currently, the only U.S. Navy and U.S. Marine Corps units flying the F-5 are VFC-13 at NAS Fallon, Nevada, VFC-111 at NAS Key West, Florida, and VMFT-401 at MCAS Yuma, Arizona. Currently, VFC-111 operates 18 Northrop F-5N/F Tiger IIs. 17 of these are single-seater F-5Ns and the last is a twin-seater F-5F "FrankenTiger", the product of grafting the older front-half fuselage of an F-5F into the back-half fuselage of a newer low-hours F-5E acquired from the Swiss Air Force. A total of three "FrankenTigers" were made.

According to the FAA, there are 18 privately owned F-5s in the U.S., including Canadair CF-5Ds.

[https://en.wikipedia.org/wiki/Northrop\\_F-5](https://en.wikipedia.org/wiki/Northrop_F-5)