

# Grumman F-14D “Tomcat”

The Hickory Aviation Museum’s F-14D Bureau Number 163902 (~Dec 07) is on loan from the National Museum of Naval Aviation. VF-31 “Tomcatters” Modex 107 flew the retirement ceremony with LCDR Chris Richard and LT Mike Petronis at the controls. Coordinated by Kyle and Kregg Kirby.



<b>Role</b>	Interceptor, air superiority and multirole combat aircraft
<b>National origin</b>	United States of America
<b>Manufacturer</b>	Grumman Aerospace Corporation
<b>First flight</b>	21 December 1970
<b>Introduction</b>	22 September 1974
<b>Retired</b>	22 September 2006 (US Navy)
<b>Status</b>	In service with the Islamic Republic of Iran Air Force
<b>Primary users</b>	United States Navy Imperial Iranian Air Force Islamic Republic of Iran Air Force
<b>Produced</b>	1969–1991
<b>Number built</b>	712
<b>Propulsion</b>	2 x Pratt & Whitney TF30, later replaced by 2 x GE F110-GE400 Turbofan
<b>Unit cost</b>	US\$38 million (1998)

The Grumman F-14 Tomcat is a supersonic, twin-engine, two-seat, variable-sweep wing fighter aircraft. The Tomcat was developed for the United States Navy's Naval Fighter Experimental (VFX) program following the collapse of the F-111B project. The F-14 was the first of the American teen-series fighters, which were designed incorporating the experience of air combat against MiG fighters during the Vietnam War. The F-14 first flew in December 1970 and made its first deployment in 1974 with the U.S. Navy aboard USS *Enterprise* (CVN-65), replacing the McDonnell Douglas F-4 Phantom II. The F-14 served as the U.S. Navy's primary maritime air superiority fighter, fleet interceptor and tactical aerial reconnaissance platform.

## General characteristics

**Crew:** 2 (Pilot and Radar Intercept Officer)  
**Length:** 62 ft 9 in (19.1 m)  
**Wingspan:** Spread: 64 ft; Swept: 38 ft  
**Height:** 16 ft  
**Wing area:** 565 ft<sup>2</sup> (54.5 m<sup>2</sup>)  
**Empty weight:** 43,735 lb (19,838 kg)  
**Loaded weight:** 61,000 lb (27,700 kg)  
**Max. takeoff weight:** 74,350 lb (33,720 kg)  
**Powerplant:** 2 × General Electric F110-GE-400 afterburning turbofans; **Dry thrust:** 16,610 lbf each  
**Thrust with afterburner:** 30,200 lbf (134 kN) each  
**Maximum fuel capacity:** 16,200 lb internal; 20,000 lb with 2x 267 gallon external tank

## Performance

**Maximum speed:** Mach 2.34 (1,544 mph, 2,485 km/h) at high altitude  
**Combat radius:** 500 nmi (575 mi, 926 km)  
**Ferry range:** 1,600 nmi (1,840 mi, 2,960 km)  
**Service ceiling:** 50,000+ ft (15,200 m)  
**Rate of climb:** >45,000 ft/min (229 m/s)  
**Armament**  
**Guns:** 1× 20 mm (0.787 in) M61A1 Vulcan 6-barreled Gatling cannon, with 675 rounds  
**Hardpoints:** 10 total: **Missiles/Bombs/Other:** Air-to-air missiles: AIM-54 Phoenix, AIM-7 Sparrow, AIM-9 Sidewinder, JDAM, Rockeye, MK80, Rockets, Reconnaissance and Targeting Pods

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## Operational history

### United States Navy

The F-14 began replacing the F-4 Phantom II in U.S. Navy service starting in September 1974 with squadrons VF-1 "Wolfpack" and VF-2 "Bounty Hunters" aboard USS *Enterprise* (CVN-65) and participated in the American withdrawal from Saigon. The F-14 had its first kills in U.S. Navy service on 19 August 1981 over the Gulf of Sidra in what is known as the Gulf of Sidra incident. In that engagement two F-14s from VF-41 Black Aces were engaged by two Libyan Su-22 "Fitters". The F-14s evaded the short range heat seeking AA-2 "Atoll" missile and returned fire, downing both Libyan aircraft. U.S. Navy F-14s once again were pitted against Libyan aircraft on 4 January 1989, when two F-14s from VF-32 shot down two Libyan MiG-23 "Floggers" over the Gulf of Sidra in a second Gulf of Sidra incident.

Its first sustained combat use was as a photo reconnaissance platform. The Tomcat was selected to inherit the reconnaissance mission upon departure of the dedicated RA-5C Vigilante and RF-8G Crusaders from the fleet. A large pod called the Tactical Airborne Reconnaissance Pod System (TARPS) was developed and fielded on the Tomcat in 1981. With the retirement of the last RF-8G Crusaders in 1982, TARPS F-14s became the U.S. Navy's primary tactical reconnaissance system. One of two Tomcat squadrons per airwing was designated as a TARPS unit and received 3 TARPS capable aircraft and training for 4 TARPS aircrews.

While the Tomcat was being used by Iran in combat against Iraq in its intended air superiority mission in the early 1980s, the U.S. Navy found itself flying regular daily combat missions over Lebanon to photograph activity in the Bekaa Valley. At the time, the Tomcat had been thought too large and vulnerable to be used over land, but the need for imagery was so great that Tomcat aircrews developed high speed medium altitude tactics to deal with considerable AAA and SA-7 SAM threat in the Bekaa area. The first exposure of a Navy Tomcat to a SA-2 missile was over Somalia in April 1983 when a local battery was unaware of two Tomcats scheduled for a TARPS mission in prelude to an upcoming international exercise in vicinity of Berbera. An SA-2 was fired at the second Tomcat while conducting 10,000-ft mapping profile at max conserve setting. The Tomcat aircrews spotted the missile launch and dove for the deck thereby evading it without damage. The unexpected demand for combat TARPS laid the way for high altitude sensors such as the KA-93 36 in (910 mm) Long Range Optics (LOROP) to be rapidly procured for the Tomcat as well as an Expanded Chaff Adapter (ECA) to be incorporated in an AIM-54 Phoenix Rail. Commercial "Fuzz buster" type radar detectors were also procured and mounted in pairs in the forward cockpit as a stop gap solution to detect SAM radars such as the SA-6. The ultimate solution was an upgrade to the ALR-67 then being developed, but it would not be ready until the advent of the F-14A+ later in 1980s.

The participation of the F-14 in the 1991 Operation Desert Storm consisted of Combat Air Patrol (CAP) over the Red Sea and Persian Gulf and overland missions consisting of strike escort and reconnaissance. In 1995, F-14s from VF-14 and VF-41 participated in Operation Deliberate Force as well as Operation Allied Force in 1999, and in 1998, VF-32 and VF-213 participated in Operation Desert Fox. On 15 February 2001 the Joint Direct Attack Munition or JDAM was added to the Tomcat's arsenal. On 7 October 2001, F-14s would lead some of the first strikes into Afghanistan marking the start of Operation Enduring Freedom and the first F-14 drop of a JDAM occurred on 11 March 2002.

While the F-14 had been developed as a lightweight alternative to heavy F-111B, it was still the largest and most expensive fighter of its time. The Navy reviewed fighters in the USAF Light Weight Fighter competition, leading to the development of the F/A-18 Hornet - a midsize fighter-attack aircraft. The Navy elected to retire the F-14 and chose the F/A-18E/F Super Hornet to fill the roles of fleet defense and strike. The last two F-14 squadrons, the VF-31 Tomcatters and the VF-213 Black Lions conducted their last fly-in at Naval Air Station Oceana on 10 March 2006.

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