F-16 Fighting Falcon

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Mission
The F-16 Fighting Falcon is a compact, multi-role fighter aircraft. It is highly maneuverable and has proven itself in air-to-air combat and air-to-surface attack. It provides a relatively low-cost, high-performance weapon system for the United States and allied nations.

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Features
In an air combat role, the F-16's maneuverability and combat radius (distance it can fly to enter air combat, stay, fight and return) exceed that of all potential threat fighter aircraft. It can locate targets in all weather conditions and detect low flying aircraft in radar ground clutter. In an air-to-surface role, the F-16 can fly more than 500 miles (860 kilometers), deliver its weapons with superior accuracy, defend itself against enemy aircraft, and return to its starting point. An all-weather capability allows it to accurately deliver ordnance during non-visual bombing conditions.

In designing the F-16, advanced aerospace science and proven reliable systems from other aircraft such as the F-15 and F-111 were selected. These were combined to simplify the airplane and reduce its size, purchase price, maintenance costs and weight. The light weight of the fuselage is achieved without reducing its strength. With a full load of internal fuel, the F-16 can withstand up to nine G's -- nine times the force of gravity -- which exceeds the capability of other current fighter aircraft.

The cockpit and its bubble canopy give the pilot unobstructed forward and upward vision, and greatly improved vision over the side and to the rear. The seat-back angle was expanded from the usual 13 degrees to 30 degrees, increasing pilot comfort and gravity force tolerance. The pilot has excellent flight control of the F-16 through its "fly-by-wire" system. Electrical wires relay commands, replacing the usual cables and linkage controls. For easy and accurate control of the aircraft during high G-force combat maneuvers, a side stick controller is used instead of the conventional center-mounted stick. Hand pressure on the side stick controller sends electrical signals to actuators of flight control surfaces such as ailerons and rudder.

Avionics systems include a highly accurate enhanced global positioning and inertial navigation systems, or EGI, in which computers provide steering information to the pilot. The plane has UHF and VHF radios plus an instrument landing system. It also has a warning system and modular countermeasure pods to be used against airborne or surface electronic threats. The fuselage has space for additional avionics systems.

Background
The F-16A, a single-seat model, first flew in December 1976. The first operational F-16A was delivered in January 1979 to the 388th Tactical Fighter Wing at Hill Air Force Base, Utah.

The F-16B, a two-seat model, has tandem cockpits that are about the same size as the one in the A model. Its bubble canopy extends to cover the second cockpit. To make room for the second cockpit, the forward fuselage fuel tank and avionics growth space were reduced. During training, the forward cockpit is used by a student pilot with an instructor pilot in the rear cockpit.

All F-16s delivered since November 1981 have built-in structural and wiring provisions and systems architecture that permit expansion of the multirole flexibility to perform precision strike, night attack and beyond-visual-range interception missions. This improvement program led to the F-16C and F-16D aircraft, which are the single- and two-place counterparts to the F-16A/B, and incorporate the latest cockpit control and display technology. All active units and many Air National Guard and Air Force Reserve units have converted to the F-16C/D.

The F-16 was built under an unusual agreement creating a consortium between the United States and four NATO countries: Belgium, Denmark, the Netherlands and Norway. These countries jointly produced with the United States an initial 348 F-16s for their air forces. Final airframe assembly lines were located in Belgium and the Netherlands. The consortium's F-16s are assembled from components manufactured in all five countries. Belgium also provides final assembly of the F100 engine used in the European F-16s. Recently, Portugal joined the consortium. The long-term benefits of this program will be technology transfer among the nations producing the F-16, and a common-use aircraft for NATO nations. This program increases the supply and availability of repair parts in Europe and improves the F-16's combat readiness.

U.S. Air Force F-16 multirole fighters were deployed to the Persian Gulf in 1991 in support of Operation Desert Storm, where more sorties were flown than with any other aircraft. These fighters were used to attack airfields, military production facilities, Scud missiles sites and a variety of other targets.

During Operation Allied Force, U.S. Air Force F-16 multirole fighters flew a variety of missions to include suppression of enemy air defense, offensive counter air, defensive counter air, close air support and forward air controller missions. Mission results were outstanding as these fighters destroyed radar sites, vehicles, tanks, MiGs and buildings.

Since Sept. 11, 2001, the F-16 has been a major component of the combat forces committed to the war on terrorism flying thousands of sorties in support of operations Noble Eagle (Homeland Defense), Enduring Freedom in Afghanistan and Iraqi Freedom

General characteristics
Primary function: multirole fighter
Contractor: Lockheed Martin Corp.
Power plant: F-16C/D: one Pratt and Whitney F100-PW-200/220/229 or General Electric F110-GE-100/129
Thrust: F-16C/D, 27,000 pounds
Wingspan: 32 feet, 8 inches (9.8 meters)
Length: 49 feet, 5 inches (14.8 meters)
Height: 16 feet (4.8 meters)
Weight: 19,700 pounds without fuel (8,936 kilograms)
Maximum takeoff weight: 37,500 pounds (16,875 kilograms)
Fuel capacity: 7,000 pounds internal (3,175 kilograms); typical capacity, 12,000 pounds with two external tanks (5443 kilograms)
Payload: two 2,000-pound bombs, two AIM-9, two AIM-120 and two 2400-pound external fuel tanks
Speed: 1,500 mph (Mach 2 at altitude)
Range: more than 2,002 miles ferry range (1,740 nautical miles)
Ceiling: above 50,000 feet (15 kilometers)
Armament: one M-61A1 20mm multibarrel cannon with 500 rounds; external stations can carry up to six

air-to-air missiles, conventional air-to-air and air-to-surface munitions and electronic countermeasure pods
Crew: F-16C, one; F-16D, one or two
Unit cost: F-16A/B , $14.6 million (fiscal 98 constant dollars); F-16C/D,$18.8 million (fiscal 98 constant dollars)
Initial operating capability: F-16A, January 1979; F-16C/D Block 25-32, 1981; F-16C/D Block 40-42, 1989; and F-16C/D Block 50-52, 1994
Inventory: total force, F-16C/D, 1017

(Current as of September)

Point of Contact
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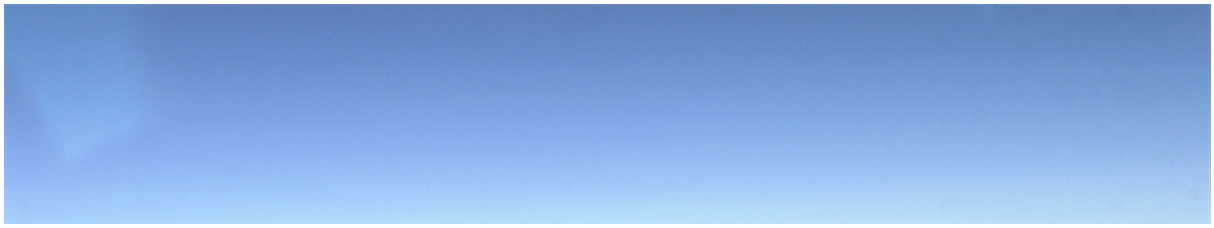
PAYA LEBAR AIR BASE, Singapore -- An F-16 Fighting Falcon from the 36th Fighter Squadron at Osan Air Base, South Korea, lands here after a mission during Commando Sling 04-3. U.S. and Singaporean Airmen trained together using realistic dissimilar aircraft air-to-air combat tactics. (U.S. Air Force photo by Master Sgt. Val Gempis)



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OVER ITALY -- An U.S. F-16 Fighting Falcon flies towards Rimini, Italy to join with the Italian air force in a training mission. U.S. Air Forces from the 510th Fighter Squadron, Aviano Air Base, Italy and Italian Air Forces from the 83rd Combat Search and Rescue Squadron, Rimini, Italy, participated in a 4-day training mission from Feb. 5 to Feb. 8, 2001. The mission involved U.S. F-16 aircrews locating and authenticating survivors and coordinate pickup with Italian rescue crews. F-16s were also tasked with escorting helicopters to protect them from air and ground threats. This is the first ever tasking of a full-time combat search and rescue mission for F-16s from the 510th Fighter Squadron. (U.S. Air Force photo by Tech. Sgt. Dave Ahlschwede)

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TYNDALL AIR FORCE BASE, Fla. -- Lt. Col. Mike Cosby, 177th Fighter Wing commander, flies an F-16C block 25 aircraft from here to Atlantic City International Airport, N.J. The wing participated in Combat Archer training at Tyndall. (U.S. Air Force photo by Master Sgt. Don Taggart)