

F-16 Fighting Falcon

General Configuration

(Part 0.1, an extract from the 1st volunteer-made self-study English manual, 1st draft)

The F-16 is 49 feet (15 metres) long and has a wingspan of 31 feet (9.45 metres). With a typical combat load, the F-16 weighs approximately 23,000 pounds (10,000 kg). This is less than half the weight of the previous-generation F-4 Phantom II.

The F-16 has:

- a cropped-delta wing incorporating wing-fuselage blending and forebody vortex-control strakes;

- a fixed-geometry, underslung air intake with splitter plate to the turbofan jet engine;

- a conventional tri-plane empennage arrangement with all-moving horizontal stabilator tailplanes;

- a pair of ventral fins beneath the fuselage aft of the wing's trailing edge;

- a tricycle landing gear configuration with the aft-retracting, steerable nose gear deploying a short distance behind the inlet lip.

The fuselage of the F-16 flares out at its juncture with the aluminum-alloy wings. This gives the aircraft greater lift and stability at steep angles of attack.

A boom-style aerial refueling receptacle is located behind the single-piece 'bubble' canopy of the cockpit. Split-flap speedbrakes are at the aft end of the wing-body fairing.

A tailhook is mounted underneath the fuselage.

A fairing beneath the rudder houses ECM equipment or a drag chute.

Later F-16 models feature a long dorsal fairing along the fuselage's 'spine', housing additional equipment or fuel.

A slender cropped-delta wing with a leading-edge sweep of 40° and a straight trailing edge have been optimized for high combat agility. A variable-camber wing improves maneuverability.

The camber is adjusted by leading-edge and trailing edge flaperons linked to a digital flight control system regulating the flight envelope.

The F-16's airframe life was designed for 8,000 hours and for 9-g maneuvers on full internal fuel.

(Sources:

<https://www.britannica.com/technology>

https://en.wikipedia.org/wiki/General_Dynamics_F-16_Fighting_Falcon)