

## F-16 Viper

### What is it?

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.

### 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.

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.

The F-16 has precision engagement modification, which added upgraded cockpit displays, moving map, LITENING and Sniper advanced targeting pod integration, situational awareness data link or SADL. The Viper is capable of carrying all variants of the AIM-120 missile and has added AIM-9X to its arsenal. Other weapons include all types of Global Positioning System (GPS) and laser guided munitions as well a 20mm Vulcan cannon with 500 rounds of ammunition. The ANG Viper is Night Vision Imaging System (NVIS) capable for Night Vision Goggle (NVG) operations.

### What has the Air National Guard done?

The ANG has participated in operations Desert Storm, Southern Watch, Provide Comfort, Desert Fox, Deliberate Guard, Allied Force, Enduring Freedom, and Iraqi Freedom and currently is responsible for a majority of the Air Sovereignty Alert mission for Homeland Defense.

### What continued efforts have the Air National Guard planned for the future?

The ANG plans to continue with all variants of the F-16. The ANG is now operating all variants of the F-16 (Block 30/40/42/50/52). The ANG has most recently received one new Squadron of Block 40 Common Configuration Implementation Program (CCIP) and one new Squadron of

Block 50 in FY 10. The ANG continues to fulfill Air and Space Expeditionary Forces (AEF) and Air Sovereignty Alert (ASA) requirements with all variants of the F-16.

As part of the new F-16 Ready Aircrew Program (RAP) tasking message, and due to the continual decrease in actual flying hours across the Combat Air Forces (CAF), Air Combat Command (ACC) has now instituted High Fidelity Simulator training as a suitable substitute for flying. Pilots may now log actual sorties in a simulator, on a 2 to 1 ratio, as an actual flying event. Unfortunately, the availability of high fidelity simulators is grossly lacking. To keep up with future training and to be able to abide by the RAP tasking message, the ANG requests at the very least 2 High Fidelity Mission Training Centers (MTC, 4 "linked" simulators) to be placed in a geographical location that is easily accessible to any ANG F-16 unit. The ANG currently has one MTC in Burlington Vermont that is sole property of the ANG. If the "Vermont model" was followed in acquiring two new MTCs, the cost would be roughly \$21 million for purchase and approximately \$5 million per year for engineering upkeep, subject matter expert and software development over the lifespan of the simulators.

With respect to physical F-16 hardware, all units are in immediate need of Helmet Mounted Integrated Targeting (HMIT) systems. With all the missions the F-16 is responsible for, it is imperative that this system be immediately implemented to integrate all weapon systems available to the pilot. The ANG is solely responsible for Air Sovereignty Alert with the F-16 being the predominant platform by which alert is conducted. 1<sup>st</sup> AF's guidance requires that fighter aircraft have the ability to interrogate IFF (identification friend or foe) while airborne as well as visually acquire through Advanced Targeting Pod (ATP) means to identify possible hostile aircraft. Currently not all F-16s are IFF interrogator equipped nor are there anywhere near enough ATPs to equip all F-16s with a 4<sup>th</sup> generation ATP.

**Why is this important to the Air National Guard?**

The ANG maintains, operates, and trains with approximately ½ of all USAF F-16s. The F-16 is also the 'bridge gap" to the F-35 Lightning II.