

General Characteristics

Primary Function: Armed reconnaissance, airborne surveillance and target acquisition

Contractor: General Atomics Aeronautical Systems Incorporated

Power Plant: Rotax 914F four cylinder engine

Thrust: 115 horsepower

Wingspan: 48.7 feet

Length: 27 feet

Height: 6.9 feet

Weight: 1,130 pounds empty

Maximum Takeoff weight: 2,250 pounds

Fuel Capacity: 665 pounds (100 gallons)

Payload: 450 pounds

Speed: Cruise speed around 84 mph (70 knots), up to 135 mph

Range: up to 400 nautical miles (454 miles)

Ceiling: up to 25,000 feet

Armament: two laser-guided AGM-114 Hellfire missiles

Crew (remote): Two (pilot and sensor operator)

Initial operational capability: March 2005

Unit Cost: \$40 million (fiscal 1997 dollars) (includes 4 aircraft, ground control stations, and Predator Primary Satellite Link)

Air Force Inventory: 102

MQ-1 PREDATOR



Mission

The MQ-1 Predator is a medium-altitude, long-endurance, remotely-piloted aircraft. The MQ-1's primary mission is interdiction and the conduction of armed reconnaissance against critical targets. When the MQ-1 is not actively pursuing its primary combat mission, it acts a reconnaissance, surveillance and target acquisition asset in support of the joint force commander. For the Vigilant Guard 2008 exercise in Nevada, the aircraft will be used for aerial damage assessment in the Fallon area and will be able to send full-motion video to incident commanders on the ground, giving them a bird's eye view of areas that have suffered damage during the simulated earthquake in northern Nevada.

The active duty Air Force's 11th Reconnaissance Squadron, based out of Creech Air Force Base in Indian Springs, Nev., will operate the aircraft for the VG 08 exercise, and airmen with the Nevada Air Guard's 232nd Operations Squadron, also based at Creech, will fly the mission with Air Force Reservists.

Features

The MQ-1 Predator is a system, not just an aircraft. A fully operational system consists of four aircraft (with sensors), a ground control station, a Predator Primary Satellite Link, and approximately 55 personnel for deployed 24-hour operations.



The basic crew for the Predator is one pilot and two sensor operators. They fly the aircraft from inside a ground control station via a line-of-sight data link or a satellite data link for beyond line-of-sight flight. The aircraft is equipped with a color nose camera

(generally used by the pilot for flight control), a day variable-aperture TV camera and a variable-aperture infrared camera (for low light/night). The cameras produce full-motion video while the SAR produces still frame radar images. (Cont'd.)

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Though the aircraft will not be armed for the Vigilant Guard exercise, the MQ-1 Predator can carry the Multi-spectral Targeting System with inherent AGM-114 Hellfire missile targeting capability and integrates electro-optical, infrared, laser designator and laser illuminator into a single sensor package. The aircraft can employ two laser-guided Hellfire anti-tank missiles with the MTS ball.

The system is composed of four major components which can be deployed for worldwide operations. The Predator aircraft can be disassembled and loaded into a "coffin." The ground control system is transportable in a C-130 (or larger) transport aircraft. The Predator can operate on a 5,000 by 75 feet (1,524 meters by 23 meters), hard surface runway with clear line-of-sight. The ground data terminal antenna provides line-of-sight communications for takeoff and landing. The PPSL provides over-the-horizon communications for the aircraft.

An alternate method of employment, Remote Split Operations, employs a smaller version of the GCS called the Launch and Recovery GCS. The LRGCS conducts takeoff and landing operations at the forward deployed location while the domestic-based GCS conducts the mission via extended communication links.

The aircraft includes an ARC-210 radio, an APX-100 IFF/SIF with Mode 4, an upgraded turbo-charged engine and glycol-weeping "wet wings" for ice mitigation. The latest upgrade, which enhances maintenance and performance, includes notched tails, split engine cowling, steel braided hoses and improved engine blocks.

Background

The "M" is the Department of Defense designation for multi-role and "Q" means unmanned aircraft system. The "1" refers to the aircraft being the first of a series of purpose-built remotely piloted aircraft systems.

The Predator system was designed in response to a Department of Defense requirement to provide persistent intelligence, surveillance and reconnaissance information to the warfighter.

In April 1996, the secretary of defense selected the U.S. Air Force as the operating service for the RQ-1 Predator system. A change in designation from "RQ-1" to "MQ-1" occurred in 2002 with the addition of the armed reconnaissance role.

