

[Information](#) > [Factsheets](#) > [MQ-1B Predator](#)

MQ-1B PREDATOR

Posted 1/5/2012

[Printable Fact Sheet](#)

Mission

The MQ-1 Predator is an armed, multi-mission, medium-altitude, long endurance remotely piloted aircraft (RPA) that is employed primarily in a killer/scout role as an intelligence collection asset and secondarily against dynamic execution targets. Given its significant loiter time, wide-range sensors, multi-mode communications suite, and precision weapons -- it provides a unique capability to autonomously execute the kill chain (find, fix, track, target, engage, and assess) against high value, fleeting, and time sensitive targets (TSTs). Predators can also perform the following missions and tasks: intelligence, surveillance, reconnaissance (ISR), close air support (CAS), combat search and rescue (CSAR), precision strike, buddy-lase, convoy/raid overwatch, route clearance, target development, and terminal air guidance. The MQ-1's capabilities make it uniquely qualified to conduct irregular warfare operations in support of Combatant Commander objectives.

Features

The Predator is part of an Unmanned Aircraft System, or UAS, not just an aircraft. A fully operational UAS consists of four sensor/weapon equipped aircraft, a ground control station (GCS), a Predator Primary Satellite Link (PPSL), and spare equipment along with operations and maintenance crews for deployed 24-hour operations.

The basic crew for the Predator is a rated pilot to control the aircraft and command the mission and an enlisted aircrew member to operate sensors and weapons plus a mission coordinator, when required. The crew employs the aircraft from inside the GCS via a line-of-sight data link or a satellite data link for beyond line-of-sight operations.

The MQ-1B Predator carries the Multi-spectral Targeting System, or MTS-A, which integrates an infrared sensor, a color/monochrome daylight TV camera, an image-intensified TV camera, a laser designator and a laser illuminator into a single package. The full motion video from each of the imaging sensors can be viewed as separate video streams or fused together. The aircraft can employ two laser-guided AGM-114 Hellfire missiles which possess a highly accurate, low collateral damage, and anti-armor and anti-personnel engagement capability.

The system can be deployed for worldwide operations. The Predator aircraft can be disassembled and loaded into a container for travel. The ground control system and PPSL are transportable in a C-130 Hercules (or larger) transport aircraft. The Predator can operate on a 5,000 by 75 foot (1,524 meters by 23 meters) hard surface runway with clear line-of-sight to the ground data terminal antenna. The antenna provides line-of-sight communications for takeoff and landing. The PPSL provides over-the-horizon communications for the aircraft and sensors.

The primary concept of operations, Remote Split Operations (RSO), employs a launch and recovery GCS for takeoff and landing operations at the forward operating location while the Continental U.S.-based crew executes command and control of the remainder of the mission via beyond-line-of-sight links. RSO results in a smaller number of personnel deployed to a forward location, consolidates control of the different flights in one location, and as such, simplifies command & control functions as well as the logistical supply challenges for the weapons system.

The aircraft has an ARC-210 radio, an APX-100 IFF/SIF with Mode 4, and an upgraded turbocharged engine. The latest upgrades, which enhance maintenance and performance, include notched tails, split engine cowlings, braided steel hoses and improved engine blocks.

Background

The Predator system was designed in response to a Department of Defense requirement to provide persistent intelligence, surveillance and reconnaissance information combined with a kill capability 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. The "R" is the Department of Defense designation for reconnaissance aircraft. The "M" is the DOD designation for multi-role, and "Q" means unmanned aircraft system. The "1" refers to the aircraft being the first of the series of remotely piloted aircraft systems.

A change in designation from "RQ-1" to "MQ-1" occurred in 2002 with the addition of the AGM-114 Hellfire missiles, enabling reaction against ISR, CAS and interdiction targets.

The Predator UAS continues to provide required armed ISR capabilities to overseas contingency operations warfighters. During August 2011, Predator passed its one millionth total development, test, training and combat hours mark - a significant accomplishment for the U.S. Air Force.

General Characteristics

Primary Function: Armed reconnaissance, airborne surveillance and target acquisition

Contractor: General Atomics Aeronautical Systems Inc.

Power Plant: Rotax 914F four cylinder engine

Thrust: 115 horsepower

Wingspan: 55 feet (16.8 meters)

Length: 27 feet (8.22 meters)

Height: 6.9 feet (2.1 meters)

Weight: 1,130 pounds (512 kilograms) empty

Photos

◀ 1 of 5 ▶



An MQ-1 Predator unmanned aerial vehicle and F-16 Fighting Falcon return from an Operation Iraqi Freedom combat mission. Both aircraft provide intelligence, search and reconnaissance gathering features, as well as munitions capability to support ground troops and base defense. (U.S. Air Force photo/1st Lt. Shannon Collins)

[Download HiRes](#)

Inside AF.mil

[Search](#)

search fact sheets

[Find it](#) General Images Video[View All RSS](#)[RPAs/UASs](#)

[BQM-167A Air Force Subscale Aerial Target](#)
[MQ-1B Predator](#)
[MQ-9 Reaper](#)
[QF-4 Drone](#)
[RQ-11B Raven](#)
[RQ-170 Sentinel](#)
[RQ-4 Global Hawk](#)
[Scan Eagle](#)
[Wasp III](#)

Maximum takeoff weight: 2,250 pounds (1,020 kilograms)

Fuel Capacity: 665 pounds (100 gallons)

Payload: 450 pounds (204 kilograms)

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

Range: Up to 770 miles (675 nautical miles)

Ceiling: Up to 25,000 feet (7,620 meters)

Armament: Two laser-guided AGM-114 Hellfire missiles

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

Initial operational capability: March 2005

Unit Cost: \$20 million (fiscal 2009 dollars) (includes four aircraft, a ground control station and a Predator Primary Satellite Link)

Point of Contact

Air Combat Command, Public Affairs Office; 130 Andrews St., Suite 202; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@langley.af.mil

The Official Web site of the United States Air Force

[Site Map](#) [Contact Us](#) [Questions](#) [Security and Privacy notice](#) [E-publishing](#)



FACT SHEET

U.S. Air Force Fact Sheet MQ-1B PREDATOR

Mission

The MQ-1 Predator is an armed, multi-mission, medium-altitude, long endurance remotely piloted aircraft (RPA) that is employed primarily in a killer/scout role as an intelligence collection asset and secondarily against dynamic execution targets. Given its significant loiter time, wide-range sensors, multi-mode communications suite, and precision weapons -- it provides a unique capability to autonomously execute the kill chain (find, fix, track, target, engage, and assess) against high value, fleeting, and time sensitive targets (TSTs). Predators can also perform the following missions and tasks: intelligence, surveillance, reconnaissance (ISR), close air support (CAS), combat search and rescue (CSAR), precision strike, buddy-lase, convoy/raid overwatch, route clearance, target development, and terminal air guidance. The MQ-1's capabilities make it uniquely qualified to conduct irregular warfare operations in support of Combatant Commander objectives.



An MQ-1 Predator unmanned aerial vehicle and F-16 Fighting Falcon return from an Operation Iraqi Freedom combat mission. Both aircraft provide intelligence, search and reconnaissance gathering features, as well as munitions capability to support ground troops and base defense. (U.S. Air Force photo/1st Lt. Shannon Collins)

Features

The Predator is part of an Unmanned Aircraft System, or UAS, not just an aircraft. A fully operational UAS consists of four sensor/weapon equipped aircraft, a ground control station (GCS), a Predator Primary Satellite Link (PPSL), and spare equipment along with operations and maintenance crews for deployed 24-hour operations.

The basic crew for the Predator is a rated pilot to control the aircraft and command the mission and an enlisted aircrew member to operate sensors and weapons plus a mission coordinator, when required. The crew employs the aircraft from inside the GCS via a line-of-sight data link or a satellite data link for beyond line-of-sight operations.

The MQ-1B Predator carries the Multi-spectral Targeting System, or MTS-A, which integrates an infrared sensor, a color/monochrome daylight TV camera, an image-intensified TV camera, a laser designator and a laser illuminator into a single package. The full motion video from each of the imaging sensors can be viewed as separate video streams or fused together. The aircraft can employ two laser-guided AGM-114 Hellfire missiles which possess a highly accurate, low collateral damage, and anti-armor and anti-personnel engagement capability.

The system can be deployed for worldwide operations. The Predator aircraft can be disassembled and loaded into a container for travel. The ground control system and PPSL are transportable in a C-130 Hercules (or larger) transport aircraft. The Predator can operate on a 5,000 by 75 foot (1,524 meters by 23 meters) hard surface runway with clear line-of-sight to

the ground data terminal antenna. The antenna provides line-of-sight communications for takeoff and landing. The PPSL provides over-the-horizon communications for the aircraft and sensors.

The primary concept of operations, Remote Split Operations (RSO), employs a launch and recovery GCS for takeoff and landing operations at the forward operating location while the Continental U.S.-based crew executes command and control of the remainder of the mission via beyond-line-of-sight links. RSO results in a smaller number of personnel deployed to a forward location, consolidates control of the different flights in one location, and as such, simplifies command & control functions as well as the logistical supply challenges for the weapons system.

The aircraft has an ARC-210 radio, an APX-100 IFF/SIF with Mode 4, and an upgraded turbocharged engine. The latest upgrades, which enhance maintenance and performance, include notched tails, split engine cowlings, braided steel hoses and improved engine blocks.

Background

The Predator system was designed in response to a Department of Defense requirement to provide persistent intelligence, surveillance and reconnaissance information combined with a kill capability 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. The "R" is the Department of Defense designation for reconnaissance aircraft. The "M" is the DOD designation for multi-role, and "Q" means unmanned aircraft system. The "1" refers to the aircraft being the first of the series of remotely piloted aircraft systems.

A change in designation from "RQ-1" to "MQ-1" occurred in 2002 with the addition of the AGM-114 Hellfire missiles, enabling reaction against ISR, CAS and interdiction targets.

The Predator UAS continues to provide required armed ISR capabilities to overseas contingency operations warfighters. During August 2011, Predator passed its one millionth total development, test, training and combat hours mark - a significant accomplishment for the U.S. Air Force.

General Characteristics

Primary Function: Armed reconnaissance, airborne surveillance and target acquisition

Contractor: General Atomics Aeronautical Systems Inc.

Power Plant: Rotax 914F four cylinder engine

Thrust: 115 horsepower

Wingspan: 55 feet (16.8 meters)

Length: 27 feet (8.22 meters)

Height: 6.9 feet (2.1 meters)

Weight: 1,130 pounds (512 kilograms) empty

Maximum takeoff weight: 2,250 pounds (1,020 kilograms)

Fuel Capacity: 665 pounds (100 gallons)

Payload: 450 pounds (204 kilograms)

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

Range: Up to 770 miles (675 nautical miles)

Ceiling: Up to 25,000 feet (7,620 meters)

Armament: Two laser-guided AGM-114 Hellfire missiles

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

Initial operational capability: March 2005

Unit Cost: \$20 million (fiscal 2009 dollars) (includes four aircraft, a ground control station and a Predator Primary Satellite Link)

Point of Contact

[Air Combat Command](#), Public Affairs Office; 130 Andrews St., Suite 202; Langley AFB, VA

23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@langley.af.mil