

MQ-9 Predator B Unmanned Aerial Vehicle System

MQ-9, commonly referred to as Predator B, is a follow-on to Predator, RQ-1/MQ-1. The system is intended to fly higher, faster, provide more power, and carry larger payloads than the original Predator system. Two prototypes flown to date are not capable of carrying the size payload the Air Force is seeking. The third air vehicle to be delivered will have an increased gross take-off weight (10,000 pounds versus 7,250 pounds) and increased payload capacity (750 pounds internal and 1,500 pounds on each wing). The weapons and sensors carried by the air vehicle have yet to be finalized.

An Interim Requirements Document (IRD) was approved by Air Combat Command (ACC) on May 14, 2002. Specific thresholds are not established, but weapons, sensor, navigation, datalinks, and payload capabilities are planned to increase during spiral development. For instance, Hellfire, used on the MQ-1, will likely be the initial weapon and future spirals will incorporate new technologies such as the Small Diameter Bomb and the Low Cost Autonomous Attack Systems (LOCAAS) as they are available. The MQ-9 will use the same ground station as the MQ-1. After deciding MQ-9 would not be a Pathfinder, the Air Force elected to revisit MQ-9 requirements. The Air Force is currently working to produce a new IRD to be approved by the Air Force Requirements Oversight Council (AFROC).

The concept of operations for MQ-9 was approved by ACC on May 2, 2002. As its MQ designation implies, the MQ-9 will have multiple missions. The plan is to use MQ-9 in armed reconnaissance (“hunter-killer”) roles as well as reconnaissance, surveillance, and target acquisition (RSTA).- Hunter-killer missions require the system to find, identify, and kill targets. The combination of persistent Intelligence, Surveillance, and Reconnaissance (ISR) capability and the ability to engage with onboard weapons or coordinate off-board fires is intended to increase the probability of detecting and successfully negating time sensitive targets. Attack capability will be increased during spiral development as new weapons are integrated, allowing greater emphasis on the armed reconnaissance mission over traditional RSTA. In addition to Hunter-Killer and RSTA missions, the requirements and concept of operations highlight the ability of the unmanned system to penetrate, discriminate, and negate pre-planned high-value, high-risk targets.

Two prototype aircraft have been delivered and a third is on contract. Acquisition of three more aircraft are on hold until operational requirements are defined. The first two aircraft have only a 7,250-pound gross take off weight and do not have the payload capacity or the wing hard points for the anticipated armed reconnaissance mission; however, these two aircraft will be equipped with EO/IR sensors and a synthetic aperture radar. The two prototype aircraft are powered by a Honeywell/McCauley (TPE 331-10T) turbo-prop engine that can use JP-4, -5, -8 or Jet-A fuel. Congressional language directed that the Air Force procure two turbo-prop and one jet-powered Predator-B aircraft; however, there is concern that the jet-powered version may not have adequate endurance.

Three new Predator squadrons are envisioned (for a total of six squadrons including the current 11th, 15th, and 17th Reconnaissance Squadrons), but the mix of MQ-1 and MQ-9



The MQ-9 combination of persistence and the ability to engage with onboard weapons or coordinate off-board fires is intended to improve joint forces' capability to engage time-sensitive-targets.

AIR FORCE PROGRAMS

aircraft within the squadrons has not been decided. Basing locations are currently being studied.

The MQ-9 program plans to employ spiral development to achieve a system capable of effectively employing hunter-killer tactics. MQ-9 has not yet transitioned to a formal acquisition program, and as a result, has no approved acquisition program baseline that establishes the program schedule for delivering this spiral capability or supporting decision points. However, the Air Force intends to have the first Predator B strike package available for deployment within 36 months.

TEST & EVALUATION ACTIVITY

The first two prototype Predator B vehicles have flown over 100 hours at altitudes up to 50,000 feet during contractor testing intended to assess basic flying qualities. Planning for government testing has just begun. The Air Force is incorporating lessons learned from the first two prototype aircraft into the third aircraft. The Air Force plans to demonstrate a limited Hellfire Missile employment capability with the third aircraft in the Fall of 2003.

TEST & EVALUATION ASSESSMENT

No data is available to DOT&E on flight-testing to date. Work is necessary to formalize and synchronize requirements, concept of operations, acquisition and fielding strategy, and test and evaluation strategy for the system. Designing an adequate test program will be impossible without first establishing the acquisition program and the production decisions that operational testing is intended to support.