# Acquisition Directorate

# Unmanned Aircraft Systems (UAS)

April 2009

USN RQ-8 Fire Scout

U. S. Customs and Border Protection, Predator

The USCG Acquisition Directorate is committed to delivering and supporting UAS that are affordable, efficient and mission capable. The Coast Guard is monitoring and collaborating with Navy and Customs and Border Protection UAS programs.

**Project Description:**

Unmanned Aircraft Systems (UASs) consist of an aircraft, its mission payloads, and ground support equipment (e.g., transporters, storage containers, launchers, and control stations).

The United States has acquired four broad types of UASs for military, naval, and law enforcement operations. These include: hand-launched UASs (the Marine Corps' RQ-14 Dragon Eye); medium-altitude, tactical UASs (the Navy's shipboard RQ-8 Fire Scout, or the Army's RQ-7 Shadow 200); medium-altitude, long-range UASs (the Air Force's RQ-1/MQ-1 Predator); and high-altitude, long-endurance UASs (the Air Force's RQ-4 Global Hawk).

UASs have the potential to serve as effective multi-mission surveillance platforms in the maritime environment, augmenting both cutter-based rotary wing aircraft and land-based fixed wing aircraft. The Coast Guard's Acquisition Directorate is working with the service's sponsor and technical authorities to identify, assess, and procure land- and cutter-based UASs and payload technologies that will meet operational requirements.

**Mission Capability:**

Maritime Domain Awareness (MDA), a central Coast Guard operational concept, refers to the effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment of the United States. Various types of UASs could contribute to MDA by providing persistent, wide area surveillance.

Tactical, cutter-based UASs would augment the operational effectiveness of Coast Guard cutters by extending a cutter's surveillance horizon. The Coast Guard is studying the most effective classes of UASs to operate from the National Security Cutter (NSC), an advanced capability vessel that uses onboard sensors and partnerships with manned and unmanned aircraft to support a 12,000-nautical mile surveillance range.

Additionally, the Coast Guard is studying tactical, land-based UASs that would provide surveillance capability comparable to those of Coast Guard and joint-service maritime patrol aircraft. Both cutter-based and land-based UASs should be able to perform surveillance, detection, classification, and target identification functions. To accomplish these tasks, the UASs' payload should include a maritime radar, electro-optical sensors, and an automatic identification system.

**Mission execution begins *here.***

**Status:**

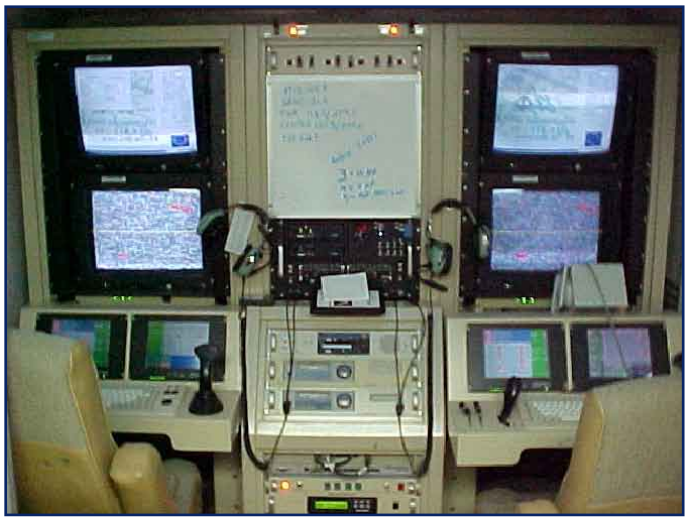
The Coast Guard is studying several aspects of UAS acquisition and operations, including unmanned systems marketplace research; technological and safety constraints for operating UASs in non-special use airspace; modeling and simulation and field testing of the viable UAS platforms and payloads for NSC mission support. Historic and ongoing Coast Guard UAS project studies will inform technology demonstrations to mitigate acquisition risk and, where possible, leverage other organization's UAS development and non-recurring engineering investments.

In November 2008, the Coast Guard experimented with dry-fitting the Navy's RQ-8 Fire Scout aboard the NSC. The tests, which did not involve launch and recovery from the cutter's flight deck, showed that an unmanned aircraft could be loaded, moved, and hangared (stowed) aboard the NSC.

In March 2008, the Coast Guard worked with U.S. Customs and Border Protection and the Air Force in a joint MQ-9 Predator B maritime flight evaluation. The tests built both services' knowledge of land-based UAS operations in the maritime environment, including demonstration of multi-mode radar and electro-optical/infrared sensors.

In November 2003, the Coast Guard worked with the Air Force to demonstrate the performance of the RQ-1 Predator A at King Salmon Bay, Alaska. The objective of this test was to evaluate the potential for UASs in the Alaskan airspace using line of sight (LOS) flight controls. Line-of-sight control from a site in Alaska was successfully demonstrated. In August 2002, the R&DC completed a four-day field test of a Sentry HP small UAS. The intent of this evaluation was to demonstrate the capability of a UAS to perform a Coast Guard mission—daytime detection, classification, and identification of a target of interest in open water. These tests were successful in demonstrating the potential for small UASs to perform Coast Guard missions. In February/March 2001, the Coast Guard deployed the Condor UAS on CGC Harriet Lane. The intent of this deployment was to learn about operating a UAS from a cutter, to evaluate the usefulness of information provided by a UAS, and to identify system and performance requirements for future UAS acquisitions. The Coast Guard will seek further opportunities for cooperative testing within the Department of Homeland Security (DHS) and the Department of Defense (DoD).

Based upon lessons learned from its own studies and from cooperative experiments with other agencies, the Coast Guard has developed, and DHS has approved, a UAS acquisition strategy to acquire both low-altitude, cutter-based, tactical UASs and mid-altitude, land-based, long-range UASs. The UAS acquisition strategy emphasizes commonality with existing DHS and DoD programs. The strategy precedes any future acquisition with adequate mission analysis, market research, alternatives analysis, testing, and evaluation.



*Flight controls used during the Air Force demonstration of the RQ-1 Predator A at King Salmon Bay, Alaska.*

The Coast Guard's Acquisition Directorate is responsible for a $27 billion investment portfolio that includes more than 20 major projects. The Coast Guard's investment in modernization and recapitalization ensures that the operational force has the equipment necessary to remain the lead agency in maritime safety, security and natural resources stewardship.