

**TESTIMONY OF**

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**BEFORE**

**HOUSE COMMITTEE ON HOMELAND SECURITY**

**SUBCOMMITTEE ON BORDER, MARITIME, AND GLOBAL**  
**COUNTERTERRORISM**

**ON**

**THE ROLE OF UNMANNED AIRCRAFT SYSTEMS IN BORDER SECURITY**

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Chairman Cuellar, Ranking Member Miller, Members of the Subcommittee, it is a privilege and an honor to appear before you today to discuss the employment of the Predator B and Guardian Unmanned Aircraft System (UAS) for homeland security missions by U.S. Customs and Border Protection's (CBP) Office of Air and Marine (OAM), and in particular their role in border security operations. I want to begin by expressing my gratitude to the Committee for its continuing support of the CBP mission, especially as it relates to our efforts to expand UAS operations over both the land and maritime borders of the United States.

CBP has operated the Predator B UAS for over five years and has pioneered the employment of this high-end, long duration, remotely-piloted aircraft in the National Airspace System (NAS) for border security and disaster assistance. Predator Bs, which can operate in excess of 20 hours during a single border search mission, currently patrol parts of both the southern and northern U.S. land borders and have logged more than 6,500 flight hours in support of CBP's border security mission. The newest addition to CBP's UAS family, a maritime search variant of the Predator B called the Guardian, carries a broad-area sea-search radar with impressive long range detection and tracking capabilities. Together, the Guardian and Predator B have enabled CBP to support the response to large-scale natural events such as hurricanes, floods, and the oil spill in the Gulf of Mexico; and have positioned CBP to confront ever-changing threats to the homeland in the future.

### **Current Operations and Deployment Strategy**

CBP currently operates six Predator B aircraft, including the first maritime Guardian which was developed under a joint program office with the United States Coast Guard (USCG). A seventh aircraft, our second Guardian, is scheduled for delivery before the end of this year,

and funding for a third Guardian is included in the President's Fiscal Year (FY) 2011 Budget request. The Predator family of aircraft has an evolving sensor suite and has flown over one million hours on defense missions. The CBP version of the aircraft has a 66 foot wing span and weighs over 10,000 pounds. Since 2005, the main operating base for the UAS has been the U.S. Army's Fort Huachuca, located near Sierra Vista, AZ. CBP has three Predators deployed to Sierra Vista to conduct missions along the southwest border, and to develop tactics, test new sensors, and train new pilots and sensor operators. Since the UAS is designated by CBP as a national asset, broad operations are directed from OAM National Air Security Operations Office (NASO) in Washington, DC. Individual mission assignments are generally based on specific intelligence, intelligence trends, and requests from the CBP Field Commanders at the southwest and northern borders. Other Department of Homeland Security (DHS) component agencies, such as the Federal Emergency Management Agency (FEMA) and the USCG, as well as outside federal agencies, such as the FBI and DEA, also make requests.

In December 2008, CBP deployed its first Predator B to North Dakota to commence northern border operations and enhance pilot training opportunities. By February 2009, two aircraft were operating from Grand Forks Air Force Base, North Dakota. In the fall and winter of 2008 to 2009, CBP Predators drawn from both the northern and southern borders supported FEMA missions during the southeastern hurricanes and the floods in North Dakota. During the hurricane activity, the Predators conducted pre- and post-event missions that mapped 260 critical infrastructure points of interest and provided FEMA and the Army Corps of Engineers vital video and change detection information on storm damage. During the North Dakota and Midwest floods of 2009, the aircraft flew nearly 100 hours during 11 missions, and provided video on the

formation of ice dams so that action could be taken to destroy them and prevent the floods from expanding.

CBP and the USCG began cooperating on UAS operations in 2007, beginning with a UAS rapid deployment demonstration to North Dakota named *Agile Falcon*. Using a USCG C-130 cargo aircraft, a complete system including the Predator B support equipment and ground control station was successfully airlifted, proving the capability that will eventually be used to support the introduction of the Guardian into the eastern Pacific drug transit zone. In March 2008, the USCG participated in a CBP-led demonstration of a maritime UAS capability off Tyndall Air Force Base, Florida. And in the months that followed, the USCG joined CBP in the creation of a Joint Program Office for the development of a maritime Predator variant.

On the heels of a highly successful partnership with the North Dakota Air National Guard, CBP aggressively sought to expand operations to the eastern half of the northern border. In June 2009, OAM conducted a successful surge operation to the Great Lakes and St. Lawrence Seaway, operating from the Army's Wheeler-Sack air field at Fort Drum, New York. The air field at Fort Drum is perfectly located to support routine UAS operations along the northern maritime border, as well as contingency operations along the eastern seaboard. OAM also began work on a long-range partnership with the New York Air National Guard's 174<sup>th</sup> Fighter Wing (FW) in Syracuse, New York, to share maintenance, training, and logistic support common to CBP Predators. The 174<sup>th</sup> FW also possesses the capability to support CBP UAS operations, either from Wheeler-Sack Army Air Field at Fort Drum, or directly from Hancock Field in Syracuse.

#### **Access to the National Airspace System (NAS)**

The Predator B and Guardian are two high-end, remotely-piloted unmanned aircraft routinely operating in the NAS under Certificates of Authorization (COAs) from the Federal Aviation Administration (FAA). CBP has worked with the FAA to meet all requirements of its COA application process and the detailed, tailored requirements of individual certificates. OAM has demonstrated that the Predator B can be flown safely in the NAS, with operational limitations that ensure the safety of other NAS users and people and property on the ground. It is a proven operational system with redundant command and control, under the operational oversight of the Air and Marine Operations Center (AMOC), and the flight safety oversight of the FAA. It is flown along the nation's borders and coastlines, primarily at night when civilian air traffic is low, and it is flown in support of critical national security missions. To date, 35 of 36 COA requests made by CBP have been approved by the FAA. The latest COA approvals have increased the miles of airspace available for UAS operations, including 1,103 miles above Texas, enabling CBP to deploy its unmanned aircraft from the eastern tip of California, across the land borders of Arizona, New Mexico, and Texas, and into the maritime border just short of the Texas and Louisiana border. The other recent COA approval granted access to airspace needed to deploy the Guardian UAS, and a Predator B temporarily re-deployed from North Dakota, over the Deepwater Horizon oil spill. CBP continues to work with the FAA to expand access from 240 to over 900 miles along the northern border, west of North Dakota, and then, as resources permit, back to the Great Lakes and St Lawrence Seaway. The FAA has assured CBP that homeland security COA requests will be given top priority.

### **Expanding into the Maritime Domain**

Work on a maritime variant of the Predator B began in late 2007 and the path forward to the new capability took shape after the UAS Maritime Demonstration conducted in March 2008. By November 2008, CBP and the USCG had signed a charter for the Joint Program Office. Within a few months thereafter, modification of an existing Predator B as the first prototype Guardian began and the completed aircraft was delivered to CBP in December 2009. The Guardian's primary enhancement was the addition of a SeaVue broad-area maritime search radar, common to the radars being flown on CBP's P-3 long-range tracker aircraft and the DHC-8 medium range patrol aircraft. Other enhancements included electro-optical/infrared sensors with maritime haze filters, a 360-degree maritime automatic information system (AIS), and an upgraded power subsystem with twice the output of a standard Predator B.

The Guardian maritime UAS successfully completed operations test and evaluation in May 2010, and the early results indicate that it will provide DHS with an impressive capability for maritime surveillance and interdiction missions in the source and transit zones. The aircraft is currently deployed to Canaveral Air Force Station, Florida, and is an additional asset in use with the unified response command assisting with the BP Deepwater Horizon oil spill. Plans are in place for embarking on the first joint CBP/USCG mission in the Caribbean Sea later this summer. Eventually, the aircraft is expected to be deployed alongside the P-3 patrol aircraft, searching for bulk drug carriers, such as semi-submersible vessels and bulk drug submarines, in the Caribbean and eastern Pacific. Less than one year after the selection of a radar system, CBP introduced a unique, long-range maritime search asset to the DHS inventory, unmatched by any other capability on the world stage.

## **Future Plans**

When DHS approved the UAS Program as a component of CBP's Strategic Air and Marine Plan (StAMP), OAM was authorized to acquire up to 24 complete systems. Consistent with the available resources, OAM has acquired seven aircraft, including five Predator B land configuration aircraft and two maritime Guardians. As previously stated, the FY 2011 budget request includes funding for an eighth aircraft, also a Guardian. To support the aircraft, their command and control systems, operations personnel, maintenance and logistics, and other infrastructure, OAM established three launch, landing, and mission control sites (Sierra Vista, Arizona; Grand Forks, North Dakota; and Cape Canaveral, Florida), along with a mission operations site at the AMOC.

To further bolster our southwest border security resources, CBP re-deployed a ground control station from the AMOC to the Naval Air Station, Corpus Christi, Texas this month. Current plans call for occasional surge operations to Corpus Christi until sufficient aircraft, crew, ground support equipment, and operating funds become available, and a launch site agreement is reached with the U.S. Navy. Since the approval of the FAA COA for southern Texas and Corpus Christi, CBP has made steady progress on a basing agreement. With aircraft launched from both Sierra Vista, Arizona, and Corpus Christi, Texas, CBP can cover the full length of the 1,185 miles of airspace approved for homeland security operations by the FAA.

### **Enhancing UAS Performance for Homeland Security Missions**

CBP UAS operations provide leading edge capabilities to homeland security missions. No other CBP aircraft can provide persistent surveillance for over 20 hours in a single mission, respond to urgent calls from ground agents for unparalleled situational awareness, and host a variety of sensors to meet the evolving threat on the land and maritime borders.

Over the past three years, CBP has established formal relationships with the Department of Defense (DOD) and its components to leverage capabilities developed for use overseas that may have applications to homeland security missions. The capabilities fall into three broad categories: sensor systems; video and data capture and exploitation systems; and hardware support. Since OAM is an operating organization with minimal research and development staff or supporting test and evaluation infrastructure, it is logical and efficient to take advantage of technological advances by the DOD, industry, and other agencies.

I would like to highlight three specific DOD capabilities that are being tested or adopted by CBP to enhance UAS performance for homeland security. The first would provide CBP with a radar capability with active, near-real time vehicle and dismounted change detection, to support border ground operations, especially in areas subject to high levels of border violence. Once proven on the Predator, the capability could be distributed to other CBP surveillance aircraft. The second capability would provide enhanced signals direction-finding capabilities that could be used both over land and during coastal and long range maritime operations. A third capability, funded by Congress in FY 2010, will provide infrastructure for the timely exploitation of information and video from a variety of aviation platforms and sensors, beginning with the UAS and P-3 long range patrol aircraft. Exploitation can be defined as the detailed analysis, interpretation, and distribution of information from many sources; eventually this will provide a nationwide capability to coordinate aviation mission assignments during broad border area campaigns and major events. Located at the AMOC, the first processing, exploitation, and dissemination cell is being patterned after similar capabilities employed by the U.S. Air Force and is expected to be operational before the end of this year.



## **The Road Ahead**

No aviation program, no matter how effective and efficient, is without challenges. The greatest near-term challenge faced by CBP's UAS Program is a shortage of pilots and sensor operators, specifically pilots certified to launch and land the aircraft. There is a significant amount of competition among the DOD, industry, and DHS to hire UAS pilots. Last year, Congress provided funds for 24 new pilots and though all were hired, only a few brought with them significant UAS experience. The rest are undergoing training that will take the better part of this year to complete. CBP does not plan to hire additional UAS pilots in FY 2011, except to cover retirements, and therefore has begun to cross-train pilots and sensor operators from other high-in-demand units, primarily those stationed at the CBP P-3 branch in Corpus Christi. Since CBP plans to operate Predators and Guardians from Corpus Christi, it is logical and efficient to share resources to the maximum extent possible.

As previously mentioned, CBP continues to work very closely with the FAA on UAS access to the NAS, with the objective of eventually establishing long-term or permanent corridors through which CBP can routinely fly missions along the nation's land and coastal borders, into the source and transit zones, and respond to emergency missions across the country. The relatively recent establishment of a UAS Executive Committee that includes DHS, FAA, DOD, and the National Aeronautics and Space Administration, will help to address government-wide NAS access needs. Since CBP has a homeland security mission in the NAS, the agency's COA requests will receive top priority by FAA.

## **Conclusion**

Mr. Chairman and Members of the Subcommittee, thank you for this opportunity to testify about the work of U.S. Customs and Border Protection, particularly in regard to the impressive capabilities that unmanned aircraft systems bring to our homeland security missions. Your continued support of CBP and the UAS program has led to significant improvements in the security of our borders and our nation. I will be glad to answer any questions you may have.