

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

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**HEARING**  
BEFORE THE  
SUBCOMMITTEE ON BORDER, MARITIME,  
AND  
GLOBAL COUNTERTERRORISM  
OF THE  
COMMITTEE ON HOMELAND SECURITY  
HOUSE OF REPRESENTATIVES  
ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

JULY 15, 2010

**Serial No. 111-75**

Printed for the use of the Committee on Homeland Security



Available via the World Wide Web: <http://www.gpo.gov/fdsys/>

U.S. GOVERNMENT PRINTING OFFICE

64-701 PDF

WASHINGTON : 2011

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For sale by the Superintendent of Documents, U.S. Government Printing Office  
Internet: [bookstore.gpo.gov](http://bookstore.gpo.gov) Phone: toll free (866) 512-1800; DC area (202) 512-1800  
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## THE ROLE OF UNMANNED AERIAL SYSTEMS IN BORDER SECURITY

Thursday, July 15, 2010

U.S. HOUSE OF REPRESENTATIVES,  
COMMITTEE ON HOMELAND SECURITY,  
SUBCOMMITTEE ON BORDER, MARITIME, AND GLOBAL  
COUNTERTERRORISM,  
*Washington, DC.*

The subcommittee met, pursuant to call, at 10:06 a.m., in Room 311, Cannon House Office Building, Hon. Henry Cuellar [Chairman of the subcommittee] presiding.

Present: Representatives Cuellar, Thompson, Jackson Lee, Kirkpatrick, Pascrell, Green, Miller, Rogers, McCaul, and Smith.

Also present: Representative Carney.

Mr. CUELLAR [presiding]. The subcommittee will come to order. The Subcommittee on Border, Maritime, and Global Counterterrorism is meeting today to receive testimony on the role of unmanned aerial systems in border security.

We meet here today at a critical juncture at our Nation's border and homeland security. As 21st Century threats evolve, our country is facing new challenges that demand new solutions.

At our northern and our southern border, we have taken critical steps to interdict the flow of illegal weapons, people, drugs, and cash. Since 2007, Congress has continued to increase border security funding. As a result, we have doubled the number of border patrol agents from 10,000 in 2004 to over 20,000 today.

Still, our Nation's communities along our borders and coastal waters face a unique exposure to threats. To mitigate those risks, we have to deploy a combination of manpower, knowledge, and resources to strengthen our strategy for securing our borders. Unmanned aerial system and a remotely pilot aircraft, known as the UAV, or the Unmanned Aerial Vehicle, is a relative new means for providing real-time intelligence to combat illegal activity along our borders.

For the past 5 years, this aircrafts have patrolled our northern and southern border, providing critical intelligence to our law enforcement officers. UAVs essentially put eyes in the sky to give us real-time view of what is happening on the ground.

In remote sections of our borders, these aircraft give us a window we don't otherwise have with ground patrol alone. UAVs are a force multiplier for our Federal, State, local law enforcement as they provide the intelligence to help detect, disrupt, and dismantle unlawful activity along our borders.

UAVs also give law enforcement and prosecutors the necessary evidence to prosecute criminals engaged in narcotic, human, and bulk cash smuggling, as well as arms trafficking. Increasingly, UAVs will become a familiar means for providing our homeland security. Thus, we are joined here today to discuss how the Department of Homeland Security uses UAVs within their portfolio to secure our Nation.

Many of us here today understand the challenges of expanding this program. Through this forum, I would like for us to inspire new ways to overcome these challenges.

Currently, there are five UAVs patrolling our borders, plus a most recent maritime variant, that just completed a pilot off the coast of Florida this spring. After months of work with Customs and Border Protection, the Federal Aviation Administration—the first-ever certificate authorization allow UAVs flights in Texas was approved this June. We say thank you.

Effective September 1, this approval will allow UAV flights to patrol the Texas-Mexico border which shares waters with neighboring Mexico.

Keep in mind that the Texas-Mexico border spans 1,200 miles of the 2,000-mile border of the Nation's southern border. Thus, deploying a UAV to Texas is a critical step in securing the U.S.-Mexico border.

As a representative of the Nation's largest inland trading port in Laredo, Texas, I can tell you that communities that I represent are the front line of the U.S.-Mexico policy every day. Mrs. Miller will, of course, in a very eloquent way, talk about the northern border and, of course, the coastal that is so important.

As violence continues in neighboring Mexico, our communities feel the impact across the Rio Grande, the narrow river that connects our two nations. 2010 has reached a boiling point as turf wars and gunfire unfold just minutes from our neighborhoods, and American families don't travel to Mexico as frequently as they did, and now Mexicans fear traversing the Mexican border towns to enter the United States.

Since January alone, just miles from my district in neighboring Mexico, we have seen two consulates forced to be closed and reopened, two USDA livestock inspection sites in Mexico closed, then reopened on the U.S. side because they don't want to send their personnel across the river, most about drug-related shootings, pirates intimidating American boaters on the Falcon Lake and other activities that have disrupted the lives of U.S. citizens.

These are types of situations where putting eyes in the sky can assist law enforcement in monitoring patterns and practices of our criminal organizations along the border. Monitoring these situations will give us an opportunity to prevent a spillover of violence from Mexico into the United States.

Moving forward, I want to hear how DHS will expand the role of UAVs as a means of border security in the future, lessons learned, plans looking ahead, and what Congress needs to do in the mean time.

I do want to thank, of course, the presentation that the assistant commissioner, Mr. David Aguilar, and all have made to McCaul and myself and a couple other folks. We appreciate that.

But, you know, we certainly want to look at how we can work with us. As—you know, my—standard language has been it is not us versus you, the Executive versus Congress, as we provide oversight. I am sure you don't take that personal, but it is one of the things that I think we need to look at, how we can work together as a team.

So therefore, we are very, very interested in looking at the funding that we passed in the supplemental, waiting for the Senate. Hopefully the Senate will provide this funding, which is, in my opinion, one of the largest infusion of cash that we have added for border security, which includes an additional two UAVs also.

But despite this funding, we have other obstacles to overcome. I know training pilots to fly these UAVs at home has proven difficult at times when similar aircraft have been used in wars in Iraq and Afghanistan. Today, I look forward to discussing, General, with you your view on how best we can attract and train and retain the UAV pilots to keep up with the pace of the new UAV systems in the United States.

Specifically, we need to examine the challenges of training these pilots, the time it takes and what necessary means are to fulfill the future needs of this program. Then, we look to FAA, who is the entity responsible for approving the flights of this aircraft system. I am in particular interested in the process of how FAA approves the flights of this aircraft, the safety implications involved, and the timetable for their approval.

Specifically, we need to discuss our border National security request for the certificate of authorizations filed in the—of other COA requests. We understand there is from universities to ag to many other requests, but certainly we are hoping that this border National security are at the top of the line.

As I understand, you have over 180 pending COA requests before the FAA, and priority hopefully will be given to Homeland Security submittals. But what if there are multiple Homeland Security issues at one given time?

Does the FAA have a contingency plan to place—to approve UAVs to respond to multiple National emergencies? Americans know threats don't wait for us to prepare, and now is the time for us to strengthen our strategy for combining technology and manpower to protect the homeland by way of domestic capability in addition to our efforts abroad.

UAVs are one more tool for us to stay steps ahead and leaps above the threats that we face, and they can help deter and prevent illegal activity and threats to terrorism against the United States. In the event of a National crisis, they will provide critical eyes in the sky for what we can't see or do from the ground.

So I look forward to our hearing today to examine and explore the role of unmanned aerial systems in providing border security, and certainly thank the witnesses for their time.

For our Ranking Member, let me ask first if we have—we do have a video, but we are having a little—problems with the sound. Is everything ready to go, hopefully? Okay.

At this time, for the Ranking Member and Members, I would like to view a video provided by DHS. It is a brief video clip, I think about 2 minutes and 25 seconds, to show us the capability of the

CBP UAV program. I think this will be good to give us an idea of what—the UAV. So hopefully the sound is also working along with the video, and then—Mrs. Miller said that it might be a stealth drone where there is no sound, and I think we can. If we are ready? If not, we will continue. There is no pressure at all. Everything is fine.

Well, as the young lady is figuring this out, I am going to now recognize the Ranking Member of the subcommittee, the gentlelady from Michigan, Mrs. Miller, for an opening statement.

Mrs. MILLER. Thank you, Mr. Chairman. I am just going to make a few short comments, and hopefully we will get to the video.

I think it is important that we see the capability of the UAVs. I want to thank you, Mr. Chairman, for calling this hearing because as we think about what is happening in our Nation, and one of the issues that we see on the news every single day is the Arizona law and how that is a manifestation of a lot of frustration of citizens across the Nation about our not securing our border.

What we are doing on this subcommittee I think is very important, because we have to think about all available resources that we have as a Nation, as a creative people, of how we can secure our borders. Certainly, when we see ourselves involved in theater, in Iraq and Afghanistan, I mean, even in South Korea at the DMZ, we are securing borders for other countries, and we can't secure our own border.

We need to think about all of the resources that we have available. I mention Afghanistan and Iraq in particular because we see the fantastic capabilities of the UAVs. Here we have a situation where the American taxpayers have already paid for this. This is an essentially off-the-shelf hardware that has proved incredibly effective in theater with al-Qaeda and smart bombs.

You know, they are flying along at very high altitudes, 50,000-plus feet. Too bad if you lose one, but guess what? You didn't lose a soldier.

You know, my husband was a fighter pilot in Vietnam theater, so—from another generation, but I told him, I said, "Dear, the glory days of the fighter jocks are over." The UAVs, Unmanned Aerial Vehicles, are coming.

They are fantastic technology, and now you see our military sitting in a cubicle sometimes in Nevada, drinking a Starbucks, running these things in theater and being incredibly, incredibly successful. So I really appreciate us talking about these UAVs today.

I think it is a critical component of a mix of resources. We are all very enthusiastic about the President sending National Guard troops to the border. We are enthusiastic about ramping up customs and border protection along the border, not only the southern border, but the northern border.

This committee has had numerous hearings about SBInet, again not only along the southern border, but the northern border. I mention the northern border because Chairman talks about the southern border.

I always say this: Believe me, I am incredibly sensitive and cognizant of what is happening on the southern border of our Nation with the drug cartels, with the kidnappings, with all of the terrible things that are happening there.



But I represent a State, Michigan, along the northern border, and I always want to just make sure that we don't forget about the northern border as well. We have incredible things that are happening on the northern border, and we feel that we are getting a bit short-changed there. God forbid something is going to happen and they are going to say, "You took all these resources down to the southern border, and you don't have anything at the northern border that you need there."

So I would just mention that. I don't mean it in a parochial way. I say it because I think it is in a very important part of our evaluation of how we secure our border and why these UAVs are so incredibly important. Because the Border Patrol says that we only have 32 miles under effective control for the north border, northern border, which is over 4,000 miles.

I live on the Great Lakes and, you know, when you just look at the water as far as you can see there, and realize the lack of resources that are happening there and the busy border crossings that we have—the busiest border crossings on the northern border in Michigan—the Ambassador Bridge, the Blue Water Bridge, which are the two busiest border—the CNN Rail Tunnel, the busiest rail entry into the entire Nation. So, again, I think having this kind of situational awareness that the UAVs can help us on the southern border, but also on the northern border as well.

I would just mention that General Kostelnik and myself talked about a UAV mission at Selfridge Air National Guard Base, or at least having a ground mission somewhere along the northern border in my region, over 2 years ago. We were—and I will have a question about that—but we were told at that time we would have a ground mission by 2010.

Of course, now we are moving all of that to the southern border. Again, I understand, but I do think, and I would ask this committee, to think about the northern border as well.

I am glad to see the FAA here. We obviously can't talk about UAVs without the FAA here. I understand, everybody has a different mission, and have an expectation of you to accomplish your mission under extraordinarily challenging conditions.

Easy for me to talk about the northern border when you have Detroit Metro Airport there that has almost half a million sorties, or flights, annually. It is incredibly busy air space. I don't know if it is a problem, but you have that challenge in New York and some of the other areas you have looked. You certainly have that in the Chairman's area, as well.

I think, what the subcommittee wants to find out today is, how can we accommodate what is absolutely a priority for the Nation and the Congress as a reflection of the American people, securing our border and how we can utilize UAVs effectively. We do need to have the FAA's help with accommodating all of that.

Again, I recognize the challenges. You just can't start flying these drones without thinking about what can happen in a very, very, very busy airspace with an antiquated air traffic control system. No fault of the FAA, but Congress needs to be moving a little further along on that, as well.

But at any rate, Mr. Chairman, I appreciate the subcommittee having this hearing. I think, again, it is very, very important. We

all share the same concerns and want the same outcome, which is border security and utilizing every resource that we have available to do so.

With that, I would yield back.

Mr. CUELLAR. Thank you again very much. Mrs. Miller, we appreciate it. I think this is good to have, make sure we cover both the southern and the northern border, of course the coastal areas also.

At this time, the Chairman now recognizes the Chairman of the full committee, the gentleman from Mississippi, Mr. Thompson, for an opening statement.

Mr. THOMPSON. Thank you very much, Mr. Chairman, and I thank you for holding today's hearing to examine the Department of Homeland Security's use of unmanned aerial systems in its border and maritime security missions.

You have worked diligently on this issue, and I thank you for it, which is particularly vital to you, given the district that you represent along our Nation's border.

Last week I visited Arizona, where I heard first-hand from residents about the need to—and to secure America's southwest border. So it is particularly fitting this hearing is being held today.

Along with providing appropriate personnel and infrastructure, deploying effective technology is an essential part of the Department's border and maritime security efforts. I am interested in hearing more today about unmanned aerial systems can assist Customs and Border Protection and the Coast Guard in that regard.

At the same time, we know that this technology can be utilized in disaster response, such as the recent Deepwater Horizon oil spill. It is my understanding that DHS's UAS assets have been tasked with providing aerial images from the Gulf in the wake of this spill.

Like my colleagues, I strongly support providing the men and women of DHS with the tools they need to carry out their vital work on behalf of our Nation. However, I have some questions for our panel. Today, I hope to hear specifics about how UASs can help CBP and the Coast Guard to fulfill their missions.

Technology is intended to be a force multiplier. Given the cost of this technology, we should have a clear understanding of what the American taxpayers are getting for their money.

I also hope to hear about some of the challenges CBP and Coast Guard face in deploying UASs along our borders and shores and how we might be of assistance. For example, there might be a great deal of concern about the length of time it takes DHS to obtain a certificate of authorization to fly UASs in the Nation's airspace.

It is my understanding that this process has improved of late, which is good to hear. However, FAA and DHS must continue to work together to ensure that these COAs are issued in a timely manner while still ensuring the safety of our airspace.

CBP has also reported that a shortage of qualified UAS pilots is a persistent problem given the demand for such pilots in the military and elsewhere. If funding is provided for additional UASs, this pilot shortage must be addressed.

To the extent that Congress can be helpful in overcoming these challenges, we certainly want to do so. Both CBP and Coast Guard

intend to expand their UAS program significantly in the coming years.

It is imperative that they do so in a way that makes the most of our limited homeland security resources. Certainly the American people and border community residents in particular expect no less.

I thank our witnesses for being here today, and I look forward to their testimony. I yield back, Mr. Chairman.

Mr. CUELLAR. Thank you, Mr. Chairman.

At this time, I ask for unanimous consent that Representative Carney, a Member of the committee, be able to sit and question the witnesses at this morning's hearing.

Other Members of the subcommittee are reminded that, under the committee rules, opening statements may be submitted on the record. Now welcome our panel of witnesses.

The first witness is Major General Michael T. Kostelnik, is the assistant commissioner of the U.S. Customs and Border Protection Office of Air Marine, the world's largest aviation and maritime law enforcement organization.

The general has served in the Government for over 38 years. Prior to joining CBP, he was deputy associate administrator for space station and space shuttle at NASA.

Before joining NASA, the general spent 32 years on active military duty with the U.S. Air Force and serving as a fighter pilot, experimental test pilot, and a designated acquisition commander, among other positions. His best qualification, he is also a Texas A&M graduate, Aggie, from the university there.

By accident, Mr. Chairman, we also have another Texan from San Antonio. It was not planned this way. Right, Michael?

Our second witness is Rear Admiral Vincent B. Atkins from the San Antonio area, Lamar, who is an assistant commander for capability for the United States Coast Guard. In that position, Admiral Atkins is responsible for identifying and providing service-wide capability and capacity and for developing standards for staffing, training, equipment, sustaining and maintaining, employing Coast Guard forces to meet mission requirements.

He previously served as the deputy director of response policy, where he oversaw the development of strategic doctrine and policy guidance for the Coast Guard's statutory mission. Rear Admiral Atkins has served innumerable afloat-ashore staff assignments since graduating from the Coast Guard Academy in 1982.

We also have our third witness, Ms. Nancy Kalinowski, which is the vice president of assistance operations services to the air traffic organization at the Federal Aviation Administration, FAA. She is responsible for the overall Nation's National guidance for the air traffic flow of management, airspace management, information management, as well as the delivery of safe, secure, and efficient air traffic management and flight services for the National airspace system.

During her more than 30-year career with the FAA, she has served in management and executive positions in human resource management, budget, communications, flight service, airspace management, design, and other sort of management and aviation safety. Certainly, as it was said a few minutes ago, we welcome the FAA here with us also.

Our fourth witness, Mr. John Allen, joined the Federal Aviation Administration November 1991 and was appointed as the director of flight standard service in December 2008. He leads an organization of more than 4,800 aviation professionals responsible for the promoting safety for civil aircraft by setting regulation standards for aircraft agencies, general aviation, airmen, and designees.

Flight standards also is responsible for the certification and inspection of surveillance investigation enforcement of aviation regulations. Mr. Allen retires a Brigadier General from the Air Force Reserves in 2009 after holding various command positions during his 31 years of active duty and Reserve military career.

Without objection, the witnesses' full statements will be inserted in the record. I now ask the witnesses to summarize their statements for 5 minutes, beginning with the general.

But General, we are going to ask you—we always come up with practical solutions to problems that we might have. Since we are missing the audio, we will ask you to, before you do your statement, ask you to narrate the video there.

I think hearing it from the general, this would be the best way to hear this. It was actually planned, Mr. Chairman, as we did this.

So, General, if you want to go ahead and—why don't we run the video first, Members, so you can get an idea of what the UAVs are and the stations and the work, and then, after that, we will start with your prepared statement. General.

Gen. KOSTELNIK. Before we run, if I could—

Mr. CUELLAR. Yes, hold it a second.

Gen. KOSTELNIK. I have to say, this is actually a historic event that occurred last year almost at this same time. This was taking the Predator UAS to Oshkosh, the largest gathering of manned aviators in the world.

Because there has been such a debate on see-and-avoid and aircraft, we are there routinely with other members of the Federal Government showcasing military aviation capabilities across a spectrum of missions.

But in the last couple years, we have always brought the Predator B model, which is about—has a wingspan of about 4 feet, very small sits on the table, and we show video to all the traveling pilots that come through the displays at Oshkosh. Almost to a person, they all thought that that little four-foot thing was a Predator.

In reality, the Predator B, the MQ-9, which is the military Reaper that we fly is a very large aircraft. It is 66-foot wingspan, it is 10 foot tall, it is 36 foot long, but it is unmistakable.

So at the request of the Experimental Aircraft Association, and with the partnership and support of the FAA, last year we brought the Predator—you will see that we are trucking in a control set so we can land it. We flew the Predator across through the National airspace, landed at Oshkosh, and then, for a week, had that aircraft on display for the American public that travels and would be most affected by the risk of unmanned aviation in the National airspace come by, talk to the pilots, look at the control set, see the aircraft. To a person, I believe they came away with a different perspective of the system, the risk and the mission that that aircraft does.

As an aside, last year was a difficult year financially. There was another aircraft that was there, the Airbus A380. It is the largest airplane in the world. According to the EAA, in their own words, attendance at Oshkosh last year was up 36 percent, and it was up primarily due to one of the smallest aircraft there, the Predator UAS, and one of the largest.

So what you will see—and I will narrate through—this is our short vignette of our experience at Oshkosh air venture last year. You can run it, and I will navigate.

[Begin video.]

Gen. KOSTELNIK. We have a truck that—the ground control station. This is the formal system that we fly the airplane with, and you will see it being disassembled.

This is our director, who runs our Oshkosh show. In the background, you will see the classic MQ-9, the aircraft that the military calls the Reaper, the aircraft that we call the Predator. Ours are unarmed but have all of the other systems.

You can see it is a very large aircraft. This is in the early days of the show when we have flown the aircraft in. People would get a chance to look at the systems, look at the capabilities. You can see in the forward part an electro-optical ball. This provides this type of video, so the aircraft sees in multiple spectrums—electro-optical, which is low-light level TV.

This is an inside view, looking at the imagery. This is the kind of imagery that we will get in the ground. This is the actual control set. That is the pilot on the left side flying the displays. He is looking out through cameras in either the EO or clear ball looking out the front.

This is typical of the kind of imagery. It is a movable ball, so you can look around. You can clear, and you are doing it in multiple spectrums. The EO optics, this is what it looks like looking behind the airplane. This is some of the image that we actually took during the hurricane support a couple years ago.

Mr. Krogh was one of our most experienced launch and recover pilots. This is the crown jewel of UAS operations, those that actually take off and land the Predators. This is typical of the kind of imagery that we take, you know, during our mission sets.

There are concerns about privacy that have been raised. But if you look at the type of imagery that we are taking, the things we are looking at and where we are, we are really on solid ground in those regards.

This is a air pavilion behind it, just different vignettes of the equipment on the inside. What you are looking at is the kind of displays that the pilots have. All of our crews are FA-certified pilots. Both the left seat pilot and the right seat sensor operator are FA-certified pilots, all part of our risk reduction program.

That just gives you a good sense. It is a very popular show, and I think it offered a new perspective to the aviators when they saw the size of the airplane, the fact that it wasn't something programmed on its own but something being hand-flown virtually through the satellite infrastructure that came away with a different sense. I think the rest is probably repetitive.

[End video.]

Mr. CUELLAR. Thank you for that narration. We appreciate it.

General, why don't we go ahead and go with your actual statement?

Gen. KOSTELNIK. Okay.

Mr. CUELLAR. Then we will proceed at that time. So you are recognized for 5 minutes to summarize your statements.

**STATEMENT OF MICHAEL C. KOSTELNIK, MAJOR GENERAL, USAF (RET.), ASSISTANT COMMISSIONER, OFFICE OF AIR AND MARINE, U.S. CUSTOMS AND BORDER PROTECTION, DEPARTMENT OF HOMELAND SECURITY**

Gen. KOSTELNIK. Chairman Thompson, Chairman Cuellar, Ranking Member Miller, thank you for your leadership, and thanks for this committee's support of homeland security mission.

Air and marine is a very small organization on world standards, but in this area of flying unmanned vehicles, we are setting policy. We are the world leaders in homeland security.

The Department of Defense has many more aircraft and a lot more experience overseas, but in the homeland, you might be surprised to know that we are the world's second-largest operator of the Predator B, this large Predator system that I have shown. There are about 35 aircraft in the Air Force inventory and, at the end of this year, we could have as many as 10 operational in our own.

But on the world stage, taking these high-end—DOD technologies and applying them in the homeland, that is a unique skill. That is a unique talent. In the world stage, there is no organization that is more capable or more experienced for flying these technologies safely and effectively in the homeland.

We have been operational for more than 5 years. We have flown more than 6,000 hours. We have flown the southwest border and the northern border on routine operations.

In North Dakota we deployed, to Congressman Miller's point, to upstate New York. We have flown in partnership with our Canadian brothers along the St. Lawrence Seaway.

While those have been routine operations helping to secure the Nation's border as part of a more complete secure border strategy, when we lay these assets down, people of all type wonder why are these things here. They are concerned about this or that.

We are there for security reasons, but once we are there, we can do a great many things. In fact, 3 years ago when we had the unprecedented flooding in Iowa that caused a lot of problems, we could have put our assets into play to help there, but there wasn't the vision. There wasn't the thought. There wasn't the process. We didn't really quite have the capability.

But 2 years ago, the leadership in the State of North Dakota, and it was bipartisan both sides, you know, specifically requested that we would help them in their time of need in terms of floods. So, 2 years ago, we flew the floods in North Dakota. We got a great response from the FAA. Short-notice emergency colors were able to support that flood.

Last year, or this past year, we flew the floods not only in North Dakota, but also in Minnesota as a result of our experience in North Dakota.

Of course, we are into hurricane season now in the part of the country where I come from, the Gulf, and we flew 2 years ago all three hurricanes during that time period, again with the support and the cooperation of the FAA. These were, you know, unique and first-ever applications of this technology in those type of, you know, contingencies.

Part of that experience was an unmanned flight that took off from NAS Corpus Christi and flew all across the country up to Delaware, making synthetic aperture radar cuts of all the significant infrastructure along the coast of the United States. That is in our databases.

Now, from those same stills, if we get hurricanes in those same areas this year, we can, after the event, fly the same aircraft with the same technology and do fore-and-after difference analysis with our help from the NGA. From that we can determine early on significant infrastructure damage to dikes, dams, marinas, bridges, all of those kinds of things in a great new application of technology.

While we are moving aggressively in this area to protect the country from terrorists, to support our missions in immigration and narcotics interdiction, you know, who could have imagined the Deepwater Horizon event? We are currently operational with both a Predator B, which we borrowed temporarily from our friends in North Dakota but will return to the northern border.

We have our joint aircraft, the Guardian, flown jointly by the U.S. Coast Guard as well as CBP, stationed out at Cape Canaveral. For the last 2 weeks, we have been flying nightly missions in support of the Deepwater Horizon event using the unprecedented forward-looking infrared with professional maritime filters to create a unique database, feeding this information live to key management infrastructures not only in the Gulf but other places across the country.

This, I think, conversation will be not only about performance and capability, but clearly about risk, given my friends with the FAA that are here. These aircraft are not without their risk. We are well early into this system, and there is a wide variety of capability with our UAS, everything from small handheld things to very large things.

What should be allowed to fly on National airspace? Well, I think there are four things that capture this distinctly.

One: What system you are flying? Ours is the most experienced in the world, more than a million operational flight hours.

Two: Where you are trying to fly?

Three: When you are trying to fly—all of these things.

Finally, the last W is the most important: Why you are trying to fly?

U.S. Customs and Border Protection is a part of the Department of Homeland Security. We are flying to protect the country. We are trying to do the things to prevent a 9/11. But certainly, if there was a recurrence, we would put these aircraft into that same mode.

I look forward to your questions, and appreciate your help and support in this area. Thank you, sir.

[The statement of Gen. Kostelnik follows:]

## PREPARED STATEMENT OF MICHAEL C. KOSTELNIK

JULY 15, 2010

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 5 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 2011 budget request. The Predator family of aircraft has an evolving sensor suite and has flown over 1 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 174th Fighter Wing (FW) in Syracuse, New York, to share maintenance, training, and logistic support common to CBP Predators. The 174th 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 1 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 fiscal year 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 3 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 fiscal year 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 Nation-wide 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 fiscal year 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 ac-

cess 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.

Mr. CUELLAR. Thank you, General, for your testimony.

At this time, we now recognize Admiral Atkins to summarize his statements for 5 minutes.

**STATEMENT OF VINCENT B. ATKINS, REAR ADMIRAL, ASSISTANT COMMANDANT FOR CAPABILITY (CG-7), UNITED STATES COAST GUARD**

Adm. ATKINS. Good morning, Mr. Chairman, Congresswoman Miller, Chairman Thompson, and distinguished Members of the subcommittee. As the Coast Guard assistant commandant for capabilities, I am honored to appear before you today to talk about the utility of unmanned aircraft systems to secure our maritime borders, as well as support the full range of Coast Guard missions to the benefit of U.S. economic and environmental security.

With our unique combination of civil and military authorities, the Coast Guard serves as the Nation's principal maritime law enforcement authority and lead Federal agency for maritime homeland security. Our broad responsibilities extend from our inland waters to the Great Lakes to over 95,000 miles of coastline and into the high seas.

In support of this security mission, the Coast Guard and other Government agencies employ a layered defense and depth strategy to prevent the entry of illicit contraband and people across a broad and asymmetric maritime border.

In general terms, National security is a concerted effort to prevent attacks within the United States, reduce our Nation's vulnerability to terrorism, and to protect our resources and commerce. In the maritime environment, this not only includes our physical borders but the exclusive economic zone and also the approaches to these areas and in those areas between our ports of entry.

To provide this security, it is imperative that the Coast Guard maintain a high degree of Maritime Domain Awareness, or MDA, across a vast and geographically diverse region. When integrated with our manned air and surface assets, the Coast Guard sees great promise for land and cutter-based UAS in support of maritime security.

While the Coast Guard operates jointly with our partner agencies, we often perform as a sole entity typically due to our mission and/or geography. This is most apparent in long-range counter-drug and counter-migrant operations from the Equatorial Pacific of Central and South America to the deep Caribbean.

In terms of fisheries protection and enforcement operations, we operate from the far reaches of the Bering Sea along the Maritime Boundary Line to the Georges Bank in the North Atlantic. Also in

the North Atlantic, the Coast Guard monitors and tracks ice movements, ensuring the safety of heavy commercial shipping.

Closer to home, we protect our ports and waterways, shores, and living marine resources from foreign and domestic threats. Homeland security missions, both civil and military, benefit from improved maritime domain awareness, which in turn is improved by persistent surveillance provided by unmanned aircraft systems.

To achieve this UAS capability, the Coast Guard is leveraging partnerships with Customs and Border Protection, the U.S. Navy, the Federal Aviation Administration, and other Federal UAS users. Our goal is to identify best practices, minimize risk to future UAS acquisition and operations, and to understand how to best integrate land and cutter-based UAS into our broad mission set.

With CBP, the Coast Guard created a Joint Program Office, which has since facilitated the development, testing, and fielding of maritime version of the Predator, also known as the Guardian. Coast Guard pilots jointly operate the Guardian UAS and assist in developing tactics, techniques, and procedures for maritime UAS operations.

We look for operational opportunities to understand how to leverage UAS maritime capabilities, including the support of the inter-agency response to Deepwater Horizon, and also in future counter-drug missions. We are working with the Navy on their Fire Scout program to better understand shipboard rotary-wing UAS applications.

Additionally, the Coast Guard is part of an inter-agency effort to safely integrate unmanned aircraft into the National airspace system. The Congressionally-mandated UAS Executive Committee is a highly active and collaborative effort and represents the best opportunity for successfully integrating unmanned aircraft into the NAS.

Sir, the Coast Guard believes there is a real role for UAS in maritime security, and we appreciate this subcommittee's oversight and guidance as we move forward to realize these benefits.

Thank you, and I stand ready to answer any questions you may have.

[The statement of Admiral Atkins follows:]

PREPARED STATEMENT OF VINCENT B. ATKINS

JULY 15, 2010

Good morning Mr. Chairman and distinguished Members of the subcommittee. I am honored to appear before you today to speak about the employment of unmanned aircraft systems (UAS) in support of the Coast Guard's mission to secure our borders.

The Coast Guard is a military service and branch of the armed forces of the United States. We are also the only service in the Armed Forces with statutory law enforcement authority. Since our beginnings as the Revenue Cutter Service in 1790, the Coast Guard has seen tremendous expansion in our roles and responsibilities, continuing with the Homeland Security Act of 2002. The Coast Guard functions as the Nation's principal maritime law enforcement authority and lead Federal agency for maritime homeland security. The Coast Guard is also designated as lead agency for maritime drug interdiction under the National Drug Control Strategy, the lead agency for maritime and aeronautical search-and-rescue in coastal and international waters and airspace, and the co-lead agency with Customs and Border Protection's Office of Air and Marine (OAM) for air interdiction operations. Of these roles, many overlap with other agencies, while others fall solely within the purview of the Coast Guard.

America's borders encompass over 95,000 miles of coastline. To secure America's borders, the Department of Homeland Security (DHS) and other Government agencies employ a comprehensive "layered security" strategy, which aims to provide security at and between U.S. ports of entry while simultaneously extending the zone of security beyond the physical border to include the Exclusive Economic Zone. These waters contain living and non-living marine resources that are of substantial economic value to our Nation.

The layered security strategy depends on effective and efficient Maritime Domain Awareness (MDA), which refers to the persistent intelligence, surveillance, and reconnaissance of all vessels, cargo, aircraft, and people approaching and seeking entry into the United States, legally or illegally. Along with the Coast Guard's fleet of manned aircraft, UAS will provide required capability to monitor open seas and littoral waters providing additional data and imagery to maritime operational commanders and other users throughout the U.S. Government. The resulting improvement in MDA will support other Coast Guard's efforts to detect, monitor, track, and if necessary, interdict targets of interest. This capability will, in turn, increase the effectiveness of the Coast Guard and its partners in performing our core homeland security, defense, and law enforcement missions.

As envisioned in the Deepwater Mission Needs Statement (MNS), UAS is critical to support many of the Coast Guard's missions (e.g., Search and Rescue; Drug Interdiction; Alien Migrant Interdiction; Living Marine Resources; Other Law Enforcement; Defense Readiness; and Ports, Waterways, and Coastal Security) in direct support of the 2010 Quadrennial Homeland Security Review Report.

For example, these capabilities would augment surveillance efforts currently provided by manned Maritime Patrol Aircraft. Sensor data would be made available to Coast Guard and other Government agency command and control units, tactical units, and exploitation sites.

To achieve a well-balanced capability, the Coast Guard's UAS strategy is three-fold:

- Evaluate existing cutter-based and mid-altitude, land-based UAS options and leverage existing Department of Defense and CBP acquisition products;
- Exploit information available from U.S. Navy High Altitude Long Endurance (HALE) platforms; and
- Develop knowledge and experience through partnerships within DHS and the Department of Defense.

This strategy will be used to safely and pragmatically guide the implementation of a UAS solution.

In February 2009, the Department of Homeland Security approved the Coast Guard's strategy to acquire mid-altitude long-range and low-altitude cutter-based tactical UAS's to meet mission requirements. The strategy also emphasizes commonality with existing DHS and Department of Defense (DoD) programs that are already technologically and production mature. This approach will streamline the Advanced Concept Technology Demonstrations and the development of UAS Mission Needs Statements and Capability Development Plans already underway.

The Coast Guard is proactively leveraging partnerships with CBP, the Department of Defense, and the Federal Aviation Administration (FAA) to explore the abilities of UAS to contribute to Coast Guard mission sets. To this end, the Coast Guard significantly enhanced collaboration with CBP by establishing a Joint Program Office with four officer billets in 2009. At the same time, the Coast Guard created senior officer liaison billets with the Navy and the FAA.

In cooperation with CBP, the Joint Program Office has provided significant expertise in maritime surveillance, sensors and data management capabilities, resulting in the development and fielding of the Guardian UAS, an offshore version of the land-based Predator UAS. In addition, the Joint Program Office assisted in securing facilities to support Guardian test activities and routine flight operations.

The Joint Program Office's efforts also enabled three Coast Guard aviators and one sensor operator to receive Predator training at CBP facilities. Upon completion of the training, Coast Guard personnel operate the Guardian UAS and assist CBP in developing tactics, techniques, and procedures for UAS operations in the maritime environment. This mutually beneficial relationship provides a valuable resource for both agencies, as it enables the Coast Guard to develop critical UAS skill sets within the service, and provides manpower and maritime expertise to CBP, permitting expanded and flexible flight operations in domestic and international waters.

A recent example of the benefits of this cooperative effort was the Coast Guard's request to employ the Guardian UAS in response to the Deepwater Horizon oil spill. Pilots from both agencies have employed UAS to map the spill, locate and track responding surface assets, and transmit imagery to supporting command centers, ef-

forts which enabled the Coast Guard to evaluate the UAS's ability to support large-area surge operations.

In addition, the Coast Guard is observing other new technologies in existing systems that can support a wide variety of missions in the maritime. Over the last year, the Coast Guard has been monitoring the Heron I UAS in routine exercises sponsored by U.S. Southern Command, including the joint development of test and mission plans, as well as observation of flight operations in Central America and command and control activities in the United States. Data gathered in these efforts will be invaluable in acquiring and operating a UAS capable of meeting the Coast Guard's mission needs.

The Coast Guard's mission also requires a cutter-based, rotary-wing UAS program which will provide a tactical enforcement tool to extend the range and capability of our new cutter fleets. Our partnership with the Department of Defense has ensured that we maintain the expertise to develop a robust cutter-based program, enabling one Coast Guard aviator to qualify on the Navy's Fire Scout UAS, and two other aviation personnel to observe Fire Scout operations and maintenance aboard the USS McInerney. The Coast Guard's close relationship with the U.S. Navy in this effort led to the option of installing a sea search radar aboard Fire Scout. Although this was not originally included in the Navy's payload requirements, it is critical for Coast Guard missions and provides a more robust and capable surveillance capability. Having completed a "dry fit" of the Fire Scout aboard the NSC Bertholf in 2008, engineering and design plans have been completed to support a Fire Scout technical demonstration aboard the NSC in fiscal year 2011.

#### CONCLUSION

Since its inception, Coast Guard aviation has been at the leading edge of applying new technologies to efficiently accomplish our many responsibilities. It is our unique authorities, capabilities, competencies, and partnerships, both foreign and domestic that enable the Coast Guard, in partnership with our fellow DHS components and the other branches of the armed forces, to consistently and effectively provide maritime security. In the context of the U.S. layered security strategy for the maritime domain, the introduction of UAS would extend the reach of Coast Guard's ability to protect America's maritime borders.

Thank you for the opportunity to testify before you today. I will be happy to answer your questions.

Mr. CUELLAR. Thank you very much for your testimony.

At this time, I would like to recognize Ms. Kalinowski to summarize her statement for 5 minutes on behalf of herself and Mr. Allen.

#### **STATEMENT OF NANCY KALINOWSKI, VICE PRESIDENT, SYSTEM OPERATIONS SERVICES, AIR TRAFFIC ORGANIZATION, FEDERAL AVIATION ADMINISTRATION; ACCOMPANIED BY JOHN M. ALLEN, DIRECTOR, FLIGHT STANDARDS SERVICE, FEDERAL AVIATION ADMINISTRATION**

Ms. KALINOWSKI. Thank you very much, Chairman Cuellar, Congresswoman Miller, and distinguished Members of the committee. The FAA appreciates the invitation to come speak to you today in support of both our missions, the FAA, CBP, and Coast Guard.

The FAA sets the parameters for where an unmanned aircraft system may be operated and how these operations may be conducted safely in the National airspace system. Our main focus when evaluating UAS operations in the National airspace system is to avoid any situations in which an unmanned aircraft would endanger other users of the NAS or compromise the safety of persons and property on the ground, as Mrs. Miller said.

The FAA recognizes the great potential of unmanned aircraft in National defense and homeland security and, as such, we strive to accommodate the DOD and the DHS's needs for UAS operations. But we must do so without jeopardizing the safety of the National airspace system.

Currently, if a Government agency or a public university or a State or local law enforcement organization wishes to fly an unmanned aircraft system in the civil airspace, the FAA may grant a certificate of waiver or authorization, commonly referred to as a COA. The proponent applies to the FAA for a COA, detailing what and how they intend to fly the UAS in the airspace. The FAA works with the proponent to mitigate any risks that flying the UAS in the civil airspace may present. Risk mitigations frequently include special provisions unique to the requested type of the operation.

For example, the applicant may be restricted to a defined airspace or restricted to operating during certain times of the day. The UAS may be required to have a transponder or, if it is expected to be flown in a certain type of airspace, a ground observer or an accompanying chase aircraft may be required to be the eyes of the UAS.

Other safety enhancements may be required, also depending on the nature of the proposed operations. I have more information later on about the COA process, which I can go into detail if the committee wishes.

As noted by Congressman Thompson, we have recognized the need to streamline our process for evaluating COA applications. To address the timeliness concerns of the applications, the FAA is working to simplify the COA process and has also increased the staffing levels by more than a dozen people.

The FAA's working better to standardize the review process and to increase communication and transparency between our partner agencies and the applicants. We take this process very seriously, and while we are taking specific steps to improve the COA process, we are always going to take the time we need to ensure that these operations can be conducted safely in the NAS.

These efforts are already showing improvements. In 2009, we issued 146 COAs, but so far this year we have issued 122 COAs in the first 6 months, and we are on track to issue over 200 this year.

At the current time, we have over 268 active certificates of authorization on 133 different aircraft types. They have been issued to 151 different proponents. The CBP currently has 11 COAs issued to them.

Normally, the COAs are worked on a first-come, first-serve basis. However, if an agency such as Customs and Border Protection has a priority mission request, it receives priority consideration from the FAA. As General Kostelnik discussed, we also recognize that there are emergency and disaster situations where the use of UASs can save lives and help our first responders.

To address these situations, we do have special disaster COAs and emergency COAs that can be issued in a matter of hours or even minutes, and we have responded to the CBP in this manner.

We are also working with our partners in Government and the private sector to advance the development of UASs and their ultimate integration into the NAS.

First, in accordance with 2009 Defense Reauthorizations, the DOD and FAA have formed the Executive Committee that Admiral Atkins just referred to, the ExCom, to focus on conflict resolution

and identification of range policies, technical issues, and procedural concerns rising from the integration into the NAS. We have also included the Department of Homeland Security and NASA to more capture broadly the other Federal agency concerns and missions.

The focus of this U.S. Com is to enable an increase, and then ultimately a routine access of Federal public UAS operations into the NAS to support all of our missions. We thank the Congress for enabling the formation of the ExCom to advance the work of UAS integration.

Unmanned aircrafts are a promising new technology, but one that was originally and primarily designed for military purposes to support the war fighter. Although the technology incorporated into UASs has advanced, their safety record warrants careful review.

We are trying to integrate the aircraft into the NAS, but we need to continue to take a very hard look at the risks that UASs pose to the aviation community and the traveling public, as well as the risk to persons or property on the ground.

We seek to balance our partner agencies' security, defense, and other public needs with the safety of the National airspace system. We will not compromise the safety of the National airspace system.

We look forward to continuing to work with our partners, and we thank you, the Congress, and especially this committee, for the guidance that you have given us, the support that you personally, Chairman Cuellar, and your committee have provided to the Customs and Border Protection and the Coast Guard missions to further enable this partnership.

Thank you.

[The joint statement of Ms. Kalinowski and Mr. Allen follows:]

JOINT PREPARED STATEMENT OF NANCY KALINOWSKI AND JOHN ALLEN

JULY 15, 2010

Chairman Cuellar, Congresswoman Miller, Members of the subcommittee: Thank you for inviting the Federal Aviation Administration (FAA) to this hearing. We are Nancy Kalinowski, Vice President of System Operations Services in the Air Traffic Organization (ATO), and John Allen, Director of the Flight Standards Service in the Office of Aviation Safety at the FAA. Together, we have distinct yet related duties in carrying out the FAA's mission to ensure the safety and efficiency of the National Airspace System (NAS). Mr. Allen's organization is charged with setting and enforcing the safety standards for air operators and airmen. Ms. Kalinowski's role is to provide overall guidance for air traffic procedures and airspace issues and her office is the focal point for daily ATO interface with the Department of Defense (DoD) and the Department of Homeland Security (DHS) regarding air transportation security issues.

As the most complex airspace in the world, the NAS encompasses an average of over 100,000 aviation operations per day, including commercial air traffic, cargo operations, business jets, etc. Additionally, there are over 238,000 general aviation aircraft that represent a wide range of sophistication and capabilities that may enter the system at any time. There are over 500 air traffic control facilities, more than 12,000 air navigation facilities, and over 19,000 airports, not to mention the thousands of other communications, surveillance, weather reporting, and other aviation support facilities. With this volume of traffic and high degree of complexity, through diligent oversight, the FAA maintains an extremely safe airspace.

With regard to unmanned aircraft systems (UAS), we—the FAA—set the parameters for where a UAS may be operated and how those operations may be conducted safely in the NAS. Our main focus when evaluating UAS operations in the NAS is to avoid any situations in which a UAS would endanger other users of the NAS or compromise the safety of persons or property on the ground. The FAA recognizes the great potential of UASs in National defense and homeland security, and as such, we strive to accommodate the DoD and DHS' needs for UAS operations, but we



must do so without jeopardizing safety. Because airspace is a finite resource, to help mitigate risk, FAA sets aside airspace for an operator's exclusive use when needed. These exclusive use areas are known as Restricted or Prohibited Areas. The DoD conducts most of its training in such airspace. Along the southern border of the country, the DoD has elected to share that restricted airspace with Customs and Border Protection (CBP). However, the CBP also operates UASs in civil airspace, as discussed below.

When new aviation technology becomes available, we must first determine whether the technology itself is safe and whether it can be operated safely. Whether the technology is to be used by pilots or air traffic controllers, we determine the risks associated with putting that technology into the NAS. Once we address and mitigate those risks, we move forward with integration in stages, assessing safety at each incremental step along the way. Unforeseen developments, changing needs, technological improvements, and human factors all play a role in whether the new technology is safe enough to be permitted into the system.

The FAA is using this same methodology to manage the integration of the new UAS technology into the NAS. While many view UASs as a promising new technology, the limited safety and operational data available does not support expedited or full integration into the NAS. For example, some of the data that we do have comes from the CBP, and while we have reason to believe that the safety data that we do have may not be a representative sampling of UAS operations, it is all we have. To the extent that this limited data from CBP are representative, they suggest that accident rates for UASs are higher than in general aviation and may be more than an order of magnitude higher than in commercial aviation.

For example, from fiscal year 2006 to fiscal year-to-date 2010 (July 13, 2010), CBP reports a total of 5,688 flight hours. The CBP accident rate is 52.7 accidents per 100,000 flight hours (the standard safety data normalization factor/the standard on which safety data is reported). This accident rate is more than seven times the general aviation accident rate (7.11 accidents/100,000 flight hours) and 353 times the commercial aviation accident rate (0.149 accidents/100,000 flight hours).

While the CBP accident rate appears to be higher than general or commercial aviation, we note that CBP's total reported flight hours of 5,688 are very small in comparison to the 100,000 hour standard typically used to reflect aviation safety data and accident rates. CBP has had seven deviations (where the aircraft has done something unplanned or unexpected and violates an airspace regulation) so far this fiscal year in over 1,300 hours of flight time, as compared to the five deviations in 1,127 hours of flight time in fiscal year 2009. Continuing review of UAS operations will enhance FAA's ability to assess the safety to improve on-going use of this technology.

This is the crux of the FAA's responsibility. More data is needed before an informed decision to fully integrate UASs into the NAS can be made. Because of this, the FAA must make conservative decisions with respect to UAS NAS integration. Until such time as the data can support an informed decision to integrate UASs in the NAS—where the public travels every day—in accordance with our safety mandate, the FAA must continue to move forward deliberately and cautiously.

For UASs to gain access to the civil airspace, the FAA has a Certificate of Waiver or Authorization (COA) process. This is the avenue by which public users (Government agencies, including Federal, State, and local law enforcement, as well as State universities) that wish to fly a UAS can gain access to the NAS, provided that the risks of flying the unmanned aircraft in the civil airspace can be appropriately mitigated. Civil UAS operators must apply for a Special Airworthiness Certificate—Experimental Category to gain access to the NAS. This avenue allows the civil user to operate the UAS for research and development, demonstrations, and crew training. The Special Airworthiness Certificate does not permit carrying persons or property for compensation or hire. Commercial UAS operations in the United States are not permitted at this time.

Risk mitigations required to grant a COA frequently include special provisions unique to the requested type of operation. For example, the applicant may be restricted to a defined airspace and/or operating during certain times of the day. The UAS may be required to have a transponder if it is to be flown in a certain type of airspace. A ground observer or accompanying "chase" aircraft may be required to act as the "eyes" of the UAS. Other safety enhancements may be required, depending on the nature of the proposed operation.

To apply for a COA, public entities may submit an application on-line with the FAA. The FAA then evaluates the request. Internally, ATO first examines the application for feasibility—airspace experts review and ensure the operation will not severely impact the efficiency of the NAS. The application is then sent to Flight Standards to evaluate the operational concept, the airworthiness release of the air-

craft, the pilot/crew qualifications, and the policies and procedures used by the operator. From that in-depth evaluation, special provisions are written. These internal FAA offices then confer together to address any remaining concerns and harmonize the provisions needed to ensure the safe operation of the UAS. Once these steps have taken place, the COA is signed and given to the applicant.

We have recognized the need to streamline our process for evaluating COA applications. To address the timeliness concerns of applicants, the FAA is working to simplify the COA process and has also increased staffing levels by more than a dozen people. The FAA is working to better standardize the review process and increase communication and transparency between the agency and the applicants. We take this process seriously and while we are taking specific steps to improve the COA application process, we will always take the time needed to ensure these operations can be conducted safely.

These efforts are already showing improvements. In 2009, we issued 146 COAs. So far this year, we have issued 122 COAs, and we are on track to issue over 200 this year. At the current time, we have 268 active COAs on 133 different aircraft types, issued to 151 proponents. CBP currently has 11 COAs issued to them.

Normally, COAs are worked on a first-come, first-served basis. However, given that there are emergency and disaster situations where the use of UASs has saved lives and otherwise mitigated emergency situations, the FAA has issued three special disaster COAs, one to CBP and two to the DoD. Both agencies have requested COAs using the special process, and most disaster COAs have been issued before either agency had the aircraft and personnel in place to fly the mission. In addition, there is a second type of special “emergency” COA. Emergency COAs have been used to help with California wildfires, the Deepwater oil spill, and special law enforcement missions. These have been issued in minutes or hours, not days and weeks. The FAA has issued three disaster COAs and 16 emergency COAs to CBP for its use.

These are only a few of the many improvements that the FAA is implementing to address the concerns with the COA application process. In the mean time, we are working with our partners in Government and the private sector to advance the development of UAS and the ultimate integration into the NAS. First, in accordance with Section 1036 of the Duncan Hunter National Defense Authorization Act (NDAA) for fiscal year 2009, Public Law 110–417, the DoD and FAA have formed an Executive Committee (ExCom) to focus on conflict resolution and identification of the range of policy, technical, and procedural concerns arising from the integration of UASs into the NAS. Other ExCom members include DHS and the National Aeronautics and Space Administration (NASA) to capture more broadly other Federal agency efforts and equities in the ExCom. The mission of this multi-agency UAS ExCom is to enable increased, and ultimately routine, access of Federal public UAS operations into the NAS to support the operational, training, developmental, and research requirements of the FAA, DoD, DHS, and NASA. All of these partner agencies are working to ensure that each department and agency is putting the proper focus and resources to continue to lead the world in the integration of UAS. We thank the Congress for enabling the formation of the ExCom to advance the work of UAS integration into the NAS and streamline the COA process.

The FAA expects small UASs to experience the greatest near-term growth in civil and commercial operations because of their versatility and relatively low initial cost and operating expenses. The agency has received extensive public comment on small UASs, both from proponents who feel their size dictates minimal regulation and from groups concerned about the hazards that UAS pose to piloted aircraft as well as persons and property on the ground.

In April 2008, the FAA chartered an Aviation Rulemaking Committee (ARC) to examine these operational and safety issues and make recommendations on how to proceed with regulating small UASs. The agency has received the ARC’s recommendations, and is drafting a proposed rule. Ensuring the safety of all airspace users while not putting undue burdens on small UAS operators is a challenging task; the FAA hopes to publish the proposed rule by mid-2011.

Additionally, the FAA has asked RTCA—an internationally recognized standards organization that frequently advises the agency on technical issues—to work with the FAA and industry and develop UAS standards. RTCA will answer two key questions:

1. How will UASs handle the challenges of communication, command, and control? and
2. How will UASs “sense and avoid” other aircraft?

These activities are targeted for completion before 2015.

As the FAA moves forward with improving the processes for integrating UAS into the NAS, we want to acknowledge and thank our partner agencies from DHS in

helping to keep our skies safe. CBP, in cooperation with the FAA, conducted a comprehensive training session for all of their UAS pilots and sensor operators just last month. The 16-hour CBP training safety meeting was conducted June 14 and 15 with classroom training, as well as guided discussion periods involving pilots and sensor operators from CBP. This approach to safety provided the two agencies with an environment to share knowledge and experience and forged a partnership that takes into account both the security of the homeland as well as the safety of our airspace. We look forward to continuing that partnership with the CBP, as well as the other Federal agencies, as UAS technology matures.

Unmanned aircraft systems are a promising new technology, but one that was originally and primarily designed for military purposes. Although the technology incorporated into UASs has advanced, their safety record warrants careful review. Now, as we attempt to integrate these aircraft into the NAS, we need to take a hard look at the risk that UASs pose to the traveling public as well as the risk to persons or property on the ground. As the agency charged with overseeing the safety of our skies, the FAA seeks to balance our partner agencies' security, defense, and other public needs with the safety of the NAS. We look forward to continuing our work with our partners and the Congress to do just that.

Chairman Cuellar, Congresswoman Miller, Members of the subcommittee, this concludes our prepared remarks. We would be pleased to answer any questions you might have.

Mr. CUELLAR. Thank you again very much. Again, to all the witnesses, thank you for being here with us.

I would like to remind each Member that he or she will have 5 minutes to question the witnesses, and I now recognize myself for questions.

General, let me go ahead and ask you this particular question. Give me the overall vision of what the UAVs will be as part of the border security. In other words, summarize what we were talking about yesterday. What does that mean for the southern border? What does that mean for the northern border? What does that mean for the coastal area when we talk about the UAV program?

Gen. KOSTELNIK. Thank you, sir.

Our program is a growing and a planned program. For the last several years, each year we have provided the Congress a formal strategic vision, a strategic plan for where we are going.

In my view, our UAS program has always been a part of the more comprehensive secure border initiative program. Well, mostly that has been associated with the fans and ground-based radars. The UAVs have always been the virtual air piece.

We have purposely laid down our infrastructure where the Air National Guard infrastructure is, where they are flying the war-time Predator missions overseas, our AMOC in Riverside, California; North Dakota, the Hooligans up there fly Predators overseas. We are going into NAS Corpus Christi. We are going into Syracuse for our maintenance facility. They fly Predators overseas.

Our focus is to provide the air picture in concert with our manned aviation and our ground-based technology and aviation systems to provide a complete border security net. Not that whatever be every piece 24/7, but providing the right type of manned or unmanned capability at the right time, at the right place, you know, to provide the security, you know, that that is needed.

We have targeted our lay-down into places like Sierra Vista, given the focus on the Southwest border, or into North Dakota, given the focus on the northern border in concert with the five manned aviation branches we have stood up in the last 5 years. We have deployed and explored operations out of New York State.

We are now going in with your help into Corpus Christi. That will be the next base that we stand up. We are over at the Cape. So we are starting to lay down, and as through our program, we lay down other sites.

There will be other additional sites on the northern border such that, when we reach the end game of our complete lay-down, not only will we have the capability to do daily and routine border security ops, supporting immigration, narcotics interdiction and terrorists, you know, activities, but also with those lay-downs, we are uniquely placed to respond to contingencies of all kinds, natural ones like the floods in the north and the hurricanes in the south, environmental ones like the Deepwater Horizon event.

But most importantly, I believe this capability—and Ms. Kalinowski was right. I mean, this is based on wartime capability, but these things have found so much use overseas, why wouldn't we use the same technology to protect ourselves in the homeland that we apply overseas to do that mission there?

Increasingly, with the Uganda event, Mumbai not too long ago, you know, it is clear that, you know, the world is increasingly an unsafe place, and one needs to be prepared for the unexpected. Now, UASs are not a panacea. They don't do anything themselves. They must work in conjunction with manned assets.

But if you look honestly at the technology, this single aircraft can do things none of the other aircraft in the Department of Homeland Security can do in a package. I think those kind of capabilities, you know, kind of set the stage.

We are early on in that maturation process. We are clearly still growing. We are clearly still learning. The technology is well in advance of the National policy and the vision for National use, but that will come with your help and your leadership in a measured way.

But the difficult things, the technologies that we should be implying, we are getting very good at. I would offer that, while these things are not without their risks, we actually do have a good safety record for this aircraft in this homeland in the way we fly it with our efforts. So that is our way ahead.

Mr. CUELLAR. Of course, on the safety issue, do everything possible, I know the FAA is in charge of that. But again, make sure there is no linkage losses and all that, just do everything possible to make sure we provide that safety. Because especially some of those drones will be flying over populated areas, and we certainly want to make sure that we do everything possible on that.

The other point that I want to mention, I got a note from the Texas Sheriffs association that was asking, General, as you provide that real-time information—and I assume it goes directly to Border Patrol. Is that correct?

Gen. KOSTELNIK. It is actually a wide variety of users. Some of it could go to any one of our intel functions. We can stream the video sometimes to some of the DOD components in concert with other missions. Once it goes to the Air and Marine Operational Center in Riverside, it can be distributed to users anywhere in the country.

In fact, we can stream our information across the ordinary internet channels with very low levels of encryption because, really,

most of the images there is not a lot to be concerned with. So if I had an aircraft flying today and we were wired to the internet, I could show you live video from one of our aircraft today.

While it might be not the resolution you want on a TV monitor, it gives leadership wherever you have, whether it is here in the country or out in the field at a command and control infrastructure at emergency management response, you know, unbelievable situational awareness about what is going on real-time.

When we flew the hurricanes 2 years ago, we were feeding that image not only to FEMA sites across the country but to headquarter sites at DHS and CBP. You could see real-time as a Predator flew by an oil derrick whether there was a leak in that derrick or not. That kind of information is priceless in the sense of commercials.

Mr. CUELLAR. Right. But the intent is to work with our other partners, State and local, depending on the situation whether you use a fusion center or whatever the case might be, but there is an intent to work with our local folks, is that correct, local and State?

Gen. KOSTELNIK. Yes, sir. As a matter of policy, U.S. Customs and Border Protection aviation and maritime law enforcement assets not only support CBP Border Patrol FO missions, all Department of Homeland Security missions, but outside agencies, including DEA, FBI, and others. We are there. Once we are in a locale, you know, that asset supports all State and local contingencies.

Mr. CUELLAR. Okay.

Gen. KOSTELNIK. All environmental contingencies of any type.

Mr. CUELLAR. Okay, thank you very much.

At this time, I now recognize the Ranking Member of the subcommittee, gentlelady from Michigan, for questions.

Mrs. MILLER. Thank you very much, Mr. Chairman.

General, I noticed in your testimony you were talking about the CBP suffering from the pilot shortage. Maybe you could flesh that out a bit for me, because you were saying that the Congress has funded 24 pilot positions, but I think we actually funded 144, is what my notes are saying here.

Also, I am interested in how you train a pilot to do something like that? Is there anything that the subcommittee can do to help you with making sure you have adequate amounts of pilots and the resources that you need to train these individuals?

Gen. KOSTELNIK. Well, the 24 pilots that were provided in the 2009 budget, those have been hired. They are in the process of being trained. The 144 number was the plus-up we were looking at in 2010, which for internal budget reasons, we did not get. All of those would not have been UAV pilots, but a large part of those numbers were—

Mrs. MILLER. So not to interrupt, but that was an internal decision—

Gen. KOSTELNIK. Right.

Mrs. MILLER [continuing]. Not to fund those.

Gen. KOSTELNIK. Right.

Mrs. MILLER. So the resources were shifted somewhere else internally.

Gen. KOSTELNIK. Well, it was a matter of the budget issues associated with the 2011 budget and the changes we had to make

which would not be recurring in 2010 to get there. We did get, of that 144, about 24 slots, and some of those will go into UAV pilots.

Now, in terms of training, this is probably the biggest bottleneck, you know, across the spectrum of users. Not only are we having issues, the United States Air Force is having users as Secretary Gates is trying to grow the number of CAPs they have overseas.

It is interesting, because it is all about unmanned things, but the reality is that UAVs are manpower-intensive, especially, you know, the remotely piloted ones like the Predator because—the other pilots and sensor operators—

Mrs. MILLER. Right.

Gen. KOSTELNIK [continuing]. Intel kind of things. So, you know, very manpower-intensive.

In terms of training, the first aircraft, as you recall, we lost in 2006, one of the early prototypes of the Predator B pilot air, had nothing to do with the UAV. Perfectly good airplane.

Mrs. MILLER. You lost contact with that aircraft, right?

Gen. KOSTELNIK. The pilot cut off the engine. No, we never lost contact with that airplane. That was a contractor pilot being trained inappropriately on a contract flight who cut off the engine. There was a momentary loss link that switched to the second control, which is the normal procedure in a Predator.

The second set of flight controls were supposed to be in an operate mode. They were in cutoff mode. The guy was poorly trained, cut off the engine, didn't realize it. The airplane continue to do what it was supposed to do until it hit the ground. I mean, that was a problem on its own.

Since that time, we have aggressively, with the help and support initially through the United States Air Force, and now with our own resources, we grow and train our own resources. We have more than 40 air marine pilots, dual-qualified, FA-certified, flying manned fixed-wing or rotary-wing aircraft and Predator Bs as part of our infrastructure. We have a small cadre of launch and recovery pilots, and we are growing that program. There is no quick fix for that. It takes time. It takes time.

Mrs. MILLER. Okay. Not to cut you off, but I have a limited amount of time here.

I did appreciate your narration of the video and taking the predator to Oshkosh. I don't know if you plan on doing that when they have Oshkosh in 2 weeks, but with all of the activity that is going on there, I think it is very important and great that you get the buy-in of the general aviation community through the EAA, et cetera.

The FAA I think can also hear wonderful input from people who are utilizing the airspace in so many different ways if they feel comfortable with these drones being out there. I think that is a critical component of us, going forward, making sure.

I would just also want to mention, Mr. Chairman, and for the committee as well, I think as a Congress and as a Nation, we need to think always about utilizing, as I say, off-the-shelf hardware like the drones that the taxpayers have already paid for that are being very successfully utilized in theater, in conflict, and how we meld those into homeland security as well.

I think we missed a big opportunity during the last BRAC. Quite frankly—they weren't thinking about it—because we were talking about military facilities around the Nation and maybe using Stryker brigades and how those could be utilized by the National Guard for homeland security.

Same thing with UAVs, how they could be utilized and how we really meld the DOD and the Department of Homeland Security together in facilities around the Nation, the ability to—as the general was just saying, you are doing these overlays at Air National Guards all over. I don't know if you are going to do that down at the Cape. Are you putting that at Patrick?

Gen. KOSTELNIK. It is actually at Cape Canaveral Air Force Station.

Mrs. MILLER. Okay. So I don't know if there is Air National wing at Patrick, but it would be great to have a ground station there for what is happening with the Deepwater Horizon, et cetera, in the Gulf.

So I just think, just generally want to—I think this committee can be helpful in talking to the entire Congress—we are going to have another BRAC at some point—of how we utilize all of these various resources.

The first and foremost responsibility of the Federal Government, which is to provide for the common defense, that is in the preamble of the Constitution. All these other issues are important, but nothing more important than National defense, homeland security. I think if we can utilize some of these—anyway, I am a huge supporter.

I know I am out of time. If I could just ask one other question quickly. What is the reaction of your Canadian counterparts to the UAVs, and even some of the aerostats or other kinds of technology that you are utilizing there? You know, they are very concerned about the thickening of the border. They are very concerned that we are over-reacting to this threat sometimes. They are our greatest neighbor and ally, and we always have to be sensitive to that.

Thank you. General.

Gen. KOSTELNIK. Should I respond to that?

Mrs. MILLER. Thank you. I appreciate that.

Gen. KOSTELNIK. When we stood up North Dakota, we took the UAVs up there. That was the first northern border deployment. Of course, we had a very strong presence, the Canadian Border Security and the RCMP. Of course, behind the scenes, we have great partnerships with our law enforcement and security forces up north. I mean, went through the iVet process and iBid process. There is a lot going on.

On the aviation side, when we stood that up, that is the question that you get from mostly the media. The law enforcement types get it, but the Canadian media says, "Well, why are you militarizing the border?" You know, why are you bringing these planes up here?

But the reality is, you know, border security serves everybody well on both sides of the border, because the kind of things, the places we are flying, the things we are looking at, the things we are going after, the people who are in those areas are only up to no good. It really serves the vast majority of the American-Canadian public well to have a secure force.

Oh, by the way, I remind them, you know, when we put this aircraft here, it is there to support contingencies. It wasn't 3 months after we stood up North Dakota that we had that flood—and North Dakota, you may realize that the waters run north—and the Canadian government was on the edge of asking us to fly the Predator into Canadian airspace to help them with their flood support.

So the reality is—and this is important to the American public, because once we put these aircraft in place, South Texas, when we get down to Corpus Christi, that will be new. I get a lot of questions from San Antonio and Corpus. I mean, that is my home town. But the reality is, when the airplane is there, we won't have to sortie an airplane down there to do response to hurricanes.

If there are tornados in other parts of the country that need response, we won't have to deploy aircraft from halfway across the country to get there. This airplane, with the EO, with the IR, with the laser designator, you can find people lost in the wilderness. You can find warm bodies in cold water. You can relay that information to man recovery and response assets. It just brings more Federal capability to State and locals that they would never have.

I mean, if you were a local law enforcement type, your question in south Texas, wouldn't you like the same capability that the special operator war fighters have overseas in your hometown towards your mission? Once we are there, we support them as a priority.

Mr. CUELLAR. Okay. Thank you.

Thank you to the Ranking Member.

At this time, Members, we do have one vote, so I am going to ask the Chairman to go ahead and do the question, then we will rush off and then come right back because that is only just one vote. So as Members, you know the rules, recognize other Members for questions according to committee rules procedure. We will go with the start of the seniority, who we have got here first.

But at this time, we will go ahead and recognize the Chairman of the full committee for 5 minutes.

Mr. THOMPSON. Thank you very much, Mr. Cuellar.

Ms. Kolinowski—yes, okay, all right. I am sure you have been called better or worse, you know, just according.

Your prepared testimony states that data does not support expedited or full integration of UASs. You further go on to say that the limited data you have suggests that accidents rate could potentially be higher. Your information is concerning. Can you explain that?

Ms. KALINOWSKI. Yes, I can, sir. We have enjoyed a very positive working partnership with Customs and Border Protection in this past year, and they have been very forthcoming with their information and their data on their operations in the civilian NAS.

We still need to understand and receive more data from our partners in the Department of Defense in order to fully understand all the safety challenges that we have with these unmanned aircraft systems.

Mr. THOMPSON. Excuse me, what kind of information from DOD are you lacking?

Ms. KALINOWSKI. Mr. Allen, would you like to address that?

Mr. ALLEN. Well, sir, information we would desire are accident rates, the true picture of how the aircraft performed in the combat environment in Iraq and Afghanistan so we can get a better pic-



ture, understanding that that environment is totally different from the environment that we have here, but a full picture of how they have operated in the past, and then how we will operate in the future and get that data would give us a better understanding in terms of the risks that we are dealing with so that we can make the best decisions, moving forward, for safety.

Mr. THOMPSON. How outstanding is that data request from DOD?

Mr. ALLEN. Well, sir, we are continually working on that on a continual basis. I would offer that sometimes it is a matter of understanding what data is asked for and how people perceive data. I know there are concerns of misinterpretation of data and some concern of giving data misinterpreted, and therefore not arriving at the right conclusion.

So we have been working at this over at least the past year, and we are getting more data from them all the time. But the main point here is that explaining our conservative approach at times, because we want to make sure we ensure safety, the more data we get, then the more leaning-for we can be in providing access of the UAS to the NAS.

Mr. THOMPSON. So you continue to request additional data?

Mr. ALLEN. We request and we work, and we get it as well, sir.

Mr. THOMPSON. So now, does that continuing to request data lengthen the time for the certificates of authorization to be issued?

Mr. ALLEN. No, sir. I would argue that it does not. It will help us strategically to provide guidance and improve our process, but I would argue that it doesn't provide a direct bearing on the time frame that we are approving these certificates of authorization.

Ms. KALINOWSKI. When we are dealing with specific certificates of authorization, we will receive the information that we need in order to evaluate the safety case for that particular operation, whether it be for Customs and Border Patrol, Coast Guard, or for the Department of Defense or any other operation within the civilian NAS.

What we are looking forward to is more complete understanding of how all the different aircraft operate, their accident rates, the problems that they may have had with lost link or communications, and the problems that we—the challenges that we have found together in training pilots and bringing them forward into a safety management system. The more we understand about safety, the more we can work toward integration more fully into the National airspace system on a regular basis.

Mr. THOMPSON. Thank you.

I mentioned I was in Arizona last weekend, along the southern border, Douglas, Arizona, the Tucson sector. It is difficult to say to the ranchers a UAS is better than boots on the ground.

One of the things, General, I think you will need to provide the committee with is the successes or whatever justification for interdictions, or what have you, that have occurred within a period of time so that, the next time I am there, I can be, pardon the pun, a little armed with information. We have had some difficulty, as you know, getting that hard data.

Just for my information, we now buy Predator UASs. Am I correct?

Gen. KOSTELNIK. It is in the Predator family, but it is the MQ-9, not the MQ-1. So in the Air Force terminology, the Predator is the smaller one. The Reaper is the larger one, and the Predator B is the same as the Reaper. That is the one we are flying, the large Predator.

Mr. THOMPSON. Thank you.

Have we found an equal UAS that is cheaper than what we are paying now that provides the same level?

Gen. KOSTELNIK. No, sir. There is no real clear competitor on the world stage with the experience. This is from a family of Predator series vehicles, starting with the MQ-1, MQ-9, now Reaper, then the Guardian. These aircraft have flown more than a million hours. That experience alone, there is no other UAV with that kind of experience. That is part of the risk reduction.

Mr. THOMPSON. Yes. Yes, the experience is one thing, but the capability is the other. So your testimony is that, from your experience, that capability does not exist anywhere else?

Gen. KOSTELNIK. No. There is no clear competitor for the Predator B class with the equipment, sensors, and the capability at this time.

Mr. THOMPSON. Thank you. I yield back.

Mr. CUELLAR. Thank you, Mr. Chairman.

Members, we are going to go ahead. We have got, actually, none time remaining, so we have got to run up there. We will be right back. We will go ahead and recess this committee meeting for a couple minutes till we get back. So, at ease.

[Recess.]

Mr. CUELLAR. We will go ahead and get the committee as we are waiting for Members to come in.

As we are doing this, let me ask a question to Admiral Atkins. Tell us a little bit about the pilot program that you are all doing in Florida, the maritime—I believe you are doing that with CBP.

Adm. ATKINS. Well, yes, sir. In fact, it is using the Guardian, and it is basically for us to understand, in the maritime, how do we take the sensors on that Predator B that have been marinized and how do we use it? In fact, that is the same bird that we are using on the Deepwater Horizon oil spill.

So given the sensors, and given its altitude, how do those sensors act in terms of finding the oil, tracking the oil, and how do we move that information from the bird to the shore and to those folks who can use it? So it is a real good effort to understand how to expand the utility of this tool to something that we didn't think about before, oil spills. You know, Deepwater Horizon was eye-opening in a lot of ways, and this is one in particular.

Mr. CUELLAR. Okay. All right.

Why don't we go ahead and continue with the Ranking Member, Mr. McCaul, from Texas? Recognized for 5 minutes.

Mr. MCCAUL. Thank you, Mr. Chairman, and let me say what an honor it is to be the acting Ranking Member on this subcommittee.

Want to thank the witnesses, and it is good to have some Texans, I hear, as well. I also want to thank the FAA for the certificate of authority that was issued for Texas, Corpus Christi, and commend the Chairman, Chairman Cuellar, for his hard work in getting that

certificate accomplished. I am not sure if you heard that or not, but I was complimenting you.

Mr. CUELLAR. No, well, I was just—the gentleman next to me. I thought it was—

Mr. MCCAUL. So I know you worked hard to get that certificate, and I was commending you for that.

I want to talk about—in general, I appreciate the meeting we had yesterday, very insightful. I think we in the Congress think, you know, all we have to do is appropriate dollars for UAV and it is taken care of. But the fact of the matter is, when you talk about the systems and the complete systems, there is a lot more that goes into this, more than just a UAV. There is a ground control station, airfield infrastructure, the pilots that you have mentioned, and other additional funding for that.

Which kind of takes me to my next question. This is going to be really, I think, focused more for the general and the admiral to answer this question. In terms of the—and let me say first, the UAVs I think are real integral part of our secure border initiative. They are not the complete 100 percent answer to it, but I think it is one piece to providing the surveillance that we need.

I think the point has been made that we are using this technology in Afghanistan and in Pakistan, and it is been effective to help secure that border. We ought to be using it, in my judgment, on the southwest border and northern border, which I am pleased to see that we are going in that direction.

But in terms of resources and needs, that is what we like to help you accomplish in terms of the mission. The long-term mission in providing full security on the border with respect to UAVs, what is the need? What can Congress do to authorize and appropriate the appropriate resources that you need to accomplish this mission?

Gen. KOSTELNIK. Well, I would say a good first look at that would be the annual strategic plan that we provide the Congress. It covers more than just the UAS systems. It covers the aircraft as well.

But, you know, we have been working on our program now for 5 years, and I think we have built a pretty credible, though still small and maturing force. In that plan, the last one, you know, calls for a ultimate fleet of about 18 aircraft and the pilots and the associated equipment to go along with it.

So if you look at your vision and your operational kind of need, some of which is still evolving because it is based on a threat, perhaps, we haven't seen, well, I think the UAVs in their current deployment are very helpful in terms of the missions we apply it for. I believe we are building a force for a threat and an experience we really haven't seen yet. It is something that is in the future.

So you really have to decide what your need will ultimately be in terms of mission set. From that, you can get to aircraft, and from that you can get to control sets and bases and all those things. We have had, you know, very good support from the Congress in building this program. We have another aircraft we will procure, you know, next year, and that is very helpful.

Our shortcomings have been in pilots. Some of that is just the time it takes to grow, and finding people that want to do it and

are competent to do it. We certainly need help in O&M. People forget that it takes, you know, gas and spare parts, and most of the Predators are contractor support from General Atomics, not inexpensive.

Then, ultimately, when you go into main operating bases and the airplanes are just airplanes, but they do require hangars, and Corpus would be a good example. It is a Navy training base. Hopefully, with their support, we are going to be posted there, but, you know, hangars become, you know, an issue.

So the reality is I think that strategic plan would give the Congress a good sense, and then consistence on, you know, National priorities and resources, one can, you know, pick and choose about how rapid the growth could be based on emergent needs. Today, our—of 18 aircraft would be modified by our experience with the Guardian.

So now, we would look in our end-game and have an acquisition decision memorandum for a fleet of ultimately 24. Today we have seven that are procured. We will have eight next year in the supplemental. I believe the President has also offered a couple additional ones. But our normal procurement in each budget cycle is about one system per year, so you can see how long that would take to get there.

Mr. McCAUL. I appreciate that.

So as I understand it, I mean, the ultimate goal would be to get to 24?

Gen. KOSTELNIK. If you—a vision that you would want the capability to provide this kind of overhead support on a contingency basis, in fact that plan for 24 would allow for a 3-hour response to have a Predator overhead anywhere in the continental United States.

Maybe we don't need that kind of capability. I mean, that is the uncertainty that you plan for. While we haven't seen that strong requirement to pull yet, maybe you only need part of that. So we are building as quickly as we can.

The limits really aren't aircraft right now. Sometimes it is COAs. Now that, you know, we have made some progress there, it is not COAs. Today it is really pilots, in fact, people who can launch and recover.

It goes back to the issues. We are all here talking about unmanned. The real issues have nothing to do with the unmanned part. The real issues are all about the manned piece, and this is a manpower-intensive system.

Mr. McCAUL. We talked a lot about that yesterday. I think the pilot is, as you mentioned it, is an important piece that is overlooked. I know you requested 144. You have only received 24 of those positions. Would 144 help you complete this long-term mission?

Gen. KOSTELNIK. Well, there really wasn't anything magic about the 144. The 24 was a specific appropriation from the Congress to help us with UAV pilots, and that was in 2009. The 144 actually included a lot of program managers, engineers. I mean, air marine is a very small, high-ops tempo. We do everything the Air Force, Navy, Army does, but we are really more like the special oper-

ations piece. So our program office in the Air Force might be 100 people or four or five people, you know, doing multiple things.

So the 144 was a plus-up to cover a lot of bare areas besides just the pilots. There might have been another 20 or so pilots in that number that would be helpful, but pilots, you know, right now, having them operational is a concern. We can qualify many of the pilots that we have on board.

Mr. McCAUL. When you mention the 24 number, you are talking about complete systems, UA systems?

Gen. KOSTELNIK. Well, you wouldn't necessarily need 24 of everything. That would be 24 aircraft, and then below that there would be so many GCSs, because you don't need a ground control system for every GCS. You would have six operational sites, so you like to have two control sets at each site, one for a backup, and then we deploy these assets—with the Coast Guard.

We can fly the airplanes. We can truck them. So, if you move to deploy the airplanes to other places on this hemisphere, in fact, for other kind of missions supporting other Federal and National entities, then you may need other things. But once you decide on a strategy and a plan, you know, then you start to lay in. But 24 aircraft would be correct, but you wouldn't buy 24 GCSs.

Mr. McCAUL. Right. This won't happen overnight, either. It takes time. I think, incrementally, each year you build to get to that number.

Gen. KOSTELNIK. Right.

Mr. McCAUL. I know my time has expired, but is it okay if—indulge the Chair?

Admiral, do you have any response to that question?

Adm. ATKINS. Yes, sir. The Coast Guard is right now in the needs definition phase, and that is why Congress last year appropriated \$5 million through our research and development test and evaluation fund to help us work with CBP and the Navy to understand existing on-going efforts relative to UAS. So, our plan is to reduce our acquisition risk, reduce our operational risk by understand and leveraging lessons learned from other UAS users already, DOD and our DHS brothers and CBP.

In terms of future resources requirements, the Coast Guard requirement is going to be predicated on the type of bird that you ultimately decide you need and its capabilities, and how does that fit into our fixed-wing—our gap, you know, because our fixed-wings provide so many resource hours to fly on a mission. So, depending on how much mission you have, you end up with a gap.

So anticipating that gap and working UAS into that gap is part of our solution set.

Mr. McCAUL. Let me just close with this comment, and that is I think there is clearly bipartisan support for this mission. I look forward—I know the Chairman does as well—working with you to identify what the needs in terms of resources are for you.

I think as the Chairman mentioned in his opening statement, we are really here to work with you and not against you. So I just wanted to, you know, close with that comment.

Thank you.

Mr. CUELLAR. Thank you, Mr. McCaul.

At this time, the Chairman recognizes the gentleman from New Jersey, Mr. Pascrell. A pleasure.

Mr. PASCRELL. Ms. Kalinowski, has the DEA and the ATF applied for these COAs?

Ms. KALINOWSKI. I can get back to you with that specific information. But to my knowledge, no.

Mr. PASCRELL. You don't have a breakdown of the applicants for the COA?

Ms. KALINOWSKI. I do back at the office. I did not bring that with me.

Mr. PASCRELL. General, thank you for your service. I would like to ask a very specific question about how much stronger these unmanned aerial systems will make our border security efforts.

I would like to talk about two specific areas. The two specific areas are arms traffic and drugs, illicit drugs. I would like to know what we are doing about it, be it north, south, in space. What are we doing about it as far as what we have been talking about here today? Secondly, what cooperation are you getting from DEA and ATF?

Gen. KOSTELNIK. Well, of course, ATF has a lot of efforts ongoing, and as the DEA on the arms transport. Much of that is done, as you probably know, through the ports of entry, so there are a lot of sophisticated scanning and intelligence-based operations trying to interdict the flow of U.S. weapons going south through the ports of entry.

DEA, we have a lot of relationship with. They have their own Air Force activities, but they do not operate the military-style equipment that we do, nor do they have the UAS capability. We routinely support very high-end DEA missions in the United States and outside U.S. borders in the Caribbean and other places with our Blackhawks and with our, you know, high-end equipment.

Mr. PASCRELL. How effective would the unmanned craft be in seeking out the tremendous—what we have been reading, anyway—transportation of drugs across the border into Mexico from the United States of America?

Gen. KOSTELNIK. Now, I think these are very effective. They do similar things that the manned aircraft do, as the admiral was talking about. In fact, we fly a lot of these aircraft, or P3s, to similar kinds of work with the Coast Guard cutters out in the, you know, eastern Pacific.

But let me just offer you a little vignette to give you a sense for how it is actually working. You know, we have ultralights flying across the Arizona border now, very small, single-manned, not very sophisticated. It carries 250 pounds of marijuana. We can see these things from radar on some cases, depending on their altitude, and we track those to where they go.

When there is a Predator overhead, and we can hand over that track to the Predator and the Predator is talking with man assets, and these aircraft, when they used to land in the desert, we could have a helicopter with a Border Patrol agent to interdict, get the airplane, get the dope, get the individual. I mean, that is pretty good.

With the UAV, though, you have some options. You don't really have to interdict the airplane. Now they are dropping the drugs on

the ground rather than landing because our interdiction has gotten so good. But what you can do is you can wait and loiter, because now the UAV can fly all night.

You can see who comes to pick the drug up, and, depending on where they are going, you can tail with overhead surveillance the drug to the stash house, and you can take down the accumulation of all the loads plus all of the infrastructure. So there are a wide variety of capabilities that the UAVs have been bringing to our southern border operation for the past 5 years. We have ground-based sensors, Vietnam-era sensors, laid all across our border.

Mr. PASCRELL. How many agencies, General, are involved in interrupting and confiscating weapons across the borders of the United States of America? How many agencies are involved? Can you tell the committee that?

Gen. KOSTELNIK. I would say that the bulk of the ones that you have named—certainly ATF, certainly ICE, certainly DEA, certainly U.S. Customs and Border Protection—then our partners, you know, down south. In fact, there is a unified command, inter-agency, including the FBI, of all of the interested—and Coast Guard—all of the interested agencies that are focused on all of these things.

They pick up weapons. They pick up narcotics. They pick up illegal immigrations and are looking for terrorists. The ATF is the primary agency responsible for those things, but we look for all of these things in the interdiction efforts.

Mr. PASCRELL. Thank you.

Mr. Chairman. I would like to have, and I think the committee would like to have—and we have asked for it before—all of the interdictions, the number of them and—in other words, let's quantify this.

I want to know how effective we are in interdicting ourselves between the weapons that are coming from the United States into either Canada or Mexico, and I want to know all of these—and we have—if we have a unified command, and I will take the General's word for that, we should be able to tap into that command and find out how effective manned, as well as unmanned, craft are doing in helping us do that.

I think we will be astonished to learn what those results are. They are kind of unbelievable. The same thing in terms of drug traffic and with drugs across our borders back and forth.

I have never seen a real detailed report to this committee about how effective we are in doing that, and I am not convinced, Mr. Chairman, that this is a priority of our Government's, to interdict weapons that are moving from the United States into Canada or Mexico, et cetera.

These weapons are being used against not only the populations of the countries I have just mentioned, but against our Border Patrol and our agencies, ATF and DEA specifically. I believe it has gone on to a epidemic proportion, and I think that we need to know this.

Can I rely on you to get that information?

Mr. CUELLAR. Let me go ahead and say this: I think it is extremely important that we see results, because there was an investment to be put in in large numbers. We certainly have to see those results.

So, General, go ahead and get us, within 5 working days from today, that information. I will put it specifically in writing. I will have the committee clerk get that. We will work with you to make sure that we get that results. Like to get also the Coast Guard also to make sure we get that information within 5 working days. I am sure you have got that information available, and I think that would help, for the ones that do believe in this project, to make sure we sell this, that if there are individuals that do have questions, in order for them to analyze this, we need to get that information. So 5 working days from today.

At this time, Mr. Pascrell, if you are finished, I am going to go ahead and move on to—we will get you that information to be shared with the committee Members.

At this time, the gentlewoman from Texas, Ms. Jackson Lee, is recognized for 5 minutes.

Ms. JACKSON LEE. Thank the Chairman. Appreciate the committee holding this hearing with the Ranking Member.

I apologize for not being here for testimony. We were engaged in meetings regarding the on-going crisis in Haiti and maybe the potential for individuals seeking asylum here on the basis of the devastating conditions there. But I appreciate your presence and the importance of this hearing, and would like to just note some comments, and this will be the framework of my questioning.

The Arizona law that is now in the center of controversy is obviously implemented on the basis of the inaction of the Federal Government and the need for States to take charge. It is moving toward epidemic stages because the State of Texas now has a legislator who has indicated that they intend to file similar legislation. Again, it falls back to, well, the Federal Government is not enforcing the law.

These are unique equipment, or unique assets that I assume are to be used to help us enforce the law. They are particularly unique in their technology because they are unmanned and they should give us the kind of information that could calm the fears of the citizens of Arizona and/or the leadership of Arizona, and hopefully the rational leadership of Texas.

I would like to be able to be an advocate that we are, in fact, enforcing the law and that we need to further reform our laws through comprehensive immigration reform to be able to answer some of the concerns of my friend and colleague from New Jersey, and that is to protect our borders, to protect our staff in Customs and Border Protection, and to rid ourselves of the bad guys.

So I would like to hear from Major General Kostelnik and Rear Admiral Atkins if this—and I don't know. I will yield to the two of you as to some direct success stories in the utilization of the unmanned aerial systems.

Is it one could point to some success stories on the border of Arizona? Can one point to some success stories on the border of Texas? Obviously there are a number of other, New Mexico, California, that would have some ultimate impact.

But if you would, let's start with you, Major General.

Gen. KOSTELNIK. Yes. In response to that, I would offer, you know, a vignette about how the Predators have been used particularly in the Arizona border, where that is one of the major quarters



for illicit trafficking, both immigration and narcotics, with the platform.

In the old classic days of border enforcement—and I know you all have been out to the desert. It is very remote, very rugged, you know, not a lot of infrastructure, so the Border Patrol still have horse patrols out there, drive out in ATVs and all type of things. With these sensors that we have across the border, the ones I was mentioning to the Congressman, they detect vibration or motion.

So we have those arrayed all across the border on the U.S. side, and when something passes or something happens in the traditional sense, a Border Patrol agent on a horse or a car or walking had to go out and see what set that sensor off.

Unfortunately, these things are not very dependable. Wind will set them off. Animals will set them off. Sometimes it is a small group of migrants, sometimes it is a large group of migrants. Sometimes it is 50 people carrying weapons and 50-pound bags of marijuana, and it makes a big difference.

Today, and for the past 5 years, we have had Predators not in the air all the time but in the air nightly, and they are on patrol. When a sensor goes off, we don't send people out to look at the sensors anymore. The Predator is already airborne, already loitering, flies over, looks at the sensor with a FLIR, and on a typical night we might have 25 sensor activations go off in a 10-hour period.

At a standard 15 sensor activations, 12 of them might just be the wind. Two might be animals. One might be a group of migrants, and one might be a big group carrying drugs.

If it is a small group, we will launch a single Border Patrol agent on a small helicopter. They will land and they will take care of the issue. If it is 50 people carrying weapons and 50 pound bags of marijuana, which we have had on numerous occasions, we launch the Blackhawk with a Border Patrol special team.

The Blackhawk lands short, Predator stays on top. You know, everybody has on night vision goggles. We use the laser from the system. Very efficient and effective way of getting the job done.

Ms. JACKSON LEE. Yes. Let me quickly get this last question in, and then, Admiral, if you can answer.

But to the FAA quickly, and if the Chairman will indulge me an additional—I ask unanimous consent for them to be able to answer the question. This goes to the two representatives, and particularly Mr. Allen, and then if Nancy Kalinowski would like to answer. Admiral, I would like you to finish on my first question, if you would.

Many have expressed concerns about the length of time it takes the FAA to approve a certificate of authorization to operate a UAS in the National airspace. I am concerned that, if it is a certificate of authorization and it is not regulated. I, frankly, find that a problem.

I would like you to explain how FAA's COA process works, what are FAA's primary concerns when it is determining whether to approve a COA, and finally, that some reports have indicated the FAA is concerned about the potential for mid-air collision involving UASs. Would you elaborate? Would you think that there are safety challenges? What measures do you think the FAA UAS operators need to take to keep air traffic safe?

Mr. Allen.

Mr. ALLEN. Yes, ma'am. Ms. Kalinowski would be best disposed to talk to the COA process itself, so I will address your other questions, if you please.

In terms of priority basis, as was stated earlier, it is a first-come, first-serve basis except for when the mission dictates that there is an issue of National security, of National defense, of a higher priority in terms of a National disaster. Obviously then we up the priority and address those COAs immediately. We also have standing COAs to be approved at a moment's notice to address security and National catastrophe issues so that we do address those issues right away.

Ms. JACKSON LEE. What is right away—24 hours, 10 hours?

Mr. ALLEN. Actually within hours, within minutes, actually.

Ms. JACKSON LEE. Do you consider the COAs that these gentlemen work with as the National security? Is that what you are saying?

Mr. ALLEN. If you are looking at the track record, the first time they provided a COA request, I think it languished for approximately 2 years. We agree that that was not appropriate. At the time, we did not know or not advised of the priority. When we were advised of the priority, those were worked very, very quickly to provide that capability.

But in terms of, let's say, a hurricane relief, fires, we have COAs ready to go to allow them to operate the UASs expeditiously and not waiting days, not waiting weeks. That is the IAF priority.

Ms. JACKSON LEE. Ms. Kalinowski, you have the answers to the other questions?

Ms. KALINOWSKI. Yes. To apply for a certificate of authorization, Congresswoman, the proponent submits the application on-line to the FAA, and then the FAA evaluates the request. Internally, the Air Traffic Organization examines the applications for feasibility, the airspace experts review and ensure the operation will not severely impact the efficiency or the safety of the National airspace system.

The application is then sent to Mr. Allen's organization in Flight Standards to evaluate the operational concept, the airworthiness of the release of the aircraft, the pilot and the crew qualifications, and the policies and the procedures used by the operator for the particular mission that they are proposing.

From that in-depth safety evaluation, we write out special provisions, and then our internal offices confer together to address any of the remaining concerns that we might have and to harmonize some of the provisions that we have put forward in order to ensure that there is safety associated with a particular certificate of authorization.

We work closely with the proponents to understand their operational needs, their mission needs, and to balance that with the FAA's safety concerns for the operation to ensure that there is no safety impact to the National airspace system.

Ms. JACKSON LEE. I will wait for my other answers, then I will yield back, Mr. Chairman.

Mr. CUELLAR. Thank you very much.

At this time, the Chairman recognizes Mr. Carney for 5 minutes.

Mr. CARNEY. Thank you, Mr. Chairman. I apologize if this was covered while I was away.

You know, in my other capacity—I think you know that I am a Predator-Reaper mission commander, and one of the things that we have a challenge with is using all the data, or interpreting all the data gathered. You know, even in the small, short-duration mission, there is a lot of information there.

Are you set up, or setting up, to be able to exploit all that information? Do you have PIs in place that can look at the information and interpret it, you know, and do the studies that you need to do, looking at, for example, known crossing areas when they have been—you know, that sort of thing?

You know, do we have in place the infrastructure needed to exploit everything we are going to get from this resource?

Gen. KOSTELNIK. Well, 2 years ago, the answer to that would have been no. When we started operating the sensors in support of the hurricanes, clearly that was the part of our focus. Today, you know, thanks to some support we have had from the Hill, we are putting in a classic DOD PED cell into the AMOC this summer. In fact, it will be operational towards the end of September.

A PED cell is a Processing, Exploitation, and Dissemination. So it does the real-time, photo interpreted as real-time analysis, and then it does back-shop dissemination to all the National users.

For the last year since the hurricanes, actually we have been using exactly the same capability at NGA. In fact, in supporting the Deepwater Horizon event, the Guardian is feeding imagery real-time to the NGA PED in St. Louis, and they are doing the data analysis and then sending it back to the management team, you know, in the Gulf.

So, no, this was the last piece of our operation that we had to build. As we get into this next fiscal year, we are going to have that complete capability.

Then, downstream, we will be putting other distributed PED cells at other places on the country, but we already have the connectivity and the relationship not only within CBP and DHS, but also with the DOD protectorates, NORTHCOM, SOUTHCOM, JIATF SOUTH, to feed the real-time imagery direct to those infrastructures, as well.

Mr. CARNEY. So are the DOD components actually helping back up what you guys are doing now?

Gen. KOSTELNIK. Well, we are not using them on the PED cell, but we are actually buying exactly the same system that the Air Force Special Ops 11th Intel Squadron uses so we don't reinvent the wheel. We are not taking any risk. We are buying that capability right off the shelf. Clearly, their program officers are helping us with those acquisitions.

Mr. CARNEY. But your PED cells are fully manned?

Gen. KOSTELNIK. Well, that is the next stage. We have some of those capabilities in place. Clearly, we will have to grow those analysts over time.

Mr. CARNEY. Right.

Gen. KOSTELNIK. In the short-term, we do have help from DOD and other components that have that kind of expertise to help. But we will grow that over time.

Mr. CARNEY. Okay. You know, we all understand the importance of the data gleaned. You know, we miss things in the heat of the operation that become useful later when we are planning other missions and a better understanding of what is going on. So whatever you need Congress to do to authorize more PED cell development, do not hesitate to contact us.

Gen. KOSTELNIK. Since you raise that issue, I would offer—maybe you are aware of this, and perhaps not. But, you know, the Predator Reaper is pretty limited streams, you know, pretty limited field of view and so forth. Of course, the Air Force is developing, and about to deliver, Gorgon Stare—

Mr. CARNEY. Gorgon Stare, yes.

Gen. KOSTELNIK [continuing]. Which is a wide area. If we have, you know, too much data to deal with now, when that system comes on-line, it is going to be extraordinary.

In fact, I just served on the Air Force Scientific Advisory Board Somerset in UAS this year, and this is one of the biggest emergent problems with the United States. They are generating so much information, just the ability to actually get the real data from the information is the problem.

That is even a investment that is harder to appreciate. You can see an airplane on the ramp. You can't see, you know, a digital analyst behind, you know, working these kind of things, but fundamentally important to the future, a real problem.

Mr. CARNEY. Absolutely.

Thank you. Thank you, Mr. Chairman. I appreciate the hospitality you have shown me in letting me sit in on your committee. Thank you.

Mr. CUELLAR. Mr. Chairman, it is always a pleasure.

Members, I think we are pretty much done. Want to thank—

Ms. JACKSON LEE. I know the Chairman's time is moving. Could the admiral just—I cut him off when I asked whether there was any impact on the—

Mr. CUELLAR. One minute to answer that question.

Ms. JACKSON LEE. Thank you.

Adm. ATKINS. Just very brief, ma'am, we don't fly any UASs, so I defer to the general's answers.

Ms. JACKSON LEE. Are you not—well, they are not flown. They are unmanned. Do you not use any?

Adm. ATKINS. Not yet, ma'am. We are in the exploration phase. We are looking to get into the game.

Ms. JACKSON LEE. All right. I know you don't. I understand your mission. But you are here, and so the question is whether you would be using any unmanned.

I would just conclude, Mr. Chairman, by saying that I have a level of discomfort on the process of certification, and I have level of discomfort of the effectiveness of them. I think the major general did a very good job, but he spent a lot of time saying there was 99 percent throwaways, and we got one or two, and when we got them, then we swoop down and get them.

I don't know whether or not—well, my question then is I would like a detailed—and I think it was Mr. Pascrell's comment—response as to what are the success stories and whether or not there is a direct coordination that works between major general's team

and FAA so that it is immediately assessed that the National security issue and all of the talk that was done about process, it is moved quickly and confirmed to be utilized. I would hope that we can get those answers as quickly as possible.

I yield back to the distinguished Chairman.

Mr. CUELLAR. Right. Thank you very much, Ms. Jackson Lee.

I would ask the FAA, Ms. Kalinowski, if you all could go visit and spend some time with the Chairwoman on this particular issue. I think that would be good. I know that I have spoken to the administrator several times on this issue, and tell him I appreciate the work that he is doing. But if it is okay with you, Ms. Jackson Lee, I would ask you to spend some time.

But General, I think you are understanding—getting a feeling from some Members, they want to see the results, including myself. If you would get that to us, and Ms. Lee, we are going to prepare a letter to give you the exact information. We will get it out today, because I do want to get it 5 working days from today so he can get it back to the committee.

So we will put a letter with your input, get it over to our clerk.

Ms. JACKSON LEE. Thank you, Mr. Chairman.

Mr. CUELLAR. All right. Well, at this time, I want to thank all the witnesses for being here, for testifying, and we thank you for the information you have provided, and of course the Members. Members might have additional questions, as you just saw, so please provide that over to us.

Hearing no further business, the subcommittee stands adjourned. Thank you. Good day.

[Whereupon, at 12:07 p.m., the subcommittee was adjourned.]



## APPENDIX

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QUESTIONS FROM CHAIRMAN BENNIE G. THOMPSON OF MISSISSIPPI FOR MICHAEL C. KOSTELNIK

*Question 1a.* In 2004, CBP tested the Hunter and Hermes 450, two medium altitude-medium endurance UASs, as part of its Arizona Border Control (ABC) Initiative. CBP reported success with both of these UASs, but the following year purchased the Predator UAS, and has continued to do so as it has acquired additional UASs in recent years.

Did CBP have success with intermediate-sized UASs?

Answer. No. CBP's experience with intermediate-sized UASs was limited to the 2004 proof-of-concept demonstration using the Hermes and Hunter unmanned aircraft in the restricted airspace of the Libby Army Airfield. These platforms were chosen due to their availability, but were sensor limited (Electro Optical Infra-Red (EOIR) capable only). They were used solely to evaluate the possible effectiveness of an unmanned aircraft in a law enforcement role. The demonstration proved UASs merited further examination for use by DHS, but would require significant analysis by CBP end-users to assess what type of UAS and sensor configuration would be most effective for border security missions.

Although adequate for the purpose of the proof of concept demonstration, intermediate-sized UASs failed to meet CBP's operational requirements for endurance, performance, sensor capability, and flight in the National Airspace.

*Question 1b.* If so, why does CBP continue to purchase larger, more costly Predator UASs?

Answer. As stated, intermediate-sized UASs did not meet CBP operational requirements, and were only used as a proof of concept platform.

The Office of Border Patrol, in conjunction with CBP's Technology Solutions Program Office, developed operational requirements for UAS employment that led to the development of a number of key performance parameters (KPPs). These KPPs could not be satisfied by intermediate-sized unmanned aircraft.

*Question 1c.* Has CBP conducted an analysis that shows the Predator is the best tool for the border security mission? If so, please share that analysis with the committee.

Answer. The analysis that led to the selection of the Predator B was in conjunction with the DHS Source Selection Team technical evaluation and source selection of July–August 2005. With the exception of the General Atomics Predator B, all of the aircraft examined by the source selection team failed to meet CBP's technical specifications for payload carrying capacity and capabilities; take-off performance with the required payloads; requirements for remotely-piloted operations; time on station; and a number of other requirements.

*Question 2a.* CBP currently owns and operates six UAS, but only one is based on the northern border (at the Grand Forks Air Force Base in North Dakota).

What is CBP's justification for its current UAS resource deployment?

Answer. It is correct that CBP currently owns and operates 6 UASs, but actually two are located at Grand Forks Air Force Base in North Dakota.

CBP's UAS resource deployment is based on several factors including threat assessment and mission sets. In addition, all UAS operations in the National Airspace System (NAS) must be approved and authorized by the FAA to determine that they meet the appropriate level of safety and air space management requirements. Accordingly, FAA regulations currently limit where and when CBP can operate the UAS.

*Question 2b.* How does CBP prioritize which sectors to devote UAS resources to?

Answer. Prioritizing of UAS assets is accomplished by ensuring that all mission sets are reviewed and analyzed against threat assessments from multiple intelligence sources, in conjunction with the requesting customer (Office of Border Patrol, ICE, FBI, DEA, FEMA etc.) we are currently supporting.

These mission sets consist of:

*Response to National Catastrophic Events.*—Chemical, biological, and nuclear attack, earthquakes, hurricanes, flooding, and mass migration.

*Border Security.*—Response to border violence, people smuggling, and drug trafficking, National special security events; support to other Federal, State, local, and Tribal authorities; cooperative operations with Mexico and Canada (extension of existing agreements and building on past operations, i.e., HALCON).

*Maritime Security.*—Persistent, wide-area surveillance of open ocean/source transit zones.

*Forward Operating Locations.*—The UAS Program is postured to rapidly deploy throughout the western hemisphere to provide humanitarian and homeland security support. Capability exists to deploy entire systems to Central and South America, to support joint missions with DEA and cooperative countries, and to leverage foreign basing agreements already in place with the USCG.

QUESTIONS FROM CHAIRMAN BENNIE G. THOMPSON OF MISSISSIPPI FOR NANCY  
KALINOWSKI AND JOHN M. ALLEN

*Question 1a.* Our committee is interested in understanding the FAA's perspective regarding the challenges of operating UASs in the National Air Space.

What is the current volume of air traffic in the corridors where CBP has been granted permission to operate UASs?

Answer. Attached are spreadsheets that tally flight through areas of Arizona/ New Mexico/west Texas and south Texas for a sample period of May 1 through May 7, 2010. The spreadsheets are categorized by instrument flight rules (IFR) and visual flight rules (VFR) flights. The source of the data is the FAA Offload Program database.



NUMBER OF IFR FLIGHTS PER WEEK DAY

Source = FAA Offload database

Region	Corridor	SUN	MON	TUE	WED	THU	FRI	SAT	Grand Total
South Texas:									
	Brownsville East to Houston .....	1,103	1,548	1,560	1,580	1,509	1,537	1,081	9,918
	Brownsville West to Laughlin ....	441	612	665	634	636	743	456	4,187
	.....	1,544	2,160	2,225	2,214	2,145	2,280	1,537	14,105
South Texas Total .....									
AZ/NM/WTexas:									
	Yuma to Nogales .....	338	421	491	514	533	534	388	3,219
	Nogales to El Paso .....	271	275	308	312	335	326	324	2,151
	El Paso to Laughlin .....	622	736	735	767	775	713	696	5,044
	.....	1,231	1,432	1,534	1,593	1,643	1,573	1,408	10,414
AZ/NM/WTexas Total .....									

*Question 1b.* Are there certain areas of the country that pose special considerations? Please explain.

Answer. The United States National Airspace System has different classes of airspace. Each class of airspace has specific operating requirements. Currently, the only class of airspace that does not have Unmanned Aircraft Systems is Class B and, in most cases, the associated Part 91, Appendix D, Airports/Locations: Special Operating Restrictions. In addition, flight over populated areas is not allowed.

