

MARITIME DOMAIN AWARENESS

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BEFORE THE
SUBCOMMITTEE ON
COAST GUARD AND MARITIME TRANSPORTATION
OF THE
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TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES
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MARITIME DOMAIN AWARENESS

Wednesday, October 6, 2004

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON COAST
GUARD AND MARITIME TRANSPORTATION, COMMITTEE
ON TRANSPORTATION AND INFRASTRUCTURE, WASHING-
TON, D.C.

The subcommittee met, pursuant to call, at 10 a.m., in room 2167, Rayburn House Office Building, Hon. Frank A. LoBiondo [chairman of the subcommittee] presiding.

Mr. LOBIONDO. Good morning. Thank you for coming today. The subcommittee is meeting this morning to examine the efforts by the Coast Guard and other Federal agencies to expand awareness and activities occurring within the maritime domain.

Following the events of September 11, the Coast Guard has spearheaded an interagency approach to enhance maritime domain awareness. This effort includes the collection and use of information and intelligence regarding activities of the maritime transportation industry coupled with a comprehensive knowledge of the conditions occurring within the marine environment. Though the security concerns have led to increased concerns about maritime domain awareness, in fact a more complete understanding of who is moving where in the waters under United States control is also important for improved search and rescue capabilities, economic management at ports, law enforcement and environmental response planning.

Maritime domain awareness encompasses a wide range of efforts that are being carried out by Federal agencies on a daily basis. This committee has been especially involved with the Coast Guard's efforts to expand its capabilities to monitor and track vessels on the high seas as they approach shore.

The Maritime Transportation Security Act requires the Coast Guard to develop an implementation of an Automatic Identification System, AIS, that would report the location and identity of vessels to the Coast Guard and other officials in real time. This system will enhance the Coast Guard's capabilities to target and track vessels and to promote the safe navigation of those vessels as they approach port. I hope that the witnesses' testimony will include an update on the implementation of this system.

I believe that AIS is an example of the vessel-tracking systems that we must continue to develop to ensure safe navigation and to protect the security of our ports. However, we must be able to extend our tracking capabilities beyond the range of the system. I understand that the Coast Guard has got a process of developing a long-range vessel-tracking system in conjunction with the Inter-

national Maritime Organization. A long-range vessel-tracking system will further extend our maritime borders and enhance the Coast Guard's ability to monitor navigation and to protect our homeland security.

In addition to the Coast Guard's efforts, other Department of Homeland Security agencies are carrying out programs designed to enhance maritime domain awareness particularly in the area of cargo security. The committee believes that we must continue our efforts to improve the screening and tracking of maritime cargo containers. The Maritime Transportation Security Act and the Coast Guard and Maritime Transportation Act of 2004 both direct the Coast Guard to develop and implement systems to meet these objectives. I am encouraged by the Department's current efforts to improve cargo security and look forward to working with the Department in the future to continue to address emerging needs in the area of maritime homeland security.

In addition to collecting information on the vessels and maritime cargo containers, maritime domain awareness requires a comprehensive understanding of the conditions occurring within the maritime environment. The safety of the maritime transportation industry depends on the accuracy of navigational charts as real-time information on weather, tides, currents in coastal offshore waters. I understand that NOAA has begun to make the information widely available in electronic form using GPS technologies. I am hopeful that these technologies developed by NOAA can be combined with Coast Guard systems, including AIS, to produce a common platform that can be used to improve navigation and vessel security.

Enhancing our awareness of activities in the maritime domain is necessary to protect the safety and security of our maritime transportation system. America is a maritime Nation that depends on the steady flow of commerce in and out of its 361 ports. This committee will continue its efforts to ensure that the Coast Guard has necessary resources, technology and authority to both secure America's ports and maintain the safe movement of the maritime transportation industry.

I want to thank the witnesses for coming today before the committee, and we look forward to their testimony.

Mr. DeFazio, would you like to make an opening statement?

Mr. DEFazio. Thank you, Mr. Chairman. Thank you for scheduling this hearing on maritime domain awareness. This is a particularly important issue in light of 9/11 and concerns about maritime threats, but it has been of concern to the committee for a number of years in terms of vessel tracking both in the proximate waters of the United States and now hopefully a more ambitious program to track vessels and/or containers more distant.

Many of us believe that the most likely form of weapons of mass destruction attack on the United States of America will be through delivery in a shipping container, of which at this point we are only screening less than 5 percent for WMD; or in a vehicle crossing the border, a truck, of which we also screen a minority. So this could add to our defenses dramatically if we were able to better track vessels at all times, even on the high seas, and hopefully, with a further evolution, track containers.

I note that some private shipping companies, because of concerns about piracy, already are using this technology so they can constantly monitor their ships and see if for some reason the ship has stopped somewhere in or around the Straits of Malacca or someplace else because it has been hijacked or changed its course. So the technologies are out there, it is just a matter of the United States insisting, using our clout in the International Maritime Organization to demand that these steps be taken. And ultimately if these steps aren't taken by foreign carriers, then, of course, we can use our authority to prohibit their entry into the United States if they have not utilized this equipment.

With that, Mr. Chairman, I would also like unanimous consent to enter the statement of the Ranking Member Mr. Filner, who is unavoidably detained.

Mr. LOBIONDO. Without objection, so ordered.

Mr. Coble.

Mr. COBLE. Mr. Chairman, the purpose of this hearing is significantly important, as you and the gentleman from Oregon have pointed out, and I thank you for having scheduled it. Unfortunately, Mr. Chairman, I have two other meetings going on simultaneously, so I am going to be a floater today, but I appreciate you having scheduled the hearing.

Mr. LOBIONDO. I understand you are a very important, busy Member of Congress.

Mr. COBLE. Thank you for the comment.

Mr. LOBIONDO. Now I will introduce our panel. We have Mr. Jeffrey P. High, Director of Maritime Domain Awareness for the United States Coast Guard; Rear Admiral Sam DeBow, Director of NOAA Marine and Aviation Operations; and Mr. Robert Jacksta, who is the Executive Director of Border Security and Facilitation for U.S. Customs and Border Protection.

We will start with Mr. High. Thank you for joining us, and please proceed.

TESTIMONY OF JEFFREY P. HIGH, DIRECTOR OF MARITIME DOMAIN AWARENESS, UNITED STATES COAST GUARD; REAR ADMIRAL SAMUEL P. DeBOW, JR., DIRECTOR, OFFICE OF MARINE AND AVIATION OPERATIONS, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION; AND ROBERT A. JACKSTA, EXECUTIVE DIRECTOR, BORDER SECURITY AND FACILITATION, U.S. CUSTOMS AND BORDER PROTECTION, DEPARTMENT OF HOMELAND SECURITY

Mr. HIGH. Good morning, Mr. Chairman, and thank you very much, and distinguished members of the committee, for this opportunity to talk to you about MDA. I would request that my written statement be entered into the record. And with that, I will summarize that statement with three main points: First, what is MDA, and why is it important; second, how we are coordinating inter-agency efforts; third, what we have done and what we are planning to do with technology.

Maritime domain awareness is defined as the effective understanding of anything associated with the global maritime environment that could adversely affect security, safety, economy or the environment of the United States. Comprehensive understanding of

maritime domain means we must know what is normal and what is not normal so we can identify potential risks.

MDA is not a new concept for the Coast Guard. We have always been in the MDA business. Since September 11, 2001, the Coast Guard, with the help of Congress and the administration, has greatly expanded our maritime security capabilities, including MDA. About a year ago, to coordinate our efforts, the Commandant Admiral Collins established an MDA Program Integration Office and Coast Guard MDA Steering Committee. He also sought, and the Chief of Naval operation agreed, to supplement the staff with Navy officers.

Since MDA is a national-level concern, the Coast Guard and the Navy led an interagency effort to create a senior-level MDA senior steering-level group, or SSG. I am pleased to report that the SSG held its first meeting on September 24, and the SSG is cochaired by the Deputy Secretary of Homeland Security Admiral Loy and the Assistant Secretary of Defense For Homeland Defense, the Honorable Paul McHale. It also includes senior representatives from several agencies.

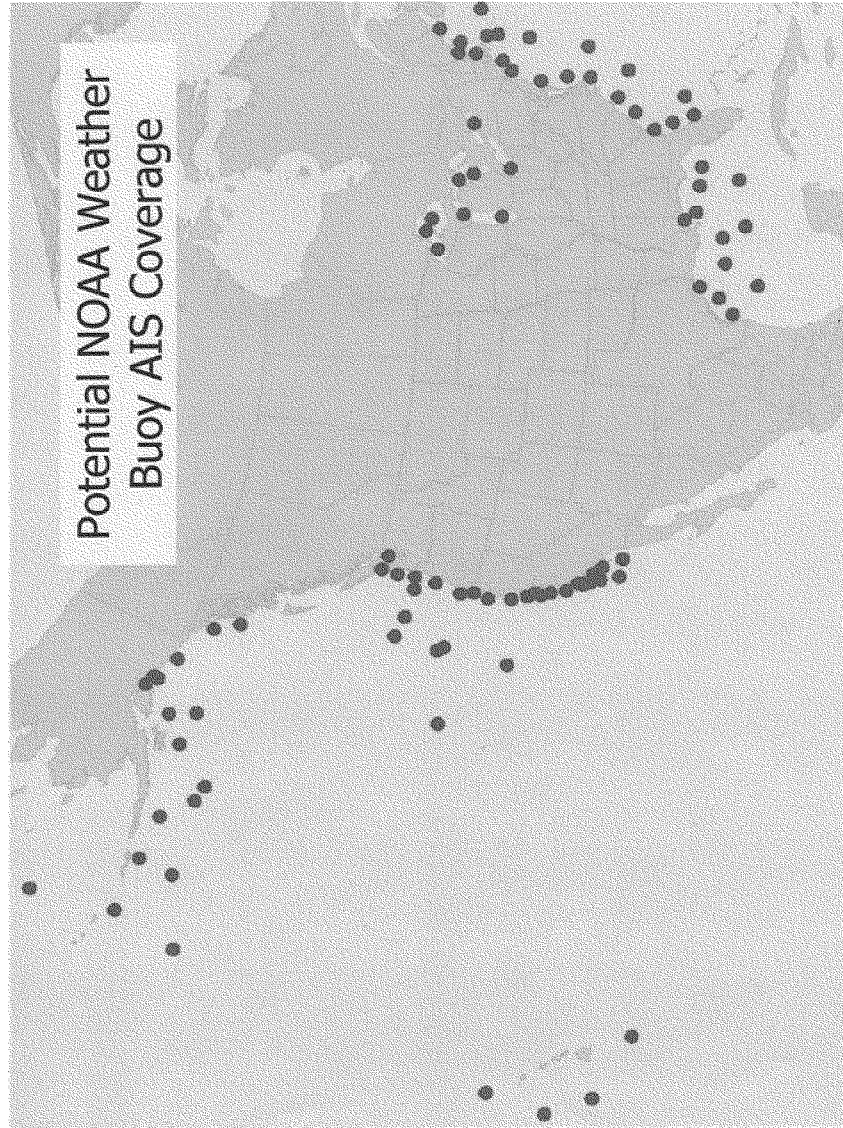
Its specific responsibilities include creating a national MDA plan, designing the enterprise architecture for shared situational awareness, and engaging other partners, State, local, industry and international.

Mr. Chairman, some of the capabilities necessary to enhance MDA, including those you asked the Coast Guard to address in this hearing, are already in place or are being built. Some will be developed and deployed in the near future. Technologies, like the ability to detect anomalies in vessel behavior, require a great deal of investment and research, while others, like Automatic Identification System, are mature and quickly exploited.

In fact, in accordance with the international accepted standards in carriage requirements, AIS equipment is currently being carried on thousands of ships worldwide. To see these ships, the Coast Guard currently has or is installing AIS receivers at our Vessel Traffic Services, or VTS, ports and selected areas of the coastline where we are pursuing an accelerated AIS. These locations are shown on the first figure before you. We have also entered into an agreement with NOAA to install AIS receivers on offshore data buoys, as shown on the second figure. Initial deployment of these receivers will begin in early 2005

[The information received follows:]





Mr. HIGH. To leverage AIS capability beyond the reach of our terrestrial base infrastructure, we recently contracted to install an AIS receiver on board a commercial satellite to receive and forward AIS from space. We expect the satellite to be launched in late 2005. All of these capabilities will be incorporated into our nationwide AIS major acquisition project. As we create that system, when possible, we will use infrastructure that we already own or are building, such as Rescue 21 towers. In addition, the Rescue 21 and Deepwater recapitalization projects will contribute to MDA by providing new capabilities, including high-capacity, integrated, interoperable communication systems with extensive coverage areas.

Looking to the future, we are working closely with our partners in DOD, DHS and elsewhere to evaluate new sensors and platforms such as long-range radar systems, UAVs and lighter-than-air airships like the one seen flying around the Capitol the other day.

It is crucial to all stakeholders, whether Federal, State or local governments or partners in private industry, to work together to achieve maritime domain awareness. If we do, our national maritime security strategies will succeed against a vast array of threats, while sustaining the free flow of commerce, maintaining our freedoms and respecting civil liberties.

Mr. Chairman and distinguished members of the committee, thank you for this opportunity to discuss our efforts to enhance MDA. We look forward to working with the Congress on our maritime security strategy and would be happy to answer any questions you may have.

Mr. LOBIONDO. Thank you, Mr. High.

Admiral DeBow.

Admiral DEBOW. Good morning, Mr. Chairman and members of the subcommittee. Thank you for the opportunity to testify on the topic of the National Oceanic and Atmospheric Administration's capabilities for supporting maritime domain awareness. I am Admiral Sam DeBow, Director of the NOAA Corps and the NOAA Marine and Aviation Operations, the office that manages NOAA's fleet of ships and aircraft. Until recently I served as a NOAA representative on the MDA implementation team and the predecessor to the current steering committee. Before I begin, I would like to request that my detailed written statement be submitted for the record.

Mr. LOBIONDO. Absolutely.

Admiral DEBOW. NOAA is not a security, defense or intelligence agency, but we have an important role with respect to homeland security and MDA. One of NOAA's primary missions is to understand and predict changes in the Earth's environment. Our suite of oceanographic, meteorological, environmental products and services promotes situational awareness about the marine environment, which is at the heart of a maritime domain awareness strategy.

MDA, as defined by Mr. High, is the effective understanding of anything associated with the global marine environment that could impact the security, safety, economy and environment of the United States. These last three factors, safety, economy and environment, are at the core of NOAA's mission.

NOAA maintains the National Spatial Reference System, which provides the baseline geographic reference for all marine activities. We define the national shoreline and produce nautical charts of the

U.S. Exclusive Economic Zone. Through a mix of private sector contractors and in-house investments in new technology, we have made progress in reducing our backlog of the most critical survey areas. We are investing in new mapping technology, such as airborne laser mapping systems and state-of-the-art multibeam sonar systems. In addition, we are presently testing the capability for an autonomous underwater vehicles to support hydrographic surveys.

NOAA's electronic navigational charts, or ENC's, are an important part of NOAA's suite of navigational products. These smart charts can be incorporated with GPS and other oceanographic data. They also serve as fully integrated base maps for use in geographic information systems, which are essential to MDA efforts. NOAA's ENC's are available for free on the Internet. To date, over 3 million ENC's have been downloaded. NOAA expects to have a complete suite of fully maintained ENC's by the end of 2008.

NOAA provides tides, water level and current data via the National Water Level Observation Network and the Physical Oceanographic Real Time System, or PORTS. Our recent innovation to PORTS are our oceanographic forecast models. These models rely on real-time data to generate accurate forecasts of water levels 36 hours into the future.

NOAA's Navigation Services enhance MDA by providing mariners with information telling them where they are and what type of physical features surround them. In addition, NOAA forecasts environmental conditions that are likely to impact marine operations.

These capabilities would form a major part of an integrated ocean observation system, but also support emergency response to manmade and natural disasters. For example, NOAA ships carrying sophisticated technology helped locate and map the wreck of TWA flight 800, EgyptAir flight 990, and the aircraft piloted by John F. Kennedy, Jr. In response to September 11, NOAA aircraft flew remote sensing missions over the World Trade Center and Pentagon to assist the recovery efforts. Our hydrographic survey vessels spent over a year conducting baseline surveys of ports and harbors to support the Navy's homeland security mine detection mission. Recently our navigation response teams rapidly located and mapped wrecks and obstructions in the Atlantic and Gulf coasts affected by the latest hurricanes. This enabled the seaports to reopen quickly without risk to mariners.

NOAA's scientific support coordinators provide advice and on-site support regarding oil and chemical hazard assessment, habitat impacts and cleanup strategies. NOAA also utilizes models to forecast spill trajectories and impacts.

Now I would like to take a moment to share examples of other capabilities presently in development with our Federal partners. As Mr. High just said, NOAA's Data Buoy Center has recently signed an agreement with the Coast Guard to install Automatic Identification System receivers on NOAA's offshore data buoys, thereby expanding the reach of MDA beyond our nearshore waters.

NOAA is presently evaluating the use of MDA fishery and vessel monitor systems for MDA purposes. Although it is presently restricted to fisheries enforcement, it offers the potential for fisher-

men to act as America's eyes and ears on the water and notify the Coast Guard of suspicious activity.

And NOAA is actively working with our Federal partners toward the development of an Integrated Ocean Observing System. One of the advantages of this system would be to coordinate interagency capabilities, enabling us to form a proactive forward-deployed maritime defense.

In summary, NOAA has a variety of products, services and observing systems that generate information about the marine environment, information that directly supports public safety, the economy and the environment. This same information also enhances maritime domain awareness. Together with our Federal partners, we will continue to work hard to leverage our technology and services for the security and benefit of the Nation.

Thank you for the opportunity to testify, and I would be happy to answer any questions.

Mr. LOBIONDO. Mr. Jacksta.

Mr. JACKSTA. Good morning, Chairman and members of the subcommittee. Thank you for this opportunity to update you on the progress U.S. Customs and Border Protection has made in further strengthening U.S. seaports and protecting our trade lanes and the global trading system. To date, trained CBP officers, technology, automation, electronic information and partnerships with the trade and foreign governments are concepts that underpin CBP's port security and antiterrorism initiatives. These concepts expand our borders and reinforce the components of our layered defense to better secure maritime trade. These layers are interdependent and are deployed simultaneously to substantially increase the likelihood that weapons of terror will be detected.

I would like to focus on how this layered defense works with regard to maritime security. Working with industry, we set out to devise a strategy to secure the primary system of global trade, the containerized shipping. Without grinding the global trade to a halt, we have been able to achieve this and we have done so. We did this by implementing four interrelated activities: the 24-hour rule, the Container Security Initiative, the Customs-Trade Partnership Against Terrorism, and the national targeting system using the primary system available to them, the Automated Targeting System.

Every one of these initiatives is designed to make our borders smarter by pushing our security well out beyond our physical borders. Moreover, these initiatives are designed to meet the twin goals of vastly increasing maritime security, but doing so without choking off the free flow of legitimate trade.

These are principles that have guided our strategy. They make use of technology, advanced information, extended border concepts and partnerships to achieve our goals. None of these initiatives existed before September 11.

In addition to the initiatives we have implemented, U.S. Customs and Border Protection has worked closely with the U.S. Coast Guard, our sister agency, and the Department of Homeland Security. To effectively secure the ports of entry, CBP must have access to electronic cargo and travel information in advance, the automation technology to manage this information, and the experienced

personnel to evaluate and apply this information. Our National Targeting Center achieves these goals through the mandate that we obtain advanced electronic information on all cargo shipped to the U.S. 24 hours before the cargo is loaded at a foreign port. All oceangoing cargo containers that are identified through CBP's Automated Targeting System as posing a potential terrorist threat are inspected, usually with large-scale imaging equipment and radiation detection devices, on arrival at our seaports.

The Container Security Initiative came into being as a direct result of September 11. The purpose of the initiative is to extend our Nation's zone of security. Essentially CBP assesses the risk of oceangoing containers headed for the U.S. before it is loaded on a vessel at a foreign port and before that vessel is bound for the U.S. With the prescreening of high-risk containers, the CSI program secures the movement of legitimate trade as well as facilitates the movement of trade. We have CBP targeting teams operating right now at 26 foreign ports.

After September 11, CBP approached the trade community to devise a joint strategy to protect the global supply chain. The Customs-Trade Partnership Against Terrorism was developed to meet this need. Some of the basic tenets are strengthening and enhancing supply chain security and engaging trade associations and international organizations in developing global security standards. Participation in C-TPAT has grown. Currently there are over 7,000 private sector partners.

Nonobtrusive inspection technology and radiation detection technology is another cornerstone in our layered strategy. Technologies deployed to our Nation's ports of entry include large-scale X-ray and gamma imaging systems as well as a variety of portable and hand-held technologies.

CBP is also moving quickly to deploy nuclear and radiological detection equipment. These large-scaled systems are deployed to seaports on both coasts and the Caribbean. CBP has also initiated the deployment of radiation portal monitors in the maritime environment.

CBP is also working with the industry to have a smart and secure container that prevents and deters tampering, alerts government and trade when tampering does occur, and is inexpensive.

Customs and Border Protection has led and implemented maritime security initiatives in partnership with the private sector and other U.S. Government agencies. As I previously mentioned, our most important partner in maritime security is the U.S. Coast Guard. CBP also participates in various multiagency working groups addressing maritime security issues, namely Operation Safe Commerce and implementation of the Maritime Transportation Security Act of 2002.

I believe CBP has demonstrated and will continue to demonstrate its leadership and commitment to maritime security efforts, and we anticipate that working together, we will further these efforts.

Thank you again, Chairman and members of the subcommittee, for this opportunity to testify. I would hope to be able to answer any questions you may have.

Mr. LOBIONDO. Thank you.

Mr. DeFazio is going to start off with the questions this morning.

Mr. DEFAZIO. Thank you, Mr. Chairman.

Mr. High, we had the Maritime Transportation Security Act, which required all commercial vessels to have transponders on board by December 31, 2004. Are we going to meet that deadline?

Mr. HIGH. All commercial vessels?

Mr. DEFAZIO. Yes.

Mr. HIGH. Well, are you referring to the Maritime Security Transportation Act of 2002, and we will have commercial vessels that are—in other words, the international carriage requirements. We will have—vessels in U.S. Government trade over 65 feet will be carrying—it will not be every commercial vessel. There are certain exclusions: passenger vessels under 150 passengers; fishing vessels, which you might consider commercial are not covered yet in our regulations.

Mr. DEFAZIO. And why is that?

Mr. HIGH. Our process—we are following the regulatory process where we identify our requirements to the field. We go through an economic cost-benefit analysis, which is very rigorous.

What we have done is a notice of proposed rulemaking and an intention to look at those other classes of vessels, and we are still going through the process. We have not yet completed that process.

Mr. DEFAZIO. Isn't part of the problem basically the change orders or the add-ons to the system themselves? The addition of e-mail capabilities has driven up the cost to about \$10,000 a unit, which is obviously a big hit for a smaller vessel. And as I understand it, we are looking at something that is a stripped-down version potentially for these vessels?

Mr. HIGH. Yes, sir. You make a good point that one of the issues is—and we expect that as the industry expands their capability to produce these machines, and the competition grows, we will see the costs going down. There are class B AIS receivers for which standards are still being developed, and the costs are coming down. And when the costs are lower, in the neighborhood of \$500 to \$1,000, then the cost-benefit works out a lot better. And we are sensitive to the industry's concerns about that, but we are balancing that with the security interest.

Mr. DEFAZIO. Representing a coastal area, I am sensitive to not imposing overly large costs on struggling fishers and others, but I am not sure that leeway exists in the law. And part of the problem is that we overdeveloped the initial system. So about this B version or whatever, are we just going to approve that for domestic use? As you point out, the internationally governed ships already have the other system, the full system.

Mr. HIGH. We are looking at that option. In fact, the Commandant shares your sense of urgency. He requires the Coast Guard to look at every class of vessels out there from recreational vessels down to zero feet, how do we go after finding all these vessels; and AIS is one answer, not all the answers. So we are looking at all the options. Class B AIS would be one of the answers.

Mr. DEFAZIO. And class B is not something that we would have to take to the IMO because these vessels aren't going to be operating internationally, so, therefore, we could just approve it domesti-

cally. We don't have to go through a lengthy negotiation and consensus process at the IMO; is that correct?

Mr. HIGH. Our preference always when we deal with international efforts—

Mr. DEFazio. This wouldn't be international, but these are vessels that are not going to be going into international waters, right?

Mr. HIGH. When they were working in our waters, they wouldn't be going into international waters, but they may be the same vessel that might take an international trip, and it is not very far across our shores from Florida to international waters. So we always look for a preference. There are standards committees that are looking at the class B right now, and we are trying to do our best to work through that process. The regulation process is not my main—

Mr. DEFazio. I have an ongoing concern about the U.S. working through a consensus-based organization, the IMO, when it goes to issues of safety and security. And I am generally fairly frustrated with the length of time it takes. I think this is something we should be able to expedite. I would hope to be able to get a less expensive device approved for people who don't need the bells and whistles and doing e-mails on their fishing boats, but being able to comply with the law.

Thank you, Mr. Chairman.

Mr. LOBIONDO. Thank you, Mr. DeFazio.

Mr. Jacksta, I am interested in hearing more about the current efforts under way to develop systems to improve tracking and screening of containers. And if you could talk a little bit more about that, and particularly what is maybe in a test program. This is one of our big concerns of how do we identify. I know a lot of people have expressed the percentage of containers we are inspecting, and that has changed dramatically in the sense that we are inspecting containers not on a random basis, but based on some specific information. The committee is interested in hearing on where the next step may be.

Mr. JACKSTA. What I would like to do is begin and discuss a little bit about what our approach is to security, and basically it begins when we have a partnership with the importers or the exporters of shipping containers, and it is important for us to work closely with them and develop security measures in place so that the supply chain of that container, when it is transported, is secure. Once we can establish that it is secure, we want to make sure there is a mechanism for us to seal that container so there is no further breach of security or concerns with the container having goods put into it.

So we are working on the technology to improve container security, and we are working with various other agencies as well as the technology side of the house to develop what we are calling the smart container. With that, what is also important to us is getting the information regarding the shipment as far back in the process as possible, when the container is being stuffed with the goods that will be shipped. We want to make sure we have an idea of what is in the container and whether it is of concern.

Partnering with the importers or the shippers allows us to get that information. When we get that information, we can utilize it,

and, working with the carriers, we can make a decision on whether an examination is needed. With that, the Container Security Initiative, where we have our teams over in 26 locations, allows us to work with the foreign government to make a decision before that container is put on a vessel, shipped to the United States or whether it needs to be examined. And the cooperation we have had with these foreign governments has allowed us to do those examinations overseas and make a decision if there is threat. That brings our borders out as far as possible before they arrive in the United States.

The 24-hour rule where we are requiring the shipper and the individuals that are going to ship goods to provide us information allows us to make a decision on whether there is a concern with the cargo. And I think what we are trying to do now, we are looking to develop a system to begin the system using commercial databases, to begin the process of tracking the container from the time that the container may be stuffed by a foreign shipper to the point when it gets on a vessel and then to the United States; what is happening with that container; is there anything that is going to be added to container by other shippers; is there anything that might be of concern, we want to know about that, and we are in the preliminary stages of trying to develop a system to do that. It needs partnership with the industry, and we are currently having those discussions. And I think that will help enhance the security and an understanding of where that container is in the process.

Mr. LOBIONDO. We heard some of the discussions about devices that would be either put on a container or part of a container that, in essence, would be able to determine any biological, chemical, radiological components that aren't supposed to be there, if, in fact, the container is open, when it is opened, GPS system hooked up to it. Is anything like that can tested at this point?

Mr. JACKSTA. Yes, sir. We are currently testing with specific importers and shipping lines technology which we are calling a smart seal, a seal that allows us to determine electronically whether the container has been opened or doors have been opened, has there been a breach of security. And that technology is new. There are lot of efforts to develop a system that we can count on, so when there is a breach of security and we need to look at it, that we know there has actually been a breach of security.

Currently, we are testing technology not only to tell us whether the container has—the doors have been opened, but also we are looking at different types of technology to determine if there is any type of radiological material in the container. I must indicate that the technology is developing right now, and it will be a while before we are able to have technology that will probably determine whether biological or chemical devices are in that container. But the CBP is working with DHS, the SNT and other organizations to look at this. So we are testing today.

Mr. LOBIONDO. Do you have any guesstimate of when we might expect to hear something back concerning how this is going? Are we looking at 6 months, a year? What is your guess?

Mr. JACKSTA. I think there are a couple of things going on that would help us make a decision on some type of technology. I think that we were—we are working with the Operation Safe Commerce

and the effort that we put grants out to various companies to take a look at the seals and the different types of smart containers that might be out there; the issue of us currently testing. And we are going to be continuing our testing and expanding it during the next couple of months.

I would be willing to say within another 6 months, we will have a preliminary review of the security devices we put out there and whether they are something we could pursue on a large scale, and at the same time ensuring security, but at the same time not making it so expensive that each seal would be too expensive to put on a container.

Mr. LOBIONDO. At the subcommittee hearing that we had in August, August 25, on the 9/11 Commission report, there was testimony regarding a new program being put into place at the port of Hong Kong to screen and photograph each cargo container that entered the port by road or by rail. Are you involved at all, your agency, with assessing this program in Hong Kong?

Mr. JACKSTA. I am not familiar with it, but I will get back to you. This is the first time I am hearing of it.

Mr. LOBIONDO. Are you aware of any technologies that are being utilized in ports outside of the U.S. that are holding some promise in this security area that you are paying attention to?

Mr. JACKSTA. Yes. I think we are continuing to work with the industry, and there are a number of tests; companies are trying to test different technologies and making sure that the container is secure. And we are constantly trying to evaluate every type of system out there. And yes, we are in consultation through our international affairs with various governments and various partnerships with the industry to find out what exactly can be utilized. We are working very closely with the World Shipping Council also to get feedback on anything that may be going on out there.

Mr. LOBIONDO. I have some more, but I'll turn it over to you. Mr. DeFazio.

Mr. DEFAZIO. Thank you, Mr. Chairman.

Mr. Jacksta, just to bring me up to speed on this C-TPAT program, the certification, what percentage of the containers coming into the country are coming in under that program?

Mr. JACKSTA. Basically, the exact number would be difficult.

Mr. DEFAZIO. You don't have to be exact, just a ballpark.

Mr. JACKSTA. Basically 98 percent of the ocean carriers that carry containers are C-TPAT members, and that means that can either be an importer or a vessel operator. C-TPAT agreement and partnership also works with the actual port authorities. So most of the containers that are coming into the United States in the seaport environment have a C-TPAT involvement in some shape.

Mr. DEFAZIO. But not necessarily beginning to end, right? I mean, this stuff came out of the plant, it was loaded into the container, and that manufacturer certified the container was sealed and monitored. And isn't there another issue of less than a container load? Isn't that a big problem for us? If you certify—a manufacturer or an agent—but they are taking the stuff they are putting into the containers from multiple sources. Isn't that a problem?

Mr. JACKSTA. That is a concern we continue to evaluate. The fact that the container might have mixed importers or mixed shipments

in it does not prevent us from examining it. We would use our Automated Targeting Systems to evaluate the shipper who put the goods into the container. So there is a mechanism that we are aware of what is in that container, whether it is being—if additional shipments are put into that container, we are aware of that through the Automated Targeting System.

Mr. DEFAZIO. How comprehensive is overseas scrutiny of these people who become certified under C-TPAT? I mean, in the U.S., we have this thing we use in aviation. Anybody walked in twice and shown an ID, and we don't know anything about them. Have we done background checks on the principals of all of these companies and worked with intelligence services overseas to assess whether they have any data regarding these companies? The maritime industry is pretty opaque, and Osama bin Laden could own ships, and we wouldn't know it the way the maritime registries work.

Mr. JACKSTA. The beginning process to become a C-TPAT member, the shipping line has to submit to CBP a detailed security plan—

Mr. DEFAZIO. What is that?

Mr. JACKSTA. Customs-Trade Partnership Against Terrorism. The member must submit to CBP a detailed plan how they are going to enhance their security, and that includes a list of people working for their company. It includes security measures they put at their facilities to ensure that the areas cannot be violated or in any way compromised. We also evaluate that security plan to make sure there is consistent uniformity with how they handle cargo and the various touch points they may have. We evaluate that, that initial application. If the company meets our security needs, we basically tell them that they are now a C-TPAT member.

With that, we have also established a program where we are now going out and travelling around the world to the various locations with CBP officers to validate that what they told us is actually true. So we do have a validation program to make sure that when you become a C-TPAT member, that there is a mechanism in place that we are going to go out there and verify that you are complying with what you told us. So we now have close to 40 members that are now travelling around the world reaching out to the importers, reaching out to the various port authorities, the ocean liners, and having discussions with their security personnel on the security measures they have put in place.

Mr. DEFAZIO. Sounds like a big job for 40 people. Has anyone ever been denied certification?

Mr. JACKSTA. Yes, sir.

Mr. DEFAZIO. Has anyone ever had their certification revoked?

Mr. JACKSTA. Yes, sir. We do that on a regular basis.

Mr. DEFAZIO. In addition to having these 40 people, we are also working through our intelligence services and diplomats. We are utilizing everything we can bring to bear on this in terms of different sources, not just a paper verification from the companies or shippers themselves?

Mr. JACKSTA. Yes, sir. One of the things I failed to mention, when we do get that application, we initially review it. We not only review it to make sure the company has security measures in

place, but it is reviewed by our Intelligence Community to determine whether there is anything about this company that would raise concerns from CBP's perspective on whether we would question there is proper security in place and whether proper people are in that company.

Mr. DEFAZIO. Thank you, Mr. Chairman.

Mr. LOBIONDO. Thank you, Mr. DeFazio. Sort of across-the-board question, Admiral. You mentioned that your offshore buoys are going to be utilized for collection of AIS data. Are you all feeling good about the level of cooperation and coordination with the Maritime Domain Awareness Program, and could you suggest any areas that we need to be paying attention to through the committee to strengthen this between the different agencies involved?

And, Mr. High, do you want to start off.

Mr. HIGH. Thank you, Mr. Chairman.

Actually, I think the interagency cooperation is a really good news story here. We have been looking at maritime domain awareness in a very broad light. If you look at our definition, it talks about the effective understanding associated with the maritime environment, safety security environment. It is bigger than security and includes all the missions that my colleagues have been talking about. In fact, my colleagues were at the first meeting of our senior steering group when we got all the agencies together.

So you mentioned our AIS on the buoys. This is a great partnership we have with NOAA. There are benefits to NOAA to find out what traffic is out and about. There is opportunities to share the information that they have on weather, perhaps across an AIS signal. But at the same time, they have a natural picket fence, as you can see from your drawing about where those buoys are, and they give us a place to put our receivers. We can see ships coming in.

So I think the cooperation is excellent amongst the various agencies, and I could go on and let you know our senior steering group, which now has stood up, has established seven working groups that are all chaired by different agencies that have members from various agencies, and looking at things like a common operational picture, and looking at things like technology and how we share technology. They are looking at intelligence systems, so that all of these are aimed at trying to share across our Federal agencies.

Mr. LOBIONDO. In your opinion, are we being successful in avoiding duplication of effort as we proceed with all this?

Mr. HIGH. We are beginning to get there. I think what we are finding—and our first step will be to do the beginnings of a gap analysis to look at what is the current state to see where there might be some duplications. We understand if we pool our talents and our technologies, we will find out who is doing something that can share with others.

A good example of this is our drug process in the Caribbean, the DOD-Coast Guard interagency efforts. We share information. This is the kind of thing we are trying to get to with all of the other missions we have got going.

Admiral DEBOW. As Mr. High said, we have participated in this senior steering group, and we have members from NOAA on the various working groups, as he said, technology, common operating picture. In addition to the satellite and in addition to the weather

buoys, we have the NOAA satellite search and rescue capability, an integrated security alerting system mandated by the International Maritime Organization. This involves discrete transmitters placed onboard ships and can alert authorities of a hijacking or other terror incidents at sea.

Mr. LOBIONDO. That is operational now?

Admiral DEBOW. Mandated, and it is being worked on right now.

Mr. LOBIONDO. When would we expect it, an operational date that we would say is across the board?

Admiral DEBOW. I have to get back with you on that. I don't have that information.

And as Mr. High said, we, working in all the working groups and working toward a common working theme, our technology supports the common operational picture. Our ENC's can be used as a base layer which would be coordinated, and everyone can use that information for seeing how the operation works.

Mr. JACKSTA. We have been involved with the Maritime Domain Awareness Group. We are part of the committee there. We have various people assigned to each one of the subcommittees and making sure that CBP issues are addressed and providing support where needed to ensure we have a comprehensive plan. And I think it is important for us to be involved in that. Whether it is the intelligence side of the house, the technology, targeting systems, we feel working together, we can have the best plan possible to provide security. And I think this is a real positive step in the right direction to make that happen.

Mr. LOBIONDO. Well, it sounds if we are certainly in the right direction. We have sort of a lot of blank spaces that are going to be filled in within the next couple of months. We will certainly look, from a committee standpoint, to do some follow-up with you.

I am very anxious in a couple of areas, how coordination is going, how else we can pull together resources to be more effective. The container situation continues to be one that we all want to pay a great deal of attention to. We want to wait for good technology, but there will always be something that will be around the corner that will be better. At some point we will look at implementation that will give us a much better handle than we have now.

The coordination, the one last area I want to ask about, the coordination of intelligence in helping to identify how we are picking what we are going to be checking out, are you satisfied with how that is going and the changes since September 11?

Mr. JACKSTA. Yes, sir. I think that what should be noted is that our National Targeting Center is where we have the best people that we have in targeting containers and targeting shipments for examination. We have representations from various agencies as well as from the Department. We have Coast Guard. We have TSA. We have representatives from FBI. We have people from the Department of Energy. We work together, sitting down on a daily basis, determining what types of shipments should be looked at, and that is extremely important to us. And we have very close relationships with the Intel Community so that any type of intelligence can be quickly inputted into our system so that once we are aware of something, we can make sure that we stop that shipment from getting on board the vessel through our 24-hour rule.

So I think there has been a lot of good work done. There still needs to be more. We constantly have to be able to evaluate our targeting systems to make sure that they are responsive to any type of new threats or new type of concerns. So we have a lot of work to do, but I think we are making progress, and I think we will continue, and I think the maritime domain awareness is only going to help it.

Mr. LOBIONDO. Mr. High.

Mr. HIGH. I would like to add to that. The intelligence is really a centerpiece of this maritime domain awareness. The Coast Guard has invested in intelligence fusion centers, and we have field information, security-sensitive teams that look at intelligence. We have worked very closely with the Navy out at Suitland. We have—this is an unclassified hearing, so I won't cite an example, but I can tell you of an example of some groundbreaking intelligence relationships we are building and breakthroughs in the way we are looking at intelligence and sharing intelligence across the agencies.

One of the committees that we have in our senior steering group is Intelligence, and they began their work even before they were established. So there is a lot of good news on the intelligence front. I think the sharing is very, very significant.

Mr. LOBIONDO. OK. I want to thank the panel for joining us today. We will be looking to do follow-up. And thank you for the good work you are doing.

Since there is a lot going on this morning, if there are any committee members who want to submit questions in writing, we will give them that opportunity and be back to you.

The Committee stands adjourned.

[Whereupon, at 10:50 a.m., the subcommittee was adjourned.]

**TESTIMONY OF REAR ADMIRAL SAMUEL P. DeBOW, Jr.
DIRECTOR OF NOAA COMMISSIONED OFFICER CORPS
AND DIRECTOR OF THE OFFICE OF MARINE AND AVIATION OPERATIONS
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
DEPARTMENT OF COMMERCE
BEFORE THE
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION
U.S. HOUSE of REPRESENTATIVES**

OCTOBER 6, 2004

Good morning, Mr. Chairman and distinguished Members of the Subcommittee. As a representative of the National Oceanic and Atmospheric Administration (NOAA), I thank you for the opportunity to appear before you today to discuss Maritime Domain Awareness (MDA) and NOAA's contributions to homeland security within U.S. maritime boundaries. I have spent most of my career in NOAA's hydrographic survey program as a NOAA Commissioned Officer. Most recently, I was appointed Director of the NOAA Commissioned Officer Corps and Director of the Office of Marine and Aviation Operations, and participated as the NOAA representative to the interagency MDA Implementation Team.

In particular I will update you on the status of NOAA's navigation products and services as they relate to MDA, and on how NOAA's response planning capabilities can minimize damage from natural or man-made incidents on our waterways. I will also discuss more broadly NOAA partnerships with the Department of Homeland Security – specifically with the United States Coast Guard, and the Department of Defense to ensure the safety and security of the Nation's maritime areas.

NOAA's Mission

NOAA's responsibilities for the environment, safety, and commerce of this nation span the oceans, coasts and atmosphere. We provide weather, water, and climate services, manage and protect fisheries and sensitive marine ecosystems, conduct atmospheric, climate, and ecosystems research, promote efficient and environmentally safe commerce and transportation, provide emergency response, and offer vital information in support of homeland security. The work we do touches the life of every person in this country every day. Capabilities that are part of NOAA's standard daily operations often are vital during times of emergency. NOAA has a wide range of resources that can be used to prepare for and respond to accidents, disasters or terrorist incident.

Ports and Maritime Security

A central part of NOAA's contribution to Homeland Security involves port and maritime security. We recognize that U.S. ports are considered vulnerable choke points, and the 95,000 miles of U.S. shoreline are a difficult border to protect. But at the same time, U.S. seaports are gateways to our largest cities and industries. Commercial shipping carries more than 95 percent by volume of the U.S. overseas trade so critical to our economic health on the 3.4 million square nautical miles of ocean and coastal waters under U.S. jurisdiction.

It is in this context that NOAA supports the Coast Guard's Maritime Strategy to uphold maritime security while preserving our fundamental liberties and economic wellbeing. NOAA provides information to decision-makers – including first responders – to use in developing Maritime Domain Awareness. Our primary objectives are to protect lives, property and the environment from hazardous incidents and disasters, whether natural or man-made, and to effectively maintain the Marine Transportation System (MTS) information infrastructure required for safe maritime commerce and U.S. force deployment. We forecast events such as hurricanes and tornadoes; provide the tools necessary to navigate safely in U.S. waters; respond to hazardous material spills and accidents in the marine environment; and offer training and technology to communities to prevent and mitigate the effects of hazards. To accomplish these aims, NOAA relies on its extensive network of platforms and observing systems. It is with this network of data resources and our geospatial expertise that NOAA can provide the basic tools needed by partners such as the Coast Guard and Defense Department in order to conduct MDA activities.

Mapping and Charting

NOAA is responsible for charting the U.S. Exclusive Economic Zone (EEZ) and defining the National Shoreline in support of maritime commerce. The Coast Guard and U.S. Navy have already called upon NOAA's expertise in both areas to help with disaster response and Homeland Security requirements. Immediately after the September 11th attacks, NOAA directly supported search and recovery efforts at the World Trade Center (WTC) and Pentagon disaster sites with its aerial mapping and remote sensing capabilities. Flying a Light Detection and Ranging (LIDAR) system to profile terrain elevations, NOAA produced images at 15 centimeter accuracy to establish an accurate spatial reference frame from which responders could perform effective recovery. The LIDAR data were also used to monitor structural movement of damaged buildings in the area of the WTC disaster and to calculate the volume of rubble. Just last month we helped to respond to Hurricane Ivan by taking aerial images of the post-hurricane shoreline from Gulfport, Mississippi, to Fort Walton Beach, Florida. These images will be compared to pre-hurricane surveys to support damage assessment and emergency response activities for federal, state and local agencies. NOAA's shoreline mapping

activities provide an accurate delineation of the national shoreline and up-to-date characterizations of coastal and harbor areas.

On the wet side of the beach, NOAA has a long history in developing the technologies used to collect, measure and chart water depths. NOAA's hydrographic surveying program – my particular area of expertise – engages in categorical surveying of the nation's navigable waters for nautical charts and other navigation tools. These valuable charting and hydrographic services support the Coast Guard, Navy, Army Corps of Engineers and others in their efforts to strengthen MDA and port security. In October 2001, the Naval Oceanographic Office, Corps of Engineers and NOAA signed a memorandum of agreement to conduct cooperative hydrographic surveys for systematic hydrographic surveys of harbors, approaches and vessel traffic lanes critical to military deployment and commercial shipping. The goal was to establish immediate maritime domain awareness, acquire high-resolution data in navigable waterways for effective mine countermeasure operations, and update NOAA Electronic Navigational Charts (ENC). Without hesitation NOAA revised its planned survey schedule to accommodate this request to obtain baseline hydrographic data; we may periodically resurvey these areas to support highly accurate detection of changes that might threaten military or commercial ship transits.

Of the 3.4 million square nautical miles in the EEZ, NOAA has classified over 500,000 as navigationally significant due to the threat of natural and manmade hazards to marine navigation. Beginning in 1994 we identified approximately 43,000 square nautical miles – about 1.3 percent of the EEZ – as being the most “critical” to survey in terms of vessel usage and safety issues. Critical areas constitute waterways with high commercial traffic volumes, oil or hazardous material transport, compelling requests from users, and transiting vessels with low underkeel clearance. This critical subset of navigationally significant areas became known as the survey backlog; much of it is in Alaska and the Gulf of Mexico.

For the past 10 years, we have employed a balanced mix of resources between NOAA survey platforms and contract data acquisition to reduce backlogged requirements. We now contract out over 55 percent of our surveying resources, and our contractor relationships are very strong. The recently reactivated NOAA Survey Vessel FAIRWEATHER, the THOMAS JEFFERSON replacement for the 40-year old WHITING, and planned RUDE replacement will help NOAA to continue to eliminate the backlog of critical requirements still pending. NOAA also looks at technology development for more efficient ways of collecting and analyzing data, such as Autonomous Underwater Vehicles, Light Imaging Detection and Ranging, and multibeam sonar improvements.

With a plan in place to successfully address the backlog of critical requirements, NOAA must concurrently renew its focus on the Nation's other navigationally significant areas. New areas that meet the critical criteria are developing all the time; regions that were

lower priority in 1994 have since been identified by the Coast Guard, marine pilots and port authorities as potentially dangerous to safe navigation and in need of survey or re-survey. Some of the causes are naturally occurring changes such as silting, storms and earthquakes; receding glaciers that offer enticing views to eco-tourists; an increase in number and size of vessels using a waterway; and known wrecks and obstructions following weather events or accidents. NOAA works to find the appropriate balance between addressing these unanticipated requests on a quick response basis and meeting existing navigational requirements. High-accuracy navigation data is essential for safe operations and maritime domain awareness in U.S. waters for commercial mariners, recreational boaters, our federal partners, and other maritime users. These stakeholders depend on NOAA to produce new digital hydrographic data to populate the Electronic Navigational Chart and other innovative products that far exceed the paper nautical chart in capability. Addressing this need requires a continuing investment in NOAA's fleet and contract survey capabilities to maintain expertise and acquire more effective and comprehensive coverage. Maintaining core capability and expertise is a critical component of NOAA's mission to establish standards and ensure the quality of data obtained by a multitude of sources.

Electronic Navigational Charts

NOAA ENC's are an important component of NOAA's suite of navigation tools for capturing and displaying accurate hydrographic data. Built to international standards, ENC's are essentially a database of chart features and attributes that can be intelligently processed and displayed by electronic charting systems. As "smart charts," NOAA ENC's give the user much more information than can the paper- chart. They can be incorporated with GPS and other oceanographic sensor data (water levels, winds and weather) to significantly improve navigation safety and efficiency by warning the mariner of hazards to navigation and situations where the vessel's current track will take it into danger. NOAA ENC's also serve as fully integrated vector base maps for use in geographic information systems. This functionality can benefit MDA efforts; modern electronic information systems are key to maritime security, port safety and uninterrupted maritime commerce. ENC's can be used for port vulnerability and risk management assessments, the Coast Guard's Automatic Identification System (AIS) for Homeland Security MDA and vessel traffic management, emergency response planning, coastal zone management and many other purposes. The Coast Guard also relies on NOAA ENC's to navigate its vessels in areas with ENC coverage.

NOAA currently has 420 ENC's built of the nation's major ports and approaches, with a goal of matching the coverage of our 1000-chart paper suite by the end of 2008 based on the President's FY2005 request. They are available for download, free and open, on the Internet. In fact, in July 2004 the number of ENC downloads reached the three million mark. As we work to complete ENC coverage, our comprehensive suite of digital raster nautical charts with weekly electronic updates serves mariners well as an interim solution and entry point into electronic navigation. We work hard to see that this updated information is widely distributed. Fully one-third of our ***paper/digital raster***

charts were refreshed and published as new editions this year. In addition, NOAA Print-on-Demand technology allows us to update charts weekly, or even hourly if necessary, to put up-to-date nautical charts in the hands of mariners. NOAA ENC's are currently updated on a monthly basis for critical chart corrections derived from Coast Guard reports, Corps of Engineers blueprint analysis, NOAA survey data and other sources. Although it currently takes 18 months for a full NOAA hydrographic survey to move from the vessel to the chart, NOAA is working on streamlining this pipeline with processing and technology improvements. The goal is to reduce the "ping-to-chart" timeframe to three months, with critical correction updates provided weekly.

Spatial Reference

NOAA is responsible for maintaining the National Spatial Reference System (NSRS), which establishes a highly accurate, precise, and consistent nationwide geographic framework. NSRS is the unseen backbone of all surveying, mapping, and navigation activities throughout the U.S. It is the coordinate reference system that allows a ship to leave a port and confidently navigate to another port or an airplane to take off and land precisely at another airport. NOAA works with other federal, state and local agencies and private industry to establish standards that form a common base between all entities. This common base grows more and more critical with the growing use of geographical information systems and the Global Positioning System (GPS). For example, WTC recovery efforts relied on the NSRS to establish a reference system to locate all utilities and building structures in the impacted area.

Part of the NSRS is the Continuously Operating Reference Station (CORS) network -- a nationwide network of permanently operating GPS receivers to support 3-dimensional positioning. NOAA and the Coast Guard partner on maintaining CORS around the country. The NSRS and CORS network is already located at the 40 major port areas and is ready to support the operational and geospatial needs to protect U.S. ports and coastal areas. In Louisiana, NOAA used CORS for elevation surveys of major evacuation routes to demonstrate the critical need for early evacuation decisions as some of the region's major evacuation routes have been sinking steadily and are subject to rapid flooding. To improve the NSRS, NOAA is developing height measurement standards to provide a consistent method in height measurements.

Tides and Currents

Regional stakeholder listening sessions conducted by the Coast Guard, NOAA, and other federal agencies in the late 1990's revealed that Marine Transportation System stakeholders' highest priority is accurate, reliable, timely information. In combination with nautical charts, tide and current data are critical pieces of environmental information necessary for a complete picture of the frequently hazardous environment in which mariners operate. Accurate tidal information can make the difference between

a vessel grounding or making a safe transit. Knowledge of the currents helps today's ever larger vessels safely maneuver through channels and turns in our constricted harbors.

NOAA operates several ocean observing systems to provide this critical data to mariners: the National Water Level Observation Network (NWLON) of 175 long term tide and water level stations, the National Current Observation Program, and the Physical Oceanographic Real Time System (PORTS®). NOAA's traditional tide and tidal current prediction tables, along with nautical charts, must be carried on all vessels over 1600 gross tons. While the ability to predict tides and currents has been around for centuries, these astronomic-based calculations cannot factor in meteorological effects, and are often significantly different than actual conditions if weather comes into play. As a result, this information is used extensively for both MDA and port safety, particularly with the size of vessels today challenging dredged channel depths in almost every major U.S. harbor.

NOAA's cost-shared partnership program – PORTS® – addresses this need. Technological advances allow tide and current data reports in real time, as well as other types of environmental data important to mariners such as wind, air and water temperature, barometric pressure, and salinity. The PORTS® program works with local users to assess requirements within an area and determine what type of real time environmental data is needed and where to place sensors. NOAA quality controls the data on a 24/7 basis so that mariners can rely on PORTS® to avoid accidents rather than cause them. If for some reason vessels must leave port immediately, PORTS data integrated with GPS would help to calculate underkeel clearances for a vessel's transit, thereby reducing the possibility of ships running aground, blocking other vessels and channels or spilling contaminants.

There are now twelve PORTS® in existence in the United States, serving 34 seaports through which 37 percent of U.S. cargo by tonnage passes on an annual basis. The thirteenth, Columbia River, will likely come online in FY2005. A primary user, the Coast Guard works closely with NOAA on PORTS®; some PORTS® such as New York/New Jersey are operated in conjunction with the Coast Guard Vessel Traffic System center. NOAA is also working with the Coast Guard to integrate PORTS® data into its Automatic Identification System; to date this has been accomplished in the Great Lakes.

A recent addition to the PORTS® suite of sensors is the air gap sensor, which provides mariners with the distance between the underside of a bridge, and the water. In the last few decades, ship size has grown both above and below the waterline, and the number of bridge strikes by ship antennas and superstructures is on the rise. The air gap sensor is a specialized tool developed by NOAA to help address a major user priority.

Another powerful enhancement to PORTS® are NOAA's Oceanographic Forecast System models. These models rely on the real-time data provided by PORTS® and other systems to generate accurate forecasts of tide and current conditions 36 hours

into the future. They can also “nowcast,” or provide present conditions, at locations where observations are not available. NOAA presently operates three models (NY/NJ, Chesapeake Bay, Houston-Galveston) with several more under development. The models help mariners plan vessel transits to take advantage of favorable tides and currents, or perhaps more importantly, avoid unfavorable conditions. In the event of a crisis, NOAA’s forecast models would provide crucial advance data for re-routing of vessel traffic and safe evacuation planning. Marine modeling also supports trajectory predictions of the oceanic and atmospheric dispersion of hazardous materials to protect people and the environment. Besides enhancing safety, both models and PORTS® data can also significantly improve efficiency through optimal loading of cargo and scheduling.

The FY2005 President’s Request contains a \$2.7M increase to fully maintain and upgrade NWLON to real-time status as well. NWLON has long provided the nation with tidal datums (vertical reference), tide and storm surge predictions, long-term sea level rise and other products. This modernization effort will establish a baseline level of real-time tide and water level data at the top 150 U.S. seaports, as well as a solid foundation upon which PORTS® can build. The Great Lakes NWLON stations already have this capability, and the additional funding will make real-time service available from all coastal NWLON stations. It should be noted that a single NWLON station may accommodate over 20 other types of sensors in addition to water level, so this data would be provided in real-time also. NWLON, along with NOAA’s survey platforms and spatial reference networks, is a fundamental data contributor to the Integrated Ocean Observing System and larger Global Earth Observing System of Systems.

NOAA is also exploring High Frequency Radar (HFR) technology as a means to modernize currents measurement. HFR sensors mounted along the coast can monitor large geographic areas and provide comprehensive information on surface currents. NOAA presently uses Acoustic Doppler Current Profilers that are very accurate but point-based, and they measure currents through the water column with the exception of the top meter. HFR is therefore an attractive complement to Doppler Profilers. There are a number of other potential applications for HFR technology, such as vessel detection, and oil spill response. NOAA is working with academia and other federal agencies to further refine this technology; approximately 60 HFRs are already operated primarily by academia for research purposes.

Response

NOAA has a wide range of capabilities in its day-to-day operations that can be used to prepare for catastrophic events. For example, surveying and charting are daily NOAA activities mandated by Congress. But after Hurricanes Frances, Ivan and Jeanne, NOAA deployed its Navigation Response Teams (NRT) for emergency surveying to quickly reopen Atlantic and Gulf Coast ports, demonstrating the economic, safety and

MDA benefits of rapidly resurveying ports and harbors. The NRTs typically conduct hazardous obstruction surveys throughout the Atlantic Seaboard, Pacific Coast, Great Lakes and the Gulf of Mexico to update NOAA nautical charts. NOAA and the Defense Counter Terrorism Technology Support Office are presently crafting an agreement to partner in developing Underwater Domain Awareness capability for ports, harbors and inland waterways. The task is to investigate enhanced sonar technologies and capabilities to better detect, classify and/or interdict underwater threats. The NRTs will serve as research platforms to test equipment and develop new ways to effectively and efficiently survey navigable waterways.

NOAA's hydrographic vessels are occasionally called upon by Coast Guard to acquire detailed side scan and multi-beam survey images for search and recovery, as was the case with TWA 800 and the EgyptAir crash. Earlier this year, NOAA assisted a Coast Guard investigation by locating and obtaining high-resolution imagery of the Bow Mariner, an ethanol tanker that exploded and sank off the Virginia Capes. This capability is another weapon in the defense against maritime threats, as it allows ports to be re-opened quickly if nothing is discovered and helps the Coast Guard to design temporary lanes and detours based on depth data. As mentioned earlier, we can also rapidly disseminate chart updates and critical chart corrections to the mariner, and we can create and distribute temporary charts, overlays and data sets as needed by primary responders like the Coast Guard.

NOAA's Scientific Support Coordinators (SSC) sit in Coast Guard offices, working daily with their Coast Guard counterparts to plan for emergencies and develop port-specific incident response plans. These plans anticipate specific challenges to incident response and recovery, such as those faced by chemical facilities in port areas. NOAA also develops computer programs that are used for both incident-specific planning and routine training. This preparedness training is vital, because when an event occurs, first responders do not have time to fumble with cumbersome and unfamiliar tools. NOAA SSCs then go on-site during emergencies to bring all of NOAA's support resources to the table.

One of NOAA's major contributions in preparation for and in response to an emergency is the software program CAMEO (Computer-Aided Management of Emergency Operations). Jointly designed with EPA, CAMEO is widely distributed among firefighters and serves as a primary tool in preparing for and responding to chemical incidents. An updated version of CAMEO was released in March of 2004. It contains a chemical database of over 6,000 hazardous chemicals, and chemical-specific information on fire and explosive hazards, health hazards, firefighting techniques, cleanup procedures, and protective clothing. Other programs built into the software estimate the downwind dispersion of a chemical cloud based on the toxicological/physical characteristics of the released chemical, atmospheric conditions, and "footprints" from the air dispersion model. CAMEO can also display the location of facilities storing hazardous materials as well as buildings of high concern, such as hospitals and schools.

NOAA's response capabilities are forming stronger internal relationships to better prepare for emergencies and support Coast Guard on MDA issues. For example, the National Ocean Service and the National Weather Service are partnering to provide site-specific weather forecasts during oil and chemical spills. More precise weather data will improve NOAA's oil spill trajectory forecasts, increase worker safety and inform decisions on weather-dependent spill response methods. NOAA is also presently creating an Emergency Response Program to improve its overall response coordination.

It would be remiss of me not to mention the NOAA Corps, the smallest of the Nation's seven Uniformed Services, when discussing NOAA's response capabilities. Although these officers primarily have science and engineering backgrounds, they too stand ready to support the Coast Guard, Department of Defense and any other Federal agency that requires assistance in protecting the Nation's security. At the request of the DOD, NOAA has provided a summary of its capabilities, ships and aircraft that could be used in a national emergency. NOAA's Marine and Aviation Operations (NMAO) operates our diverse fleet of research and hydrographic coastal and ocean-going vessels ranging in length from 90 to 274 feet, as well as our helicopters and airplanes. NMAO abilities to assist port security efforts include assisting the Coast Guard boarding or inspection parties, supporting port/harbor security, providing sophisticated airborne chemical detection support, conducting hydrographic surveying/sea floor mapping and Geographic Information System development, conducting state-of-the-art sonar operations, and providing additional hurricane reconnaissance if U.S. Air Force assets are reassigned.

NOAA and USCG Partnership

One of NOAA's closest Federal partners in many of our activities is the U.S. Coast Guard. We work with the Coast Guard on fisheries and sanctuary enforcement, the Marine Transportation System (MTS), satellite-aided search and rescue, and hazardous material spill response in marine and coastal environments. This partnership has been a long-standing and productive one for both agencies. I thank the Coast Guard personnel for their tremendous efforts to ensure the safety of our valuable port and marine areas. Our ports and MTS are important to national security not only from the perspective of military mobility, but also as the backbone of our Nation's commerce. The Coast Guard plays a vital role in protecting this critical commercial activity, and NOAA is working hard to support the Coast Guard's security measures.

We continue to explore ways in which we can assist on MDA and port security. A newly signed agreement between the NOAA National Data Buoy Center and the Coast Guard covers the installation of maritime two-way communication and surveillance systems on NOAA data buoys to intercept and relay AIS signals to Coast Guard for vessel tracking.

This helps to expand MDA beyond nearshore waters to relay AIS information while a vessel of threat potential is far enough away from our coasts to take action. Along the same lines, NOAA's Satellite Search and Rescue now supports the International Maritime Organization's newly mandated Ship Security Alerting System (SSAS). The purpose of the SSAS is to transmit a security alert from the ship to shore to indicate to a competent authority that the security of the ship is under threat or has been compromised without raising an alarm on board ship nor alert other ships. A third area under study involves the use of the NOAA Fisheries Vessel Monitoring System (VMS) for MDA purposes. VMS is a satellite-based surveillance system with two-way communications used by NOAA Fisheries Law Enforcement to identify and track vessels throughout the US EEZ, Pacific Ocean, and Atlantic Ocean. Although VMS is currently restricted to fisheries enforcement through the Magnuson-Stevens Act, it offers the potential for fishermen to act as America's eyes and ears on the water and notify Coast Guard of suspicious activity under the "Coastal Watch" program.

Conclusion

In conclusion, NOAA provides the supporting geographic information to assist Coast Guard and other agencies responsible for preparedness and response in the maritime domain. NOAA data increases awareness of the marine environment. NOAA is committed to MDA, particularly with respect to port security and safety of life, property and the environment. In NOAA's unique role as an information provider, we will continue to work closely with our partners to ensure that the U.S. Marine Transportation System and our maritime domain are secure so that maritime commerce, the lifeblood of our economy, continues to flow through U.S. ports and harbors. This concludes my testimony, and I would be pleased to respond to any questions the Committee may have.

**THE HONORABLE BOB FILNER
RANKING DEMOCRAT
SUBCOMMITTEE ON COAST GUARD AND
MARITIME TRANSPORTATION
ON
OVERSIGHT HEARING ON
MARITIME DOMAIN AWARENESS**

October 6, 2004

Thank you Mr. Chairman for scheduling today's hearing on Maritime Domain Awareness. Knowing the activities that are occurring on our waterways and in our ports as well as what is in the cargo entering our ports is the key for securing our maritime transportation system. Taken together, this is commonly called "Maritime Domain Awareness".

On ships close to our ports it could be transponders broadcasting their location. On ships further out in our 200-mile zone it could be satellite communication systems automatically calling the Coast Guard to provide the vessel's location and heading. For containers in our ports, it could be transponders that broadcast the containers location throughout its movement in the United States.

Of course, transponders and satellite systems can be turned off if someone wants to be covert. Therefore, we need an

additional layer of defense – aircraft and cutters – to monitor our waters.

For the past 2 years, I have been pushing the Coast Guard to lease additional Helicopter Interdiction Tactical Squadron assets. I firmly believe we need more assets for the Coast Guard to successfully carry out its mission. Simply putting new engines and armor on old HH-65 aircraft won't give us any more aircraft. We have 95,000 miles of coastline – it can't possibly be patrolled like a cop walking the beat – with the number of aircraft in the Coast Guard's current inventory.

I am also concerned about the Coast Guard's plan for implementing the Automatic Identification System. The Maritime Transportation Security Act of 2002 stated that all vessels over 65 feet, all towing vessels over 26 feet, and all passenger vessels carrying more than a number of passengers for hire specified by the Secretary, had to have AIS transponders by December 31, 2004 if they were going to be operating on the navigable waters of the United States. The Coast Guard regulations only require AIS transponders if the vessels are operating in one of a handful of ports with Vessel Traffic Service systems in operation. These regulations clearly do not comport with the law. I understand that

that the Coast Guard wants to wait until a lower cost transponder is approved by the International Maritime Organization (IMO). However, the vessels we are talking about are not on international voyages – and the Coast Guard could have required them to have a low-cost transponder by the statutory deadline if the Coast Guard wanted to comply with the law.

As we saw with the Coast Guard's implementation of foreign vessel security plans, the Administration is ignoring the law Congress passed to protect our coastal communities and basing our security on a system approved by the IMO.

Mr. Chairman, I would also like to note that Chairman Cox has now released his views that the Committee on Homeland Security should be made a permanent standing committee in the House and that the homeland security jurisdiction of this Subcommittee should be stripped away and given to the new Committee. Mr. Chairman, I agree with you and Chairman Young that this would not improve our nation's security -- but could actually lead to inadequate oversight of the executive branch on these vital issues. This Subcommittee has been diligent in its work. The 9-11 Commission members recognized how this

Subcommittee has worked in a bipartisan manner to write the Maritime Transportation Security Act of 2002.

I only hope that this is not the last hearing that this Subcommittee holds on maritime security.

With that said Mr. Chairman, I look forward to hearing from today's witnesses on what is being done to improve awareness of the security related activities in our maritime transportation system.

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DEPARTMENT OF HOMELAND SECURITY

U. S. COAST GUARD

STATEMENT OF

STATEMENT OF MR. JEFFREY P. HIGH

ON THE

U.S. COAST GUARD'S MARITIME DOMAIN AWARENESS EFFORTS

BEFORE THE

SUBCOMMITTEE ON COAST GUARD & MARITIME TRANSPORTATION

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

U.S. HOUSE OF REPRESENTATIVES

OCTOBER 6, 2004

DEPARTMENT OF HOMELAND SECURITY
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U.S. HOUSE OF REPRESENTATIVES
OCTOBER 6, 2004

Good morning Mr. Chairman and distinguished Members of the Committee. I am Jeff High, Director of the Coast Guard's Maritime Domain Awareness Program Integration Office. It is a pleasure to be here today to update you on our efforts to enhance awareness in the maritime domain.

Prior to the attacks of September 11, 2001, the Coast Guard's primary focus within the maritime domain had been on safety, law enforcement, the environment, and vessel traffic management. While we recognized security as an issue in our September 1999 Report to Congress on the Marine Transportation System, most national and international efforts within the maritime domain revolved around facilitating the safe and efficient movement of waterborne commerce, the interdiction of narcotics and illegal migrants, and trade compliance. Even before September 11, 2001, we realized that the maritime domain was one of the most valuable and vulnerable components of our national security, our marine transportation system, and our economic prosperity. While many ports and waterways have critical strategic military value, the commercial perspective is equally impressive, and the challenge is significant:

- Over 95% of overseas trade enters through U.S. seaports;
- Our seaports account for 2 billion tons and \$800 billion of domestic and international freight each year;
- Approximately 9 million sea containers enter the U.S. via our seaports each year;
- 26,000 miles of commercially navigable waterways serving 361 U.S. ports;
- Seaborne shipment of approximately 3.3 billion barrels of oil each year;
- 6 million cruise ship passengers travel each year from U.S. ports;
- Ferry systems transport 180 million passengers annually;
- Waterways support 110,000 commercial fishing vessels, contributing \$111 billion to state economies;
- 78 million Americans engaged in recreational boating;
- Some 8,100 foreign vessels making 50,000 U.S. port calls each year; and
- Domestic and international trade is expected to double in next 20 years.

Certainly, a terrorist attack incident against our marine transportation system has the potential to inflict a disastrous impact on global shipping, international trade, and the world economy. Since September 11, 2001, the Coast Guard, with the help of Congress and the Administration, has greatly expanded our maritime security capabilities and activities.

The world's oceans are global thoroughfares. A cooperative international approach involving partnerships of nations, navies, coast guards, law-enforcement agencies, and commercial shipping interests is essential – with all parties collaborating to confront broadly defined threats to our common and interdependent maritime security.

We are committed to working with local, state, national and international agencies and organizations as one team engaged in one fight. Having one department, the Department of Homeland Security (DHS), responsible for homeland security has helped make America more secure today.

Before proceeding, I think it would be helpful to clarify what is meant by the term “Maritime Domain Awareness” or MDA. MDA is the effective understanding of anything associated with the global maritime environment that could adversely impact the security, safety, economy or environment of the United States.

This definition was validated during the National MDA Summit held this past May. The Summit was co-chaired by the Deputy Secretary of Homeland Security, Admiral James Loy, and Assistant Secretary of Defense for Homeland Defense, the Honorable Paul McHale, and included approximately 30 interagency leaders across the government, including the Commandant of the Coast Guard, the Chief of Naval Operations, and leaders of the intelligence community, law enforcement, and virtually all agencies with maritime interests. MDA broadly supplements the maritime safety and security requirements of the varied stakeholders.

Enhanced Maritime Domain Awareness will be attained by leveraging and building on existing and far-ranging capabilities. Many of these capabilities reside in the disciplines of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR). However, MDA will require innovative efforts in other areas. Among these new efforts will be unprecedented information sharing with at the federal, state and local levels, as well as with our international partners and the public and commercial sectors of the broadly based global maritime community.

The Role of the Coast Guard in Maritime Domain Awareness

As the lead federal agency for maritime homeland security, the Coast Guard has the primary responsibility within DHS to protect the U.S. maritime domain and our marine transportation system, and deny their use and exploitation by terrorists. The first and foremost strategy element of the Coast Guard’s *Maritime Strategy for Homeland Security* is to “Increase Maritime Domain Awareness.”

The U.S. Coast Guard also safeguards against a broad array of other maritime related threats - drug smuggling, illegal migration, international organized crime, natural resource exploitation, danger to those conducting commerce and other maritime operations, the spread of infectious diseases, and environmental degradation. Furthermore, the Coast Guard has an existing intelligence program, a command-and-control (C2) structure, and associated communications that can be built upon to improve coordination and integration of MDA capabilities.

MDA will also play a major contributing role as the Coast Guard implements many of the provisions of the Maritime Transportation Security Acts of 2002 and 2004, such as a National Transportation Security Plan; vulnerability assessments of vessels and facilities; area, vessel and facility security plans; incident response plans for vessels and facilities; and personnel background checks prior to issuing transportation security cards to individuals required to enter designated secure areas.

The Coast Guard’s leadership in coordinating national efforts to enhance MDA capability does not require the exercise of command over other agencies’ intelligence systems, surveillance and sensor capabilities, or communications as a condition for these assets to participate and contribute to MDA. Nor does this leadership role mean the Coast Guard intends to replicate these existing capabilities. Rather, its mission set, existing port and coastal resources, expertise, and unique status - a military service, a law-enforcement agency, a member of the Intelligence Community, and a regulator/facilitator

of the maritime industry - allow the Coast Guard to interact with all members of the MDA community. The Coast Guard is well qualified to lead the effort to integrate and coordinate the development of a national MDA capabilities.

MDA is the critical enabler that allows the Coast Guard and its partners to work together to achieve their common objectives against a vast array of threats confronting the United States, while sustaining the free flow of commerce and maintaining individual freedoms.

National-level Leadership

The demand for assertive and comprehensive planning, leadership and multi-agency coordination by the Coast Guard has greatly increased. Efficient and effective efforts require more formal structure and reduced ad-hoc activity. In recognition of this, the Coast Guard established a Maritime Domain Awareness Program Integration Office (PIO) with the following strategic goals:

- Lead collaborative comprehensive planning efforts ... Coast Guard, Department of Homeland Security, National, International
- Create forums and relationships to enhance understanding, provide direction, and optimize use of resources ... public and private sector stakeholders
- Transform and integrate existing and future capabilities ... sensors, platforms, information systems, command and control
- Facilitate and align efforts to collect, analyze, and disseminate timely information
- Obtain resources ... provide interim capabilities and sponsor future capabilities

In addition, the Commandant established an MDA Steering Committee (MDASC), which includes Navy liaison members, to facilitate discussion and coordination of the activities of the MDA Program Integration Office.

MDA has received high level interest and support within the Administration. The Coast Guard and Navy have been jointly tasked with enhancing MDA. We are improving our coordination with the Navy and other maritime stakeholders within the federal government. A senior-level MDA Senior Steering Group (SSG) has recently been formed to develop a coordinated approach for all MDA-related activities. The SSG is co-chaired by Deputy Secretary James Loy (DHS) and the Honorable Paul McHale (DOD) and includes senior representatives from interested maritime stakeholders. The SSG will enhance coordination of all MDA-related initiatives to achieve more effective results. Specific responsibilities include:

- Creating a National MDA Plan;
- Designing the enterprise architecture for shared situational awareness; and
- Engaging other partners (state / local / industry / international)

The SSG conducted its first meeting on September 24, 2004. The SSG established seven working groups and assigned individual member agencies to support these working groups.

The Process of Awareness

Comprehensive understanding of the maritime domain involves specific knowledge of vessels, generic port infrastructures, transshipment facilities, maritime approaches, waterways, anchorages, fishing grounds, rookeries, choke-points, shipping lanes, and transit corridors, as well as a diverse array of critical infrastructure - from offshore oil platforms in the Gulf of Mexico to the Statue of Liberty. This awareness must become increasingly comprehensive as potential threats approach the U.S. coast, ports,

and inland waterways. We must know what is “normal” and what is “not normal” throughout the marine transportation system and maritime domain – from our inland waterways and ports to the high seas – so we can best assess potential risks.

Effective MDA involves identifying threats as soon as possible and far enough away from our coastline to appropriately respond to eliminate or mitigate the risk. MDA includes the collection, analysis and dissemination of information and intelligence to facilitate operational or tactical responses. It is a dynamic system of people, technology, processes, and doctrine that feeds the operational commanders and field unit response and interdiction assets, and in turn, receives feedback from them on situational awareness.

Building a national MDA capabilities requires both a process and a system. In the most fundamental terms, the MDA process consists of receiving maritime data, information, and intelligence, both classified and unclassified; fusing, correlating, analyzing, and interpreting the collected material; and disseminating effective assessments, actionable intelligence, and relevant knowledge to appropriate federal, state, local, private, and international stakeholders in a usable format. The system required to facilitate this process is an enterprise architecture that integrates the C4ISR activities of the United States and its international partners. The system includes cooperation and information exchange with and among the public, private and commercial sectors at all levels.

The Common Operational Picture

The blending of various assessments, actionable intelligence, and our knowledge of maritime activities form a Common Operational Picture (COP). The COP is a display of critical information shared by multiple interests. The COP provides a geospatial display, with referenced overlays and data enhancements. The COP environment may include distributed data processing, data exchange, collaboration tools, and communications capabilities. It will include but is not limited to geographic information systems data, assets, activities and elements; planning data; readiness data; intelligence, reconnaissance and surveillance data; imagery; and environmental data. It will contain advanced display technologies and decision support tools including software intelligent agents with anomaly detection capabilities.

The COP will be shared by various partners within the maritime domain. A filtered view of the COP will be shared with civilian law enforcement and other government agencies that do not hold Department of Defense (DOD) clearances but do handle Sensitive But Unclassified (SBU) data. It also can be shared with allies and coalition partners at the appropriate level of security access. The COP will facilitate collaborative operational planning at every echelon: local, regional, national and international.

Enhancing our Capability

Some of the capabilities necessary to enhance MDA are already in place or are being built, including some of the systems the Chairman asked the Coast Guard to address in this hearing. Some will be developed in the near future. Necessary actions to implement MDA include web-enabling the various agencies involved; establishing open architecture systems and standards to allow rapid upgrades and integration; building common data bases to widely share information; implementing standard user interfaces to access information; and establishing web portals that will allow users to pull data from common servers.

Building MDA will require monitoring vessels, cargo, people and specified areas of interest in the global maritime environment. It will include maintaining and accessing data on vessels, facilities and infrastructure. It will require collecting, analyzing and disseminating critical information to decision makers to facilitate effective understanding of the global environment. All technologies are being explored to achieve these goals. Some technologies, like Automatic Identification System (AIS), are mature and can be quickly exploited, while others, like the ability to detect anomalies in vessel behavior, require a great deal of investment and research.

AIS, in accordance with an internationally accepted standard for equipment, is currently being carried aboard thousands of ships worldwide. The Coast Guard currently has AIS capability in the Vessel Traffic Service (VTS) ports of New York, New Orleans, Berwick Bay, Houston/Galveston, Los Angeles/ Long Beach, Prince William Sound, and Sault Ste. Marie. Equipment to provide AIS capability in San Francisco, Puget Sound, and Port Arthur is planned for installation by the end of the calendar year. There are also selected areas of the coastline, including Alaska and the Gulf of Mexico, where we are pursuing accelerated AIS deployment which will be incorporated into our Nationwide AIS major acquisition project, an initiative to achieve AIS capability throughout the U.S.

We are actively engaged in options to leverage AIS capability beyond a terrestrial-based infrastructure. We recently contracted to install an AIS receiver on board a commercial satellite to receive and forward AIS signals from space. We expect the satellite to be launched in 2005. With this capability, the Coast Guard will be able to collect and process AIS data well beyond the coast of the United States in a cost effective and timely fashion.

We have also entered into an agreement with the National Oceanic and Atmospheric Administration (NOAA) to install AIS receivers on offshore data buoys. The NOAA National Data Buoy Center's (NDBC) Marine Observations Network is a fleet of environmental monitoring buoys and coastal stations located through out the U.S. coastal and ocean zones. These operational buoys and stations can be found in major estuaries and through out the EEZ, including Alaska and Hawaii. Under a Memorandum of Agreement with the NDBC, the Coast Guard is sponsoring the augmentation of these buoys and coastal stations with AIS systems and the integration of the stations into the USCG AIS network.

AIS data received from marine vessels (identification, position, and other voyage-related data) that are within radio range of these NDBC stations will be transmitted to the NDBC AIS Data Assembly Center and processed and transmitted on the USCG and the National AIS Infrastructure. AIS systems on NDBC platforms will significantly enhance our National AIS Infrastructure and the Common Operational Picture (COP). Plans are to eventually convert all 70 buoys and selected coastal and estuarine stations. Initial deployment of AIS receivers will occur in early 2005, as these offshore buoys and stations are scheduled for regular servicing.

NOAA is actively involved with the Coast Guard in the international and national AIS standards setting activities. These national and international standards coupled with the AIS two-way communications system offers opportunities to NOAA as well. With the development of a NOAA Voluntary Observing Ship (VOS) automated data collection system, the AIS enabled NDBC buoys and coastal stations will be capable of receiving environmental measurement data from vessels that are participating in the VOS program. The data captured through AIS Data Link will be transmitted to the NDBC Data Assembly Center for quality control processing and release to the NOAA operational Data Stream. With additional modest technical development, NOAA will be able to transmit environmental information, safety and regulatory -related messages and warnings to ships within radio range of NDBC stations through the AIS Vessel Data Link.

Our communication and offshore asset recapitalization efforts are essential to the Coast Guard's ability to provide higher levels of maritime homeland security and enhanced maritime domain awareness. The Rescue 21 and Deepwater recapitalization projects will provide high capacity, integrated, interoperable communications systems that can rapidly transmit information to the COP and provide complete communications coverage. Information from Rescue 21 will help complete Deepwater's COP and will play a critical role in allowing commanders to make effective risk-based decisions when directing and coordinating homeland security and other large operations in ports, waterways, and coastal areas. With asset tracking, complete coverage and an integrated, state-of-the market communications network, the Coast Guard will be better positioned to identify and quickly respond to threats to maritime safety and security.

In the interim, we have taken action to provide more immediate capabilities to our operational commanders and interagency partners. The Coast Guard has already established systems to track vessel movements within U.S. waters through the National Vessel Movement Center and Inland River Vessel Movement Center and is working to expand these capabilities. Additional major ongoing initiatives include short and long-range vessel tracking requirements and capabilities, joint use Sector Command Centers with the Navy in Norfolk and San Diego, collocating our Sector Command Center in Charleston with the Justice Department funded Charleston Harbor Operations Center, and our Sector Command Center and Surveillance Test bed in Miami. Coast Guard Intelligence efforts to improve MDA include Intelligence Coordination Center (ICC) and Coastwatch, establishing Maritime Intelligence Fusion Centers, and Field Intelligence Support Teams that operate in our larger ports. The Coast Guard is also monitoring external initiatives, such as other agency funded grants and research and development initiatives, to ensure linkages are maintained and best practices are captured.

Vessel tracking efforts focus principally on technology, personnel, information exchange, and supporting business processes and doctrine to support the persistent surveillance of all vessels along the maritime margins of the U.S. coastline, including inland waters, as well as passenger and cargo vessels greater than 65' in length out to 2,000 nm, to assess potential threats. There is also a need for more global tracking with partnering Governments to better identify and analyze vessel behavior based on historical trends and characterization of normal shipping patterns/routes. This track history will facilitate a more comprehensive risk evaluation of Vessels of Interest (VOIs) that depart from known habits or expected behaviors, and will support critical port operations and boarding teams in carrying out their responsibilities.

Notice of Arrival (NOA) data indicate that on an average day, more than 1,000 vessels over 300 GT approach the U.S. from foreign ports carrying goods and passengers, while another 350 merchant ships are already present in our ports. An additional untold number of vessels traverse our Exclusive Economic Zone (EEZ) on coastwise trade bound for non-U.S. ports, and are not required to report their course/destination to U.S. authorities since they do not plan to arrive at a U.S. port. Overall, an estimated 5,000 commercial vessels are within 2,000 nm of the U.S. at any time.

It is much more difficult to detect, monitor and intercept targets which do not abide by existing agreements. To handle those targets we have developed and are continuing to develop and improve our capabilities to attain a persistent maritime awareness capability. The Coast Guard is pursuing a wide variety of means to track cooperative and potentially non-cooperative vessels calling on, or operating near, the United States.

We are working closely with our partners in the Department of Defense, Department of Homeland Security and elsewhere, to evaluate sensors and platforms that will enhance our ability to detect, identify and track vessels. The Coast Guard is actively engaged in identifying a system or mix of systems to provide a wide area surveillance capability. Included in this mix are long-range radar systems, unmanned aerial vehicles (UAVs), High Altitude Long Endurance (HALE) and Lighter than Air (LTA) airships. Existing capabilities within the government domain will be integrated into a final solution.

The Coast Guard is also leading efforts at the International Maritime Organization (IMO) to develop an international requirement for long range tracking to provide enhanced visibility of these vessels for flag, port and coastal states. At the same time, we are evaluating options to obtain information on vessel positions and intentions through other sources, and cooperative arrangements with the maritime industry.

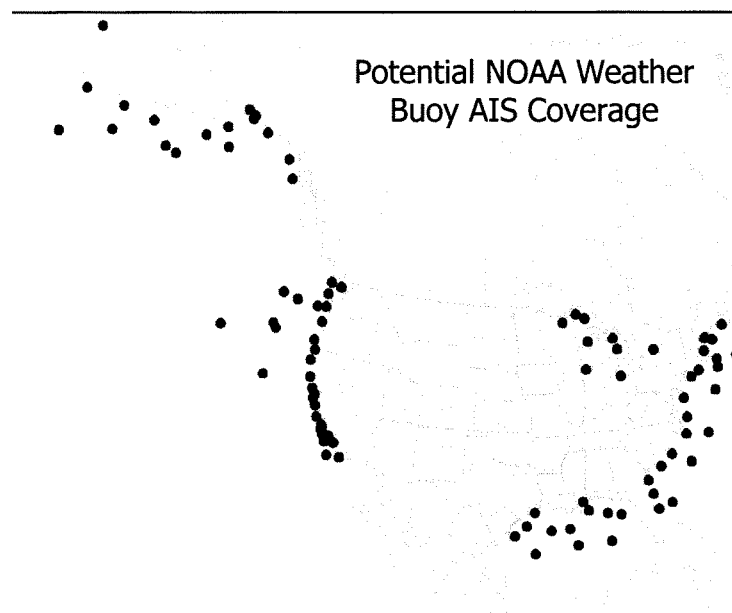
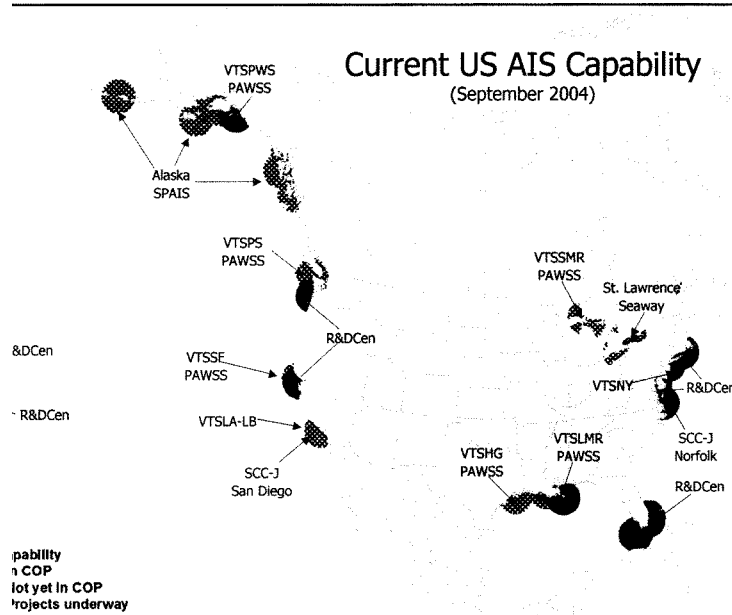
Extending our surveillance and detection capabilities will provide more time to investigate potential threats and generate an appropriate and timely response. We will continue to develop improved systems and capabilities with the intent of increasing the amount of coverage as we grow from securing specific locations of interest to areas of total coverage.

Conclusion

Enhancing MDA will require a significant investment in time, personnel, and other resources to develop and maintain systems, procedures and relationships to limit, prevent, and apprehend those who would use the world maritime environment to break the law or commit terrorism.

It is crucial for the members of the MDA community, whether federal, state, or local governments, or partners in private industry, to work together to achieve the full scope of capability that permits the effective understanding of anything in the global maritime environment that could adversely affect our security, safety, economy, or environment. MDA is the critical enabler that will allow our National strategies to succeed in their objectives of prevention, protection, response, and recovery against a vast array of threats confronting the safety and security of the United States, while sustaining the free flow of commerce and maintaining our freedoms.

Thank you for the opportunity to discuss the Coast Guard's efforts to enhance Maritime Domain Awareness. We look forward to working with Congress to create an effective, integrated, collaborative worldwide maritime intelligence network that provides persistent Maritime Domain Awareness to safeguard our Nation. I will be happy to answer any questions you may have.



**STATEMENT BY
ROBERT M. JACKSTA
EXECUTIVE DIRECTOR, BORDER SECURITY AND FACILITATION
OFFICE OF FIELD OPERATIONS
CUSTOMS AND BORDER PROTECTION**

**Hearing before the House Committee on Transportation and Infrastructure
Subcommittee on Coast Guard and Maritime Transportation**

OCTOBER 6, 2004

Good morning Chairman LoBiondo and Members of the Subcommittee. Thank you for this opportunity to update you on the progress U.S. Customs and Border Protection has made in further strengthening U.S. seaports and protecting our trade lanes and the global trading system--the very means of global trade--through revolutionary supply chain security initiatives.

Trained CBP Officers, technology, automation, electronic information and partnerships with the trade and foreign governments are concepts that underpin CBP's port security and anti-terrorism initiatives. These concepts expand our borders and reinforce the components of our layered defense to better secure maritime trade. These layers are interdependent and are deployed simultaneously, to substantially increase the likelihood that weapons of terror will be detected. Today, I would like to focus on how this layered defense works with regard to maritime security.

Working with industry, we set out to devise a strategy to secure the primary system of global trade--containerized shipping--without grinding global trade to a halt.

Starting in late 2001, U.S. Customs, now U.S. Customs and Border Protection, developed and began implementing a strategy to increase security against the terrorist threat, but one that would also actually facilitate the movement of trade.

We did this by implementing four interrelated initiatives: the 24-Hour Rule, the Container Security Initiative (CSI), the Customs-Trade Partnership Against Terrorism (C-TPAT), and the National Targeting Center, a primary user of our Automated Targeting System (ATS).

Every one of these initiatives is designed to make our borders smarter –and to extend our borders by pushing our security measures out beyond our physical borders so that our ports and our borders are not the first line of defense. Moreover, these initiatives are designed to meet the twin goals of increasing maritime security, but doing so without choking off the flow of legitimate trade.

These initiatives make use of technology, advance information, extended border concepts, and partnerships to achieve our goals.

National Targeting Center (NTC)

To effectively secure sea, land and air ports of entry, CBP must have access to electronic cargo information in advance, the automation technology to manage this information, and experienced personnel to evaluate and apply this information. Our National Targeting Center achieves these goals through the mandate that we obtain advance electronic information on all cargo shipped to the United States 24 hours *before* the cargo is loaded at foreign seaports.

The National Targeting Center has established a range of liaisons with other agencies responsible for securing U.S. borders. For example, CBP and the Coast Guard have exchanged liaison officers at the NTC and the Intelligence Coordination Center at the National Maritime Information Center to address and coordinate on issues related to vessels of interest and maritime threats. Another example involves the Food

and Drug Administration, who commenced around the clock joint targeting operations at the NTC on December 11, 2003 in support of the Bio-Terrorism Act.

Automated Targeting System (ATS)

CBP's Automated Targeting System (ATS) is a functioning and operational tool that permits the National Targeting Center to process advance information and focus CBP's inspection efforts on potentially high-risk transactions. In the cargo environment, the targeting system analyzes electronic data related to the individual shipments to profile and rank them in order of risk.

Although ATS inputs go well beyond advance manifest information, the scope and reliability of the cargo information currently received under the 24 Hour Rule is reinforced by the Trade Act Final Rule published on December 5, 2003. This Rule mandates advance electronic cargo information inbound and outbound for all modes of transportation.

All oceangoing cargo containers that are identified through CBP's ATS as posing a potential terrorist threat are inspected, usually with large-scale imaging equipment and radiation detection devices, on arrival at U.S. seaports, if not before—which takes me to the Container Security Initiative.

Container Security Initiative (CSI)

The Container Security Initiative (CSI) came into being as a direct result of the events of September 11. The purpose of this initiative is to extend our nation's zone of security. Essentially, CBP assesses the risk of oceangoing containers headed for the United States *before* it is loaded on a vessel in a foreign port and *before* that vessel is bound for our seaports. With our host nation counterparts, CSI permits a prescreening

of high-risk containers *before* they are loaded on board vessels destined to the United States. With the prescreening of high-risk containers, the CSI program secures the movement of legitimate trade as well as facilitates the movement of trade by using time prior to the landing of the container for inspectors, rather than after arrival. Thus, the normal lag time for a container awaiting loading is used to enhance both security and trade facilitation. Various countries with ports shipping the greatest volume of containers to the United States have been committed to join CSI. CBP has CSI agreements with 20 nations; and we have CBP targeting teams operational at 26 foreign ports.

Customs – Trade Partnership Against Terrorism (C-TPAT)

After September 11, CBP approached the trade community to devise a joint strategy to protect the global trading supply chain. The Customs – Trade Partnership Against Terrorism (C-TPAT) was developed to meet this need.

Some of the basic tenets of C-TPAT are:

- Strengthening and enhancing supply chain security.
- Developing a security conscious environment throughout the entire commercial process;
- And engaging trade associations and international organizations in developing global security standards.

Participation in C-TPAT has grown; currently there are over 7000 private sector partners. Today, CBP teams are in the process of verifying the information submitted by the C-TPAT participants to ensure that appropriate measures are in place to help secure the supply chains.

CBP is also working with the industry to have a smart and secure container that prevents and deters tampering, alerts government and trade when tampering does occur, and is inexpensive.

Non-Intrusive Inspection (NII) and Radiation Detection Technologies (RDT)

Non-Intrusive Inspection Technology (NII) and Radiation Detection Technology is another cornerstone in our layered strategy. Technologies deployed to our nation's sea, air, and land ports of entry include large-scale X-ray and gamma-imaging systems as well as a variety of portable and hand-held technologies. CBP is also moving quickly to deploy nuclear and radiological detection equipment, including Personal Radiation Detectors (PRD's), Radiation Portal Monitors (RPM's) and Radiation Isotope Identifier Devices (RIID's).

A portion of these large-scale systems are deployed to seaports on both coasts and the Caribbean. CBP has also initiated the deployment of Radiation Portal Monitors in the maritime environment with the ultimate goal of screening 100% of all containerized imported cargo for radiation.

This equipment, used in combination with our layered enforcement strategy, allows for CBP to screen shipments rapidly for radiological weapons of mass destruction. At the same time we are working with stakeholders to ensure that radiation screening does not significantly impact operations within a port.

Operation Safe Commerce (OSC)

Customs and Border Protection continues to be a partner in the Department's Operation Safe Commerce (OSC) program. This congressionally funded initiative provides allocation of resources to fund pilot projects to enhance maritime security

through technology and enhanced business practices. The ports of New York/Newark, Seattle/Tacoma and Los Angeles/Long Beach have been selected to participate in Operation Safe Commerce. The first phase of this program is coming to completion over the next several months. There is additional money allocated to OSC, and CBP plans to have substantial input into the project.

Conclusion

Customs and Border Protection has led and implemented maritime security initiatives in partnership with the private sector and other U.S. Government agencies. Our most important partner in maritime security is the U.S. Coast Guard. CBP participates in various multi-agency working groups addressing maritime security issues; namely, Operation Safe Commerce and implementation of the Maritime Transportation Security Act of 2002. These efforts focus on Cargo Security Measures, Maritime Domain Awareness and the development of the National Maritime Security Plan, under the direction of the Coast Guard.

Mr. Chairman, it is important we have a sound contingency plan in place in the event of a terrorist attack involving our maritime system.

One of the primary reasons for implementing the maritime security strategy I have described is to develop a system that will prevent and deter exploitation by global terrorists. Another important reason is to have a sufficient security system already in place so that, if there is a terrorist attack involving maritime trade, the Department of Homeland Security, after assessing the situation, can restart the movement of trade to the United States without a prolonged shutdown of U.S. seaports.

We now have in place an automated targeting system that, with the 24-Hour Rule, allows us to evaluate all cargo containers destined for U.S. seaports and to identify those that pose a terrorist risk. Currently, the Container Security Initiative is operational at 26 of the largest ports in terms of volume of shipments to the United States. Similarly, C-TPAT has evolved to include more than 7,000 private-sector partners, implementing security processes and procedures – which we have begun validating – back to the container's point of origin.

Given these security measures and our collaboration with the U.S. Coast Guard, and other parts of DHS, I believe that we are working toward a maritime security strategy that will allow DHS to restart the system with minimal disruption, even after a terrorist incident.

I believe CBP has demonstrated and will continue to demonstrate its leadership and commitment to maritime security efforts, and we anticipate that working together we will further these efforts.

Thank you again, Chairman LoBiondo and the Members of the Subcommittee for this opportunity to testify.

I would be happy to answer any questions you may have.

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