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Spring 2009

The **COAST GUARD** Journal of Safety  
& Security at Sea  
**PROCEEDINGS**  
of the Marine Safety & Security Council

# **INTERAGENCY SUCCESS STORIES**

**Improve mission  
execution by  
promoting  
unity of effort**



**International  
Players**



**Successful  
Strategies**



**Unified Moves**

# PROCEEDINGS

Spring 2009

Vol. 66, Number 1

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U.S. Coast Guard Office of International  
and Domestic Assessments.





# Assistant Commandant's Perspective

By RADM BRIAN M. SALERNO  
*U.S. Coast Guard Assistant Commandant for Marine Safety, Security and Stewardship*

Six years ago, the Coast Guard moved from the Department of Transportation to the Department of Homeland Security (DHS) in the largest reorganization of our federal government in more than 40 years. Building upon existing long-standing domestic and international partnerships, Coast Guard men and women around the country and across the globe have come together with our partner agencies within the department, with other national and international agencies, and with our maritime stakeholders to protect and preserve the safety and security of our vessels, oceans, ports, and waterways.

As a result of many successful agency and interagency efforts, in the last six years the Coast Guard has:

- Saved tens of thousands of lives and responded to more than 150,000 mariners in distress while working to improve national and international search and rescue response.
- Interdicted and seized millions of pounds of illegal drugs, with an estimated worth in the billions of dollars.
- Standardized and tightened port, vessel, and cargo security in the United States and worldwide.
- Led the U.S. delegation to the International Maritime Organization, where we work to improve international standards for the safety of shipping and the protection of the environment.

There is no doubt that our vessels, ports, waterways, and maritime infrastructure are safer and more secure than they were before the terrorist attacks of Sept. 11, 2001. I attribute this important accomplishment to the leadership of former Secretaries Michael Chertoff and Thomas Ridge, along with the thousands of DHS employees on the front lines who commit themselves to keeping us all safe and secure, day-in and day-out, 365 days a year.

We look forward to continuing this working relationship with new DHS Secretary Janet Napolitano. The Coast Guard is a better agency for being in DHS, and I believe DHS is a better department with the Coast Guard in it.

While these accomplishments are significant, we cannot rest on our reputation. We must build upon our close relationships within DHS and with other national and international agencies, and we must continue to look for new opportunities to work effectively with the private sector.

We operate in a world of increasing vulnerability, with more diverse hazards, and in an era of persistent conflict. Never before has this nation or our global partners relied so heavily on our oceans and waterways for our collective safety, security, and prosperity. We must continue to work with our partners to protect the environment and keep our vessels, ports, and waterways safe and secure.

We will answer that call. All threats. All hazards. Always ready.

**ADM Thad Allen**  
Commandant  
U.S. Coast Guard

**The Marine Safety  
& Security Council  
of the  
United States Coast Guard**

**RADM W. D. Baumgartner**  
Judge Advocate General  
Chairman

**RADM Brian Salerno**  
Assistant Commandant  
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and Stewardship  
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# Champion's Point of View



By CAPTAIN ANTHONY (TONY) REGALBUTO (USCG, RETIRED)  
*Chief, Office of International and Domestic Assessments*

The U.S. Coast Guard has a proud tradition of collaborating with our interagency, international, and maritime industry partners throughout our long history and service to the nation. The September 11, 2001, terrorist attacks required that the nation, and, specifically the U.S. Coast Guard, build upon these existing relationships since the new threats exceeded the capability of one agency and one government to address them properly. Since terrorism is an international problem, it requires a multi-agency, and a multi-lateral approach. As some of our senior leaders have said, it requires an “all hands” evolution.

The U.S. Coast Guard brings some unique and complementary authorities, capabilities, and competencies to the playing field when it comes to collaboration. It is at all times a military organization and a law enforcement organization, so it spans the continuum from homeland security to homeland defense. We like to call ourselves “governmentally bilingual”—we speak the language of the Department of Defense (DOD) as well as the language of the civilian agencies.

U.S. Coast Guard platforms are multi-mission capable; they can rapidly shift from one mission set to another. We use a military command and control system, and therefore we can readily accept and integrate assistance from other military services when needed, such as in a response to a national disaster or an emergency. We also serve to bridge relationships between DOD forces and non-DOD agencies with whom we work closely, such as Customs and Border Protection and Federal Emergency Management Agency. The U.S. Coast Guard also has bilateral relationships with coast guards and navies around the world.

In this issue of *Proceedings*, we will share our successes in building international partnerships, outline accomplishments on the home front, and illustrate joint training and joint operational efforts. Our wide range of authors and articles will cover organizational efforts (such as initiatives, conferences, MOUs, and seminars) and illustrate these “best laid plans” with accounts of how they play out strategically and operationally.

I would like to thank this issue's authors, many of whom took on their assignments while participating in activities and operations far from the comfort of a cubicle. I thank them for the time and enthusiasm they dedicated to sharing their experiences in order to showcase how we all collectively serve our public and maritime stakeholders. As we continue to develop our portfolio of success stories, challenged by old and new threats, we will continually learn how to build on our common interests and cooperate in some very interesting and innovative ways.





# Building on the Groundwork of International Success

by PETTY OFFICER 1ST CLASS ANASTASIA M. DEVLIN

A dark rainbow of uniforms mingles and fuses as the guests mill around the reception. The conversation, hesitant and politely formal at the beginning of the week, flows more freely after dozens of meetings and shared discussions.

Throughout the room, the blend of languages doesn't stand out so much as the international language of smiles and laughter among people with a common goal.

Pacific Ocean: Canada, Russia, Japan, China, Korea, and the United States.

## Preplanning

Forums such as these aren't easily put together. To synchronize 71 delegates, 17 agencies, six countries, five languages, and hundreds of support staff takes an amazing amount of coordination and communication.



**CAPT Moreland, center, Coast Guard liaison officer, U.S. Embassy Beijing, represents the U.S. at the North Pacific high sea driftnet destruction ceremony in Shanghai, China. On the right hand side of CAPT Moreland is the chief of China Fisheries Law Enforcement Command, Mr. Li Ming, and the chief of the East China Sea Fisheries Law Enforcement Command, Mr. Gu Daoliang. USCG photo.**

These guests are delegates of the ninth meeting of the North Pacific Coast Guard Forum (NPPCGF), which met in Seattle March 24 – 27, 2008. The forum, held semi-annually since its inception in Tokyo in 2000, fosters cooperation among the six countries bordering the North

CAPT Robert Day, deputy commander of Maintenance and Logistics Command Pacific, headquartered in Alameda, spent six months preparing for this week. Everything from clearing customs at the airport to coordinating bus contracts for transportation to providing “uniquely American” entertainment needed to be prearranged. If something were to go wrong, a command center within the hotel is staffed 24/7 to respond to the delegates' needs.

Ensuring the delegations are able to communicate effectively, even outside of the formal meetings, is the first order of business at a conference involving six countries. CAPT Day sought to meet this challenge from within, relying on Coast Guard resources.

“Luckily when we ran Coast Guard [systems], we found just a plethora of Coast Guardsmen who have very solid skills in all the languages we needed here. The foreign delegations have been very pleased with these auxiliaries, active duty, and reservists we've brought here to Seattle from all over the country, and they fit in absolutely perfectly.”

*continued on page 8*





**Mr. Li Ming, chief of China Fisheries Law Enforcement Command; CAPT Barney Moreland, Coast Guard liaison officer at the U.S. Embassy in Beijing; and Mr. Gu Daoliang, chief of East China Sea Fisheries Law Enforcement Command cut a net aboard a vessel in Shanghai during a ceremony honoring the seizure of six fishing boats that were engaged in high-seas drift net fishing. All photos by Lü Wei.**





All of this preparation serves one primary purpose—to make the delegates feel safe and comfortable so they can concentrate and do the job they came here to do: collaborate.

The ideas that pass during these meetings have the potential to change policy in any of the six countries participating. They also have the potential to create an environment to make our world safer and more peaceful.

### The Experts Meeting

This gathering in Seattle was the first of two sessions held each year. The first session, called an experts meeting, brings together the planners and technical experts from each country's participating agencies. They discuss topics related to drug trafficking, illegal immigration, maritime security, and fisheries enforcement.

These common interests among the six countries cultivate an environment where new ideas and recommendations can be developed. Those recommendations are presented to the commandants of the six countries' lead

## RESULTS

Although conceptual at first, the forum has slowly but surely generated concrete results. Beginning in 2004, the international fleet of ships began communications drills, then full-scale drills, and, finally, combined law enforcement operations. By summer of 2007, the cooperative law enforcement effort had led to the identification and apprehension of several vessels convicted of illegal, unregulated, and unreported fishing.

"Through leveraging our resources and expertise we can make these waters safer in a more complex and dangerous world," said the head of the Canadian delegation and director general of the fleet for the Canadian Coast Guard, RADM Gary Sydock. "The work we do is important, and progress is being made on all fronts at every meeting."

maritime agencies at the second of the two NPCGF gatherings, usually held in the fall.

"Our chief goal is to exchange information to improve security and safety of vessels at sea, as well as coastal nations in the region," said VADM Charles Wurster, commander of Coast Guard Pacific Area, headquartered in Alameda, Calif., and head of the U.S. Coast Guard delegation. "The NPCGF provides an opportunity to foster multi-lateral cooperation."

### Hot Topics: Combined Operations, Cooperation Agreement, Exercises, Vessels of Interest

Although the members of the NPCGF met on numerous topics, ranging from international maritime security to improved updated law enforcement techniques, according to Day, four main topics stood out.

"The first of those is combined operations, especially given the successes we've had over the past few years," said Day. He said a main point of discussion was securing assets, locations, and times for the upcoming combined operations for the late summer time period.

One of the other big pieces they worked on is an "agreement on cooperation" laying out exactly why the NPCGF exists. The document will guide the North Pacific Coast Guard Forum and what the forum focuses on for the next several years. "We didn't have an overarching document that said what we were about, and what we are going to

**The U.S. Coast Guard and its counterparts from Canada, China, Japan, Korea, and Russia met in a forum to discuss topics related to drug trafficking, maritime security, fisheries enforcement, and illegal migration as part of the North Pacific Coast Guard Forum Experts Meeting. The North Pacific Coast Guard Forum was initiated in 2000 as a venue to foster cooperation through the sharing of information among the major countries bordering the North Pacific Ocean. Photo by Petty Officer Eric J. Chandler.**





do as a group,” said Day. “This is the agreement of why we exist as an entity.”

The third main topic of discussion was multi-mission, multilateral exercises, stemming from the responses to Hurricane Katrina and the Indonesian earthquakes. The delegates from each country discussed what expertise and assets from each country could be called upon in the event of another natural or man-made disaster. The countries will begin extending the cooperation they share in responding to illegal, unreported fisheries incidents, and applying it to another level of coordination.

“We just add another element to it,” said Day, explaining the cooperative effort. “So now we’re looking beyond fisheries cooperation. Now we’re looking at oil spill response, humanitarian relief ... expertise in hurricane response. There’s a smorgasbord, there’s a menu of services that we all understand, and can draw from each other in the event that one of us experiences one of these catastrophes.”

The final hot topic of the forum was defining each country’s standard definition of the term “vessel of special interest.” These could be vessels that have polluted, violated fisheries laws, or have been suspected of illegal smuggling of narcotics or migrants. Day explained that the forum needed one definition that all the countries could agree to, so when that vessel was encountered, information could be shared.

### Collaboration

Day explained that with all the languages spoken at the forum, it was a hurdle to make sure the terminology was exactly right, especially for each country’s legal policies and information disclosure policies. Different security measures taken by each country about what information could and could not be discussed was also a challenge that had to be worked through in order to achieve the level of collaboration needed to be productive.

The material was forwarded to each of the countries’ coast guard commandants, or equivalent officers, for review, and for further discussion at the second NPCCGF meeting held in San Francisco in September 2008.

As the head of the Korean Coast Guard delegation, Inspector General Taek Kuen Chang said, “It is my hope that through the North Pacific Coast Guard Forum, all members from each nation will continue to form a strong bond and a brighter future.”

That hope is shared, not only by the other delegations, but by the nations they serve.



**A view of the command center within the North Pacific Coast Guard Forum (NPCGF), which was initiated in 2000 as a venue to foster multilateral cooperation through the sharing of information on matters related to combined operations, exchange of information, illegal drug trafficking, maritime security, fisheries enforcement, and illegal migration. The current membership includes agencies from Canada, China, Japan, Korea, Russia, and the United States. U.S. Coast Guard photo by Petty Officer 2nd Class Zac Crawford.**

### About the author:

*Petty Officer Devlin works in San Diego, Calif., as the supervisor of the Eleventh District Public Affairs Detachment. A member of the Coast Guard since 1999, she has also served in Gloucester, Mass.; Boston; and Miami.*





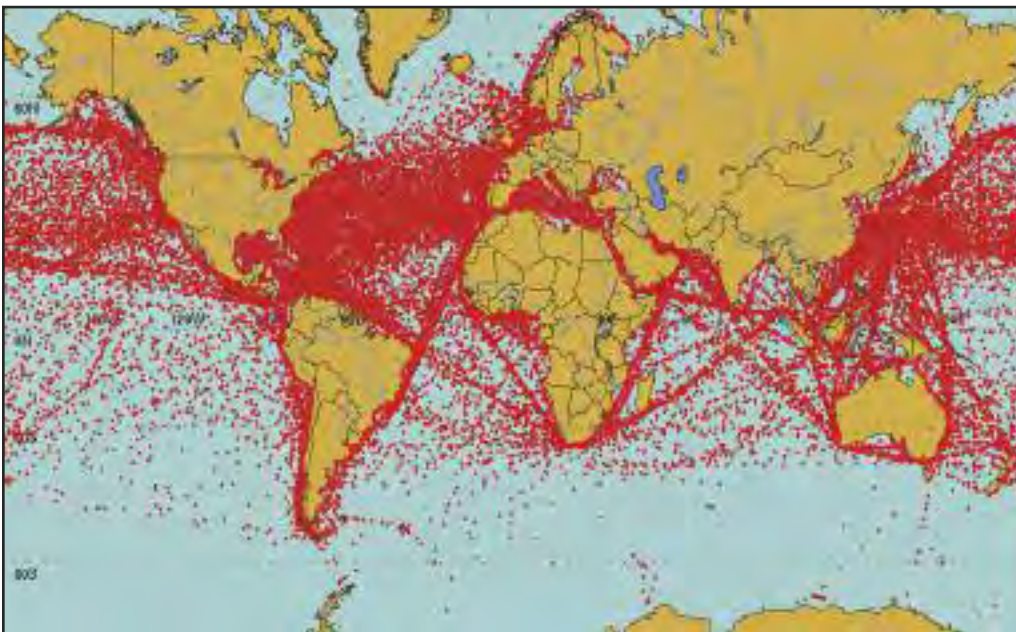
# The Office of Global Maritime Situational Awareness

*A collaborative approach to government information sharing.*

by CAPT DALE FERRIERE  
*Office of Global Maritime Situational Awareness*

CAPT GEORGE MCCARTHY  
*Office of Global Maritime Situational Awareness*

CAPT RAFAEL NIEVES  
*Office of Global Maritime Situational Awareness*



**More than 94,500 commercial vessels ply the maritime domain carrying billions of containers of cargo each year. Identifying a threat among this activity goes beyond finding a needle in a haystack. Graphic courtesy of the U.S. Navy.**

can develop an effective understanding of everything that could affect the global maritime domain's safety, security, economy, and environment.<sup>4</sup>

**Maritime Situational Awareness**  
Much of the data needed to build this maritime domain awareness (MDA) is already being collected by governmental, commercial, and non-profit organizations around the world, and the technology already exists to pool it. For now, most of it is locked in stovepipes within hundreds of agencies and organizations. Using that data is like trying to connect the dots when every dot is on a different page.

More than one million mariners of every nationality aboard nearly 95,000 vessels of at least 100 gross tons flagged in more than 150 nations<sup>1</sup> move millions of passengers<sup>2</sup> and billions of tons of cargo<sup>3</sup> around the globe each year. Millions of pleasure and fishing craft operate in U.S. waters alone.

Around the world, competition for marine resources is accelerating. No single country, department, or agency

The Office of Global Maritime Situational Awareness (OGMSA) was created as a national office by presidential directive to partner with the maritime community inside and outside the government to build processes and working relationships that increase our ability to find those dots and connect them. Such an enhanced capability will benefit the full spectrum of maritime domain needs including security, safety, the environment,



and commerce in not only an emergency such as a hurricane, but also in day-to-day operations.

The U.S. government has long been aware of port security vulnerabilities and the potentially disastrous consequences of terrorist acts in our critical ports. The interruption of commerce due to prolonged closure of a major U.S. port could severely impact supply chains for months, driving down the U.S. stock market, and deliver an immediate economic blow measured in tens of billions of dollars,<sup>5</sup> with cascading costs topping a trillion dollars.<sup>6</sup>

National Security Presidential Directive 41 / Homeland Security Presidential Directive 13 (NSPD 41 / HSPD 13) of December 2004 established U.S. policy, guidelines, and implementation actions to enhance U.S. national security and homeland security by protecting U.S. maritime interests<sup>7</sup> and called for cooperation among federal, state, local, tribal, private sector, and global partners to develop an effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment of the United States. NSPD-41 / HSPD-13 established the Maritime Security Policy Coordinating Committee (MSPCC) comprised of senior representatives from those U.S. government agencies with significant equities in the maritime environment, including the Departments of Homeland Security, State, Defense, Commerce, Interior, Justice, and Energy, as the primary forum for the directive's implementation and interagency coordination.

### **National Strategy for Maritime Security**

In September 2005, the National Strategy for Maritime Security was released, reinforced by eight supporting plans,<sup>8</sup> including the Global Maritime Intelligence Integration (GMII) Plan and the National Plan to Achieve Maritime Domain Awareness (NPAMDA).

The GMII plan laid out the roles and responsibilities of the GMII director in using existing capabilities to integrate all available intelligence regarding potential threats to U.S. interests in the maritime domain, and was later expanded to Global Maritime and Air Intelligence Integration (GMAII). The NPAMDA was designed "to unify United States government and support international efforts to achieve MDA across the federal government, with the private sector and civil authorities within the United States, and with our allies and partners."<sup>9</sup> It identified the need to persistently monitor data regarding vessels, cargo, people, and infrastructure through a shared architecture.

The National Concept of Operations (CONOPS) for MDA, released in July 2007, recognized maritime domain awareness as the integration of Global Maritime Intelligence (GMI) and Global Maritime Situational Awareness (GMSA), which it defined as "a comprehensive fusion of data from every agency and by every nation to improve knowledge of the maritime domain" by "persistent monitoring of maritime activities in such a way that trends can be identified and anomalies detected."<sup>10</sup> The national CONOPS established a national office for the GMSA Enterprise (OGMSA), with the fundamental objective of creating unity of effort across the U.S. government and the purpose of facilitating effective access to maritime information and data critical to building the situational awareness component of global maritime domain awareness.<sup>11</sup>

The National MDA Interagency Investment Strategy provided recommendations at the federal level to achieve a coordinated national MDA capability, and clarified that "awareness of activity within the maritime domain, coupled with knowledge of intent or threat information, leads to an understanding of the maritime domain."<sup>12</sup> In other words, it entails actions to make more information available, and systems and tools to make sense of it for the range of users and customers who need to make decisions from it. In short, MDA = Situational Awareness + Sense Making.

### **National Office of Global Maritime Situational Awareness**

The National Office of Global Maritime Situational Awareness (OGMSA) stood up in July 2007 to help develop that awareness. OGMSA's mission is to facilitate the creation of a collaborative global maritime information sharing environment through unity of effort across entities with maritime interests. To do this, it partners with organizations that have information about the people, vessels, cargo, and infrastructure associated with the maritime domain.

Together, they make it available to the people responsible for making sense of that information in a relevant way to improve decisions regarding safety, commerce, the environment, or security. As an independent national office with an interagency staff, the OGMSA represents the maritime information sharing needs across the entire government. Initially hosted by DHS and located at U.S. Coast Guard headquarters, OGMSA collaborates with GMAII to facilitate the development of this worldwide maritime information exchange.



The directors of the Office of Global Maritime Situational Awareness and Global Maritime and Air Intelligence Integration co-chair the MDA stakeholder board with representation from the agencies responsible for the eight plans that support the National Strategy for Maritime Security and other maritime stakeholder agencies. The stakeholder board reports to the MSPCC and was tasked by the MDA CONOPS to optimize and guide information sharing and develop capabilities related to the key functional aspects of maritime domain awareness: collection, fusion, analysis, and dissemination of data, information, and intelligence. The stakeholders board serves as a primary mechanism for OGMSA's efforts as a catalyst and unifier of effort for maritime information sharing within the government.

Within the MDA stakeholder board infrastructure, OGMSA partners with designated points of contact throughout the interagency. In the case of several departments, an MDA executive agent has actually been designated. For example, the Coast Guard is the executive agent for DHS, the Maritime Administration for the Department of Transportation, and the Navy for the Department of Defense. Within this framework, GMAI not only co-chairs the board, but also represents the intelligence community on it.

### **It's a Beautiful Day in the Neighborhood**

Another mechanism developed under the CONOPS for enhancing maritime information sharing across agencies is MDA enterprise hubs. In the field of network analysis, hubs are defined as nodes within a network that connect to a disproportionately high number of other nodes. These hubs occur naturally in complex networks<sup>13</sup> and play a key role in linking nodes across a network.<sup>14, 15</sup>

In social or organizational networks, communities or "neighborhoods" of nodes with shared interests or objectives frequently form around hubs. Networks structured to link these hubs are more efficient,<sup>16</sup> so information and innovation flows more quickly across the network. Research indicates that identifying and capitalizing on these hubs streamlines efforts to build collaborative networked environments that cross communities.<sup>17</sup>

The MDA Concept of Operations identified five enterprise hubs that would initially play a role in developing maritime domain awareness, and tasked OGMSA with coordinating them. Four hubs center on key categories of maritime information: vessels, cargo, people, and infrastructure. Responsibility for the information sharing

hubs lies with U.S. federal agencies with existing expertise and databases in their respective subject areas.<sup>18</sup>

The Office of Global Maritime Situational Awareness information sharing hub implementation plan outlines the organization, responsibilities, tasks (specified and implied), and procedures for the information sharing hubs as delineated in the MDA CONOPS, and provides the framework and processes in which they will function.

Customs and Border Protection coordinates both the cargo and people hubs, and the DHS National Infrastructure Coordination Center coordinates the infrastructure hub. The vessel hub is coordinated jointly by the Coast Guard and the Navy.

Through their websites, e-mail, and watch-desk phones, these hub leads can quickly connect agencies that need information to agencies that have it. Hub contacts can be found on the OGMSA website at [www.gmsa.gov](http://www.gmsa.gov).

### **Sharing Information**

There are four processes associated with the information sharing hubs:

- They provide contact points where agencies can go to find data.
- They conduct data inventories to discover the types of information available.
- They guide data standardization.
- They provide barrier resolution to free up the flow of the data between organizations.

This body of work is leveraging efforts across the U.S. government by organizations like the National Counterterrorism Center and the program manager for the Information Sharing Environment. The objective is not to duplicate efforts, but to ensure the information sharing needs of the maritime community of interest are being served.

Another hub identified by the MDA Concept of Operations is the enterprise architecture management hub, which links participants with the expertise to build a net-centric environment through which the global maritime community of interest can share data. The concept of operations calls for a service-oriented architecture, which allows information sharing among otherwise incompatible systems to enable collaboration through synchronous communication and file sharing. It also calls for the architecture to enable content discovery and delivery

*continued on page 14*





## GLOBAL MARITIME COMMUNITY OF INTEREST

One day in the near future, a next-generation operations center may tackle an event like the following using massive amounts of shared data that enables global maritime situational awareness through a net-centric information sharing environment to minimize the impact on safety, security, the economy, and the environment.

Such an information portal could be one possible outcome of the United States' vision to achieve situational awareness through collaboration across the global maritime community of interest.

### **A category three hurricane slams ashore at a major U.S. port.**

As the hurricane cuts a path up the seaboard, Coast Guard watchstanders join other federal, state, local, and tribal representatives, along with members of non-governmental organizations and the private sector, collaborating to ensure maritime safety, optimize commercial operations, safeguard the environment, and preserve security.

Each member of the operations center is accessing a global maritime information sharing environment through a portal that allows a user-defined operating picture configured to present information in the way that makes the most sense for his or her mission.

#### **USCG Watchstander**

A Coast Guard watchstander is monitoring a tanker in distress. She has eyes on all government maritime assets in the region. She also has a plot on every commercial vessel, and with a click of her mouse can see the time and location for the closest point of approach for each. Operations center members combine data from the tanker with the most recent data on weather and currents, and cross-reference the most current data on fisheries to model the effects of various scenarios.

Representatives of various federal and state agencies also collaborate to assess the storm's impact on marine resources. The operations center will access data through the portal to forecast and mitigate effects on the supply chain across the seafood industry and to gauge economic impacts in the region.

The Coast Guard Maritime Transportation Recovery Unit, in communication with industry association partners and other government agencies, learns that one barge has sunk and two are unaccounted for in a major river. The unit quickly posts information about each barge, including ownership, last known location, and what each was carrying to the information sharing environment.

#### **Effects on the Port**

Meanwhile, operations team members identify the degree to which the storm has degraded port operations over the entire seaboard. Several ports are barely operational. The operations team plots timelines for the restoration of services throughout the system. Team members pull data on air, rail, and highway systems, which are at a standstill, and on expected capacity throughout the next several days. This data is compared to the storm track to identify infrastructure capacity and expected usage throughout the region over the next several days.

Monitoring global traffic to identify all inbound vessels, the operations center works with commercial maritime stakeholders to reroute vessels to optimize the use of the impaired infrastructure.

#### **Impact on Vessels, Cargo**

Cargo and crew data for all inbound vessels was available in the portal before vessels left their ports of departure through international data sharing, so concerns were investigated long before vessels approached their destinations. This limits delays, financial impact, and ensures that resources available for boarding vessels address the highest priorities.

Now, under emergency conditions, vessels that were already cleared for entry need little additional attention. The operations center brings up cargo data to identify those that are perishable and/or will require special handling. Cargo final destinations are compared with projected infrastructure capacity at nearby ports to minimize delays and costs.

Cargo on the waterfront in a Central American port has raised concerns that have yet to be resolved. The Coast Guard, several other federal agencies, and local law enforcement officials in the intended port of delivery will continue to share data, working through the Department of State with officials in the port of departure to resolve issues before the cargo is loaded so it will not delay the contracted carrier and add further costs for the storm-battered industry.

Federal, state, and local agencies continue to share data on those inbound vessels with unresolved issues. As they are rerouted to optimize the supply chain, data is smoothly handed off to authorities in the newly assigned ports.





**By sharing data, members of the Global Maritime Community of Interest can view a picture of the maritime domain that far exceeds the data they can gather alone. Nearly 50 nations already share Automatic Identification System (AIS) data around the globe. Graphic courtesy of the U.S. Department of Transportation Research and Innovative Technology Administration.**

with common specifications, and portal services that provide personalized, user-defined, web-enabled presentation and offer secure access to the enterprise.<sup>19</sup>

The idea is not to put all the information together into a single database. Instead, each organization that is collecting data makes it discoverable by others who need it and are authorized to receive it. Thus, each organization becomes a publisher of its own data as well as a subscriber to the data published by others. The architecture will make the information usable through common standards, enable all users to trust the data they are receiving, and keep data accessible only to authorized users.

To facilitate the stand-up of the architecture management hub, OGMSA created an interagency enterprise architecture hub working group and drafted the hub's charter. Members of the OGMSA staff also initiated working plans for the nation's overall maritime domain awareness architecture. In May 2008, the Department of the Navy's chief information officer was officially designated as the enterprise architecture management hub lead agent.

### **In Practice**

The hub structure is already enriching everyday processes with practical applications. For example, in the wake of a hurricane, the Coast Guard Maritime Transportation System Recovery Unit quickly arranged conference calls with a wide range of maritime industry associations and several government agencies to engage its partners and bring together an operational picture of the situation in the Gulf region.

The new process has the hub leads engaged in the call, which includes a standard question: What additional information could have been useful? Hub leads will be able to use this analysis from the operators to work out better systems for getting the right information to the decision makers even more quickly, efficiently, and effectively.

The critical link in building global maritime information sharing is the hub leads and the national MDA stakeholder board consistently talking to and getting feedback from the Coast Guard, the Navy, the combatant commanders, Customs and Border Protection, and other operational users of maritime information.

### **Vessel Data**

By building on existing initiatives, the Office of Global Maritime Situational Awareness has also made progress establishing the relationships that will deliver vessel location transparency (the widespread availability of basic information about each vessel) in support of the vessel hub. Much of this activity begins with linking receivers of Automatic Identification System (AIS) vessel data. AIS was promulgated by the International Maritime Organization (IMO) as a tool for vessel-to-vessel collision avoidance, for use by vessel traffic services, and to provide information to coastal states about vessels operating along their coasts. It transmits a vessel's identity, position, course, speed, and other data in bursts. The IMO-mandated transmission of AIS vessel information for all vessels of 300 gross tons or greater engaged on international voyages; all cargo ships of 500 gross tons or greater not engaged on international voyages; and for all passenger ships, irrespective of size.<sup>20</sup>



The Maritime Transportation Security Act of 2002 (46 USC § 70113) directed DHS, including the Coast Guard, to implement a system to collect, integrate, and analyze information concerning vessels operating on or bound for waters subject to the jurisdiction of the United States. The Nationwide Automatic Identification System (NAIS) will provide this capability. NAIS is a domestic integrated system of AIS base station radios, antennas, data storage, processing, and networking infrastructure that will validate, filter, and store Automatic Identification System data. To support this initiative and integrate AIS-sharing efforts, the MDA stakeholder board executive steering committee ordered that a United States AIS national strategy be written, for which OGMSA is the coordinating chair.

AIS data proved to be the key when, in an effort to gain a clear picture of maritime activity in his area of operations, the commander of U.S. Naval Forces Europe partnered with the John A. Volpe National Transportation Systems Center within DOT's Research and Innovative Technology Administration. The Volpe Center developed the Maritime Safety and Security Information System (MSSIS) to share Automatic Identification System data in real time with multiple international users through a Web-based, password-protected system based on Volpe's TransView software.

### International Efforts

MSSIS displays all AIS data streams gathered from mobile and stationary platforms in a single picture that encompasses the entire geographic area spanned by the individual platforms, and can overlay the data on maps, satellite images, and other applications, such as Google Earth. Automatic Identification System data is already being shared between countries in North and South America, Europe, Africa, Asia, and the Pacific through MSSIS. OGMSA has established an MSSIS interagency working group to pursue formalization of the initiative across DOT, DOD, and DHS, and published the central reference document for the formalization of the Maritime Safety and Security Information System. OGMSA efforts have so far helped increase the number of countries sharing AIS data through the Mar-

itime Safety and Security Information System to more than 50.

Because some nations are more open to sharing their information through non-governmental organizations, OGMSA sought out a non-governmental organization that could serve as a hub for international AIS sharing. The Office of Global Maritime Situational Awareness represented the United States in discussions with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), aimed at building a global AIS vessel data sharing network involving 156 countries. IALA has launched a trial version of a Web-based information sharing environment combining aspects of MSSIS and Helsinki Convention systems called IALA-Net at [www.frv.dk/iala-net](http://www.frv.dk/iala-net).

Maritime information sharing can also be tested and developed by building and linking regional communities. In May 2008, the Office of Global Maritime Situational Awareness published its central engagement framework document for implementing an open data sharing network in the Caribbean and South America entitled "Spotlight on the Caribbean." OGMSA and



**By sharing data, a member of the Global Maritime Community of Interest can obtain needed data from anywhere in the world, using systems such as TransView software from DOT's Volpe Center. Graphic courtesy of the U.S. Department of Transportation Research and Innovative Technology Administration.**

partner agencies across the government, in coordination with U.S. embassies in the region, are extending invitations to a number of countries to participate in an information sharing community throughout the Caribbean Basin, beginning with MSSIS. Under this



initiative, several Caribbean and South American nations have expressed eagerness to share AIS data.

These efforts also support OGMSA's task to engage the global maritime community of interest to gain federal, state, local, tribal, international, and private sector participation.<sup>21</sup> In order to enhance international participation in a global maritime community of interest, OGMSA has established liaisons with regional and country desk officers from the Department of State to ensure seamless cooperation. Staff members briefed the benefits of open, non-classified maritime data sharing to such diverse international groups as naval foreign attachés from more than 50 nations, ambassadors, chiefs of naval operations, embassy staffs, the Department of Defense-African Dialogue Conference, the Pacific and Indian Oceans Shipping Working Group, and the NATO Shipping Working Group.

OGMSA is also facilitating a more coherent relationship between government and the private sector. In August 2008, it partnered with the Department of Justice Community Oriented Policing Services, Navy Fleet Forces Command, and the Maritime Administration to launch an annual Global Maritime Information Sharing Symposium. This provided a forum for maritime leaders from industry and governments worldwide to develop effective stakeholder working groups and create problem-solving initiatives in the area of information sharing to enhance the flow of commerce.

The first symposium was hosted at the United States Merchant Marine Academy's Global Maritime and Transportation School in King's Point, N.Y. Participants included the U.S. maritime administrator, the director of DOJ's Community-Oriented Policing Services, the president and CEO of Liberty Maritime Corporation, the vice president of Maritime Services at Maersk Line Limited, the program manager for the U.S. Information Sharing Environment, the director of U.S. plans and policies for the U.S. Fleet Forces Command, the commander of the U.S. Military Sealift Command, the Coast Guard's director of Prevention Policy, the former commander of U.S. Naval Forces Europe (who launched MSSIS and is now executive vice president of the International Security Affairs Practice at Enterra Solutions), and the undersecretary of commerce of the Bureau of Industry and Security.

The symposium identified the most important maritime information sharing initiatives to be undertaken over the next year and established ongoing working

groups from government and industry. OGMSA representatives will shepherd the initiatives, and the director of the Office of Global Maritime Situational Awareness will coordinate interagency solutions through the MDA stakeholders board.

### **Overcoming Obstacles**

Often, organizations are interested in sharing information but face obstacles. Although the analogy of "connecting the dots" is widely used in discussing information sharing, sharing real-world information is not as simple as drawing a line on a page. Real-world connections are often blocked by statutory, policy, legislative, or cultural barriers.

Therefore, OGMSA developed an information sharing barrier resolution process. OGMSA has drafted charters for an international information sharing agreement team and a barrier resolution working group to provide an interagency forum to examine, evaluate, and offer resolutions to barriers impeding information sharing while managing the risks associated with information sharing.

Throughout government, much work has already been accomplished toward information sharing on which the Office of Global Maritime Situational Awareness continues to build. However, these initiatives have been primarily threat-focused, with an emphasis on finding the "bad guys." OGMSA is expanding these initiatives to apply valuable lessons learned to the broader requirements of enabling more effective decision making to improve maritime safety and the flow of maritime commerce, and to better preserve the environment, in addition to keeping our ports and shipping secure.

Going forward, expanding vessel transparency is a primary objective. AIS data sharing provides a baseline upon which participants can build, connecting more countries, adding additional data sources, and developing standards and policies.

With information sharing and collaboration growing in importance across government, OGMSA's mission will increasingly support the ability of agencies with a maritime focus to achieve their objectives. For example, the Maritime Administration's 2008-2013 Strategic Plan<sup>22</sup> envisions a maritime transportation system that helps overcome impediments to maritime system growth while addressing the concerns over safety, security, and the environment. OGMSA is committed to the partnerships and maritime information sharing that will support that kind of growth.



## Expansive MDA Growth

The MDA CONOPS calls for a spiral development model for maritime domain awareness, in which layers of capability are successively envisioned, prototyped, tested, confirmed, and then built upon. It is impossible to predict what levels of situational awareness will be possible long-term.

There is a staggering amount of data available to build a global maritime picture, and new sources are constantly being developed. The global maritime community of interest is beginning to form a network, and the first layer of the spiral is coalescing. With the enterprise architecture management hub moving forward, the pace of information sharing will accelerate.

Meanwhile, OGMSA is increasingly engaging stakeholders in the private sector whose business models rely on uninterrupted, efficient operations throughout the global maritime infrastructure.

Fully integrated maritime information sharing is still over the horizon, but actionable information is already being shared with increasing effectiveness across agency, sector, and national boundaries in ways that could not have happened a year ago. A new level of situational awareness is emerging to help decision makers develop an effective understanding of anything in the maritime domain that could threaten the security, safety, economy, or environment of the United States.

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# A Celebration of Best Practices, Partnerships, and Security Initiatives

## *The Third Western Hemispheric Conference on Port Security.*

by LTJG KATIE STANKO  
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It has been four years since the mandatory security measures adopted by the December 2002 Amendments to the 1974 Safety of Life at Sea Convention (SOLAS) and the International Ship and Port Facility Security (ISPS) Code went into effect. The ISPS Code was written by many larger countries with major ports and facilities to respond to the devastating terrorist acts of September 11, 2001, when the international community recognized the international maritime sector needed a new level of protection. Smaller maritime-dependent nations throughout the Western Hemisphere met these steep mandates through a combination of ingenuity and best practices that have drastically improved the region's maritime transportation system.

The Organization of American States (OAS), which represents the Western Hemispheric nations of North,



**Mr. Sean Connaughton, foreground, MARAD administrator and head of delegation for the United States. Also pictured is RADM Kevin Cook, U.S. Coast Guard, second row.**

South, and Central America and the Caribbean, has been involved with port-related issues since the 1950s. Upon development of the Inter-American Committee on Ports (CIP), a specialized conference dealing with port area concerns (such as port sector development and expansion of port infrastructure) made OAS one of the first international organizations to recognize the need to improve the ports of the hemisphere.<sup>1</sup> When the focus shifted to port security after 9/11 and the ISPS Code was implemented, the CIP initiated hemispheric conferences on port security to encourage OAS mem-



ber nations to meet and discuss the state of security in their respective ports and share best practices for port security.

The 3<sup>rd</sup> Western Hemispheric Conference on Port Security was held in Punta Cana, Dominican Republic, in April 2008. More than 200 delegates attended, representing 31 of the 34 member nations of the OAS, including the director of the Specialized Body of Port Security from the Dominican Republic, the chair of the Executive Board for the Inter-American Committee on Ports, the assistant secretary general of OAS, and International Maritime Organization representatives, along with various other senior personnel from the private and public sectors of their respective nations. U.S. delegates included the Maritime Administration administrator (who served as head of the delegation), U.S. Customs and Border Protection, the U. S. Coast Guard, and state partnership program representatives. The U.S. delegates provided overviews of U.S. efforts and discussed best practices noted during recent visits to various Western Hemispheric ports.

### **The State of Security and Best Practices**

If you look at the state of security across the hemisphere, it is very clear that each country has a unique story of how it implemented the ISPS Code and how advancements in security have significantly progressed over the past four years through involvement in OAS international cooperation programs. These international programs have helped to facilitate the exchange of information, provide technical and professional training, and direct technical assistance among member nations.

At the Hemispheric Conference on Port Security there were many animated discussions on how the region had implemented various port security improvements. The conference primarily focused on the OAS member nations reporting the state of security in their respective ports and their best practices. In addition to the country presentations, several key international organizations presented on the state of port security international standards and regulations from a global perspective. In terms of meeting the ISPS Code standards, seven regional port terminals of great commercial interest were highlighted as leaders in technological advances and implementation techniques:

- Manzanillo International Terminals, Republic of Panama;
- APM Terminal Limited, Kingston, Jamaica;

- Puerto Multimodal Caucedo, Dominican Republic;
- Puerto Barrios, Guatemala;
- Puerto de Veracruz, Mexico;
- Puerto de Buenos Aires, Argentina;
- Haina International Terminal, Dominican Republic.

Additionally, four of the seven ports highlighted (Manzanillo, Kingston, Caucedo, and Buenos Aires) have been certificated by Customs and Border Protection as container security initiative ports because they implemented a security regime to ensure all containers that pose a potential terrorism risk are identified and inspected in their ports before they are placed on vessels destined for the United States. These ports all shared successful port security program themes that included a clear implementation of country legislation, robust training programs, infrastructure improvement plans, the vetting and accountability of port workers, the implementation of security exercises, and clear partnerships among industry and enforcement agencies. An interesting common thread among these presentations included predictions of significant growth in cargo movement over the next four years as the Panama Canal expansion project positively impacts the entire region.

The U.S. Coast Guard international port security officer highlighted specific best practices, as observed in various countries throughout the region. These included the use of Internet-based worker access cards, command control TV surveillance systems, and the implementation of mandatory training requirements for workers. The development of various port committees to improve safety and security compliance were also deemed a best practice in facilitating and improving relationships between public and private entities.

### **Dominican Republic—A Model of Partnerships in Action**

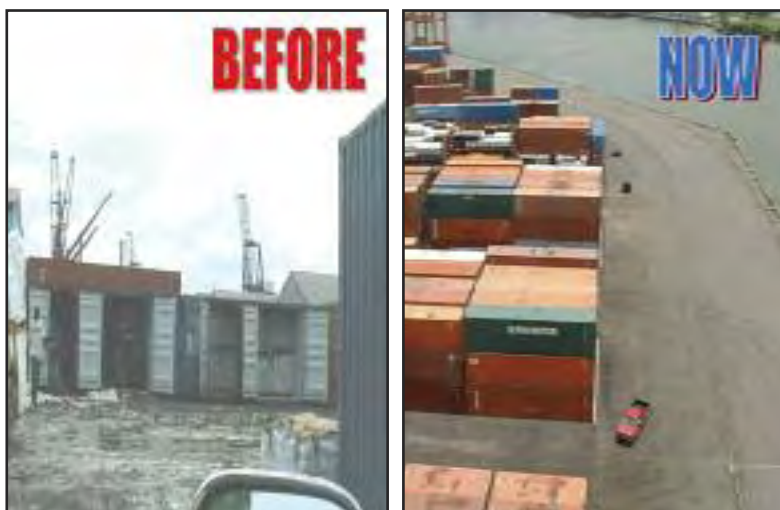
While physical and technological security measures have been a major factor in the effectiveness of security implementation at many port facilities highlighted during the conference, partnerships seemed key to building a solid countrywide port security and development program. Two vital partnerships were proven effective at accelerating implementation and strengthening the entire nation's port system: a government-to-government relationship, and a partnership between the country government and the local private industry. In the Dominican Republic, the nation playing host country to this conference and singled out by OAS for



its leadership and accomplishments, both of these partnerships exist and have resulted in a dramatic positive change to the Dominican ports with a strong, sustainable port security program.

The turning point for security in the Dominican Republic came on the heels of a government-to-government relationship formed in 2003, when U.S. Coast Guard and Dominican Republic officials developed a bilateral strategy to support the government of the Dominican Republic to meet its international obligation to fully implement the ISPS Code. At that time, the government of the Dominican Republic stepped up its internal commitment to make its country's ports secure by creating the Specialized Body of Port Security (CESEP), which includes members from the Dominican Republic's navy, army, and air force. Working on its own and also with U.S. Coast Guard experts assisting, CESEP began training on port security and the ISPS Code requirements, and began the fundamentals of vetting crew, cargo, and trucks in the ports. Members built facilities, equipped their personnel, and shared their own best practices among the various Dominican ports. CESEP is now nationally recognized as the armed port security force and government presence in the seaport, and is directly responsible for the enforcement of strict access control procedures, including checking under docks and tire fenders, assigning additional facility guards to the ships in port, and supplementing onboard security. CESEP members also conduct armed patrols and escort the ships to maintain waterside security.

Taking this success much further, CESEP partnered with industry to build a barracks and national headquarters for CESEP on the port property in Rio Haina.



**Before and after: The Port of Rio Haina main container yard. Photos courtesy of Haina International Terminals.**

## INDUSTRY LEADS PARTNERSHIPS

The Caribbean Shipping Association (CSA) recently announced a new initiative to assist ports of the Caribbean to beef up and maintain effective port security systems. Designed to assist all ports (but particularly the smaller ports of the region), the new CSA initiative will involve establishing a permanent security assessment council, which will maintain dialogue with Caribbean ports; the U.S. Coast Guard; the Caribbean Community and Common Market; the Organization of American States; and other maritime organizations. The establishment of this new body within the CSA will ensure that port security issues are kept on the regional agenda and that (Caribbean) port and terminal operators have an independent, unbiased organization within which to discuss their security needs.<sup>1</sup>

On the immediate horizon are plans to establish a working group with CSA, Caribbean port entities, the U.S. Coast Guard, and the U.S. Southern Command to develop industry-specific assessment techniques and professional development plans to improve safety and security throughout the region.

**Endnote:**

<sup>1</sup> Information on the Caribbean Shipping Association and future plans and initiatives can be found at [www.caribbeanshipping.org](http://www.caribbeanshipping.org).

This act has allowed the effective and efficient use of CESEP members while fully maintaining a 24-hour governmental presence in the port. Some of the other partnerships established in the Dominican Republic include the government's partnership with the Dominican Shipping Association to upgrade and repair the large port perimeter wall that had suffered catastrophic storm damage over the years. Also of note was the joint venture between the government and port tenants in Puerto Plata to relocate the customs house from the pier to an off-port site in order to minimize excess activity in the port. Through these partnerships, the Dominican Republic government has been able to combat the tough issues that come with the establishment of a strong port security program.

**Haina International Terminals, Dominican Republic** Partnerships are also incredibly beneficial from the private sector's view. The owners of the Haina International Terminals (HIT) knew that the ISPS Code needed to be implemented and were aware of the substantial



infrastructure needed. They also knew that strong government support was essential to making these improvements. So, in 2004, they instigated the creation of the private firm Seguridad y Desarrollo Portuario (SDP), solely dedicated to port security and port development strategies. Working with CESEP and SDP, HIT has significantly changed the face of the Port of Rio Haina. The owners have implemented access control measures to include closed-circuit cameras that monitor port events in real time, perimeter fencing surrounding the terminal, and 24-hour land and water patrols. They have changed cargo locations, ship procedures, and moved some customs operations to streamline access controls. HIT's partnerships are manifesting positive results and have led to more shipping contracts and a thriving port business.

Overall, the combined dedication of the Dominican Republic government, its CESEP organization, and the partnership between the government and the private sector rightly earned the nation the praise of OAS as a success story within the Western Hemispheric region. One prime example of good security is the reduction of stowaways aboard ships. Four years ago, 275 Dominican stowaways crept aboard ships and attempted to enter U.S. ports illegally. Today, the U.S. has seen an 80 percent reduction in stowaways found aboard ships departing the Dominican Republic heading to U.S. ports. With the successful completion of the Port of Cuacedo—lauded as the model port for security efficiency and innovation—and the successful renovation of the Port of Rio Haina by Haina International Terminals, private industry has also permanently cemented its place in the port security construct within the Western Hemispheric region.

### The Way Forward

Since implementation of the ISPS Code, it is clear that port security has increasingly become more advanced. Additionally, as port security continues to improve throughout the Western Hemisphere, it is clear that the private sector will make port security essential to its business plan, picking those ports that have the best security to remain competitive in the national shipping market. Although many nations continue to have some reservations about the sustainability of a safe and secure transportation system, the logical next step is to improve partnerships. Leveraging government-to-

## NATIONAL GUARD STATE PARTNERSHIP PROGRAM

The National Guard State Partnership Program is a 15-year-old program that facilitates bilateral partnerships between a country and a U.S. state through the state's National Guard, with the primary goal of establishing a long-term relationship between the two entities. Once the relationship with a foreign nation is established, the National Guard focuses on a number of partnership programs, including:

- emergency preparedness and disaster response;
- military exercises and peacekeeping operations;
- border/port/aviation defense security;
- leadership development;
- military media relations;
- medical, defense, and democratic institutions reform;
- natural resources protection;
- economic security;
- university/education exchange programs.

These partnerships allow for the exchange of subject matter expertise pertaining to specific programs within the public and private sectors. Presently, the U.S. Southern Command has partnerships with 20 nations including Guatemala, Uruguay, Trinidad-Tobago, Jamaica, Venezuela, Guyana, Ecuador, Belize, Paraguay, Bolivia, Panama, El Salvador, Costa Rica, Honduras, the Dominican Republic, Bahamas, Suriname, Peru, and Nicaragua. The continued development of these partnerships will lead the way to building national and regional preventive capabilities to dissuade terrorist attacks and prepare for natural or man-made disasters.

Currently, South Dakota's National Guard is working with the government of Suriname conducting military and business focus/discussion groups to facilitate subject matter expert exchanges in military procurement, medical operations, and professional development. Additionally, the South Dakota National Guard created an exchange initiative among the six state universities in South Dakota and the University of Suriname. As a result of this exchange, four Suriname University professors and six from South Dakota participated in a state partnership education workshop in Rapid City to learn more about the state of South Dakota and the country of Suriname, with 100 participants from the private and public sectors. The universities are currently staffing a memorandum of understanding to exchange students, professors, and research projects.





**Closing ceremony delegates, from left to right: VADM Homero Luis Lajara Solá, M. de G. (DEMN), director of the Specialized Corp on Port Protection; Lic. Luis Taveras, president of the administration council of APORDOM; Dr. Carlos Gallegos, executive secretary of the CIP/OAS; Lieutenant General Ramón Antonio Aquino García, E.N. (DEM), secretary of the Armed Forces; VADM Julio César Ventura Bayonet, M. de G. (DEM), Dominican navy's Chief of Staff; Mayor General José Anibal Sanz Jiminián, P.N., director of the Dominican Port Authority (APORDOM); and Mr. Ricardo Luján, undersecretary of Argentina ports and navigable waterways.**

government contacts to help facilitate stronger expertise will especially help those nations with small law enforcement agencies and little maritime background. Developing partnerships between the private corporations and their local governments will enable those nations looking to grow additional shipping or port capacity as well as those searching for unique, practical security solutions. Organizations such as the Caribbean Shipping Association and the Port Security Advisory Committee have been committed to improving and effectively enforcing the safety and security of the ports

in the region. Leveraging these industry connections is vital to enabling the Western Hemisphere to build a framework of successful port security programs.

**About the author:**

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**Endnote:**

<sup>1</sup> Background information on the Inter-American Committee on Ports can be found at <http://www.oas.org/cip/eng/background.htm>.



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# Sharing Information

## *Regional cooperation and communication in South Asia.*

by LCDR SCOTT STOERMER  
*International Port Security Liaison Officer  
U.S. Coast Guard Activities Far East*

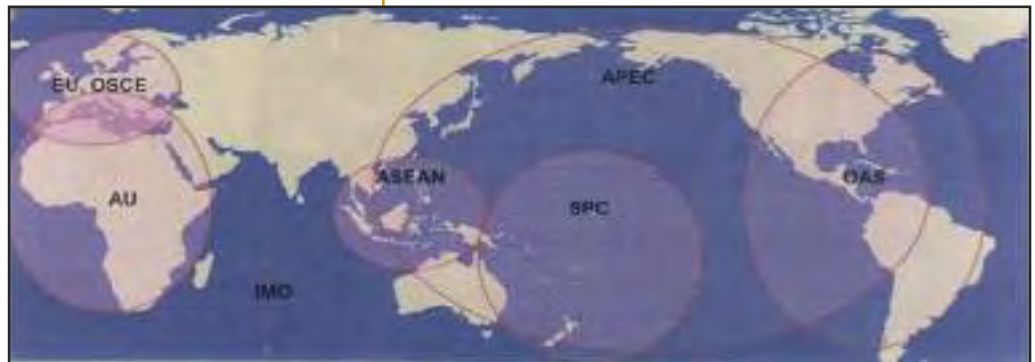
It has become cliché to refer to the events of September 11, 2001, as a turning point in our world; however, that does not hide the truth of the statement. Among many other things, the analyses of September 11 identified limited communication, organizational stovepipes, and inter-organizational power struggles as critical road blocks. According to the 9/11 Commission, “The biggest impediment to all-source analysis—to a greater likelihood of connecting the dots—is the human or systemic resistance to sharing information.”<sup>1</sup>

While the 9/11 Commission final report refers mainly to the law enforcement and intelligence communities, its applicability is far more ubiquitous. The maritime sector (specifically the transportation sector) is one of the areas where communication and cross-organizational information sharing was lacking. Moreover, the global nature of the maritime transportation sector and the interconnected web of world markets are excellent examples of where collaboration is critical. Practically speaking, global communication and collaboration are not easy to manage, but regional successes are easy to find.

### **Cooperative Effort: A Key to Success**

In the case of piracy, the Regional Cooperation Agreement on Combating Piracy and Armed Robbery

Against Ships in Asia (ReCAAP) is a strong example of the success of a regional forum and organized means to share information. Established in 2004, ReCAAP established a collaborative network among 16 South East and East Asian nations to report piracy events and share information, including mutual-aid-like agreements for response. According to ReCAAP’s 2007 annual report, “There has been a significant improvement in the piracy and armed robbery situation in Asia, with



**U.S. Coast Guard graphic depicting regional organizations throughout the world.**

the largest yearly decrease in the number of reported incidents taking place in 2007. The decline in the number of reported incidents was most evident in the port of Chittagong, Bangladesh, and the area around the Makassar Strait, Indonesia.”<sup>2</sup> This illustrates the power of unified effort on a regional basis.

In the case of maritime and port security, a number of organizations throughout the world assist member states and provide regional forums to share port security information and build mutual capacity. As an example, in the Americas, the Organization of American



States has a Secretariat of the Inter-American Committee Against Terrorism that maintains a port security program.<sup>3</sup> The European Union has a robust communications and rule making infrastructure for port security. The African Union, the Asia-Pacific Economic Cooperation, the Association of South East Asian Nations, and the Secretariat of the Pacific Community assist their member states with port security capacity building and provide a collaborative forum to share information and develop regional solutions to mutual issues. Additionally, each of these organizations, to one degree or another, maintain a security committee or secretariat. In the case of South Asia and the Central Indian Ocean, no such port security-oriented organization existed—until now. Consequently, there was no practical way to affect cross-border cooperation and communication regarding regional maritime and port security issues.

### **South Asia Region Port Security Cooperative: The Idea**

A wise man once said, “Necessity is the mother of invention.” In the case of the South Asia Region Port Security Cooperative (SARPSCO), this was, indeed, true. On October 13, 2006, the Sri Lanka Navy thwarted an attack by the Liberation Tigers of Tamil Eelam on the Port of Galle in southern Sri Lanka. During a conversation with the USCG international port security liaison officer (IPSLO) assigned to Sri Lanka, the Port of Galle port facility security officer (PFSO) expressed his

desire to share lessons learned from the attack with PFSOs throughout the region. Moreover, he shared his frustration at the lack of a regional mechanism through which this information could be promulgated.

The desire of the PFSO from Galle to share his experiences was the genesis of what became known as SARPSCO. From this kernel, LCDR Richard Kavanaugh, the IPSLO for Sri Lanka and other countries in South Asia, began to engage the Coast Guard and other nations regarding the idea. To that end, the concept of a public/private partnership for the creation of a regional

*continued on page 27*

## **Why U.S. Coast Guard Far East Activities Participation?**

The primary goal of SARPSCO was to develop a forum and establish a mechanism for communicating maritime transportation security information and best practices among designated authorities, PFSOs, industry leaders, and maritime law enforcement agencies within the South Asian region. This goal is in alignment with the Commandant’s vision as discussed in the USCG Strategy for Maritime Safety, Security, and Stewardship.<sup>1</sup>

Additionally, this goal meets two strategic objectives as outlined in the Coast Guard’s International Strategic Plan,<sup>2</sup> in particular:

1. Promote Coast Guard engagement with foreign nations that are strategic to United States and Coast Guard interests; use the resources of partner nations as force multipliers in support of Coast Guard core missions.
2. Work to establish and implement international maritime safety, security, environmental, and operating standards through leadership and participation in international forums.

Through this particular effort, the Coast Guard worked collaboratively with the designated authorities<sup>3</sup> in Pakistan, India, Sri Lanka, Bangladesh, Maldives, Oman, Mauritius, Madagascar, and Comoros, who all face significant maritime security challenges. It also served to build a stronger partnership within the South Asian/Central Indian Ocean region, facilitating regional force multipliers and support. Finally, the dialogue helped to promote interest in a more uniform implementation of the International Ship and Port Facility Security Code throughout the region.

Fortuitously, the U.S. Coast Guard Far East Activities-based international port security liaison officer for this particular region was well equipped to leverage pre-existing partnerships in an effort to make the idea succeed. Far East Activities (FEACT) provided organizational, administrative, logistical, and leadership support throughout two years of planning and final, successful execution of a SARPSCO conference. Ultimately, the Coast Guard served as a facilitating agency for the development of the regional forum and not as a member of any cooperative.

### **Endnotes:**

1. “The Coast Guard will assist the international maritime community in improving the collective governance of the global commons, as well as assist other coastal and port states in improving governance over their own territorial waters. This will involve collaboratively building regimes, awareness, and operational capabilities that strengthen coastal states and the international maritime community.” United States Coast Guard, Strategy for Maritime Safety, Security, and Stewardship, Washington, DC, 2007.
2. The U.S. Coast Guard’s International Strategic Plan is available at [http://www.uscg.mil/hq/g-ci/affairs/policy/strategic\\_plan.htm](http://www.uscg.mil/hq/g-ci/affairs/policy/strategic_plan.htm).
3. A SOLAS Chapter XI-2 designated authority means the organization(s) or the administration(s) identified, within contracting governments, as responsible for ensuring the implementation of the provisions of this chapter pertaining to the port facility security and ship/port interface, from the point of view of the port facility.





## Why South Asia/Central Indian Ocean?

While alignment with the Coast Guard's international engagement and capacity-building goals is important and necessary for the Coast Guard's support of SARPSCO, it is not the only reason to be involved in the region. From a national perspective, and, by extension, a Coast Guard one, it is difficult to overstate the economic and strategic importance of the South Asia/Central Indian Ocean region.

First, for clarity, it might help to define the geographic area under consideration. Including the nations of India, Sri Lanka, Maldives, Madagascar, Comoros, Seychelles, Mauritius, Bangladesh, and Pakistan, the region encompasses four time zones and more than 10 million square miles of ocean, depending on where one draws the boundaries. In comparison, the larger Indian Ocean covers more than 60 million square miles of ocean, and extends to the 60<sup>th</sup> parallel.

The region is home to vast quantities of terrestrial and marine resources. Moreover, it includes one of the largest and fastest-growing economies in the world—India. As an economy, India has experienced a decade of GDP growth above seven percent, with 9.2 percent growth in 2007. Exports from India total more than \$150 billion annually, with 17 percent shipped to the United States. Export products from India include petroleum products, textile goods, gems and jewelry, engineering goods, chemicals, and leather.<sup>1</sup>

So, while India is the largest and most vivid example, many other thriving economies exist in the region that are part of the global trade network. Other important exports in the region include fish, shellfish, gems, ore, sand, and gravel. The tourism industry is also an important part of the region's eco-

nomically. In fact, some nation's economies are fully dependent on the health and growth of tourism.

A direct connection between the economic and strategic importance of the region is crude oil and natural gas. Not only does the region produce immense quantities of oil and gas, it also provides major sea routes connecting the Middle East, Africa, and East Asia with Europe and the Americas. In particular, these routes carry traffic heavily laden with petroleum and petroleum products from the oil fields of the Persian Gulf and Indonesia. Coupled with the fact that the major maritime accesses to the region include such notable

chokepoints as the Strait of Hormuz, the Strait of Malacca, and the Lombok Strait, the strategic importance of the region is critical. Finally, the region experiences high occurrences of piracy, armed robbery, poaching, and trafficking in people, drugs, and weapons.

As an example of the regional and national concern over the strategic import of the region, consider the southern coast of Sri Lanka. The aforementioned sea lanes pass within 12 nautical miles of the southern tip of Sri Lanka, near the port of Galle. Moreover, Sri Lanka is also home to one of the most

active terrorist groups in the world. Coupled with the economic value of the cargo carried along the routes and the criticality of the Port of Colombo to the Sri Lankan and regional economies, it does not require too much imagination to see how destructive even a relatively minor incident could be to the region.

**Endnote:**

<sup>1</sup> From the CIA World Factbook, available at <https://www.cia.gov/>.





organization was developed in cooperation with U.S. embassies and regional governments. Through the formalization of the partnership, the government of the Republic of Maldives took the lead in developing the cooperative and offered to host the initial conference.

### **An Idea Becomes Reality**

While a discussion of the actual planning and execution of the SARPSCO conference is not critical to understanding its successes as an agent for regional collaboration, it is helpful to put the event in context. The conference was the culmination of a U.S. Coast Guard effort to support and facilitate the development of a port and maritime security-oriented organization in South Asia through organizational, administrative, logistical, and leadership support.

In conjunction with the Coast Guard, the Ministry of Transport and Communications of the Republic of Maldives agreed to serve as the project manager and inaugural host for a SARPSCO conference. Entitled "Partnering for a Safer Sea," the conference was held in May 2008 at the Sun Island Resort and Spa, Republic of Maldives. The conference was funded by the ministry; however, the Coast Guard provided an additional \$30,000 to support the conference and provide for associated costs.

Coast Guard participation included two FEACT international port security liaison officers, LCDR Richard Kavanaugh and me. Representation also included RADM Craig Bone (Coast Guard District Eleven) as an opening ceremony keynote speaker, as well as CAPT John Bingaman (Coast Guard PACAREA Prevention) and CAPT Gerald Swanson (FEACT) as conference observers.

Conference delegates represented nine nations and myriad security partners including Interpol, the International Maritime Organization, and U.S. Customs and Border Protection. Conference flow provided for a mix of lecture-style presentations, panel discussions, networking opportunities, and discussion sessions. The discussion sessions were facilitated conversations regarding the future of SARPSCO. Finally, the Coast Guard issued press releases to the major news outlets, including regional Associated Press and Reuters offices.

### **Successes and Outcomes**

By all accounts, the conference was a resounding success and ended with a unanimously approved confer-

ence agreement citing the importance of such a forum and the desire to bring the delegates/stakeholders together for a future event. In fact, several of the attending delegates publicly agreed to host a future conference. Perhaps most profoundly, the delegate from Mauritius received permission to hold the SARPSCO conference for 2009.

Besides the success embodied in the agreement, the conference opened up numerous opportunities for further Coast Guard outreach to nations in the regions. For example, the Republic of Maldives is interested in capacity building with respect to oil and hazardous materials response and domestic small passenger vessel safety. Additionally, Sri Lanka recently created a separate Department of Coast Guard and will be working to establish the new service's legislative basis. Each of these opportunities presents the United States and the nations of the region additional avenues to work together to meet the collective needs.

### **What's Next?**

We are confident the success of the first SARPSCO event will not be short-lived. It is vitally important that we work with the nations of the region to collaboratively deal with problems of mutual concern. The Coast Guard's foray into the world of international engagement and security-related capacity building efforts, such as this conference, provide awesome opportunities to showcase the Coast Guard, its missions, and its expertise. Activities Far East looks forward to working with Mauritius and the other nations of the region to further support their efforts to improve port security in the central Indian Ocean region. Activities Far East will be developing engagement plans based on the conference and its outcomes. The future is bright.

#### ***About the author:***

*LCDR Scott Stoermer has served in the U.S. Coast Guard for 12 years and is currently assigned to Activities Far East as an international port security liaison officer. Specifically responsible for port security liaison with Thailand, Vietnam, Cambodia, Indonesia, Bangladesh, and Burma, LCDR Stoermer has traveled extensively throughout Asia-Pacific.*

#### **Endnotes:**

- <sup>1</sup> National Commission on Terrorist Attacks Upon the United States (9-11 Commission), "9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States (official edition) Including the Executive Summary," Washington, DC, Government Printing Office, 2004.
- <sup>2</sup> [www.recaap.org](http://www.recaap.org).
- <sup>3</sup> Information regarding the Organization of American States is available at [www.cicte.oas.org/rev/en/programs/port.asp](http://www.cicte.oas.org/rev/en/programs/port.asp).





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# Maritime Security

*Protecting the maritime transportation sector through regional partnerships.*



by CDR MICHAEL LONG  
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*U.S. Coast Guard Sector Seattle*

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Transportation security is a major and continuing challenge in today's global environment. As no one agency or government can respond to the challenges alone, success requires the assistance and cooperation of others. In the maritime transportation environment, where overlapping jurisdictions, competitive pressures, and international pressures are the norm, cooperation through partnerships is doubly important.

The United States Coast Guard and Transport Canada (TC)/Marine Security recognize that maritime security requires not only a collaborative approach, but also an international approach—one based on a shared com-

mitment to strengthen global transportation system security. As a result, the USCG and TC/Marine Security have also broadened their extremely close maritime security working relationship to include partnerships with regional organizations.

The Asia-Pacific Economic Cooperation (APEC) forum and the Organization of American States (OAS) are two such organizations where the USCG (through its International Ports Security Program) and TC/Marine Security have worked to broaden international consensus to implement international maritime security standards, share best practices, and increase capacity.

## The Players

### THE ASIA-PACIFIC ECONOMIC COOPERATION FORUM

APEC was established in 1989 to further enhance economic growth and prosperity for the region and to strengthen the Asia-Pacific community. APEC has grown to become one of the world's most important regional organizations. Its members—referred to as "member economies"—are home to more than 2.7 billion people, approximately 55 percent of world gross domestic product, and 49 percent of world trade. Both the United States and Canada are long-standing members of the organization.

APEC operates as a cooperative, multilateral economic and trade forum, where member economies take individual and collective actions to open their markets and promote economic growth. These actions are discussed at a series of meetings of senior officials, ministers, and leaders of the 21 member economies.



## The Players

APEC's maritime security experts subgroup was formed in September 2004 to provide a forum for APEC member economies to work cooperatively in developing and implementing measures to strengthen maritime security in the Asia-Pacific region. A representative from the U.S. Coast Guard's International Port Security Program served as the MEG-SEC's first chair. A representative from Transport Canada serves as its current chair.

### THE ORGANIZATION OF AMERICAN STATES

OAS was founded in 1948 to bring together Western Hemisphere nations to strengthen cooperation on democratic values, defend common interests, and debate regional and international issues. It is made up of 35 member states—the independent nations of North, Central, and South America, and the Caribbean. Five of the OAS member states are also APEC economies: Canada, Chile, Mexico, Peru, and the United States.

Organizationally, the OAS general assembly is responsible for setting major policies and goals, while the permanent council guides ongoing work. In turn, the OAS General Secretariat carries out the programs and policies set by the political bodies through specialized secretariats. The Secretariat for Multidimensional Security, one such secretariat, coordinates OAS actions against terrorism, illegal drugs, and other threats to public safety.

### THE INTER-AMERICAN COMMITTEE AGAINST COUNTER-TERRORISM

The Inter-American Committee Against Counter-Terrorism (Spanish language acronym, CICTE) plays a lead role in maritime security. CICTE, which was created in 1999, is a counter-terrorism forum whose mission is to promote national, regional, and international cooperation to prevent, combat, and eliminate terrorism in the Western Hemisphere.

In the area of maritime security, CICTE's objective is to build the capacity of OAS member states to effectively comply with the security requirements of the International Ship and Port Facility Security Code (ISPS). To this end, the training programs of the CICTE Secretariat address such issues as improving access controls to and within individual ports, cargo and passenger security, crisis management exercises, and security awareness in general, sometimes in coordination with the parallel Secretariat of the Inter-American Drug Abuse Control Commission.

## The Programs

### ISPS CODE IMPLEMENTATION ASSISTANCE

One of the first major projects of the APEC's Inter-American Committee Against Counter-Terrorism (MEG-SEC) was forming the ISPS Code Implementation Assistance Program (ICIAP). The ICIAP was a joint proposal of Australia, Canada, Japan, the Republic of Korea, Singapore, and the U.S. to provide needs-based ISPS Code training and other forms of port security capacity building assistance to the developing member economies of Indonesia, Malaysia, Papua New Guinea, Peru, the Philippines, Thailand, and Vietnam.

The ICIAP is funded primarily by grants from Canada. In late 2006, TC/Marine Security secured grant funding totaling \$350,000 through Canada's Counter-Terrorism Capacity Building Program. With funding in place, training could commence. The U.S. coordinated ICIAP training for Peru while Australia was responsible for Papua New Guinea and the Philippines. Canada was

responsible for Thailand, and Japan was responsible for Indonesia, Malaysia, and Vietnam. The U.S. was—and remains—the ICIAP's project coordinator.

The first phase of ICIAP training focused on ISPS Code awareness workshops and developing organizational frameworks to implement ISPS Code requirements, while the second phase concentrated on ISPS Code-related drills and exercises and security assessments. The third phase will include the Port Security Visit Program (PSVP), as detailed below.

**ISPS CODE STANDARDIZATION, BEST SECURITY PRACTICES, NEEDS ASSESSMENTS**  
Recognizing that the performance-based nature of the ISPS Code resulted in many APEC economies embracing differing methodologies and levels of ISPS Code compliance, MEG-SEC developed a port security visit program aimed at promoting an increased level of consistent code implementation across the Asia-Pacific region.



The port security visit program entails member economies voluntarily hosting an in-country visit by a delegation of maritime security experts from other APEC economies. During the visit, the delegation reviews the host economy's ISPS Code implementation conventions and the results achieved to recognize best security practices and identify ISPS Code implementation needs and possible assistance programs to help address those needs. It is anticipated that MEG-SEC will submit this innovative program to the International Maritime Organization (IMO) for consideration as the IMO endeavors to develop a security-based model audit scheme.

Within the OAS, following a sub-regional pattern, the Inter-American Committee Against Counter-Terrorism Secretariat, in partnership with the USCG, TC, Inter-American Drug Abuse Control Commission, and the Inter-American Committee on Ports, organized and conducted workshops on best practices in implementing international maritime security standards for each targeted sub-region—Southern Cone, the Andes, Central America, and the Caribbean. The aim was to promote understanding, coordination, cooperation, and exchange of best practices on port security threats and methods to counter them. The target audience included port facility security officers and government agencies involved in security. The workshops included presentations by subject matter experts on a wide range of port security issues, a mock audit of a port facility to enable participants to gain hands-on experience, and small break-out groups to allow participants to share experiences and ideas. Workshops have been conducted in Mexico and Brazil, with further workshops planned in Guatemala and the Bahamas.

The CICTE Secretariat also conducts assessments and training activities within the region. Private contractors, hired through an OAS competitive bidding process, perform the assessments and training. Based on the assessments, and building on the experience gained from the USCG's International Port Security Program visits, CICTE tailors security training to mitigate the risks confronting each member state. Additionally, the training needs assessments also evaluate significant security precautions, such as access control to restricted areas; handling of cargo, ship stores, and unaccompanied baggage; and facility security monitoring procedures. The subsequent training specifically addresses basic aspects of port facilities' security, access control, customs and law enforcement procedures, and best practices. Although the program addresses both cargo and cruise

ship terminals, it emphasizes the latter, since cruise ship terminals are considered a greater potential risk.

### **STRENGTHENING DRILLS AND EXERCISE PROGRAMS**

Drills and exercises are important tools that allow security personnel to train on all components of the port facility's security plan. Furthermore, the ISPS Code requires that drills and exercises be carried out at appropriate intervals. However, many member states and economies face challenges in establishing and/or maintaining an effective drill and exercise program.

To address this issue in the APEC region, MEG-SEC developed the APEC Manual of Maritime Security Drills and Exercises for Port Facilities. The manual provides a detailed framework and guidance to standardize the design, development, conduct, and evaluation of port security drills and exercises. Additionally, this manual helps plan and prepare for drills and exercises.

The CICTE Secretariat plans to use the manual within CICTE programs to assist port facility security officers in the Americas in implementing the ISPS Code. By using the same manual, APEC economies and OAS member states will promote the standards and guidelines reflected in it, which will have a harmonizing effect on port security standards. This will provide a broad example of cooperation and avoid the potential duplication of effort. The overall aim is to facilitate the trade flow between both regions while strengthening security procedures.

The CICTE Secretariat, with technical assistance from the USCG and TC, has also undertaken a series of crisis management exercises in several countries. These strategic-level exercises are preceded by one-day training on ISPS Code procedures and are implemented as tabletop exercises. Representatives from other countries in OAS are invited to participate to build a cadre of persons with expertise in this area.

The aim is to assess the response capacities and the mandates of each of the entities involved in a crisis situation at port facilities and encourage discussions that would tackle vulnerabilities in port facility security plans. Exercises have been held in Argentina, Colombia, and Peru, with further exercises planned for Trinidad and Tobago and other countries.

#### **Looking Ahead**

No country has the ability to singularly protect the entire maritime transportation sector. It takes a collabora-



tive effort among nations operating within the framework of international organizations such as APEC and OAS to harmonize various strategies into a multi-layered, unified approach.

This is both a challenge and an opportunity. It is imperative that nations continue to work together to forge effective and efficient partnerships that will help overcome continuing challenges. Recognizing the value of this approach, representatives of the OAS/CICTE Secretariat and APEC now attend each other's meetings.

Through continued close collaboration and partnering, the U.S., Canada, the other APEC economies, and OAS member states will continue to enhance the security of the maritime transportation sector.

**About the authors:**

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*Mr. Stephen Larkin is a senior policy analyst for international marine security policy at Transport Canada.*

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# The Citizen's Action Network



*How the U.S. Coast Guard put the "home" in homeland security.*

by LCDR MICHAEL BILLEAUDEAUX  
U.S. Coast Guard District 13

MR. RYAN F. OWENS  
Chief, Industry Outreach Branch  
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Among other missions, the U.S. Coast Guard is charged with protecting the nation's shoreline, including ports, cities, and critical infrastructure. To manage this, the Coast Guard

relies on a scant 40,000 active duty, 8,000 reserve, and 29,000 auxiliary members. As a relatively small agency with a highly complex and prodigious mission, the Coast Guard has been taking an innovative approach to organize, formalize, and network a grassroots workforce.

Since 1999, the Coast Guard has been utilizing the views, knowledge, and capabilities of a group known as the Citizen's Action Network (CAN). Its members include waterfront businesses, tribal members, and everyday Americans who simply want to make a difference.

CAN members are available day and night to assist—they collaborate with the Coast Guard or other partner agencies by monitoring or reporting back real-time information from their homes, located along thousands

**"The maritime threat environment of the 21<sup>st</sup> century requires broader scope and a more comprehensive vision. We must look beyond traditional surveillance of ports, waterways, and oceans, and continuously adapt to new challenges and opportunities. We must set priorities for existing and developing capabilities to efficiently minimize risks while contending with an uncertain future."**

*—The National Plan to Achieve Maritime Domain Awareness*

of miles of sparsely populated seashores, rugged rivers, or other complex waterways. The Coast Guard communicates directly to Citizen's Action

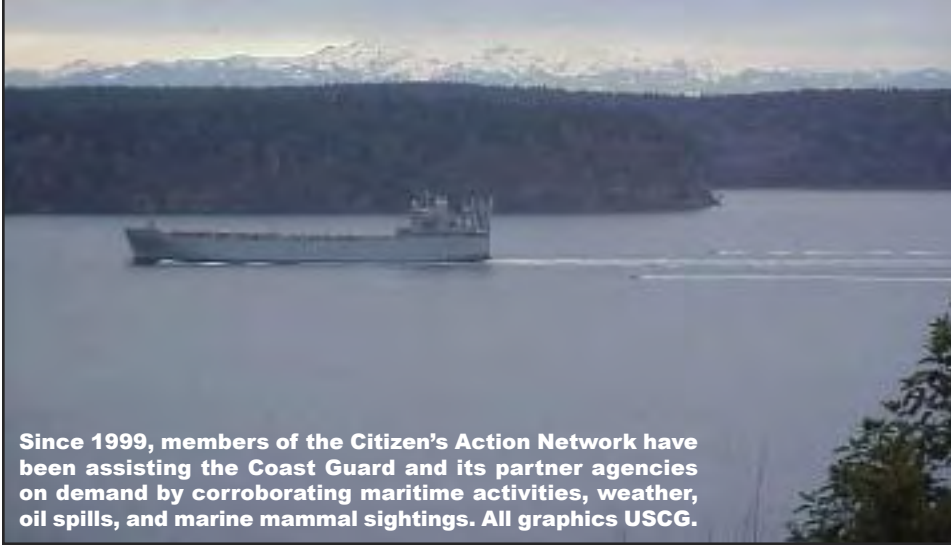
Network members to get assistance in identifying (or

ruling out) the sources of marine flares, gathering on-scene weather, establishing lookouts, or corroborating other information. The Coast Guard also routinely sends electronic messages to the members, keeping them informed and alert throughout emergent and long-term situations.

The immediate availability of these human sensors act as a mission force multiplier, allowing the Coast Guard to add a human element to validate, support, or otherwise give focus to an emergent situation where availability of any other sensor is limited or missing.

Petty Officer 1<sup>st</sup> Class Josh Goldman with the Coast Guard Aids to Navigation Team (ANT) Puget Sound manages more than 300 aids to navigation located throughout the sound. He frequently uses the Citizen's





Since 1999, members of the Citizen's Action Network have been assisting the Coast Guard and its partner agencies on demand by corroborating maritime activities, weather, oil spills, and marine mammal sightings. All graphics USCG.

CAN's on-scene information, field missions are run more efficiently and effectively.

**An Aid to Counterterrorism**

Although CAN is designed as a government-to-citizen support and information network, it is a critical component that provides vigilance within the maritime domain.

Action Network to support his missions. Goldman and others from his command are quoted in a 2007 *Northwest Navigator* feature story discussing the safety, effectiveness, and efficiencies gained by engaging the Citizen's Action Network.

For example, members have reported the presence of illegal migrants, drug labs, suspicious vessel movements, and unusual maritime activities.

"A 10-minute phone call saves us a tremendous amount of trouble," said Goldman. "It saves us the money and time that would go into just checking if a light is working or not." Chief Petty Officer Chris Sage, officer in charge of ANT Puget Sound, agreed, "For three crewmembers to check an aid it could cost as much as \$620, and that is per aid." Others in the same article pointed out that CAN was extremely helpful in that members would contact units to inform them if something appeared wrong or out of place.<sup>1</sup>

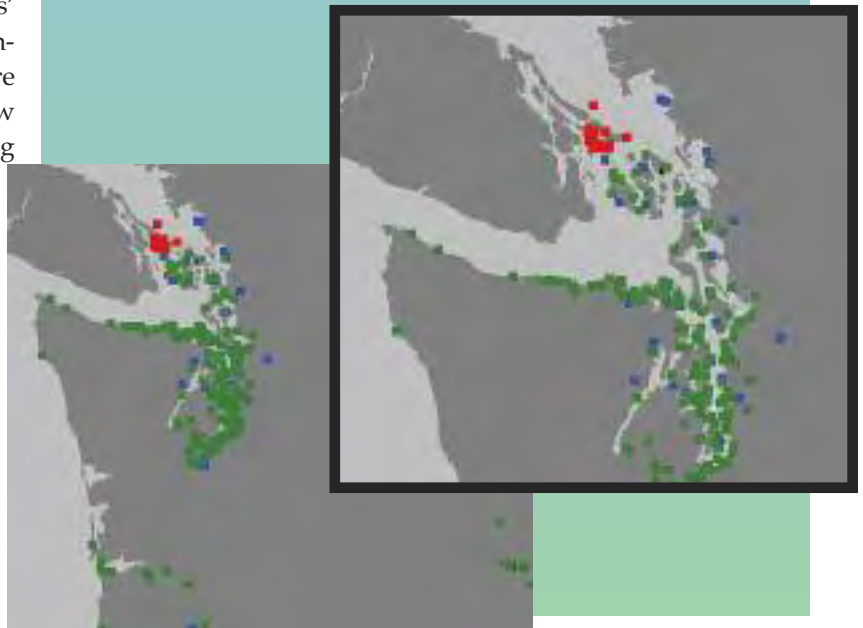
For each member of the Citizen's Action Network, his or her home location and other key information is entered and geographically pinpointed within a centralized mission planning computer, allowing network accessibility simultaneously from any of the 13<sup>th</sup> Coast Guard District operations centers.

CAN membership icons may be viewed with other critical elements within the common operating picture, and detailed information on each member (training, tools, length of membership) can be accessed by clicking on the icon. Each CAN icon is color-coded based on the member's capabilities, membership type, and background check.

Additionally, the scatterplot of CAN locations is exportable for use (via a Coast Guard interface) by partner agencies such as U.S. Customs and Border Protection, the Royal Canadian Mounted Police, or Washington State Patrol.

**A Common Operating Picture**

Citizen's Action Network members' home locations are maintained in a centralized and secure database where Coast Guard dispatchers may view them as part of a common operating picture. CAN locations and membership information may be viewed and layered on top of automatic information system<sup>2</sup> or vessel traffic service-provided vectors, side by side with other law enforcement assets or alongside intended maritime search areas. The Citizen's Action Network assists by providing real-time information to help offset the rise in Coast Guard search and rescue workload and its accompanying effects on its units and people.<sup>3</sup> By leveraging







## TOO MUCH WORK, NOT ENOUGH CAPABILITY

The Citizen's Action Network was initially designed and implemented in 1999 to help tackle Coast Guard Group Seattle's daunting responsibility of managing the thousands of square miles of open oceans and waterways. Traditionally, information-gathering activities had been left to Coast Guard field units. In this regard, Coast Guard vessels or aircraft often traveled hundreds of miles to clarify sketchy reports, check on a situation, or respond to a marine hoax or false alarm. The investment required to divert assets to investigate murky details of a marine incident often left other regions unprotected, crews dangerously fatigued, and resources taxed or broken.

In 2001, this strain on the Coast Guard's aging assets came to light. Studies by the Office of Inspector General and a Coast Guard internal review team found that readiness conditions at the 188 Coast Guard multi-mission stations had been deteriorating for more than 20 years. This debilitating situation was exacerbated after 9/11, according to the United States Government Accountability Office's report to the Senate and House committees on appropriations in January of 2005.<sup>1</sup> This report found that the Coast Guard's multi-mission stations had experienced a substantial rise in overall activity levels following the 9/11 attacks when stations were summarily assigned the brunt of the Coast Guard's port security responsibilities, leading to considerable increases in the stations' workloads.<sup>2</sup>

According to Department of Homeland Security statistics, there is one firefighter for every 280 citizens, one sworn police officer for every 385 citizens, and one emergency medical technician/paramedic for every 325 people. In the maritime domain, however, this ratio is not as forgiving, with only one Coast Guardsman for every 7,500 Americans.<sup>3</sup>

### Endnotes:

<sup>1</sup> United States General Accounting Office, report to the Senate and House Committees on Appropriations United States Government Accountability Office, "Station Readiness Improving, but Resource Challenges and Management Concerns Remain," GAO-05-161, Jan. 2005.

<sup>2</sup> This trend is documented in the number of hours that station boats were operated before and after 9/11. Boat hours increased by 44 percent, from a level of about 217,000 hours prior to the terrorist attacks to more than 300,000 hours by the end of fiscal year 2004.

<sup>3</sup> Department of Homeland Security, "Citizen Corps Introduction."

The network experienced a 15 percent jump in membership in the weeks following the 2005 London terror bombings and ensuing rise in the national homeland security advisory level for mass transportation. The membership increase was especially robust within the civilian population living within sight or walking distance of Washington State Ferry System routes. While

only anecdotal evidence exists, it is clear that the rapid rise in membership numbers along specific at-risk locations strongly suggests a positive correlation between global terror events and the "concern-turned-into-action"<sup>4</sup> social phenomenon. Academic research conducted on CAN at the Center for Homeland Defense and Security has suggested that the network's member vigilance may be developed and groomed via strong two-way association with the Coast Guard, establishing the network's goal clarity, building agency trust, and providing access to the servicing agency.<sup>5</sup>

Since 2005 the Coast Guard has been banking on public vigilance in the maritime domain through the America's Waterway Watch program (toll-free number 877-24-WATCH). Citizen's Action Network members are also armed with this reporting number and have used it to report in some significant cases.

For example, in March 2007, the Coast Guard and Royal Canadian Mounted Police alerted hundreds of CAN members and their Canadian CAN counterparts that a \$300,000 unmarked Canadian vessel had been stolen in Victoria, British Columbia, and was thought to have been sailed into U.S. waters. An immediate digital voice message was sent through to the network, which was quickly augmented with digital images and supplemental information sent via e-mail. Within 24 hours the vessel was spotted and reported by a CAN member in the South Puget Sound region. Law enforcement officers positively engaged and established several weeks' worth of surveil-

lance, which ultimately led to the recovery and return of the Canadian vessel and identification of individuals supporting a vessel "chop shop."

### The Future of the Citizen's Action Network

As a networked community, CAN represents a new homeland security working model—a best practice for



building a grassroots culture of prevention that capitalizes on broad and inspired citizenry. The network helps carry out the important duties of protecting the nation, as these citizens are by far more familiar with their waterfront communities, and are therefore in the best position to help create effective solutions to unique problems.

The program received the DHS Secretary's Award for Excellence in May 2006, which recognized its contribution to substantial maritime security improvements. In 2007 the Coast Guard Commandant's Innovation Council awarded CAN seed funds to purchase a supply of night vision goggles, binoculars, and AM/FM marine band radios.

In 2008 the Coast Guard Domestic Ports and Waterways Branch teamed up with the U.S. Customs and Border Protection service to develop a national implementation plan that will formalize the CAN concept within a more robust America's Waterway Watch concept. The idea is to maximize the power of citizens, businesses, and tribal members among a variety of federal, state, and local agencies covering many domains, including borders, airports, rail systems, and highways.

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## HOSTAGE RESCUE

On the morning of February 23, 2005, members of the Citizen's Action Network were called for assistance in a breaking case. Police were searching for a man who had stolen a yacht and taken a woman hostage. The Coast Guard launched or diverted all of its available boats and helicopters to support the sheriff's marine units already searching the region's waterways, numerous islands, and nearly 1,000 miles of shoreline.

CAN members were put on watch and maintained a lookout from their waterfront homes. Throughout the search, information relayed from CAN members allowed the Coast Guard's command center personnel to narrow the search area and most effectively utilize the assets taking part in the effort.

Some of the network members in the south Puget Sound region could see across narrow waterways, and effectively acted as visual "gatekeepers" to all marine traffic. Others, with more expansive views, were able to rule out entire swaths of waterways altogether.

All Citizen's Action Network information was shared with city and county underway law enforcement vessels. By the afternoon, CAN members were stood down when the subject vessel was identified. The suspect was subsequently arrested and the hostage was freed unharmed.



**Endnotes:**

- <sup>1</sup> Northwest Navigator, "Citizen's Action Network, A Valuable Coast Guard Asset," March 2, 2007.
- <sup>2</sup> The automatic identification system is used by ships and vessel traffic services (VTS) principally for identification and locating vessels. It provides a means for ships to electronically exchange ship data, including identification, position, course, and speed, with other nearby ships and VTS stations.
- <sup>3</sup> The Coast Guard cited human error as its most significant cause of mishaps. In 1993, a GAO report revealed that 60 to 65 percent of cutter and boat operational mishaps had human error as a contributing cause. Follow-up studies revealed that this high human error rate was caused by the overtaking of our operational crews during any given workday. Source: United States General Accounting Office, Testimony Before the Subcommittee on Transportation and Related Agencies, Committee on Appropriations, House of





**United States Coast Guard Auxiliary members who are also Citizen's Action Network members receive binoculars, night vision scopes, and marine-band radios, which were purchased through seed money provided by the USCG Commandant's Innovation Council program. CAN members are encouraged to join the auxiliary to receive added benefits, which include extra training, more direct engagement with the USCG, and the ability to receive observation and communication tools such as those seen here.**

Representatives, "Coast Guard Improvements Needed in Management of Programs and Activities," GAOAT-RCED-93-28, April 20, 1993.

<sup>4</sup> In his book "Bowling Alone," social scientist Robert Putnam suggests that increased social capital, such as volunteerism, has significant political consequences, such as the promotion of political participation and healthy democratic government. He claims that, since 9/11, more citizens are now more inclined to re-engage in their communities.

<sup>5</sup> The research findings concluded that CAN membership includes higher-than-average concentrations of military veterans, business owners, and members of non-profit organizations (among others). CAN members also have higher community engagement and community affect levels than either randomly surveyed citizens or those in other government-led volunteer organizations. The research also demonstrated that CAN members

joined as highly engaged citizens and also stayed highly engaged during their membership tenure. CAN's organizational structure was found to fit that of a classic "community of practice," with vigilance supported as a unique outcome variable, and goal clarity as its strongest predictor index. Finally, those CAN members who received written or oral communications with the Coast Guard garnered significantly higher levels of access to parties and trust-based social capital measures. In turn, those who scored at the higher levels of these two indexes significantly correlated positively to nearly every other measurement index, thus pointing back to the power and value of leadership-to-member communications. See extensive results in the thesis "Leveraging Citizens and Cultivating Vigilance for Force Multiplication in the Maritime Domain," found at pacwest.org.

*For more information, please see the following Citizen's Action Network websites:*

**The CAN's primary website:**

<http://www.uscg.mil/d13/can/>

**"How to" tools and information on starting up  
your own Citizen's Action Network:**

<http://www.citizensactionnetwork.info/>



# Improving Commercial Fishing Vessel Safety Through Collaboration

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**C**ommercial fishing in Alaska's Bering Sea/Aleutian Island (BSAI) crab fleet has long been one of the most dangerous occupations in the United States, and was popularized in the Discovery Channel's series "The Deadliest Catch." Stemming in part from the devastating losses of the Seattle-based crab vessels F/V *Americus* and F/V *Altair* in February 1983 (a combined total of 14 fatalities), Congress passed the Commercial Fishing Industry Vessel Safety Act in 1988.

The Commercial Fishing Industry Vessel Safety Act of 1988 provided the first Coast Guard authority for development of safety regulations for commercial fishing vessels. The act focused on improving the survivability of commercial fishermen after a casualty. Despite the improvement in safety from the regulations under the act, there is no authority to require regularly scheduled safety compliance examinations, and commercial fishing vessels remain classified as "uninspected." This legal framework has prompted extensive collaboration to improve safety. The regulations developed under the act require survival equipment, including life rafts, immersion suits, emergency position indicating radio beacons (EPIRBs), and also some training in emergency drills and the use of this emergency equipment.<sup>1</sup> These

safety regulations had their intended effect in Alaska commercial fisheries, which experienced a 67 percent decline in total commercial fishing deaths and a 38 percent decline in the commercial fishing fatality rate from 1990 to 1999.<sup>2</sup> However, the shellfish fisheries in Alaska had the highest fatality rate of all fisheries in the state.<sup>3</sup>

The Bering Sea/Aleutian Island crab fleet, which figured so prominently in the development of the safety legislation and regulations, continued experiencing staggering losses. During the 1990-1999 crab seasons, an average of eight lives were lost annually as a result of vessels capsizing or sinking, man overboard incidents, and industrial accidents.<sup>4</sup> In October 1999, an innovative regional safety program focusing on the prevention of vessel loss was developed to address the hazards of this dangerous fishery.

## Crab Fishery Information and Operations— The Olympic Years

Catcher vessels (which catch and deliver live crabs to shore-based or floating processing vessels) engaged in



### BSAI Crab Harvest Volume Comparison 1990-2006<sup>5</sup>

| Year           | 1990-1994          | 1995-1999          | 2000-2004         |
|----------------|--------------------|--------------------|-------------------|
| Harvest Volume | 288 million pounds | 158 million pounds | 43 million pounds |

**Table 1**

BSAI crab fisheries are highly specialized for crab fishing service. The average vessel gross tonnage is less than 200, vessel length is between 90 and 120 feet, and each vessel has a crew of five to six people. These vessels utilize pot gear to harvest the crabs, with pot dimensions approximately seven feet by seven feet by three feet and each pot weighing 750-850 pounds.<sup>6</sup>

Prior to the start of the season, vessels typically arrive in the ports of Dutch Harbor, Akutan, King Cove, St. Paul, and Kodiak to purchase bait, fuel, and groceries for the season. During this time, vessels also load pot gear, stacking the gear on deck in tiers. The first tier is stacked on end, and subsequent tiers are stacked flat. Combined, these tiers measure approximately 15-20 feet high from the deck. Once vessels had loaded all gear and completed a tank check and registration, they would depart from these multiple ports simultaneously en route to the crab fishing grounds. Once on the fishing grounds, the season would begin at a time predetermined by the Alaska Department of Fish and Game (ADF&G), and vessels would begin fishing.

The Bering Sea/ Aleutian Island crab fisheries are managed jointly by the National Marine Fisheries Service and the ADF&G. Fleetwide harvest levels, known as the guideline harvest level, are determined by the Alaska Department of Fish and Game for each fishery on an annual basis. In an "Olympic" fishery, there is no quota assigned to individual vessels. Vessels compete directly with each other to maximize catch and revenues within the limitations of the guideline harvest level. From 1990 through 2005, there were approximately six major geographically and species-specific commercial crab fisheries conducted annually in the BSAI management area. The major seasons typically began in August for eastern and western Aleutian Island golden king crab, followed by blue and red king crab seasons in the Pribilof and St. Matthew Islands in September, Bristol Bay red king crab in October, eastern and western Bering Sea bairdi crab in November, and Bering Sea opilio crab in January.<sup>7</sup>

The BSAI crab resource underwent a significant decline during this time period, resulting in major reductions in catch for some fisheries and outright closures of three of

the six major crab fisheries. Table 1 shows this decline in five-year increments.

#### Economic Pressure

While the crab amounts declined substantially, the total number of vessels participating in the fisheries did not. The biggest fisheries management problem with the Bering Sea crab fleet was that despite efforts to limit overcapacity and fishery participants through a license limitation plan, the catching power within the fleet far exceeded the available amount of crabs. As a result, the average vessel in the crab fleet was making less money. The annual ex-vessel value (average value of crab harvest per vessel) of the Bering Sea Crab harvest from the major crab fisheries was well below the decade average, falling from \$1.75 million per vessel in 1990 to \$0.7 million per vessel from 1995-1998.<sup>8</sup>

In such a highly competitive fishing environment, a vessel with greater catching power has a better chance to catch more fish and obtain a greater economic reward. This was one of the major factors that transformed this economic problem into a safety problem.<sup>9</sup> In the Bering Sea crab fleet, the catching power or capability of a vessel is directly related to a critical vessel safety feature: the number of pots a vessel is able to carry.<sup>10</sup> As more vessels have entered the fisheries and crab stocks have declined, there has been a proportional reduction in per vessel harvest and income. In an attempt to recapture this lost share, some vessel owners have increased their harvesting capability by investing in the ability to carry additional pots.<sup>11</sup> The safe carriage

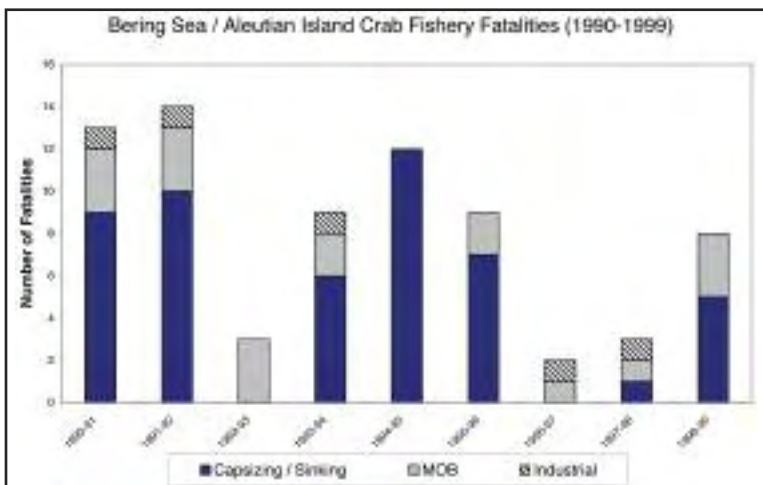
#### Pursuing Enhanced Authority

In 2006, as part of its FY08 legislative proposal, the Coast Guard recommended a provision that sought to authorize a pilot program for dockside crew survivability exams to conduct mandatory dockside crew survivability examinations on uninspected U.S. commercial fishing vessels in two geographic areas for a period of five years.

In the 110<sup>th</sup> Congress, the Coast Guard and Maritime Transportation Subcommittee of the House Committee on Transportation and Infrastructure introduced a more robust fishing vessel safety provision for FY09 as part of H.R. 2830, the Coast Guard Authorization Act of 2008, which passed the House of Representatives. Section 307 of H.R. 2830 would have mandated dockside fishing vessel examinations and crew training.

The Coast Guard continues to pursue expanded authority for mandatory dockside examinations of commercial fishing vessels in order to improve vessel safety in this vital industry.





**Figure 1: BSAI Crab Fishery Fatalities 1990-1999 (USCG/NIOSH, unpublished data, 2008).**

of additional pots often necessitates expanding the vessel dimensions through increasing the length or beam of the vessel.<sup>12</sup> Because such investments are extremely expensive (e.g., a million dollars or more), not all owners can afford or are willing to take such measures, especially with the poor fishery outlook.

A much simpler and less expensive way to increase catching power is to carry additional pots without any vessel modification. For example, a vessel that normally carries 120 pots can increase its catching/earning power by 20 percent by adding 24 additional pots. Under the existing regulatory regime, the number of pots that a vessel can carry is limited by the vessel's stability booklet/letter, or ADF&G pot limits for certain fisheries. Adding pots beyond the vessel's stability requirements raises the center of gravity, decreases the freeboard of the vessel, and lessens the vessel's righting arm. In less technical terms, adding more pots to the vessel puts weight up higher, pushes the vessel lower in the water, and decreases the vessel's ability to right itself from external heeling forces such as wave action, wind action, or internal forces such as free surface effect, improper loading, or tank management.<sup>13</sup> Crab vessels are particularly susceptible to certain kinds of catastrophic casualty events. When fully loaded with pot gear, they are susceptible to capsizing, especially during icing conditions, as is common in the Bering Sea's winter months.

#### Vessel Loss History and Fatality Rates 1990-1999

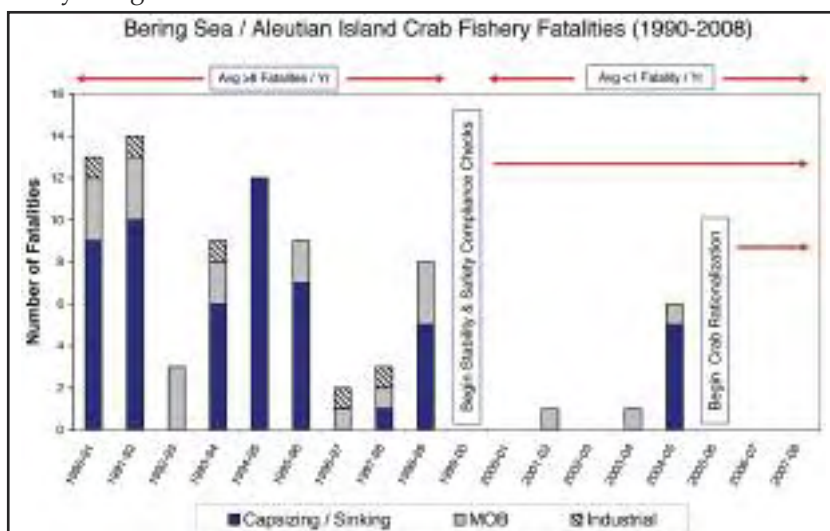
From October 1990 through March 1999, 73 people died in the BSAI crab

fisheries (Figure 1) as a result of capsizing, sinking, man overboard (MOB), and industrial accidents, such as being struck or crushed by crab pots.<sup>14</sup>

During this period, 50 people on 12 vessels died as the result of capsizing/sinking events.<sup>15</sup> At least eight of the 12 vessel losses occurred when the vessels were en route to or coming from the crab grounds in a loaded condition. A primary cause for many of these fatal capsizing/sinking events was vessel overloading or being fully loaded in icing conditions. According to USCG investigations, at least three of the 12 vessels lost were determined to be overloaded. When taking into account changes in workforce size, variations in season length, and number of vessels participating in the fishery, workers participating in crab fisheries in the Bering Sea were experiencing an astronomical fatality rate of 768 fatalities per 100,000 full-time fishermen.<sup>16</sup>

#### Partnerships and Program Development

Many stakeholders saw the need to develop a tailored program to address the specific hazards these vessels faced. The BSAI crab fleet historically had a high level of participation with the voluntary dockside exam (VDE) program. A voluntary dockside exam is conducted when USCG fishing vessel safety personnel are invited aboard the vessel at the master's request to examine required safety equipment. If the vessel is in full compliance, a VDE decal is issued. Although there was a high level of participation with the program (58 percent of the fleet had a current VDE decal in October 1999), there was a general recognition that the program was not addressing the safety problems within the fleet.



**Figure 2: BSAI Crab Fishery Fatalities 1990-2008 (USCG/NIOSH, unpublished data, 2008).**



To have the largest impact on reducing vessel losses and fatalities, the desired safety program would need to prevent capsizing events and specifically target the practice of vessel overloading. Because this kind of targeted safety intervention program had never been attempted before, it was critical to establish a strong agency/industry partnership to achieve maximum effectiveness.

The “At the Dock Stability and Safety Compliance Check” (SSCC) program that developed from this effort yielded impressive results. From October 1999 to January of 2005, the only fatalities associated with the fleet were three man overboard fatalities. Capsizing events had ceased. One exception happened on January 15, 2005, when the F/V *Big Valley* capsized, resulting in five fatalities. A subsequent investigation revealed that the vessel departed Dutch Harbor in a grossly overloaded condition and had not been the subject of an SSCC examination. It was also noted during the investigation that the vessel had been found to be overloaded in two previous SSCC exams, and had been directed to remove pots.

The loss of the vessel revealed the shortcomings in the USCG’s ability to contact 100 percent of the fleet prior to the start of the season, and also revealed that the weight of crab pots had increased significantly since the issuance of most of the fleet’s stability letters. Specifically, the F/V *Big Valley* was carrying approximately 55 crab pots (weighing 780 pounds each) instead of 31 pots (weighing 600 pounds each) as allowed by the vessel’s stability report.

But even with this accident, in the seven years since this enforcement program was established, only eight lives have been lost, or slightly more than one life annually. This is a significant improvement over the 1990–1999 time period, where the fleet lost an average of eight fishermen annually.

### Overall Results

The results of this program can be measured in the reduction of fatalities. Figure 2 depicts this decline in fatalities since implementation of the SSCC. Since its implementation in October 1999, and since the conclu-

## STABILITY CHECK

The safety program developed for the BSAI crab fleet, known as the “At the Dock Stability and Safety Compliance Check,” was cooperatively established through a partnership of the 13<sup>th</sup> and 17<sup>th</sup> Coast Guard Districts, the Alaska Crab Coalition (a crab industry group), the North Pacific Fishing Vessel Owners’ Association, the National Institute for Occupational Safety and Health (NIOSH) Alaska Field Office, and ADF&G. By working closely with NIOSH to develop robust casualty analysis that could withstand industry and scientific scrutiny, the USCG was in a strong position to approach the Alaska Crab Coalition and the North Pacific Fishing Vessel Owners’ Association to propose an intervention strategy that would:

- Increase USCG interaction with the crab fishing industry.
- Provide a mechanism to review stability and safety issues with vessel masters.
- Allow for mandatory dockside compliance examinations of required vessel safety equipment.
- Deter overloading of the crab vessels.

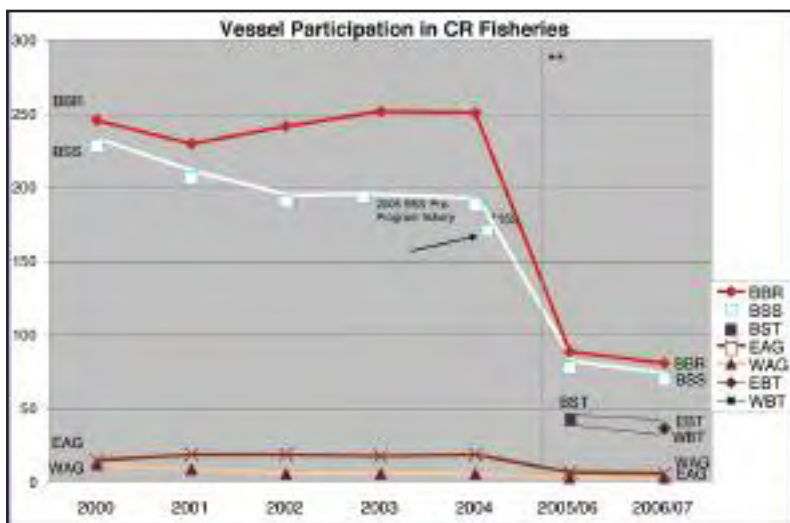
The Bering Sea/Aleutian Island crab industry leadership was very receptive to this kind of program because it placed a high value on safety and responsible vessel operations. The program was viewed in large part by the crab industry as a leveling of the playing field. The crab industry endorsed the program, offering strong support to senior USCG leadership through numerous public forums. Bringing together these various partners proved invaluable in implementing a viable and workable approach that would address key areas of concern without imposing an unnecessary burden on the crab fleet.

To execute the program, the USCG at Marine Safety Detachment Unalaska, accompanied by personnel from Marine Safety Office Anchorage, 17<sup>th</sup> USCG District, and the 13<sup>th</sup> USCG District, joined with ADF&G to conduct tank checks in multiple ports.<sup>17</sup> While ADF&G personnel conducted tank checks, the USCG reviewed vessel loading and stability issues with the master and checked for overloading. Operating in this manner, the ADF&G/USCG team would be on each vessel for a total of 10-15 minutes. Vessels found to be without stability reports, overloaded, or having missing, outdated, or inoperable primary lifesaving equipment (i.e. immersion suits, life rafts, EPIRBs) would be issued captain of the port orders and not be allowed to get underway until the safety discrepancy was corrected.



sion of the Olympic fisheries in January 2005, the USCG conducted at-the-dock stability checks and compliance examinations 12 times in October and January of each year prior to the crab seasons. The decline in the number of fatalities is real. According to NIOSH, this program has resulted in a 60 percent reduction in the fatality rate in the BSAI crab fleet.<sup>18</sup> The reduction in the





**Figure 3: Vessel Participation in CR Fisheries.**<sup>19</sup> BBR = Bristol Bay red king crab, BSS = Bering Sea opilio crab, BST = Bering Sea Tanner crab, EAG = eastern Aleutian Island golden king crab, WAG = western Aleutian Island golden king crab, EBT = eastern Bering Sea bairdi crab, and WBT = western Bering Sea bairdi crab.

fatality rate takes into account the reduction in the size of the fleet.

### Bering Sea Crab Rationalization

In 2005, the BSAI crab fishery management regime underwent comprehensive and dramatic change with the implementation of the BSAI crab rationalization (CR) program. This quota-based system provides allocations of crab resources to vessels, processing companies, and vessel masters.<sup>20</sup> The CR program includes several measures to protect revenues and employment in fishery-dependent coastal communities with a history of participation in the Bering Sea/Aleutian Island crab fisheries.<sup>21</sup> As a consequence, there are requirements for vessels to land catch in various communities.

Under this new system, the “Olympic” fishery is over. Vessels no longer maximize catch and income through a “race” to fish. Instead, vessel owners are issued a quota based upon their percentage of annual average catch, as recorded during certain qualifying years within the fishery. Vessel owners may fish that quota without competition from other vessel operators or concern that someone else will harvest their catch. Additionally, vessel owners may form cooperatives and lease or sell their quota to be harvested by another vessel. Cooperatives must use a hired master to harvest cooperative quota share, and vessels must be owned in part by a cooperative member.<sup>22</sup>

A primary goal of the crab rationalization program was to improve safety in the crab fleet by ending this race to fish, improving economic stability within the fleet, and allowing

more efficient (and hopefully safer) vessels to harvest the quota. At the time of this publication, the CR program was in the midst of completing its 36-month review, as required by the North Pacific Fishery Management Council, and empirical safety data is incomplete at this time.

Based upon interviews with individual owners and operators, there are several changes brought about by the CR program that indicate safety is improving.

**Casualty Rates/SAR Cases.** Since the beginning of the CR program in August 2005, there continue to be no vessel losses for vessels participating in the rationalized crab fisheries.<sup>23</sup> However, USCG cutter time has increased from 10 days to 135 days annually due to the fleet taking advantage of the opportunities provided by the CR program to spread out their fishing effort over time.

**Increases in Fishing Season Length/Lack of a Derby Start.** There has been a significant increase in the number of fishing days for the fleet. In the final years of the Olympic-style Bristol Bay red king crab fishery, the season length had been reduced to three to four days. Under the new crab rationalization program, the average days fished per vessel was 26 days for the 2005/06 season and 21 days for the 2006/07 season.<sup>24</sup> Substantial season length increases have been noted for the Bering Sea opilio fishery as well. Ending the derby start has also provided masters the opportunity to ensure that the vessel and crew are fully ready before getting underway.

**Reduction in Vessels.** A major impact to the fleet following crab rationalization was the immediate and significant consolidation of fleet due to the sidelining of less efficient vessels and the extensive use of vessel cooperatives.<sup>25</sup>

**Crab Gear Carried and Fishery Pace.** Under the Olympic-style fisheries, vessels would maximize catching power to improve their ability to quickly locate and

|   | Harvest Volume | Average Pot Lifts Per Vessel Day | Average Pots Carried Per Vessel |
|---|----------------|----------------------------------|---------------------------------|
| 1992 Bristol Bay Red King Crab (Olympic Style)        | 16.9 Million   | 107                              | 294                             |
| 2005 Bristol Bay Red King Crab (Crab Rationalization) | 16.5 Million   | 37                               | 177                             |

**Table 2**





## AT THE DOCK STABILITY AND SAFETY COMPLIANCE CHECK (SSCC) PROGRAM RESULTS

**Increased USCG interaction with the crab fishing industry.** USCG personnel have conducted At the Dock Stability and Safety Compliance Check (SSCC) examinations simultaneously in multiple western Alaska ports for every major crab fishery in western Alaska since October 1999. The goal for each crab season was to conduct mandatory compliance examinations of 60 to 70 percent of the crab fleet (160–175 vessels) at the dock prior to the start of the season. In determining which vessels were boarded, no distinction was made between vessels with current fishing vessel safety decals (approximately 58 percent of the fleet) and vessels with no decals (42 percent of the fleet) because the primary focus was on vessel loading practices.

In addition to these dockside operations, USCG personnel began attending nightly price negotiation meetings as well as annual crab industry meetings to review program results and familiarize themselves with crab fishery issues. These direct visits to vessels and industry meeting attendance greatly increased USCG/crab industry/fishery manager interactions, allowing development of a sustained and mutually beneficial relationship.

**Provided a mechanism to review stability-related issues with vessel masters.** During the course of the SSCC examinations, USCG personnel reviewed vessel stability letters with vessel masters. The stability information lists the number of pots that can be carried by the vessel safely in non-icing conditions, and have specific tank and hold loading instructions or reduced pot loadings for icing conditions. Reviewing stability information at the dock provided an ideal opportunity to emphasize the importance of vessel stability and to correct any vessel loading problems.

**Allowed examination of vessel safety equipment.** Another program focus was to examine primary lifesaving equipment. This included spot checks of immersion suits, life rafts, and EPIRBs to ensure all required equipment was properly serviced and installed correctly. During the first season, approximately 50 percent of the vessels had major safety deficiencies associated with primary lifesaving equipment. Because compliance checks were conducted at the dock and prior to the start of the season, corrections of deficiencies related to primary lifesaving equipment could be addressed immediately with minimal disruption to vessel operations. Five years into the program, primary lifesaving deficiencies were noted on less than five percent of the boats examined—a 90 percent decline in this type of discrepancy. Additionally, the number of vessels participating in the fishing vessel safety decal program increased from approximately 58 percent in 1999 to 95 percent in 2005.

**Deterred overloading.** The main goal of the program was to provide a deterrent to overloading. By flooding individual ports with USCG marine safety personnel and having those personnel conduct mandatory compliance examinations at the dock for a large number of crab boats prior to the start of the season, the opportunity for detection of overloading was greatly increased. One to two vessels were detected in an overloaded or improperly loaded condition, and were directed to remove pots. Because compliance checks were conducted at the dock and prior to the start of the season, the removal of pots could be done safely and with minimal disruption to vessel operations.

catch crab in the intensely competitive derby fishery. Since the implementation of the CR program, the number of pots carried has been decreased significantly, reducing the emphasis on catching power and potentially providing a greater margin of safety. Table 2 provides a comparison between the 1992 Bristol Bay red king crab season and the 2005 Bristol Bay red king crab season.

Of further interest is the reduction in the number of pot lifts per vessel per day. This is an indicator of fishery pace, and demonstrates that the fishery has slowed down considerably under the CR program, providing more opportunity for crew rest and reducing crew fatigue.

### A Look Ahead

Despite these notable changes in operational behavior, which can improve safety, the crab rationalization program alone is not enough to make all safety problems disappear. With implementation of the program, other

influences have developed that could negatively impact safety.

Interviews with individual masters have indicated that since the program dictates a percentage of the catch be delivered to pre-designated processors, there are times when vessels are forced to deliver to ports where waterway conditions are poor due to winter icing.<sup>27</sup> In addition, vessel masters have also expressed concern about rigid delivery dates established by processors and the implications of having to “race” to meet pre-established delivery schedules.

Given the exceptionally challenging operating conditions of the Bering Sea, it is still necessary for the USCG and agency/industry partners to continue emphasizing the safety of these vessels through fleet-wide dockside prevention efforts. The SSCC examination process relied on the “race to fish” to maximize USCG exposure to the fleet in a short time frame.

To maintain the USCG's ability to have extensive interactions with the crab fleet, the ADF&G and NMFS have changed their regulations to require that vessels participating in the CR fisheries have a current fishing vessel safety decal. This adjustment provides the USCG with regular opportunity to visit the vessels to ensure compliance with safety requirements. It also provides suitable leverage to hold a vessel in port if there are serious safety concerns detected that need to be addressed before the vessel is permitted to get underway.

**About the authors:**

CDR Woodley, CDR Lincoln, and Mr. Medicott have collaborated for 15 years on researching, developing, and implementing safety initiatives for commercial fishing vessels operating in Alaskan fisheries.

**Endnotes:**

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CONCLUSIONS

1. The At the Dock Stability and Safety Compliance Check examination program developed among the USCG, partner agencies, and the BSAI crab industry has had a significant positive impact in reducing vessel loss and subsequent fatalities in the BSAI crab industry by 75 percent.
2. The high level of coordination and communication among all stakeholders, particularly between the USCG and the crab industry, should be used as a model for other fishing vessel safety intervention programs.
3. A critical component of the program was conducting mandatory compliance examinations at the dock, where serious safety concerns could be identified and remedied without placing the vessel or the crew in danger.
4. The At the Dock Stability and Safety Compliance Check examination increased visibility and participation in the USCG fishing vessel safety decal program.
5. Major safety improvements such as reducing vessel losses and subsequent casualties in the Bering Sea crab fleet occurred with the implementation of the At the Dock Stability and Safety Compliance Checks, before the start of the BSAI crab rationalization program.
6. The crab rationalization program has significantly reduced, if not completely eliminated, the "race to fish."
7. An increased number of fishing days, increased flexibility for masters to choose when to fish, and reduced emphasis on catching power and large pot loads potentially have safety benefits and contribute to eliminating vessel losses.
8. Under its current construct, there are incentives in the BSAI crab rationalization program to "race" to meet pre-arranged landing dates or locations. This "race" and its potential inflexibility may create safety hazards for the fleet.
9. Despite safety improvements, it is still imperative that owners provide well-maintained vessels and professionally trained crews to operate in this fishery, and it is also necessary that the USCG and agency/industry partners continue dockside compliance and casualty prevention efforts.
10. A significant and continued commitment on the part of the vessel owners and fishery managers is necessary to ensure that other economic factors or fishery management decisions do not negatively impact safety.







# The National Search and Rescue Committee

*Working together to support lifesaving.*

**I**n this post-Hurricane Katrina era, citizens expect federal agencies to work together to save lives in challenging search and rescue operations. It's not just federal agencies—states, tribal, local, and volunteer search and rescue counterparts need to learn to work together as well. The federal government coordinates federal interagency efforts through the National Search and Rescue Committee.



## What is the NSARC?

There is quite a bit of history behind the National Search and Rescue Committee (NSARC). In 1954, President Dwight D. Eisenhower asked the Air Coordinating Committee to review U.S. civil aviation policy. The committee members studied all available facilities, including provisions to control and coordinate all types of search and rescue missions. Their efforts resulted in the National Search and Rescue Plan of the United States. Unfortunately, after this excellent start, the plan sat on a federal shelf for over almost two decades.

During a 1974 national search and rescue (SAR) conference, the Department of Transportation volunteered

by MR. RICK BUTTON  
Chief, Coordination Division  
U.S. Coast Guard Office of Search and Rescue

to organize and implement the Interagency Committee on Search and Rescue (ICSAR) to oversee the National Search and Rescue Plan. In 1999, the National Search and Rescue Plan was rewritten and ICSAR was renamed the National Search and Rescue Committee. In 2007, as a result of the problems identified in the federal response to Hurricane Katrina in 2005, the National Search and Rescue Plan was rewritten a second time. The revised plan now includes the federal government's response to large-scale, infrequent, mass rescue SAR operations.

The Coast Guard (representing the Department of Homeland Security) has chaired the National Search and Rescue Committee since ICSAR was first established in 1974. The Coast Guard Office of Search and Rescue serves as the alternate chair and provides NSARC's administrative support.

In addition to the Department of Homeland Security, NSARC member federal departments and agencies include the Departments of Defense, Commerce, Interior, and Transportation; the Federal Communications Commission; and the National Aeronautics and Space Administration. Other national organizations such as the Civil Air Patrol and the National Association for Search and Rescue participate as observers.



NSARC's objectives:

- Provide a standing committee to oversee the National Search and Rescue Plan and coordinate interagency SAR matters.
- Provide a forum for preliminary development of interagency positions in SAR matters.
- Provide for an interface with other national agencies involved with emergency services.

In addition to overseeing the National Search and Rescue Plan, NSARC also developed the United States National SAR Supplement, which has two key goals:

- Provide guidance to NSARC members on implementing the National Search and Rescue Plan.
- Provide guidance for member agencies in fulfilling U.S. obligations under international conventions such as the International Maritime Organization's International Convention on Maritime Search and Rescue and the International Civil Aviation Organization's Convention on International Civil Aviation of 1949.<sup>1</sup>

### NSARC and the U.S. Aeronautical and Maritime SAR Regions

Many people do not realize that the world's oceans are divided into aeronautical and maritime SAR regions, with nations assuming responsibility for coordinating search and rescue within their respective regions. For the United States, our recognized aeronautical and maritime SAR regions are massive, spanning almost two-thirds of the Pacific Ocean to the North Pole (including Hawaii and Guam) and approximately half of the North Atlantic Ocean (the U.S. land mass is also covered for aeronautical SAR). In support of International Maritime Organization and International Civil Aviation Organization (ICAO) requirements, our SAR regions extend to and are contiguous with those of neighboring nations.

To coordinate search and rescue within these regions, the National Search and Rescue Plan identifies aeronautical and maritime federal SAR coordinators. The Coast Guard is the federal aeronautical and maritime SAR coordinator for the United States oceanic SAR regions and routinely works with other nations in support of lifesaving at sea. The Coast Guard maintains joint rescue coordination centers (RCCs) within each Coast Guard district to coordinate SAR operations within their respective regions. Coast Guard RCCs are located in Boston, Mass.; Portsmouth, Va.; Miami, Fla.;

New Orleans, La.; Cleveland, Ohio; Alameda, Calif.; Seattle, Wash.; Juneau, Alaska; and Honolulu, Hawaii. The Coast Guard also maintains two rescue subcenters located in San Juan, Puerto Rico and Guam.

The Air Force is the federal search and rescue coordinator for the continental United States. Just as the Coast Guard maintains internationally recognized joint RCCs, the Air Force maintains an aeronautical rescue coordination center at Tyndall Air Force Base, Panama City, Fla. The Air Force works with Civil Air Patrol, state SAR coordinators and agencies, local and tribal governments, and volunteers to conduct land SAR operations.

The federal SAR coordinator for Alaska is U.S. Pacific Command, whose 11<sup>th</sup> RCC is located at Alaska National Guard Headquarters, Fort Richardson, Alaska.

### Interagency Efforts

Over the last several years, NSARC members have worked to support many national SAR issues. It's a challenge to ensure that agency-specific requirements are being met while at the same time developing unified national positions and guidance.

- **SARSAT.** In the 1970s NSARC championed the development and implementation of Search and Rescue Satellite Aided Tracking (SARSAT), a satellite-based system that relays distress location and identification information from emergency beacons



**Emergency position indicating radio beacons and emergency locator transmitters. Graphic courtesy of the National Oceanic and Atmospheric Administration.**

carried by aviators, mariners, and land-based users to SAR services. SARSAT is managed by the National Oceanographic and Atmospheric Administration, the Coast Guard, the Air Force, and NASA.



The system involves the use of emergency beacons, satellites, and ground equipment to relay distress location and identification information to search and rescue authorities. SAR instruments are flown on low-Earth polar orbiting and geostationary-orbiting satellites provided by the U.S., Russia, India, and the European Union. Canada and France provide the

legislation in preparation for the deadline. As a result of NSARC's concerted efforts, the maritime community and certain classes of aircraft are required to carry 406 MHz beacons.<sup>2</sup>

- Also in 2000, the United States, European Commission, and Russia began consultations with the Inter-

national Cospas-Sarsat Program regarding the feasibility of installing 406 MHz SAR instruments on their medium-altitude Earth-orbiting Global Positioning System, Galileo, and GLONASS navigation satellite systems. In the United States, NSARC members (in particular NASA and the National Oceanic and Atmospheric Administration) began looking into the feasibility of creating the next generation SARSAT, the Distress Alerting Satellite System (DASS).

NASA was able to identify many possible benefits that might be realized by developing this "second generation" Distress Alerting Satellite System, including:

- near-instantaneous global coverage with accurate independent location capability,
- robust beacon-to-satellite communication links,
- high levels of satellite redundancy and availability,
- resilience against beacon-to-satellite obstructions,
- the possible provision for additional (enhanced) SAR services.



**Cospas-Sarsat system overview. Graphic courtesy of the National Oceanic and Atmospheric Administration.**

SAR instruments (the SAR repeater and processor) for the U.S. low-Earth polar orbiting satellites. These instruments are capable of detecting signals transmitted from emergency beacons from almost anywhere on the Earth's surface.

- **Cessation of 121.5/243.0 MHz signals.** In 2000, the International Cospas-Sarsat Program, in support of IMO and ICAO recommendations, agreed to terminate satellite processing of 121.5 MHz and 243.0 MHz signals on February 1, 2009. They did so because the 121.5 MHz signal had numerous drawbacks that prevented an efficient and effective response by SAR authorities.

In 2002, NSARC created an interagency work group to spearhead informing the public and changing key



NASA is in the final stages of completing the DASS proof of concept, which has already reinforced its advantages over the existing Sarsat system. In addition, the NSARC agencies are working toward formally adding a requirement for DASS on future

GPS missions, and the Coast Guard, Air Force, and the National Oceanic and Atmospheric Administration (NOAA) have combined funding for the construction of a DASS ground station, scheduled to begin in 2009.

*continued on page 51*

## The “Olive”

What type of SAR does the National Park Service perform? What about the Coast Guard or FEMA? When does the Department of Defense become involved in civil SAR? To address these questions, the NSARC task force developed a SAR model that describes the various SAR operations NSARC agencies conduct. The model was dubbed the “olive,” noting its resemblance to a pimento-stuffed olive.

The olive uses a simple green-amber-red system to describe normal SAR, mass rescue operations, and catastrophic incident SAR.

### “Normal” SAR Operations (24/7)

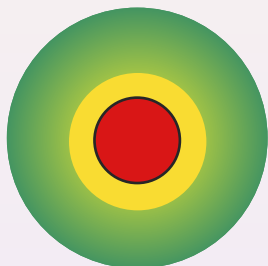
- ☛ “Normal” SAR is considered day-to-day operations performed by federal agencies—National Park Service, U.S. Coast Guard, Air Force, etc.

### Mass Rescue Operations

- ☛ Mass rescue operations (MROs) are infrequent operations that require the rescue of large numbers of people.
- ☛ They are not considered “normal” SAR, but do not meet the threshold of a catastrophic incident.
- ☛ Capabilities normally available to federal, state, tribal, and local SAR authorities would be inadequate.
- ☛ MROs are low-probability, high-risk events, like a passenger ship sinking or a passenger train derailment.

### Catastrophic Incident SAR

- ☛ A “catastrophic” incident is any incident, including terrorism, that results in extraordinary levels of mass casualties, damage, or disruption, severely affecting the population, infrastructure, environment, economy, or governmental functions.
- ☛ Civil SAR is carried out as all or part of the response to an emergency or disaster is declared by the president under provisions of the National Response Framework.
- ☛ The nature of CIS could range from “normal” SAR to mass rescue operations; what qualifies SAR operations as CIS is when the response is associated with a presidential declaration.



- ☛ No line between “normal” SAR and MROs: unique to each agency, circumstance, and type of SAR (land, aeronautical, maritime, urban, etc.).
- ☛ Black line surrounds the catastrophic incident. Presidential declaration is required.

# A Resilient America Through Partnership Innovation



## THE NATIONAL INFRASTRUCTURE PROTECTION PLAN

by Ms. ELENA HUGHES, CDR L.M. ROSZKOWSKI, Ms. ELEANOR THOMPSON  
*U.S. Coast Guard Office of Policy Integration  
Executive Secretariat, NIPP Maritime SSA*

National efforts to protect critical infrastructure pre-date 9/11. Since then, policies and strategies related to infrastructure protection have evolved to specifically incorporate resiliency as an integral component. DHS defines resiliency as “the ability to resist, absorb, recover from, or successfully adapt to adversity or a change in conditions.” What this means is that critical infrastructure and key resources (CIKR) protection is not only about preventing or countering a terrorist attack, but about systems and processes across the infrastructure being able to absorb, adapt, and recover from all types of incidents and hazards. Resiliency is key to national security as threats to the homeland—from the physical and human to cyber and the unknown—become ever more complex, insidious, and challenging to detect.

With a national goal to build a safer, more secure, and more resilient America by enhancing protection of the nation’s CIKR, the National Infrastructure Protection Plan (NIPP) identifies 18 CIKR sectors integral to the U.S. economy and our way of life: banking and finance, chemical, commercial facilities, communications, critical manufacturing, dams, defense industrial base, emergency services, energy, food and agriculture, government facilities, healthcare and public health, information technology, national monuments and icons, nuclear, postal and shipping, transportation systems, and water sectors. Responsibilities for each sector are assigned to federal agencies, which serve as a sector-specific agency (SSA). The Transportation Security Administration serves as the lead SSA within the Transportation Systems Sector, with the U.S. Coast Guard serving as the sector-specific agency for the maritime mode of this sector.

The NIPP supports efforts to build resiliency across the spectrum of critical infrastructure through a unique, more recently established and innovative partnership framework. Specifically, the Critical Infrastructure Partnership Advisory Council (CIPAC), a Federal Advisory Committee Act (FACA)-exempt body pursuant to Section 871 of the Homeland Security Act of 2002, has enabled creation of sector coordinating councils (SCC) and government coordinating councils (GCC). SCCs are composed of private owners, operators, and associations, and government coordinating councils are composed of government agencies and associations. This construct allows federal, state, local, tribal, and territorial governments to communicate and share information through the legal framework provided by the CIPAC. At the core of the partnership model is the reality that the private sector owns approximately 85 percent of critical infrastructure and key resources. This collaborative communication between the government and the private sector further enhances the ability to protect, respond, and recover for which resiliency is the gestalt.

The Transportation Systems Sector is comprised of all modes of transportation (aviation, maritime, mass transit, highway and motor carrier, freight rail, and pipeline). These modes have collaborated to develop the Transportation System Sector-Specific Plan, with the vision of a secure and resilient transportation network, enabling legitimate travelers and goods to move without undue fear of harm or significant disruption of commerce and civil liberties. The Transportation Systems Sector has significant supply chain implications and interdependencies with other CIKR sectors. This relationship was glaringly evident during the recovery from Hurricane Katrina.

Since that time, the implementation of the NIPP has led to increased intermodal and cross-sector coordination, as evidenced by the successful preparation, response, and recovery of CIKR sectors after the Midwest flooding and Gulf Coast hurricanes of 2008. In short, across the landscape of the U.S. economy, the NIPP risk management framework supports resiliency as an effective means of mitigating risk.

Along with pre-existing information sharing mechanisms (such as national and local advisory committees and the Internet-based portal HOMEPORT), the U.S. Coast Guard facilitates the partnership model by integrating maritime-specific initiatives and programs across the mode. Collaboration occurs on a day-to-day basis with interagency partners and private sector entities in a variety of local, national, and international forums.

### Accomplishments:

- Established Transportation Systems Sector Partnership Framework
- TSA, USCG, and DOT representatives on the NIPP Federal Senior Leadership Council
- Published Transportation Systems Sector-Specific Plan including Maritime Modal Plan
- Established transportation cross-sector working groups including cyber, metrics, and research and development
- Implemented the sector’s risk management process to identify, prioritize, and address CIKR risk with security partners
- Participated in cross-sector national exercises
- Continuing efforts to enhance information sharing platforms

More information about the NIPP partnership, along with the Transportation Systems Sector-Specific Plan and others, may be found at [www.dhs.gov/nipp](http://www.dhs.gov/nipp). Points of contact for the maritime mode may be found at <http://www.uscg.mil/hq/cg5/cg513/>.



- **ICAO and IMO audits of the United States national SAR system.** The International Civil Aviation Organization maintains a Universal Safety Oversight Audit Program (USOAP), conducting an audit of each member nation's air navigation system once every five years. In November 2007, it was the United States' turn; our USOAP audit was conducted by a team of ICAO auditors from several different countries. For 18 months, an NSARC task force, in support of the Federal Aviation Administration (lead U.S. agency for the audit), organized our national SAR system portion of the audit. As a result of NSARC's efforts, the ICAO auditors found no discrepancies. The U.S. national SAR system was fully compliant with all ICAO convention requirements.

In April of 2008, the International Maritime Organization also concluded an audit of the U.S. national SAR system. IMO's audit was similar to the ICAO audit, but with a maritime emphasis. NSARC also thoroughly prepared for this audit and ensured that the national SAR system was fully understood by the team of IMO international auditors. Again, no discrepancies were noted.

#### NSARC in a Post-Hurricane Katrina World

Since Hurricane Katrina, the National Search and Rescue Committee's role in national search and rescue coordination has dramatically increased. NSARC's member agencies realized that not only did the National Search and Rescue Plan and U.S. National Search and Rescue Supplement<sup>3</sup> require changes to reflect disaster operations, but also needed to address a new interagency search and rescue paradigm.

NSARC created an interagency task force to address these concerns. In 2007 the task force rewrote the National Search and Rescue Plan to continue to identify the United States federal SAR coordinator's responsibilities and provide national SAR guidance, as well as harmonize the National Search and Rescue Plan within the national response framework.

Additionally, the National Search and Rescue Committee coordinated efforts among the U.S. Northern Command, the Marine Corps, the Air Force Rescue Coordination Center and other Department of Defense offices, the Coast Guard, National Park Service, Federal

Emergency Management Agency, National Geospatial-Intelligence Agency, and the National Association for Search and Rescue to create a Catastrophic Incident SAR Addendum. The addendum provides guidance for coordinating catastrophic incident search and rescue among federal, state, local, tribal, and volunteer responders. NSARC will review the addendum annually to incorporate lessons learned and other new information.

#### Looking Ahead

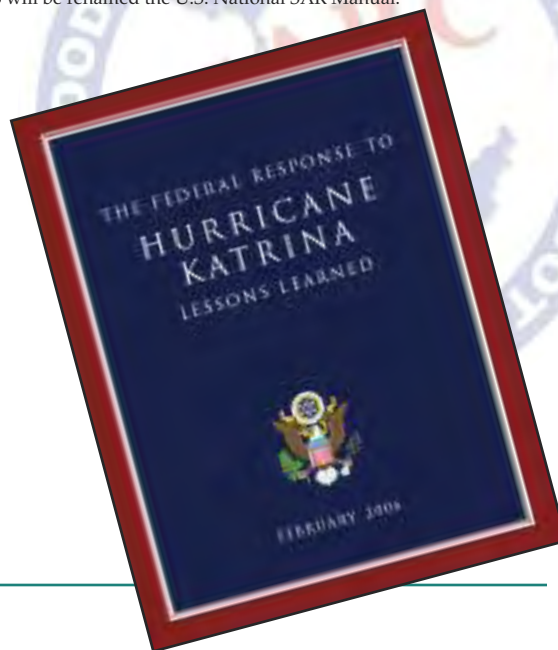
Never before have search and rescue challenges been greater. In response, NSARC has worked to ensure that national-level guidance is coordinated and developed so that federal SAR responders understand and are prepared for search and rescue operations. NSARC is about working together—building consensus, despite the differences—to save lives.

#### About the author:

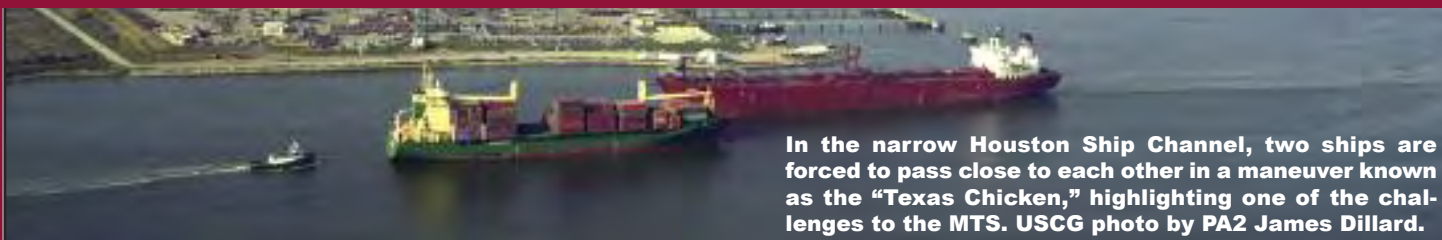
*Mr. Button conducts SAR policy, outreach, and education, both nationally and internationally. He also currently serves as the secretary of the National Search and Rescue Committee. In 2006, Mr. Button retired from the Coast Guard after 22 years, having served on several cutters and twice as cutter commanding officer. Mr. Button is a 1984 graduate of the Coast Guard Academy and a licensed Coast Guard master mariner.*

#### Endnotes:

- <sup>1</sup> The International Maritime Organization (IMO) is a specialized agency of the United Nations. With 167 member nations, IMO is dedicated to safe, secure shipping on clean oceans. The International Civil Aviation Organization (ICAO) is also a United Nations agency that fosters the safe and orderly growth of international air transportation.
- <sup>2</sup> 121.5 MHz EPIRBs became prohibited for use on January 1, 2007.
- <sup>3</sup> The U.S. National SAR Supplement provides NSARC with specific additional national guidance that builds upon the baseline guidance established in the International Maritime and Aeronautical SAR Manual, and is currently under revision by an NSARC interagency task force. As in the case with the National Search and Rescue Plan, the NSS requires new information to support large-scale interagency SAR operations. When complete, the NSS will be renamed the U.S. National SAR Manual.



# The Cabinet-level Committee on the Marine Transportation System



In the narrow Houston Ship Channel, two ships are forced to pass close to each other in a maneuver known as the “Texas Chicken,” highlighting one of the challenges to the MTS. USCG photo by PA2 James Dillard.

by Mr. JOHN K. BOBB, J.D.  
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CDR PAUL M. “BO” STOCKLIN, JR., M.M.A., M.P.A.  
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The U.S. marine transportation system (MTS) is arguably the least known and understood of our nation’s transportation modes, but it carries a large volume of our domestic and international cargo and passengers. It is a complex system of interdependent public and private entities designed to move goods and people. It consists of waterways, ports, intermodal connections, vessels, vehicles, and system users, extending from the outer boundary of the U.S. exclusive economic zone, through its bays and sounds, ports, and waterways, to the first intermodal connection from the port.<sup>1</sup>

Our MTS contributes to our economy and national security, but it faces many challenges. Its infrastructure is aging. Dredging to maintain and deepen channels is needed at many of our critical ports. Existing land in and adjacent to our ports is being sold off for housing and recreational uses, preventing its use for port and terminal expansion. Larger ships are straining our ports’ capacity. Vessel air emissions and overboard discharges harm our air and water.

## The CMTS

In 2004, the U.S. Commission on Ocean Policy made several recommendations regarding strengthening the marine transportation system, including that a cabinet-level committee be formed to address the challenges facing the MTS.<sup>2</sup> In response, the president directed that the Committee on the Marine Transportation System, or CMTS, be established to improve federal coordination, budget requests, and regulatory activities and policies that impact the MTS. The committee, comprised of the heads of 18 federal departments and independent agencies, is chaired by the secretary of the Department of Transportation.

The CMTS coordinating board is populated by senior-level representatives designated by each committee member, usually an assistant secretary or agency head. The chair of the coordinating board is currently U.S. Coast Guard RDML James Watson. The executive secretariat, which serves as a facilitator and technical advisory body to the coordinating board and its workgroups, is the permanent staff body of the CMTS, made up of federal employees from CMTS member agencies.

## Achievements

In its first year, the CMTS directed the coordinating board to develop a strategy and conduct an assessment of the MTS. In a collaborative effort led by the Coast Guard, representatives of 18 departments and agencies crafted the National Strategy for the Marine Transportation System: A Framework for Action, which identified five distinct challenges facing the MTS: inadequate system capacity, safety and security threats, environmental impacts, disruptions, and infrastructure financing. The strategy recommended 34 actions to overcome these challenges.<sup>3</sup>

There have been several other CMTS achievements over the past two years, again highlighting the role interagency partnerships can play in moving the nation’s interests forward. For example, MARAD has established a single maritime data portal, which provides “one-stop shopping” for those seeking federal data on any aspect of the marine transportation system.<sup>4</sup> The U.S. Army Corps of Engineers (USACE) is conducting an in-depth assessment of the entire system to better understand infrastructure issues and solutions. To address a backlog in dredging, USACE is also leading the CMTS efforts to use the Harbor Maintenance Trust Fund to meet these needs. The National Oceanic and Atmospheric Administration leads the interdepartmental effort to integrate real-time weather and tidal information with the Coast Guard’s automatic identification system to distribute this information to the mariner. Other MTS efforts underway include looking at infrastructure investment policy and Arctic navigational requirements.

## For More Information

The CMTS relies on the expertise and participation of a broad range of stakeholders. For federal agency personnel seeking greater interaction with the CMTS, please contact the CMTS executive secretariat either via your agency contact, or directly via the CMTS website, [www.cmts.gov](http://www.cmts.gov). For those outside federal service, please contact the federal agency you work with most frequently on MTS issues, and encourage them to be your conduit to the CMTS. Working together, federal partners; state, local, and tribal governments; and other stakeholders can build a safe, secure, and environmentally sustainable marine transportation system.

## Endnotes:

- <sup>1</sup> Intermodal connections are connections in which marine cargo is transferred from the port to another mode of transportation, usually rail or truck.
- <sup>2</sup> “An Ocean Blueprint for the 21<sup>st</sup> Century – The Final Report of the U.S. Commission on Ocean Policy,” 2004.
- <sup>3</sup> “The National Strategy for the Marine Transportation System: A Framework for Action” can be found on the USCG Homeport website (<http://homeport.uscg.mil>), under the “Ports & Waterways: Marine Transportation System” tab.
- <sup>4</sup> Available at <http://marapps.dot.gov/mts/index.jsp>.



# Customs and Border Protection, Coast Guard, and Immigration and Customs Enforcement Senior Guidance Team



*Improving the unity of effort within DHS.*

by CAPTAIN TONY REGALBUTO (USCG, RET.)

*Chief, U.S. Coast Guard Office of International and Domestic Port Security Assessments*

MR. MICHAEL PERRON

*Acting Associate Director for Deliberate Planning  
Customs and Border Protection*

In June 2006, ADM Thad Allen, Commandant of the U.S. Coast Guard (USCG), and Mr. Ralph Basham, Commissioner of Customs and Border Protection (CBP), chartered a senior guidance team (SGT) represented by flag officers and senior executives from both agencies to improve our near- and long-term efficiency and effectiveness. ADM Allen and Mr. Basham indicated that CBP and the USCG were committed to a “one team, one fight” approach to our nation’s security, whereby improving our efficiency and effectiveness will provide greater results for our nation.

Customs and Border Protection and the Coast Guard have played significant roles not only during the early formative years of the United States,<sup>1</sup> but throughout our nation’s history. However, the threats of asymmetrical attacks have provided greater visibility to our agencies and more focus on and scrutiny of our missions. As ADM Allen has said in numerous forums following the September 11 terrorist attacks, “We (the Coast Guard) have never been more relevant, and we have never been more visible to the nation we serve.” Clearly, the same could be said for Customs and Border Protection.

CBP and the USCG are two prominent law enforcement agencies in the Department of Homeland Security (DHS) with field presence in our ports of entry, between ports of entry (land and maritime borders), in coastal areas, in high seas, and in our international trade partners’ ports. Both agencies also have broad statutory authorities, robust capabilities, and missions that are necessary for our nation’s security. Therefore it is incumbent upon CBP and the USCG to work efficiently and effectively to better prepare our nation to prevent, protect, respond to, and recover from terrorist attacks, natural disasters, and other incidents of national significance.

## **Initial Focus**

In one of the first meetings of the senior guidance team, the leaders highlighted that there were three things that Customs and Border Protection and the Coast Guard needed to focus on, namely:

1. We need to better understand our dramatically changed operating environment.
2. We must change to sustain and improve our mission execution.



## THE SMALL VESSEL STRATEGY WORKING GROUP



**The USS Cole was brought to Pascagoula, Miss., for repairs after it suffered a small boat attack. USCG photo by PA2 Patrick Montgomery.**



**While providing security for a U.S. Navy amphibious assault ship, a U.S. Coast Guard 25-foot boat intercepts a recreational vessel to ensure it does not violate the 100-yard security zone. USCG photo by AUX Joseph P. Cirone.**



3. We must be more responsive to the needs of the nation.

As co-chairs for their respective agencies, Mr. Jayson Ahern, CBP Deputy Commissioner, and VADM David Pecoske, then USCG Deputy Commandant for Operations, quickly established ground rules for the senior guidance team. They agreed to meet quarterly and to form joint working groups to improve the efficiency and effectiveness of agency operations.

Initially the co-chairs formed work groups in:

- small vessel strategy to better address the small vessel threat;
- joint operation centers to improve command and control and information sharing;
- joint boardings for better mission execution;
- resumption of trade so the nation could recover from any hazard including terrorist attacks and hurricanes.

### Ongoing Strategy

Building on the successes of the initial work, the co-chairs recently formed additional workgroups in:

- joint unmanned aircraft to build capability for DHS and its component agencies;
- joint training to improve the interoperability of agency assets;
- joint vessel targeting to ensure the highest-risk targets are intercepted, interrogated, and apprehended or neutralized, if necessary;
- joint logistics to improve the support to our people and assets at a reduced cost;
- joint budget development to better source the agencies based upon a joint strategy;
- joint specialized forces to improve interoperability of specialized forces in response to a hazard.

In January 2008 the co-chairs invited Immigration and Customs Enforcement (ICE) to the senior guidance team meeting. Since then, ICE has been an active participant in the quarterly meetings and has gained valuable insight in the workgroup initiatives to date. In April 2008, the chairs decided to form a new workgroup on mass migration to better address processing migrants after they have been interdicted.

### The Small Vessel Strategy Working Group

The small vessel<sup>2</sup> environment is an area of significant concern, and is particularly vulnerable to exploitation by terrorists, smugglers, and other criminals. When attempting to address this risk, law enforcement personnel must be able to distinguish the relatively few individuals engaged in illicit activities among the vast



number of legitimate vessel operators. The challenge is immense, involving more than 17 million registered U.S. recreational vessels, 82,000 fishing vessels, and 100,000 other commercial small vessels. Also, law enforcement agencies have very little operational awareness of these small vessels, which makes the sorting even more challenging.

To address this risk, the senior guidance team chartered a small vessel strategy working group in December 2006. In preparation for a DHS-sponsored National Small Vessel Security Summit, held in Washington, D.C., in June 2007, the team directed the working group to develop small vessel strategic principles. The working group developed the principles to address the broad framework needed to close some of the gaps and vulnerabilities that

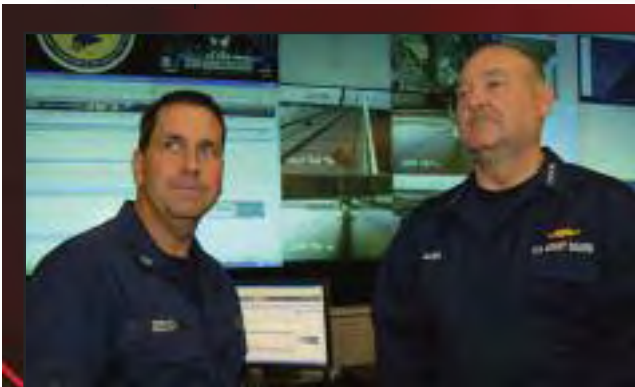
These provided more dialogue and feedback among DHS, its component agencies, and the small vessel stakeholders.

Following the summit, Secretary Chertoff directed the DHS Small Vessel Security Component Agency Working Group to take the recommendations of the stakeholders and findings from the summit and develop a DHS Small Vessel Security Strategy. Secretary Chertoff released the final strategy to the public at the American

## THE JOINT OPERATIONS CENTER WORKING GROUP



In the Joint Operation Center in Los Angeles, Calif., USCG LTJG Vanessa Martin of Marine Safety Office Los Angeles, left, confers with Los Angeles Port Police Sgt. Rosa Reynoso, while California Highway Patrol Officer James Ragle observes. The Coast Guard, along with the Customs, Immigration, and Naturalization Service; Los Angeles County Sheriff's Office, Port Police; Los Angeles Police Department; and Los Angeles Fire Department opened the Joint Operation Center at the Coast Guard base to facilitate interagency efforts. USCG photo by PA1 Daniel L. Tremper.



**CAPT Scott Beeson**, the U.S. Coast Guard liaison to Project Seahawk, briefs USCG Commandant **Thad Allen** on the role of Project Seahawk. An interagency pilot program in Charleston, Project Seahawk unifies the efforts of numerous local, state, and federal law enforcement entities. The goal is to avoid duplication of effort, engage in intelligence-led proactive and intermodal security operations, and facilitate interagency operations and investigations. Members of Project Seahawk frequently join together to conduct investigations and vessel boardings, verify access control of facilities, monitor rail and truck traffic entering the port, and perform harbor patrols. USCG photo by PA1 Donnie Brzuska.

small vessels presented and to help shape the discussion with the stakeholders at the summit.

The DHS National Small Vessel Security Summit report was released by DHS Secretary Chertoff in January 2008. Based upon requests for more engagement from the small vessel stakeholders at the national summit, regional summits were held in Cleveland, Ohio; Orlando, Fla.; Long Beach, Calif.; and Cape Cod, Mass.



At the Puget Sound Joint Harbor Operations Center, the official party cuts the ribbon to officially open the center. From left: **CAPT Stephen Metruck**, Commanding Officer of USCG Sector Seattle; **Mr. Jayson P. Ahern**, U.S. Customs and Border Protection Deputy Commissioner; **ADM Thad W. Allen**, Commandant of the Coast Guard; **Rear Adm. Frank M. Drennan**, Commander of Submarine Group Trident; and **Chief John R. Batiste**, Chief of the Washington State Patrol.



can Boating Congress Legislative Conference held in Washington, D.C., in April 2008. The workgroup will also develop an implementation plan that will provide a roadmap of specific actions DHS will take to reduce the risk of small vessels.<sup>3</sup>

### Joint Operations Center Working Group

Several recent presidential directives charged DHS to provide seamless, coordinated implementation of authorities and responsibilities relating to the security of the maritime domain by and among federal departments and agencies. Additionally, Section 108 of the Security and Accountability for Every Port Act of 2006 (SAFE Port Act) directed that interagency operations centers be established at all high-priority ports.

The SGT recognized that DHS component agencies must work together at field levels to implement these strategies. This would promote a unity of effort for maritime planning and operations. The team also recognized that joint operations centers would provide the command, control, communications, computers, intelligence, surveillance, and reconnaissance capabilities to ensure proper maritime domain awareness and to lead and manage operations. The SGT established the Joint Operations Centers Working Group to provide greater capability for CBP/USCG field units.

The Coast Guard's established Interagency Operations Centers/Command 21 (IOC/C21) Initiative (renamed from Command 2010) will provide capabilities to increase maritime domain awareness, automate data gathering, and provide a decision support capability

that captures the actions and processes of the watch. To support the SAFE Port Act, IOC/C21 will also provide facilities to support the information sharing necessary to coordinate federal, state, and local port partner activities in the conduct of daily joint operations; sensors to establish enterprise radar and camera coverage throughout the port; and information management systems (called Watch-Keeper) to link information with operations to support decision making, situation awareness, joint planning, and mission execution.

IOC/C21 is the maritime component of the DHS Secure Border Initiative. The SGT agreed that implementing the acquisition of these major systems fell beyond the scope of this working group. However, the SGT directed the workgroup to take an active role in ensuring the necessary lash-up between the Secure Border Initiative and IOC/C21 project staffs to ensure good governance.

The workgroup also identified seven pilot port projects to review, hone best practices from, and evaluate various types of coordination models used (in-person, virtual, 24/7, and co-location of CBP/USCG units). Those ports where in-person coordination has been prototyped include Seattle, Charleston, and Detroit. Virtual coordination has been prototyped in New York and Tampa/St. Petersburg. Coordination using 24/7 CBP watchstanders in the USCG command center



## Joint Operations Center Working Group SURVEY

This workgroup conducted extensive field visits and developed a web-based survey that drew about 175 field responses from USCG sectors, CBP port directors, and CBP air and marine and border patrol units. Based upon survey responses, the working group concluded that:

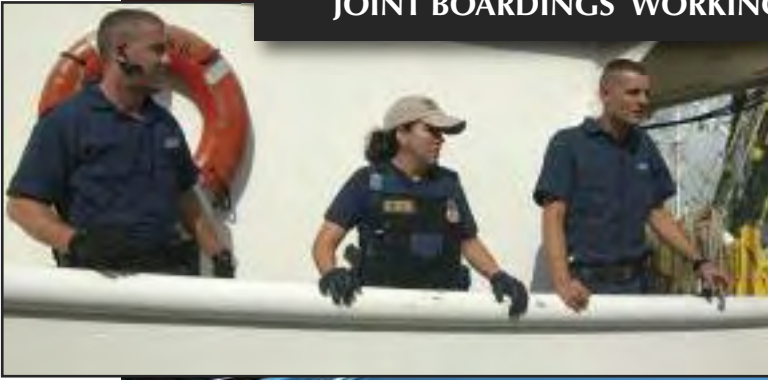
- in-person coordination is critical to effective CBP-USCG joint operations,
- coordination need not be watchstander-centric,
- jointly manned 24/7 operation centers are not required,
- virtual operations centers should be considered when in-person coordination is not feasible.

Based upon the survey results, the workgroup also identified best practices and shared them with CBP and USCG field units:

- Conduct regular operational planning, risk management, and collaboration. This should be conducted daily in the busiest ports, and as required in less busy ports.
- Integrate vessel targeting.
- Conduct a daily operational brief. This forum provides an ideal opportunity for shared situation awareness and understanding of the maritime domain.
- Coordinate small boat and air patrols.
- Integrate intelligence to improve the overall safety and security of the port areas.
- Establish a joint communications standard operating procedure.
- Conduct senior leadership strategic planning meetings. Periodic meetings will ensure the strategic alignment of each agency's respective mission focus and execution.
- Conduct joint tabletop exercises to evaluate independent and joint response to various safety and security scenarios and fast-track process improvements.



## JOINT BOARDINGS WORKING GROUP



From left, Coast Guard Petty Officer 1st Class Scott Jones, Bureau of Immigration and Customs Enforcement Special Agent Cindy Roldan, and Petty Officer 2nd Class Anthony Reynolds return to port aboard a fishing vessel that violated multiple federal fisheries laws. USCG photo by PA3 Andrew Kendrick.



Team members from a joint dockside boarding and investigation that included the U.S. Coast Guard, Customs and Border Protection, and Puerto Rico Police Department inspect a void aboard a motor vessel where more than 2,000 lbs. of cocaine was hidden. USCG photo by LTJG Eric Willis.

has been prototyped in San Diego. The USCG and CBP have developed a planning proposal to collocate field units in Jacksonville.

A follow-on survey conducted in early 2008 revealed much greater interagency coordination, with notable increases in intelligence sharing (23%), joint vessel targeting (27%), coordinated patrolling (23%), and joint daily ops briefings (10%) from the previous year. The ports of Jacksonville, Tampa/St. Petersburg, and Charleston were also cited as being among the national leaders for demonstrating exceptional interagency coordination.

### Joint Boardings Working Group

This working group focused on expanding joint CBP and USCG boardings to improve mission execution at the field level, and reduce the burden of potential multiple boardings on the maritime industry.

In October and December 2005, Customs and Border Protection and Coast Guard personnel participated in conferences to share the results of collaborative efforts, best practices, and obstacles they had to overcome to create a more effective working environment. They identified five overarching dual-agency law enforcement activities to improve mission execution, including vessel targeting, dual-agency boardings, information sharing, training, and professional exchanges.

As a follow-on, the workgroup directed implementation of the five joint CBP/USCG enforcement activities and directed development of local standard operating procedures to institutionalize and formalize these processes. CBP directors and USCG captains of the port

were required to prepare joint quarterly status reports highlighting their successes in these five areas.

The first reports indicated they were achieving great success in terms of opening up the lines of communication, developing positive working relationships, increasing joint boardings and training, and developing officer exchange programs. The July 2007 reports highlighted that co-location of resources had been achieved by several field units, and standard operating procedures development, daily interagency briefings, joint targeting and boardings, and information sharing protocols had increased considerably nationwide.

To improve training, the Coast Guard's Maritime Law Enforcement Academy and CBP's Federal Law Enforcement Training Center partnered to consolidate curriculum from existing weapons of mass destruction courses. Staff developed a combined course and began training CBP and USCG field personnel beginning in the spring of 2008.

Field units began conducting joint training in law enforcement authorities; boarding team tactics, techniques, and procedures; use of force; standardized personal protective equipment; confined space entry; hazardous materials; and fraudulent document identification.

To provide stakeholder awareness and gain feedback, leaders from the working group met with the Commercial Operations Advisory Committee, National Maritime Security Advisory Committee, and the Maritime Security Coordinating Committee. These industry groups provided positive feedback and additional





recommendations on boarding practices and training. For example, an industry representative recommended that a panel of industry members speak to law enforcement officers in training so they can better understand the industry's needs and concerns.

As a result of the joint targeting initiatives at the field level, the SGT stood up a separate Joint Targeting Working Group in January 2008 to identify best practices in targeting processes and potential areas for more collaboration and analysis at the national level.

are continuing to provide more substantial enforcement results and improve overall situation awareness. Results include the identification and repatriation of numerous stowaways, seizure of containers due to trademark violations, seizure of contraband such as shark fin and narcotics, and several arrests.

### Resumption of Maritime Trade Working Group

As far back as 2002, the Maritime Transportation Security Act required that the National Maritime Transportation Security Plan include a plan to restore cargo flow following a national transportation security incident. This concept again surfaced in Homeland Security Presidential Directive 13 and the National Strategy for Maritime Security. Subsequently, strategic concepts supporting efficient marine transportation system (MTS) recovery following a transportation security incident were documented in the Maritime Infrastructure Recovery

Plan. Shortly thereafter, the lessons learned from Hurricane Katrina also widely acknowledged that MTS disruptions can result in significant economic ramifications, and the U.S. must be prepared to execute efficient and effective MTS recovery management to minimize these negative effects. Most recently, the SAFE Port Act of 2006, Section 202, required that protocols for the resumption of trade be developed by July 2007.

The Coast Guard hosted a national maritime recovery symposium in August 2006 to further explore the issues and potential alternative solutions regarding developing robust MTS recovery and resumption of maritime trade capability. The symposium participants, executives from both government and industry, identified the need for:

- specific procedures and protocols to execute recovery/resumption strategies;
- integration of government and private sector efforts and mechanisms for communication and information sharing among government

**U.S. Coast Guard salvage teams in Empire, La., oversee commercial salvage operators as they recover more than 2,200 vessels in southeastern Louisiana following Hurricanes Katrina and Rita. USCG photo by PA2 Susan Blake.**



## RESUMPTION OF MARITIME TRADE WORKING GROUP

**Petty Officer Second Class Andrew Steele, left, and Chief Petty Officer Nicholas Calise examine a large shrimp boat that floated ashore during Hurricane Katrina. USCG photo by PA2 Susan Blake.**



Building upon the success of the joint boarding program afloat, the workgroup began focusing its attention on pierside boardings and inspections to identify opportunities to expand CBP/USCG cooperation. The group established pilot programs at the USCG sectors and CBP field offices in Seattle, Wash., and Jacksonville, Fla. Subsequently, vessel agents and operators in these ports expressed the concern that joint pierside boardings and/or inspections are difficult for the ships to manage due to dissimilarities between the CBP and USCG focus. They indicated their preference to have sequential examinations to ease the burden on the vessel's crew. Based upon this feedback, the pilot ports began exploring the feasibility of one agency conducting business on behalf of the other, rather than joint activities.

However, the joint boardings have already proved to be safer, smoother, and more effective operations. They

and private sector stakeholders during recovery management;

- underlying systems of information and prioritization tools to support recovery management decision making.

Both the USCG and CBP have equities, responsibilities, and authorities that are brought to bear following a significant MTS disruption, and specifically following a maritime transportation security incident. The SGT recognized that the USCG and CBP must work together to develop and implement the necessary protocols and recovery management procedures to ensure the most efficient resumption of trade flow following a MTS disruption. Timely development of these protocols was also necessary to meet the requirements outlined in Section 202 of the SAFE Port Act.

The working group reviewed a draft strategy to enhance the security of the international supply chain and incorporated comments regarding resumption of trade principles. Group members then drafted CBP/USCG joint protocols for the expeditious recovery of trade and held discussions with components of the Departments of Homeland Security, Transportation, and Defense to explain the process and seek input. The protocols were signed by Commissioner Basham and USCG ADM Allen in the spring of 2008 and distributed to the public and maritime stakeholders.

The goals of the protocols are to:

- Establish a communications process at the national level to be employed by the USCG, CBP, other federal agencies, and the maritime industry following or prior to an event causing a major disruption to the MTS.
- Consider the collateral impacts of a major disruption of the MTS on international commerce.
- Support federal decision making and protection of federal interests.
- Establish how the USCG and CBP will interact with other government agencies to jointly facilitate the expeditious recovery of the national MTS and resumption of commerce, including Maritime Infrastructure Recovery Plan-related activities.
- Support National Security Presidential Directive-41/Homeland Security Presidential Di-

rective-13 and the protection of the national economy and national defense.

- Support the SAFE Port Act mandate to develop protocols for the resumption of trade in the event of a transportation disruption.

As part of this effort, the Coast Guard worked with the Maritime Administration to create a port capability inventory of the 150 largest U.S. ports. This inventory will be used to inform national decision makers about port system capabilities. The USCG also drafted a Commandant Instruction that provides guidance to field units on including recovery in their area maritime security plans and creating recovery units within their incident command system. CBP also developed a Web-based messaging system to alert the trade community of significant disruption in trade flow in all modes of international transportation. CBP will coordinate each maritime message with the USCG to ensure the alignment of a unified DHS response.

**About the authors:**

*Captain Tony Regalbuto (USCG, Ret.) is a 1971 graduate of the State University of New York's Maritime College, earning a bachelor of science degree in meteorology and oceanography. He served on active duty for the Coast Guard for 31 years and was the acting port security director following the September 11 terrorist attacks. In his civilian capacity, he is currently serving as chief of the Office of International and Domestic Port Security Assessments.*

*Mr. Michael Perron graduated magna cum laude from California State University, Dominguez Hills, earning a bachelor of arts degree in political science, with a minor in communications. He served on active duty with the U.S. Army for 10 years as a military police sergeant and a Criminal Investigation Division special agent. He has been employed by U.S. Customs and Border Protection (formerly the U.S. Customs Service) for the past 21 years, including assignments as chief inspector, enforcement in Los Angeles and port director, Washington, D.C. He is currently assigned to CBP headquarters as the acting associate director for Deliberate Planning.*

**Endnotes:**

<sup>1</sup> Responding to the urgent need for revenue, President George Washington signed the Tariff Act of July 4, 1789, which authorized the collection of duties on imported goods. It was called "the second Declaration of Independence" by the news media of that era. On July 31, 1789, the fifth act of Congress established the U.S. Customs Service and its ports of entry to collect the revenues.

The United States Coast Guard, one of the country's five armed services, traces its history back to August 4, 1790, when the first Congress authorized the construction of 10 vessels to enforce tariff and trade laws, prevent smuggling, and protect the collection of the federal revenue.

<sup>2</sup> Small vessels are characterized as any watercraft less than 300 gross tons, regardless of method of propulsion. Small vessels can include commercial fishing vessels, recreational boats and yachts, towing vessels, uninspected passenger vessels, or any other commercial vessels involved in foreign or U.S. voyages.

<sup>3</sup> The report of the DHS National Small Vessel Security Summit and the DHS Small Vessel Security Strategy can be reviewed or downloaded at [www.dhs.gov](http://www.dhs.gov).







# Marine Transportation System Recovery

*A unified approach.*

by LCDR KEVIN REED

*U.S. Coast Guard Office of Port and Facility Activities*

*"A nation as vital and thriving as ours cannot become hermetically sealed. Even less can we afford to be overwhelmed by fear or paralyzed by the existence of threats. That's why we need to adopt a risk-based approach in both our operations and our philosophy. Risk management is fundamental to managing the threat, while retaining our quality of life and living in freedom. Risk management must guide our decision making as we examine how we can best organize to prevent, respond, and recover from an attack. We all live with a certain amount of risk. That means that we tolerate that something bad can happen. We adjust our lives based on probability, and we take reasonable precautions."*

*former DHS Secretary Michael Chertoff*

The marine transportation system (MTS) contains all of the waterways, ports, intermodal connections, and vessels used to ship and receive goods. Each component within the system is linked in such a way that containerized goods entering U.S. ports can easily arrive at any location nationwide via highway, rail, further marine transport, or any combination of these. A large portion of the MTS also consists of privately owned companies, waterfront facilities, and officials within the ports who are responsible for attracting users and managing the flow of commodities throughout the region.

Our marine transportation system is not solely constrained to domestic entities. The U.S. has a wide range of trade partnerships, and our ability to engage in commerce through these networks is a large part of several foreign economies. As such, the sentiments for a strong and secure MTS are understood and echoed on shores far from our homeland.

As with any system, there are vulnerabilities and unforeseen events that can impact the marine transportation system. Whether this disruption stems from a natural disaster, human error, or an act of terrorism against our nation, stopping the normal flow of commerce through U.S. ports sends shockwaves through the market felt by all stakeholders and consumers. As

the nation witnessed the tragic events occurring in New York City on the morning of September 11, 2001, inbound vessel traffic was halted and many key U.S. ports were closed in an effort to reduce the possibility of a maritime-based assault. While there weren't any reports of infrastructure damage stemming from terrorist attacks on U.S. ports and waterways, the resulting disruption of commerce did have serious implications on the economy.

Hurricane Katrina, which caused devastation along the Gulf Coast in 2005, was one of the costliest hurricanes in our history. It was the sixth-strongest Atlantic hurricane ever recorded and the third-strongest hurricane on record that made landfall in the United States. After the storm passed, damage to the port infrastructure was such that vessel transits were almost at a standstill. While it is impossible to pinpoint an exact dollar figure that corresponds to the damage and losses resulting from Hurricane Katrina, Lloyds of London alone paid out claims that totaled approximately \$6.4 billion.<sup>1</sup>

#### **Interagency Maritime Recovery and Restoration Efforts**

Even as the Coast Guard, led by then Vice Admiral Thad Allen, became the central figure in rescue efforts in the wake of this natural disaster, the nation's disaster management agencies and senior management within the Coast Guard were well aware of the need to chart a better path. In September 2005, Coast Guard officials chartered the Maritime Recovery and Restoration Task Force (MR2TF) to analyze the entire scope of the marine transportation system. The task force consisted of members from several federal agencies, including the Coast Guard, the National Atmospheric and Oceanographic Administration, the Mineral Management Service, and the Environmental Protection Agency. Port stakeholders from the private sector also participated and offered their input, knowledge, and experience.

Recommendations from the task force included incorporating marine transportation system recovery concepts into response plans such as the Maritime Infrastructure Recovery Plan, area maritime security plans, and continuity of operations strategies. The task force also brought to light the need to ensure interagency/industry focus on MTS recovery and develop essential elements of information and key measures for each level of the response organization while linking MTS recovery and restoration with critical infrastructure protection.

As a follow-up, the Coast Guard sponsored a national maritime recovery symposium in August 2006 at the Maritime Institute of Technology and Graduate Studies in Linthicum, Md., to initiate national-level discussions regarding the implications of port closures or restrictions, as well as the actions required to resume commerce following a national transportation security incident in the maritime sector. More than 160 government, private maritime sector, and intermodal transportation executives attended the symposium. A group of strategic critical requirements for national maritime recovery planning were compiled from the host of issues and recommendations produced during the symposium. Included were planning considerations such as the need for the U.S. to develop an integrated government/industry recovery management organization and an integrated government/industry national communications system for recovery. Also, it was suggested that the government should develop a national logistics support plan for cargo diversion to ensure that both industry and government are prepared to support the diversion of cargo in a national emergency.

#### **A Plan Takes Shape**

DHS Secretary Michael Chertoff unveiled the Maritime Infrastructure Recovery Plan (one of the eight plans that supports the National Strategy for Maritime Security) in April 2006 as part of an effort to establish a consistent framework and to serve as a response guide for efforts to recover from a transportation security incident. The Maritime Infrastructure Recovery Plan addresses operations coordination between senior Coast Guard and Customs and Border Protection (CBP) officials, as each agency would be making key post-incident decisions that would have a direct impact on the short-term flow of commerce through adjacent non-incident sites. In harmony with the Maritime Infrastructure Recovery Plan, the U.S. House Homeland Security subcommittee introduced the Security and Accountability For Every (SAFE) Port Act in October of 2006.

While the Maritime Infrastructure Recovery Plan was heavily focused on the response framework, the SAFE Port Act focused on preventing or deterring threats to U.S. ports by addressing vulnerabilities within the system. A three-step approach included enhancing security within the ports; preventing potential high-risk cargoes in foreign ports from entering into the U.S.; and tracking high-risk containerized goods en route to the U.S. One of the SAFE Port Act's major mandates required the Coast Guard to work with CBP to develop a set of protocols to address all aspects of planning, govern-





ment/private sector interaction, and the prioritization of vessels while re-establishing commerce following a disruption of the marine transportation system.

### **The Coast Guard, CBP, and MARAD Team Up**

Admiral Thad Allen, Commandant of the Coast Guard, and Customs and Border Protection Commissioner W. Ralph Basham signed the joint Protocols for the Expeditious Recovery of Trade in February 2008. Through their efforts, the agencies created a communications matrix that included members from the government and private sector. This opened lines of communication with the carrier and trade support groups (the organizations that represent numerous companies that operate throughout the nation's ports).

By engaging these support groups, the Coast Guard and CBP were able to address national-level commerce concerns while having direct audience with a manageable number of participants. Furthermore, the Coast Guard and CBP established links to share information coming from their respective field units. The joint efforts also enabled each agency to benefit from existing capabilities.

The Coast Guard's Office of Port and Facility Activities collaborated with the information technology department at Coast Guard headquarters and was able to integrate the CBP business resumption message onto the Coast Guard Homeport website. This gave Homeport subscribers the advantage of getting the most up-to-the-minute information regarding port status and movement of cargo.

Additionally, the Coast Guard recently released Commandant Instruction 16000.28—Recovery of the Marine Transportation System for the Resumption of Trade, which established marine transportation recovery units as components of planning at each level of the organization. The instruction calls for field units to replicate the national coordination process set forth in the joint protocols on their levels. During the roll-out period, the Coast Guard Domestic Ports Division reached out to the USCG area commands, districts, and sectors to provide them with the initial training. The division also provided a capability database populated from Mar-

itime Administration (MARAD) port statistics and a post-incident priority ordering tool to help in those ports in which there is not already an existing method of prioritizing vessel movements.

While the regional and port-level Coast Guard units are in the process of building stronger recovery-based relationships with industry and other stakeholders, a national-level outreach campaign to members in the carrier and trade support groups continues to ensure that everybody involved in the process fully understands our commitment to improving recovery efforts.

### **Continuing Efforts**

Over the past three years, the Coast Guard has made substantial strides in completing the requirements of the SAFE Port Act. We have taken action to make recovery a key part of incident management. However, there are still numerous challenges to be resolved and coordinated, as the process is ever-evolving. Navigation and Vessel Inspection Circular 09-02 contains recovery templates and checklists that have been disseminated to Coast Guard field units to be incorporated into their area maritime security plans.

Building upon this, the concept of recovery is being introduced as a component of various exercise programs. Exercising our ability to bring stakeholders together and addressing the steps necessary to re-establish the MTS is the logical next step, as it will be the key indicator of our response in an actual incident. An exercise with a goal of recovery is in process for the port of Jacksonville, and a follow-on regional planning initiative is also being orchestrated with the Transportation Security Administration. The initiative will serve as an academic workshop for federal, local, and state agencies to help examine and validate our current capabilities and recovery policy.

#### ***About the author:***

*LCDR Reed has served in the Coast Guard for 16 years. A former boatswain's mate, he served aboard CGC Chincoteague at Station Pensacola, as well as MSO/Group Los Angeles-Long Beach, MSO San Juan, and RIO St. Croix. He is currently assigned to the Domestic Ports Division at U.S. Coast Guard headquarters.*

#### **Endnote:**

<sup>1</sup> Jane Andrewartha, 2006, English Maritime Law Update: 2005. Journal of Maritime Law and Commerce.



# The National Hazardous Materials Fusion Center



by CDR RICK RAKSNIS  
*former Chief, U.S. Coast Guard Hazardous Materials Standards Division*

MRS. TONYA SCHREIBER  
*Executive Director, Office of Hazardous Materials Safety  
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U.S. Department of Transportation*

**I** imagine you are the mayor of a small Midwest town. In the middle of the night, you receive word from your fire chief that a train has derailed in the heart of your town of 5,000. Several tank rail cars marked with chlorine gas labels are laying on their sides in a ditch. Gas is venting from the rail cars and a vapor cloud is moving toward the center of town.

*The fire chief has plenty of first responders on scene but is unable to attempt to repair the leaking chlorine rail cars because he is unsure how to proceed in this hazardous environment. What can you do? What resources do you have available to help respond to and mitigate this situation?*

One such resource is the National Hazardous Materials Fusion Center. With its secure, Web-based portal, the fire chief has instant access to a wide range of information. Through the fusion center, the fire chief can quickly locate the nearest hazardous materials team in the area or pull down a list of equipment and personnel protective gear needed to respond safely. Essentially, the fire chief has a vast network of professional support on his or her laptop.

## **A Fusion Center Is Born**

The fusion center concept is the result of a cooperative effort between the International Association of Fire Chiefs (IAFC) and the Department of Transportation Pipeline Hazardous Materials Safety Administration (PHMSA). Through a strong partnership between these two organizations, as well as support from other federal, state, and local agencies and groups, the hazardous materials fusion center has been built to serve the first responder community. The center, located at



IAFC headquarters in Fairfax, Va., came online at the end of 2008, and is funded through a one-year pilot federal funds program. Staff from the International Association of Fire Chiefs will manage daily operations. It is anticipated that once the value of the fusion center

**For more information about the National Hazardous Materials Fusion Center, visit [www.iafc.org](http://www.iafc.org) and click on the “Hazmat Fusion Center and RIST” link.**

has been fully realized, long-term federal funding will sustain operations.

#### **Why This Type of Fusion Center?**

With the advent of nearly 60 counterterrorism and law enforcement fusion centers around the country, you may be wondering how this one is different. Those fusion centers were created primarily as a response to 9/11 by the Department of Homeland Security in concert with state and local law enforcement agencies. These law enforcement fusion centers were centered on a need to share the vast network of intelligence across agency borders to thwart any terrorist-type activities from achieving their desired end state. The idea is that terrorists often commit other types of crimes in advance of their main mission, so having access to a person's complete criminal history would help develop a profile of a possible terrorist. These fusion centers have already helped to prevent another terrorist attack and help multiple agencies within the private sector as well as on the federal, state, and local levels to exchange their information and intelligence more readily.

The hazardous materials fusion center's purpose, likewise, is to more formally integrate a network of loosely connected hazardous materials response information from around the country into a central location that can be accessed by anyone with a need to know. Following several high-profile hazardous materials incidents over the past several years,<sup>1</sup> IAFC and PHMSA have decided that their responses could have been better if they had access to information about the best equipment to use, best approach tactics for a particular hazardous chemical, or the location of the nearest trained hazardous materials team. They determined that the fusion center could best meet the needs of the first response community through a three-tiered approach:

- information collection,
- data analysis,
- disseminating best practices.

#### **Step One: Collect Information**

The fusion center serves as the repository for hazardous materials incident information collected from actual response cases. This information is collected from several sources, including direct reports to a toll-free phone number, secure Internet connection from hazardous materials response teams, or reports received from regional incident survey teams. These regional teams, or RISTs, are composed of individuals (usually firefighters) who are highly skilled and experienced in the hazardous materials response community.

Each RIST includes a team leader and up to six team members who are first deployed by the fusion center after they receive notification of a significant hazardous material incident. The RIST members will make a request to interview the first responders shortly after the incident comes to a close. The regional incident survey teams will collect information on how well the first responders performed their jobs. The information passed along to the fusion center will be used to develop hazardous materials response techniques, lessons learned, and best practices. In no case will the data be used to condemn or criticize a certain jurisdiction's response actions.

The first two teams were deployed during summer 2008 in Houston, Texas, and Dallas, Texas, and each of the teams reported on several incidents by the end of 2008. The full implementation schedule will place two regional incident survey teams in each of PHMSA's five regions around the country. In addition to hosting this collection of response data, the fusion center will also maintain information on the nation's network of trained hazardous material teams, including location, contact information, capabilities, and equipment. This type of information will be very valuable, especially for those jurisdictions without a trained hazardous materials response team.

#### **Second Step: Analyze Information**

As with the other types of fusion centers, collecting information is only the first step. The hazardous materials fusion center will receive the hazardous materials incident reports from the RISTs and create response-specific after-action reports. These reports will summarize the effective practices, planning tools, and resources that were observed to work well during the response. These best practices can serve as points of dis-



cussion or targeted training topics for hazardous materials training programs.

Likewise, if there is a piece of equipment or tactic that resulted in a less-than-desirable outcome, the fusion center will also highlight this information. The fusion center recognizes that it is important for hazardous materials teams to be familiar with highly technical equipment, so part of the analysis will include recommended training. In addition, by having this wealth of information at its disposal, the fusion center will look for trends and patterns to prevent and mitigate hazardous material incidents.

### Third Step: Share the Results

The principal point is to create a national database for the free flow of information among all the hazardous materials teams and interested stakeholders. This includes sharing after-action reports, curriculum materials, training drill exercises, and noteworthy hazardous materials conferences. The database will also hold hazardous material shipping information. This information will be available to hazardous materials response teams and national and international decision makers, who are responsible to establish criteria for the safe shipment of these materials.

For instance, the Pipeline Hazardous Materials Safety Administration, Federal Railroad Administration, and Federal Motor Carriers Safety Administration will use the information to improve risk analysis of hazardous materials transportation incidents. It will also improve their ability to better focus outreach, training, and resources to the response community and to improve the safety of the transportation network.

#### **About the authors:**

*CDR Rick Raksniis is the former chief of the Hazardous Materials Standards Division at the U.S. Coast Guard headquarters. He led a team of chemical engineers and chemists to develop international and domestic standards for the safe transport of hazardous materials by water. Since hazardous materials are transported not only by water but also by rail, air, and on our roads, he maintained strong relations with other federal and industry associations. He was a member of the workgroup that developed the infrastructure for the National Hazardous Materials Fusion Center.*

*Mrs. Tonya D. Schreiber is the executive director of the Office of Hazardous Materials Safety for the Pipeline and Hazardous Materials Safety Administration at the U.S. Department of Transportation. Before joining PHMSA, Mrs. Schreiber served for 16 years in the Maryland Air National Guard as an industrial hygienist. She is currently assigned to the Maryland Air National Guard state headquarters. She has a Bachelor of Science degree in environmental toxicology from the University of Maryland.*

#### **Endnote:**

<sup>1</sup> In 2001, a chlorine gas spill from derailed train cars in Riverview, Mich., caused three deaths and 17 injuries. In another train derailment in 2004, chlorine gas killed three people and injured 66 in Macdona, Texas. A 2005 chlorine gas spill from derailed train cars in Graniteville, S.C., caused nine deaths, 631 injuries, and total damages of \$8 million.

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# The U.S. Coast Guard Maritime Law Enforcement Academy

*Standardized training brings the  
U.S. Coast Guard closer to  
U.S. and international partners.*

by LT MICHAEL P. ATTANASIO  
*Regulations Branch Chief*

*U.S. Coast Guard Maritime Law Enforcement Academy*

The maritime community continues to experience rapid growth and increasing regulation and competition. Earnest concern about transnational threats and the volatility of overseas markets have heightened the price of failure. Maritime community stakeholders increasingly depend on the continued competence and professionalism of Coast Guard law enforcement personnel. To meet these growing challenges, the Coast Guard has made measurable progress advancing the training, education, and qualification of its members serving across the country through standardization, achieving federal accreditation, and seizing upon opportunities to work with domestic and international partners.

To assist that effort, Coast Guard leadership directed the merger of Coast Guard law enforcement schools in Yorktown, Va., and Petaluma, Calif. As a result, on November 1, 2004, the U.S. Coast Guard Maritime Law Enforcement (MLE) Academy opened its doors for

business at the Federal Law Enforcement Training Center in Charleston, S.C. To prepare Coast Guard maritime law enforcement personnel, the MLE Academy provides demanding classroom instruction and varied practical exercises. Students are taught constitutional law, vessel safety regulations, commercial vessel practices, detection of drug and alcohol impairment, defensive tactics, radiological detection, maritime security threats, and law enforcement officer etiquette.

Learning by doing, students are expected to treat every scenario as real. Exercises on boats, in non-lethal training ammunition shoot houses, use-of-force classrooms, and aboard the 494-foot break bulk freighter SS *Cape Chalmers* test student retention and comprehension.

## **Curriculum**

The MLE Academy offers five different courses targeted toward members of different units and levels of experience.



**The boarding officer course** is focused on the performance of all Coast Guard law enforcement duties specified under 14 USC 2 and authorities under 14 USC 89.<sup>1</sup> In February 2007, the American Council on Education recommended the course be considered the equivalent of three semester hours each in defensive tactics, criminal investigations, criminal evidence and procedures, and one semester hour in instructor techniques, for a total of 10 semester hours.

**The boarding team member course** trains boarding team members in various topics, including use of force and boarding procedures. Graduates should expect to return to their units to perform the duties of a boarding team member under the supervision of a boarding officer.

**The boarding officer practical course** is an innovative combination of resident e-learning modules followed by resident training, meeting all the standards of the boarding officer course. This combination provides needed flexibility for thousands of Coast Guard reservists providing law enforcement support.

**The radiation level 2 operator course** trains students for radiological detection procedures and equipment operation, consistent with strategic homeland security goals. In addition, the MLE

academy offers a course designed to encourage greater federal/state government cooperation.

**The marine patrol officer course** has a 25-year history of providing state law enforcement officers with an advanced understanding of federal regulations, federal state agency interaction, basic operating procedures, and officer safety. Since its inception, all U.S. states and territories have participated. As a sign of increasing collaboration, the National Association of State Boating Law Administrators and the International Association of Marine Investigators send instructors to teach students alongside their Coast Guard colleagues.

#### **Federal Law Enforcement Training Accreditation**

The creation of the MLE Academy is only one step in the Coast Guard's multi-year effort to match the maritime community's demand for increased Coast Guard performance. The desire to improve performance through training is not isolated to the Coast Guard or any one particular level of government.

Starting in 2000, training leadership from multiple federal and state law enforcement agencies met to develop an independent accreditation process that provides law enforcement agencies with an opportunity to show that they meet a recognized set of interagency professional



**FLETC training vessel SS *Cape Chalmers*. USCG photo.**



**SS *Cape Chalmers* was originally laid down in 1963 and launched in 1964 as the SS *Adabelle Lykes*, a Maritime Administration breakbulk vessel. She is 494 feet long with a full load displacement of 19,800 tons.**

**She was delivered to MARAD by the Lykes Brothers Steamship Co. for various operations until 1984, when she was renamed SS *Cape Chalmers* and laid up in the National Defense Reserve Fleet. The vessel was towed to Charleston has been on permanent loan to the Federal Law Enforcement Training Center since 2005.**

**In FY09 alone, more than 1,500 Coast Guard personnel participated in law enforcement training aboard the *Cape Chalmers*. FLETC also provides access to numerous other federal, state, and local agencies.**



**MLE Academy instructor BM1 Brian Carey, right, walks a student through commercial fishing vessel boarding procedures. USCG photo.**

standards. This independent accreditation process was developed and entitled Federal Law Enforcement Training Accreditation (FLETA). Accreditation can be obtained for an entire academy or for an individual course of training.

In addition to the Coast Guard, participating federal agencies with accredited academies and or programs include the U.S. Air Force, U.S. Navy, U.S. Postal Service, U.S. Secret Service, U.S. Department of State, Internal Revenue Service, Transportation Security Administration, U.S. Department of Energy, and the U.S. Federal Reserve.

The benefits of FLETA accreditation include increased public confidence in the integrity and professionalism of law enforcement agencies, improved agency capabilities due to increased quality of training, better in-



**Coast Guard and RCMP Shiprider officers conduct a boarding exercise aboard a pleasure craft at the MLE Academy. USCG photo.**

teragency cooperation due to comparable training programs and standards, and systematic implementation of new curriculum.

Director of Coast Guard Reserve and Training, RADM Cynthia Coogan further added, "Professional training standards validate that the right training is provided to the right employee at the right time. It is an important piece in maintaining the Coast Guard's standard of excellence. Accreditation also provides consistency among federal agency training, which in turn makes for more effective and efficient partnerships."<sup>2</sup>

### **Canadian/American Shiprider Program**

The MLE Academy was immediately challenged to put its newly designed learning system through a rigorous



**MLE Academy instructor Mr. Carl McKenzie, foreground, evaluates student technique and comprehension during a "use of force" evaluation. USCG photo.**

test when it was selected to host training for the Canadian/ American Shiprider Program. The Shiprider Program began in September 2005, when U.S. and Canadian law enforcement authorities found it increasingly necessary to cooperate in numerous joint operations, as criminals successfully sought to exploit legitimate laws designed to protect the sovereignty of independent nations. Both governments judged that such illicit activity represented an unacceptable threat to the shared maritime community.

The MLE Academy was authorized to cooperate directly with Canadian officials to design, test, and implement Canadian/American Shiprider Training (CAST) during the months of May, June, and July 2007. This represented an aggressive application of "just-in-time" training, allowing for less than 60 days to prepare the coursework. Graduates of the course would deploy to the U.S./Canadian border along Blaine,



Wash.; Vancouver, B.C.; Cornwall, Ont.; and Massena, N.Y., immediately following two weeks of resident training at the MLE Academy. For the Coast Guard, this represented a unique opportunity for executive federal leadership to fully utilize the benefits of the MLE Academy's FLETA-accredited practices.



**Coast Guard and RCMP Shiprider officers simulate detention and arrest procedures aboard a fishing vessel at MLE Academy. USCG photo.**

Canadian/American Shiprider was designed to exploit shared resources, expertise, authority, and jurisdiction of the U.S. Coast Guard and the Royal Canadian Mounted Police (RCMP). The basic principle can be envisioned as the deployment of both U.S. Coast Guard and RCMP law enforcement officers in patrol boats of both services on the St. Lawrence Seaway (and other locations on shared maritime borders). Coast Guard patrol boats embark RCMP shipriders as part of their crews and RCMP patrol boats embark U.S. Coast Guard shipriders. On the U.S. side of the maritime boundary, the U.S. Coast Guard boarding officer is in command. The RCMP officer is cross-designated as "U.S. Officer of the Customs Excepted," authorized to

assist the U.S. Coast Guard boarding officer with enforcing U.S. law in U.S. waters. On the Canadian side of the maritime boundary, the RCMP officer is in command. The U.S. Coast Guard boarding officer is cross-designated as

"Supernumerary Constable of the RCMP," authorized to assist the RCMP officer in enforcing Canadian Law in Canadian waters. In addition, a joint U.S./Canadian operations center serves in support.

The MLE Academy engaged Canadian partners for assistance in curriculum development. Using a process supported by the 73 FLETA standards, an accord was reached on all topics, including fundamentals of U.S. and Canadian law, operational differences in legal principles and definitions, comparison of Coast Guard and RCMP "use of force" policy, application of vessel safety regulations and criminal law, boarding procedures, and information necessary for cross-designation. At the insistence of both the Coast Guard and the RCMP, a significant emphasis was placed on practical,

*continued on page 71*



**Coast Guard and RCMP Shiprider officers assemble for a graduation class picture. USCG photo.**





## Federal Law Enforcement Training Accreditation Process

In order to obtain Federal Law Enforcement Training Accreditation, the MLE Academy agreed to adhere to 73 standards of excellence embraced by other accredited federal law enforcement agencies. All standards fall within four categories:

- academy administration,
- training staff qualifications and development,
- program administration,
- program and curriculum development.

These standards include the safety of students and academy personnel, instructor qualifications, and the relevancy and accuracy of curriculum.

The MLE Academy submitted a formal application to the FLETA board on November 16, 2006. Over the course of a single year, the academy refined its work practices and documentation and published a comprehensive organization manual that documented all procedures. Additionally, academy personnel conducted self-assessments. The FLETA board then dispatched three law enforcement training professionals from member agencies to assess compliance at the start of September 2007.

FLETA assessors scrutinized records, logbooks, and documents. They observed practical scenarios and all related MLE Academy operations. At the conclusion of the assessment, the academy was found not only to be operating in a manner consistent with the 73 standards of excellence, but was also cited for two best practices in the areas of safety and records management.

On November 15, 2007, the FLETA board awarded full accreditation to the Coast Guard Maritime Law Enforcement Academy. FLETA Chairperson Sharon Henegan stated, "The accreditation process is good government at work and shows commitment to quality, effectiveness, and integrity by the agencies who achieve this prestigious award. We congratulate them on this accomplishment and applaud them for taking the lead to make accreditation a priority in training."<sup>1</sup>

**Endnote:**

<sup>1</sup> "U.S. Coast Guard, Federal Air Marshals, and Federal Reserve System join the ranks of FLETA," FLETA Press Release, November 7, 2007.



**The FLETA board presents formal recognition of federal accreditation. From left, Mr. Alan Wheaton, MLE Academy; CDR Mark Wilbert, commanding officer, MLE Academy; RADM Cynthia Coogan, then director of Reserve and Training; BMC Lee Heitner, MLE Academy; and Mr. David Walts, USCG Reserve and Training Directorate. USCG Photo.**

performance-based scenario training. Exercises were designed to provide Coast Guard and RCMP students an opportunity to operate within the exact cross-border Shiprider team they would encounter in the field.

### Shiprider Training

In addition to training the actual Shiprider patrol officers, Canadian/American Shiprider Training was configured to provide the command center liaison officers with a comprehensive understanding of their authority and responsibilities. Shiprider liaison officers would be offered the opportunity to observe, advise, and consult with the Shiprider patrol teams directly in their charge.

With the curriculum designed, a team of 15 instructors was assembled to implement—seven from the RCMP, and eight from the Coast Guard. Instructors were selected based on expertise, experience, and performance. Much like the Shiprider officers in 2005 and 2006, instructors would be expected to work together as partners, teaching each class jointly.

On July 15, 2007, CAST officially began when 17 students from the RCMP and 22 students from the Coast Guard converged at the MLE Academy. Of the 17 students from the RCMP, five officers were assigned to command center liaison duties. For the Coast Guard, six of the 22 students were assigned to serve as command center liaison officers. Operational teams were formed based on geographic jurisdiction and duties assigned. Making full use of the land-based boating platforms offered by the MLE Academy, students practiced and were evaluated on adherence to procedures, water safety, use of force, applying U.S. and Canadian boating regulations, and criminal law.

Canadian/American Shiprider Training concluded on July 25, 2007. Students and observing officials representing both the U.S. and Canadian governments praised the performance of Coast Guard and RCMP instructors at the MLE Academy, and judged the Canadian/American Shiprider Training curriculum to be relevant and effective.

### Results

During the months of August and September 2007, Shiprider officers patrolled the shared waters of the U.S. and Canada. Shiprider officers were visible to the maritime community, enforcing the law, rendering needed assistance, demonstrating good judgment, and presenting a positive image of international cooperation.

At the 10<sup>th</sup> Annual Canada-U.S. Cross-Border Crime Forum, the Honorable Stockwell Day, Canadian Minister of Public Safety, gave the following report, “One of the major successes of joint cooperation between Canada and the U.S. has been the Shiprider pilot projects. In September 2005, and again in August and September 2007, Canadian RCMP officers and U.S. Coast Guard officers started operating together on jointly crewed vessels in shared waterways. During this most recent pilot project, which took place in the St. Lawrence Seaway near Cornwall and the Strait of Georgia between British Columbia and Washington State, Shiprider officers boarded 187 vessels. In 39 separate incidents, Shiprider teams contributed to 41 arrests, with six of these being made directly by the integrated marine teams.” With regard to the future of Shiprider, Minister Day added, “The Shiprider pilot projects are excellent examples of our joint efforts to tackle cross-border crime. In keeping with this theme, it gives me great pleasure to announce that our countries will begin negotiating a framework to govern the conduct of joint cross-border maritime law enforcement operations in shared waterways along the Canada/USA border.”<sup>3</sup>

In April 2008, joint training was also conducted with fellow Department of Homeland Security and Customs and Border Protection (CBP) personnel. This training focused on detection of radiological threats in the port environment. This enabled a more seamless integration between the Coast Guard and CBP in detecting threats to our ports and waterways. This joint training is expected to continue and possibly be expanded upon in the future.

Looking forward, the MLE Academy plans to add a new port and waterways coastal security course, concentrating on the execution of the Coast Guard’s port security missions. Also planned is the FLETA accreditation of the individual courses offered.

#### *About the author:*

*LT Michael P. Attanasio is a graduate of the U.S. Merchant Marine Academy, Kings Point, N.Y., and has served on active duty in the U.S. Coast Guard for six years. LT Attanasio has served in the fields of marine environmental response, law enforcement, and incident management. He is currently the regulations branch chief at the MLE Academy.*

#### **Endnotes:**

- <sup>1</sup> 14 USC 2 states, “The Coast Guard shall enforce or assist in the enforcement of all applicable laws on, under, and over the high seas and waters subject to the jurisdiction of the United States.”
- <sup>2</sup> “Maritime Law Enforcement Academy in Charleston, S.C., Receives Federal Law Enforcement Training Accreditation,” U.S. Coast Guard Press Release, November 16, 2007.
- <sup>3</sup> “Government of Canada takes action during Cross-Border Crime Forum to prevent crimes in shared waterways,” Public Safety Canada Press Release, March 19, 2008.





# Understanding Vinyl Chloride Monomer

by LT MORGAN ARMSTRONG  
U.S. Coast Guard Hazardous Materials Standards Division

## Chemical of the Quarter

### What is it?

Vinyl chloride monomer (VCM) is considered one of the world's most important commodity chemicals. In 2007, the global production and consumption of VCM was roughly 79 billion pounds. That is more than 10 billion gallons. The majority of vinyl chloride monomer is used in the production of polyvinyl chloride, also known as PVC. PVC is the largest chlorine-containing end product in the world, and is used in a wide variety of products such as pipes, cars, bottles, life jackets, wiring insulation, and credit cards.

### How is it shipped?

The United States is one of the world's top exporters, with the majority of manufacturing conducted on the coasts of Louisiana and Texas. It is typically sold directly from the manufacturer to the user. At room temperature and atmospheric pressure, vinyl chloride monomer is a colorless gas; however, it is shipped and stored as a liquefied gas under pressure. VCM is liquefied by moderately increasing pressure or reducing temperature.

VCM is typically shipped in liquid petroleum gas (LPG) ships. It may either be carried in pressurized tanks at ambient temperature or in fully refrigerated tanks at a temperature of 7°F.

### Why should I care?

#### ► *Shipping concerns.*

There are several concerns when shipping VCM at low temperatures. These include but are not limited to brittle fracture and ice formation. "Brittle fracture" occurs when metal is rapidly cooled and loses its ductility (or "give") and impact strength. The metal is then prone to cracking. This is common with steel. Other metals, such as aluminum and special alloy steels and

nickels, have improved ductility and impact resistance at low temperatures. However, VCM is not compatible with aluminum and aluminum-bearing alloys. Due to low temperatures, ice can form from moisture in the tank system and block pumps, valves, and lines, causing damage.

When VCM is shipped in pressurized tanks, several issues can arise that are common among all pressurized cargoes, including pressure surges, condensation of trapped vapors, and a liquid free-surface "sloshing" effect<sup>1</sup> (which can decrease stability).

#### ► *Health concerns.*

VCM is designated as a human carcinogen. The OSHA permissible exposure limit is one part per million. VCM gas is heavier than air, and replaces air necessary to breathe in confined spaces, causing suffocation hazards. Inhalation of VCM can cause many symptoms including dizziness, lung irritation, or death, even in a short period of time. Exposure to liquefied VCM can cause frostbite.

#### ► *Fire or explosion concerns.*

Due to its highly volatile nature and tendency to form polymeric peroxides, VCM presents a significant fire and explosion hazard. Polymerization occurs when a chemical monomer undergoes a reaction, causing the formation of three-dimensional polymer chains. When polymerization occurs at an uncontrolled rate, it can cause explosions and fire. VCM has a very high evaporation rate and quickly vaporizes and spreads over great distances. It also has a very low flash point of -110°F.

### What is the Coast Guard doing about it?

VCM is regulated under U.S. and international shipping regulations. Stringent

regulations are in place for the construction of LPG/gas carriers to ensure compatibility with cargo and maintain cargo and crew safety. Regulations also require that appropriate means be taken to stabilize VCM to prevent polymerization.

Recently there have been several incidents involving VCM leaks aboard foreign LPG carriers in U.S. ports, including one aboard the T/V *Venusgas*, a Type 2G LPG/gas carrier, at the Port of Corpus Christi, Texas. During the response to an ongoing leak of VCM in the compressor room, several Coast Guard marine inspectors, local law enforcement personnel, facility workers, and ship crewmembers were exposed to vapors and required medical attention and decontamination. The leak was caused by fractured stainless steel indicator lines.

It is crucial in these situations that the ship's crew is familiar with and immediately implements safety and response procedures. It is equally important for Coast Guard personnel and marine inspectors to maintain awareness of the hazards associated with cargoes while conducting casualty and routine inspections and while responding to cargo spills.

#### *About the author:*

*LT Morgan Armstrong is a chemical engineer currently working in the Hazardous Materials Standards Division at U.S. Coast Guard headquarters, focusing on domestic and international regulations for the shipment by water of solid bulk and packaged hazardous materials. She has a background in pollution response and vessel inspections.*

#### **Endnote:**

<sup>1</sup> The free-surface "sloshing" effect occurs when a tank is partially filled with liquid, and the movement of the liquid (in conjunction with the ship's rolls and pitches) slows the ship's return to vertical. This changes the center of mass and center of movement, and decreases stability. In heavy weather, this can increase the degree to which the ship rolls, and—in extreme cases—cause it to capsize.

# U.S. Coast Guard Provides Law Enforcement Training to Caribbean Partners



by SGT RYAN MATSON  
U.S. Army 372<sup>nd</sup> Mobile Public Affairs Detachment

## *Las Calderas, Dominican Republic*

*The mission: Board a cruise ship and identify, arrest, and search a suspected terrorist. Interview subject and turn over to international police.*

*The players: members of the Coast Guard from various Caribbean nations.*



prehended a suspected terrorist. This exercise was just one training scenario in “Operation Tradewinds,” a two-week training exercise in the Dominican Republic. During this exercise, U.S. Army, Navy, Coast Guard, and Marines personnel and soldiers, seamen, and police officers from partner nations in the Caribbean trained on everything from martial arts to basic urban skills.

### **Joint Training**

“The whole point of this operation was to give them exposure to different types of situations,” said LTJG Richard Nines, a U.S. Coast Guard controller serving with Sector San Juan, who trained the Caribbean sea-

men on law enforcement and search and seizure tactics. “I work with all the partner nations down to Venezuela on a daily basis in San Juan. This exercise was just to let them know we’re here, we’re very active, we’re always willing to help, so they can go back with a positive image of the U.S. Coast Guard.”

men on law enforcement and search and seizure tactics. “I work with all the partner nations down to Venezuela on a daily basis in San Juan. This exercise was just to let them know we’re here, we’re very active, we’re always willing to help, so they can go back with a positive image of the U.S. Coast Guard.”

“The training was focused in three areas: marine safety, search and rescue, and law enforcement,” said LT Josephine Heron, a marine safety officer with the U.S. Coast Guard Southern Command who was also part of Tradewinds. “The partner nations’ seamen went through a variety of training scenarios in each area, following a block of instruction.”

### **Training Scenarios and Feedback**

During the law enforcement training, a group of partner nation seamen simulated boarding a cruise ship vessel after a person of interest arrived at their port. Next they searched the quarters of the suspected terrorist, where a variety of clues and pieces of evidence could be found—everything from bombs to maps of the vessel, and, perhaps most importantly, the suspect’s passport. The passport was of particular significance because the seamen did not have any photo identification of the suspect in the exercise.

“We had to gather all the information to verify whether or not the person of interest was actually on the ship, and we went out and got him and turned him over to





**Leading Seaman Brangurgon Glasgow, Saint Vincent Coast Guard, and Dominican Republic Coast Guard Ensign Manuel Fernandez take a terrorism suspect portrayed by a U.S. Coast Guardsman into custody. All photos by SGT Ryan Matson.**



**SEARCHING FOR EVIDENCE**

**Leading Seaman Brangurgon Glasgow, Saint Vincent Coast Guard, looks for evidence in the suspect's quarters.**

the police," said Petty Officer Nicole Anthony, a participant seaman from Antigua.

After the partner nation seamen were done searching the quarters, their U.S. instructors showed them where some of the clues they missed were hidden. Evidence was hidden everywhere, from cracks in the wall to under boards and mattresses. This evidence gave the seamen enough proof to detain the suspect—the second portion of the exercise.

**The Action Begins**

In the next training scenario, the partner nation seamen entered a lounge where the suspect was drinking. They approached him in an attempt to take him into custody. A different situation unfolded for each group that made this attempt.

In one case, the bartender in the lounge whipped out a pistol and acted as a second terrorist. In another training session, another role player burst through a back door and ambushed the seamen.<sup>1</sup> The seamen said they learned a lot from the "surprise" portion of this exercise. "Because I got shot at by the bartender, I learned not to assume a person is not involved and to keep an eye on everything," Petty Officer Anthony said.

After apprehension, the participants searched the suspect, recovering a knife and more information relating to the overall "plot." Through every stage of the process, the seamen kept in close contact with their

command, radioing in their actions and receiving guidance on the mission.

**The Final Exam**

"The law enforcement exercise served as something of a final exam for the participating seamen," LT Heron said. Chief Petty Officer Matt Rouse, from the U.S. Coast Guard Southern Command that led the training, said the law enforcement portion was emphasized with good reason.

"This stuff here is something that they will more than likely be involved with in real life than any of the rest of it," he said. Petty Officer Anthony felt she got a lot out of training with the U.S. Coast Guard. "We learned different ways of doing some of the same things we do every day," she said.



**A CLUE**

**Leading Seaman Brangurgon Glasgow, Saint Vincent Coast Guard, finds evidence in the quarters of the terrorism suspect.**

LT Heron, likewise, said that training the partner nations' seamen exceeded her expectations. "I've been through a lot of training. I've done a lot of teaching," she said. "I've never had such an engaged group of individuals. They really got into it. We did a lot of ex-

ercises, but had a lot of fun as well."

*About the author:*  
SGT Ryan Matson serves with the U.S. Army 372nd Mobile Public Affairs Detachment.

**Endnote:**  
<sup>1</sup> In all cases, role players used air pistols that fired soft pellets.



**ARRESTING THE BARTENDER**

**Dominican Republic Coast Guard Ensign Manuel Fernandez takes an armed terrorism suspect portrayed by a U.S. Coast Guard member into custody during the role-playing law enforcement training exercise.**







# Leveraging People and Technology to Optimize Interagency Interoperability

## *The Puget Sound Joint Harbor Operations Center.*

by CAPT STEPHEN METRUCK  
U.S. Coast Guard Commander, Sector Seattle

*On a cold day in November 2003, a small boat may have stood off the transit lane in Puget Sound's Hood Canal, concealed by a dense fog, observing as a USN ballistic missile submarine made its way from homeport to a dive point 100 miles away.*

The scenario posed above highlights the ever-present challenge faced by the Coast Guard's command centers as they try to determine whether threats exist to or from the vessels operating here, and how to best work with other agencies and armed services to resolve and respond to them. At Sector Seattle, Wash., the Coast Guard has created a new Joint Harbor Operations Center that has become the nation's benchmark for federal, state, and local maritime interagency coordination and interoperability in evaluating and responding to maritime threats.

### **History**

In May of 2007, the U.S. Coast Guard established the initial operational capability of the Puget Sound Joint Harbor Operations Center (JHOC), designed to identify and respond to all manmade or natural threats to maritime safety, port security, and the environment. In August 2005, the JHOC (or Sector Command Center-Joint) concept was formally established with a memorandum of agreement (MOA) between the U.S. Navy Vice Chief of

Naval Operations and the Coast Guard Vice Commandant to leverage the sensor, detection, personnel, and communication and decision-making systems of each partner to produce a more accurate and timely common operating picture in Coast Guard sector areas of responsibility (AORs) with a large Navy presence.

However, the concepts that led to the establishment of JHOCs—sharing scarce infrastructure resources and leveraging situational awareness information across organizational boundaries—can be incorporated into the maritime planning process in all ports with multi-jurisdictional agencies each having intrinsic, independent authority. Emblematic of this concept is the new Commander Ray Evans Building at Sector Seattle, which houses the Puget Sound JHOC, and is the new home of the Washington State Patrol Homeland Security Division, a Customs and Border Protection (CBP) field office, and the USCG Field Intelligence Support Team.

The MOA between the Navy and the Coast Guard formalized a pair of local efforts in Norfolk, Va., and San



**Map of the Puget Sound Area of Responsibility. All graphics USCG.**

brought together to solve common problems, creating a West Coast prototype for the JHOC concept. Then Chief of Naval Operations ADM Vern Clark summarized the effort in a 2005 interview: “Readers need to know that this is one of the forward thinking ... organizations in the country. You know the biggest challenge we have is for agencies to learn how to work together. ... And, we find, it’s amazing how many reasons we find and ways we find to make it difficult.”<sup>2</sup>

### **Funding, Technological Developments**

In 2003, Washington’s Senator Patty Murray, who co-authored the SAFE Port/GreenLane legislation mandating interagency operations centers such as the JHOC, earmarked funds for the Sector Seattle Shore Operations Building. The Coast Guard provided acquisition, construction, and improvements funds to support full development of command, control, communications, computers, and information technology outfitting and relocation expenses. Commander, Navy In-

Diego, Calif., that forged the JHOC vision. After the terrorist attacks on the *USS Cole* in Yemen in late 2000, Captain Joseph Bouchard, then commander of the Norfolk Naval Station, wanted to strengthen the defense of the Navy base, the nation’s largest naval facility. According to a news report, “Because the Coast Guard—not the Navy—is primarily responsible for monitoring vessel traffic, Bouchard reached out to CAPT Larry Brooks, who was then the Coast Guard’s captain of the port (COTP) in Hampton Roads, to join him in the quest. Starting out with walkie-talkies and binoculars, the center soon had many high-tech tracking systems.”<sup>1</sup>

Shortly after the World Trade Center and Pentagon terrorist attacks in 2001, as the then Coast Guard COTP in San Diego, I initiated several demonstration projects to identify the most effective way of providing maritime domain awareness in that vitally important naval fleet port. We brought in a Navy Mobile Inshore Undersea Warfare (MIUW) unit as a stopgap measure to provide surface and subsurface surveillance as well as to improve command, control, and communication functions. At a cost of well over \$3 million per year, however, the MIUW deployment was not sustainable for the long run.

Other technologies were vetted for future development. More significantly, port stakeholders were

installations Command allocated funds for remote site sensors and the core C2 suite, while other Navy funding enhanced a regional tactical microwave communications grid. Concurrent Coast Guard-wide program improvements significantly aided the JHOC’s functionality. Rescue 21, the CG’s advanced command, control, and communications system, was created to improve search and rescue capabilities, but it also enhances the Coast Guard’s ability to execute all missions in the coastal zone, and enables better coordination with federal, state, and local agencies.

Once the funds were identified for the Puget Sound JHOC, planners were able to take advantage of the lessons learned during the JHOC development in Norfolk and San Diego. Unconstrained by the footprint of an existing building, they could build in the space to bring maritime partners onto the watch floor in full-time positions, and ensure there was sufficient room for additional computers and other equipment. Additionally, although specific functional requirements were uncertain at the beginning of the design effort, the JHOC was developed to meet surge situations when additional watchstanders would be needed to augment the dedicated watch team, to provide outside decisionmakers with separate classified communications space to discuss courses of action, or to give an incident com-





mander and staff room to function apart from the standing watch.

With the prospect of space available for different agencies on the watch floor and the newly developed technical expertise to integrate existing infrastructure owned by different agencies, the task to identify the potential partners and establish a common vision began in earnest. The area maritime security committee (AMSC) mandated by the Maritime Transportation Security Act of 2002 assists the federal maritime security coordinator in the maritime homeland security missions by coordinating planning, sharing information, and other necessary activities. The members consist of representatives from federal, state, and local agencies, and from industry.

The Sector Seattle JHOC development was not limited to working with typical marine industry regulators, operators, and industry. One such non-traditional partner in the Sector Seattle maritime security community is the University of Washington Department of Technical Communication in the College of Engineering, which hosts the Pacific Rim Visualization and Analytics Center, funded by the Department of Homeland Security Science and Technology Division. The university has signed a memorandum of agreement with the chair of the AMSC to facilitate interagency coordination and make the research and development capabilities of the university available as a service to area maritime security committee members. The university is uniquely positioned to serve as a facilitator since it uses a non-parochial view of interagency coordination, and has the ability to fairly mediate discussion without regard for self-interest. One of the first projects the university has been asked to carry out is to map the maritime command and control environment in the Puget Sound region, which entails examining its processes, documenting capabilities, and putting the research into a port-wide perspective. This relationship with the university further optimizes an investment that Department of Homeland Security Science and Technology has made in funding academic research by placing the researchers inside this new community of interest.

Initial construction is only the first round of the budget battle; sustainment ensures the infrastructure, personnel, and application products are in place over the long haul. The recurring cost to recharge an infrared camera is substantial. Software upgrades and maintenance have to be funded, and recapitalization of hardware and other equipment must occur on a planned cycle.

The incremental addition of sensors or data sources belonging to other agencies does have some cost. For example, getting the camera feed from the Port of Everett into the sensor management system at the JHOC requires approximately \$40,000 in equipment and labor. Less calculable than the monetary sustainment required for equipment, however, is the intangible sustainment of relationships through continual reinforcement of the partnerships. Many of the partners meet regularly at the AMSC or other security-related forums, but regular one-on-one contact with representatives from an organization and periodic evaluations of common procedures through interoperability exercises or other training evolutions must be included within the business practices of a successful JHOC or interagency operations center.

### **Benefits, Challenges**

The advantages of a strong JHOC within Washington State's Puget Sound area are particularly critical. The Puget Sound AOR is one of the largest and most complex maritime environments in the United States. The distance from the western entrance to the Strait of Juan de Fuca at the Pacific coast to the southernmost point in Puget Sound is over 140 miles.

Puget Sound's geography further complicates lines of responsibility. The United States shares the waterways north of the Olympic Peninsula with Canada, and therefore shares management of the commercial ship traffic, as well. The area is prone to earthquakes and severe winter storms. The San Juan Islands in the United States and the neighboring Gulf Islands in Canada to the north provide plentiful hiding places for drug smuggling and illegal immigration, as well as relatively short water transits to cross the border.

The Puget Sound area is overseen by a wide array of local, state, and federal agencies, many of whom have invested in diverse command and control (C2) capabilities, networked command centers, and sensor infrastructure—sometimes independently, sometimes in coordination with partners—to better develop their own operational picture of the maritime domain in Washington. These often-competitive information “silos” may individually serve each agency's needs, but they also present a significant potential for uncoordinated actions in response to threats, or for both time and effectiveness inefficiencies in responding. However, in Seattle, as in the Coast Guard's 35 other sectors throughout the United States, the sector commander is vested with the authority of the federal mar-

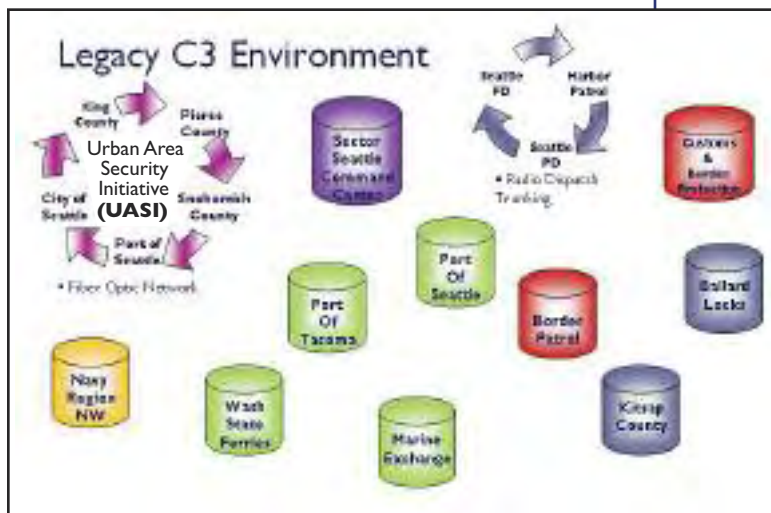
itime security coordinator and the captain of the port, and is ideally positioned to bring these partners together.

By its very nature, sharing infrastructure and situational awareness information among stakeholders suggests a shift in organizational autonomy that must be addressed if a partnership is to be successful. Understanding business processes and questioning assumptions will facilitate transition to and establishment of incident command structure in a crisis. Business practices may be as basic as the way groups are structured on a radio network. For example, the Navy, with its Enterprise Land Mobile Radio (ELMR) system, has complex hierarchical pre-defined talk groups. The FBI has dynamically assigned talk or “interop” groups that

response plans without requiring the participants to conform to unfamiliar processes or give up jurisdictional authority will overcome objections to expanded port-wide cooperation.

### Common Ground

Interoperability is the “holy grail” of interagency operations because individual agency procurement over many years has resulted in an assortment of different (and sometimes redundant) products and applications within geographically proximate areas—even within a single local government. Early in the interoperability quest, the desire for a single common radio seemed to dominate the dialogue. However, no agency could justify discarding its inventory in the name of common equipment. Workarounds have become increasingly sophisticated, and today a fire truck from the Navy Region Northwest can support firefighting efforts in Southern California by using a “plug-in” translator. The Department of Justice’s Integrated Wireless Network radios and the Navy ELMR radios operate in the VHF and UHF spectrums, respectively, yet there are ways to communicate across the networks. These accomplishments are made possible through initial high-level policy agreements and follow-on technical development and innovation.



**Typical C3 environment without dedicated interagency vision and outreach.**

may be used as required, then released for subsequent assignment when the evolution is over. The two practices appear incompatible on the surface, but prior coordination and understanding of the partners’ processes promise the ability to overcome the institutional differences.

The differences between the Navy and FBI systems would not have been identified except through the practice of maintaining relationships and having frequent discussions. Some organizations within the maritime community are open to full public disclosure, while others, out of necessity to protect sensitive operations, require less disclosure to outside organizations. Some have commercial interests that need to be addressed within the decision-making process. However, enhancing the ability to incorporate individual organizational practices and protocols into operational re-

The Sensor Management Suite is key to the successful integration of data sources (such as cameras and radar) into the JHOC common operational picture. The U.S. Space and Naval Warfare Systems Command (SPAWAR) in San Diego developed this application with the deliberate intent of integrating disparate sensors into a common user interface. Cameras from different companies with different interface protocols can be incorporated readily, often within less than a day’s effort. Thus, the JHOC can get radar and video feeds from almost any existing system belonging to a willing port partner, saving the aggregate infrastructure cost of installing a USCG-owned camera system and providing the communications backbone to bring the feed to the sector.

Blue Force Tracking, which in this context is displaying the geographical location of first responder boats and other port partner units in the AOR, was successfully demonstrated in San Diego with tracking devices on USCG, Navy, harbor police, and Customs (maritime)





assets. The chief benefits of such a common first responder view are twofold:

- The command duty officer in the JHOC can readily determine the closest available asset to bring to bear in a given situation.
- The crews in these boats can identify other “friendly” units, preventing misunderstanding or—in the worst case—blue-on-blue engagements.

The opportunities for regional coordination across jurisdictional lines are limited chiefly by funding shortfalls. The ideas and vision to create them are widely shared.

### Collaboration

One of the roles the commander of a Coast Guard sector undertakes involves promoting a communal vision with other port stakeholders, each with a unique interest in the resilience of the port, and each with different capabilities, requirements, and information. The “Goal C3 Vision” shows the conceptual goal for a collaborative environment in the Puget Sound. The captain of the port has many avenues to cultivate a common vision. Among these are:

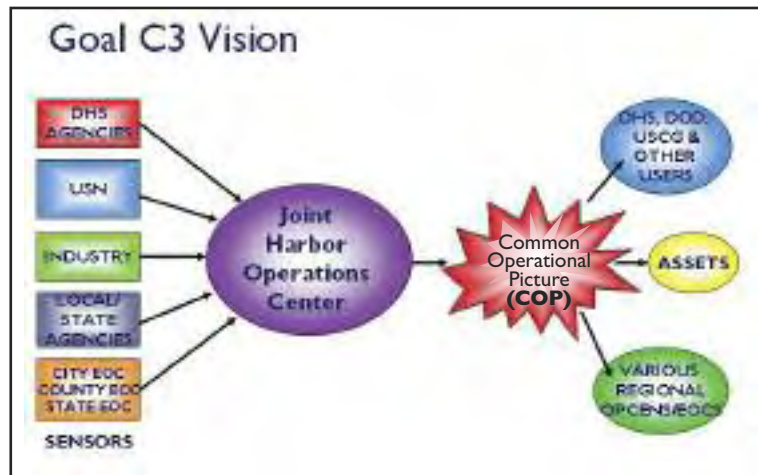
- area maritime security committee
- port readiness committee
- Puget Sound operations planning cell
- joint terrorism task force
- regional intelligence group
- regional response team
- consolidated targeting and enforcement team (USCG, CBP, ICE)

The challenge is to produce an enduring partnership. The degree to which the COTP and representatives of the Coast Guard participate in such regional forums will influence the possibility of successful interagency activities.

Another challenge is to foster a cohesive alliance. Every day brings a new opportunity to work with different partners through regional or one-on-one exercise series,

a jointly planned, multi-agency operation or a real-time response to an unplanned event. In the best case, lines of communication, clear jurisdictional responsibility and authority, and common tactics, techniques, and procedures have been discussed, agreed upon, and documented before the crisis. In the worst case, the JHOC has the phone number of an anonymous agency contact somewhere in the region. Reaching an agreement to work together is the first step along the partnership road, but

agreements, assumptions, and expectations need to be delineated in a formal document such as a memorandum of agreement or a standard operating procedure. These documents must be reviewed on a periodic basis to ensure clarity and continued relevance.



**Desired C3 environment with all partners collaborating toward shared situational awareness.**

Planning is just the first step. The real proof of true interagency coordination has to be demonstrated through effective multi-agency mission execution. Not all agencies participate at the same level in any given situation, and the more deliberately participation is agreed to up front, the more it reduces uncertainty at the beginning of an incident and misunderstandings throughout. Mutual exercises and thorough exercise debriefings will help identify overlapping jurisdictional assumptions that would cripple the response in a real-world incident. Lessons learned from one exercise need to feed the next exercise and be incorporated into the standard operating procedures, tactics, and techniques. JHOC staff and participating members should always be training.

### Looking Ahead

Today, that same small boat described in the scenario at the beginning of the article may have hoped to remain concealed while observing the transit. However, our sensors can now penetrate the fog to detect the boat. Observant watchstanders, attuned to picking out anomalies, would alert the Coast Guard command duty officer, who could request that Washington State Patrol airborne assets track the small boat to its desti-

## A View of the JHOC

Walking into the JHOC in Seattle, a visitor immediately notices the complex video display “Wall of Knowledge,” with the vast array of visual information sources available to a JHOC watchstander at a glance. Each watch station has four or five computer monitors on the desktop in addition to the large-format screens on the front wall, each one capable of displaying different applications or tactical information.

The communications specialist monitors seven different radio systems. Over 70 multi-agency cameras are integrated into the sensor management system. On top of that, there are more than 40 different data sources the watchstanders have access to.

There are several initiatives to mitigate this information overload—*Watchkeeper*, a new software suite being developed at USCG headquarters, the JHOC’s own quick response checklists, and command duty officer and watchstander training based on realistic scenarios. Additional information convergence is in the formative stages of development. Initiatives with the Department of Homeland Security-sponsored university centers of excellence, military research and development centers such as the Coast Guard Research and Development Center and SPAWAR, and self-initiated demonstrations and trials at the local deckplate level are paving the way for intelligent applications that will free decisionmakers to make decisions rather than sift through data.

nation. Procedures are in place to ensure liaison with local, state, or national intelligence analysts to assess the situation and devise a course of action. Within five minutes of returning to a local marina, the owner of that small boat might get a call from the USCG command duty officer asking if he was having engine problems.

Coordination to achieve a result like this is possible only through the concerted and sustained outreach effort that brings all port stakeholders together with one aim, to contribute to port and national security, safety, and environmental protection through information sharing and coordinated processes. Tim Flanagan, a local Internet writer who toured the JHOC, ended a recent article with a closing that best sums up the Sector Seattle JHOC concept: “This is what ‘Homeland Security’ ought to look like! ... When I pay my taxes, I’d like to think that all the money was spent on programs this valuable!”

### **About the author:**

*As the commander of Coast Guard Sector Seattle, CAPT Metruck is the Puget Sound captain of the port and the federal maritime security coordinator. He served as COTP in San Diego and on United Nations and Senate assignments. CAPT Metruck graduated from the Coast Guard Academy and Harvard’s John F. Kennedy School of Government.*

### **Endnotes:**

- <sup>1</sup> Peter Dujardin, “Local Initiative to Track Vessels at Port of Hampton Roads Goes National,” Daily Press, Newport News, Va., March 27, 2006.
- <sup>2</sup> Edited remarks by ADM Vern Clark, San Diego Union-Tribune Editorial Board, San Diego, California, February 1, 2005. (<http://www.navy.mil/navydata/cno/speeches/clark050201-ed.txt>)
- <sup>3</sup> Tim Flanagan, “Joint Harbor Operations, Part 2,” NAVAGEAR, June 27, 2007. (<http://www.navagear.com/2007/06/joint-harbor-operations-part-2/>)



**Inside the Puget Sound JHOC.**







# Providing Information to Mariners

*The U.S. Coast Guard, Army Corps of Engineers, and NOAA team up.*

by CDR BRIAN J. TETREULT  
*Chief, Vessel Traffic Services Division  
U. S. Coast Guard Office of  
Shore Forces*

MR. MICHAEL WINKLER  
*U.S. Army Corps of Engineers  
Engineering Research and  
Development Center*

MR. DARREN WRIGHT  
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NOAA PORTS®*

The U.S. Coast Guard, U.S. Army Corps of Engineers (USACE), and National Oceanic and Atmospheric Administration (NOAA) all have leading roles in promoting marine safety and providing mariners critical navigational safety information. The Coast Guard has been using the Automatic Identification System (AIS) in vessel traffic services (VTS) for nearly five years, primarily for vessel tracking and identification. But the AIS has other capabilities to provide automatic information to mariners.

For example, the Coast Guard's Automatic Identification System infrastructure is currently used to more effectively provide the USACE and NOAA's large amounts of data to mariners via electronic transfer. This effort is focused on VTS areas where the Coast Guard has existing AIS capability, but as the Coast Guard expands this capability, it is anticipated that these applications will also expand to other areas outside of vessel traffic service areas.

AIS has primarily been used as a sensor to aid in vessel tracking, complementing the information available through vessel voice reports, radar, and visual means.

Use of AIS receive capability has generally improved the monitoring of vessels, allowing more accurate and frequent tracking in areas where there were limited sensors and the confirmation of vessels' identities were only observed on radar or through remote television cameras.

Some limited use of Automatic Identification System transmit capability has been made to date, including the transmission of weather information and lock procession order for towboat and barge traffic at one inland vessel traffic service location. The initial use of this capability resulted in problems with shipboard equipment such as multiple messages being received and the AIS equipment alarming and requiring operator acknowledgement. Working closely with a relatively homogenous vessel user group, these problems were addressed, but use of this functionality in other VTS areas was discontinued until such problems could be universally worked out.

## **Expanded Use of AIS Capability**

There is great potential to further improve vessel traffic service operations using Automatic Identification System transmit capability. AIS may be used as another

## The Automatic Identification System

AIS is a maritime navigation safety communications system that automatically provides vessel information, including the vessel's identity, position, course and speed, navigational status, and other safety-related information to other ships and shore stations. Ships transmitting this information also automatically receive the same information from other ships. Since its introduction aboard ships in 2002, the information has proven to be invaluable for shipboard situational awareness (for collision avoidance) and shoreside (for use in vessel traffic management, particularly in vessel traffic services). The Automatic Identification System has increased the accuracy and coverage area for VTS vessel tracking, and has also been used to improve maritime security and commercial shipping efficiency.

In addition to its vessel tracking and situational awareness capabilities, AIS can also transmit additional information beyond the standard messages used for vessel tracking information (such as vessel position, course, speed, etc.). Additional message types are designated for binary applications, which can be used to communicate data for which there is no predefined message. According to the International Maritime Organization Subcommittee of Navigation Circular 236, "[binary messages] may permit:

- ships to report information to other ships and shore stations;
- shore stations to report navigation information, conditions, and warnings;
- ship reporting to be simplified.

Moreover, binary messages may reduce verbal communications and enhance reliable information exchange and reduce operator's workload."

Using these additional messages, almost any information of mariner interest can be provided. The International Maritime Organization has developed seven binary messages for testing, and has encouraged administrations to evaluate them. These messages include meteorological and hydrological information, closed fairway and tidal window notification, and retransmission of VTS vessel targets.

way to provide information to mariners silently and on existing navigation systems. Mariners who have seen the benefits of AIS aboard have been asking for additional information.

For example, pilot organizations in several large port areas have asked for AIS-transmitted weather information, and inland towboat operators have asked for weather and hydrological data to assist them with difficult lock approaches. Finally, providers of navigation safety information have also been searching for better ways to get information to mariners more frequently, accurately, and in a more user-friendly manner. Two of the primary information providers are the National Oceanic and Atmospheric Administration and the U.S. Army Corps of Engineers.

The U.S. Army Corps of Engineers is responsible for navigation safety and services on more than 11,000 miles of inland and inland coastal waterways, 192 lock sites with 238 lock chambers, dams, canals, and other

critical navigation infrastructure. Within the USACE there are continual developments to improve navigation safety and efficiency. The U.S. Army Corps of Engineers has established an overarching program for this work called the Coastal and River Information Service.

The purpose of this initiative is to facilitate transfer of electronic information regarding navigation activity on our nation's rivers and along the coastal areas. The ultimate goal is to provide the framework by which the USACE can utilize and obtain electronic data that relates to commercial transportation on the U.S. coastal and inland waterways systems. As part of the Coastal and River Information Service effort, the USACE's Institute for Water Resources is working with the towing industry and multiple other federal agencies to develop a harmonized data standard for navigation information. This effort will enhance collection and sharing of the wide variety of information required to be reported and that is used by the maritime industry for efficient oper-

*continued on page 85*



## Outdraft Information

Of particular interest regarding the use of AIS capability, the USACE's Engineering Research and Development Center is developing sensor packages that transmit dynamic data in real time to vessels approaching locks and dams. The research and development center has also developed a system of sensors that measure hydrological information (such as current velocity and

Other types of USACE information that are being considered for dissemination to mariners via AIS include lock and other infra-



**A model of the lock and dam shows the development of an outdraft current. Graphics courtesy of the U.S. Army Corps of Engineers.**

water level) in the approaches to locks. Cross currents, called "outdraft," exist on the upstream approach of a navigation lock.

Pilots approaching navigation locks where outdraft currents exist must maneuver to compensate for these currents using their previous experience as guides to the strength of the outdraft. Despite their precautions, allisions do occur, and can lead to loss of life, damage to the cargo and vessel, lock and dam structure damage, and threats to overall river operations.

Even when allisions do not occur, the lack of information about outdraft at locks and dams results in less efficient approaches, as pilots don't know what to expect when the tow nears the lock wall. By measuring these conditions and using AIS to transmit it to affected vessels, the USACE hopes to prevent these types of accidents and avoid spending millions of dollars on mitigation and repairs.



**Outflow current velocity presented on an electronic navigational chart. The current data has been transmitted to the vessel via AIS.**

structure operations and status (e.g., open/closed), pool levels, and other navigation information.



**Aerial view of the approach to a lock. In high water conditions, an outdraft current can develop that tends to push vessels off-course toward the dam (right).**



ations. The Coastal and River Information Service program also organizes assistance toward U.S. Army Corps of Engineers operations and strategic decision-making.

### Cooperation Through an Interagency Research Project

An overarching project has been established with the USCG Research and Development Center with the intention of investigating the implementation of Automatic Identification System transmit capability. There are three main efforts associated with this project, all with a high level of interagency cooperation. First, a requirements study was conducted that gathered information from various stakeholders involved with AIS transmit capability. The Coast Guard, USACE, NOAA, and others worked together to determine which agencies collected data that could be disseminated via the Automatic Identification System; what capabilities they already had for collecting, managing, and disseminating this information; and what capabilities would be needed to improve such dissemination.

This requirements study is being used to guide the second main effort of the project—establishment of a test bed and individual demonstration projects of the capability. The information gathered from the test bed and demonstration projects will be used to refine requirements to be used as a basis for establishing the capability in operational systems nationwide.

The third main effort of the project is the establishment of a working group to review current VTS AIS capability within U.S. waters, review the potential uses of AIS transmitted messages as part of an expanded VTS AIS capability, identify both the challenges and opportunities associated with this capability, recommend new or revised AIS transmit/broadcast messages suitable for regional and international implementation, and identify changes needed for Automatic Identification System equipment to support new / expanded capabilities. This is a structured forum where the interagency partners, equipment manufacturers, end users, technical experts, and other stakeholders can exchange knowledge, address issues, and coordinate efforts. The working group helps to ensure that everyone is moving in the same direction. The working group membership consists of representatives from government agencies who can help in the development of this capability as well as mariners, equipment manufacturers, and other interested parties. An important part of the working group is maintaining awareness of and coordination with international bodies and other national authorities doing similar work.

### About the authors:

*CDR Brian Tetreault is the U.S. Coast Guard VTS program manager and a representative to the International Association of Marine Aids to Navigation and Lighthouse Authorities VTS committee and several working groups on vessel traffic service and AIS matters. He has served aboard icebreakers in the North Atlantic and Great Lakes, aboard a fisheries patrol cutter in Alaska, and at several vessel traffic services and staff assignments. He graduated from the Coast Guard Academy and holds an unlimited second mate license and a 1,600-ton master license.*

*Mr. Michael Winkler is a research hydraulic engineer with the U.S. Army Corps of Engineers Engineering Research and Development Center. He is the AIS coordinator for the Corps of Engineers and is working on a Corps development to exchange information electronically with the towing industry. He heads the Corps eNavigation work unit. Mr. Winkler has worked for USACE since 1997 at the Corps Memphis District River Design Section and the U.S. Army Engineer Research and Development Center Coastal Hydraulics Laboratory. He is currently working toward completing an M.S. degree at Mississippi State.*

*Mr. Darren Wright has been the program manager for NOAA's Physical Oceanographic Real-time System (PORTS®) program since 2006. During his first two years in service, he was charged with the installation of seven new PORTS®, a 54 percent increase in the program. By the end of CY2009 all PORTS® are scheduled to be operational. Mr. Wright has been with NOAA since 1984 and has worked in operational oceanography for over 20 years. Before becoming the PORTS® program manager, he worked in the National Weather Service's techniques development lab, the National Ocean Service's Voluntary Observing Ship (VOS) program, and NOAA's Center for Operational Oceanographic Products and Services.*

## Vessel Traffic Services

The U.S. Coast Guard operates vessel traffic services in the largest and busiest ports in the United States. VTS provides active monitoring and navigational advice for vessels in particularly confined and busy waterways. VTSs use a variety of land-based sensors to monitor vessel traffic movement, which operators use to monitor the traffic situation and build a traffic image. The operators use the information in this image to inform mariners (usually via VHF-FM voice radio) of pertinent information so they can make informed navigational decisions. The types of information communicated include:

- locations and intentions of other vessels;
- navigational hazards;
- hydrological and meteorological information;
- traffic organization information (lock order, procession through one-way channels, etc.);
- status of aids to navigation (AtoN).

Communicating this information via voice can be too cumbersome, as the airwaves are increasingly congested and frequent misunderstandings and missed communications that necessitate repeat transmissions ensue. As a result, only the most critical information is routinely communicated. "Nice to have" information such as weather and AtoN status may only be provided by the VTS infrequently, on request, or not at all.

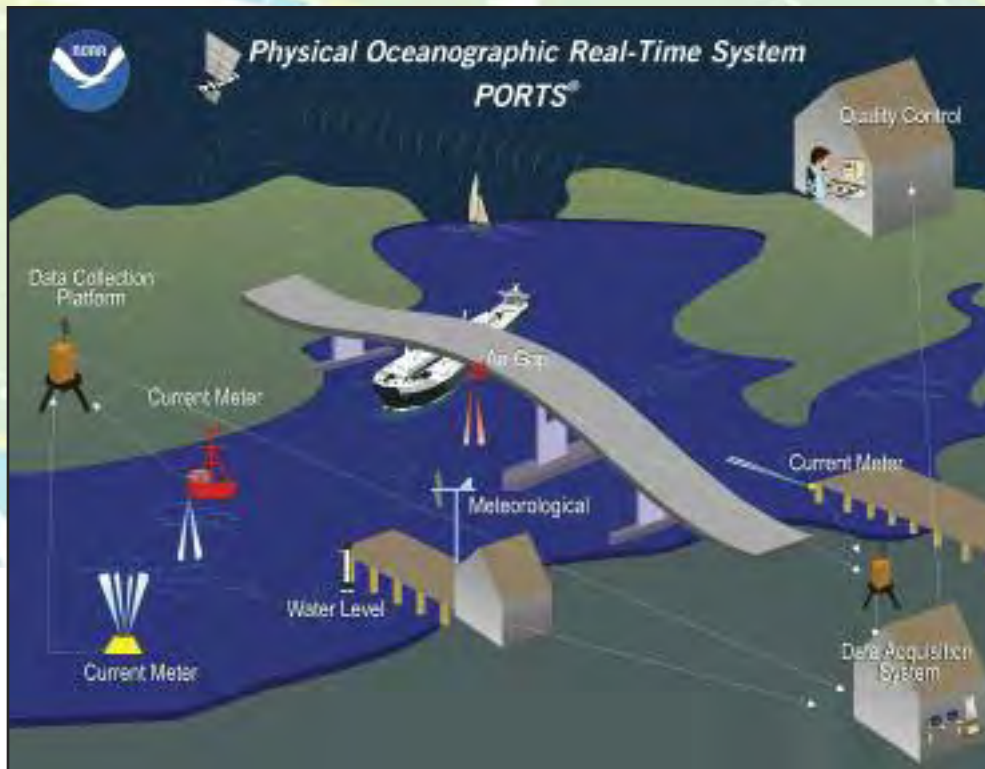
Additional information about vessel traffic services can be found at [http://www.navcen.uscg.gov/mwv/vts/vts\\_home.htm](http://www.navcen.uscg.gov/mwv/vts/vts_home.htm).



## NOAA Physical Oceanographic Real-Time System (PORTS®)

PORTS® is a decision support tool created to improve the safety and efficiency of maritime commerce by providing real-time environ-

The USCG and NOAA are working together to provide PORTS® data via AIS at USCG VTS sites. PORTS® data is currently available to mariners via the Internet, by telephone, and on request by radio from the VTS. PORTS® sensor data will be processed by the VTS system and transmitted to AIS-equipped vessels. AIS equipment aboard vessels will receive the data, which then may be displayed on shipboard navigation systems. Data such as wind speed and direction, current speed and direction, water level, air temperature, water temperature, and barometric pressure will be available to the mariner.



**NOAA PORTS® includes a variety of sensors to provide real-time meteorological and hydrological information to mariners. Graphics courtesy of the National Oceanic and Atmospheric Administration.**

mental observations, forecasts, and other information. PORTS® measures and disseminates observations and predictions of water levels, currents, salinity, meteorological parameters (e.g., winds, atmospheric pressure, and air and water temperatures), and bridge air gap information that mariners need to navigate safely.

The tool provides accurate real-time oceanographic information tailored to the specific needs of the local community. PORTS® systems come in a variety of sizes and configurations, each specifically designed to meet local user requirements. The largest PORTS® installation is comprised of more than 50 separate instruments. The smallest consists of a single water-level gauge and associated meteorological instruments (e.g., winds, barometric pressure, etc.). Regardless of its size, each PORTS® installation provides information that allows mariners to maintain an adequate margin of safety for the increasingly large vessels visiting U.S. ports, while allowing port operators to maximize port throughput. Currently there are 18 existing PORTS® systems that service roughly 50 seaports. For more information on PORTS® see <http://ports.noaa.gov>.

NOAA also has other information of interest to mariners, such as water levels from the National Water Level Observing Network, weather information from buoys and coastal observing stations, and weather forecasts and warnings. Another interesting area being explored in partnership with NOAA is the transmission of locations of endangered marine animals, so that ships may avoid them.



**The Coast Guard's AIS system will be used to provide PORTS® data directly to mariners.**



# Multi-Agency Search Yields Results



by PA3 SETH JOHNSON  
*U.S. Coast Guard Public Affairs Detachment New York*

As the rust-colored doors swing open, there is a sharp chemical waft, and dozens of white metal barrels appear in the cargo container as sunlight spills in. David Clark places his gloved hands on a barrel and peers inside. He begins meticulously looking over each of the barrels for spillage and damage in a container big enough to double as a small garage.

"We are looking for spilled products and safety deficiencies," said Clark, a hazardous materials investigator in the Pipeline & Hazardous Materials Safety Administration in West Trenton, N.J. "Mainly what we see are a lot of problems with placards not being there or filled out properly. This one is carrying adhesives," said Clark as he flipped through a hazardous materials manual. "It's labeled right, but the placard is wrong."

## Teamwork

This was just one out of hundreds of containers inspected in a Coast Guard-led initiative that involved 12 federal agencies and lasted over three days around the Ports of New York and New Jersey in March 2008. The initiative, called a multi-agency strike force operation (MASFO), focused on identification of safety violations in the storage and shipment of hazardous materials and numerous other deficiencies, and also built cooperation among organizations that do not work together every day.

"This has allowed everyone to come together and inspect cargo on roads, railways, ports, and vessels," said John Hillin, an inspector at Coast Guard Sector New York's Prevention Division. "With 100 inspectors working together, they have been able to learn a great deal and will work better as a team in the future, providing a safer port."



**Petty Officer 1st Class Jamie Espinoza, a marine science technician at the Coast Guard Container Inspection Training and Assistance Team, Oklahoma City, explains how working with the Department of Transportation, New Jersey State Police, and Port Authority Police allows more hazardous material containers to be searched as they leave ports for shipping. Photo by Petty Officer Seth Johnson.**







**David Clark, an inspector for the U.S. Department of Transportation, inspects hazardous material labeling with Coast Guard Chief Petty Officer Peter Gollnick, a marine science technician and inspector at Coast Guard Sector Boston. Photo by Petty Officer Seth Johnson.**

Even while working as a team, the reason and effectiveness of mass inspections revealed itself to agency members working in the field. "After the meetings we had with the other agencies we used an incident command structure to organize everyone," said LT Scott White, chief of Facility and Terminal Compliance at Coast Guard Sector New York's Prevention Division. "We made sure the lead on each team corresponded with the right modal organization. Pipeline Hazardous Material Safety Administration dealt with hazardous materials on land, the Coast Guard dealt with inspections and materials aboard boats, and the State Police and Highway Administration on land."

### The Players

Participants in the MASFO included the U.S. Coast Guard, Customs and Border Protection, Federal Aviation Administration, Federal Railroad Administration, National Cargo Bureau, Department of Homeland Security, Office of Inspector General, New Jersey State Police, Norfolk Southern Railroad Police Department, Port Authority Police Department, Federal Motor Carrier Safety Administration, Pipeline & Hazardous Material Safety Administration, and the New Jersey Department of Transportation.

Each of these agencies has specialties it works with from day to day. Having other members of agencies working in areas they usually wouldn't provided the unique training experience that many inspectors had

never experienced. Each agency defined the roles of its participants. For example, the Federal Railroad Administration inspected cargo on trains, Port Authority Police worked alongside agencies to provide safety and assist with inspections, and the New Jersey State Police helped assist in roadside inspections and law enforcement.

### Checks and Balances

With members of multiple agencies all working together, the multi-agency strike force operation was also able to "catch" more in terms of identifying violations and deficiencies, as a whole.

"The idea is if there is a problem with a shipment, to catch it before it gets into another transportation mode," said Joe Evans, a hazardous materials program manager at the Federal Motor Carrier Administration. "We check brakes, tires, driver credentials, and licensing to make sure he is able to carry hazardous material."

While many agencies were local, Coast Guard leaders in the field of marine safety, inspection, and prevention traveled from places like Boston, Mass., and Oklahoma City, Okla., to work together during this operation and unique learning experience.

The multi-agency strike force operation took six months of planning. This included off- and onsite meetings before federal agents surged the inspection tempo of containerized cargo in the Ports of New York and New Jersey, said White.

During the course of the MASFO there were 28 containers put on hold, 76 inspected containers found with deficiencies, 127 violations issued, and 15 trucks placed out of service. With roughly 2,000 man hours and 636 containers inspected, this proved to be a large, successful operation that left road, rail, and waterways safer, while bolstering the communication and cooperation among agencies and enforcing shipping safety and regulation.

"This has been the largest, most enthusiastic, and smoothest running [operation] I have been involved in," said White. "This [MASFO operation] could very well be one of the largest in Coast Guard history."

### About the author:

PA3 Seth Johnson is stationed at Coast Guard Public Affairs Detachment New York. He joined the Coast Guard in 2004. He has served on the Coast Guard Cutter Spencer, and recently attended the Defense Information School, Fort Meade, Md., to train as a public affairs specialist.

# Security with Compassion



by LCDR TONY RUSSELL  
*former Commanding Officer, USCGC Nantucket*

Life at sea can be hard for the commercial seafarer. In today's global economy, some small shipping companies operate on the verge of insolvency and when times get tough, often the first to feel the crunch are the most vulnerable members—the crew.

Complicating the matter is the complex labyrinth that is the international maritime industry, in which it is not uncommon for a ship to have regulatory, business, and physical ties to a multitude of countries and jurisdictions simultaneously. On occasion, this formula develops into a complex and frustrating problem for the U.S. Coast Guard, one that we cannot ultimately solve ourselves through our safety and security missions—only through partnership with industry and other non-governmental humanitarian agencies.

## More Than a Call for Help

Such was the case of the M/V *Haitien Pride*. It started when a Good Samaritan vessel received a mayday call from this 161-foot, Panamanian-flagged coastal freighter and its crew of seven Filipinos, sailing from Haiti with the intent to enter Miami. This began an eight-day saga that required the efforts of multiple elements of Coast Guard Sector Miami, Immigration and Customs Enforcement (ICE), Customs and Border Protection (CBP), the Seamen's Church Institute of New York and New Jersey (SCI), the ship's representative, and the governments of the Bahamas and the Philippines to bring it to a successful conclusion.

At 10:57 a.m., May 5, 2006, Sector Miami's command center received a mayday report from the M/T *Asphalt*

*Star* for the M/V *Haitien Pride*, which was disabled and adrift approximately 27 miles southeast of Miami. As

**A small boat crew from Coast Guard Cutter *Nantucket*, based in Miami Beach, stands by the M/V *Haitien Pride* during an interagency boarding of the vessel that included the Coast Guard and its port state control inspectors; Immigration and Customs Enforcement; and a representative from the Seamen's Church Institute, a seafarers advocacy group. At the time, the crew was threatening illegal entry to the U.S. during a pay and labor dispute with the owner. U.S. Coast Guard photo by LCDR Tony Russell.**



the sector investigated the situation, it quickly became more complicated.

### Refugees?

The Coast Guard Cutter *Cormorant*, with a port state control inspector aboard, was dispatched to conduct a search and rescue boarding on the vessel. In the meantime, the master and crew began to make various claims regarding their poor treatment, lack of pay, lack of adequate food and water, and the safety of their vessel. These claims were accompanied by requests to enter Miami.

During *Cormorant's* boarding, the vessel was found to be structurally sound and not in distress. Additionally, both *Cormorant* and the *Asphalt Star* provided food and water to sustain the crew. Based on these findings, Sector Miami decided that the standard safety and security requirements for entry into the U.S. would not be waived and the vessel would have to submit the required advance notice of arrival, document of compliance, safety management certificate, and international ship security certificate.

These entry requirements were provided to the vessel's owner and agent, as well as an attaché from the Philippine Consulate who was sent to help resolve the situation. They made the decision that meeting these requirements was not financially feasible and began to make arrangements for the vessel to go to the Bahamas.

The master and crew of the vessel were not entirely pleased with this situation and continued to state their desire to take the vessel to Miami, where they hoped to deliver the ship to the owner in an attempt to get paid back wages and return to the Philippines.

"It is always tough when you have people who are clearly going through a hard time dealing with their employer," said LCDR George Zeitler, chief of inspections for Sector Miami. "However, our responsibilities are not to the financial conditions of the crew, only to their physical well-being, and we cannot lower our critical safety and security standards in order to ease their personal burden."

Though it was hoped the situation was resolved, a fear lingered that this was not the last dealing with the *Haitien Pride*—a fear that proved to be well-founded.

### A Run for the Border

On the morning of May 12, Sector Miami received a call from the vessel's agent stating that it was once again en route to Miami, despite the captain of the port order denying entry until specific safety and security re-

quirements were met. The situation suddenly got more serious, and the focus shifted significantly from safety to security.

An aggressive effort was made to re-locate the vessel, which had turned off its required Automatic Identification System, making things more difficult. The search team included an auxiliary aircraft, a Falcon jet from Air Station Miami, and the 87-foot patrol boat *Bluefin*.

The vessel was found drifting in the Gulf Stream, south-east of Miami. It was immediately verified that there was no distress onboard. While the significant concern continued to be the safety of the crew, the Coast Guard and its DHS partners began developing a contingency plan in the event the vessel attempted an illegal entry.

### Interdiction, Negotiation

An interagency boarding team was quickly assembled from the 110-foot patrol boat *Nantucket*; Sector Miami PSC inspectors; agents from ICE; and a non-governmental advocate for seafarers, Douglas Stevenson from the Seamen's Church Institute.

"As a team we agreed that the optimal outcome was to get the vessel to voluntarily go to the Bahamas," said LCDR Jon Totte, chief of enforcement for Sector Miami. "But in the meantime, we had to ready ourselves to prevent an illegal entry if necessary, and it was nice to see our pre-established relationships, particularly with ICE and CBP, work out so well."

*Nantucket* placed a boarding team on the distressed vessel and the PSC team initiated a second inspection while the boarding officer and ICE agents began discussions with the master. Stevenson remained on the cutter while permission was sought to place a civilian aboard.

While the master and crew were friendly and compliant, they continued to be adamant about going to Miami and expressed fear of arrest or stranding in the Bahamas. Finally, permission was given to place Stevenson aboard to mediate the discussion. The mission of the Seamen's Church Institute is to provide support and advocacy to seafarers, and in this case, Stevenson understood that the best thing the master could do for himself and his crew would be to go to the Bahamas, where no-cost arrangements could be made to repatriate them to the Philippines.

### Resolution

Almost immediately after Stevenson stepped aboard, the tone and progress of the negotiations improved. This was likely due to SCI's reputation, credibility, and





demonstrated the value of the new Coast Guard sector's unified command structure, combining response and prevention responsibilities under one commander. And it showed the value of looking beyond the obvious govern-



**Mr. Douglas Stevenson from the Seaman's Church Institute of New York and New Jersey serves as mediator between the master of the M/V *Haitien Pride* and the Coast Guard. Working together, they were able to convince the master and crew that their best option was to sail the vessel to the Bahamas, where arrangements could be made for their repatriation. U.S. Coast Guard photo by Petty Officer Greg Ewald.**

the fact that someone other than a government agent was providing assurances of taking care of them.

In less than two hours, the master and crew agreed to go to the Bahamas if clearance could be arranged and assurance made that they would not be arrested upon arrival. Sector Miami was able to coordinate these steps, working with the vessel's agent and the Coast Guard liaison officer in the Bahamas. With an escort from the *Nantucket*, which also provided 30 gallons of lube oil and five gallons of water, the vessel safely anchored near Freeport the morning of May 13, and the crew was eventually repatriated.

### Lessons Learned

Though unusual and challenging, this case had many positive benefits. It tested the improved relationships and coordination that have been established since the stand-up of the Department of Homeland Security. It

ment agencies and involving third-party non-government organizations to help broker acceptable solutions in these very complex and sensitive situations that don't fit neatly into DHS's jurisdictional responsibilities.

The most significant point made by this case, and others like it, is that the Coast Guard can find that important and delicate balance among safety, security, and compassion that makes it such a unique military, law enforcement, and humanitarian organization.

"The Coast Guard's best side really shined through and showed that it can provide compassionate assistance without jeopardizing safety and security," summarized Stevenson.

### About the author:

*At the time of this incident, LCDR Russell was commanding officer of USCGC Nantucket. He is currently press assistant to the USCG Commandant.*



## QUESTIONS You have questions, We have answers. ANSWERS

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### **Ask the MSSC**

Many of you have already utilized our online reader survey. We're grateful for your input and we carefully read and consider each submission. In addition to your feedback on the magazine, you have also used this question form to pose questions of your own, such as:

- "Why is celestial navigation still a test subject for merchant marine officers and are there any plans to discontinue it?"
- "Why is the TWIC not required for public vessels sailors?"

- "I would like to see an update on the Towing Safety Advisory Committee. What has been accomplished? What is the path forward? Are there going to be third-party inspectors? How would an organization become approved to be an inspector or auditor?"

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We hope you continue to send us feedback via our reader survey. We'd particularly like to know what we can do to improve the *Proceedings* website. What content or functionality would be most useful for you?

Keep your comments coming, as we work to improve *Proceedings*.

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*Why is celestial navigation still a test subject for merchant marine officers and are there any plans to discontinue it?*

*Answered by the USCG National Maritime Center and the Office of Operating and Environmental Standards.*

Celestial navigation is still included on license exams for ocean routes for a number of reasons.

First, celestial navigation is among the required competencies in the applicable part of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW). For example, the minimum standard of competence for an officer in charge of a navigational watch includes the “[a]bility to use celestial bodies to determine the ship’s position.” The STCW is undergoing a comprehensive review and celestial navigation is among the areas receiving attention.

While it is too early to tell the outcome of this review, the position of the United States is that while the role of celestial navigation has significantly diminished, it should not be eliminated entirely. Celestial navigation performs an important function as a backup means of navigation in the event that other navigation modes fail.

Second, the use of either azimuths or amplitudes of a celestial body is the only way to determine accurately a ship’s compass error when operating outside of the visual range of terrestrial objects. The United States supports limiting the celestial navigation requirements to those necessary to perform its backup navigation role and in order to perform compass error corrections.

It is worth noting that although we have not eliminated celestial navigation from our license examinations, we have made changes that reflect its diminished use in

everyday watchkeeping. In early 2002, we reduced the minimum passing grade for celestial navigation exam modules from 90 percent to 80 percent. We believe this reduction is consistent with the reduced (but not eliminated) role celestial navigation plays in modern watchkeeping.

Notwithstanding our agreement that the role of celestial navigation has diminished, its use in prudent navigation has not been entirely eliminated and the Coast Guard does not have any immediate plans to eliminate celestial navigation from its license examinations through the amendment of our regulations found at 46 CFR §10.910.

*Why is the TWIC not required for public vessels sailors (Navy/Coast Guard)? CG places this on commercial mariners but is it required for mariners who sail on public vessels?*

*Answered by USCG Office of Prevention Policy, Cargo & Facilities Division.*

Under Title 46 Code of Federal Regulations, by April 15, 2009, all mariners holding an active license, certificate of registry, MMD, or STCW endorsement must hold a valid Transportation Worker Identification Credential (TWIC) issued by the Transportation Security Administration under 49 CFR Part 1572. Title 46 does not apply to a public vessel of the United States (a “public vessel” means a vessel that is owned, or demise chartered, and operated by the United States government or a government of a foreign country; and is not engaged in commercial service). Mariners who sail on public vessels are not required to hold a license, certificate of registry, MMD, STCW endorsement, or TWIC.

Even though these individuals are not required to hold a CG-issued credential by law, many (for example: mariners aboard Military Sealift Command vessels) are required by the operator to hold a valid qualification document as a con-

dition of employment. As such, they will be required to obtain a TWIC before their credential will be renewed.

In addition, Under 33 CFR § 101.514, federal officials, including employees of the armed services, are not required to obtain or possess a TWIC.

Additional information on TWIC is available on the U.S. Coast Guard’s Homeport website at <http://homeport.uscg.mil/twic>.

*I would like to see an update on the Towing Safety Advisory Committee. What has been accomplished? What is the path forward? Are there going to be third-party inspectors? How would an organization become approved to be an inspector or auditor?*

*Answered by the USCG Office of Operating and Environmental Standards.*

TSAC updates the public on its activities via its website at <http://homeport.uscg.mil/tsac>. The site contains background information as well as past meeting minutes, a current members list, task statements (past and present), recommendations the committee has made to the Coast Guard, and notices of future meetings. The “path forward” is embodied in the committee’s current efforts to provide recommendations for the new towing vessel inspection regulations, the revision of NVIC 4-01 regarding licensing and manning for officers of towing vessels, and clarification on the apprentice mate (steersman) license.

TSAC recommended third-party auditors and safety management systems be incorporated into the new towing vessel inspection regulations. The notice of proposed rulemaking for towing vessel inspections is being drafted and should be published in the spring of 2009. All proposals with regard to safety management systems, inspectors, and auditors would be included in that notice, and





the public's comments will be solicited. You will find all of TSAC's recommendations on the website noted in the first sentence.

*Why is smoking still permitted on the inside of towing vessels? Over 75 percent of the towing industry smokes. I think this the only place left in this country where you can smoke in the workplace. This is unfair and unsafe for the non-smoking mariner. Any relief in sight?*

*Answered by the USCG Office of Vessel Activities.*

Short answer: No, there is no immediate relief in sight.

However, the Coast Guard anticipates publishing a notice of proposed rulemaking for the inspection for certification of towing vessels this year. As part of that rulemaking, the Coast Guard anticipates there will a discussion concerning mariner safety and health issues. The Coast Guard will open the docket to receive comments on this proposed rulemaking and comments concerning prohibition of smoking on towing vessels are certainly possible.

Absent any specific regulations to prohibit smoking on towing vessels, the Coast Guard encourages you to work with your company's safety and health committee and see how you can achieve a company-specific policy concerning prohibition of smoking aboard their vessels.

*How does the Coast Guard track medical conditions of non-licensed personnel?*

*Answered by the USCG Office of Vessel Activities.*

Merchant mariner non-licensed personnel include two groups:

1. Qualified ratings such as able seaman, qualified member of the engineering department, and tankerman;
2. Entry-level positions such as ordinary seaman, wipers, and steward's department personnel (food handlers).

The Coast Guard handles each of these groups differently.

Qualified ratings follow a process similar to licensed personnel. Qualified ratings are required to have physical examinations every five years. Compliance with this requirement is monitored through the application process. Applicants for original and renewal of credentials must submit a completed form CG 719K Merchant Mariner Physical Examination Report with their application. The CG-719K is completed by the medical professional who conducted the physical evaluation of the applicant. It documents a comprehensive review of the applicant's medical and physical condition. The CG-719K is reviewed to flag any potential medical issues and a determination is made whether the mariner is physically qualified for a merchant mariner credential.

Entry-level applicants follow a similar, but abbreviated process. They submit a different form, CG-719K/E Merchant Marine Certification of Fitness for Entry-Level Ratings. This form is shorter than that required of licensed personnel and qualified ratings. In the CG-719K/E the medical professional attests to the applicant's ability to perform basic physical shipboard tasks. A full physical examination is not required. Entry-level applicants with limited service on non-seagoing vessels and/or on seagoing vessels of less than 200 gross register tons are not required to submit a physical exam of any type, nor are they required to demonstrate ability to perform basic physical shipboard tasks.

If the Coast Guard determines that a merchant mariner has a medical issue that may affect the mariner's ability to perform his duties, the Coast Guard may still grant the credential. These waivers may require special conditions as simple as using and having spare eyeglasses on-board. In the case of medical conditions that are stable but have the potential to deteriorate over time, the medical waiver may include a stipulation that the mariner undergo periodic medical evaluations more frequently than the standard five years. All physical waivers require that the mariner report any change in the waived condition to the credential issuing authority within 30 days.

The Coast Guard monitors licensed personnel in the same manner, with the exception of pilots, who must submit a CG-719K annually.

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# Nautical Engineering Queries

*Prepared by NMC Engineering Examination Team*



1. The heat gained per pound of refrigerant in the evaporator is known as the \_\_\_\_\_.

- A. latent heat of vaporization
  - B. sensible heat
  - C. refrigerating effect
  - D. specific heat of vaporization
- 

2. What is the diameter of a cylinder with a cross-sectional area of 706.86 square inches?

- A. 36 inches
  - B. 30 inches
  - C. 24 inches
  - D. 15 inches
- 

3. In accordance with Coast Guard regulations (33 CFR), each pressure gauge used in fuel transfer operations must be calibrated to indicate pressure within what percent of the actual pressure?

- A. 3%
  - B. 5%
  - C. 7%
  - D. 10%
- 

4. Any feed water testing done on a routine basis would normally include testing for \_\_\_\_\_.

- A. chloride
- B. phosphate
- C. electrical conductivity (total dissolved solids)
- D. all of the above



1. A. latent heat of vaporization      Incorrect Answer: The heat required to change a liquid to a gas without any change in temperature is known as the latent heat of vaporization.
- B. sensible heat      Incorrect Answer: When heat either absorbed or rejected by a material causes or accompanies a change in the temperature of the material, the heat transferred is known as the sensible heat.
- C. refrigerating effect      **Correct Answer: The quantity of heat that each pound of refrigerant absorbs as it passes through the evaporator is known as the refrigerating effect (Btu / lb).**
- D. specific heat of vaporization      Incorrect Answer: The specific heat of vaporization, or specific **latent** heat of vaporization, is the amount of heat required to convert one kilogram of a liquid into vapor without a change in temperature.
- 
2. A. 36 inches      Incorrect Answer: Choice "B" is the only correct answer.
- B. 30 inches      **Correct Answer: Solution is as follows:**  

$$A = \Pi d^2 \div 4$$

$$A = \text{cross-sectional area, } d = \text{cylinder diameter, and } \Pi = 3.14$$

$$d^2 = A(4) \div \Pi$$

$$d^2 = (706.86 \text{ inches}^2) (4) \div 3.14$$

$$d^2 = 2827.44 \div 3.14 = 900.46 \text{ inches}^2$$

$$d = \sqrt{900.46 \text{ inches}^2} = 30.0 \text{ inches}$$
- C. 24 inches      Incorrect Answer: Choice "B" is the only correct answer.
- D. 15 inches      Incorrect Answer: Choice "B" is the only correct answer.
- 
3. A. 3%      Incorrect Answer: Choice "D" is the only correct answer.
- B. 5%      Incorrect Answer: Choice "D" is the only correct answer.
- C. 7%      Incorrect Answer: Choice "D" is the only correct answer.
- D. 10%      **Correct Answer: 33 CFR 156.170(c)(3) states "Each pressure gauge must show pressure within 10 percent of the actual pressure ..."**
- 
4. *Note: Feed water is the heated and de-aerated water between the de-aerating feed heater and the boiler. Boiler water is the water actually contained within the boiler.*
- A. chloride      **Correct Answer: Feed water testing done on a routine basis would include a chloride test to monitor the purity of the boiler's incoming water. A high chloride (salinity) reading would indicate saltwater contamination from a leaking condenser, malfunctioning evaporator, and/or contaminated make-up water tank.**
- B. phosphate      Incorrect Answer: Boiler water is treated with phosphate, and must be tested on a routine basis for phosphate content.
- C. electrical conductivity      Incorrect Answer: Total dissolved solids (TDS) refers to the combined content of all inorganic and organic substances contained in the boiler water, and is generally measured using the electrical conductivity method.
- D. all of the above      Incorrect Answer: Choice "A" is the only correct answer.



# Nautical Deck Queries

*Prepared by NMC Deck Examination Team*

# Q

uestions

1. An urgent marine storm warning message would be broadcast on \_\_\_\_\_.
  - A. 2670 KHz
  - B. 156.80 MHz (VHF-FM Ch. 16)
  - C. 157.10 MHz (VHF-FM Ch. 22A)
  - D. none of the above

---
2. A vessel has been surveyed in a foreign port and found unseaworthy as a result of neglect. A seaman on this vessel is entitled to discharge and \_\_\_\_\_.
  - A. transportation to the port of engagement
  - B. one month's pay only
  - C. one month's pay or transportation to the nearest U.S. port, whichever is the lesser amount
  - D. one month's pay or transportation to the nearest U.S. port, whichever is the greater amount

---
3. Towing vessel fire protection regulations define a "fixed fire extinguishing system" to include all of the following EXCEPT a \_\_\_\_\_.
  - A. carbon dioxide system
  - B. halon system
  - C. manually operated clean agent system
  - D. manually operated water mist system

---
4. When pushing ahead, wires leading from the quarters of the after-outboard barges to the bow of a towboat \_\_\_\_\_.
  - A. prevent the towboat from sliding when the rudder is moved
  - B. prevent the barges from spreading out when backing down
  - C. hold the towboat securely to the barges
  - D. prevent the sidewise movement of the face barges



1. A. 2670 KHz  
 B. 156.80 MHz (VHF-FM Ch. 16)  
 C. 157.10 MHz (VHF-FM Ch. 22A)  
 D. none of the above
- Incorrect Answer. Routine, non-urgent offshore forecasts and storm warnings are broadcast on 2670 KHz following a preliminary announcement on 2182 KHz.  
 Incorrect Answer. Preliminary urgent marine storm warning broadcast announcements are transmitted over channel 16 before broadcasts are transmitted over 157.10 MHz (VHF-FM Ch. 22A).  
**Correct Answer.** Urgent marine navigational and weather information is broadcast over VHF channel 22A (157.1 MHz) from over 200 sites covering the coastal areas of the U.S., including the Great Lakes, major inland waterways, Puerto Rico, Alaska, Hawaii, and Guam. Preliminary broadcasts are first announced over the distress safety and calling frequency, Ch. 16. The mariner is then directed to Ch. 22A for the complete broadcast.  
 Incorrect Answer. C is the correct answer.

2. Note: 46 U.S. Code § 10906 states: "When a survey is made at a foreign port, the surveyors shall state in the report whether, in their opinion, the vessel had been sent to sea unsuitably provided in any important particular, by neglect or design, or through mistake or accident. If by neglect or design, and the consular officer approves the finding, the officer shall discharge a seaman requesting discharge and shall require the master to pay one month's wages to that seaman in addition to wages then due, or sufficient money for the return of the seaman to the nearest and most convenient port of the United States, whichever is the greater amount."

- A. transportation to the port of engagement  
 B. one month's pay only  
 C. one month's pay or transportation to the nearest U.S. port, whichever is the lesser amount  
 D. one month's pay or transportation to the nearest U.S. port, whichever is the greater amount
- Incorrect Answer.  
 Incorrect Answer.  
 Incorrect Answer.  
**Correct Answer.**

3. Note: 46 CFR 27.101 states that for towing vessels, a fixed fire extinguishing system means:  
 (1) A carbon dioxide system that satisfies 46 CFR subpart 76.15 and is approved by the Commandant;  
 (2) A manually operated clean-agent system that satisfies the National Fire Protection Association (NFPA) Standard 2001 (incorporated by reference in Sec. 27.102) and is approved by the Commandant; or  
 (3) A manually operated water mist system that satisfies NFPA Standard 750 (incorporated by reference in Sec. 27.102) and is approved by the Commandant.

- A. carbon dioxide system  
 B. halon system  
 C. manually operated clean agent system  
 D. manually operated water mist system
- Incorrect Answer.  
**Correct Answer.**  
 Incorrect Answer.  
 Incorrect Answer.

4. A. prevent the towboat from sliding when the rudder is moved  
 B. prevent the barges from spreading out when backing down  
 C. hold the towboat securely to the barges  
 D. prevent the sidewise movement of the face barges
- Incorrect Answer. These wires are called jockey wires. Jockey wires are run from the centerline of the towboat's bow to each quarter of the barge ahead. Their function is to prevent the "knees" of the towboat from sliding during a turn.  
**Correct Answer.** These wires are known as stern wires.  
 Incorrect Answer. These wires are called face wires and connect the tow to the barge directly ahead.  
 Incorrect Answer. Wire lashings connect the heads and quarters of two barges to prevent sidewise movement. These lashings are not connected to the towboat.







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