

U.S. Department  
of Homeland Security

United States  
Coast Guard



The Coast Guard Journal of Safety at Sea

# PROCEEDINGS

*of the Marine Safety Council*



**Coast Guard at Work**

**Around the World**

# PROCEEDINGS



January-March 2003

Vol. 60, Number 1



## On the Cover

The cliffs shown in this illustration are at Cape Split, Nova Scotia, which is the gateway to the world's highest tides. Original photos of the cliffs, flags and signpost are copyright © 2003 to USCG and its licensors.

## Europe

- 6 Welcome to ACT/MIO Europe
- 9 What is a SPAR?
- 12 New Cruise Ship Construction in Europe
- 16 U.S. Fleet Grows through the Marine Safety Program
- 18 Lifesaving Equipment Inspections in Europe
- 21 The World Maritime University: *A Conduit for Maritime Knowledge*



## Russia, West Africa & the Middle East

- 24 Protection of the Marine Environment in the Bering and Chukchi Seas
- 28 Coast Guard Inspections in West Africa
- 30 Navy, Coast Guard Team Up for Maritime Commerce and Safety in the Arabian Gulf



## Far East & the Pacific

- 33 Small Force, Global Mission in the Land of the Rising Sun
- 36 U.S. Coast Guard Activities in China
- 38 MIDET Singapore
- 40 NaKika Floating Development and Production System
- 42 Overview of U.S. Forces Japan
- 44 Destination MSO Guam: *Adventurous Island; Unique T-boat Fleet*
- 47 MSO Honolulu, Hawaii: *“Keeping the Pacific Safe”*
- 48 MSD American Samoa—A *“Sentimental” Walk in Paradise*
- 49 Complex Response to *Tankship Insiko 1907*



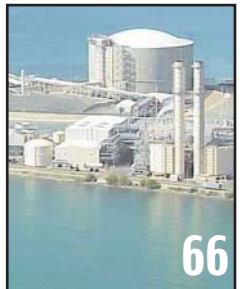
## Domestic Support

- 52 The Coast Guard Marine Safety Program and the State Department Office of Oceans Affairs
- 54 U.S. Coast Guard International Training in the Wake of September 11<sup>th</sup>
- 58 Coast Guard Inspections in Central and South America
- 60 International Organizations and Memoranda of Understanding: *Promising Ship Safety*
- 63 The U.S. Coast Guard’s Foreign Legion



## the Caribbean

- 66 MSO San Juan: *Guardian of the Caribbean*
- 69 Coast Guard Supports Caribbean Training
- 70 Caribbean IMO Center for Pollution, Prevention and Response



## Always on Deck

- 4 Assistant Commandant’s Perspective
- 5 Champion’s Point of View
- 74 PTP: An Approach to Management: *A Look at Japan and the United States*
- 76 Mariner’s Seabag: International Cooperation: *Salvage of the Japanese Training Ship Ehime Maru*
- Nautical Queries:
  - 78 Engineering
  - 79 Deck





# Assistant Commandant's Perspective

by Rear Adm. PAUL J. PLUTA  
Assistant Commandant for Marine Safety, Security & Environmental Protection

The Coast Guard's transition to the Department of Homeland Security on March 1 marks not a new role for our service, but rather reinforces the importance of the missions we have long performed. However, while we have routinely joined with industry and the international maritime community to enhance maritime safety and environmental protection, the events of September 11 underscored the need to also partner internationally to rapidly meet the challenges of global terrorism and other maritime security concerns.

We have worked with the international maritime community over the past decade to enhance safety and environmental protection through such instruments as the Safety of Life at Sea (SOLAS), the Standards of Training, Certification and Watchkeeping (STCW), and the International Safety Management (ISM) Code. Since September 11 we have been engaged with other nations primarily through the International Maritime Organization to find solutions to the new challenges facing the security of the global maritime transportation system. As a result of that partnership, we have been able to rapidly implement many initiatives.

The Coast Guard men and women who serve overseas have played an integral role in our ability to establish and maintain those critical international partnerships, serving as the principal liaison with U.S. embassies, foreign navies and coast guards, and the international maritime community in their area of responsibility.

Our partnerships with the international maritime community are the basis for the approval of several key initiatives, such as the expeditious adoption of amendments to SOLAS and the International Ship and Port Facility Security (ISPS) Code. The ISPS Code, adopted by the International Maritime Organization in December 2002, is the first comprehensive set of international maritime security standards and regulations. The Code provides for uniform international rules and standards for detecting security threats and taking preventive measures against security incidents affecting vessels or port facilities used in international trade. The SOLAS amendment and ISPS Code are an integral part of the Coast Guard's maritime homeland security strategy.

We have taken other initiatives to enhance global maritime security. We have partnered with countries such as Jamaica to assist them in identifying security risks in their own ports. We are engaged with the International Labor Organization and the World Customs Organization to address the challenges of seafarer identification and container security. The Commandant and I recently returned from a visit to Greece and Singapore, which have two of the largest shipping communities in the world, where we encouraged cooperation and compliance with the international port security code.

For more than half a century, our colleagues overseas have acted as our principal liaison to their host nations, forming the foundation of our partnerships. They serve as our eyes and ears, maintaining maritime domain awareness and establishing the relationships that are so critical to our long-term partnerships. Through the strength of these international partnerships, we have been able to take a major step in rapidly meeting the challenges of global terrorism and achieving maritime security.

**Adm. Thomas H. Collins**  
USCG Commandant

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

**Rear Adm. Robert F. Duncan**  
USCG  
Chief Counsel  
Chairman

**Rear Adm. Paul J. Pluta**  
USCG  
Assistant Commandant  
for Marine Safety, Security  
& Environmental Protection  
Member

**Rear Adm. David Belz**  
USCG  
Assistant Commandant  
for Operations  
Member

**Cmdr. Laticia J. Argenti**  
USCG  
Executive Secretary

**Steven Venckus**  
USCG  
Legal Counsel

### Proceedings Contact

**Albert G. Kirchner Jr.**  
Acting Executive Editor  
(202) 493-1072  
Fax: (202) 493-1030  
NMCProceedings@ballston.uscg.mil  
www.uscg.mil/hq/g-m/gmhome.htm

### **Statement of Ownership, Management and Circulation**

DIST (SDL No. 134)  
A: ac(2); ebfghijklmnopqrsuv(1).  
B: nr(50); cefgipw(10); bklqshj(5);  
xdmou(2); vyz(1).  
C: n(4); adek(3); blo(2); cfgijmpqr-  
tuvwyz(1).  
E: ds(5); abcefhijklmnopqr-  
vwyz(1).  
E: kn(2).  
F: abcdehjkloqst(1).  
List TCG-06

# Champion's Point of View



by Capt. FRANK STURM  
Commanding Officer, ACT/MIO Europe

## Editorial Team

**Albert G. Kirchner Jr.**  
Acting Executive Editor

**Ellen Rosen**  
Managing Editor

**Jesi Hannold**  
Senior Graphic Designer/  
Technical Writer

*Proceedings* (ISSN 0364-0981) is published quarterly by the Coast Guard's Marine Safety, Security & Environmental Protection Directorate, in the interest of safety at sea under the auspices of the Marine Safety Council. Special permission for republication, either in whole or in part, except for copyrighted material, is not required, provided credit is given to *Proceedings*. The views expressed are those of the authors and do not represent official Coast Guard policy.

All requests for subscriptions and changes of address must be in writing: Emailed to [jhannold@ballston.uscg.mil](mailto:jhannold@ballston.uscg.mil), or mailed to the following address:

Editor, *Proceedings* Magazine  
U.S. Coast Guard  
National Maritime Center  
4200 Wilson Blvd., Suite 790  
Arlington, VA 22203-1804

Please include mailing label when changing address.

**What is the Coast Guard Doing Here?** I've been asked that question many times in my U.S. Coast Guard career: on port calls in South America and the South Pacific while sailing as a deck officer onboard a Coast Guard icebreaker; in Newfoundland, Canada, while serving as part of the Coast Guard's International Ice Patrol; and even in Milwaukee, Wis., while assigned to the Marine Safety Office.

The question comes up even more often now, in my current assignment at the Coast Guard's Activities/Marine Inspection Office (ACT/MIO) Europe, in Rotterdam, The Netherlands. At speaking engagements throughout Europe, on vessel inspections in Africa, on visits to U.S. military bases in Europe, even during conversations with my Dutch neighbors or other ex-patriots in The Netherlands, people are constantly surprised to learn that the Coast Guard has people stationed on this side of the Atlantic.

When asked what the U.S. Coast Guard does, most Americans mention saving lives, interdicting drugs or illegal migrants, or protecting property along America's shoreline. "Guarding the coast," as our name implies.

Those who work in our nation's maritime industry are usually aware of our service's role in vessel or facility inspections, pollution response, port and vessel security, casualty investigations, mariner licensing, and other activities to prevent or respond to problems on the water. If it has something to do with safety on the water, then the Coast Guard probably does it.

Many people do not realize that those responsibilities do not stop at the edge of the horizon of the continental United States. Coast Guard cutters regularly deploy with U.S. Navy ships around the world. Coast Guard liaison officers, advisors, and attachés are assigned to U.S. embassy staffs and geographic U.S. Combatant Commanders (formerly known as Commanders-in-Chiefs or CINCs) in many locations, primarily in the western hemisphere.

This issue of *Proceedings* focuses on the work of Coast Guard units or people stationed overseas to conduct marine safety work. It also includes articles about the activities of Coast Guard units located at the "edge" of the United States that are involved in international efforts to ensure or promote maritime safety and protect the marine environment.

In this issue, we invite you to take a trip with us around the world as we focus on some of the Coast Guard's less-publicized places of work. Learn about Coast Guard units in Alaska, Hawaii, American Samoa, Guam, Japan, Singapore, The Netherlands, the Virgin Islands, and Puerto Rico, and about Coastguardsmen based in the United States who travel to other parts of the world to get the job done. Read about new construction of cruise ships, SPARs, and Floating Production Systems. Learn about Coast Guard inspections in West Africa, South America, and Singapore. See how our service works with other U.S. forces, foreign governments and international agencies to educate mariners in Sweden, ensure safe shipping in the Gulf of Arabia, promote regional cooperation on port state control, and provide maritime safety and security training in countries around the globe.

You will see that the sun never sets on the U.S. Coast Guard.

## Welcome *to* ACT/MIO Europe

by Cmdr. JOHN KOSTER, Executive Officer, ACT/MIO Europe, Rotterdam, The Netherlands



**T**here are only two U.S. Coast Guard units located outside of the United States or its territories: one in Japan and one in The Netherlands. Coast Guard Activities/Marine Inspection Office (ACT/MIO) Europe, located in Rotterdam, The Netherlands, has a unique history, area of operations, and set of missions.

### History

The U.S. Coast Guard arrived permanently in Europe near the end of World War II at the request of the Department of State in order to handle a large influx of U.S. merchant ships and U.S. merchant seamen. Numerous Merchant Marine Details (MMDs) were established in British and European ports. After the war, the MMD functions declined, eventually leaving only MMDs in London, England; Bremerhaven, Germany; and Rotterdam, The Netherlands.

After the completion of Sea-Land's SL-7 Type Fast Sealift Ships constructed in Bremen and Rotterdam in the mid-1970s, all remaining MMDs in Europe were closed and an MIO was opened in Rotterdam in 1975. That office was the first MIO established outside of the United States and its primary mission was to meet the needs of overseas construction of U.S. commercial vessels and Mobile Offshore Drilling Units (MODUs), and to provide overseas inspections of existing U.S. flag vessels. Another new Coast Guard command, Activities Europe (ACTEUR), was created in London in the mid-1960s to support the Coast Guard's international mission in Europe and to command and coordinate the many Coast Guard LORAN (radionavigational) stations located throughout Europe.

In June 1982, MIO Rotterdam was closed due to budgetary reasons and the inability to expand its staff under existing treaties. The responsibilities for

overseas marine inspection activities in Europe, Africa and the Middle East were transferred to MIO New York. From June 1982 until July 1995, MIO New York carried out these duties with marine inspectors from New York City and two to three marine inspectors permanently stationed at ACTEUR London. In the early 1990s, the Coast Guard began to hand over its European LORAN stations to their "host" countries. With the loss of the LORAN stations there was a diminished need for ACTEUR London. In 1994, the decision was made to close the unit in London and establish a new command in Rotterdam, to be called Activities/Marine Inspection Office Europe. In June 1995, ACTEUR London was closed and on July 11, 1995, ACT/MIO Europe was commissioned in Rotterdam. It is a tenant command in the 598th U.S. Army Transportation Terminal Group facility. The unit is commanded by a Captain and is comprised of 171 personnel including 12 commissioned and warrant officer duty inspectors, and three independent duty enlisted persons for administration, finance and information technology support, the Executive Officer, and Commanding Officer.

### Area of Responsibility

ACT/MIO Europe has perhaps the largest area of responsibility (AOR) of any operational unit in the Coast Guard, covering all of Europe, Africa and the Middle East to the India/Pakistan border. Our inspectors spend much of their time out of the office in foreign lands. To best prepare each inspector prior to traveling, the Command security officer provides country-specific security briefs. After in-depth research, areas considered unsafe for security reasons may be closed for travel by our inspectors until the situation improves. The Commanding Officer has closed or restricted travel to the following countries: Angola, Afghanistan, Democratic Republic of the Congo, Guinea-Bissau, Iran, Iraq, Israel, Kenya, Kuwait, Ivory Coast, Nigeria, Pakistan, Republic of the Congo, Sri Lanka, Sudan, Syria, Tanzania, and Yemen.



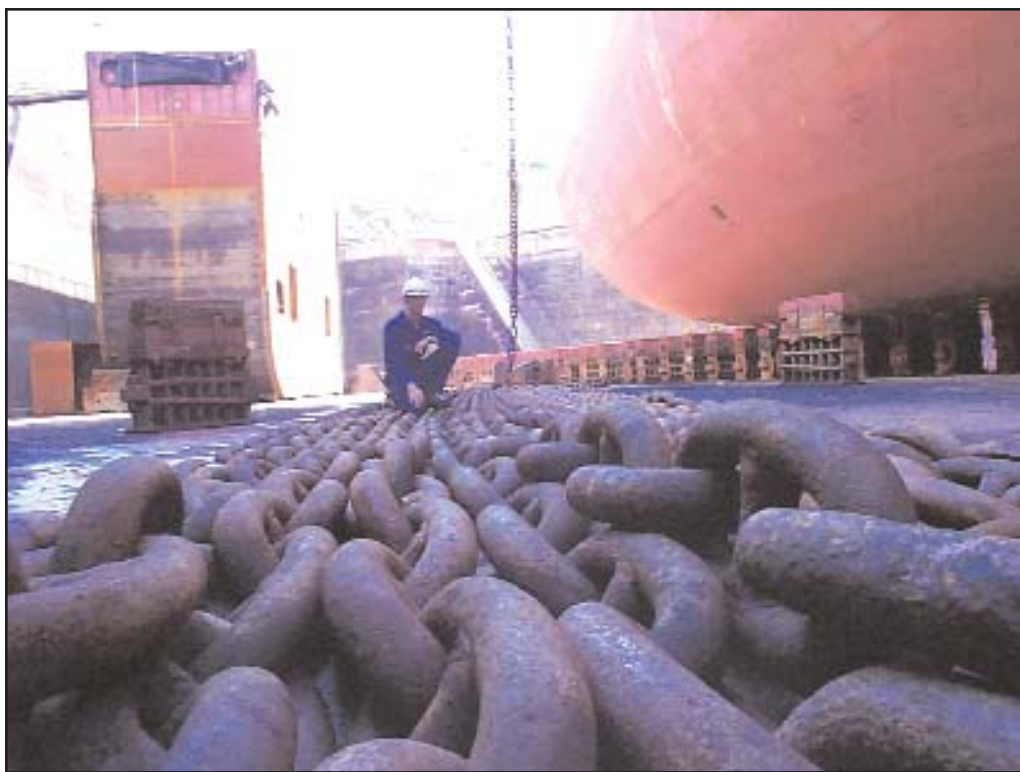
Vessels operating in closed or travel-restricted countries are usually required to move to a non-closed country for Coast Guard inspections or, if after a satisfactory review of the vessel's files, may be authorized to be inspected by the American Bureau of Shipping (ABS) on behalf of the Coast Guard in accordance with an ABS/Coast Guard Letter of Agreement that was signed on Sept. 20, 1996. It is interesting to consider that while Rotterdam is one of the largest ports in the world, most of our inspection work is conducted elsewhere. We fly out of the super-modern Schiphol Airport near Amsterdam, which is located about 45 miles from the office.

### Mission Activities

The size and international flavor of ACT/MIO Europe's AOR make this command's responsibilities rather unique when contrasted with those of the domestic MIOs. In addition to conducting inspections and casualty investigations for the U.S. flag fleet of commercial vessels that operate throughout Europe, Africa and the Middle East regions, we also perform foreign cruise ship initial control verification examinations (ICVEs), and overseas lifesaving appliance prototype and production testing for Coast Guard type approval. Additionally, the unit has important international mission responsibilities.

### Inspections

Marine inspection is by far our most active mission area. Our marine inspectors are some of the best experienced in the Coast Guard. Normal prerequisites for being considered for assignment to ACT/MIO Europe are full "double-ended" qualifications (i.e., both deck-side and machinery). In 2002, our bullpen of a dozen inspectors conducted approximately 200 multiple-trip/day inspections. In addition to meeting the maritime industry's demand for attendance by our inspectors throughout our vast area of responsibility, we also ensure payment of overseas inspection fees, which indirectly helps defer the costs of staffing and maintaining an overseas office. Although the \$4,585 fee is not applicable to every job, it is required for most annual inspections on both U.S. and foreign vessels. We collected nearly \$400,000 in overseas inspection fees during 2002. The inspectors' travel is also conducted on a fully reimbursable basis.



**An ACT/MIO inspector conducts an inspection of a U.S. deep draft vessel in a Malta drydock. USCG photo by Lt. Jason Smith.**

*U.S. Vessel Inspections*—There are more than 150 vessels within our fleet of responsibility, which vary from Offshore Supply Vessels in West Africa, commercial and Military Sealift Command deep draft vessels throughout Europe and the Middle East, and MODUs operated off Africa and on the North Sea. This fleet accounts for most of our workload for inspections, such as renewal of Certificates of Inspection, periodic inspections and drydock examinations.

*Foreign Vessel Inspections*—Although ACT/MIO Europe does not itself have any Captain of the Port jurisdiction, we also engage in certain Port State Control of foreign vessels activities. New foreign cruise ship construction projects and foreign tankships requesting Certificate of Compliance examinations account for approximately 15 percent of our inspection workload. One of our growth areas involves performing the majority of the nation's ICVEs for new builds of large, ocean-going foreign flag passenger vessels that intend to embark passengers in U.S. ports. Most of these novel vessels have been built in Finland, France, Germany and Italy. We conduct detailed examinations involving several multi-day visits by our marine inspectors throughout the vessels' design and construction phases in order to verify compliance with U.S. and international requirements concerning mainly Structural

Fire Protection and Lifesaving arrangements. ACT/MIO Europe conducted nearly 20 ICVEs in 2001 and 18 during 2002. In the wake of Sept. 11, 2001, we have also seen a rise in the number of requests from foreign tank vessel operators that are bound for U.S. ports for Tank Vessel Examination/Certificate Of Compliance inspections, primarily to avoid added delays upon arrival in the United States.



dispatch at a moment's notice. Currently we do not process cases involving Suspension and Revocation of merchant mariners' documents due primarily to our remoteness from the Administrative Law Judges, however we do remain busy investigating dozens of general marine casualties per year.

#### International Outreach/Liaison

In addition to our other responsibilities, ACT/MIO Europe carries out a wide variety of international mission activities. We are the Coast Guard's primary liaison in the region with U.S. embassies, foreign navies and coast guards, international organizations and the international maritime community. We actively participate in various international maritime industry and regulatory forums in order to promote the Coast Guard's goals and objectives in improving maritime safety and to work together to eliminate substandard shipping throughout the world. Included are the International Maritime Organization (IMO), the Paris and Black Sea Memorandum of Understanding on Port State Control groups, the European Commission's Maritime Safety Unit, and the International Standards Organization, as well as those sponsored by commercial organizations. We travel throughout our area of responsibility to present the Coast Guard's views on maritime safety topics and stand ready to act as an information source on all Coast Guard mission areas. Most recently, we have become involved in the international aspects of the new maritime homeland security program.

#### USCG Approved Lifesaving Appliance

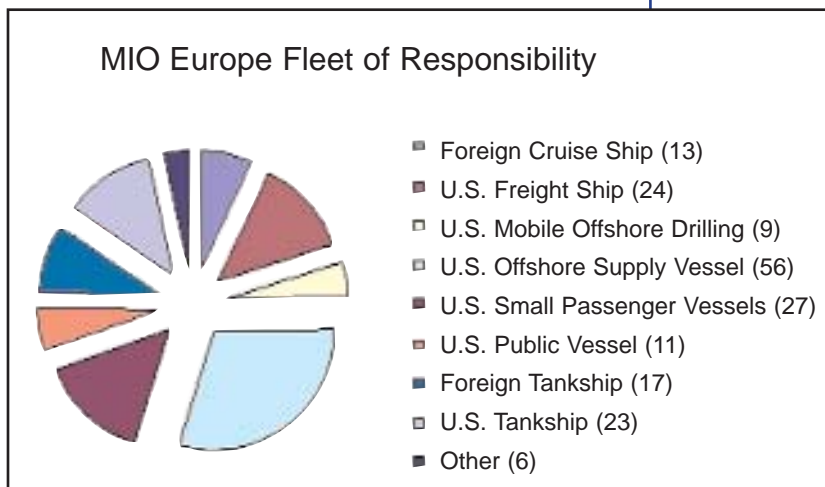
*Manufacturing*—ACT/MIO Europe works closely with the Coast Guard Headquarters Office of Design and Engineering Standards to ensure compliance with Subchapter Q of Title 46 of the Code of Federal Regulations. Equipment covered under this subchapter includes Coast Guard approved liferafts, lifeboats, davits, evacuation slides/chutes, and emergency rations, etc., all of which must bear a Coast Guard approval number and are required equipment aboard U.S. flag vessels. We are obligated to make factory visits and to witness prototype and production testing of much of this equipment. We recently completed prototype testing of several high-capacity Marine Evacuation Systems and a 150-person liferaft, as well as numerous production and servicing facility inspections.

#### Investigations

ACT/MIO Europe performs marine casualty investigations on U.S. vessels located in Europe, Africa and the Middle East to determine causes and potentially to develop recommendations for safeguarding against re-occurrence. Most of our inspectors also hold investigator qualifications and are available for

#### In Closing

Being located where we are poses a number of advantages to the industry, the Coast Guard, and to our people. The industry enjoys the benefit of having a local resource and point of contact in this part of the world, our inspectors are closer to where their work is, and our Coast Guard families are provided with the chance to see Europe and experience other cultures. For many of our personnel, assignment to ACT/MIO Europe is the fulfillment of a career-long desire.





# What *is a* SPAR?

by Lt. BRYAN DUNLAP, ACT/MIO Europe



**“ S P A R ”** is a term used in the worldwide offshore oil industry to describe a class of structures used to extract oil and gas from the ocean floor in deepwater locations. It isn't an acronym, but it does have nautical roots.

The historical definition of a SPAR is a single object protruding above the surface of the water that can be used as a mooring point for a vessel, or a single mast or gaff on a ship. Although there doesn't seem to be an exact definition for the word SPAR in the oil industry, a quick look at one of these structures will reveal how it got its name: it has a long hull which, when placed in operation, rides vertically in the water with the top of the hull stretching above the water's surface.

SPARs are used in “deepwater,” a term used in the oil industry to describe locations where the depth exceeds 1,000 feet. As the relatively easily accessible terrestrial and near-shore hydrocarbon reserves are used up around the world, most of the major new discoveries are coming from deepwater.

SPARs have only been in existence for about the last 10 years. They are some of the most advanced designs used today in the business of extracting hydrocarbons from deep within the earth below the ocean, and getting them to the surface to be refined. They are used in water depths that exceed the capabilities of conventional methods and combine all the necessary support for drilling operations as well as production, once drilling is completed.

SPARs eliminate the need to start a project with a ship-based drilling rig and later replace the rig with a fixed production platform (not feasible at deeper locations). SPARs also offer the advantages of being much less expensive to design, maintain, and operate in deepwater than traditional drill rigs and platforms.

A SPAR has two main components: the hull and the upper structure. As the term implies, the hull is the lower portion of the SPAR, and 50 percent or more of it will be submerged once the vessel is in operation. The upper structure sits on top of the vertical hull and serves as the work area of the SPAR.



**Figure 1. A solid continuous steel hull designed SPAR. Photo courtesy ChevronTexaco.**

Currently two categories of SPAR design are in use. The older concept is the “solid” continuous steel hull design shown above in Figure 1. Note the “spiral bands” around the exterior of the underwater body which serve to redirect sub-sea currents to reduce the hull's vortex effect.

The “truss” SPAR design evolved from the solid hull. A truss SPAR hull is composed of three major components: an upper “hard tank,” middle “truss” section, and lower “soft tank”(see Figure 2, right). The truss section, which consists of crisscrossed piping supports, is used to reduce weight and the effects of lateral water currents upon the structure.



**Figure 2. A truss SPAR design. USCG photo by Lt. Bryan Dunlap.**



**Figures 3 (above) and 4 (below). USCG photos by Lt. Bryan Dunlap.**



The term soft tank refers to the type of ballast material employed within it. A heavy, non-corrosive liquid material is pumped inside the tank rather than solid ballast such as iron or concrete.

The hulls of many of the SPARs used in the Gulf of Mexico are constructed outside the United States. In these cases, once a hull is built (Figures 3 & 4, left), it is loaded onto a heavy lift vessel for transport to the United States. This voyage, depending on weather, can take a month or more. Once in position in its deepwater location, the hull is “up-ended” (Figure 5, below) and moved into place where it will remain on station for an expected service life of

20 or more years.

The task of mooring a SPAR on the exact location is done without the upper structure in place. The upper structure includes the accommodations section, and the drilling and production equipment. It is attached in pre-fabricated sections after permanent mooring has been accomplished.

The upper structures for most of the SPARs already in use in the Gulf of Mexico have been built in the United States. These sections can tower as much as 400 feet or more above the top of the hull when they are outfitted with a complete oil drilling derrick. Once drilling is complete and a well is established, the derrick is removed and full production of hydrocarbons commences.

SPARs and their moorings are designed and built to withstand hurricane conditions encountered offshore, as well as the normal offshore underwater currents, including the “Gulf Loop” currents in the Gulf of Mexico, year-in and year-out for the life of the unit.

The stability of the SPAR is maintained through both fixed and variable ballast systems, and constant tension is maintained on the moorings themselves through a system of chain jacks. Activities/Marine Inspection Office Europe (ACT/MIO Europe) is working with three shipyards that are fabricating U.S.-flagged SPARs. Two of these shipyards are located in Pori, Finland, and one in Jebel Ali, United Arab Emirates. A total of five SPAR hulls have been built or are under construction at these yards. We expect to see a growth in this type of work in our area of responsibility (Europe, Africa, and the Middle East).



**Figure 5. The SPAR’s hull is up-ended once it is in position in its deepwater location. Photo courtesy ChevronTexaco.**

These SPARs are being built in accordance with the U.S. Coast Guard’s Navigation and Vessel Inspection Circular (NVIC) 10-82, Change 2, which means that the American Bureau of Shipping (ABS) classification society is working on behalf of the Coast Guard to provide the owner with plan approval and surveys of most of the construction.

ACT/MIO Europe works jointly with the ABS in an oversight role, in conformance with our agreement with that organization. The Coast Guard attends

about 10 percent of such approved ABS construction projects. Our inspectors are assigned to work with ABS in order to provide regulatory guidance, and also to liaise with their inspector colleagues who work for the Coast Guard Officer In Charge of Marine Inspection (OCMI) at the SPAR's eventual homeport.

ACT/MIO Europe marine inspectors make periodic site visits to the shipyards to ensure the vessel meets major construction requirements and federal regulations, and to help ensure the SPAR's inspection for certification at its final destination goes smoothly.

Additional Coast Guard safety and pollution prevention inspections are carried out at the SPAR's final offshore destination, prior to the vessel being placed in service and at routine intervals after the vessel is issued a Certificate of Inspection. These inspections include internal structural examinations, annual safety examinations, and underwater hull inspections. The underwater inspections are usually completed using Remotely Operated Vehicles (ROV) equipped with underwater cameras. Markings on the underwater portion of the SPAR are used to help orient the ROV operator and give exact references as to location on the hull.

## *Some facts relating to SPARs*

### **Time to construct hull:**

Average of 12-18 months, depending on design

### **Amount of steel used to construct hull:**

Approximately 9,000-14,000+ tons, depending upon the design

### **Hull length (excluding upper accommodations and production area):**

500+ feet, depending upon the design

### **Diameter of hull:**

90+ feet, depending upon the design

### **Welding on the hull:**

Approximately 9 miles of linear weldment

### **Typical number of workers at peak of project:**

Approximately 1,000-1,400, including almost 700 welders

### **Total cost to construct the average SPAR:**

An estimated \$300 million

**Genesis SPAR completed and working in the Gulf of Mexico. Photo courtesy ChevronTexaco.**





# New Cruise Ship Construction *in* Europe

by Lt. Cmdr. JOHN MAUGER, ACT/MIO Europe, Rotterdam, The Netherlands



Historically, the overwhelming majority of new, U.S.-based cruise ships have been constructed in European shipyards and home-ported in only a handful of U.S. ports. However, in order to keep pace with passenger capacity and open new markets for passenger demand, recent decisions by the industry have shown trends for moving construction

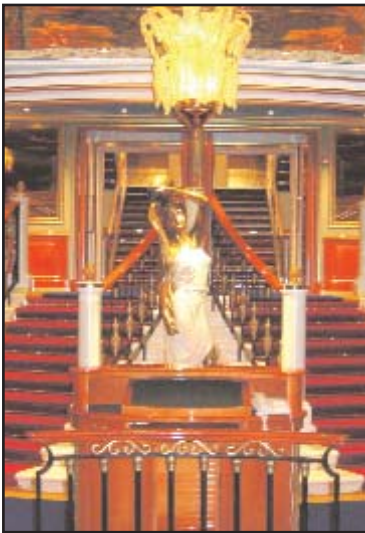
vessel and makes an independent assessment as to whether the vessel substantially complies with the International Convention for the Safety of Life at Sea (SOLAS) requirements. As with other overseas exams, the exams are conducted at the request of the owners, who reimburse the Coast Guard for an inspector's travel and per-diem costs. Unlike other vessels though, overseas ICVEs do not require payment of a separate overseas user fee.

While the scope of the program has not changed over the course of the last decade, the timeline and procedures for carrying out the inspections have been modified substantially. The following paragraphs describe a typical timeline for Coast Guard involvement during the construction of a foreign flag passenger vessel and highlight some of the procedures that have been implemented within the last few years.

This process starts during a concept review meeting between the owners, the shipyard managers, the vessel's flag state representatives, and the Coast Guard Marine Safety Center. The purpose of the concept review is to introduce the project to the Coast Guard and discuss Coast Guard interpretations of safety-related requirements for vessel arrangements and outfitting.

The various Coast Guard interpretations are published in the form of NVICs (e.g. NVIC 01-93, 04-95, 10-01, and 06-02), Outline Of Cooperation (OOC) agreements between the Coast Guard and the various class societies, and unit-issued policy letters. However, as the latest designs often incorporate features that were not foreseen by these guidance documents, new interpretations are often discussed

projects outside of Europe (e.g. the construction of two new Princess Cruises ships in Japan) and "homeporting" new cruise ships at a broader variety of U.S. ports (e.g. the recent positioning of the Carnival Conquest in New Orleans). As a result of this expansion in the industry, more U.S. Coast Guard offices are likely to become involved in the overseas inspections of cruise ships. This article summarizes the Coast Guard's overseas inspection process and the specific best practices that Coast Guard Activities/Marine Inspection Office (ACT/MIO) Europe has developed over the course of our involvement in this program.



**A decorative stairway inside a cruise ship. USCG photo by Chief Warrant Officer J. Dixon.**

The current Coast Guard policy for conducting Initial Control Verification Examinations (ICVE) is established in Navigation and Vessel Inspection Circular (NVIC) 01-93, "Guidance for Conducting Control Verification Exams." This policy allows operators to request an overseas ICVE, during which the Coast Guard, as a port state authority, conducts oversight of the flag state statutory approval of the

during the course of the concept review meetings. Thus, the concept review meetings, and subsequent correspondence that documents Coast Guard acceptance of the design, are a very important part of the overall ICVE review.

Once the arrangements are firmed up, the ship's construction progresses at a very rapid pace. The major European shipyards will typically deliver the first cruise ship in a class within 18–24 months after laying the keel. Further, since these shipyards are often able to construct multiple hulls at the same time, sister vessels (i.e., the next vessel in the same class) will typically be delivered at 10–15 month intervals from the delivery of the previous vessel. During the initial construction, the Marine Safety Center will continue to review and comment on applicable plans and address issues through correspondence. This plan review process provides the Coast Guard's only opportunity to "see" the vessel until approximately three to six months prior to delivery, when the U.S. Coast Guard attends the vessel for the first time.

Inspectors from ACT/MIO Europe and the Marine Safety Center conduct a structural fire protection (SFP) exam when the majority of the vessel's structure has been built, interior outfitting/finishing is in progress, and the classification society has started conducting commissioning tests.

Modern passenger ships are typically constructed in modules, starting from the amidships keel and working fore and aft as well as up. Because of this construction technique, inspectors are able to look at all aspects of the vessel construction at the SFP exam.

In the crew spaces (generally the lowest accommodation spaces in the vessel), inspectors can see the finishing details, including draft stops, cable

penetrations, fire doors, and outfitting materials. As the inspectors work higher up in the vessel, the finish work is partially complete, allowing the inspectors to readily view installation of structural bulkheads, fire insulations, HVAC ducting, galley installations, general arrangements, and means of escape. In addition to reviewing these construction details, the Coast Guard inspectors will review and resolve comments regarding interpretations and agreements about compliance with SOLAS, which were made during the concept review.

By the end of this comprehensive exam, the Coast Guard inspection team will have been able to assess whether the construction of the vessel substantially complies with the applicable SOLAS safety regulations. More importantly, the inspectors will also have had ample opportunity to review the quality control and acceptance testing procedures that have been established by the shipyard and applicable statutory authority.

While the guidance in NVIC 01-93 doesn't specifically call for a separate SFP exam, these exams have been integrated into the ICVE program over the course of the past few years. In the past, SFP details had been examined during the normal overseas or stateside ICVE. Because the finish work was already completed at this point in the exam, shipyard workers were often required to remove decorations, paneling, and thermal insulations in order for the inspectors to examine the structural fire protection details. As a result, the inspection was not cost-effective for either the shipyard (which was charged with preparing the vessel) or the Coast Guard (which was only able to see an inspection mirror's view of the behind-the-scenes construction).

**Modular construction of a cruise ship superstructure in Genoa, Italy. USCG photo by Lt. Cmdr. John Mauger.**



### *ACT/MIO Europe Fact*

In 2002, inspectors from ACT/MIO Europe spent 25 percent of their total inspection duties (more than 200 “inspector-days”) conducting overseas inspections on 14 new cruise ships (> 1 M tonnes International Tonnage Convention [ITC]) built in Europe.

To improve efficiency, the Coast Guard, in consultation with the major classification societies, agreed to conduct a separate SFP exam for new vessels constructed in the European yards. Depending on the size and complexity of the vessel, a separate SFP exam will typically take a team of two or three inspectors, one or two days to complete.

This separate exam has shortened the typical ICVE by the same corresponding amount of time (from four or five days to three) and has allowed the Coast Guard to perform a much more detailed inspection of the vessel’s construction. A suggested schedule for conducting a separate SFP exam can be obtained from either ACT/MIO Europe or the Marine Safety Center.

The final assessment inspection was instituted after several incidents in which inspectors arrived from the United States only to find that the vessel was not adequately prepared for the ICVE. As a result, the

Coast Guard lost several days of inspector time due to the extensive travel required for the overseas exams.

To rectify this situation, ACT/MIO Europe instituted a mandatory assessment inspection and developed an assessment worksheet for the statutory authority to complete before the assessment exam is scheduled.

The assessment worksheet takes into account the percentage of installation and completion of several fire and safety related systems, as well as the installation of finishing materials that may affect the performance of safety-related systems (i.e., fire door hinges typically require readjustment after installation of carpet and padding, thus ACT/MIO requires that all carpeting in way of fire doors be installed at the time of the ICVE). An assessment inspection will typically take an inspector one day to complete. A copy of an assessment worksheet may be obtained from ACT/MIO Europe.

The Coast Guard inspectors use the Foreign Passenger Vessel Annual Examination (CG-840) booklet as guidance for conducting the exam. In addition, the inspectors will also conduct transitional power, emergency battery (i.e., blackout test), and atrium smoke extraction tests.

In general terms, the intent of the overseas exam is to verify that the shipyard has provided the owners/operators with all of the necessary equipment and controls to perform the safety functions required by the applicable SOLAS and Coast Guard regulations. As a result, the Coast Guard inspection team will work closely with the statutory authority and the shipyard representatives to demonstrate performance. Owner/operator performance (i.e., drills, licenses, training, documentation, etc.) is not typically reviewed during an overseas ICVE, but will certainly be reviewed at the vessel’s first U.S. port prior to issuance of the Coast Guard’s Certificate of Compliance letter.

With a few experienced inspectors, an experienced yard/classification



**A smoke extraction test in the atrium of a cruise ship. USCG photo by Lt. Cmdr. John Mauger.**



society, and a separate SFP exam, ACT/MIO Europe has found that the overseas ICVE can be completed during 30 hours of onboard inspection throughout the course of three days. ACT/MIO Europe has developed a typical schedule that breaks the inspectors into three Coast Guard teams: deck, fire/life safety, and engineering. A sample three-day schedule and the list of responsibilities can be obtained from ACT/MIO Europe.

Throughout the course of the inspection, each team will work with appropriate representatives from the statutory authority, shipyard, and owners to test their respective systems. Any deficiencies that are noted during the tests are added to a work-list that is issued to the vessel prior to the departure of the Coast Guard inspection team. Upon arrival in the United States, the owner/operator is responsible for demonstrating that the items on the work-list have been resolved and is also responsible for completing all remaining crew performance requirements.

#### **Cruise Ship Industry Statistics**

- The Cruise Lines Industry Association (CLIA) estimates that 7.4 million passengers will have cruised from North American ports in 2002.
- According to CLIA, over the last two decades, the total number of passengers cruising from North American ports has steadily increased at an average rate of 8.4 percent per year.
- Over the course of the last decade, the construction of new ships and repositioning of existing ships has caused passenger capacity to increase at an average of 7.9 percent per year.
- Through the end of 2005, the cruise lines plan to spend \$12 billion dollars to bring an additional 35 new ships online in the U.S. market.

#### **The Coast Guard's Future Role in Overseas ICVEs**

Cruise ships continue to capture the interest of the American public and the international maritime leadership. As such, it is anticipated that the U.S. Coast Guard will continue to be an active participant in the construction and inspection of these vessels.

A project is underway at Coast Guard Headquarters to update the policy in NVIC 01-93 based on the best practices that have been developed in Europe over the course of the past decade. This project will align many of the aforementioned procedures into a single document.

Additionally, we will continue to use the experience that we gain during the vessel design and construction to develop and build consensus for new international fire and life safety regulations. To this end, our overseas inspection program will continue to be a critical component of the current and future safety for passengers traveling from the states.

#### *Two to four years prior to delivery of the first vessel in class*

Coast Guard involvement in the construction of a large passenger vessel may begin well before the vessel's keel is ever laid. In fact, although the vessels are not of U.S. flag, the Coast Guard gets involved on a voluntary basis during the initial project design to review and discuss those design elements that pertain to life safety issues.

#### *Three to six months prior to delivery of the first vessel in class*

Near the end of the construction cycle, inspectors from ACT/MIO Europe and the Marine Safety Center attend the vessel to conduct an SFP exam. This exam provides the Coast Guard with a unique opportunity to conduct oversight on the construction details and general arrangements before the vessel is fully completed.

#### *One to three weeks prior to delivery of the first vessel in class*

In between the SFP exam and ICVE, inspectors from ACT/MIO Europe will attend the vessel to assess final completion and observe deployment of half of the required marine evacuation systems (MES), if installed. Typically, these two inspection steps may be combined into a single visit to the vessel.

#### *Overseas ICVE/delivery of the first vessel in class*

Upon successful completion of the assessment and deployment of half of the MES system, ACT/MIO Europe will make final preparations to attend the overseas ICVE. The USCG team for the overseas ICVE will typically consist of inspectors from the following units: ACT/MIO Europe, Coast Guard Marine Safety Center, and Officer In Charge, Marine Inspection (OCMI) at the ship's first U.S. port. The team may also include representatives from U.S. Coast Guard Headquarters or the OCMI in the ship's U.S. homeport.

# U.S. Fleet Grows *through the* Maritime Security Program

by Chief Warrant Officer KEITH M. STEGALL, ACT/MIO Europe



## “WE WANT TO REFLAG FOUR SHIPS TO THE U.S. FLAG. WHAT DO WE HAVE TO DO?”

This question does not come up very often for U.S. Coast Guard marine inspectors, but this is exactly what Activities/Marine Inspection Office Europe (ACT/MIO Europe) was asked in April 2002. Throughout the following eight months, ACT/MIO Europe staff ushered three ships into the U.S. fleet, with one more to follow in 2003. All of these hulls came in under the nation's Maritime Security Program (MSP).

The program was established by the Maritime Security Act of 1996 and is managed by the U.S. Maritime Administration (MARAD). It was designed to bolster the reserve fleet of U.S. ships and provide an expedited means of allowing certain foreign-flagged ships to change flag to the United States, thereby giving the federal government immediate access to militarily useful container, roll-on/roll-off and tank vessels on Registry trade. This approach avoids the need to spend billions of dollars to acquire additional cargo ships dedicated solely to carrying military cargoes, and the millions of additional dollars required to maintain more standby vessels in MARAD's Ready Reserve Fleet.

Ships must fit a specific profile in order to gain acceptance to the MSP. For a vessel to participate, it must meet all of the following criteria:

- Be less than 10 years old (generally)
- Be classed by an accepted classification society
- Become U.S. flag (including U.S. majority ownership and crewing, and U.S. Coast Guard inspection and certification in compliance with all applicable international conventions)

In addition, owners must commit vessels, capacity and intermodal systems to a sealift emergency preparedness program called the Voluntary Intermodal Sealift Agreement (VISA) (coordinated, pre-negotiated contracts for the type and quantity of sealift capacity, when and where necessary, to deploy and sustain U.S. forces when required for national security purposes).

In normal times, MSP ships carry commercial cargo on their usual routes. However, in time of war or national emergency, the vessels may be activated under the VISA program and employed under the direction of the Navy's Military Sealift Command (MSC) for delivery of military cargoes worldwide, or the Military Traffic Management Command.

Maersk Lines Limited received approval from the MARAD Office of Sealift Support in September 2002 to reflag four container ships into the MSP program. These D and G class ships will replace four older and much smaller ships currently in the MSP program. The D and G class vessels are able to carry 4300 TEU (twenty-foot equivalent units), whereas the older vessels can only carry up to 1500 TEU.

In October 2002, ACT/MIO Europe inspectors met with class surveyors from Lloyds Register and Maersk Line Limited representatives in Dubai, United Arab Emirates, to commence the inspection and reflagging process for the first vessel, Danish flag *M/V Gerd Maersk* (which was to become the U.S. flag *Maersk Missouri*). Subsequently, the *Maersk Carolina* and *Maersk Georgia* were reflagged. The *Maersk Virginia* was reflagged in February 2003.

The inspection process for the reflag of these ships is guided by the agreement signed between MARAD

and the Coast Guard. The MSP program manager at Coast Guard Headquarters is the Marine Safety Directorate Office of Compliance (G-MOC), which develops and distributes policy guidelines for MSP inspections to Coast Guard field activities in the Coast Guard Marine Safety Manual. Field activities, such as ACT/MIO Europe, may modify the scope of the MSP examination based on the individual circumstances, but generally the MSP inspection is similar to other inspections where the Coast Guard works with an authorized class society.

Some of the challenges with the MSP reflagging process include:

- Obtaining hard copy documentation relating to the previous flag/class formal acceptance of certain important equipment and systems not typically accepted by the Coast Guard under a conventional reflagging.
- Myriad unique details such as making the determination that Lloyds Register would issue the majority of certificates, while the Coast Guard would issue the International Convention of Safety of Life at Sea (SOLAS) Safety Equipment Certificate, and the American Bureau of Shipping the ISM documents.
- The significant lead time and effort involved in adequately preparing the owners/operators and class for the inspection.
- Establishment of the various parties' roles and the length of time that would be needed to properly conduct such an inspection.
- Working through manning issues.

In the case of the *Maersk Missouri*, ACT/MIO Europe inspectors attended the vessel in drydock in Dubai to conduct a modified hull and internal structural exam, which was coincidental to the reflagging process. They also conducted a full MSP hand-over survey with the attending Lloyds Register surveyors and a Maersk Line representative to verify full compliance with international standards.

Under the MSP program, the Coast Guard has some latitude in accepting ships built to certain international vice U.S. standards, particularly in the area of equipment approvals (e.g., pollution prevention apparatus, major lifesaving appliances, etc.). Differences in equipment noted between components that are Coast Guard approved versus those that meet IMO, SOLAS or International Convention for the Prevention of Pollution at Sea (MARPOL) specifications, are recorded in a vessel's permanent inspection file.

A certificate of inspection is issued after completion of a satisfactory examination. By working closely together, the parties are able to resolve any problems that arise, allowing the vessels to make their targeted sailing dates from the shipyard. These ships have been entered into the normal Coast Guard annual inspection cycle to ensure continuing compliance with the international regulations and class rules.

### Maritime Security Program Fleet as of March 1, 2003

Ship Type/ Vessel	Company Name
<i>Cont C11 APL Korea</i>	American Ship Management, LLC
<i>Cont C11 APL Philippines</i>	American Ship Management, LLC
<i>Cont C11 APL Singapore</i>	American Ship Management, LLC
<i>Cont C11 APL Thailand</i>	American Ship Management, LLC
<i>Cont C10 President Adams</i>	American Ship Management, LLC
<i>Cont C10 President Jackson</i>	American Ship Management, LLC
<i>Cont C10 President Kennedy</i>	American Ship Management, LLC
<i>Cont C10 President Polk</i>	American Ship Management, LLC
<i>Cont C10 President Truman</i>	American Ship Management, LLC
<i>RO/RO Green Cove</i>	Central Gulf Lines, Inc.
<i>RO/RO Green Point</i>	Central Gulf Lines, Inc.
<i>RO/RO Green Lake</i>	Central Gulf Lines, Inc.
<i>RO/RO Faust</i>	American International Car Carrier, Inc.
<i>RO/RO Fidelio</i>	American International Car Carrier, Inc.
<i>RO/RO Tanabata</i>	American International Car Carrier, Inc.
<i>Cont Chesapeake Bay</i>	First American Bulk Carrier Corp.
<i>Cont Delaware Bay</i>	First American Bulk Carrier Corp.
<i>Cont Endeavor</i>	E-Ships, Inc.
<i>Cont Endurance</i>	E-Ships, Inc.
<i>Cont Enterprise</i>	E-Ships, Inc.
<i>Cont Lykes Navigator</i>	First Ocean Bulk Carrier – I, LLC
<i>Cont Lykes Discoverer</i>	First Ocean Bulk Carrier – II, LLC
<i>Cont Lykes Liberator</i>	First Ocean Bulk Carrier – III, LLC
<i>Cont Maersk Missouri</i>	Maersk Line, Limited
<i>Cont Maersk Virginia</i>	Maersk Line, Limited
<i>Cont Maersk Georgia</i>	Maersk Line, Limited
<i>Cont Maersk Carolina</i>	Maersk Line, Limited
<i>RO/RO Overseas Joyce</i>	OSG Car Carriers, Inc.
<i>Cont Sealand Achiever</i>	U.S. Ship Management, Inc.
<i>Cont Sealand Florida</i>	U.S. Ship Management, Inc.
<i>Cont Sealand Pride</i>	U.S. Ship Management, Inc.
<i>Cont Sealand Motivator</i>	U.S. Ship Management, Inc.
<i>Cont Sealand Commitment</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Atlantic</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Defender</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Endurance</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Explorer</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Innovator</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Integrity</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Liberator</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Patriot</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Performance</i>	U.S. Ship Management, Inc.
<i>Cont Sea-Land Quality</i>	U.S. Ship Management, Inc.
<i>Cont Lykes Motivator</i>	Waterman Steamship Corporation
<i>LASH Atlantic Forest</i>	Waterman Steamship Corporation
<i>RO/RO Green Dale</i>	Waterman Steamship Corporation
<i>Cont Lykes Explorer</i>	Waterman Steamship Corporation



# Lifesaving Equipment Inspections *in* Europe

by Lt. JASON SMITH  
and Lt. JACQUELINE TWOMEY  
ACT/MIO Europe



## As part of our mission to save lives,

the U.S. Coast Guard ensures that lifesaving equipment for U.S. vessels is adequate in design and construction. Both our regulations in 46 Code of Federal Regulations (CFR) Subchapters Q and W, and the 1974 International Convention for the Safety of Life at Sea (SOLAS), require that certain articles of lifesaving equipment be approved by the Coast Guard prior to use on U.S. vessels.

The Lifesaving & Fire Safety Standards Division (G-MSE-4) at Coast Guard Headquarters manages the approval program for lifesaving equipment. The staff of G-MSE-4 reviews proposed concepts and designs for lifesaving equipment for compliance with the established design and performance requirements. However, prior to approval, for many types of equipment an actual prototype must be tested and inspected according to procedures specified in the regulations, and those tests and inspections must be supervised by a Coast Guard marine inspector. This is where Coast Guard Marine Safety Offices (MSO) and Marine Inspection Offices (MIO) come in. Since many of the manufacturers of lifesaving equipment used on U.S. vessels are located in Europe, marine inspectors from Activities/Marine Inspection Office (ACT/MIO) Europe, based in Rotterdam, The Netherlands, witness a large percentage of the prototype testing conducted for the Coast Guard.

Each year, Coast Guard Activities/Marine Inspection Office Europe inspectors supervise approximately 20–40 prototype or production tests of lifesaving equipment. We routinely work with

three manufacturers of lifeboats and rescue boats, four manufacturers of launching appliances (davits and winches), and three manufacturers of liferafts and high capacity marine evacuation systems (MES) for large passenger vessels. These tests are conducted in such diverse locations as the Czech Republic, Denmark, France, Germany, The Netherlands, Norway, Poland and the United Kingdom. For inspections outside the United States, the Coast Guard bills the manufacturers for the travel and subsistence expenses of the inspector(s) (unlike most other countries, we do not charge for our inspectors' time for equipment inspections).

Testing is conducted in accordance with the current International Maritime Organization (IMO) "Recommendation on Testing of Life-Saving Appliances" (IMO Resolution A.689(17), as amended). Pursuant to a U.S. initiative a few years back, equipment-specific forms were developed by the IMO as a standardized way to capture the results of these tests, to ensure that the tests conducted throughout the world are consistent and comprehensive, and to facilitate the exchange and mutual acceptance of the test reports by maritime safety administrations.

Lifeboats represent a substantial portion of the tests and inspections we supervise. For prototype testing, a complete prototype lifeboat must be built in accordance with the submitted plans to demonstrate the suitability of the design. Our inspectors generally will inspect the prototype boat even during construction, to ensure that such aspects as fiberglass layup and filling with flotation material are done in accordance with the plans. The boat must then be

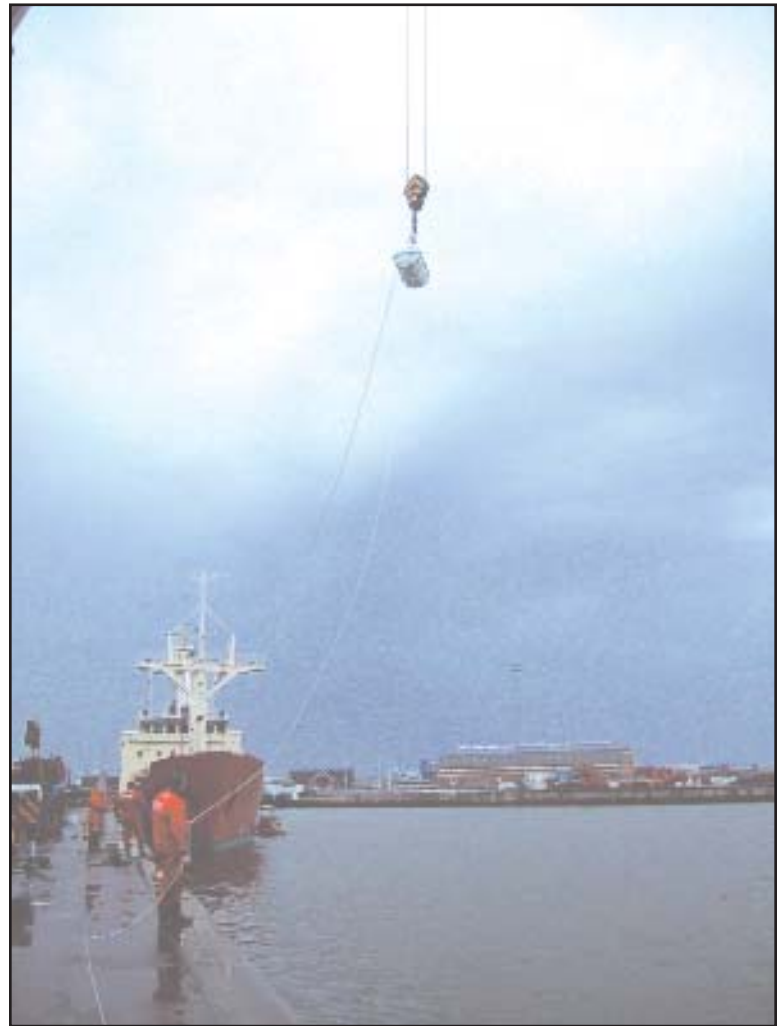
subjected to rigorous tests in accordance with the IMO requirements to prove that it will not fail when it is deployed under extreme load or weather conditions. Some of these test conditions include exposure of the materials to sub-zero temperatures, extreme heat and fire, and subjecting the complete boat to impact tests, flooding, capsizing, and overloading. If the equipment meets all of the design requirements and passes all of the prototype tests, submission of the test reports and as-built drawings to G-MSE-4 will lead to issuance of an approval number and Certificate of Approval.

For some types of equipment, the IMO requirements call for even more extreme conditions, which can considerably complicate the logistics of the test. Marine evacuation systems, for example, must be deployed at sea with a wind of force 6 on the Beaufort scale and with a significant wave height of at least 3 meters. The marine inspector must of course also withstand these conditions to verify the proper operation.

To conduct these heavy weather sea trials, the inspector must get underway on a vessel chartered by the lifesaving equipment manufacturer, sometimes along with representatives from other approving authorities. The equipment manufacturer will have to monitor the weather closely in order to predict the availability of required conditions. The inspector must verify that the equipment tested is built and installed in accordance with the plans submitted to G-MSE-4. The inspector must also verify that the weather conditions meet or exceed the IMO requirements. After deployment in the desired conditions, the inspector will examine the equipment to check for proper operation, including proper inflation, strength of materials and function of the equipment. If the equipment fails the test, the design must generally be modified, re-evaluated and retested before approval can be given.

Because of the varying conditions required for the different tests, testing is often carried out on different occasions over a period of time, and in different locations. This means that in many cases several different inspectors might be involved in the prototype tests for a particular piece of equipment. This, combined with the fact that failures are not uncommon due to the complexity and difficulty of the required tests, can make documentation of the process a challenge.

To address this, ACT/MIO Europe has developed a



**A liferaft being drop tested. Liferafts must be able to withstand a drop of at least 59 feet (18m). USCG photo by Lt. Jacqueline Twomey.**

system for tracking the tests conducted for each prototype. This tracking system requires the manufacturer to certify that the equipment has been pre-tested before an inspector will be scheduled to attend an inspection. Additionally, this tracking system identifies all tests conducted following a modification to ensure that credit is not mistakenly given for a test passed by an earlier version of the design that is not representative of the final product.

The work of the MIO is not necessarily done with the issuance of a Certificate of Approval. Coast Guard and IMO regulations require that the Coast Guard or its representatives make random inspections of manufacturers to ensure that production items comply with the same specifications as the prototypes tested for approval. The Coast Guard has delegated the supervision of production inspections for some types of equipment (such as inflatable life-

rafts and rescue boats) to independent third-party inspection bodies. However, for others, such as lifeboats and lifeboat launching appliances (davits and winches), our regulations require that each production unit for use on a U.S.-flag ship be tested in the presence of a marine inspector. ACT/MIO Europe supervises a large percentage of these "production" tests and inspections for the Coast Guard. Upon acceptance, the date, marine inspector's initials, OCMI Zone and Coast Guard propeller stamp are permanently marked on the data plate affixed to each of these types of gear.

As with prototype tests, the requirements for specific production tests are specified in U.S. and international regulations. These tests and inspections are generally nominal compared to those required for prototype testing. At a minimum, production inspections include a comparison of the equipment with the approved plans and an overload test.

Some equipment requires additional testing, such as fiberglass lifeboats, which must be gauged to determine hull thickness, and weighed. The values obtained for the production lifeboat must be substantially the same as those found on the prototype built for the approval of that model of lifeboat. This verification prevents a manufacturer from building a strong lifeboat for the required prototype tests, and then building a weaker production lifeboat.

For lifeboats, the inspector will also supervise the filling of the boat with buoyancy material, examine fiberglass test coupons, fiberglass strength results and foam density test results, and supervise an equipment check and two-hour engine test.

Testing and inspections continue even after the equipment leaves the manufacturer. When the equipment is installed onboard a ship, the local OCMI inspects the adequacy of the installation both structurally and operationally, and supervises the appropriate required installation tests. These range from overload and lowering speed tests for launching appliances, to full harbor deployments of a marine evacuation system and the liferafts associated with it.

In the past few years, G-MSE-4 has initiated projects to modernize our regulations in order to reduce the Coast Guard resources devoted to routine equipment inspections in favor of delegating those functions to suitable independent third-party inspection bodies. Unfortunately, this effort has been put somewhat on hold by a shift in regulatory development resources to maritime security issues. However, in support of anticipated future efforts, G-MSE-4 continues to be actively involved in a wide variety of standards development efforts in both the national and international arenas.

In addition, the United States and the European Commission are finalizing a Mutual Recognition Agreement (MRA) for marine equipment. The MRA will allow marine equipment approved in the United States by the Coast Guard to be used on ships registered in European Union countries, and vice versa, thereby reducing the redundant prototype and production testing by both parties. While the MRA will initially cover only a small number of equipment items for which the U.S. and European requirements are already considered equivalent, G-MSE-4 will continue technical consultations with the European community to gradually expand the list through agreement of mutually acceptable performance and conformity assessment standards. The end result should be the desired reduction in Coast Guard resources devoted to routine equipment tests and inspections overseas.



**A prototype of a rescue boat that would not float during a flooding test. USCG photo by Chief Warrant Officer Thomas Lewis.**



# The World Maritime University:

## *A Conduit for Maritime Knowledge*

by Lt. Cmdr. JENNIFER KETCHUM, U.S. Coast Guard Representative to the World Maritime University

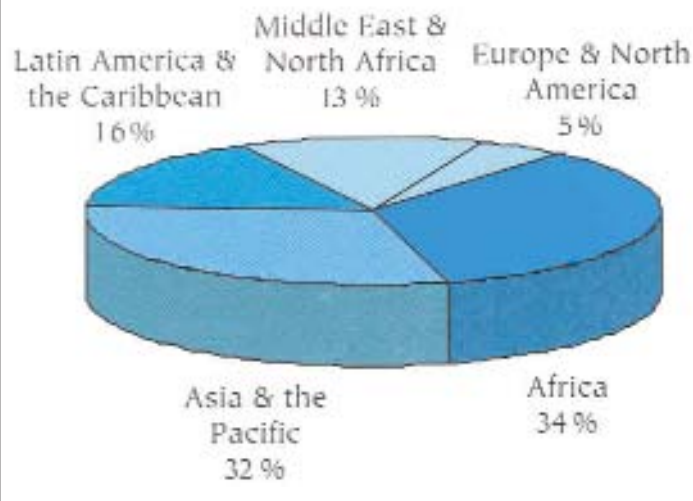


International Maritime Organization (IMO) staff and delegates work hard to draft relevant agreements and conventions to meet their mandate of "safer shipping and cleaner oceans." The new agreements and conventions can then be distributed to the 162 member states of the IMO for adoption and implementation, but how can the story behind the regulations or the essence of the debate be conveyed to the maritime officials in the nations so they know how best to implement the requirements? That's where the World Maritime University (WMU) comes into the picture. Located in Malmö, Sweden, WMU was founded in 1983 to further IMO's aims and objectives by acting as the means for academic study of international maritime affairs.

WMU is unique among universities of the world. It offers master's programs that are fully accredited by the Association of European Universities to a specialized niche market: maritime professionals from nations all over the world. All teaching is in English, and there is an intensive English language program to enable students who are not native English speakers to attain an English proficiency commensurate with graduate level work. While there is only one degree field,

maritime affairs, there are five specializations: maritime administration (MA), marine safety and environmental protection (MSEP), maritime education and training (MET), shipping management (SM) and port management (PM). Students choose their specializations after a common first semester of foundation studies. The Master of Science program is 17 months long.

**Regional Distribution of WMU Graduates  
1985-2001**



USCG illustration by S. Jackson.

Since WMU was chartered by means of an IMO Assembly Resolution, the school retains a special link with the IMO. Although the link is not manifested in terms of funding (IMO provides no funds to WMU), it is evident in support in other areas. All students at WMU are required to observe a meeting of an IMO subcommittee or committee, and speak to their regional representative in the Technical Cooperation Division of IMO. IMO staff provide information to students for their dissertations. Many WMU graduates have positions on the IMO secretariat, or are delegates to the IMO for their nations or IMO regional representatives.

Although there is a vocational component to WMU, it is a very academic institution. Students are



**Students from WMU's class of 2000 at its entrance. USCG photo by Lars Anderson.**

required to perform original research in support of their assignments and exams, which are geared toward ensuring the students know the "how to" as well as the "why." After the second semester results are calculated, the "A" grade performers are given a chance to write a dissertation (comparable to a master's thesis in the United States). These dissertations are an opportunity for a student to take an in-depth look at a particular topic.

The instruction at WMU is not focused on faculty from developed nations dictating specific requirements to maritime administrations from other nations, but rather, the WMU education is focused on providing options. Some governments may not be able to see the benefits of good maritime governance nor have the ability to create attainable maritime safety and security goals due to overwhelming problems in other sectors of the nation. WMU not only defines the goals, but also presents the options on how to attain the goals. It is then up to each student to take the information and place the template of their culture and governmental system on it and adopt the best solutions for their nation. To further highlight the available options, students spend six weeks on field studies in nations that have been successful in a particular field. For example, SM students have field studies in Greece, the home of a

majority of ship owners, and Denmark, home of Maersk, the largest shipping company in the world. MET students gain valuable insight by visiting various European merchant marine training centers.

Classes also reflect this desire to have students reach conclusions on their own. Classes are based on a modular approach. Students typically study the same subject for one to two weeks, and are assessed (either by exam, assignment or in-class exercise) at the end or shortly after the end of the module. This system facilitates the use of "visiting professors," experts in a particular field who teach at the university for a week or two. Since these visiting professors are often experts serving in their field, they are able to provide current information on the ever-increasing range of subjects that are relevant to the study of maritime affairs.

Since many nations of the world cannot afford to send members of their maritime infrastructures to a residential master's program, a system of fellowships has been established. Currently large fellowship donors include the governments of Sweden and Norway, and the Ship and Ocean Foundation of Japan. The fellowships include full tuition and fees, lodging at the university's student hostel, books and supplies, travel, insurance, and a modest monthly living allowance. Other fellowships are provided from the governments of Denmark, the United Kingdom, Canada, and private donors, including the International Transport Workers Federation (ITF) and until recently, the Carl Duisberg Gesellschaft (CDG) foundation in Germany. Some governments pay directly for their students to attend.



**WMU students exercise immersion suits during a field study in the bay in Travemunde, Germany.**



The students hail from almost every nation in the world, including some land-locked nations. Of the 162 member states of the IMO, 141 states have sent students to WMU since 1983. It is common to have more than 40 nationalities represented in just one class of 100 students. Although most of the students are from the developing world, students have also come from European nations, North America and Japan. Some students have previously attended U.S. Coast Guard and U.S. Navy courses in the United States. Several graduates of the Coast Guard's International Maritime Officers' Course (IMOC) are represented in the student body as are students who studied at the U.S. Naval War College or other Navy or Coast Guard schools (including Navy and Coast Guard Officer Candidate School), and even some international graduates of the Coast Guard Academy.



**WMU students get an opportunity to try out a free-fall lifeboat during a field study in Germany. USCG photo by Lt. Cmdr. Jennifer Ketchum.**

Coast Guard support of the WMU began at its inception in 1983. At first, this participation was on individual initiative, and consisted of a few visiting professors, membership on the board of governors, and one former Coast Guard officer as a faculty member. Official participation started with the addition of a Coast Guard billet in the 1980s. This was discontinued in the early 90s, but reinstated again in 2000. The two-year billet for a lieutenant commander ensures that the U.S. position on many issues is clarified to the students, as well as providing WMU a faculty member who can teach in his or her area of expertise.

The billet is located in the faculty of MA and MSEP. Classes taught by the Coast Guard officer on staff deal primarily with operational aspects of environmental protection, but recently, have included other topics such as port security, maritime administration, port state control, and search and rescue (SAR). In all cases, the appropriate office at Coast Guard Headquarters is contacted to ensure that the latest U.S. perspectives are presented to the students.

Another part of the job is serving as a liaison. These duties include coordinating Coast Guard participation in WMU programs and general liaison duties with the Swedish government, and the U.S.

embassies in Copenhagen, Denmark, and Stockholm. In the past year, one four-member Coast Guard team came to WMU to teach in a one-week Port Security seminar, and one four-member team came as part of the SAR benchmarking study.

Students come from a variety of backgrounds. Some are master mariners; others are members of their nation's coast guard or navy; still others are career civil servants in a national shipping company, port facility or maritime administration. All are here to learn their subjects well so as to provide the best service to their nation upon their return. WMU graduates are well represented in the halls of the IMO, in major shipping companies, in classification societies, maritime training centers, coast guards and navies of the world, and at all levels of national governments. A side benefit to a WMU education is the very strong worldwide alumni network.

The university's charter makes reference to WMU being a conduit for information transfer, "with a view to promoting the achievement globally of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and the prevention and control of pollution." Coast Guard presence at WMU ensures that the students from all nations can learn options for good maritime administration from an organization that has come to be known as the world's premier maritime service.



# Protection of the Marine Environment in the Bering and Chukchi Seas

by RICK JANELLE, 17th Coast Guard District, Juneau, Alaska



## Background

Since at least 1972, the United States and the Russian Federation (RF), then represented by the Union of Soviet Socialist Republics (USSR), have agreed that protection of the marine environment is worthy of international cooperation and effort. This recognition was formalized on May 23, 1972, when the two countries signed the Agreement on Cooperation in the Field of Environmental Protection. On May 11, 1989, the two nations signed in Moscow a more regionally focused agreement, the "Agreement Between the Government of the United States of America and the Government of the Union of Soviet Socialist Republics Concerning Cooperation in Combating Pollution in the Bering and Chukchi Seas in Emergency Situations." This agreement recognized the following:

- Exploration, exploitation, and production of natural resources, as well as related marine transportation, posed a threat of significant pollution by oil and hazardous substances in the Bering and Chukchi Seas.
- In the event of an international pollution incident, or threat of a pollution incident, prompt and effective action would be required to organize and coordinate prevention and response operations.
- Through the adoption of joint oil and hazardous substance spill prevention and response measures, damage to the marine environment in the Bering and Chukchi Seas may be averted.

This 1989 Agreement provided the basis for the following:

- Regular meeting of the Joint US/RF task group on Prevention and Cleanup of Pollution of Marine Environment from Shipping.
- Development of the Joint Contingency Plan Against Pollution in the Bering and Chukchi Sea, signed in London, and put into effect Oct. 17, 1989. The signing of this plan effectively opened the doors for both countries to normalize the exchange of oil spill information, and exchange oil spill technicians and equipment.
- The use of an RF vessel on the *Exxon Valdez* response in Prince William Sound.

## Early Years

The early 1990s experienced little activity under the agreement while the RF was undergoing governmental reorganization and restructuring. One result was designation of the State Marine Pollution Control, Salvage & Rescue Administration (SMPC-SRA) as the Russian agency responsible for oil or hazardous material spills. In 1993, a delegation of SMPC-SRA officials visited Coast Guard Headquarters in Washington, D.C., and were also official observers at a major Alyeska/Tesoro Petroleum oil spill exercise in Prince William Sound, Alaska. The itinerary included briefs by Alaska Regional Response Team (ARRT) members, Coast Guard Captains of the Port (COTP) and state of

Alaska officials. The success of this visit opened new lines of communication and established a solid foundation for improved working relationships. As a result of this meeting, both sides agreed on the following:

- To continue with the exchange of information on results of research, development and testing of methods for oil and other hazardous materials.
- To share experience in the field of professional training, and to this end arrange short-term exchange visits of specialists from each side.

In 1994, the RF hosted a delegation of six U.S. pollution experts, and in 1995 the Coast Guard sponsored a second delegation from SMPCSRA to the 1995 International Oil Spill Conference.

### Coast Guard District 17 Direction

Up to this point, Coast Guard Headquarters had been the main driving force in RF activities. In 1997, the 17th Coast Guard District Commander and his staff, who are based in Juneau, Alaska, began to assume a larger role, and began joint planning with SMPCSRA and the Japanese government for a large-scale field exercise proposed for the summer of 1998 in the Sea of Okhotsk near Korsakov, Sakhalin Island, in the Russian far east. Key exercise goals were:

- Establish a joint command center to exercise the command and control of all participating Russia/U.S./Japan resources, and deploy available resources in a fully functional combined forces response.
- Introduce Incident Command System principles and prepare an Incident Action Plan (IAP) for use during the exercise.
- Exercise the ability of the various assets on-scene (i.e., search and rescue, oil spill equipment, marine fire fighting).
- Apply Russian Federal Boarder Service (RFBS) –Coast Guard Combined Operations Manual to a major international oil spill exercise and examine RFBS potential role and effectiveness.
- Strengthen and promote regional environmental response cooperation through the Joint Response Team.
- Exercise U.S. out-of-region environmental readiness.



**Mitch Deely (standing left) and Mike Patterson (standing right) are instructing Victor Schamin (center) and Anatoly Yanchuck (center right) of the RF on a game board oil spill simulation. USCG photo.**

This successful exercise, completed in May 1998, was the first time the RF/U.S. Joint Response Team had conducted an exercise with full equipment deployment in the field. Accordingly, there were several other “firsts” with this event. This was the first time that:

- The Alaska Regional Response Team was represented directly in a Russian-based exercise, providing technical assistance and consultation services to their counterparts as part of an integrated Incident Command Post.
- Russia, the United States, and Japan jointly deployed significant spill response equipment.
- The state of Alaska and Canada had provided observers to a Russian exercise.
- A Coast Guard polar icebreaker had been used directly in an oil spill response scenario, demonstrating tremendous capacity for remote logistics and direct spill cleanup with the Vessel of Opportunity Skimming System (VOSS).
- A Coast Guard C-130 aircraft deployed Alyeska’s air deployable dispersant spraying (ADDs) system in a foreign country.

Just as important, this exercise also highlighted the need to update the 1989 Joint Contingency Plan. Significant changes in the organization in the governing bodies of the Russian Federation, and the huge increase in oil exploration and the potential for

major oil field development/export in the Sakhalin Island region need to be considered in the update.

#### **Plan Update**

Between 1998 and 2001, the joint working group met several times, and communicated via electronic means, to update the Joint Contingency Plan. The updated plan formalized the procedures and processes for operational concepts, planning and preparedness, trans-boundary movement of response resources, and other response-related concerns. A formal signing ceremony for the revision was conducted in conjunction with the International Oil Spill Conference in Tampa, Fla., on March 26, 2001.

#### **Joint Work Plans**

Following the signing ceremony, both sides identified and expressed the need for a long-term planning document to guide future joint work and personnel exchanges. To satisfy this demand, a two-year work plan was proposed. This proposed plan, once signed, would be a non-binding arrangement intended to serve only as a long-term planning document for improving the Joint Contingency Plan. Nothing contained would be mandatory. As circumstances and resources changed, either party could make written requests to amend the work plan.

The main purpose of the two-year work plan is to identify work projects that would:

- Improve the Joint Contingency Plan of the United States and the Russian Federation on Combating Pollution in the Bering and Chukchi Seas in Emergency.
- Work toward the development of sustainable infrastructures for marine environmental protection and response to oil and hazardous substance incidents.
- Develop greater cooperation and understanding between the RF and the U.S. responsible government and private sector agencies chartered with response to oil and hazardous substance incidents.
- Develop methods and techniques for prevention and preparedness as well as response to oil and hazardous substance incidents.
- Encourage compatibility of response systems in terms of command and control techniques, equipment, training, exercises and related preparedness and response issues.
- Identify potential subjects for training that are beneficial to both parties.

To complete the final negotiations to the work plan, the Joint Planning Group met at the State Maritime Academy in Novorossiysk, Russia, a port city on the Black Sea. As part of this meeting, the delegation met with several oil-related industries, environmental and government agencies, and observed a full-scale



Maritime Administration vessels for the Port of Novorossiysk, Russia deploy an oil containment boom as part of an exercise supporting the Caspian Pipeline and Marine Terminal. USCG photo.



deployment oil spill response exercise in support of the new Caspian Pipeline and Marine Terminal. The exercise, sponsored by the Maritime Administration for the Port of Novorossiysk, included 40 vessels and simulated response to a marine fire, search and rescue, and both near shore and offshore oil spill response. The Caspian Pipeline Consortium is the largest U.S. investment in Russia to date. The pipeline transports crude oil from Kazakhstan and Russia to world markets. Also, the U.S. delegation had the opportunity to tour the State Maritime Academy and found a staff that was full of pride over the type of top-notch students that graduate and join the various merchant fleets of the RF.

The two-year work plan was formally signed in Ketchikan, Alaska on June 28, 2002 as part of the 17th District's annual joint training with the Canadian Coast Guard.

At this meeting, the Russian SMPCSRA delegation was provided briefs by all participants on the high level of cooperation that exists between the United States and Canada, and observed a unique table top oil spill simulation exercise that involved a real time "game board" format. This unique format was of great interest to the Russian delegation in that they visualized incorporating this type of instruction into their training academy programs.

#### **The Future**

The recently signed two-year work plan will guide the actions of the District 17/SMPCSRA joint



**Rear Adm. Robert North, Uri Rosen (middle) and Vladimir Karev (right) sign the updated 2001 Joint Contingency Plan of the United States and the Russian**

**Federation on Combating Pollution in the Bering and Chukchi Seas in Emergency. USCG photo.**

response team over the next two years. The first task for 2003 will be a communications exercise to test procedures to invoke the plan from either country. A meeting of the Joint Working Group in conjunction with the 2003 International Oil Spill Conference will follow.

Having routine contact with our RF counterparts has vastly improved our understanding of each other's organizations and operations, and provided increased awareness of our common environmental concerns. The 17th District looks forward to completion of the work plan and continuous improvement during the next several years.

*For more information, contact Rick Janelle, USCGD17 (MOR), PO Box 25517, Juneau, AK. 99802; (907) 463-2808; [rjanelle@cgalaska.uscg.mil](mailto:rjanelle@cgalaska.uscg.mil).*



# Coast Guard Inspections *in* West Africa

by Lt. j.g. TRAVIS TAYLOR, ACT/MIO Europe



An assignment to Coast Guard Activities/Marine Inspection Office (ACT/MIO) Europe conjures up thoughts of travel to well-known destinations such as Paris, Rome, Prague or Venice. Most of the popular cities in Europe, however, are not centers for the maritime industry. Coast Guard commercial vessel inspections are few-and-far-between at these tourist hot spots.

Port Gentile, Port Harcourt, Douala, Malongo, Malabo, and Abidjan: these are some of the destinations visited frequently by ACT/MIO Europe inspectors. Many readers might have to do some quick surfing on the Internet just to find the location of some of these cities. All of them lie in the tropical region along the west coast of Africa, from the Ivory Coast down to South Africa.

ACT/MIO Europe's marine inspectors frequently travel to these obscure locations to conduct inspections on U.S.-flagged vessels. For some of the Coast Guard's seasoned inspectors who have "been there, done that," talk of trips to Africa may bring back enjoyable memories of their past; others may break into a cold sweat from the nightmares commonly associated with travel in this region.

Coast Guard inspectors travel to West Africa to support the offshore oil industry. West Africa now sends about as much oil to the United States as does Saudi Arabia<sup>1</sup>. One estimate has the oil outputs from Nigeria and Angola doubling or tripling in the next 10 years. This part of Africa could supply the United States with 25 percent of its oil imports 15 years from now.

The types of vessels inspected in this region include offshore supply vessels (OSVs), small passenger

vessels, and mobile offshore drilling units (MODUs). These vessels comprise a large percentage of ACT/MIO Europe's annual vessel inspection workload. With more than 50 U.S.-flagged vessels in the region, operators are constantly requesting annual, periodic, and drydock inspections on their vessels. A tour at ACT/MIO Europe would not be complete without making a trip to West Africa.

Travel to these remote and unfamiliar countries presents unique challenges for Coast Guard marine inspectors. These challenges focus on cultural, personal safety, and personal security issues.

A typical trip for an ACT/MIO Europe inspector to West Africa takes three to seven days. Upon arrival in the region, one must first successfully navigate through local immigrations and customs (which, depending on the country visited, may take some time). Following that, marine inspectors are usually met by a vessel representative. Because rental cars and ground transportation can be unreliable, unsafe or nonexistent, the vessel representatives are invaluable. They provide transportation, communications and local knowledge. Without these three things, no job in West Africa could even begin.

After clearing the airport, marine inspectors get their first chance to take in some local sights. For first-time visitors, culture shock immediately sets in. In some cities, noise and auto exhaust fill the air. The use of the car horn is compulsory and common. Like maritime navigation sound signals, each distinct blast serves a useful purpose.

Roadside vendors are common. They approach vehicles stopped in traffic to sell snacks, the latest video CDs, eyewear or a variety of other things. Inspectors

find themselves thinking, “Wow! All this to absorb and I’ve been in the country for less than an hour.”

If all this weren’t enough to deal with, the inspector has to focus on the job at hand. For the frequent visitors, all this seems normal. Welcome to West Africa!

To some degree, vessel inspections in West Africa are straightforward and similar to those conducted in the United States. Where they differ most is the assurance of a safe working environment. Because many of these vessels operate abroad with a U.S. licensed master but with crews composed of foreign nationals<sup>2</sup>, the occupational safety and health standards that apply in U.S. shipyards and work environments are not required to be followed.

An inspector’s first safety obstacle is often from the pier to the vessel, which may be the outboard-most vessel of four abreast, with gangways optional. During dry dock periods or internal structural exams, there is no NFPA certified marine chemist to ensure safe entry of tanks and voids. In most cases, the attending marine inspector relies on his own equipment: a clip-on oxygen sensor or a portable multi-gas sensor.

There are a limited number of shipyards and dry dock facilities in West Africa that can handle work on OSVs. In most of these repair facilities, which commonly deviate from some of the repair procedures standard in the United States, workmanship is usually good. This is due in large part to the vessel owner’s relationship with the yard. Many companies that own or operate vessels in West Africa have spent years building good working relationships with shipyards and maritime service providers. And in a place where volatile community relations can halt work progress, experience counts. The marine inspector also has to rely on experience. It is not an easy job to balance safety, verify proper repairs are completed on an aging OSV and ensure commerce for the offshore industry is not halted in the process.

Along with personal safety, security concerns have also plagued West Africa. Realizing the volatility of civil unrest in some countries in West Africa, ACT/MIO Europe consistently evaluates the risk posed to marine inspectors. Based on travel information received from the Department of Defense and State Department, along with the individual inspec-

tors’ experiences, countries are categorized as open, restricted, or closed for travel by ACT/MIO Europe inspectors<sup>3</sup>. Vessels due for a Coast Guard inspection that are operating in designated closed countries are either asked to relocate to a country open for inspector travel, or the vessel operator will request a closed country inspection be conducted by American Bureau of Shipping (ABS) surveyors on behalf of the U.S. Coast Guard<sup>4</sup>. This partnership between ABS, the Coast Guard, and industry has proved invaluable for all parties.



**Unstable gangways, rickety scaffolding and numerous tripping hazards are commonplace during drydock operations. Photo courtesy Marvin Serna Jr. and Trico Marine Operations, Inc.**

Understanding the risks posed to our marine inspectors, vessel operators are accommodating and try to make our stay in-country comfortable. Lodging in most countries is provided at quality hotels or staff houses, depending on the local security concerns. Dining out is relatively safe and bottled water is abundant. Communications outside of the region can be unreliable with landline telephones, so mobile phones using a local service or satellite linked phones are commonly used.

As long as the demand for oil grows and U.S.-flagged vessels continue to operate in the region, ACT/MIO Europe’s presence in West Africa will continue. Though operations in West Africa are not as glamorous as those in Western Europe, the Coast Guard’s presence there is just as important.

<sup>1</sup> Statistics quoted from *The International Herald Tribune*, Feb. 11, 2002, page 11.

<sup>2</sup> Title 46 USC, Section 8103 permits the use of entirely foreign crew members with the exception of the vessel master for vessels engaged in support of exploration, exploitation, or production of offshore mineral energy resources operating abroad.

<sup>3</sup> The latest listing of open, restricted, and closed countries is available on MIO Europe’s Web site: [www.uscg.mil/d1/units/acteur/index.htm](http://www.uscg.mil/d1/units/acteur/index.htm).

<sup>4</sup> Letter of Agreement between Coast Guard and American Bureau of Shipping dated Sept. 20, 1996.



# Navy, Coast Guard Team Up *for* Maritime Commerce *and* Safety *in the* Arabian Gulf

by Lt. j.g. CHRISTINE KING, U.S. Naval Reserves, Maritime Liaison Office, U.S. Naval Forces Central Command Staff



**USS Fletcher (DD992) sailors conduct Maritime Interception Operations (MIO) onboard a container ship en route to Iraq in support of United Nations resolutions. Photo courtesy U.S. Navy by Photographer's Mate 3rd Class Michael A. Myers.**

The United States and other countries of the world depend on the oil resources of the Middle East, a region that accounts for 70 percent of the world's oil reserves.

A key to petroleum exports from the Middle East is the 90,000-square-mile Arabian Gulf. Within its waters are oil rigs, islands, shoals, and thousands of vessels, ranging in size from 500,000-ton super-tankers to 80-foot dhows. U.S. Navy and Coast

Fleet ironically runs the risk of complicating matters for the shipping traffic it is there to protect.

Based in Manama, Bahrain, the Maritime Liaison Office, known as MARLO, works to ensure the friendly coexistence of the U.S. Navy and commercial shipping operations in the Arabian Gulf and nearby waters, including the Gulf of Oman, the Arabian and Red Seas, and the Indian Ocean. MARLO is committed to maintaining a close and

reliable working relationship with the maritime community to facilitate commerce and promote safety at sea.

The MARLO staff is a unique combination of Coast Guard, Navy, and civilian personnel whose respective areas of expertise ensure swift accomplishment of its mission. Leading the effort is Coast Guard Capt. Alan H. Moore, whose maritime safety background provides a wealth of knowledge related to shipping operations, commercial vessel construction, merchant mariner standards of training, pollution prevention and response, and port security. Assisting Capt. Moore are four U.S. Navy officers with experience in naval operations in the Central Command area of responsibility. They contribute an incomparable aptitude for explaining U.S. Naval activities to shippers and conveying mariners' concerns to the appropriate Navy staff office. Two civilians serve as cultural experts and provide continuity, an important factor in the Middle East arena where the success of any undertaking relies heavily on long-term personal relationships, but where tours for military personnel average between one and two years. A Navy chief petty officer and a civilian secretary provide the administrative support necessary for smooth operations.

MARLO was established as part of U.S. Naval Forces Central Command Staff (COMUSNAVCENT) in 1987 in response to the Navy's need for understanding of commercial maritime activities during the "Tanker Wars" between Iran and Iraq, when commercial shipping came under attack by boats, mines, and aircraft from both sides. MARLO assisted in the coordination of protected convoy movements in the operation designated Earnest Will. MARLO proved its worth once again during the 1990-1991 Gulf War by notifying mariners of mine danger areas. In the last decade, MARLO has repeatedly served as a much-needed link to shippers during regional crises and as the Navy's sustained expression of good will in times of calm.

At least twice each year, security conditions permitting, MARLO personnel travel to all U.S.-friendly coastal nations throughout the CENTCOM area of responsibility, namely, Egypt, Djibouti, Eritrea, Kenya, Jordan, Saudi Arabia, Yemen, Oman, United Arab Emirates, Qatar, Kuwait, and Pakistan. The purpose of the visits is to establish relations with a wide range of players in the regional shipping community to include port officials, shipping company officials, shipping agents, offshore construction company officials, oil industry person-

nel, diving and salvage company personnel, and Coast Guard representatives. Between visits, MARLO maintains communications through its Web site and a monthly newsletter containing articles related to marine safety, security, and environmental protection. To notify shippers of situations warranting immediate attention, MARLO has the capability to release advisory bulletins via Email to a distribution of more than 700 addressees.

MARLO advisory bulletins are an important source of information for decision-makers in the shipping industry and a tried and true method for the Navy to communicate changes in U.S. policy affecting maritime affairs. In the immediate aftermath of the September 11 terrorist attacks, a MARLO advisory consolidated reports regarding new security measures in U.S. ports, dispelled rumors of procedures restricting certain nationalities from serving on U.S.-bound vessels, and identified sources of more detailed information for mariners to consult. During Operation Enduring Freedom, merchant vessels in autumn 2002 were suspected as a method of transporting Taliban and al-Qaeda leaders fleeing Afghanistan. MARLO was a key player in notifying regional shippers of the Navy's intention to conduct Leadership Interdiction Operations off the coast of Pakistan and the east coast of Africa. Similarly, in July 2002, MARLO advised the regional shipping community of the Navy's plans to reinstate U.N. inspections of ships entering and departing the Port of Aqaba to counter an Iraqi oil smuggling scheme discovered to be operating in Jordan. The advisory helped catalyze the Jordanian government's crack-down on the smuggling operation.

In September 2002, MARLO issued an advisory to alert shippers of indications that al-Qaeda is determined to disrupt economic stability by targeting petroleum industry assets, from wellheads to refineries to oil tankers. A blast onboard the merchant tanker *Limburg* caused by an explosives-laden boat one month later demonstrated al-Qaeda's capability and willingness to carry out such a terrorist attack. MARLO continues to issue advisories on threats to shipping as information becomes available.

Twice a year, MARLO hosts a conference for the regional maritime community. In this forum, industry representatives from across the Arabian Gulf and East Africa come together to discuss topics of common interest and share their concerns with representatives from the U.S. Navy and its coalition and Arabian Gulf counterparts. Senior COMUSNAVCENT officers and U.S. ambassadors to regional

countries routinely participate in the conference, providing unique, firsthand insight into forthcoming U.S. policies and operations, an invaluable resource to the shippers hoping to minimize delays associated with U.N.-mandated cargo inspections. Recent U.S. Coast Guard speakers have included Cdr. John Koster, who presented an introduction to port state control, Capt. Harlan Henderson, who spoke about spill response and the National Incident Command System in the United States, and Capt. Scott Hartley, who discussed the effects of U.S. and international law on Arabian Gulf and world shipping.

With more than 150 guests, the most recent MARLO conference, on Dec. 11, 2002 in Dubai, United Arab Emirates, broke all previous attendance records. Featured speakers included Mr. Kim Petersen, Chief Executive of SeaSecure LLC, and Maritime Security Advisor to the U.S. State Department's Overseas Security Advisory Program, presenting an abbreviated version of his ship and port security training seminar; Mr. Steve Blair of American Bureau of Shipping, Europe covering implementation of the International Safety Management Code (ISM); Col. Suleiman al-Busaidy, Advisor to the Minister of Regional Municipalities, Environment and Water Resources, Sultanate of Oman, giving an update on Oman's efforts to curb sea pollution; and Mr. Keith Dominic of the National Imagery and Mapping Agency, describing resources available to mariners through the Worldwide Navigational Warning Service.

Currently, U.S., British, and Canadian ships patrol the Arabian Gulf as part of the coalition Maritime Interception Operation to enforce the U.N. trade sanctions against Iraq. Merchant vessels traversing the northern Arabian Gulf are queried, and vessels bound for or departing Iraqi ports are boarded and inspected to prevent unauthorized cargo from reaching Iraq and to stop illegal oil from being smuggled out of the country. In support of sanctions enforcement, the MARLO staff is a ready point of contact for

shippers  
inquiring  
about the



**MARLO personnel enjoy the attractions of the Middle East on their travels in Petra, Jordan. Photo by Lt. j.g. Mark Steliga, USN.**

status of ships at the U.N. checkpoint or for answering their questions regarding inspection procedures.

Many of the Middle East's coastlines have been heavily polluted by tanker washings, garbage, and dumping of wastes and sludge. This is largely due to the lack of port state control programs in the region and a prevalent disregard of environmental stewardship. There are, however, several fledgling port state control programs and marine environment protection organizations, and MARLO serves as a valuable point of contact for forward-thinkers in these offices who look to the United States for guidance in formulating policy and enforcement procedures. The MARLO staff also continues to train and assist regionally in the development of effective disaster management plans.

In emergency situations, shippers have successfully reached out through MARLO's 24-hour emergency phone line. MARLO often coordinates with the Navy 5th Fleet command center to provide search and rescue support, medical evacuations, and assistance to vessels in distress. For example, in February 2002, a steward onboard a cargo ship in the northern Arabian Gulf suffered an attack of acute appendicitis. The ship's agent contacted MARLO after other sources of assistance proved unworkable. Working through the 5th Fleet command center, MARLO helped arrange for a medical evacuation using U.S. Navy assets. Similarly, in August 2002, the manager of an offshore supply company contacted MARLO to report that one of his ships was in distress and had possibly lost communications. A MARLO officer worked with 5th Fleet staff to locate the vessel. In the end, the ship's crew was rescued by another merchant vessel before the ship sank, but the company manager was grateful for the Navy's willingness to assist and for its ability to determine and report the status of the crew.

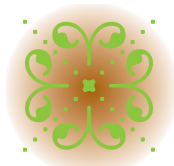
Finally, MARLO serves to assist shippers who wish to contact the Navy about an administrative issue, but do not know the official procedures for doing so. In this capacity MARLO has been a liaison between shipping companies and the Navy Regional Contracting Centers and the Navy Judge Advocate General office.

MARLO continues to be the direct conduit between the U.S. Navy and the regional maritime community, facilitating the dialogue between the two that is essential for ensuring commercial and operational success, and safety of life at sea for all mariners.



# Small Force, Global Mission *in the Land of the* Rising Sun

by Lt. Cmdr. NICHOLAS CARON, U.S. Coast Guard MIO, Far East Section



The presence of U.S. military forces in Japan is well known, but it comes as a surprise to many to learn that the U.S. Coast Guard is also in the Land of the Rising Sun. In reality, the Coast Guard is a valued armed forces component with the “other” four services at U.S. Forces Japan Headquarters, near Tokyo.

As with most things dealing with space in Japan, the office for U.S. Coast Guard Far East Activities (FEACT) at Yokota Air Base is small, but the mission is global in size. FEACT’s Japan office is composed of six active duty Coast Guardsmen, two Japanese civilians, two Reservists and two Auxiliarists. The commanding officer is a captain and the executive officer is a lieutenant commander. A lieutenant commander and a chief warrant officer comprise the inspection/investigation team. A chief storekeeper and a first class yeoman administer the office. There is also a marine inspection detachment in Singapore with four inspectors—a lieutenant commander, a lieutenant, and two chief warrant officers.

FEACT personnel perform the unit’s mission within Japan and throughout the Far East. Travel in our extensive area of responsibility (AOR) takes us to Singapore, China, South Korea, Taiwan, Malaysia, Indonesia, India, Australia, New Zealand, The Philippines, Thailand and the British island of Diego Garcia in the Indian Ocean.

The Japan and Singapore units are in an excellent strategic location to facilitate their four missions: maritime safety, maritime security, national defense and international engagement.

Our primary focus is maritime safety, which involves the inspection of U.S and foreign commercial vessels, the oversight of new vessel and oil rig construction, the investigation of marine casualties and assisting U.S. Coast Guard licensed merchant mariners working in our AOR.

In support of maritime homeland security, we carry out the exchange of merchant vessel information with host nations and facilitate the early detection of high-risk foreign vessels heading for U.S. waters. We educate foreign shipowners of the newest maritime security regulations initiatives and coordinate Coast Guard participation in international security conferences.

FEACT, in its national defense role, advises co-located Department of Defense (DoD) military commanders on maritime safety and security concerns, coordinates and participates in numerous bilateral military exercises, facilitates the deployment of Coast Guard cutters and aircraft operating in its AOR and promotes the readiness and movement of the Ready Reserve and Prepositioned Fleets operating throughout Asia and the Indian Ocean.

FEACT’s international engagement mission supports maritime domain awareness and promotes opportunities to enhance the Coast Guard’s role in the global arena.

FEACT’s missions and strategic location in Asia are important for the following reasons:

- More than 50 percent of the world's shipping is controlled in Asia.
- More ships enter U.S. ports from Asia than all other areas combined.
- Japan is the second largest economy in the world. Korea is the world's largest ship builder and Japan is the second largest ship builder.
- Two of the top three busiest ports in the world are in our AOR: Singapore and Hong Kong
- FEACT's largest customer is the Military Sealift Command with more than 45 vessels operating throughout the 7th Fleet AOR. Some of these ships are part of Maritime Prepositioning Force (MPF) in support of national defense. These MPF ships are located in Guam/Saipan (seven ships) and Diego Garcia British Indian Ocean Territory (B.I.O.T) (20 ships).
- The Japan/Singapore/U.S. alliance is considered one of the United States' most important security and strategic partner ships.

The U.S. Coast Guard has had a continuous presence in the Far East since 1947, when Coast Guard Capt. Meales was requested to assist Japan in setting up the Japanese Maritime Safety Agency (renamed the Japan Coast Guard [JCG] in 1999). The Coast Guard also operated a long-range electronic navigation (LORAN) system for DoD from the mid 1950s until

1994 with transmission stations located throughout the Western Pacific and on numerous Japanese islands.

There has been heavy U.S. vessel inspection and construction activity in the Far East since 1970. Inspections and investigations were first supported using temporarily assigned inspectors from Marine Safety Office Honolulu. In December 1994, FEACT and its subunit, Marine Inspection Detachment (MIDET) Singapore, were officially commissioned.

Our current inspection activities include new construction of six oil production platforms in South Korea and Indonesia and two new passenger vessels being built in Japan. FEACT conducts foreign vessel certificate of compliance (COC) exams on tank vessels and cruise ships, including exhaustive Initial Control Verification Exams (ICVE) on new cruise ships built in Asian shipyards, which take on passengers in U.S. ports. In all, FEACT averages approximately 20 COC exams per year.

FEACT also carries out production and prototype inspections at lifesaving equipment manufacturing facilities in China, Japan and Tasmania. In addition, FEACT oversees Coast Guard-approved liferaft facilities in New Zealand, Australia, Singapore, Thailand, Japan and South Korea.

The fleet of responsibility for U.S.-flagged vessels is approximately 50 deep draft vessels operating throughout the Indian Ocean and the Australia-Asia region, and more than 100 inspections per year are conducted on American vessels for U.S. and Safety of Life at Sea (SOLAS) international regulatory compliance.

Our six traveling inspectors are some of the most seasoned inspectors in the Coast Guard. They all are fully qualified (machinery and deck) inspectors. They inspect everything from the largest oil tankers to the newest cruise ships and are on the road an average of 12 days per month with additional inspection work in their host countries.

FEACT's marine safety expertise is an excellent platform for international engagement and port state control and maritime security. FEACT is an



**Chief Warrant Officer Peter Mertens inspects the propulsion system on the USNS Bowditch during a drydock inspection in Sasebo, Japan. USCG photo.**

“observer” member of the Tokyo Memorandum of Understanding on Port State Control and participates with 18 member nations at semi-annual meetings throughout Asia, the South Pacific and in Chile. In 2002, FEACT made presentations at numerous conferences including: Singapore Shipowners, Hong Kong Shipowners, Japan Shipowners, Asia Regional Accident Investigators, Indian Ocean Coast Guard Agencies, Malacca Strait Council, DoD Component Commanders and Asia-Pacific Economic Cooperative.

FEACT also provides the International Maritime Organization (IMO) with instructors under the IMO technical exchange program, allowing Coast Guard personnel to instruct 14 Asian developing nations on our inspection, investigation and port state control programs.

FEACT’s maritime safety and international engagement supports its national defense mission. The command plays an important role as the Coast Guard liaison to U.S. Forces Japan, which is headed by a three-star Air Force general. FEACT’s office is conveniently located at his headquarters, allowing unique leverage with DoD counterparts, making us the only total joint force (all five services) under one operational command. This co-location proved beneficial during the post September 11 response as unit personnel provided around-the-clock watches in the U.S. Forces Japan Command Center and coordinated Japan Coast Guard assets for protection of vital U.S. assets, as well as Japanese coastal/port security (just hours following the September 11 attacks, the Japan Coast Guard had 128 ships on alert and 28 aircraft on patrol).

FEACT is also responsible for direct liaison work with the Japan Coast Guard and there is a Japan Coast Guard lieutenant commander who works in the FEACT office on a periodic basis.

One of the most recent successes was as primary planners and participants in the November 2002 KEENSWORD Exercise, a multilateral Japan Self-Defense Force, DoD and U.S. Coast Guard four-day search and rescue (SAR) exercise with two U.S. Coast Guard SAR controllers from Coast Guard Pacific Area staff, two FEACT reservists and a rescue swimmer from the Coast Guard Air Station in San Francisco.

The FEACT team is obviously quite busy but morale stays high due to the excitement and challenges of

overseas work and excellent on-base family support. It has proved to be an ideal assignment for those in the Coast Guard desiring the opportunity to travel to exciting lands. Outside the gates of Yokota, there is the opportunity for the FEACT team to travel around Japan utilizing one of the world’s best public transportation systems, which includes the country’s famed Shinkansen (bullet trains). Working, living and traveling throughout Asia provides for full immersion and enjoyment of numerous cultures and experiences.

For more information, search FEACT’s Web site at [www.uscg.mil/d14/units/feact/FEACT/htm](http://www.uscg.mil/d14/units/feact/FEACT/htm). Additional information about Yokota Air Base is available at: [www.yokota.af.mil](http://www.yokota.af.mil).

### *Population*

Metropolitan Tokyo approx. 10,000,000.  
Yokota Air Force Base approx. 8,560.

### *Climate*

Temperature range 35-90 degrees Fahrenheit. Spring and fall are the rainy seasons in Japan. It is often hot and humid during July and August and well into September. The Kanto region (which includes Tokyo) has very mild, sunny winters; however, occasional snowfall is possible throughout the winter months.

### *Housing*

2,709 family units at Yokota Air Force Base, along with many units for single members.

### *Facilities*

Full medical and dental clinics, commissary, exchanges, food court, post office, library and gym to name a few.

### *Education*

Two elementary schools (K-6), one middle school and high school and three colleges or universities: Central Texas College, University of Maryland and Troy State University.

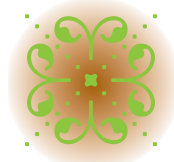
### *Recreation*

Movie theatre, bowling alley, morale, welfare and recreation tours to many local sights of interest, par 3 golf course and close proximity to an 18-hole military course, in addition to the usual sports activities.



# U.S. Coast Guard Activities *in* China

by Lt. Cmdr. NICHOLAS CARON, U.S. Coast Guard MIO, Far East Section



**T**he U.S. Coast Guard has been conducting inspections in various locations in the Peoples' Republic of China since 1980. U.S. Coast Guard Activities Far East (FEACT) and Marine Inspection Detachment (MIDET) Singapore personnel work extensively in China supporting the Coast Guard's marine safety, security, search and rescue, and international engagement missions.

The majority of our work is under the auspices of the Marine Safety program with vessel and lifesaving equipment inspections in Qingdao, Nantong, Dalian and

Zhenjiang. In 2002, inspectors conducted two U.S. tank vessel reflag projects and four deep draft drydock exams. In addition, we monitor the construction of Coast Guard approved lifeboats and davits that are fabricated in China. We conducted nine lifesaving equipment inspection approvals at five different facilities resulting in Coast Guard approval of 16 lifeboats, three rescue boats, 23 davits and 34 winches. All this equipment will be installed on Coast Guard certified commercial and certificated military support vessels.

U.S. law requires all lifesaving equipment used on Coast Guard certificated vessels to be Coast Guard approved. Lifeboats, davits and winches constructed at Beihai Shipyard and at Beihai's davit fabrication

facilities in Qingdao have to go through a detailed inspection process prior to being approved. FEACT conducts these inspections to ensure the equipment is being constructed to the standards set by the Coast Guard and the International Maritime Organization.

In 2002, FEACT/MIDET inspectors averaged one China trip per month. With the current world economic climate, conducting U.S. vessel repair and hull exams in China has its advantages due to the inexpensive cost of materials and labor. With cost savings driving most marine industries, we are expecting a 70 percent increase in China

**China is considered one of the fastest growing economies in the world. The opening up of markets will fuel increased shipping to and from China and the United States, and will make Chinese shipyards more competitive for vessel construction and repair contracts.**

shipyard contracts for Coast Guard certificated vessels and reflag projects in 2003. According to the World Trade Organization, China is considered one of the fastest growing economies in the world. The opening up of markets will fuel increased shipping to and from China and the United States and will make Chinese shipyards more competitive for vessel construction and repair contracts.

Under our maritime security and international engagement missions we have provided presentations to the Hong Kong Shipowners Association and Chinese Classification Societies. Through these venues we are able to liaise with quality shipping companies. This is very important in facilitating foreign vessel arrivals into U.S. ports with the Coast Guard's heightened state of maritime domain

awareness. In addition, we have provided training and inspection aids on the Coast Guard's Port State Control, Inspection and Investigation Programs for two Chinese port state control officers who were trained by FEACT personnel through the IMO's Technical Exchange Program.

In order for the U.S. Coast Guard to visit China, we have to complete extensive paperwork for each entry. Whenever a request for an inspection or conference is received, we must ensure the required notification is made via the U.S. State Department, Coast Guard Headquarters and the U.S. Department of Defense.

Entry into China requires a minimum 30 days notice and numerous Chinese Embassy visits in Singapore or Tokyo to process the required entry visa. In addition, it requires a country clearance message and an individual force protection plan for each Coast Guard visitor.

Search and rescue (SAR) specialists from the Coast Guard, Air Force and Navy participate in the annual



**U.S. container ship repair at Nantong Shipyard. USCG photo.**

Hong Kong Search and Rescue Exercise (SAREX). This is the largest SAREX of its kind in Asia and includes participants from throughout Asia. The Coast Guard routinely participates with rescue swimmers and SAR controllers each year, and a high endurance cutter or C-130 aircraft in alternating years. The Coast Guard is a key player in this important Hong Kong Civil Aviation Department event. Coast Guard aircraft and crew support is provided

by Air Station Barbers Point in Honolulu, Hawaii. The U.S. Air Force provides SAR controllers and Coast Guard staffed Joint Rescue Coordination Center Honolulu. Pacific theatre DoD assets have come from as far as Alaska to join in the exercise.

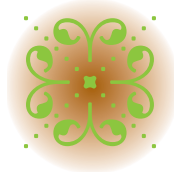
Work in China is a highlight for all Coast Guard personnel. It requires a broad spectrum of skills; the ability to communicate with foreign shipyard workers, the skills to recognize and react in hazardous shipyard conditions, the ability to travel under challenging conditions and, most importantly, the ability to appreciate our "Chinese Fortune" to travel in one of the world's most ancient and interesting cultures.



**Lt. Madura witnesses a lifeboat drop test in Beihai, China. USCG photo.**

## MIDET Singapore

by Lt. Cmdr. OSCAR W. STALLINGS JR., U.S. Coast Guard MIDET Singapore



*Being an inspector in the busiest port in the world is a time-consuming and demanding job, yet it is also a rewarding experience.*

The U.S. Coast Guard's Marine Inspection Detachment (MIDET) Singapore conducts inspections and investigations aboard U.S. and foreign merchant vessels operating in East Asia and the Indian Ocean. The unit is composed of the supervisor, who is a lieutenant commander, one lieutenant and two chief warrant officers. The inspectors are responsible for ensuring compliance with U.S. and international shipping regulations on U.S.-flagged vessels and oil rigs operating, being repaired or constructed in our area of responsibility (AOR) or for foreign vessels planning to visit U.S. ports. The events of Sept. 11, 2001 have added maritime security to their responsibilities, and with the growing importance of this region to U.S. national security interests, MIDET Singapore has been thrust into a pivotal role in support of Operation Noble Eagle, conducting security checks and reviewing vessel cargo manifests and crew lists for vessels heading to U.S. ports. In addition to our inspection mission, we serve as a forward deployed unit providing and sharing Coast Guard expertise with Pacific Rim nations and other international organizations. We have developed a joint port state control (PSC) inspections security program with the Maritime Port Authority of Singapore. This initiative further allows the Coast Guard to identify potential high-risk vessels and crew operating within Asia and possibly headed for U.S. ports. On September 11, under the auspices of this joint PSC program, we were able to immediately board and implement safety and security measures for a foreign cruise ship visiting Southeast Asia with 900 U.S. college students.

The government of Singapore, realizing its importance in regional security as one of the largest container ports, has been extremely proactive with numerous maritime security initiatives. Singapore was the first Asian country to sign the U.S. Customs container security initiative with the United States, greatly enhancing maritime domain awareness at its source, and coordinated an international Maritime Safety & Security Conference with global participation. The Coast Guard Commandant and Assistant Commandant for Marine Safety, Security and Environmental Protection participated in this important conference.

MIDET Singapore is "sponsored" by the U.S. Embassy, with which we have an excellent working relationship. We carry out Coast Guard international liaison activities with the government of Singapore, primarily, the Singapore Maritime Port of Authority, the Port of Singapore Authority and the Singapore Police Coast Guard. Additionally, we interface with various classification societies (American Bureau of Shipping, Det norske Veritas, Lloyds Register, and Nippon Kaiji Kyokai), as well as the Singapore Shipping Association (SSA).

We have the opportunity to work with Chinese, Malaysians, Indonesians, Indians, Australians, New Zealanders and Europeans on a daily basis. Also of note is a close working relationship with our next-door-neighbor Military Sealift Command and Maritime Administration ships operating and undergoing repair within our geographic area of responsibility.





**Chain scaffolding attached to the back of a vessel in a Singapore yard for a rudder repair. USCG photo.**

With the sun blazing just a stone's throw from the equator, Singapore is a tropical and exotic locale. Inspectors find themselves working in one of many shipyards here in Singapore or in China. We have the benefit of interacting with cultures from all over Asia. There are more than 10 shipyards in Singapore, two in Malaysia, two in China, and one in Indonesia that we routinely visit.

We have the responsibility as any shipyard has for its employees. Therefore, we use risk management tools to allow our Coast Guard marine inspectors to perform their duties in a multitude of work environments over which the Coast Guard has little or no control. MIDET Singapore works closely with shipyards to ensure our members are aware of the potential hazards and are adequately protected, while maintaining the ability to effectively perform required missions.

Singapore has a thriving free-market economy that is progressive and prosperous. On any given day, a virtual regatta of freight, container and other vessels can be seen coming, going or just waiting at anchor for their turn to feed the city's habit for commerce. Every three minutes, 24 hours a day, a ship is either entering or leaving port.

Post-September 11, we have focused on cruise ship security. Our direct action has been to notify the ship's master and owner of the latest risk assessments and advise them against certain port calls.

Singapore offers Coast Guardsmen and their families the opportunity of a lifetime. Being a marine inspector in the busiest port in the world can be a challenging and rewarding experience. The city-state is a sleek, clean, modern nation on a landmass measuring 26 miles by 14 miles. The Singaporean government has done an outstanding job of planning its development and rapid growth over the past few decades. Most importantly, while planning for the public needs of some four million Singaporeans it has been able to achieve one of the highest standards of living in Asia.

The four official languages of Singapore are English, Malay, Mandarin and Tamil. Malay is the national language and English is the main language of business and administration. Students study in English and also learn the language of their ethnic background in school, with Mandarin being the most widely taught second language.

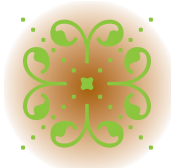
Home for MIDET is Sembawang. It is a peaceful residential section in the northern part of the island. We live in British colonial homes built in the late 1920s and 1930s. This area is also home to Australian, New Zealand and British service members and their families. Living and working in and out of Singapore are incredible opportunities for MIDET personnel.



**A bungalow leased as quarters for U.S. personnel stationed in Singapore. USCG photo.**

# NaKika Floating Development *and* Production System

by Chief Warrant Officer SCOTT CHRONINGER, U.S. Coast Guard MIDET Singapore



## An octopus

with tentacles as great as 25 miles long will soon be living in the Gulf of Mexico. NaKika, the octopus lord of the gods of the Gilbert Islands, will soon be relocating to more productive waters.

In the past, it has not been profitable to develop small- and medium-size oil/gas discoveries in deep water. Now with the use of new technologies, Shell and BP have joined forces in using a novel co-development concept. Using this concept, Shell and BP are able to develop and produce these hydrocarbons profitably.

A host Floating Development & Production System (FDPS), NaKika, named after the octopus lord of the gods, will be placed in a centrally located position within the development area consisting of five small- to medium-size petroleum discoveries. These discoveries, Kepler, Ariel, Fourier, East Anstey and Herschel, which are from 5,800 to 6,900 feet below sea level and located in the Mississippi Canyon area of the Gulf of Mexico, around 144 miles southeast of New Orleans, La., will then be connected to the NaKika through sub-sea flow lines. A sixth field, Coulomb, in a record 7,600 feet water depth, will be tied back in the future as production capacity becomes available.

The project is a complex one involving Shell's first semi-submersible host in deep water and its deepest permanently moored semi-submersible development and production system. NaKika has a semi-submersible-shaped hull with topside facilities for fluid processing and pipelines for oil and gas

export to shore. Shell is the pre-development operator of the NaKika project, responsible for the design, fabrication, and installation of the floating host facility and sub-sea production systems, as well as the drilling and completion of the 10 development wells. BP will be the operator after production starts, responsible for all operations above and below the water surface.

The project aims to recover up to 300 million barrels of oil equivalent. The project is expected to cost \$1.26 billion, excluding lease costs. Approximately 50 percent of the costs are associated with the fabrication and installation of the host facility and pipeline. Production is expected in late 2003. There will be complete separation, dehydration and treatment facilities designed to process 425 million cubic feet of gas and 110,000 barrels of oil per day.

Design, engineering and project management for the NaKika project was provided by Shell's Exploration and Production Projects. The contract for the fabrication, integration and transportation of the host facility was awarded to Hyundai Heavy Industries of Ulsan, South Korea. The project will have the deepest water depth for development wells in the world when Coulomb is brought on stream and the first deepwater sub-sea well completion with three commingled reservoirs.

Although NaKika will not have lightering capabilities, the facility will hold 44,000 barrels of flow assurance oil in the pontoons. This flow assurance oil has been deemed cargo by regulatory officials, resulting in several design challenges, which Shell overcame. The NaKika host is double-hulled and semi-submersible.



**Completion of NaKika, which is in production, is expected in late 2003. The platform is designed to process 425 million cubic feet of gas and 110,000 barrels of oil per day. Photo courtesy Shell Oil Co.**

The cargo tanks in the pontoons were required to be protected on the top and outboard sides to comply with the requirements of the Oil Pollution Act of 1990 (OPA 90). Shell's design established double-hull criteria on all sides of the flow assurance oil tanks. Design requirements in ventilation and other systems were also met to comply with the cargo oil requirements.

NaKika represents several "firsts" for the quarters and power modules of a U.S. Gulf of Mexico floating facility being constructed in Asia. The U.S. Coast Guard Marine Inspection Detachment (MIDET) in Singapore faced logistical and resource challenges during the construction of NaKika. No classification society was involved with the design or construction of accommodation or power modules, leaving the task to the Marine Safety Center and the Officer-in-Charge Marine Inspections, Activities Far East. Inspectors from Singapore spent up to 17 hours traveling some 4,000 miles to Korea on a monthly basis to review processes and inspect completed work. The final task for MIDET at the completion of

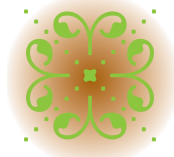
work scheduled in Korea was to pass responsibility for inspection to a representative from Marine Safety Office (MSO) Morgan City. MSO Morgan City's inspector visited the construction facility in Korea for a complete briefing on details and clarification of issues always noted during new construction and when new technology is put into practice. This briefing has provided for a smooth transition when the facility is brought to the production site within MSO Morgan City's area of responsibility.

Early planning and communication between Shell, Mineral Management Service (MMS) and the U.S. Coast Guard allowed for all of these issues to be addressed prior to construction. Shell's construction site team worked closely with the Coast Guard Marine inspectors at Activities Far East and constantly monitored the shipyard progress. This effort by Shell provided that extra push to ensure a quality finished product which met all regulatory requirements and will be a comfortable and safe working environment for the 60 residents soon to be living onboard.



## Overview of U.S. Forces Japan

by STEVEN L. HERMAN, FEACT/USFJ Public Affairs, U.S. Coast Guard Auxiliant



The U.S. military presence in Japan is seen as a critical component of America's response strategy in Asia.

Nearly 50,000 U.S. military personnel are stationed in Japan, compared to about 100,000 in all of Europe. The troops in Japan are under the umbrella of U.S. Forces Japan (USFJ), which was established in 1957 after the U.S. Far East Command was deactivated and the United Nations Command was transferred to the Republic of Korea. However, the U.S. military has had a permanent presence in the country since August 1945 when Imperial Japan surrendered, bringing an end to World War II and the beginning of the Occupation Era, which concluded in 1952. The continued stationing of U.S. Forces in Japan in recent decades is authorized by the U.S.-Japan Treaty of Mutual Cooperation and Security signed in 1960.

USFJ is composed of elements of U.S. Pacific Command (USPACOM) that are based on Japanese territory. In addition to the men and women in Army, Navy, Marine Corps and Coast Guard uniform, USFJ includes 52,000 dependents, 5,500 Defense Department civilian employees and 25,192 Japanese workers. Nearly half of the total force is on Okinawa and 75 percent of the total land area occupied by the U.S. Forces in Japan is located in that southernmost Japanese prefecture.

U.S. Forces are dispersed among nearly 100 facilities located on all of the major Japanese islands, except for Hokkaido and Shikoku. The facilities range in size from single antenna sites to a training area covering several thousand acres. Total acreage of U.S. bases in Japan is about 78,000 acres.

The annual cost of stationing U.S. Forces in Japan runs into the billions of dollars with a significant portion paid for by the Japanese government. Japan's contribution covers such costs as the

improvement of facilities, the salaries of Japanese staff on bases and utility payments. For fiscal year 2001, according to Japanese government statistics, the host-nation support reached ¥257.3 billion (about \$2 billion U.S. dollars at the current exchange rate), which was 45 percent of the total budget of the Japanese Defense Facilities Administration Agency and some three-quarters of the cost of U.S. troops stationed in Japan. The two countries mutually agreed in 2000 to slightly reduce host-nation support. In the fiscal 2001 budget, the total sum was reduced by more than six percent from the level of the previous fiscal year.

America's military presence in Japan is seen as being a force able to effectively and quickly reach potential hot spots throughout the Asia-Pacific region. Training and exercises with Japan's Self Defense Forces are increasing. It is said that the United States has more equipment in common with Japan than any other ally.

Japan's own military spending ranks third in the world, behind the United States and Russia, but ahead of China. However, on a per capita basis, Japan is farther down the list, below such nations as France and Saudi Arabia. Japanese government policy is to keep military spending under one percent of Gross Domestic Product (GDP).

Under Article V of the Treaty of Mutual Cooperation and Security, U.S. Forces, Japan's area of responsibility is the land areas of the Japanese archipelago and the adjoining sea areas out to 12 nautical miles. Under Article VI, the United States is given use of facilities in Japan for maintaining regional security.

For most U.S. military personnel and their families, Japan is considered one of the most desirable assignments in the world. The larger bases have extensive educational, medical, dining, shopping and

recreational facilities. The Kanto plain, where Yokota Air Base, the Yokosuka Naval Base and other facilities, such as the Army's Camp Zama are located, has mild winters. Okinawa's climate is apt to remind Americans of Hawaii rather than any spot in the contiguous United States.

Japan is renowned for its low crime rate, and American personnel need not be nervous about touring the country. The biggest challenge for most foreigners is the language barrier. A minority of

Japanese speak fluent English and for most U.S. service personnel their tours of duty in Japan are too short to master the native language. But even in the big cities, a befuddled American having trouble reading directions is likely to be asked by a Japanese if they can be of assistance. Japan is a country where hospitality and politeness, as well as taking care of guests, are important elements of societal behavior. Most American personnel in Japan quickly discover that a little courtesy and a few words of Japanese go a long way.

## Major Components of USFJ

### *Headquarters, U.S. Forces, Japan (HQ, USFJ)*

HQ, USFJ is located at Yokota Air Base, about 25 miles west of Tokyo. The Commander U.S. Forces Japan (COMUSJAPAN) joint staff is composed of 120 military personnel and 50 Defense Department civilians, which administers unilateral and bilateral defense issues. USFJ Headquarters focuses on war planning, conduct of joint/bilateral exercises and studies, administering the Status of Forces Agreement, improving combat readiness, and enhancing the quality of life of military and DoD civilian personnel and their dependents.

### *III Marine Expeditionary Force (III MEF)*

Some 18,000 Marines are garrisoned primarily on Okinawa and Southern III MEF, which is under the operational command of Marine Forces Pacific (MARFORPAC) on Honshu.

### *U.S. Marine Corps Bases, Japan (MCBJ)*

MCBJ consists of about 1,100 personnel and is responsible for maintaining and operating the bases, facilities and training areas used by Fleet Marine Forces deployed within Japan.

### *5th Air Force (5AF)*

The 5AF mission is to maintain the deterrent force posture of the United States and to conduct offensive and defensive air operations, should deterrence fail. Supporting that mission are approximately 15,700 military and civilian personnel located at units throughout Japan. In addition to the tactical air roles, U.S. Air Force Japan (USAFJ) provides theater airlift and operational support with cargo airlift. USAFJ participates with the Japan Air Self Defense Force in bilateral training exercises and the development of bilateral plans.

### *Commander Naval Forces, Japan (CNFJ)*

CNFJ consists of about 7,700 personnel and is responsible for maintaining and operating the port facilities and providing base and logistic support for those surface, subsurface, aviation and amphibious elements of the U.S. 7th Fleet that operate from Japan as part of the Overseas Family Residency Program (OFRP). U.S. CNFJ participate with the Japan Maritime Self Defense Force in exercises and planning.

### *U.S. 7th Fleet*

U.S. 7th Fleet, which is under the operation control of Pacific Fleet, has about 14,000 sailors, 17 ships and 100 airplanes operating from Japan as part of the Overseas Family Residency Program.

### *U.S. Army, Japan/9th Theater Support Command (USARJ/9thTSC)*

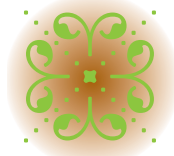
U.S. Army, Japan consists of about 2,000 soldiers and is charged during peacetime with operating port facilities and a series of logistics installations throughout Honshu and Okinawa. USARJ participates actively with the Japan Ground Self Defense Force in bilateral training exercises and the development of bilateral plans. It commands and supports U.S. Army-assigned units, attached units and augmentation forces and employs these forces in support of the Commander. USARJ maintains and strengthens the credibility of deterrent power in the Pacific through maintenance of defense facilities, war reserves and operational project stocks. The war-fighting element of USARJ is I Corps.

### *U.S. Coast Guard, Activities Far East (FEACT)*

Commander FEACT has 12 personnel in Japan and four active duty personnel in Singapore. FEACT works a vast area of responsibility stretching from South Korea to Indonesia to India. Its missions are maritime safety and security, national defense and international engagement. FEACT participates actively in USFJ exercises, advises DoD military commanders on mission issues and facilitates deployment of Coast Guard cutters and aircraft in Asia. Besides inspecting commercial vessels and investigating marine casualties in the region, FEACT also facilitates early detection of high-risk foreign vessels heading for U.S. waters. It works closely with not only USFJ but the Japan Coast Guard as well.

## Destination MSO Guam: *Adventurous Island; Unique T-boat Fleet*

by Lt. KEVIN Y. PEKAREK, Chief of the Inspection Department, U.S. Coast Guard MSO Guam



### **The Island and its Geography**

Guam is a small, lush tropical island and a U.S. territory. It is located at 13.48 degrees north and 144.45 degrees east. Stated another way, Guam is where America's day begins. People are waking to go to work in Guam, while those persons living in the mainland are getting ready to go home from work on the previous day. The land area is 212 square miles. The official languages of its population of approximately 150,000 people are English and Chamorro.

Guam is one of several islands in the Northern Marianas chain. The pristine warm waters surrounding Guam, along with the beautiful coral reefs, make the island a prime destination for tourists and vacationers who enjoy outdoor recreational activities. The island is relatively flat with a few small mountain peaks in its southern part. The vast majority of the island's population lives on the western shores.

There are three harbors of safe refuge on the west coast: Agana boat basin, Gerberville and Agat marina. Ninety percent of the commercial small passenger vessels operate out of these areas. Merizo town, located on the southern tip of Guam, is also home to several vessels that provide service to Cocos Island, a small, recreational island about two miles offshore. Lastly, a few vessels work out of the east coast, providing jungle river cruises on the Talofofu River.

### **The Coast Guard in Guam**

The Coast Guard Marianas Section/Marine Safety

Office (MSO) Guam command is physically located on a piece of land owned by the Coast Guard but within the perimeter of the U.S. Naval base. It is centrally located on the western shore of the island. Currently, Capt. Robert C. Lorigan is the Commanding Officer/Officer in Charge Marine Inspections (OCMI). In addition to support from our own Coast Guard command, members stationed in Guam may also receive support from two other military commands on the island. The U.S. Navy's Commander, Naval Forces, Marianas Islands is the principal Navy command and the U.S. Air Force is located about an hour's drive north at Anderson Air Force Base. Both bases have commissaries, medical care for dependents and various other types of services that are available to military and their dependents.

### **MSO Inspections Department Personnel**

The MSO consists of two departments: port operations and marine inspections/investigations. The inspections department current workforce consists of a Chief of Inspection, Senior Investigating Officer (both lieutenants), three chief warrant officers, two marine science technicians (MSTs) and one yeoman. Any one of the inspectors assigned to Guam may be scheduled to inspect U.S.-flagged, small passenger vessels. On a weekly rotation, one marine inspector and one petty officer will stand duty to provide inspection services for the foreign flag vessels that visit the island. The MSTs conduct port state control exams, including ensuring vessels comply with ballast water initiatives, and



investigate pollution incidents. One of the MSTs is also currently our Fishing Vessel Examiner. The yeoman provides licensing and documentation assistance to the many merchant mariners living or passing through Guam. Guam is a satellite Monitoring Unit for Regional Exam Center Honolulu.

### Marine Inspectors' Support to T-boat Fleet

Over the last few years, the T-boat inspectors have been quite busy ensuring the fleet updated its vessels to comply with the new small passenger vessel regulations. Typical areas noted with deficiencies have included: installation of high bilge level alarms, installation of fixed bilge piping, fixed firefighting extinguishing systems, improper subdivision if intending to carry more than 49 passengers and installation and testing of a public address system.

Marine inspectors have also been busy witnessing simplified stability tests. The vast majority of the T-boat fleet consists of fiberglass reinforced plastic (FRP) and wooden vessels. Inspectors must understand the different construction and repair procedures for these types of vessels. Terms such as scarfing, sealants, cropping rotten wood, angel hair, treated marine ply, glued and screwed, cold molded plywood hull and FRP blisters are commonly used and must be understood by the marine inspector when reviewing repair proposals.

### MSO Guam's Diverse T-boat Fleet

The island has a diverse collection of small passenger vessels. Many of these boats are required to be inspected by the Coast Guard; some of the craft that carry six passengers or less for hire are not Coast Guard-inspected, but must still meet certain federal safety regulations.

These vessels provide service as charters for sport fishing, porpoise or dolphin watching, tourist sight-seeing including excursions to Cocos Island, jungle river cruises, dinner cruises with live entertainment on Apra Harbor, recreational diving and snorkeling platforms, water taxi to/from deep drafts vessels, underwater reef viewing, pulling "banana boats," parasailing, breathing observation bubbles (BOB) and Sea Walker excursions.

A BOB is an underwater, self-propelled device in which the driver wears an oxygen-fed helmet while observing fish or the reefs. A Sea Walker is similar to a BOB in that the passenger wears an air-supplied helmet but in this case there is no scooter, just the helmet and air. The BOB and Sea Walker gear are considered recreational equipment, and are not required to be inspected by the Coast Guard. The tender vessels that shuttle tourists and this equipment to the areas of operations, however, may require a Coast Guard inspection if they carry more than six paying customers.



**The *Atlantis V* is a commercial submarine operating in Guam. The steel-hulled constructed vessel is propelled by an electric motor and was originally built in Surrey, B.C. The *Atlantis V* is used as a reef and aquatic life viewer from below the water. Photo by Audrey McCurdy, Operations Manager and vessel driver for Atlantis Guam, Inc.**

The island's small passenger vessels are made with a wide range of construction materials. Boats made from wood, wood layered with FRP, aluminum or steel can all be found in Guam. Hull types are mono-hull, catamaran or trimaran.

Since Guam is a U.S. territory, it enjoys some unique variances to the regulations found in Subchapter T of 46 Code of Federal Regulations (CFR) for inspected small passenger vessels. Vessels operated in Guam are allowed to be built foreign and then transported

to the island for documentation and operation. This is allowed under U.S. law (Title 46, United States Code), provided the vessel's certificate of documentation carries a registry endorsement for coastwise trade.

Guam has T-boats that were built in such places as China; Japan; Surrey, Canada; Queensland, Australia; Slidell, La.; Lake Havasu City, Ariz.; Myrtle Creek, Ore.; and Ft. Lauderdale, Fla., just to name a few. A vessel owner has informed MSO Guam he intends to construct a vessel in Taiwan and bring it to Guam for operations. MSO Guam is working with Coast Guard Far East Activities to determine the scope of construction oversight that will be required for this vessel.

Guam also has one commercial submarine in operation, the *Atlantis V*, which works in Apra Harbor. Passengers observe Guam's coral reef and aquatic life from this submersible reef viewer. On this vessel the OCMI has accepted Federal Aviation Administration-approved inflatable personal flotation devices. *Atlantis V* just completed successful enrollment into the Coast Guard's underwater in lieu of dry dock (UWILD) program.

#### Inspectors' Administrative Tools

The inspection department has developed a pre-inspection checklist to assist the vessel owner in maintaining the vessel throughout the year and also prepare for Coast Guard inspections before calling out Coast Guard personnel. MSO Guam also uses a risk-matrix sheet similar to those used by other OCMI's. Information from this sheet is tabulated and used to identify vessels that pose the greatest risk to the passengers they carry and to the port.

A vessel is judged on its inherent risk factor (IRF) and its discrepancy risk factor (DRF). The inherent risk factor includes those risks that are present based on hull material, age of vessel, route, number of passengers carried, vessel service, NVIC 1-91 training program, overnight accommodations and a marine casualty or violation during the last 12 months. Points are awarded in the DRF section when discrepancies are found during the inspection in any of the areas regulated by the Coast Guard. The two scores are added and computed into the final score for that vessel. Vessels that score substantially higher than the fleet average and appear to present greater risk will be looked at more closely throughout the year, including use of unannounced spot exams.

#### Super Typhoon Pongsona's Devastation

The island of Guam was blasted by super typhoon Pongsona on Dec. 8, 2002. Winds registered 150 mph with gusts to 185 mph as the eye passed directly over the island. The island suffered major damage to power, water, sewage, and telephone services. These services were interrupted to all the island's inhabitants for weeks after the storm.



**Rainbow Runner and Rainbow Chaser in Gerberville's harbor of safe refuge. Both dive vessels capsized during Pongsona and have since been salvaged. USCG photo by Lt. Kevin Pekarek.**

The impact of these service disruptions on the residents was amplified by the fact that the Mobil oil tank farm caught fire. The tank farm stored the total supply of gasoline for the island.

During the firefighting stage and cooling-off period, gas sales were stopped to the general public as tanker trucks could not get to the fueling station. Cause of the fire remains unknown.

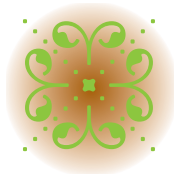
Seven Coast Guard-inspected vessels were sunk or driven up on the rocks during the storm. As of December 2002, it appears five of the vessels will be refloated, salvaged and restored to service while two are considered total losses.

#### Conclusion

A tour of MSO Guam will be rewarding both professionally and personally. A fairly small group of inspectors work closely together to accomplish a variety of jobs. No two days are ever the same. Marine inspectors can be inspecting a 22-foot FRP catamaran, with external gasoline-driven 150 HP engines one day and the next day be part of a port state control boarding team examining a 650-foot, Cyprian flagged, Russian-crewed tank vessel on its first time to the United States. Guam has seven U.S. deep draft vessels in its fleet of responsibility, which are under charter and work for the Military Sealift Command.

# MSO Honolulu, Hawaii: *Keeping the Pacific Safe*

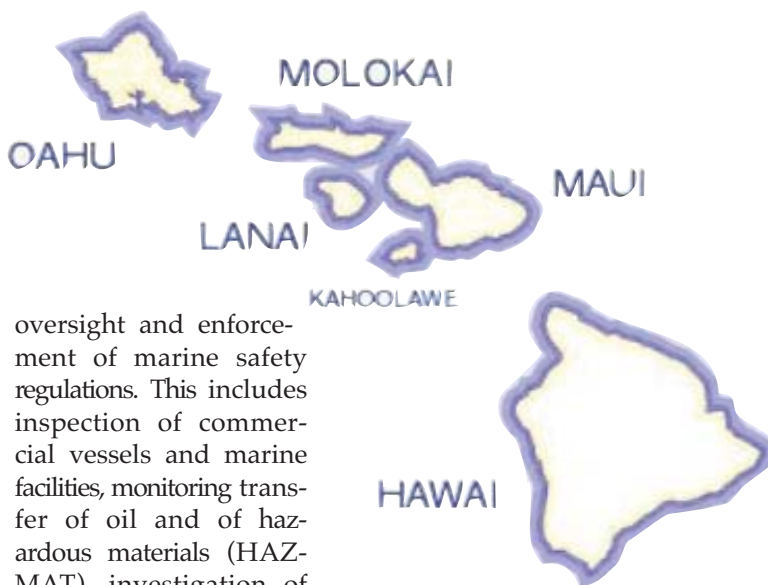
by Lt. Cmdr. TODD OFFUTT, U.S. Coast Guard MSO Honolulu, Public Affairs Officer



Marine Safety Office (MSO) Honolulu serves a broad expanse of the Pacific. Its area of responsibility (AOR) includes the state of Hawaii, the islands and atolls of the Hawaiian Archipelago Island Chain, and American Samoa. Islands and atolls include Wake Island, Midway Island, Johnston Atoll, Kingman Reef, Palmyra Atoll, Jarvis Island, Baker Island, Howland Island, and all of the adjacent waters of the Exclusive Economic Zone for each island, atoll and reef. For licensing and documentation of merchant mariners, this area also includes Guam, New Zealand, Australia, Kawajalien, and the Philippines.

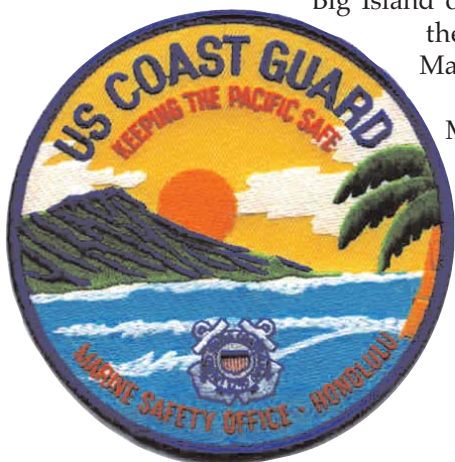
The parent command is located on the north side of Honolulu Harbor. The more than 100 active duty and reserve personnel provide services through departments of: Administration, Vessel Inspection, Investigation & Analysis, Port Operations, Planning, and the Regional Exam Center. A Marine Safety Detachment is located in Pago Pago, American Samoa, and Marine Safety Teams are located on the Big Island of Hawaii and the island of Maui.

Missions are accomplished through inspection,



oversight and enforcement of marine safety regulations. This includes inspection of commercial vessels and marine facilities, monitoring transfer of oil and of hazardous materials (HAZMAT), investigation of vessel casualties, investigation/remediation of oil spills and HAZMAT releases, and issuance of licenses/documents to merchant mariners.

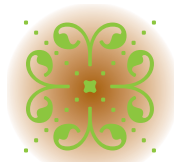
The MSO jointly staffs a Command Center with Coast Guard Group Honolulu to provide seamless maritime safety and security throughout the AOR. Group Honolulu conducts search and rescue, and on-water law enforcement of boating safety laws, fisheries regulations, maritime security, commercial fishing vessel safety, and drug interdiction.





## MSD American Samoa *A “Sentimental” Walk in Paradise*

by Lt. DEREK DOSTIE, Supervisor of U.S. Coast Guard MSD American Samoa



Driving east along the winding coastal Route 1 early in the morning, a majestic sun rises across the warm waters of the Pacific. Swells that have traveled hundreds of miles rise up and break over the fringe reef yards away, throwing salt spray into the air. Sunlight shines over the lush, green, tropical rain forest, and scenic mountains rise steeply around the harbor.

Welcome to Pago Pago Harbor, American Samoa, and home to a remote Coast Guard Marine Safety Detachment (MSD). American Samoa is actually composed of six volcanic islands and one atoll. The main island of Tutuila, with Pago Pago Harbor, is the largest of the islands with an indigenous population of more than 50,000 on the largely mountainous parcel of 65 square miles.



The MSD's task is challenging and the job sometimes difficult, but the rewards can be summed up in the catchy commercial phrase: “priceless.” The MSD is a long-arm extension of Marine Safety Office Honolulu. The MSD is nearly 2,500 miles from Honolulu, roughly the same distance from Honolulu to the West Coast of the United States. This nearly isolated location poses significant challenges with operations, logistics, communications, administrative functions, and training. However, all are overcome through patience, perseverance and flexibility.

Remnants of an extinct volcanic crater serve as the foundation for a road that encircles a deep, protected harbor ideal for shipping interests. Formerly a U.S.

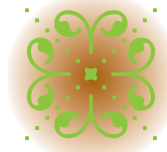
Navy coaling station at the turn of the century, local Samoan chiefs then ceded several of their islands to become a U.S. territory in April 1900. Today, the island is managed by the U.S. Department of the Interior and remains split from the now independent country of Samoa, a short distance to the west. The port has also shed its days as a World War II era monitoring post to become a major fishing port. The island is home to two of the last U.S. tuna canneries that employ nearly 6,000 workers.

To “protect paradise”—as the MSD's motto goes—means to protect property, the port infrastructure, environmental resources including sensitive environmental areas, and personnel who work and live on or near the water. Like other Coast Guard units, the MSD fulfills missions to ensure

harbor safety and security, and industry compliance with regulations and safety through: shipboard commercial vessel inspections, port state control initiatives, pollution prevention and response activities, casualty investigations, waterfront facility inspections, security boardings, monitors of fuel oil transfers and explosive offloads, and intermodal container inspections. The unit also supports the Regional Exam Center in Honolulu with mariner licensing, the National Vessel Documentation Center with vessel registrations, the National Movement Center with vessel arrival information, and Vessel Tracking Group Honolulu with security matters. Other missions include assistance to Search and Rescue, Aids to Navigation work and liaison duties to the local government.

# Complex Response to Tankship *Insiko 1907*

by Lt. CHRIS LEE, Chief, Environmental Protection Branch, MSO Honolulu  
and Cmdr. GEORGE BUTLER, Chief, Port Operations Department, MSO Honolulu



**Coastguardsmen** serving at Marine Safety Office (MSO) Honolulu are faced with many situations involving international issues, as Hawaii provides a great number of services to mariners for thousands of miles in all directions. The *Insiko 1907* was one of these opportunities that provided some unique challenges.

The *Insiko 1907* was a small fuel tanker that was servicing the fishing fleet in the central and southern Pacific in the early months of 2002. Known as a tramp tanker, she would fill her cargo tanks with diesel, and steam around the Pacific in search of fishing fleets, where she would sell her product to those in need. The ship was 260 feet long, and carried a crew of 12 plus the captain's dog, Hokget. The captain claimed the vessel was Indonesian flag but, to avoid paying taxes, the Chinese owner never officially documented the vessel with Indonesia. Subsequently, Indonesia did not recognize the vessel, making the vessel stateless.

The vessel had been underway for approximately three months on March 13, 2002, when an electrical problem in the engine room reportedly started a fire that soon burned out of control. The electrical fire apparently ignited the oil in the bilge and within minutes the entire compartment was fully engulfed in flames.

The crewman who was in the space at the start of the fire was not seen again and was presumed dead. The chief engineer went to investigate the fire and narrowly escaped, with burns on both sides of his body.

According to witness accounts, the fire burned out of control and quickly engulfed all of the accommodation spaces, bridge and galley. The ship lost all power. The fire forced the crew and the captain's dog to the forecandle, where they remained on deck of the drifting vessel for 20 days, as the fire on the aft of the ship burned itself out. The ship was approximately 850 miles south of the Big Island of Hawaii, but because the vessel had lost power so quickly, no one knew of their dilemma and so no rescue operations were initiated.

On April 2, the cruise ship *Norwegian Star* sighted the *Insiko 1907* roughly 220 miles south of the Big Island of Hawaii and drifting westward. The cruise ship altered course, contacted the Coast Guard offices in Honolulu, and rescued the crew of the *Insiko 1907*. Due to the language barriers between the Taiwanese crew of the *Insiko 1907* and the *Norwegian Star's* officers, the captain's dog Hokget was inadvertently left behind along with the deceased crewmember. A Coast Guard rescue helicopter was dispatched to medevac the burned chief engineer off of the cruise ship and the Coast Guard cutter *Assateague* was dispatched to get the remaining crew off of the cruise ship.

At that time the vessel was not in U.S. waters and its projected track line did not bring it near any land. The captain of the *Insiko 1907* reported that 60,000 gallons of oil products remained onboard. The Coast Guard broadcasted a notice to alert all mariners of the drifting vessel and report any sightings to the Coast Guard.

At that point, the Coast Guard Federal On-Scene



**The *Insiko 1907*. USCG photo courtesy CG District 17.**

Coordinator (FOSC) in Honolulu had no intentions of taking action to retrieve or dispose of the *Insiko 1907* because the vessel did not pose a significant threat to United States' waters. After the crew had been rescued and the *Norwegian Star* turned towards Hawaii, one of the passengers on the cruise ship noticed the dog left onboard the burned-out vessel. Upon returning to Honolulu, the passenger immediately notified the Hawaiian Humane Society, which instantly took up the cause to "Save Hokget." This became a leading story nationwide, and gained wide media coverage.

By April 5, the Hawaiian Humane Society had raised in excess of \$50,000 to rescue the dog. They contracted a tug to meet the vessel and rescue the dog but no one knew the exact location of the vessel.

Finally, on April 9 the *Insiko 1907's* position was reported to the Coast Guard by a passing fishing vessel. Weather and seas had changed, and an updated track line of its drift indicated the vessel

would come within 200 miles of Johnson Atoll (an unincorporated U.S. territory), thus putting the vessel in U.S. waters and under the FOSC's jurisdiction. Meanwhile, the vessel's owner in China informed the Coast Guard that he intended to abandon the vessel completely because he had no funds left to attempt salvage. The

FOSC, drawing upon previous experience with abandoned vessels floating in the Pacific which eventually washed ashore on one of the many remote Pacific Islands, decided to take steps to ensure the vessel would not pollute any U.S. waters and accessed the Oil Spill Liability Trust Fund.

The FOSC had a number of options available to him to remove the threat of oil pollution from the drifting *Insiko 1907*. One option was to hire a tug and barge to transit south to offload the diesel and recover the deceased crewmember and dog. However, the transit would take several days and the vessel would still be left adrift. A second option was to issue a Pollution Removal Funding Authorization (PRFA), contracting the U.S. Navy to sink the vessel. However, this option would be very costly and would not involve removing the pollution threat, the primary concern. Finally, the third option, and the one that was ultimately chosen, was to send a tug to tow the vessel back to Honolulu, remove the deceased crewmember and dog upon arrival in Honolulu, pump the vessel off, clean the vessel and request disposal through the Environmental Protection Agency (EPA) in accordance with 40 Code of Federal Regulations (CFR) 229.

On April 20, a Coast Guard aircraft was sent to obtain an updated position of the *Insiko 1907* as it neared U.S. waters. The crew of the Coast Guard C-130 airplane reported Hokget was visible on deck and the aircrews dropped pizza for him to eat, gaining even greater media attention. The next day the crew of a fishing vessel boarded the *Insiko 1907* and unsuccessfully attempted to capture Hokget. The crew of the fishing vessel left food and water onboard prior to departing.

During this time, the FOSC sought approval from Coast Guard Headquarters for an intervention on



**Damage shown to the *Insiko 1907*. USCG photo courtesy CG District 17.**



the high seas and permission to scuttle the vessel at sea. Although the National Contingency Plan provides the FOSC with the authority to remove, and if necessary, destroy a vessel, 33 USC 1.01-80 expressly withholds authority from the FOSC to remove or destroy a vessel (regardless of threat), or to take any action under the Intervention on the High Seas Act (33 USC 1471). Only the Commandant could authorize the plan to scuttle the vessel in this situation. While this process of gaining the Commandant's approval can be time consuming, it did not cause a delay since the FOSC had already dispatched a tug to the location of the vessel, in anticipation of Commandant approval. After determining the vessel to be stateless and after receiving a letter from the vessel's owner abandoning the vessel, the Commandant granted permission for the intervention.

A Honolulu-based spill contractor was hired to meet the vessel and take it in tow. On April 26, the tug *American Quest* rendezvoused with the *Insiko 1907*, rescued Hokget, and took the vessel in tow. Through the State Department, the Coast Guard successfully contacted the family of the deceased crewmember. The family granted permission for the Coast Guard to bury the remains at sea with the *Insiko 1907* if the vessel was scuttled, but if the body could be recovered, they requested that the remains be returned for proper burial.

On May 2, the *Insiko 1907* was towed into Honolulu Harbor under very heavy media coverage. A press

briefing was conducted with the bulk of the attention paid to the dog Hokget. Many news agencies were present and concerned citizens held banners welcoming the dog to Hawaii. The dog received a traditional Hawaiian lei (flower necklace) and a big "Aloha" from waiting spectators. After 120 days of quarantine, the dog was released and adopted by a family living on the island of Kauai. Once clean-up operations began on the *Insiko 1907*, much of the media interest subsided.

More than 227,000 gallons of diesel and oily water (much more than originally reported), 33 drums of hazardous waste, 22 compressed gas cylinders and eight tons of debris were removed from the *Insiko 1907* as it was readied for disposal at sea. As more and more fuel was removed from the vessel, there was a growing concern about the stability of the vessel. Would the vessel roll over and sink at the dock? Would it sink while in transit to its scuttling spot? The FOSC received assistance from a local marine surveyor and the Coast Guard Marine Safety Center (MSC), located in Washington, D.C., to determine the stability of the burned out vessel. MSO Honolulu, PENCO (the cleanup contractor), MSC and the local surveyor developed a tow and scuttle plan for the *Insiko 1907* to ensure its stable tow to sea. Finally, on May 24, the Commandant granted the FOSC approval to scuttle the vessel and the EPA granted permission to dispose of the vessel at the designated disposal area. The *Insiko 1907* was safely towed to a position approximately 12 nautical miles southwest of Oahu and successfully scuttled.



**Hokget the dog, in the arms of a Hawaiian Humane Society representative. USCG photo courtesy MSO Honolulu Port Operations Department.**

During the cleanup of the vessel, the deceased crewmember's remains were found deep inside the burned out engine room. The local coroner kept the remains until the State Department worked out the details to fly them back to Taiwan.

Throughout this highly successful response, the Coast Guard met each unique challenge, through close coordination with others in the public and private sector. This team successfully rescued a crew and a dog, removed a significant pollution threat, returned the remains of a deceased crewmember to his family, and rid the Pacific of a derelict vessel.

# The Coast Guard Marine Safety Program *and the* State Department Office *of* Oceans Affairs

by Cmdr. FRED KENNEY, U.S. Coast Guard Liaison Officer, Office of Oceans Affairs, U.S. Department of State



A sunken World War II U.S. Navy oiler begins leaking off the coast of a Pacific Island nation. A Cypriot-flagged, Russian-crewed tanker collides with a U.S. fishing vessel off the coast of Massachusetts, killing three. The vessel then proceeds to Newfoundland, where Canadian officials place the master and two others under house arrest. Finally, in international waters off the coast of Florida, a Brazilian-flagged container ship sits anchored with no means of propulsion, and with an owner unable to make the necessary repairs. Should the weather change, the ship poses a threat to the marine environment in the U.S. exclusive economic zone. In the wake of the September 11 attacks, the United States proposes an aggressive new maritime security program at the International Maritime Organization (IMO), headquartered in London, England for ships and port facilities. This initiative, led by the U.S. Coast Guard, requires a significant inter-agency and international effort.

While the four situations described above may not seem connected, they all have two things in common. First, all involve the Coast Guard's Marine Safety, Security and Environmental Protection program, more commonly known in the Coast Guard as the "M" program. Second, all have implications for U.S. foreign policy, the responsibility of the U.S. Department of State. Within the State Department, all four issues come under the purview,

in conjunction with other offices, of the Office of Oceans Affairs in the Bureau of Oceans, International Environmental and Scientific Affairs.

Established in 1974, Oceans Affairs takes the policy lead for negotiations and international cooperation for global oceans matters. Staffed by 12 Civil Service employees, five Foreign Service Officers, a fellow from the American Association for the Advancement of Science, and a Coast Guard Liaison Officer, the office leads the intra-agency effort to preserve and promote the goals of U.S. oceans policy through the negotiation of and participation in international agreements concerned with the proper use of the world's oceans and marine resources. The areas of responsibility for the Office of Oceans Affairs are very broad and include serving as the lead State Department office for tracking major international pollution incidents, facilitating international marine pollution prevention measures from ships and land-based sources, monitoring significant international marine casualty cases and U.S. port state control policy. Oceans Affairs also serves as the State Department focal point for substantive matters before IMO, and staff members are part of a number of delegations there. As part of the IMO support program, the director of the Office of Oceans Affairs was recently designated chairman of the Shipping Coordinating Committee, the federal advisory committee responsible for receiving public input on

U.S. IMO negotiating positions. Oceans Affairs is also the State Department representative for the National Response Team. In short, if the issue involves the Coast Guard's M program and has foreign policy implications, Oceans Affairs is likely to be involved.

When a situation like those described above occurs, the Office of Oceans Affairs works with the responsible offices within Coast Guard Headquarters to ensure that all foreign policy concerns are considered. This process usually involves engaging the regional specialists at the State Department country desks or at the U.S. embassies and consulates for the countries involved. Often, Oceans Affairs personnel will pay calls at foreign embassies in Washington to negotiate resolutions to M-related issues. In cases where high-level inter-agency cooperation is required, Oceans Affairs manages the Presidential Directive 27 (PD-27) coordination process for the federal government. The PD-27 process is required whenever one agency intends to take a non-military enforcement or other action that could affect the foreign relations of the United States. In such instances, PD-27 requires that other interested agencies be consulted and that the proposed course of action receive inter-agency concurrence. Most Coast Guard personnel are familiar with the PD-27 process in drug and migrant cases. However, as the international complexities associated with marine safety and security related functions have increased over time, so have the number of M-related PD-27s.

Beyond M-related activities, the Office of Oceans Affairs is responsible for a number of other oceans-related issues, including the United Nations regional environment programs in the Caribbean and South Pacific, the Antarctic Treaty, the Arctic Council, protection of marine mammals (notably whales), the U.S. oceanographic research program, including managing the program to provide U.S. oceanographic research vessels clearance to operate in foreign waters. Perhaps most importantly, the Office of Oceans Affairs is also the lead U.S. coordinator for policy regarding the United Nations Convention on the Law of the Sea (UNCLOS), and heads the U.S. delegation to the U.N. whenever UNCLOS issues are discussed.

Because so many of the issues under the Oceans Affairs purview are related to Coast Guard missions, in June 2001 the Coast Guard established a liaison position in the office. While the position was established primarily to enhance State Department support of IMO-related issues, the liaison also provides Coast Guard personnel with stronger links for issues such as marine pollution and oceanographic research. In addition, the liaison facilitates contact with other State Department offices with oceans responsibilities, such as the Office of Transportation Policy and the Bureau of International Organizations. After the September 11 attacks, the liaison was in position to coordinate State Department policy on maritime security, a role the Office of Oceans Affairs continues today.

## **PROCEEDINGS** has a new home on the Web!

**[www.uscg.mil/proceedings](http://www.uscg.mil/proceedings)  
view all issues from January–March, 1998 through the present**

**While you're there ...**

**[www.uscg.mil/hq/g-m/CalendarEvents.htm](http://www.uscg.mil/hq/g-m/CalendarEvents.htm)  
check out the monthly Calendar of Events for the maritime industry**



## U.S. Coast Guard International Training *in the* Wake of September 11<sup>th</sup>

by Chief Warrant Officer TROY RIEDEL, U.S. Coast Guard ITD



### **T**he terrorist attacks

in America changed the world. And surely the international maritime community has not been exempted. Nearly everyone agrees that the international maritime community is vulnerable to many potential threats. And many “experts” predict that the next such terrorist attack could be perpetrated from within the international maritime community. The U.S. Coast Guard’s International Training and Technical Assistance Division is helping developing nations reduce their vulnerabilities through cooperation, training and technical assistance.

The International Training and Technical Assistance Division (ITD) is a cadre of more than 50 specialists and instructors based out of the U.S. Coast Guard Training Center in Yorktown, Va. They deliver many types of training and technical assistance, including maritime law enforcement, boat operations, engineering support, port security, marine safety, marine environmental protection, Incident Command System (ICS) and crisis management. Each year they train approximately 1,700 personnel in 65 different countries.

It is important to note that all international training conducted by the Coast Guard is requested, and paid for by other U.S. government agencies or the partner nations’ government. The most usual sources of funding are the Department of State and Department of Defense (each department has multi-

ple funding sources available for different purposes and types of training).

Even before Sept. 11, 2001, ITD conducted Port Security training. In fact, their exportable port security program was overhauled in 1998 and nearly a dozen different nations hosted port security-related training between 1998-2001. As one could imagine, this training has taken on an entirely different perspective since the terrorist attacks of September 11.

Specifically, ITD now offers four different exportable port security courses. There is a “basic” Port Physical Security/Port Vulnerability Assessment course one week in length and an advanced version of the same that is two weeks in length. There is also an operational port security boat operations and tactics course. The fourth exportable course is focused more on port security planning, identifying vulnerabilities and crisis management of a “security incident.” This is the Crisis Management Seminar.

During calendar year 2002, ITD delivered port security training in Colombia, Lithuania, Malta, Greece, Latvia, Estonia, Kenya, Lebanon and Jordan. Additionally, ITD conducted surveys or assessments in preparation for potential future training missions to Croatia, Turkey, Djibouti, Eritrea, Ghana, Mauritania, Malawi, Thailand and Honduras.

Each mobile training event is customized, as much as possible, to the country receiving the training. For

example, ITD conducted a Crisis Management Seminar for the Hellenic Coast Guard (HCG) in Athens. The HCG is the primary agency in Greece responsible for port security and the protection of waterside venues during the 2004 summer Olympic games. A special anti-terrorism funding source through the Department of State was utilized for this training. The seminar focused on port security, port vulnerability assessment and the management of a crisis incident. Practical exercises included making a vulnerability assessment of the Port of Piraeus. Piraeus will be the site where more than 10,000 people (mostly International Olympic Committee members, special guests and dignitaries) will be housed onboard cruise ships.



**Leon Hayward, U.S. Customs Service, instructs during a Joint U.S. Coast Guard-U.S. Customs Service Port Security mission to Madagascar. USCG photo by Chief Warrant Officer Troy Riedel.**

Weapons of mass destruction (WMD) have increasingly become a part of our daily news headlines. In countries where it is a concern, ITD delivers a special, half-day training module providing an overview of WMD and smuggling trends, concentrating on source regions and case studies of interdictions made throughout the world. ITD has included WMD training during missions to Azerbaijan, Lithuania, Latvia, Estonia, Turkmenistan and Jordan.

Since nearly all of ITD's members are cross-trained in multiple mission areas, it is possible for ITD to incorporate nearly any specially requested topic by a host nation into the standard port security curriculum. In the past, ITD has customized their exportable port security training by offering specific training modules regarding port state control, maritime law enforcement, locating hidden compartments, maritime boarding procedures and boat operations in support of port and maritime security.

The newest ITD course focuses on port security boat tactics. This offering is very challenging. Not only does the partner nation have to supply suitable training platforms, the boats, but they need to oversee a tactical course involving moving assets and

students who may not speak English. As is the case with all of ITD's courses, safety is always paramount.

As popular and relevant as port security-related training has been in 2002, it will become increasingly more requested and important with adoption in December 2002 of the International Ship and Port Facility Security (ISPS) Code by the International Maritime Organization. The ISPS is the first comprehensive set of international maritime security standards and regulations. And as the maritime communities of developing nations raise their standards to meet the new ISPS, ITD will be called upon to assist by providing technical assistance and mobile training missions.

Maritime/port security is a complex issue, composed of security risks and vulnerabilities, and requiring the coordinated efforts of multiple agencies and multiple organizations, from all corners of the globe. Cooperation is pivotal. The U.S. Coast Guard's ITD is only one piece of the puzzle. ITD has been, and will continue to be, an important piece of the cooperative effort by providing maritime and port security training and technical assistance to our friends throughout the world. Through this security cooperation we hope to help establish the capability to protect the maritime communities and the people who rely on them.

**Boatswains Mates Amy Cramer and Nate Loppnow of Station Sandy Hook, N.J., look back at the smoke-filled Manhattan skyline during the September 11<sup>th</sup> attacks in New York. Rescue crews from Sandy Hook helped conduct security operations on the Hudson River. USCG photo by Public Affairs Officer Tom Sperduto.**







# Coast Guard Inspections *in* Central *and* South America

by Lt. BRYAN DUNLAP, ACT/MIO Europe



Among Marine Safety Office (MSO) New Orleans' many responsibilities is that of inspecting and certifying the various U.S. flag vessels operating in Mexico, South America, and Central America, including the Caribbean region. Most of these vessels are involved in the offshore oil industry. This "fleet" includes offshore supply vessels, mobile offshore drilling units (MODU), small passenger vessels, and Subchapter K large passenger vessels. Inspection types include annual safety, drydock, and internal structural inspections.

Some of the exotic destinations visited by MSO New Orleans' inspectors in this line of work include remote areas of Brazil, Chile, Peru, Ecuador, Venezuela, Mexico, Trinidad and Tobago, and Curacao. All of these countries have one thing in common: offshore oil deposits.

There are many famous resorts in these countries, with lavish hotels and five-star restaurants adjacent to pristine beaches. Unfortunately, these are not the areas where the offshore industry operates.

Oil industry operations are usually found in more remote locations. Gaining access to some of these sites can involve a flight in a foreign owned and operated helicopter, a boat voyage six hours offshore, or a six-hour car ride through the jungle just to get to the vessel. Other exams are conducted while underway due to the vessel's operating contract obligations. Often, there are no hotels or restaurants nearby, so sleeping and eating onboard the vessel being inspected is in order.

There are also some unique and interesting vessels among MSO New Orleans' overseas inspected fleet, such as one of the only U.S. flag commercial ice breakers, an Antarctic resupply vessel, and a small waterplane area twin hull (SWATH) passenger vessel. The U.S. passenger vessels that operate in the region are typically employed in transporting foreign offshore workers to and from offshore installations. For these vessels, the only U.S. licensed or documented person required by law to be onboard is the captain/master of the vessel. They often work extended tours of duty; it is common to see a master work six months on a vessel, then be off for six months.

Coast Guard marine inspectors normally travel in pairs to these locations, though that

is not always the case. In some instances, an inspector can be on the road for two to three weeks, conducting multiple inspections in two or three countries. Flights from New Orleans to South America involve air travel of at least 12 to 14 hours just to arrive in the country, often followed by the local travel already mentioned. Immigration and Customs border checks can take additional time. It is challenging, but rewarding work that offers a chance to visit countries that most Coasties can only dream of seeing.

The number of inspection activities in the region that MSO New Orleans is responsible for has grown significantly during the past few years, and can be expected to further increase due to steadily expanding offshore oil exploration and production. Companies will certainly be adding newer and larger vessels to their operations. The number of available Coast Guard inspectors has not, however, been able to keep pace with the increasing demands on our resources, especially in light of our growing port security responsibilities. One method of meeting industry's needs has been to allow vessels to conduct self-inspections and to accept satisfactory American Bureau of Shipping (ABS) classification society survey reports in lieu of sending inspectors overseas.

---

*The author served at MSO New Orleans from 1997 to 2001, and made many inspection trips to Mexico, Central America, South America, and the Caribbean.*



**Both vessels in these photographs are research vessels working for the National Science Foundation and are ice breakers with science capabilities, homeported in Punta Arenas, Chile. THIS PAGE: The main purpose of the *Lawrence M. Gould* is to resupply the base in McMurdo, where this photo was taken. OPPOSITE PAGE: The *Nathaniel B. Palmer* in the Arctic ice. Photos courtesy the National Science Foundation.**



# International Organizations *and* Memoranda *of* Understanding: *Promoting Ship Safety*

by E.J. TERMINELLA, U.S. Coast Guard Foreign & Offshore Compliance Division



**The** United States has become primarily a port state, with nearly 8,000 foreign ships calling on its ports each year. These foreign ships account for almost all of the passenger ships and the majority of the cargo ships operating in U.S. waters. As a result, the greatest potential threat of pollution or safety mishaps in U.S. ports and waterways now comes from foreign ships. To combat and mitigate this threat, the United States and other nations have developed strong port state control programs.

Port state control is not new to the United States. Beginning in the 1970s, the U.S. Coast Guard increased its emphasis on the examination of foreign vessels. Although this emphasis was primarily driven by requirements to ensure compliance with the then-new U.S. pollution prevention and navigation safety regulations, boarding officers also exercised port state authority when instances of non-compliance with the 1974 International Convention of Safety of Life at Sea (SOLAS) and the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL) conventions were noted. Over time, the international safety and environmental protection standards (implemented under conventions such as SOLAS and MARPOL) have become more strict, with increased enforcement authority for port states. As a result, the U.S. regulations and international conventions have become comparable.

Worldwide, many flag states recognized that cooperation must exist to combat substandard shipping. Many substandard vessels were avoiding those flag states with robust port state control (PSC) programs and calling on ports with weaker inspection controls. To combat this problem, flag states have bonded together to form geographic "nets" resulting in the creation of Port State Control Memoranda of Understanding and Agreements (PSC MOUs/Agreements). These PSC MOUs/Agreements provide a harmonizing entity for the consistent application of international instruments by their signatories. In return, these signatories/member countries agree to implement the policies of the MOU, which normally includes defined inspection percentage goals and the inspection of vessels that are identified with the use of a targeting scheme.

The Coast Guard recognized that these PSC MOUs/Agreements had formal PSC programs in operation and that partnering with them would benefit all parties. To facilitate the effectiveness of port state control, the Coast Guard maintains contact with all of these organizations. Each organization holds meetings throughout the year, and the Coast Guard attends the majority of them to provide professional expertise and gain insight into other methods for improving vessel compliance. We have requested and obtained "observer" status in five of these regional agreements and are currently exploring the idea of requesting status as an observer in the remaining organizations. Observer status allows the

Coast Guard to maintain a “seat at the table” and allows for a productive exchange of information.

In 1994, a national initiative, with congressional impetus, was undertaken within the United States to bring to bear our full resources with the aim of eliminating substandard shipping in U.S. waters. Due to the increased level of inspections necessary to comply with this congressional mandate, the Coast Guard developed and integrated a risk-management methodology into our PSC program to allocate our inspection resources where they could do the most good. By identifying those ships, ship owners, classification societies and flag administrations that were most often found lacking in meeting their international convention responsibilities, the Coast Guard is able to target those vessels and parties that have demonstrated a recurrence of substandard practices in their merchant fleet.

The International Maritime Organization (IMO) also plays a vital role in facilitation between the PSC MOUs. In June 2000, the IMO, through its Technical Co-operation fund, organized and facilitated the first Workshop for Regional Port State Control Agreement Secretaries and Directors of Information Centres. This meeting was convened with the goal of “encourag[ing] participants to discuss common problems and share experiences, with the ultimate aim of harmonizing and coordinating PSC practices and identifying technical co-operation requirements.” The IMO recognizes that the PSC MOUs are forces that promote marine safety worldwide. But these organizations do not have specific representation at the IMO, and as a result these workshops are a means to bring the PSC organizations and IMO together to garner the areas of concern for all parties. Due to the success of the first meeting, a second meeting was convened in July 2002. The Coast Guard has participated at both of these meetings.

The majority of these entities have a similar organizational structure. A Port State Control Committee (PSCC) serves as the rule-making body of the organization, and representatives from the flag states that are signatory to the MOU serve as voting members. Other representatives from various interested organizations who attend the meetings as observers are not voting members of the PSCC. A Secretariat handles the daily operation of the organization. This includes analysis of vessel inspection data to spot vessel deficiency trends or coordination of inspection campaigns, as well as response to external questions and implementation of any policy/

There are currently eight regional  
PSC MOUs/Agreements  
in existence:

- The Paris Memorandum of Understanding on Port State Control (Paris MOU), adopted in Paris (France) on July 1, 1982;
- The Acuerdo de Viña del Mar (Viña del Mar or Latin-America Agreement), signed in Viña del Mar (Chile) on Nov. 5, 1992;
- The Memorandum of Understanding on Port State Control in the Asia-Pacific Region (Tokyo MOU), signed in Tokyo (Japan) on Dec. 2, 1993;
- The Memorandum of Understanding on Port State Control in the Caribbean Region (Caribbean MOU), signed in Christchurch (Barbados) on Feb. 9, 1996;
- The Memorandum of Understanding on Port State Control in the Mediterranean Region (Mediterranean MOU), signed in Valletta (Malta) on July 11, 1997;
- The Indian Ocean Memorandum of Understanding on Port State Control (Indian Ocean MOU), signed in Pretoria (South Africa) on June 5, 1998;
- The Memorandum of Understanding for the West and Central African Region (Abuja MOU), signed in Abuja (Nigeria) on Oct. 22, 1999;
- The Memorandum of Understanding on Port State Control in the Black Sea Region (Black Sea MOU), signed in Istanbul (Turkey) on April 7, 2000.

financial edicts decided upon by the PSCC. In addition, most PSC MOUs maintain a central "information center" as a storehouse for their representatives' data. The information centers are charged with collection and dissemination of information to/from the various administrations that make up the MOU.

### **The European Quality Ship Information System**

A recent international agreement that contributes significantly to information transparency and the elimination of substandard shipping is the European Quality Ship Information System (EQUASIS). EQUASIS was established to promote data transparency in the maritime sector and to provide merchant vessel performance information for interested parties. On May 17, 2000, a Memorandum of Understanding (MOU) was signed by seven entities: France, Singapore, Spain, United Kingdom, European Commission, Japan and the United States. The group's stated goals were:

- Set up an effective information system containing quality and safety-related information of the world's merchant fleet; and
- Make relevant information publicly available and easily accessible, thus allowing persons involved in maritime transport to be better informed about the performance of ships and maritime organizations with which they are dealing. The system thus aims at improving quality and abating substandard practices in any sector of the maritime industry.

EQUASIS maintains a public database that consolidates information from numerous sources. PSC inspection and detention information is supplied by three entities: the Paris MOU on PSC, the Tokyo MOU on PSC and the U.S. Coast Guard. In addition, the statutory vessel information and various ship affiliations are provided by several organizations. All organizations undergo a review process to ensure their data is of value to the maritime community and that they have the ability to provide the data in a correct and consistent manner. There are no opinions posted on the Web site regarding the

quality of the ship. Rather, all of the relevant information regarding the ship is posted in a clear, uniform, concise manner, in order to expedite the review process by interested maritime parties. The Web site, [www.equasis.org](http://www.equasis.org), has been in operation since May 23, 2000 and its usage has increased from approximately 20,000 hits in its first full month of operation to more than 180,000 in November 2002.

The EQUASIS organization is composed of three levels: a Supervisory Committee, Management Unit and Technical Unit, and an Editorial Board. The seven signatories to the MOU make up the membership of the Supervisory Committee. These signatories were chosen in an attempt to provide a geographically diverse group to promote a greater pool of ideas and worldwide promotion of the Web site/organization. Additionally, representatives from IMO participate as observers. The role of the committee is to oversee the productive operation of the Web site and to decide upon the political and technical areas related to its operation and improvement.

The Editorial Board is the technical body of the organization and is tasked with reviewing the areas concerning the arrangement and operation of the Web site. All data providers are invited to attend the meetings and provide input on improving the efficiency/layout of the site. The Management Unit coordinates the day-to-day operations and decisions on technical matters and oversees the Technical Unit's implementation of improvements/changes to the Web site, as well as updates to the EQUASIS database.

The Coast Guard continues to actively liaise with all PSC Memoranda of Understanding/Agreements and EQUASIS. Promotion of marine safety and environmental compliance requires all members of the maritime industry to fulfill their responsibilities. International agreements strengthen these individual efforts and provide for a more effective system. Through information exchange, data transparency and effective coordination between our groups, the net of strong port state entities will continue to expand and increase the difficulty for substandard ships to trade undetected in our global waters.



# The U.S. Coast Guard's Foreign Legion

by Cmdr. ED STANTON, Commanding Officer, U.S. Coast Guard Gulf Strike Team



The U.S. Coast Guard's National Strike Force (NSF) supports Incident Commanders and Federal On-Scene Coordinators (FOSC) responding to oil discharges, industrial chemical releases, weapons of mass destruction (WMD) incidents, and natural disasters. In short, NSF supports any incident that might severely tax the resources of the home unit, especially incidents of an environmental nature. The Strike Teams also deploy before large events like the Olympics or the NATO anniversary to provide an on-scene capability in the event of a terrorist release of a weapon of mass destruction.

Our statutory mandate as outlined in the Clean Water Act, the Oil Pollution Act and the National Contingency Plan requires us to respond to domestic incidents. Potentially, we could work for any FOSC from the Coast Guard, the Environmental Protection Agency (EPA), Department of Defense (DoD) or Department of Energy. Typically, we work for EPA and the Coast Guard. Our EPA work requires us to deploy to many parts of the United States unfamiliar with the Coast Guard (coal mines in Kentucky and oil fields in Oklahoma). We usually get a lot of stares from the locals in places like that because they are wondering what the Coast Guard is doing so far from the coast.

Over the years, the NSF teams have deployed to places far more exotic and foreign: Mozambique, the Bahamas, Tajikistan, Venezuela, Honduras, Saudi Arabia, Kuwait, Morocco, Spain, Mexico, Greenland, Japan, Saipan, and Samoa.

The Strike Teams went to Saudi Arabia and Kuwait during the Gulf War to assist with the huge oil spills created by retreating Iraqi forces. The Coast Guard

has a Memorandum of Understanding with DoD to provide for military environmental response operations. In most cases, personnel from the Strike Teams would be the first choice to deploy in support of such operations.

The Coast Guard supports the Department of State in the event that foreign governments need environmental response assistance. When an environmental incident occurs in a foreign country, the country may make a request to the local U.S. embassy for assistance. It is gratifying that foreign governments often specifically request Strike Force assistance. Each Strike Team's area of responsibility (AOR) includes non-U.S. geography. The Atlantic Team has Europe, the Middle East and Atlantic/northern Africa; the Gulf Team has the Caribbean, Central and South America; the Pacific Team has Oceania, Australia, New Zealand, Pacific/southern Africa and the Far East. The first time I ever met a component of the NSF was when the Atlantic Team deployed to the waters of Greenland to respond to an oil spill from an oil tanker in 1977.

On the rare occasion that a foreign government requests assistance, they make their request to the local American embassy. The embassy forwards the request to the Department of State in Washington, D.C. The Department of State may decide to support the request if it is in the national interest. In that case, State forwards the request to Coast Guard Headquarters to decide which Coast Guard asset to deploy to support the request. The foreign government making the request has to agree to pay the Coast Guard's expenses. It's surprising how simple the process is and how rapidly it can be put into operation. If the emergency is an environmental response mission, the Strike Teams may be directed



The oil tanker *Jessica* offshore Galapagos Naval Base. National Oceanic and Atmospheric Administration (NOAA) photo.

to deploy. Over the last two years, the Strike Teams have deployed to Ecuador, Samoa, Spain, the Republic of Panama, Western Samoa, Okinawa, and Saipan.

In February 1999, the Gulf Strike Team, responding to a request from the Honduran government, provided technical assistance to extinguish a fire in a transformer room at the el Cajhon hydroelectric powerplant. U.S. Air Force, Gulf Strike Team and Honduran engineers made repeated entries into the plant to assess the fire, conduct air monitoring, extinguish the fire with foam and monitor for reflash.

In January 2000, the Gulf Strike Team responded with a Center for Disease Control team to the Port of Laguaria, Venezuela. Rainfall-induced mudslides had struck the container yards and warehouses of the port causing widespread damage to cargo containers. Hundreds of containers were strewn about the port and some of them contained hazardous cargo. Some of the damaged warehouses contained hazardous chemicals. The Strike Team identified hazards, developed sampling protocols, work plans and safety plans, and assisted with monitoring the extensive site.

In January 2001, a small oil tanker, the *Jessica*, grounded on a rock ledge in the Galapagos Islands, a national park of Ecuador. The government of Ecuador requested Strike Force assistance and the Gulf Strike Team deployed 10 people and its Vessel of Opportunity Skimming System. The team spent two weeks assisting the Ecuadorian navy and Galapagos National Parks personnel, transferring oil from the tanker and assisting with the application of dispersants to the spill. Earlier, the Pacific Strike Team responded to a request for assistance from Western Samoa to remove oil from longline fishing vessels stranded by a typhoon.

Most recently, the Gulf Strike Team executive officer deployed to Spain in December 2002, to provide technical assistance to that country as it dealt with the impacts of the *T/V Prestige* heavy oil spill on its northern coast.

The Coast Guard is signatory to cooperative agreements with the government of Mexico, Canada and the Republic of Panama to provide assistance to them in the event of environmental incidents. The NSF is usually tasked with deploying in response to such incidents. The Atlantic Strike Team participates in exercises and response deployments with Canada in the Atlantic and on the Great Lakes and St.

Lawrence Seaway. The Gulf Strike Team participates with Mexico in the Gulf of Mexico and with the Republic of Panama for incidents in the Panama Canal. The Pacific Strike Team participates with Mexico for spills in the Mexican waters of the Pacific and with Canada for oil spills along the Canadian border in the Northwest.

Sometimes, the NSF is asked to deploy to foreign countries for missions outside of our normal duties. This fall, the Gulf Team deployed two personnel to the Republic of Panama to gather forensic oil samples from a vessel suspected of discharging oil in the Port of

Charleston, S.C. This was a rather unique task for the NSF, since it usually only provides response services and doesn't get involved with the investigative end of incidents. In this case, not only did the team get to work the spill case in Charleston, but it also got to assist with the investigation. The commanding officer of Marine Safety Office (MSO) Charleston asked the Gulf Team to perform this duty because Strike Team personnel maintain a readiness to deploy overseas. The NSF's readiness posture and mission require team personnel to maintain passports and an extensive level of medical prophylaxis (lots of shots).

In addition to operational deployments, the Strike Force also provides training to foreign governments and to DoD personnel stationed overseas. The Pacific Strike Team provides training to DoD personnel in places like Okinawa and Japan. The NSF also provides assistance with the planning and execution of some exercises overseas. Personnel from the NSF Coordination Center Pollution Response Exercise Program (PREP) and the Atlantic Strike Team assisted the Navy with an oil spill exercise conducted in Bahrain, in December 2002.

While technically not considered foreign deployments, the NSF has responsibilities in all U.S. territo-



Oiled beaches on Spain's Atlantic coast after the heavy oil spill of the *Prestige*. NOAA photo.

ries. The Gulf Team routinely deploys to Puerto Rico and to the U.S. Virgin Islands working oil spills for the Coast Guard and hazardous chemical incidents for the Environmental Protection Agency. Similarly, the Pacific Strike Team responds to incidents in the far-flung U.S. territories of the Pacific. For example, they assisted MSO Guam in dealing with the devastating effects of Typhoon Pongsona, which hit the island in December 2002. The storm left the island without power for several weeks, caused a large fire at an oil tank farm, and created countless smaller oil spills from damaged boats and waterfront facilities.

Now that the National Strike Force has been designated as the only Coast Guard unit allowed to provide hands-on response to WMD incidents, it is possible that the number and diversity of our overseas deployments may increase. Since the terrorist attacks of 2001, the NSF has been increasing its expertise and equipment to meet the new WMD threat and the missions of homeland security. The NSF is constantly striving to increase Coast Guard readiness and capability to serve the emerging national interests as incident managers, trainers, consultants, and technicians, either at home or abroad.



# MSO San Juan: *Guardian of the Caribbean*

by Capt. WILLIAM J. UBERTI, Commanding Officer, MSO San Juan



### Diverse Area of Responsibility

Marine Safety Office (MSO) San Juan's area of responsibility encompasses Puerto Rico (including the offshore islands of Culebra, Vieques, Mona and Desecheo) and the U.S. Virgin Islands, consisting of St. Thomas, St. Croix, and St. John. Also included is the responsibility for oil and chemical response for the Navassa Island, a U.S. territory located approximately 30 miles west of Haiti. The island of Puerto Rico is approximately 100 miles long and 30 miles wide with 11 major ports. San Juan, located on the northern side of the island, is the capital city and largest seaport. San Juan ranks sixth of the top 100 ports in the United States for cargo volume and cargo value, and is the fourth largest container port in the United States (16th in the world) as well as being the third largest cruise ship port in the U.S.

(fifth in the world) based on number of passengers. More than 868 million gallons of petroleum products pass through San Juan's oil terminals yearly.

On the south coast of Puerto Rico, the ports of Guayanilla, Tallaboa, Ponce, Aguirre, Guanica, and Yabacoa transfer more than 325 million gallons of petroleum products a year including liquefied natural gas (LNG) and liquid petroleum gas (LPG). The south coast also handles more than 62,000 containers annually, which is expected to significantly increase with the building of the Port of the Americas, a transshipment port for the handling of post panamax ships with 6,000 to 8,000 TEU (the 20-foot equivalent unit, the international measure for container cargo) capacities.



In the Virgin Islands, St. Thomas ranks as the busiest cruise ship port in the world by number of cruise ship port calls and passengers. The HOVENSA oil refinery located on St. Croix serves as the fourth largest refinery in the world and the largest in the western hemisphere. This refinery is capable of processing more than 500,000 barrels per day. In addition, the refinery's port of Limetree Bay is the fifth largest tanker port in the United States. St. John, the smallest of the U.S. Virgin Islands, receives more than 207,000 passengers annually.

Due to its strategic location, MSO San Juan holds a unique leadership role in the Caribbean Region. Four areas in which the MSO is making a difference include: enforcement of the Caribbean Cargo Ship



**An LNG facility in Guayanilla, Puerto Rico. USCG photo.**

Safety Code, deterring entrance of stowaways, implementation of port security initiatives, and oil spill response and prevention.

#### **Caribbean Cargo Ship Safety Code Enforcement**

The Caribbean Region Port State Control Committee adopted the Caribbean Cargo Ship Safety Code in 1996 to regulate typical small freighters that trade in the region which are not subject to the 1974 International Convention of Safety of Life at Sea (SOLAS). The Code applies to all vessels less than 500 gross tons trading in the Caribbean region and was adopted by the United States as equivalent to

U.S. regulations. Before its enactment, MSO San Juan faced a plethora of substandard small cargo vessels operating from Caribbean ports that met no recognized construction or safety standards. Since that time the number of commercial vessels less than 500 gross tons has significantly dropped from 200 to approximately 50 calling annually in Puerto Rico and the U.S. Virgin Islands. Although the Caribbean Cargo Ship Safety Code has done much to improve the safety conditions on these

vessels, many still experience a high detention rate due to poor maintenance programs. In order to better address this issue, MSO San Juan is taking the lead in establishing a training program for port state control inspectors in the Caribbean island nations. The training program includes both classroom and on the job experience with qualified marine inspectors.

#### **Stowaways**

One area of concern from both a safety and security point of view is the entrance of illegal immigrants as stowaways on incoming small cargo ships. This is particularly true for vessels entering Puerto Rico from the nearby Dominican Republic. These vessels, usually carrying containers or break-bulk cargo, arrive weekly and, until recently, posed a significant stowaway problem. As a result Captain of the Port (COTP) orders have been issued requiring all vessels departing certain foreign ports (noted for stowaway smuggling) to provide security plans prior to entering a U.S. port. The plans must include procedures for sweeping the ship prior to departing the foreign port and a sweep of the ship prior to entering the United States. Stowaways found in a U.S. port subject the vessel owner or operator to a \$27,500 fine for violation of a COTP order and increased future at-sea boardings as a high interest vessel (HIV). Working closely with the Immigration and Naturalization Service, this policy has produced a substantial reduction in the number of illegal migrants arriving in port.



**The Lady Kishna, a typical Caribbean cargo ship. USCG photo.**





**Stowaways being apprehended. USCG photo.**

### Port Security

With such a widespread AOR and limited Coast Guard resources, port security can become a real challenge. Of particular concern is protection of the cruise ship terminals, LNG/LPG facilities, and key oil terminals and refineries. In order to successfully accomplish this mission, Port Security Committees were formed to address port vulnerabilities and develop port security plans. In addition, MSO San Juan has established a sea marshal program to conduct HIV boardings and has also partnered with Forces United for Rapid Action (FURA-Puerto Rico Maritime Police) and the Department of Planning and Natural Resources in the Virgin Islands to assist with HIV escorts. MSO San Juan is also working closely with the FBI and local government agencies to develop contingency plans for dealing with weapons of mass destruction (biological, chemical, or nuclear) incidents.



**A boom deployment exercise. USCG photo.**

### Maritime Security Act of 2002

The recently signed Maritime Security Act of 2002 requires an assessment of antiterrorism measures at foreign ports that trade with the United States. This includes reviewing the ports' container screening process, cargo security measures, and vessel security procedures. The law allows the United States to deny entry to any vessel carrying cargo or passengers that does not have effective counter-terrorism measures in place. Soon after passage of this law, MSO San Juan received numerous requests from the surrounding island nations to explain how counter-terrorism measures would be evaluated. As a result, MSO San Juan delivered a workshop in the Dominican Republic outlining to the Caribbean nations ways to identify port vulnerabilities and reduce risk.

### Oil Spill Response

As a leader in the spill response and prevention arena, MSO San Juan had been engaged with its Caribbean neighbors in an effort to improve preparedness throughout the region. As Puerto Rico's closest international neighbor, the Dominican Republic has been the recipient of much attention by MSO San Juan. Through a concentrated partnership with the 7th Coast Guard District and Coast Guard Headquarters, MSO San Juan has participated in oil spill response drills and training sessions that were used to develop an area contingency plan for this large Caribbean island nation. These efforts helped to solidify an Incident Command System (ICS) structure that can be integrated into the U.S. Coast Guard's ICS organization in the event of an incident that crosses international boundaries. MSO San Juan has also been involved in an environmentally sensitive area-mapping project that will greatly assist in spill response planning efforts for the Dominican Republic.

### Challenges Ahead

Many challenges lie ahead, especially in the port security arena. Presently, plans are in place for the installation of the Vessel Traffic Information System for the port of San Juan. Three port security harbor boats are also slated for this AOR within the next year. As we gain more personnel/vessel assets and better use of technology we will be successful in increasing our maritime domain awareness and lower the vulnerability of the AOR to terrorist attacks.



# Coast Guard Supports Caribbean Training

by Lt. BLAKE WELBORN, Marine Safety Training Branch, U.S. Coast Guard Training Center



U.S. Coast Guard members supported the International Maritime Organization's (IMO) training initiative in Port of Spain, Trinidad and Tobago from Oct. 14 to Dec. 12, 2002. Members of the Coast Guard's 7th District Marine Safety Division, Training Center Yorktown, and Marine Safety Office (MSO) Tampa traveled there to participate in the Third Caribbean Ship Inspector Training Course (CASIT 3).

The CASIT initiative was established under IMO's Caribbean Memorandum of Understanding (CMOU). The CMOU currently has 20 member governments that benefit from the coordination. Benefactors include Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, Netherlands Antilles, Saint Kitts & Nevis, Saint Lucia, Saint Vincent & the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands

The CASIT program is intended to train small ship inspectors to serve as Caribbean maritime administration representatives. Graduates are equipped to carry out flag state control inspections on their domestic vessels less than 24 meters (78 feet) in length and annual and renewal surveys on vessels up to 500 GT. These inspectors will be capable of carrying out port state control inspections under the Caribbean Cargo Safety Ship Code and other IMO and regionally accepted criteria on vessels up to 500 gross tons, and the inspection of documents on all ships regardless of gross tonnage.

The 7th District Marine Safety Division has been working for four to five years within the framework of IMO's CMOU on port state control and with its

governing committee to increase the level of knowledge and experience in port state control practices throughout the region. A key component has been IMO's 13-week CASIT course. The first nine weeks are foundational work done in the classroom in Trinidad. Upon completion of the classroom section, the students spend four weeks at a 7th District MSO "learning the ropes" from Coast Guard field inspectors. IMO provides one full-time instructor and the Coast Guard provides additional instructors to supplement. Mr. Jim Leak served as the IMO instructor as well as the course coordinator of CASIT 3.

Although the material for the course is taken from the original CASIT course developed by det Norske Veritas for IMO and other courses, the instructors brought prepared lesson plans and field experience to the course.

This joint educational effort proved advantageous to not only the students but also the Coast Guard. Lt. Cmdr. Robert Kirk of the 7th District Marine Safety Division said, "We hope that by participating in this program we will enhance the quality of vessels arriving to the U.S. from the Caribbean, as well as improve shipping within their own waters. If successful, the long term results from this effort should be a reduction in not only our work from a [port state control] perspective, but also the potential to reduce search and rescue work in the region."



**Lt. Dan Lawrence (2nd from right), of Training Center Yorktown, with some of the CASIT3 students during the simplified stability proof test lesson. USCG photo.**

# Caribbean IMO Center *for* Pollution, Prevention *and* Response

by Lt. Cmdr. RICK RODRIGUEZ, U.S. Coast Guard, IMO Liaison–Curacao



Shipping is perhaps the most international of all the world's great industries and one of the most dangerous. It has always been recognized that the best way of improving safety at sea is by developing international regulations that are followed by all shipping nations, and from the mid-19th century onwards, a number of such treaties have been adopted. Several countries proposed that a permanent international body should be established to promote maritime safety more effectively, but it was not until the establishment of the United Nations itself that these hopes were realized. In 1948, an international conference in Geneva adopted a convention formally establishing the Inter-Governmental Maritime Consultative Organization. This new organization met for the first time in London in 1959. In 1982, after careful consideration, the name changed more appropriately to the International Maritime Organization, more commonly referred to as the IMO.

IMO is the United Nations specialized agency respon-

sible for improving maritime safety and preventing pollution from ships. IMO adopts international shipping regulations but it is the responsibility of governments to implement those regulations. The purposes of the organization, as summarized by Article 1(a) of the Convention, are "to provide machinery for cooperation among Governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade; to encourage and facilitate the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships." In other words, the IMO promotes "safer shipping and cleaner oceans." The organization is also empowered to deal with administrative and legal matters related to these purposes.

IMO's first task was to adopt a new version of the 1974 International Convention for the Safety of Life at Sea (SOLAS),



IMO poster. Image courtesy IMO.

the most important of all treaties dealing with maritime safety. This was achieved in 1960 and IMO then turned its attention to such matters as the facilitation of international maritime traffic, load lines, and the carriage of dangerous goods, while the system of measuring the tonnage of ships was revised.

Nevertheless, although safety was and remains IMO's most important responsibility, a new problem began to emerge—pollution. The growth for oil being transported by sea and in the size of oil tankers was of particular concern. The Torrey Canyon disaster of 1967, in which 120,000 tons of oil was spilled, demonstrated the scale of the problem.

During the next few years, IMO introduced a series of measures designed to prevent tanker accidents and to minimize their consequences. It also tackled the environmental threat caused by routine operations such as the cleaning of oil cargo tanks and the disposal of engine room wastes—in tonnage terms, a bigger menace than accidental pollution.

The most important of all these measures was the 1973 International Convention for the Prevention of Pollution from Ships as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). It covers not only accidental and operational oil pollution but also pollution by chemicals, goods in packaged form, sewage, garbage and air pollution.

The International Convention on Oil Pollution Preparedness, Response, and Co-operation (OPRC), adopted in November 1990, is designed to help Governments combat major oil pollution incidents. The convention became international law in May 1995. OPRC 90 affirms the rights of a coastal state to take measures on the high seas to prevent, mitigate, or eliminate danger to its coastline from a maritime casualty, and provides a global framework for international cooperation in combating major incidents or threats of marine pollution.

To assist governments in understanding the importance of OPRC 90's main goal, that is, "to facilitate international cooperation and mutual assistance in preparing for and responding to a major oil pollution incident and to encourage states to develop and maintain an adequate capability to deal with oil pollution emergencies," the IMO, in cooperation with the United Nations Environment Program (UNEP), established three regional activity centers:



**An oil recovery boom capturing oil. USCG photo.**

- The Regional Activity Center/Regional Marine Pollution Emergency, Information and Training Center for the Wider Caribbean Region (RAC/REMPEITC-Carib), is an IMO office that assists the countries in the region in preventing, preparing for, and responding to major pollution incidents;
- A centre in Malta to coordinate anti-pollution activities in the Mediterranean, known as the Regional Marine Pollution Emergency Center (REMPEC); and
- IMO also participates in the Regional Program on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA).

RAC/REMPEITC-Carib is a UNEP and IMO center established in Curacao, Netherlands Antilles to assist countries in the Wider Caribbean and Latin America to prevent and respond to major pollution incidents in the marine environment. The center was established on a provisional basis by a decision of the Seventh Intergovernmental Meeting of the Action Plan and the Fourth Meeting of the Cartagena Convention and Protocols in December 1994. The center opened for business on June 15, 1995 within the framework of the Caribbean Environmental Program, under the management of UNEP, IMO, and the government of the Netherlands Antilles. In June 2001, the RAC/REMPEITC-Carib Steering Committee elected Mr. Mark Meza, Coast Guard Office of Response, as the first chairperson of the steering committee. Mr. Meza has chaired the center's steering committee ever since. On World Maritime Day, Sept. 26, 2002, UNEP, IMO, and the government of the Netherlands Antilles signed a memorandum of understanding permanently





**Left to right: Lt. Cmdr. Rick Rodriguez; Ben Komproe, Director; Minister Herbert Domacase; Carla Davelaar, Secretary.**

designating REMPEITC-Carib as a Regional Activity Center. This means that UNEP and IMO have gained the confidence of the center's staff, and the commitment of the host government and the steering committees to designate the center as IMO's satellite office for the Wider Caribbean and Latin American Region.

The center's director and secretarial staff are appointed by the government of the Netherlands Antilles under the supervision of the Ministry of Traffic and Telecommunications. The seconded consultants to the center are experts in marine environmental protection, port safety, and port security. U.S. Coast Guard officers have served at the center since 1995, with each officer appointed for a two- or three-year period. Between 1995 and 2001, The Netherlands assisted the center with their own seconded officer appointed from Holland's North Sea Directorate.

The U.S. Coast Guard's Office of Response (G-MOR) coordinates and integrates field planning, preparedness and response operations for pollution incidents, natural disasters, marine accidents, terrorism and other threats to public safety, the marine environment, and marine transportation/commerce. In addition, G-MOR manages the billet known as IMO Liaison-Curacao, to RAC/REMPEITC-Carib.

Officers assigned to the center gain considerable experience on the international level; promoting international conventions and protocols, and acting as an advisor during marine incidents. Most national contacts for the center in the region are at the senior government level, such as a secretary or minister having responsibility of the maritime sector, and at the governor/prime minister level. Generally speak-

ing, the center's consultants are viewed as IMO's senior representatives of a region. The IMO has labeled the seconded experts as senior consultants.

Following their RAC/REMPEITC-Carib tour, Coast Guard officers have moved on to command cadre assignments at marine safety offices. Senior consultants have the greatest opportunity to sharpen their leadership and management skills as well as keenly develop their skills in managing an annual budget exceeding \$500,000. Coast Guard officers have proven that the experience gained as senior consultants to the IMO are turned into skills to be used as the next leaders of Coast Guard field units. Coast Guard officers assigned to RAC/REMPEITC-Carib are: Capt. R. Seebald (1995-1997), Cmdr. M. Maes (1997-1999), Cmdr. P. Keane (1999-2001), and Lt. Cmdr. R. Rodriguez (2001-present).

To conduct the center's mission, resultant objectives, and related activities, assistance is needed not only from the countries, island states and territories of the region, but also in-kind and financial support of donor countries and organizations, and private entities. Several activities need the support of highly experienced persons or specialized organizations.

Based on the experience of IMO's consultants, the center has categorized the goals of the Cartagena and the OPRC 90 Conventions to fulfill the needs of the states and territories of the Caribbean and Latin America:

- Provide expertise and support to responders;
- Establish a regional center for collecting and managing oil spill reports;
- Establish partnerships with other stakeholders;
- Ensure stakeholders participate in the development process;
- Encourage the development of national capabilities;
- Develop a legislative framework for countries to adopt;
- Develop standardized environmentally sound response practices by training responders;
- Assist in developing a response communication strategy;
- Use and promote a comprehensive approach to oil spills;

- Manage emergencies so they do not become a crisis; and
- Utilize seconded staff from national and industry groups to augment center resources.

To promote the stated goals, the center has developed a series of objectives and activities that are then placed into a two-year work plan and distributed throughout the region. Additionally, the center is mandated to operate in the three official languages of the region: English, Spanish, and French. The objectives and associated activities are as follows:

- *Strengthen National Capabilities:* Assist governments in establishing national response systems through training, risk assessments, and exercises.
- *Facilitate Cooperation and Mutual Assistance:* Promote bilateral and multilateral agreements and government-industry partnerships. Maintain the Caribbean Island OPRC-90 Plan through updates and exercises.
- *Exchange Information:* Organize specialized meetings to promote international organizations, test national contingency plans, sensitivity index mapping, develop risk assessments, monitor and participate in government/industry projects. Expand regional communication through the Internet/Web page as well as update regional spill data.
- *Coordinate Response Resources for Emergencies:* Promote and conduct marine pollution education, training, and exercises. Conduct subregional and regional exercises for testing the Caribbean Island and the Mainland OPRC Plans.
- *Assist in Establishing a Legal Response Framework:* Formulate legislation to facilitate the implementation of international conventions (Cartagena, OPRC 90, Civil Liability and Fund Conventions, MARPOL 73/78)

The center's business plan is assisting countries in obtaining the national capability to implement the Cartagena Convention Oil Spill Protocol and the OPRC 90 Convention to have a sustainable marine environment in the Wider Caribbean and Latin American region. This can only be accomplished by

firm commitments from the Cartagena Convention Contracting Parties, nations of the region, and the oil and shipping industry. In addition, the center has created a network of regional instructors to conduct the activities. These instructors are from industry and governments; they use their own time, and are not paid for their expertise, only for their travel expenses. As an example, the center recently coordinated a week-long workshop designed to train supervisors and on-scene commanders to manage an oil spill. The course, known as the OPRC Level II model course, was designed to provide the basic response strategies and tactics as well as the organizational planning skills required of operational supervisory staff to deal with major oil spills. The course was taught to 33 students representing 23 nations, and is just one of the many model courses the IMO and the center have developed through the OPRC subcommittee, local experts, and the shipping and oil industry. Other courses offered by the center are the Level 1 for first responders, Level 3 for administrators and senior management seminar, train-the-trainer course, use of response equipment and sensitivity mapping for oil spill response, and contingency planning.

The Coast Guard has a great presence and influence in the Caribbean and Latin American region. Officers assigned to the center are viewed as the local U.S. Coast Guard officer, and routinely liaise with the Royal Dutch Navy, Netherlands Antilles Coast Guard, U.S. Consul General of the Netherlands Antilles, U.S. Air Force, and the U.S. Navy for matters related to the Caribbean drug interdiction mission and for search and rescue related matters. Additionally, Coast Guard cutters and aircraft routinely visit Curacao. These operational units, although not expecting to be greeted by the "IMO Liaison" upon arrival, have been pleased to see the local 'Coastie' waiting at the pier or ramp. In January 2001, former Coast Guard Commandant James Loy paid a visit to Curacao.

In conclusion, RAC/REMPEITC-Carib is the IMO and UNEP office, which assists the countries in the region in preventing, preparing for, and responding to major pollution incidents. The center has a reputation for fostering cooperation within the wider Caribbean and Latin American region, focusing on developing countries while considering national and regional needs. The ultimate goal is to implant marine ecological sustainability into existing regional and national training institutions, and make it a top priority for national governments.



# An Approach *to* Management: *A Look at Japan and the United States*

by Lt. Cmdr. SADATOSHI KOIKE, Japanese Coast Guard

It is often said that management is an art. I understand this more than ever now that I have completed my tour with the U.S. Coast Guard Human Element and Ship Design Division (G-MSE-1). During the last decade, Total Quality Management became something of a buzzword and was interpreted without hard and fast rules in business and government alike. No matter if it is the U.S. or Japanese Coast Guard, organizational strategies and cultural viewpoints influence management practices. Through my study of risk-based decision-making (RBDM), a practice of the Prevention Through People philosophy, I have a better understanding of the differences in management approaches between Japan and the United States. While both approaches are useful, each has its own strengths.

My professional interest in RBDM stems from Japan's newly formulated Policy Evaluation Law, which is similar to the U.S. Government Performance and Results Act. Rather than a single paintbrush or easel, RBDM is one group of tools used in the art of management. RBDM is a process that organizes information about the possibility for one or more unwanted outcomes into a broad, orderly structure that helps decision makers make more informed management choices. Japan's new Policy Evaluation Law requires all government ministries and agencies to prepare performance plans and monitor performance. RBDM can potentially be used as a tool for the Japanese Coast Guard to use for performance monitoring and decision-making. Studying examples of best practices of models of risk management and assessment methodologies provides invaluable information on developing safer operations.

If cultural viewpoints influence the art of management, what are the cultural differences? Japan leans towards a *village-based idealism* that places great emphasis on responsibility and the interlocking of individuals to depend on each other within a small group. When an individual belongs to

a group so strongly, the group becomes greatly impacted by even the smallest of mistakes by one member. Conversely, the United States follows an idealism that emphasizes *individuality* with groups of individuals forming a network-type of organizational system. Both of these cultural ideals influence their respective management styles. The following illustrates two examples of such.

Take a problem such as an oil spill, for example, with regard to management. A Japanese-style response would be to handle the situation according to protocol previously set by individual agencies, such as clean-up crews, police, investigators, and environmental analysts. After the spill had been handled, personal responsibility is placed on a specific individual for allowing the accident to occur. In contrast, a U.S.-style response to the spill would be to coordinate various and necessary agencies to devise a common solution. The factors leading to the oil spill would be systematically compiled, analyzed, and used to determine reasons for the accident. This data is often used by the Coast Guard to devise tools to improve procedural matters and thereby reduce the risk and further consequences of such accidents from happening.

The contrasting practices with regard to accident prevention provide another example of differing management styles. While both countries focus on technical standards, prevention is sought by the United States with safety training and procedures; prevention in Japan is enforced by following the manuals and instructions. Another aspect to prevention in Japan is the high standard of responsibility placed on each individual to perform meticulously without error.

How do the aforementioned cultural differences influence Japanese and American methods for analyzing risk? Japan often employs a more inductive, "bottom-up" way of think-

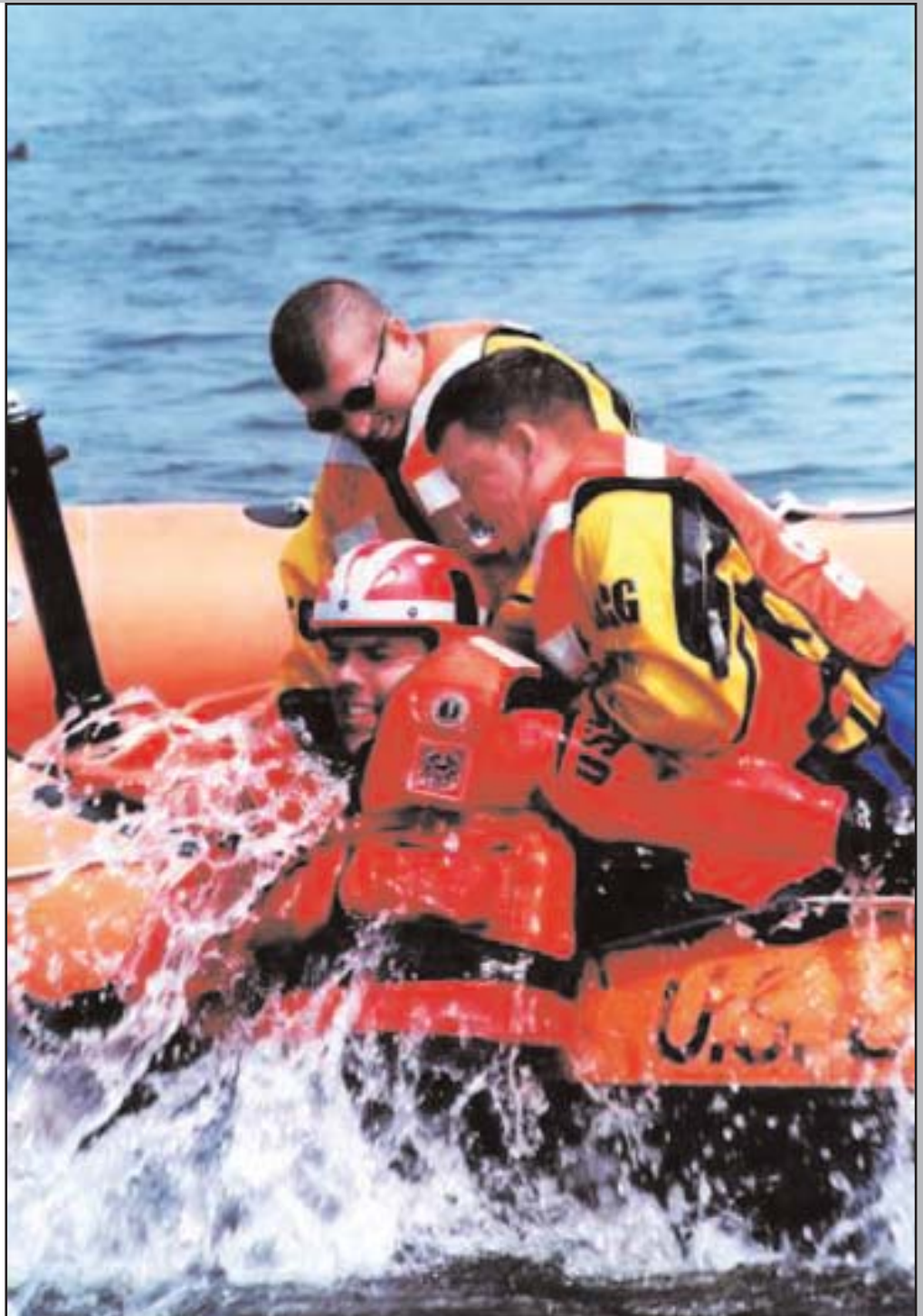


ing. This bottom up approach is captured in RBDM's Event Tree Analysis (ETA). ETA logically develops visual models of the possible outcomes on an initiating event. In contrast to the bottom-up approach, the United States primarily uses a more deductive, "top-down" way of thinking. The top-down approach is analyzed via RBDM's Fault Tree Analysis (FTA). FTA develops visual models of how logical relationships among equipment failures, human errors, and external events can combine to cause specific accidents. While both methods are useful, each has its own strengths in analyzing risk.

Dealing with human errors and reducing risk is not a problem of using the right or wrong methodologies; it is a matter of understanding the tools and culture of the organization, and artistically creating a solution unique to the specific management problem. Nonetheless, everything is a trade-off of either an organization's fiscal health or the personal safety of others. As I have learned during my fellowship with G-MSE-1, trade-offs can be systematically analyzed with the tools of RBDM.

---

*For more information on calculating risk and reducing human error, view the Coast Guard's Risk Web site at [www.uscg.mil/hq/g-m/risk](http://www.uscg.mil/hq/g-m/risk), or call the Risk Hotline at (202) 267-2829.*



**Petty Officer 3rd Class Robert Campana from Station New York is pulled to safety during a training exercise by Petty Officer 1st Class Chris Beahr (left) and Petty Officer 2nd Class Jason Olsen, both from Station Sandyhook, New Jersey. Prevention is sought by the United States with safety training and procedures, one of the differences between the Japanese and U.S. Coast Guards. USCG photo by Public Affairs Officer Tom Sperduto.**

*Lt. Cmdr. Sadatoshi Koike from the Japanese Coast Guard was on a short-term fellowship at G-MSE-1 from September 2002 to January 2003 studying how RBDM systems are applied by the U.S. Coast Guard. He thanks the people of that division for their cooperation and kind assistance to his research. He can be reached at [s.koike@e-mail.ne.jp](mailto:s.koike@e-mail.ne.jp)*

# International Cooperation: *Salvage of the Japanese Training Ship* Ehime Maru

by Lt. Cmdr. TODD OFFUTT, Chief, Investigations & Analysis Department, U.S. Coast Guard MSO Honolulu

On Feb. 9, 2001, the *USS Greeneville*, a Los Angeles class nuclear-powered submarine, collided with the Japanese training vessel *Ehime Maru* roughly nine miles off the southeastern shore of Oahu, the most populated island of the state of Hawaii. The *Ehime Maru* sank in 2,000 feet of water. Twenty-six of 35 crewmembers were rescued.

This tragic incident was followed by a five-month, \$60 million salvage operation from July to November 2001 that involved the coordination, talent and compassion of many in the United States and international communities. Accordingly, this is not an account of the events that led to the sinking of the *Ehime Maru*, an exhaustive record of the extraordinary engineering aspects of the salvage, nor a long list of participant agencies, but a commentary on the extraordinary efforts to honor the memories of the victims.

### **Perspective: Effects of Geography & Culture**

The state of Hawaii and surrounding territories are a diverse mix of people and places. Hawaii itself lies 1,470 miles north of the equator and 2,500 miles southwest of the continental U.S. The six main islands, including Oahu, are part of a 128-island archipelago stretching 1,523 miles.

The state is one of the most racially diverse places in the world as there is no majority. In the 2000 U.S. census, more than 20 percent claimed multi-ethnic backgrounds; the national average was 2.4 percent. This is not simply a place where East meets West, but a place where the cultures merge in a manner that seems to bring out the best in all of them. Moreover, it is also the only U.S. state with a royal heritage. Its strong ties across the Pacific, and Japan in particular, are typified by the fact that Hiroshima was named its first sister city.

Because of its location, it's an important port for the U.S. Navy. Based in Hawaii, the Pacific Command is geographically the largest of the unified service commands, covering about 50 percent of the earth's surface from the U.S. West Coast to Africa's east coast, and from the Arctic to the Antarctic. Its historic significance to the region is similarly strong.

The state also boasts important commercial, academic and scientific interests worldwide. One of the most successful trade zone programs in the United States, the Hawaii Foreign Trade Zone, handles roughly \$3 billion worth of merchandise from 257 firms. The waters are renown for their biodiversity, and its geography attracts interests spanning astronomy and ocean sciences to geology and biomedical research. These many influencing factors make for a challenging milieu of opinions, perspectives, and approaches to decision making.

### **Challenges: Complexity of Salvage Operation & Investigation**

While the U.S. Coast Guard routinely interacts with other federal, state and local agencies in this geographically and socially diverse region, the salvage of the *Ehime Maru* by the Navy was especially notable due to a number of issues: the high-profile nature of the incident; diplomatic issues and Japanese public expectations on vessel recovery in very deep water; technical concerns of precedent-setting engineering operation (the operation was a first for the Navy, which had never pulled an 830-foot ship from a depth of 600 meters [2,000 feet]); depth of vessel beyond diver capability; fore and aft structural damage to complicate lift in excess of 750 tons; and Environmental issues.

Through a series of carefully planned events, the operation spanned more than nine months, with roughly five of

A thorough discussion of the complex technical and engineering aspects of the salvage operation is included in the July–August 2002 *UnderWater* magazine article "Behind the Scenes with the US Navy: Recovering the Ehime Maru." It can be located online at: [www.diveweb.com/commdiv/features/024.03.htm](http://www.diveweb.com/commdiv/features/024.03.htm).



those comprising the actual salvage. The operation included seven major phases, each of which required coordination across many government agency jurisdictions and involved an interwoven host of issues ranging from public health, environment, and maritime safety, to name a few.

- **Phase I - Environmental Assessment:**  
Identified shallow water site where the *Ehime Maru* would be temporarily moved to complete necessary preparatory work; assessed environmental impact; confirmed onboard pollution potential; developed pollution response plans; incorporated available emergency response equipment; met National Environmental Policy Act requirements; and determined requirements for deep ocean disposal of *Ehime Maru* after crewmember recovery. The assessment was completed in less than 13 weeks at a cost of nearly \$2 million.
- **Phase II – Mobilization of Recovery Forces:**  
Utilized two commercial vessels (*M/V Rockwater 2* for lifting *Ehime Maru*, *M/V Ocean Hercules* for removing masts and debris).
- **Phase III - Rigging at 600m:**  
To accomplish the rigging and lifting operations, specialized offshore equipment was mobilized from Singapore, Europe, Philippines, Texas, Louisiana, and California.
- **Phase IV - Deep Water Lift & Relocation to 35m Depth:**  
Established and enforced temporary flight restrictions and on-water safety zones established by the Federal Aviation Administration and the Coast Guard, respectively.
- **Phase V - Deep Water Site Survey:**  
Conducted post-lift Remote Operated Vehicle (ROV) survey/recovery at 600m site using Japanese Vessel *JDS Chihaya* and ROV system.
- **Phase VI - Crew Member Recovery:**  
Used surface-supplied divers from U.S. Navy and Japanese Military Self Defense Force Divers (JMSDF).
- **Phase VII - Preparation and Relocation to Deep Water:**  
JMSDF divers monitored recovery operations at the site and assisted in the survey/recovery of objects of interest at the site once vessel had been relocated to the final site, 12 miles off Kalaeloa (Oahu) in water 6,000 feet deep. On *JDS Chihaya's* stern, honors were rendered by the Japanese crew as well as the U.S. Navy Mobile Diving and Salvage Unit Commanding Officer.

## Participants

The salvage involved numerous agencies, most notably the U.S. Navy Supervisor of Salvage (SUPSALV) and Submarine Development Squadron Five. A division of the Naval Sea Systems Command, SUPSALV deploys worldwide to provide technical, operational, and emergency support to the Navy and other federal agencies in the ocean engineering disciplines of marine salvage, pollution abatement, diving, diving system certification and underwater ship husbandry.

The Coast Guard's participation primarily involved the enforcement of safety zones around various phases of the salvage operation, and the broadcasting of notices to mariners to warn them of associated hazards. Since the incident involved a non-public vessel, the Coast Guard also conducted a casualty investigation pursuant to its responsibilities under Title 46, US Code. The National Transportation Safety Board eventually assumed lead for the investigation. The Federal Aviation Administration also created a temporary flight restriction for the Deep Water Recovery and Final Relocation Site for the *Ehime Maru*.

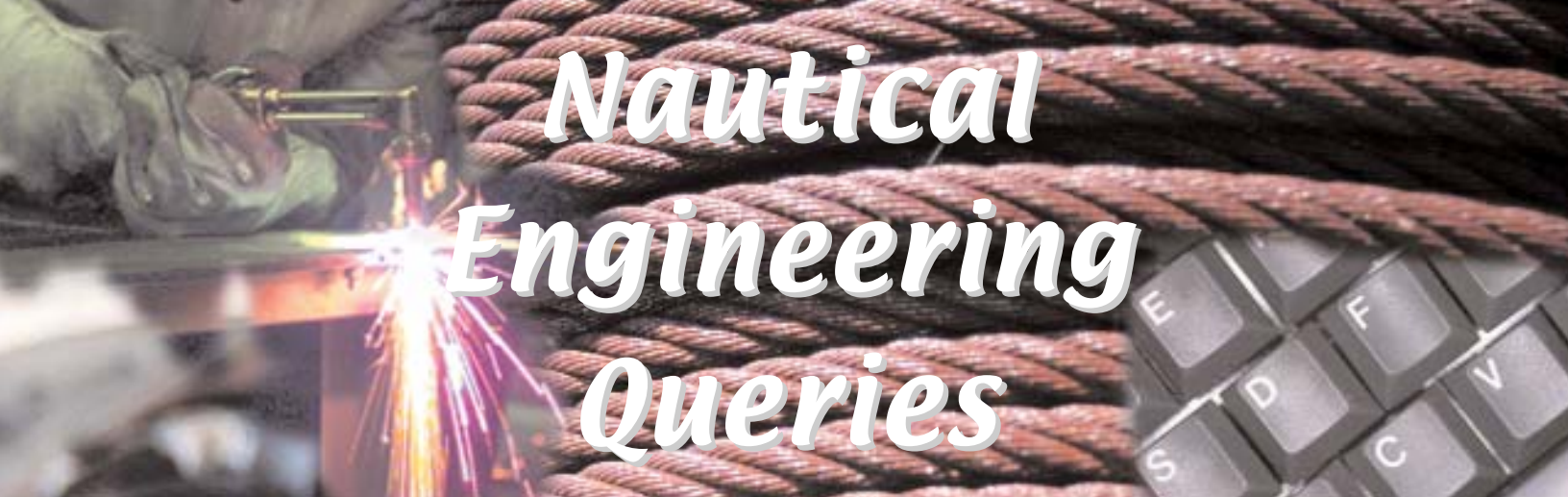
Included among the diplomatic and Japanese participants were: Japan's Minister for Foreign Affairs; *Kagawa Maru*, sister ship to the *Ehime Maru*; Shin Kurushima Dockyard; and the Japanese National Maritime Research Institute.

## Into the Future

On the anniversary of the sinking, a monument to the *Ehime Maru* was dedicated by the governor of Ehime prefecture, and then-Hawaii governor, Ben Cayetano. Volunteers from the Japan-America Society, the United Japanese Society and St. Louis School's Japanese Club maintain the memorial. The Hawaii Community Development Authority approved the Japanese government request to locate the memorial in Honolulu's Kakaako Waterfront state park. The victims' families chose the site because it was near the Aloha Tower, where other Japanese fisheries training vessels tie up while in the islands. The 12-by-12-foot memorial features nine black granite slabs for the nine crewmembers who lost their lives, and the vessel's anchor recovered by Navy divers. Also inscribed on the memorial are the emblem of Uwajima Fisheries High School, which owned the ship, and the names of the victims.

In December 2002, a tape-cutting ceremony was held in southwestern Japan to mark the completion of a replacement *Ehime Maru*. The 499-ton replacement, which cost \$11.3 million to build, is the same size as the original but has been outfitted with new sonar and safety gear. According to school officials, students will begin training on the vessel in this year and make their first excursion in April.





# Nautical Engineering Queries

- Fuel oil penetration into the cylinder of a diesel engine is \_\_\_\_\_.
  - dependent on air turbulence
  - reduced by finer atomization
  - increased by finer atomization
  - nonexistent in the precombustion chamber system
- The color of the engine exhaust from a diesel-propelled ship should be \_\_\_\_\_.
  - clear
  - hazy light brown
  - hazy light blue
  - hazy light gray
- The power output of a turbocharged diesel engine will drop if the cooling water flow through the aftercooler is interrupted because the \_\_\_\_\_.
  - turbocharger stalls
  - exhaust pressure increases
  - air charge density decreases
  - scavenge effect increases
- Which of the following statements regarding copper wire sized by AWG numbers is correct?
  - Number 12 AWG wire has a higher current rating than 10 AWG wire.
  - Number 12 AWG wire at 25°C has more resistance per 1,000 feet than 10 AWG wire at 25°C.
  - Number 10 AWG wire has a higher dielectric strength than 12 AWG wire.
  - Number 12 AWG wire is larger than number 10 AWG wire.
- Which of the fire-extinguishing agents listed is the safest to use when combating a class C fire?
  - CO<sub>2</sub>
  - Foam
  - Water fog
  - Soda acid
- Air accumulated in the aftercooler of the air ejector unit is discharged directly to the \_\_\_\_\_.
  - intercondenser
  - high-pressure turbine
  - main condenser
  - atmosphere
- In a boiler water gage glass, a ball check valve is installed on the \_\_\_\_\_.
  - top connection only
  - bottom connection only
  - top and bottom connection
  - drain valve
- The purpose of the recirculating line between the turbine driven feed pump and the DC heater is to \_\_\_\_\_.
  - ensure a steady boiler water level at all loads
  - seal the labyrinth packing on the pump
  - ensure sufficient flow through the feed pump at low load
  - cool the vent condenser
- When securing an AC generator, you should FIRST \_\_\_\_\_.
  - open the generator circuit breaker
  - switch the voltage regulation to "manual"
  - decrease the field excitation to minimum
  - reduce the load on the unit
- Capacitance in an AC circuit will \_\_\_\_\_.
  - stop current flow once the capacitor is fully charged
  - allow current flow in only one direction
  - oppose any change in circuit voltage
  - rectify the current

Answers: 1. B, 2. A, 3. C, 4. B, 5. A, 6. D, 7. B, 8. C, 9. D, 10. C

# Nautical Deck Queries

1. You are on a large merchant vessel entering a U.S. port. A pilot is onboard, who has the conn. Which statement is TRUE?
  - A. The Pilot is responsible for the ship's safe maneuvering only if required to be onboard by law.
  - B. The Master is responsible for the ship's safe navigation and the Pilot is employed for his/her local knowledge.
  - C. The Pilot is responsible for the ship's internal working.
  - D. The Pilot becomes solely responsible for the ship's safe navigation only if the Master relinquishes the conn.
2. A term applied to the bottom shell plating of a double-bottom ship is \_\_\_\_\_.
  - A. bottom floor
  - B. outer bottom
  - C. shear plating
  - D. tank top
3. Which is an indication of reserve buoyancy?
  - A. Metacentric height
  - B. Righting moment
  - C. Rolling period
  - D. Freeboard
4. Which type of line is best able to withstand sudden shock loads?
  - A. Polypropylene
  - B. Nylon
  - C. Dacron
  - D. Manila
5. Underway in the North Sea on course 142°T, you sight a buoy bearing 105°T. Its white light is continuous, very-quick flashing. To ensure that your vessel remains in the best navigable water you would \_\_\_\_\_.
  - A. continue on course and ensure that the bearings change to the left
  - B. pass between the buoy and another buoy showing a fixed white light
  - C. alter course to port and pass the buoy close aboard to either side
  - D. alter course to port and pass north of the buoy
6. To measure distance on a Mercator chart between the parallels of LAT 34°30'N and LAT 31°30'N, which 30 mile scale should be used?
  - A. 33°00'N to 33°30'N
  - B. 32°30'N to 33°00'N
  - C. 32°45'N to 33°15'N
  - D. 32°15'N to 32°45'N
7. Vessels should maintain a sharp lookout, especially during December through March, when navigating the right whale's only known calving grounds off the coast of \_\_\_\_\_.
  - A. Nova Scotia
  - B. Maine and Massachusetts
  - C. Georgia and NE Florida
  - D. California and Mexico
8. INLAND ONLY: When two power-driven vessels are meeting in a narrow channel on the Western Rivers, the vessel having the right-of-way is the one \_\_\_\_\_.
  - A. moving upstream against the current
  - B. moving downstream with a following current
  - C. located more towards the channel centerline
  - D. sounding the first whistle signal
9. BOTH INTERNATIONAL & INLAND: Power-driven vessels must keep out of the way of sailing vessels except \_\_\_\_\_.
  - A. in a crossing situation
  - B. when they are making more speed than the power-driven vessel
  - C. when the sailing vessel is overtaking
  - D. on the Inland Waters of the United States
10. INTERNATIONAL ONLY: Which statement is TRUE regarding a vessel "constrained by her draft"?
  - A. It is hampered because of her work.
  - B. It is unable to maneuver due to some exceptional circumstance.
  - C. It may be a vessel being towed.
  - D. It must be a power-driven vessel.

Answers: 1.B; 2.B; 3.D; 4.B; 5.D; 6.C; 7.C; 8.B; 9.C; 10.D



**U.S. Department of Homeland Security**

**United States Coast Guard**

**National Maritime Center  
4200 Wilson Blvd., Suite 630  
Arlington, VA 22203-1804**

**Official Business  
Penalty for Private Use \$300**



**Local livestock meets a Pacific Strike Team member in Saipan during response to a PCB/unexploded ordnance site. USCG photo.**