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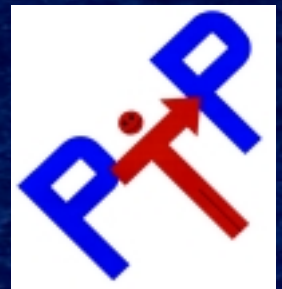
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Assistant Commandant's Perspective

By RADM Paul Pluta

Assistant Commandant For Marine Safety & Environmental Protection

Beginning in September 1995, when the first formal partnership was signed between the Coast Guard and the American Waterways Operators, the Coast Guard has enjoyed great success with each of its nine formal Prevention Through People (PTP) partnerships that follow a non-regulatory approach to addressing safety and environmental protection. I am a firm believer in partnership, not just in word, but also in deed.

The greatest reason for these partnerships' success is simple . . . each partnership is founded on teamwork and a firm commitment to achieving the highest possible level of safety for each member of the maritime community. With a foundation of shared goals and constructive dialogue, success is inevitable. Each of the nine partnerships serves as a great success story about the value of Coast Guard and industry teaming together for a common goal, and each partnership can boast of great improvements they have fostered within their organization and within their segment of the maritime community.

With these partnerships, both the Coast Guard and the organizations formally agree to devote their people, time and resources to important marine safety and environmental protection improvements. These partnerships are not entered into lightly; they are created because of ideas for improvements that would best be addressed by a combination of government and industry interaction. Their success is the result of much hard work and dedication on both sides, and they deserve to be commended.

The successes of the partnerships you are going to read about are as varied as the organizations they represent. With each partnership, both the Coast Guard and the industry have joined together to strengthen the maritime community as a whole.

There are also a number of informal partnerships ongoing between the Coast Guard and various local community groups, and each of these partnerships deserves to be commended as well. Working together, whether through formal or informal partnerships, is an excellent approach to achieving marine safety and environmental protection beyond what our regulations prescribe. I believe strongly in the value of such partnerships, and I encourage this continued work together. My personal thanks go out to all the great partners I've had the pleasure of working with and to all those I will meet in the months ahead. Count me in as a loyal partner.

A handwritten signature in black ink that reads "Paul Pluta".

**Admiral James M. Loy,
USCG Commandant**

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By the Way... Editor's Point of View

Reading through the articles in this issue of *Proceedings*, one can't help but notice the significant accomplishments that have been achieved through the sense of common purpose and full spirit of cooperation between government and industry concerns. From the first formal Prevention Through People partnership in 1995 between the Coast Guard and the American Waterways Operators, many formal and informal partnerships have been formed to improve many aspects of marine safety and environmental protection. What they have in common are shared goals and a commitment to making a difference through hard work.

It is in the same spirit that we bring you *Proceedings*. It is due only to the sense of cooperation and teamwork between the National Maritime Center and the designated Champion that you are able to read the pages in this magazine four times a year. Our Champion this quarter was the Coast Guard's Human Element & Ship Design Division, headed by Commander Timothy Close. CDR Close and his staff took months to plan and coordinate the articles in these pages, which so completely and eloquently relate the successes of partnership in the marine safety and environmental protection community. We thank CDR Close, his staff, and the industry and Coast Guard partners they worked with to make this issue possible. They crafted these articles because of their commitment to their mission and their desire to share their successes to benefit others.

Next quarter we look forward to working with our colleagues at the National Maritime Center to bring you an update on the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW '95). And as is the case with this and future editions of *Proceedings*, we welcome your comments in our continued efforts to better serve your needs.

The Value of PTP Quality Partnerships

By CDR Timothy Close, Chief, Human Element and Ship Design Division, USCG
and Jennifer Blain Kiefer¹

The U.S. Coast Guard Marine Safety and Environmental Protection Program has traditionally been viewed as doing regulatory and enforcement work. As official “guardians of the sea,” this has been an accurate view.

But there is much more to the Program beyond the regulatory aspect. In the early 1990s, the Office of Marine Safety and Environmental Protection began to review marine casualties by looking at human and organizational factors, rather than simply technological errors. The Quality Action Team (QAT) leading this review learned that more than 80 percent of all marine casualties had their root cause in human error. Thus, a new focus on the human element began. The QAT stated in their 1995 report that they were chartered “to develop a long-term strategy to rebalance the safety equation by refocusing prevention efforts on casualties caused by human error” (5).²

Strategy

Rebalancing the safety equation required a new approach, a cultural change in how people were working and thinking about safety. This approach was aptly called Prevention Through People (PTP), and focused on the single greatest asset of the marine industry — its people. With five guiding principles — honor the mariner, take a quality



Photo courtesy Corbis Photos.

approach, seek non-regulatory solutions, share commitment, and manage risk — PTP began to redefine how the marine community addressed safety. This cultural change switched the focus more from a reactive response approach to safety toward a proactive, preventive approach. The Coast Guard quickly realized that significant gains could be made outside of the regulatory relationship in marine safety and environmental protection through government and industry working together in partnership.

Background

Since the beginning of the PTP approach, the Coast Guard and industry have worked together closely to ensure that both government and industry goals for safety are met. In the Coast Guard’s 1995 PTP Report, members identified a number of practices industry leaders found to be effective at reducing the risks of casualties due to human and organizational factors.

After the release of the PTP QAT’s report, a draft strategic plan was developed to guide its implementation. As part of the implementation efforts, the Coast Guard developed formal partnerships with some marine organizations, furthering PTP action in the field.

These partnerships show how PTP can be applied successfully within the different segments of the marine industry. Officially known as PTP Quality Partnerships, these formal relationships with various maritime organizations were developed to examine ways in which the PTP concept could be successfully applied within the various segments of the marine industry. Designed around cooperative efforts between mariners, maritime companies, industry organizations, and the Coast Guard on practical and real efforts to reduce deaths, injuries and pollution incidents, this dynamic program continually strives for higher levels of safety.

Purpose

As Theodore Roosevelt once remarked, “what counted was the combination of the opportunity with the ability to accomplish results” (86).³ While regulations, which establish a minimum level of compliance, are necessary, non-regulatory

efforts such as PTP and its partnerships allow the Coast Guard to work with the maritime community on safety efforts that reach beyond the minimum level of compliance. These PTP Quality Partnerships are formal relationships between the Coast Guard's Office of the Assistant Commandant for Marine Safety and Environmental Protection (G-M) and other organizations, for the purpose of furthering maritime safety and environmental protection by improving processes and operational practices through non-regulatory means.

These partnerships have been established with the goal to provide non-regulatory, cost-effective measures to improve practices in the maritime industry that promote maritime safety and environmental protection. The goals, objectives and activities of the partnerships must be consistent with the G-M Business Plan, and be focused on issues to implement positive changes in the maritime industry. Partnerships do not provide advice or recommendations on Coast Guard policies or regulatory issues, and they are subject to review by the Coast Guard's Office of Regulations and Administrative Law.

Definition

The word partnership is often used to describe any interaction between government and industry, regardless of whether that interaction is cooperative or adversarial, informational or substantive. It's a label attached to promote the impression of goodwill on a meeting involving different groups, but it does not automatically constitute a fully collaborative partnership.

True partnerships involve two or more groups joining together for a specific, mutually beneficial purpose. The Coast Guard has a number of such informal, non-regulatory partnerships between their field offices and various local companies and organizations. A few of these partnerships are highlighted in this issue, with the recognition that there are dozens if not hundreds more working everyday to further improve the marine safety and environmental protection of U.S. ports and waterways.

Formal PTP Quality Partnerships are a step up from an informal relationship. They are working toward a higher level of cooperation, working together to solve problems on a broader, more national level. This type of partnership involves four major elements: it must be a *formal relationship*, based upon a *commitment to common goals*, involving *mutual trust*, achieved through *open and frank communication*.

Formal relationship: It is a formal acknowledgment by both parties of the importance of the relationship that exists between the two, and more importantly (regardless of how good

the relationship has been in the past) that both parties agree to move to the next level of cooperation.

Common goals: Partnerships should be formed only after careful thought and with mutual consent. Any organization considering the formation of a partnership should ensure that the involved parties each share common goals and can demonstrate a commitment to achieving them. Without this mutual commitment, partnerships cannot work. Having common goals, however, is only the first step. At issue is the ability of both groups to more precisely define the level of effort toward achieving the common goals.

Mutual trust: Because both organizations may not always initially agree on a common means of achieving the stated goals, the need for mutual trust within the partnership becomes essential. Many different internal and external forces, such as economic conditions or customer demands, can affect the Coast Guard and industry's perceptions of how the goals should be achieved. As long as the focus remains on the goals, it is very possible to maintain mutual trust in the integrity of each other.

Communication: A partnership is nurtured through frequent, open and frank communication. This is the hallmark of a good partnership. It is how trust is built, differences resolved, and results achieved. The partnership establishes the framework, bringing together leadership from both sides, to address issues of mutual concern.

Value

From the Coast Guard point of view, these partnerships provide us with a great opportunity to work with various maritime organizations on safety improvements, through a non-regulatory means. The teamwork involved in these partnerships is great.

As you will see throughout the upcoming articles, both the Coast Guard and industry have benefited greatly from these formal PTP Quality Partnerships. Through these partnerships, the Coast Guard can continue working to further enhance personnel safety and environmental protection. The partnerships also allow the Coast Guard to work closely with a number of maritime organizations, learning more about how those sectors of the industry operate. In turn, the maritime organizations are able to reach out to more of their members and improve safety through the partnership projects. Their work with the Coast Guard shows their commitment to their members, their community, and the industry as a whole. But at the heart of each partnership is the desire to maintain the safest working environment possible for all mariners, shoreside and at sea, so that everyone can be safe and the environment kept clean.

¹ Potomac Management Group, Contractor with the Coast Guard's Human Element and Ship Design Division

² Prevention Through People Quality Action Team Report, July 15, 1995.

³ Theodore Roosevelt. *An Autobiography*. Charles Scribner's Sons, New York. 1913.



MAN OVERBOARD!
Don't let this be you!

Stay
Alert
For the
Edge

Prevention
Through
People PTP



AMERICAN WATERWAYS OPERATORS/ PTP PARTNERSHIP

By Amy Brandt, Government Affairs Assistant, AWO
and Jennifer Kelly, Senior Vice President, Government Affairs and Policy Analysis, AWO

Launched in 1995, the American Waterways Operators (AWO)/Prevention Through People (PTP) Quality Partnership is the first-of-its-kind, government/industry partnership to be sponsored by the Coast Guard. Aimed at improving marine safety and environmental protection through non-regulatory initiatives, the partnership has tackled serious safety challenges, from crew fatalities to hurricane preparedness. This partnership combines the expertise of leaders from Coast Guard and the inland and coastal tugboat, towboat, and barge industry, representing the largest segment of the U.S.-flag commercial vessel fleet.

The partnership is rooted in the belief that both the Coast Guard and the barge and towing industry are best served by a cooperative approach that emphasizes open dialogue and result-oriented action through partnership. That vision is embodied in both AWO's strategic plan and in the Coast Guard's Marine Safety and Environmental Protection Business Plan, which emphasizes the twin goals of PTP and Quality, Safety, and Environmental Protection Through Partnership.

Establishing the Partnership

Discussions about how to establish a partnership between the Coast Guard and AWO began in the fall of 1994. Under the leadership of then RADM James Card, Assistant Commandant for Marine Safety and Environmental Protection of the Coast Guard, and AWO President Mr. Thomas Allegretti, a Quality Action Team (QAT) of Coast Guard and industry leaders was put together to formalize the structure of the partnership. The QAT was tasked with "developing a non-regulatory process for communication and problem-solving, and fostering the use of that process to advance common goals."

In early September 1995, the AWO Board of Directors voted unanimously to endorse AWO's participation in a Safety Partnership. Later that month, RADM Card and Mr. Allegretti signed a mutually binding Memorandum of Understanding (MOU).

DOWNSTREAMING: BETTER SAFE THAN SORRY



BASED ON THE JOINT COAST
GUARD/AWO STUDY OF
DOWNSTREAMING ACCIDENTS



Some safety tips can help save lives.

- ✓ Check the current and river stage - Almost all downstreaming accidents happen in high current conditions.
- ✓ Don't be overconfident - A lot of experienced captains have found themselves in trouble, because they didn't heed the warning signs.
- ✓ Let the crew know you are going to downstream - Have your deckhands ready to tie off as soon as you land.
- ✓ Shut doors and windows on the first deck - Also make sure the boat has adequate freeboard.
- ✓ Abort if necessary - Don't ignore the warning signs.

STAY ALERT FOR SAFETY!



In a round-the-clock business like marine transportation, working safely means staying alert! Here are some tips you can use, on the boat and off, to protect yourself and stay alert for safety.

At the signing of the MOU, RADM Card remarked, "With [more than] 80 percent of vessel mishaps attributable to human error, and given that human error, for the most part, cannot be regulated away, reducing the frequency of these mishaps is achievable only through the cooperative efforts of all parties." The partnership recognizes that regulations alone cannot ensure safety; active cooperation from industry is needed as well.

After signing the formal agreement, a National Quality Steering Committee (NQSC) was established to identify safety and environmental issues. Each issue would then be addressed by informal QATs comprised of experts from the Coast Guard and the barge and towing industry. More than 24 QATs have been established so far. The NQSC set to work quickly and dedicated the first subject-specific QAT to studying the cause of deckhand fatalities on inland towing vessels. The NQSC has since spawned three Regional Quality Steering Committees (RQSC): the Atlantic RQSC, the MidAmerica RQSC, and the Pacific RQSC. The RQSCs address regional and local interests by utilizing the talents of Coast Guard District personnel and AWO member leaders.

Recording Progress

The partnership has achieved measurable progress in marine safety and environmental protection since its inception. Projects relating to crew fatalities, pollution prevention, and industry best practices occupy much of the National and Regional Quality Steering Committees' time. The Coast Guard and AWO deliberately undertake work that reflects both parties' missions and priorities. The following are highlights of the partnership's most significant work to date.

- *Towing Vessel Crew Fatalities Quality Action Team*

Because safety of life at sea is the paramount concern of the partnership, the National QSC commissioned this QAT to determine the causes of crew fatalities and generate recommendations to eliminate such incidents. The QAT undertook the most comprehensive study ever done on the incidence and causes of inland towing vessel crew fatalities.

The QAT concluded that the majority of towing vessel crew fatalities result from crewmembers falling overboard during routine operations, with deckhands and crewmembers under the age of 25 incurring the highest fatality rates. Several contributing factors were found including the following: lack of training, skill assessment, communication, safe work practices, supervision, and teamwork. The QAT report includes a comprehensive review of previous literature and studies; an analysis of Coast Guard casualty data from 1985-1994; a review of specific cases; and conclusions and recommendations, including a discussion on the role of safety

“culture” in the maritime industry. The QAT believes that the implementation of this report’s recommendations will help achieve the paramount goal of protecting mariner safety. Upon completion of the study, the QAT produced the “S.A.F.E. Decks” brochure, urging crewmembers to “Stay Alert for the Edge.”

- *Tank Barge Transfer Spills Quality Action Team*

This QAT was commissioned to discover the causes of transfer spills and develop solutions to reduce them. To achieve this end, the QAT used a proven methodology to outline vessel loading and discharge processes; analyze available data; summarize the data; and finally, develop root cause diagrams. Through this process, five root causes of transfer spills were identified, and a comprehensive list of solutions was created to address them.

The QAT concluded that most transfer spills can be prevented, and that the responsibility for prevention falls mainly on the management within marine operating companies. The QAT also developed several resources to aid marine companies in reducing spills during transfer operations, including an action register for company management consisting of comprehensive lists of recommended actions to reduce spills. The QAT believes that the use of these resources will help the industry achieve its goal of zero spills.

- *River Crisis Action Plan*

Brought together by the MidAmerica RQSC, the River Industry Executive Task Force, the Coast Guard, and the Army Corps of Engineers commissioned a working group to develop a response plan for marine transportation emergencies on the Mississippi River. The group began its work by analyzing the response actions taken on the Mississippi River during the floods of 1993 and 1995, and the drought of 1988.

After analyzing these events, the group developed a model Crisis Action Plan (CAP) that emphasized clear definitions of communication responsibilities; accurate descriptions of hydrological and meteorological effects on the river system; and an outline of how federal, state, and local government agencies and industry river organizations should interact during a crisis. The CAP also called for the establishment of a Waterways Management Committee to coordinate future responses to river crises. If a crisis occurs, the committee will be responsible for assembling a staff from government and industry to address the situation.

- *Downstreaming Quality Action Team*

The MidAmerica QSC commissioned a QAT to evaluate a long-standing safety concern: towboat sinkings and fatalities that result from the practice of downstreaming. The QAT found that underpowered towboats and human factors, such as a lack of

awareness of proper downstreaming techniques, and the risks involved in downstreaming under adverse conditions were the major contributors to these accidents. An exceptional video of downstreaming operations and the recommended ways of safely downstreaming was developed and distributed to vessel operators throughout the industry.

- *Hurricane Preparedness Plan Quality Action Team*

This QAT, formed by the Atlantic Region QSC, examined the hurricane and storm preparedness plans for various ports on the United States Atlantic Coast and developed recommendations to improve plans and address the unique needs and safety concerns of the tug and barge industry. A set of core guidelines was also developed to ensure consistency within policy and procedures, from one port to the next. These guidelines address the unique challenges that tug and barge units confront in severe weather conditions.



RADM James Card and Mr. Thomas Allegretti signing the Partnership Agreement in 1995. Photo courtesy AWO.

- *Towing Industry’s Incident Reporting System Quality Action Team*

Sponsored by the Pacific Region QSC, a voluntary system that can capture information about unsafe occurrences was developed. Some examples of these unsafe occurrences involve near-casualties, near-misses, and related precursor events that, without some corrective action in the chain of events, could have resulted in an unsafe occurrence, accident, or casualty.

This information is currently being collated by the AWO Pacific Region office and disseminated without attribution to AWO Pacific Region members. Names will remain anonymous. Information on events that have the potential for national significance is distributed to the entire industry.

Achieving our Goals

The chart on the following page is a comprehensive list of the National and Regional Quality Steering Committees completed and on-going partnership activities.

In 1998, the AWO/Coast Guard Partnership’s achievements received national recognition from then Vice President Al Gore and his National Partnership for Reinventing Government (formerly the National Performance Review). As part of this recognition, an article in *Businesslike Government: Lessons Learned from America’s Best Companies* was written. Singled out was the AWO/Coast Guard S.A.F.E. Decks campaign, a product of the Towing Vessel Crew Fatalities QAT. The S.A.F.E. Decks program also earned recognition from the American Society of Association Executives (ASAE) as one of 50 nationwide winners of the Award of Excellence for outstanding association contributions to the American society. The partnership’s award-winning tradition continued when it won a spot on ASAE’s annual Associations Advance America Honor Roll.

	<i>Status</i>
<i>National Quality Steering Committee</i>	
Towing Vessel Crew Fatalities QAT	Completed
Tank Barge Transfer Spills QAT	Completed
Towing Vessel Boarding Program QAT	Completed
Major and Medium Tank Barge Spills QAT	Completed
Crew Alertness Dialogue Group	In progress
<i>Mid-America Regional Quality Steering Committee</i>	
Pollution Prevention Regulations Study	Completed
Inland Towing Vessel Guide to Federal Oil Transfer Procedures	Completed
River Crisis Action Plan	Completed
Cooperative Towboat Examination Program	Completed
Aids to Navigation QAT—Upper Mississippi, Illinois, and Missouri Rivers	Completed
Aids to Navigation QAT—Ohio, Tennessee, Monongahela, Allegheny, Cumberland, and Tombigbee Rivers	Completed
Barge Fleeting on the Mississippi River QAT	Completed
Recommended Practices for Bunker Barges	Completed
Regional Examination Center Consistency QAT	Completed
Barge Inspection Consistency QAT	Completed
Downstreaming QAT	Completed
Industry Orientation Modules QAT	Completed
Gulf Intracoastal Waterway Aids to Navigation QAT	Completed
Streamlined Inspection Process QAT	Completed
<i>Atlantic Region Quality Steering Committee</i>	
Hurricane Preparedness Plan QAT	Completed
Visibility Standards for Pilothouse Personnel QAT	Completed
Industry Training and Orientation Program QAT	Completed
<i>Pacific Region Quality Steering Committee</i>	
Towing Industry Incident Reporting System QAT	Completed
Vessel Safety Alerts: Lesson Learned Information Exchange	In progress
Crew Alertness and Work Hours QAT	In progress
<i>Other Initiatives</i>	
Regional Risk Assessment of Petroleum Transportation on the Waters of the Northeast United States	Completed

of a tug and barge collision with a bridge in Seattle, Washington, where fatigue was cited as a primary cause of the accident. The primary vehicle for conducting the work of the QAT is an organized and comprehensive outreach to a broad cross section of the towing industry in the Pacific Region to obtain their experience with and problems in complying with work-hour regulations. This outreach has also been aimed at identifying best practices being used by companies to mitigate activities or tasks that have the potential to compromise crew alertness or work-hour compliance. The QAT members are talking individually with representatives from 20 Pacific Region companies (both AWO and non-AWO companies) using a detailed, structured interview format. Companies are also being asked to anonymously complete a survey for the purposes of data compilation. The QAT's preliminary findings have indicated that this problem is a cultural one on boats and in companies that will require a variety of inter-related problem-solving approaches, which are heavily based on personal responsibility. It is expected that the QAT will complete its initial work by early to mid-fall and be prepared to present a preliminary final report to the QSC at its fall 2001 meeting.

Another result-oriented focus is safety performance within the towing industry. The Coast Guard and AWO spent the last year developing a methodology that will track towing industry safety performance over time, and pinpoint areas where further improvement is needed. To this end, the partnership instituted a process of collaborative data sharing and analysis, using statistics from the Coast Guard and U.S. Army Corps of Engineers to measure industry progress in eliminating accidents, spills, and crew fatalities. The first collaborative statistics report is expected to be released mid-2001. The data will be updated annually and serve as a valuable source for ideas about future work for the partnership.

Focusing on Current Project Priorities

Most recently, the partnership has been working to enhance marine safety by promoting crew alertness — a priority of both the Coast Guard and AWO. The Crew Alertness Dialogue Group was formed in 1999 under the auspices of the National QSC to recommend ways to manage risk and ensure personnel safety in a 24-hour work environment. In December 2000 the partnership unveiled the "Stay Alert for Safety!" brochure for tugboat and towboat crewmembers. To date, nearly 35,000 brochures have been distributed to mariners from all sectors of the industry. The Dialogue Group met again this summer to discuss additional ways to promote the continued importance of crew alertness throughout the industry.

The Pacific RQSC is also examining crew alertness issues as part of a new QAT. This team was formed in the aftermath

The partnership's recent work on environmental issues includes the results of a long-awaited QAT analysis of major and medium tank barge spills. A working group has been formed to implement the QAT's recommendations to build on the industry's record of improved performance and declining spills.

The Coast Guard and AWO have also unveiled an expanded presence for the partnership on the Internet, offering summaries of projects. The Web address is <http://www.uscg.mil/hq/g-m/nmc/ptp/ptppart/awo.htm>.

Looking Ahead

As the AWO/Coast Guard partnership enters its sixth year, both parties look forward to continued success in finding non-regulatory, cooperative solutions to industry-wide challenges.

Passenger Vessel Association / PTP Partnership

By LCDR Kevin Kiefer, Marine Engineer for the Office of Design & Engineering Standards, USCG and Mr. Dick Purinton, PVA President & General Manager for Washington Island Ferry Line

“My challenge to the partnership members is to work together...so we can resolve any differences and further improve passenger vessel safety... Partnership and following the principles Prevention Through People is the key to success in passenger vessel safety.” ~ Vice Admiral Thomas H. Collins, USCG in his speech at Maritrends 2001, PVA’s annual convention

After 30 years of working together, the Passenger Vessel Association (PVA) established a formal partnership with the United States Coast Guard to pursue non-regulatory efforts toward improving safety. In this fashion, all partnership efforts strive to promote passenger, personnel, and property safety within the domestic passenger vessel industry and to protect of the environment within our nation’s waters. The partnership agreement was signed on January 22, 1996.

A Partnership Action Team (PAT) was created in conjunction with the signing of the partnership. The PAT serves as a steering committee and provides the institutional leadership and oversight necessary to ensure that the partnership is implemented successfully. The PAT is comprised of PVA leadership, such as the PVA President and members of the Board of Directors. On the Coast Guard side, there are senior Coast Guard personnel, such as the Assistant Commandant for Marine Safety and Environmental Protection, the Director of Field Activities and the Director of Standards. The PAT determines which projects the part-

nership should work on and how to accomplish them. Once a project has been selected, a Natural Work Group (NWG) is created with representatives from both groups. Deliverables for each project are identified in a NWG charter, which is agreed upon by the PAT co-leaders (PVA President and Coast Guard Assistant Commandant for Marine Safety and Environmental Protection). The PAT meets at least three times a year.

Throughout the past five years, the PAT has identified and pursued many passenger vessel industry and Coast Guard concerns. These concerns include the creation and implementation of a Streamlined Inspection Program (SIP) for passenger vessels, a risk tool for identifying opportunities to reduce risk exposure, fire safety equivalencies to 46 Code of Federal Regulations (CFR) Subchapter K, and guidance for enhancing the operational safety of high-speed passenger vessels. The PAT is currently working on the following issues: risk management implementation, determination of casualty data requirements, and devel-

oping manning guidelines for high-speed passenger vessels.

Accomplishments Streamlined Inspection Program (SIP)

In January 1996, an NWG was created to develop the details of an SIP to produce improvements in the passenger vessel inspection process. SIP is an alternative to the traditional annual inspection program. Traditional inspection programs mean that the Coast Guard conducts frequent, periodic examinations of various vessel systems; documents its findings; and, when discrepancies are discovered, requires a company to take the necessary corrective actions specified. Under SIP, company personnel conduct the examinations, document their findings, and take the necessary corrective actions specified in the Coast Guard-approved plans when discrepancies are discovered. The Coast Guard still conducts required inspections of the vessel(s) but the marine inspector’s primary focus is to review the implementation and management of the SIP by the company and check some critical vessel systems to verify accuracy of the records.

The NWG developed a detailed implementation plan that identified specific goals for SIP with passenger vessels and recommended the course of action in conducting pilot programs. This implementation of the SIP to the passenger vessel industry brought many benefits: better management of vessel costs, increased involvement and “ownership” by vessel personnel for the safe operation of the vessel, and an increase in crew professional advancement.



PAT members at Catalina Island, CA on CGC Blackfin, Sep. 29, 2000. Front row (L to R) is Mr. Richard Purinton, Mrs. Beth Gedney, Mr. Chris Hendricks, Mr. Ed Welch. Back row (L to R) is Mr. John Groundwater, Mr. Gary Frommelt, RADM Robert North, Mr. Darrell Bryan. Photo by LCDR Kevin Kiefer.

Risk Guide

The PAT formed another NWG in 1997 to examine the use of risk-based methods to improve the safety of passenger vessel operations. One of its principle initiatives was to develop a guide that would help vessel owners analyze critical areas of their operations; critical areas being those that have high-risk exposure. A simple “how-to” guide was developed to help operators perform risk assessments on their own operations. This field-tested guide became known as the “PVA Risk Guide¹.”

Fire Safety Equivalencies to 46 CFR Subchapter K

The existing 46 Code of Federal Regulation (CFR) Subchapter K establishes a level of safety for small passenger vessels carrying more than 150 passengers. The regulation is based on several fire safety requirements, including the use of steel or an equivalent non-combustible construction material. Within these Subchapter K passenger vessel regulations (46 CFR, Sections 114.540 and 116.340), there are provisions that allow for equivalencies, as well as alternative design considerations. Equivalencies or alternative designs each provide a level of safety equivalent to that established by the specific provisions of this Subchapter.

The Coast Guard agreed with the results of the NWG, and incorporated the equivalency guidelines through the publication of a Coast Guard Navigation and Vessel Inspection Circular (NVIC), NVIC 3-01 entitled, “Guide to Establish Equivalency to Fire Safety Regulations for Small Passenger Vessels (46 CFR Subchapter K).” This NVIC informs the public of Coast Guard guidance and requirements for the equivalency process. The use of these guidelines benefits the Coast Guard and maritime industry by providing a standard method for evaluating and demonstrating the fire safety equivalencies of novel designs and materials without compromising the current high level of safety.

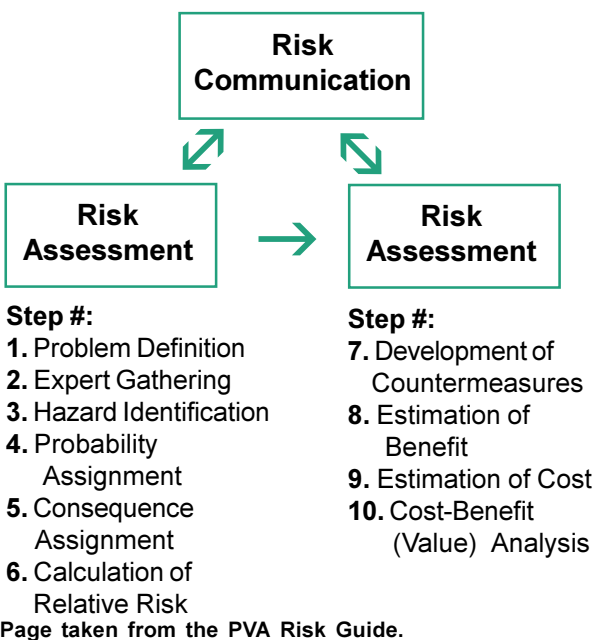
High-Speed Passenger Vessel Operational Standards

The domestic high-speed passenger vessel market has been growing steadily, especially in urban areas. One reason is that it provides an alternative to increasingly over-taxed, land-based transportation systems. Although there is an international standard, the International Maritime Organization (IMO) High Speed Craft (HSC) Code, for the construction and operation of this vessel type, the majority of the U.S. market vessels are built to the domestic regulatory standards of 46 CFR Subchapter T or K. Regardless of which safety standard these vessels are built to, the reality is that these vessels operate with advanced technology and operating them requires additional, and sometimes unique, training and operational controls.

These parameters are outlined in the IMO HSC Code, but only loosely tied to 46 CFR 115.700 and 176.700, which empowers the Of-

Process for Handling Risk

Get input from and share results with decision makers when appropriate



However, the procedures or steps necessary to achieve and demonstrate this equivalence were not defined. To address this concern, the PAT chartered a NWG to develop guidelines that establish design equivalencies with the specified fire safety provisions of Subchapter K. During a two-year period, the NWG completed these deliverables and successfully developed and proved the viability of the equivalency guidelines.

The PVA Risk Guide is an impressive accomplishment on its own, as it continues to serve the passenger vessel industry in identifying and minimizing risk today. However, the PAT continued its pursuit and devised a process for educating the passenger vessel community on general risk management concepts and on the use of the Risk Guide. This educational process was accomplished through a series of joint PVA and Coast Guard sponsored workshops, in combination with a facilitated mentoring process to which participants gave high reviews.



Mr. Gary Frommelt, ADM James Loy, Mr. Richard Purinton and Mr. Frederick Hall during a PVA leadership meeting with ADM Loy, April 23, 2001. Photo by LCDR Kevin Kiefer.

ficer in Charge Marine Inspections (OCMI) to require additional navigation, control and communications equipment on vessels operating at high-speed in restricted or high traffic areas. This disparity has been recognized by current operators of domestic high-speed vessels, who have established in-house specialized training and other controls to account for the unique operational nature of these vessels.

During the fall of 1999, another NWG was chartered to research and document the necessary operational parameters for high-speed passenger vessels currently in domestic service. The final work product of this NWG was the development of Coast Guard NVIC 5-01, "Guidance for Enhancing the Operational Safety of Domestic High-Speed Vessels." This NVIC provides guidance regarding the operation of domestic vessels, new or existing, which operate at higher speeds and are not required to meet the IMO HSC Code.

Recognizing the unique safety issues associated with high-speed vessel operations, the primary focus of this NVIC is on measures to enhance operational safety. Further, this NVIC helps to "bridge the gap" between U.S. domestic regulatory standards and the HSC Code. To that end, this NVIC provides guidance in the areas of crew training, vessel operations, and navigational safety equipment. It is intended to be a basis for a risk management dialogue between the OCMI and the domestic high-speed vessel owner/operator.

Current Projects

Risk Management Implementation

Both the PVA and Coast Guard recognize that risk management provides a non-regulatory mechanism to assess and improve safety. It is an operational system, not simply the sum of specific regulatory requirements. Both organizations also want more domestic passenger vessel operators to use the risk management methodology previously mentioned in the PVA Risk Guide. Therefore, the PAT is discussing ways to assist passenger vessel operators and Coast Guard personnel in assessing the risks associated with passenger ves-

sel operations. This project is in its infancy stage; however, risk management is extremely important to both organizations and will continue to be discussed at future PAT meetings.

Casualty Data Requirements

This relatively new work item for the PAT was created a year ago to assist the Coast Guard and the passenger vessel industry with their data collection and development efforts. Collecting and analyzing the number of injuries and fatalities, oil spills, and other quality data is vital to the measurement, assessment, and implementation process of preventive actions for passenger vessels.

As a result of these efforts, the PAT recognized that trend analysis using a reliable denominator data (such as total number of passengers carried, miles traveled, and hours or days of operation) was needed. Therefore, a workshop was held to evaluate available data sources and measurement practices, and to identify data gaps. At the workshop, industry and government agency representatives became familiar with the Coast Guard's and other government agencies' safety data sources, analysis, and measurement methods. The workshop also provided opportunities for industry members to contribute to the development of a new Coast Guard marine safety database. More data collection efforts

between the Coast Guard and industry are planned.

High-Speed Passenger Vessel Manning

Human and organizational factors contribute to most maritime accidents. The growth of commercial high-speed vessel operations and the corresponding growth in the number of waterway users logically points to greater human and organizational factors concerns and therefore, greater overall safety risks. This higher overall risk is attributed primarily to an increased risk in collisions for high-density traffic areas. This brings the manning issue for high-speed vessels to the forefront.

Modern high-speed vessels also involve increased operating complexities and demands. To address this concern, the PAT chartered a NWG in February 2001 to examine the operations of domestic high-speed passenger vessels, develop guidelines for establishing safe manning levels, and make recommendations to the PAT relating to the manning of these vessels. This project is currently underway, and the expected deliverables include guidelines for establishing manning levels for high-speed vessels. These guidelines are based on the following factors: vessel size, service, loaded service speed, operating route, passenger capacity, maneuverability, level of automation and type of training program.

Future Direction

Efforts between the PVA and Coast Guard will continue to promote passenger, personnel, and property safety and protect the environment within our nation's waters. The PAT will maintain its pursuit for new, meaningful projects while ensuring ongoing projects are properly implemented and completed. The items previously mentioned and future work items will be discussed at upcoming PAT meetings. Through partnership, all of us in the maritime industry can contribute to a safer working environment.



Mr. Rick Mosteller and RADM James Card signing the Partnership Agreement, Jan. 22, 1996. USCG photo.

¹ To obtain a copy of the PVA Risk Guide, contact LCDR Kevin Kiefer, email: kkiefer@comdt.uscg.mil.

Chamber of Shipping of America and American Petroleum Institute / PTP Partnership

By Kathy Metcalf, Director of Chamber of Shipping of America
and William J. Abernathy, Human Element and Ship Design Division, United States Coast Guard



Photo courtesy Mark Ebel's collection: www.Ship-Photos.de

BACKGROUND

The Coast Guard, the Chamber of Shipping of America (CSA), and the American Petroleum Institute (API) united their resources and created a formal partnership in 1996 to complete a communications project. This project set out to minimize non-essential communications that occur during critical operations, with the intent of improving communications between members of the bridge team.

The partnership specifically identified shipboard communications during critical navigational periods as an area in which improvements could be made without extensive regulatory change or capital investment. CSA made this issue a standing item for its Maritime Policy and Operations Committees. Shipboard communications became the subject of extensive discussion among its members. Discussion among active sailing mariners further indicated that communications management during critical navigational periods was indeed an operational challenge.

Under this partnership, the Coast Guard and CSA theorized that new communications technology between ship and shore resulted in a significant increase in the quantity of both legally required and operationally desired communications. To validate their theory, the partnership decided to develop and distribute a survey to gather information. Finally, goals for this communications project were determined and efforts ensued to:

- Determine the types of communications managed by the bridge management team during specific periods, and
- Determine, from the mariner's perspective, which communications during critical navigation periods were considered essential, which were considered a hindrance, and which were considered a distraction to the safe vessel navigation.

SURVEY SCOPE & PARAMETERS

A marine consultant, who was familiar with shipboard operations and survey preparation and analysis, developed the draft survey. CSA members further refined the survey to ensure that the substance and length of the survey was appropriate for shipboard distribution. Initially, the survey distribution targeted vessels calling at U.S. ports only. However, once distributed, the survey elicited tremendous response from mariners calling at ports all over the world. The scope of the survey was then broadened to include results for both U.S. and foreign ports.

Controls were put in place to assure confidentiality of the survey. However, a significant number of the surveys included vessel and responder identification. All respondents provided the following standard information:

- Vessel type;
- Nature of the port call (discharging or loading cargo);
- Type of communications equipment available to the bridge team;
- Whether the vessel owner/operator maintained an office or personnel in the port of call; and
- Whether the owner/operator utilized a third party agent in the port of call.

The survey was composed of both multiple choice and narrative questions. Each multiple-choice question asked the mariner to “grade” a particular type of communication. Communication was graded with regards to its importance (essential vs. non-essential), whether it should or could be rescheduled to a more appropriate time period, the average length of the communication, and who within the bridge management team was responsible for the communication. The narrative questions asked the mariner to provide information on any other internal/external communications that was perceived as distracting to personnel who were responsible for the safe navigation of the vessel, and that had not been addressed by the multiple choice questions.

There were four distinct sections to the survey. The first section consisted of eight multiple-choice and one narrative question addressing communication requirements during the pre-arrival portion of the voyage. The second section consisted of 10 multiple-choice and one narrative question addressing communication requirements from pilot pick-up to arrival off the dock. The third section consisted of 13 multiple choice and one narrative question addressing various communication requirements, such as off-dock maneuvering to finished-with-engines communications. The fourth and final section consisted of two narrative questions that allowed for comments on any other distracting communications issues, either in the port for which the survey was completed, or elsewhere.

SURVEY RESPONSE

The unique nature of the partnership enabled CSA to distribute the survey through a number of maritime associations including API, the Baltic and International Maritime Council (BIMCO), the International Chamber of Shipping, International Association of Independent Tanker Owners (INTERTANKO), the International Organization of Masters, Mates and Pilots and the Oil Companies International Marine Forum.

The initial survey collection process occurred during a 12-month period from mid-1998 to June 1, 1999. Due to the large number of surveys still being received after the January 1, 1999 deadline, the response period was extended to June 1, 1999. By that date, 357 completed surveys were received; this equaled a response rate of 24 percent, which is well above typical survey response. With few exceptions, the surveys were completed by vessel Masters. Based on the responses received, the following conclusions can be made with respect to the survey population:

A. Survey responses were received from a wide variety of vessels, including bulk carriers, container vessels, crude, product and chemical tankers, general cargo ships, roll-on/roll-off vessels, car carriers and training vessels. Eighty-one percent of the responses covered bulk carriers, containerships, crude tankers and product tankers collectively. Bulk carriers accounted for 28 percent, containerships accounted for 27 percent, while crude and product tankers collectively accounted for 26 percent of the responses.

B. Seventy-one percent of the responses were from vessels calling in U.S. ports. The remaining 30 percent represented ports primarily in Europe, with smaller portions representing ports in the Far East and the Indian sub-continent.

C. Twenty-six percent of responses indicated owner/operator headquarters or offices in the port for which the survey was completed, while 47 percent indicated that either company personnel or a third party agent attended the vessel during the port call.

D. Twenty percent of the vessels responding were engaged in loading operations, 37 percent in discharge operations, and 41 percent were engaged in both loading and discharge operations; the latter being attributable to the large number of containerships responding to the survey.

SURVEY FINDINGS (Multiple Choice Questions)

The significant response rate to the survey indicates that management of communications during critical navigational periods is of great interest and concern to the mariner, particularly the Master, who must manage these communications in the midst of fulfilling responsibility for the safe navigation of the vessel.

It appears that the Masters and the bridge management teams are properly managing what would otherwise be overwhelming communications requirements. In fact, a number of respondents indicated that certain non-essential communication systems were either shut down or ignored during critical navigational periods, in order to allow the bridge team to focus on the safe navigation of the vessel.

Not surprisingly, the communication types recognized as the most essential and given highest priority were those associated with vessel safety and safety of navigation. These communications included exchanges prior to and during pilot boarding, information exchange during the Master/pilot boarding conference, communications with vessel traffic services and/or nearby waterway traffic, and communications with docking tugs.

Communications given the lowest priority were identified as those between the vessel, the owner/operator (home office) visitors, surveyors, regulators, or contractors scheduled to board the vessel on docking. While the responses were equally split as to the essentiality of these communications, the responses indicated overwhelmingly that these communications could and should be rescheduled at a more appropriate time than the critical navigational periods covered in the survey.

As to duration of each communication, it is significant to note that 74 percent of the communications were less than five minutes in length. Ninety-five percent of the communications were less than 15 minutes in length. This brevity indicates that the bridge team is challenged more by number of communication requirements rather than by excessive length of any one communication type.

The Master, rather than other members of the bridge team, makes a vast majority of the essential and timely communications. The exception to this occurs during the transit between the vessel and vessel traffic systems and between nearby vessels and docking tugs, which are traditionally handled by the pilot and/or the docking master.

There was no significant difference in responses among the various ship types that reported information consolidated in this survey.

Due to the absence of port identification in a significant number of surveys, no conclusions can be made relative to port-specific variations, for example, no specific port (for which survey information was obtained) can be identified as causing either an increase or decrease in the communication challenges that are faced by the bridge management team.

SURVEY FINDINGS (Narrative Questions)

While no statistical analysis is possible concerning responses to the narrative questions, some significant observations were made from these responses. The single most distracting communication, by a broad margin, was false alarms generated by the Global Maritime Distress and Safety System (GMDSS) receiver. This was true for all three transit segments covered by the survey. Some responses indicated that the false alarm distraction was so great that the equipment was turned off once the vessel was in transit from the pilot station to the dock.

The next most distracting communication issue is the volume of excessive or non-essential traffic on VHF channels, particularly safety and commercial working channels. There are two issues worthy of note here. Due to traffic density in many ports, safety channels are overloaded with essential traffic. This overload is made worse by the addition of non-essential traffic on these channels from several sources, generally attributed in the survey responses to recreational and fishing vessels. Working channels



Photo courtesy Corbis Photos.

are also subject to overload for the same reasons noted above. In particular, instances of ongoing casual conversations occurring on commercial working channels were cited.

Responses also noted that significant distractions occur due to non-essential use of satellite telephones and cellular/portable phones. The distractions associated with cell phone misuse were

generally attributable to pilots conning the vessel during transit, and in some cases, were noted as introducing additional distractions during communications among the bridge management team.

Other distractions noted in the narrative sections included those from internal communications; non-essential communica-

tions from external sources, i.e. solicitations from ship mariners; and excessive or unnecessary rebroadcast of local safety messages by port safety and/or vessel traffic system officials.

The significant response rate to the survey indicates that management of communications during critical navigational periods is of great interest and concern to the mariner, particularly the Master, who must manage these communications in the midst of fulfilling responsibility for the safe navigation of the vessel.

RECOMMENDATIONS FOR FUTURE ACTION

Vessel owners, operators, masters, crew and regulatory agencies are urged to review existing communications requirements and where possible, streamline these requirements to minimize their impact on ship safety during critical navigation periods.

In situations where removing the existing communications requirements is improper or impractical, with regard to the safe navigation of vessels, stakeholders are urged to consider scheduling these required communications. The goal is to permit minimal impact to the safe navigation of vessels.

Additional efforts should be focused on mitigating impacts in key and recurring areas of communications challenges: namely GMDSS false alarms, overload of working channels with both essential and non-essential communications, and non-essential use of satellite and cellular telephones during critical periods of navigation.

CSA and the Coast Guard will support future partnership efforts related to human factor issues aboard ship to fully understand the impact of the current shipboard environment on crew performance.

Future PTP Program initiatives are urged to consider the use of the Partnership's survey as a means of creating a forum for operators, owners, masters and crew, and encourage their participation in topics of mutual interest.

International Council of Cruise Lines/ PTP Partnership

By Rajiv Khandpur, Program Manager, Passenger Vessel Safety, Office of Compliance, U.S. Coast Guard and CAPT Ted Thompson (USCG Ret.), Executive Vice President, International Council of Cruise Lines

Background

The International Council of Cruise Lines (ICCL) is a non-profit industry trade association consisting of 16 passenger cruise lines that carry approximately 95 percent of all passengers boarding on foreign cruise ships from ports in the United States. ICCL advocates industry positions to key domestic and international regulatory organizations, policymakers and other industry partners. ICCL actively monitors international shipping policy and develops recommendations to its membership on a wide variety of issues.

Charter/Purpose

A formal charter between the Coast Guard and ICCL was signed on March 12, 1997 at a major cruise line convention (SEATRADE) by then-Coast Guard Assistant Commandant for Marine Safety and Environmental Protection, RADM James Card, and ICCL president, Cynthia Colenda. The first formal partnership meeting was in July 1997 in Washington, D.C., and there have been six formal partnership meetings to date.

The purpose of the ICCL/PTP partnership is to strengthen the communication and working relationship between the passenger vessel industry and the Coast Guard. The partnership's objective is to foster the common goals of promoting maritime safety, security and environmental protection and develop non-regulatory solutions.

Organization

The Partnership Action Team (PAT), comprised of Coast Guard flag-level officers and cruise company CEOs leads this partnership. The partnership is co-chaired by the Coast Guard Assistant Commandant for Marine Safety and Environmental Protection and the ICCL Chairman.

The PAT's direction is carried out by a standing Joint Technical Work Group (JTWG) composed of senior Coast Guard and ICCL personnel representing expertise in passenger vessel safety, operations, and management. The JTWG may set up ad hoc work groups for a limited time

with set objectives to resolve issues as they come up in different areas. So far, efforts have targeted the following main topics:

- Emergency Response Plans and Exercises;
- Clarification on the Safety of Life at Sea (SOLAS) Convention and other regulations; and
- Training issues.

Emergency Response Plans and Exercises

The cruise ship industry is growing in both numbers and capacity of vessels. There are approximately 130 cruise ships operating from United States ports that carry 6.5 million passengers annually. This is estimated to grow to 165 vessels and 10 million passengers by 2004. These vessels carry anywhere from 1,000 to 5,000 persons on board. The latest trends are certainly toward bigger and larger ships.

This impressive growth in the passenger vessel industry has the potential to not only increase the risk of casualty, but also the consequence of a casualty due to the huge number of passengers carried on board. This potential risk and concern for the future spurred the partnership to further examine this issue. Specifically, the partnership sought to address mutual concerns in planning and coordinating a response to a cruise ship incident.

Under the sponsorship of the partnership, regional response exercises are conducted at least once a year in Alaska and Florida. A large-scale cruise ship response exercise was also conducted in Hawaii. From these exercises, it was determined that the following objectives are critical and should be accomplished on a national basis:

- Establish an atmosphere conducive to information sharing among industry, the Coast Guard Marine Safety community, and the Coast Guard Search and Rescue (SAR) system communities;

- Discuss issues related to and impacting efficient and coordinated responses to a significant casualty on a cruise ship;
- Discuss and identify the players in such a response, the authorities, jurisdictions and resources; and
- Identify factors necessary to plan and conduct a successful table-top drill and eventually a field Mass Rescue Operations (MRO) exercise.

To this end, the partnership jointly sponsored a MRO workshop in Jacksonville, FL on March 26-27, 2001. The purpose of the workshop was to provide a forum for rescue organizations, the cruise line industry, and others, to discuss their abilities to adequately respond to a significant casualty on a major cruise ship with 4,000 or more persons on board.

Workshop attendees discussed many issues associated with a mass rescue operation, such as the following: ship design, layout and construction, industry resources and response capabilities, as well as the jurisdiction, authority, responsibility and capability of the international SAR system. The workshop also focused on how to incorporate response issues into a MRO preparedness exercise. A report summarizing the workshop discussions was prepared and distributed to all attendees. In the future, Coast Guard and industry exercise planners will need to apply the many issues raised during this workshop and develop an exercise table-top drills and field scenarios. We anticipate the completion of this project within the next two years.

Clarification of SOLAS and Other Regulations

The many issues tackled under this general topic include developing procedures and processes to ensure consistent implementation, and addressing emerging concerns such as the recent issues related to environmental discharges. The following includes the work completed to date:

- Clarifying davit-launched liferaft training and drill requirements;
- Clarifying International Safety Management (ISM) Code implementation guidance for cruise ships;
- Clarifying English language requirements and competency for emergency drills; and
- Hosting an interagency workshop on cruise ship environmental management.

The interagency workshop was in response to concerns regarding potential environmental impacts to water quality from the growing cruise ship industry. Its primary goal was to educate the Environmental Protection Agency (EPA) regarding industry environmental practices and procedures, and Federal and state enforcement and compliance programs. The EPA has an ongoing effort to assess the nature and impact of cruise ship waste discharges and to ultimately develop regulatory programs to control such discharge.

Additionally, there are a number of topics currently being worked on by the partnership, including the following:

- Web site on Cruise Ship Safety;
- Oily Water Separator discharge testing;
- Environmental practices onboard a cruise ship;
- Training and certification for foreign cruise ship tender operators;
- Navigation and emergency equipment testing 12 hours prior to both arrival into or getting underway upon the navigable waters;



Pool deck onboard the *Sea Princess* of Princess Cruises.
Photo by LCDR Kevin Kiefer.

- and, Installation of locally sounding audible alarms in passenger cabins.

Training

This partnership also fosters the exchange between Coast Guard and industry personnel at various training venues. This exchange improves communication and garners a better appreciation of each other's organizational goals and constraints. The following highlights just a few:

- The Coast Guard conducts a week-long passenger vessel inspection course three times a year. Two industry representatives are invited to attend one of each. In turn, the industry encourages Coast Guard students to board a cruise vessel for familiarization and training visits.
- Princess Cruises volunteered to assist with Coast Guard inspector training. Princess Cruises also invited Coast Guard inspectors to observe company internal audits as part of ISM oversight.

- The Coast Guard offers an "industry training" opportunity for its junior officers. A Coast Guard officer may spend approximately three months with an industry (for example, the passenger cruise industry). The Coast Guard officer continues to get paid by the government; however, the industry provides the training opportunity and absorbs the general and administrative costs associated with the position. This is mutually beneficial to both parties, for industry benefits from a one-person addition to their workforce for a short duration, and the student gains an appreciation of the industry that she or he will eventually be regulating.

Closing

The ICCL/PTP partnership continues to thrive and provides an excellent forum for resolving issues through working outside the regulatory regime. This builds mutual trust between the industry and government, and is one key to making continued progress.



Lifesaving appliances onboard the *Sea Princess* of Princess Cruises.
Photo by LCDR Kevin Kiefer.

The International Association of Independent Tanker Owners / PTP Partnership: A Systems Approach to Risk Management

By LCDR Mary Jager, Program Analyst for the Office of Marine Investigation and Compliance Analysis

The International Association of Independent Tanker Owners (INTERTANKO)/PTP partnership grew out of a mutual interest in a systems approach to risk management in the maritime environment. The Coast Guard has long recognized that local conditions are best understood by the local community, and has therefore promoted working relationships with these groups when developing response plans and conducting waterways assessments. INTERTANKO's 1996 Port and Terminal Safety Study suggested that this approach could be broadened to identify harbor safety risks. In the study, INTERTANKO stressed that a systems outlook was necessary for safe operation of port areas. The Secretary of the Department of Transportation agreed and invited INTERTANKO's participation in the Marine Transportation System (MTS) initiative.

INTERTANKO was an excellent choice for participation since their members supply well more than 60 percent of the crude oil and petroleum products imported into the United States each year. INTERTANKO was established in 1970 to represent the interests of independent tanker owners. Its members are non-oil company and non-state-controlled tanker owners; members represent about 76 percent of the independently owned tanker fleet above 10,000 dwt, which is about 72 percent of the total tanker fleet. The three main

goals of INTERTANKO are safe transport, cleaner seas, and free competition.

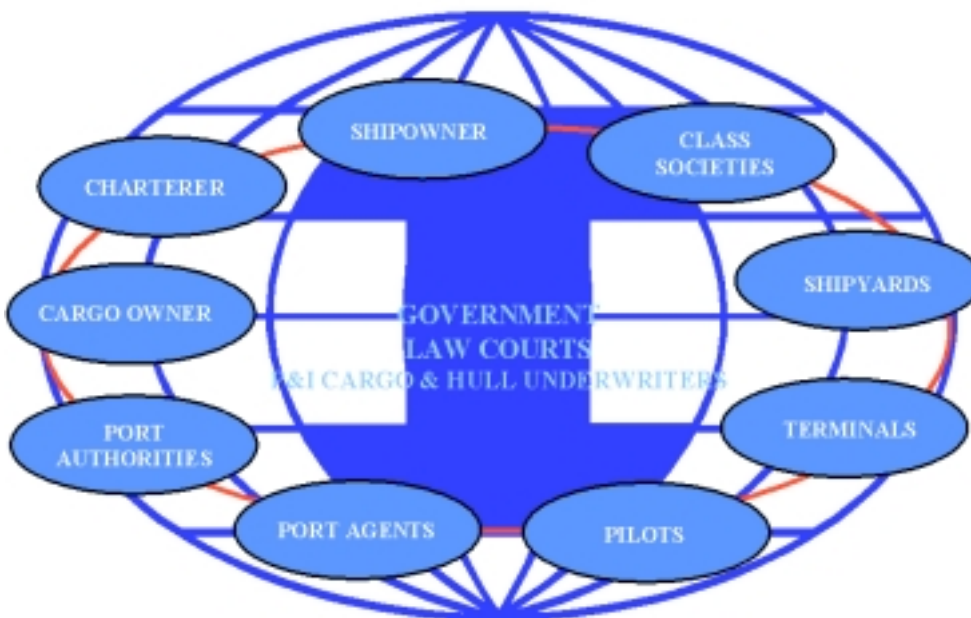
At the same time that momentum was building for a systems approach to waterways management, the Coast Guard was developing risk management strategies. This included PTP, which focused on the human element in marine casualties. As part of PTP, the Coast Guard was pursuing partnerships with representatives from the maritime industry to help identify risks and develop appropriate non-regulatory approaches to risk management. The two initiatives merged in April 1998 with the signing of the Partnership Agreement between INTERTANKO and the Coast Guard.

Under the agreement, the partners were charged with identifying and removing conditions that were hazardous to navigation in U.S. waters. Three working groups were established as part of the partnership. The first addressed issues regarding Harbor Safety Committees; the second regarding hazardous condition reporting; and the third regarding the lack of timely, relevant and accurate information concerning the port where vessels were operating.

Each of these three topics has direct bearing on a systems approach to risk management.

The partnership and issues identified for immediate action support INTERTANKO's risk management goals. INTERTANKO's interest in a systems approach to risk management derives from their studies that show that most collisions and groundings involving tank ships occurring in port areas are the result of multiple circumstances. Because they understand that vessel owners and operators are responsible for the safe operation of the vessel, they are working to ensure that the environment the vessel is operating in is as safe as practical. INTERTANKO emphasizes the "Chain of Responsibility

RESPONSIBILITY CHAIN



bility" in which each element, or link, in the transportation system shares responsibility for waterway safety. The projects undertaken in the partnership are based on this concept. INTERTANKO's Port and Terminal Safety Study highlights the inter-relationship between safe operation and a safe operating environment and recommends that attention be focused on the other "links," because it is in this neglected area that risk can be reduced through an equitable sharing of responsibilities among all participants in the transport chain. The Coast Guard agrees with this focus, as is seen through their work with the MTS.

MTS completed a report in September 1999 entitled "An Assessment of the U.S. Marine Transportation System: A Report to Congress," where it cites the two primary goals of MTS as the safety of people and property, and the protection of the environment. To achieve U.S. safety and environmental objectives, the report identified specific strategic areas. Included for consideration were the three projects undertaken by the INTERTANKO/PTP partnership. These were "local coordination" accomplished by the Harbor Safety Committees working group, "vessel operation and the human element" addressed through the Hazardous Condition Reporting working group, and "establishing information management structure supportive of the Marine Transportation System," proactively being developed through the Situational Data working group. The INTERTANKO/PTP partnership working groups proposed solutions for these strategic areas and the Coast Guard took action to implement the recommendations.

The **HARBOR SAFETY COMMITTEES** (HSC) working group worked to harness and focus the energy being generated at the local level. HSCs are typically comprised of representatives of governmental agencies, maritime labor and industry organizations, environmental groups, and other public interest groups. They serve as a means to ensure communication among stakeholders within the port. These committees were forming in ports around the country, and the Coast Guard saw opportunity for involvement through the Captain of the Port (COTP). The Coast Guard provided guidance to local stakeholders on who could best represent the various interests in their ports and provided a conduit to action based on the concerns and risks identified. The Coast Guard then issued Navigation and Inspection Circular (NVIC) 1-00: "Guidance for the Establishment and Development of Harbor Safety Committees Under the Marine Transportation System (MTS)." The NVIC provides guidance for local coordination of MTS issues such as ports and waterways safety, security, mobility and environmental protection.

The **HAZARDOUS CONDITION REPORTING** working group was chartered to develop a non-regulatory solution to

resolve the flow of information and hazard correction issues within ports and waterways of the U.S. The National/International Maritime Safety Incident Reporting System (NMSIRS) that evolved into the International Maritime Information Safety System (IMISS) was proposed as a starting point to fulfill the intent of this objective. NMSIRS, then IMISS, was developed as a voluntary non-attribution national/international maritime lessons-learned system. The reasoning behind the system was that although the maritime community captures a lot of information on marine casualties, there are many more situations that involve unsafe occurrences, e.g. near-accidents and hazardous situations involving vessels, their crews, and passengers and cargo, that go undetected. The focus of the system was to be human element related and most of the work on development was conducted under the auspice of the Society of Naval Architects and Marine Engineers (SNAME) Human Factors and Manning Panel 0-38 Working Group. The SNAME group was made up of federal, state, labor and industry representatives (including INTERTANKO). The group successfully tested and delivered a prototype system.

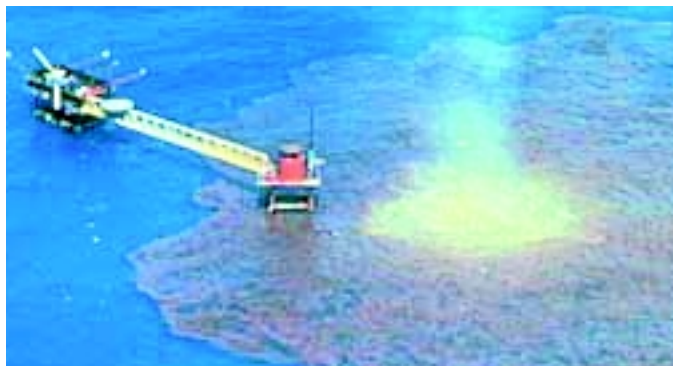
The **SITUATIONAL DATA** working group chose to look at Automatic Identification Systems (AIS) implementation. AIS use radio transponders permanently installed or carried on board specified vessels to broadcast important data such as vessel identification, GPS/DGPS position, course, speed, navigational status, dimensions, or cargo. Combined with shipboard display capability, AIS presents critical navigation and vessel traffic information to the bridge team. The Coast Guard is currently developing AIS transponder requirements and Safety of Life at Sea (SOLAS) Chapter V has already been updated to require AIS on certain vessels with a phase in period for others.

Another product of this working group was the concept for the Port Operations Information for Safety and Exchange (POISE). The Coast Guard has implemented a series of Web pages grouped under the URL <http://www.uscg.mil/safeports> that are maintained by the local COTP. These contain information and links to relevant safety information about the port. The goal of this project is to provide "one stop online information shopping," taking the "'search' out of searching the Internet."

The timing was right for a partnership between INTERTANKO and the U.S. Coast Guard to work together to develop a systems approach to safety through risk management in U.S. ports. The products recommended by the partnership and generated at the international and U.S. federal level complement this approach and will be successful in reducing risk to all participants in the transportation system.

Partnering with the Coast Guard: Spill Control Association of America and Association of Petroleum Industry Cooperative Managers / PTP Partnership

By LCDR Scott Bates, Coast Guard Office of Response, Response Resource Branch



Itox offshore well blowout, Gulf of Mexico. USCG photo.

In 1997, the Coast Guard's Office of Response (G-MOR) recognized that environmental protection initiatives, particularly the spill response industry and the Coast Guard mission area of environmental protection and response, were missing from the existing formal Prevention Through People (PTP) Quality Partnerships. It was determined that the Coast Guard's Office of Marine Safety and Environmental Protection should foster a cooperative relationship with the commercial spill response segment of the marine industry in order to partner towards operational improvements in this area.

Accordingly, G-MOR reached out to key members of the commercial spill response community. This resulted in an agreement that called for the formation of a partnership, and a Partnership Action Team (PAT) to serve as the management body. The partnership charter between the Coast Guard and the Spill Control Association of America (SCAA) was signed on February 3, 1998 in Las Vegas, Nevada by RADM Robert North, then-Coast Guard Assistant Commandant for Marine Safety and Environmental Protection, and Mr. David Usher, President of SCAA. Subsequent partnership inquiries of key members of the petroleum industry sparked their interest as well. The Association of Petroleum Industry Cooperative Managers (APICOM) formally joined the partnership four months later.

The partnership's primary objective is to improve the effectiveness of spill response operations. Therefore, the PAT appropriately reviews issues or problems of mutual interest to the membership. These "Opportunities-For-Improvement" (OFIs), if deemed necessary, are addressed through the establishment of OFI Work Groups (OWGs). These handpicked OWGs look at potential improvements regarding some of the most controversial topics of spill response, including those described below.

The Basic Ordering Agreement (BOA)

There are two means available to the Federal On Scene Coordinator (FOSC) to contract for services, supplies, and equipment to cleanup and/or mitigate the harmful effects of spilled petroleum products and hazardous substances: (1) Basic Ordering Agreement (BOA), or (2) non-BOA purchase order/contract. A BOA is a written understanding negotiated between a Coast Guard Contracting Officer and a contractor. It is the preferred method of contracting for oil spill cleanup. The contractor is on-call 24 hours a day, 365 days a year and usually has to respond on short notice. BOAs are *strictly for emergency use*. Due to some of the ongoing problems associated with negotiating and maintaining BOAs, the PAT decided to form an OWG to seek improvements. The following depicts some of the BOA misperceptions that the OWG identified and the responses they determined.

1. "A BOA is a rigid, inflexible document."

The federal government's preferred method of contacting is a competitive, firm-fixed price contract. As specified in Federal Acquisition Regulation (FAR) subpart 16.703, a BOA is not a contract; it is merely an instrument of understanding regarding terms that apply to possible future contracts (orders). For example, a BOA contractor does not have to accept an initial call from the government to provide oil spill cleanup services. Further, the time-and-materials pricing approach is the least preferred method in the FAR, as detailed in FAR subpart 16.601, because it provides no incentive for the contractor to control cost or labor efficiency. This permits better selection and utilization of contractor resources since only the specific equipment and services the government requests will be provided. Because of its flexibility for use in emer-

gency situations, the time-and-materials BOA is a great, if under-appreciated, procurement vehicle for oil and hazard material spill cleanup.

2. “The BOA contractor selection criteria overemphasizes price of services.”

Selection is predicted on the following: technical capability, response time, past performance, and price. Due to the importance of capability and time, it was suggested that price be taken out of these selection criteria. The National Pollution Funds Center (NPFC) stated that the factor of price gets at the Coast Guard's obligation to facilitate open competition among BOA contractors. In addition, the price selection criteria allows the Coast Guard to fulfill its responsibility to be good stewards of federal funds.

3. “BOA standby rates were developed taking into account offset times but not inclement weather delays.”

The BOA only pays for the time contractor equipment/personnel are actually at the spill site if the contractor is located within a 50-mile radius of the spill. Typical BOA language does not consider transportation time for employees to travel from homes and/or offices to bring equipment to the site. Ongoing NPFC review of BOA language will assist contractors with this concern. Also, contractors do get paid for acceptable equipment that has been brought to the spill site but can't be used due to inclement weather. However, regardless of inclement weather, if the BOA contractor brought a poorly maintained, malfunctioning piece of equipment to the spill site, the contractor would not be compensated for the time the equipment was inoperable during the cleanup.

While these misperceptions clearly continue to stand in the way of contractors and Coast Guard responders as they attempt to affect the most effective spill response, awareness of them by key decision/policy makers marks a much brighter future for spill response.

The Public and Private Resource Interface That Occurs at Most Spills

The private sector response community has expressed concern regarding the use of publicly-owned response resources (U.S. Coast Guard,



Barge Morris J. Berman incident, San Juan, Puerto Rico, January 1994. Clean-up workers use heavy machinery and manual removal techniques to clean oil from the beach. USCG photo.

U.S. Navy, and other governmental assets) to perform oil and/or hazardous materials removal actions when private sector resources are available to perform the same tasks. The private sector understands the need for the availability of government response resources (including those of the Coast Guard and the Navy Supervisor of Salvage) to ensure that the FOSC has a “safety net” during a response action. The Coast Guard recognizes that the responsible parties and their respective owned/contracted response resources should be the primary response elements during a spill incident. This OWG was created to study the issues or problems that result from the use of public sector response resources on spill incidents when private sector resources are available, and to make recommendations for process improvements in this area.

OWG accomplishments include setting a foundation for creation of a “Right Mix” study, which will take into account all response resources in the U.S., whether they are publicly or privately owned. They also set far-reaching risk determination goals by suggesting wide-scale research into the availability and content of current studies depicting oil movement by pipeline and tank vessels, as well as the movements of dry cargo/freight vessels in all Coast Guard Captain of the Port Zones.

The OWG is now poised to take “broad risk” information and re-evaluate the positioning of response equipment nationwide, taking into account the current status of all known spill response technologies, and the revamping effort of the Oil Spill Removal Organization classification process.

The Federal Role in Dispersant Delivery

Dispersant usage throughout the past 20 years has primarily been a case-by-case issue. Although pre-authorized use areas have been designated for more than a decade, use of dispersants has been very rare up until the last two to three years, and then concentrated primarily in the Gulf of Mexico. This recent use has demonstrated that dispersants are an effective tool in limiting environmental impact, especially in preventing or reducing shoreline and sensitive area impacts.

Spills from tank vessels have been suggested to be a significant potential risk that can be aggressively and effectively treated by dispersants. A rulemaking process has been initiated to determine what level, if any, should the tank vessel industry be required to meet a dispersant usage-planning standard.

The U.S. has a limited pre-authorization for use of dispersants and a corresponding capability. Where dispersants are pre-authorized and have a history of being used, a level of commercial capability exists. However, the risk of a major accident resulting in a large spill is not restricted to those areas. Currently, there are limited private resources to meet a large spill response in most U.S. coastal waters outside of Alaska. The OWG decided to look further into the matter, focusing on options to insure that the U.S. can provide a viable and competent system to respond to a large spill with dispersants if needed. Three options were discussed.

One option would be to have regulations written and require large aircraft dispersant capability over all regions of the coastline as proposed in recent workshops. Though not impossible, the costs involved in having this infrastructure available for a rare



Disastrous Exxon Valdez oil spill. USCG photo.

event would inevitably be at the expense of conventional response capability. For smaller spills, especially near the coastline, these large aircraft may not be appropriate for response while meeting the planning requirements. With the high costs involved, planholders would be less likely to have additional dispersant capability (helicopter, vessel, and small aircraft) to duplicate these planning requirements even though those resources have a real response capability.

A second option would be to require tank vessels to have a dispersant capability in pre-authorized areas for a 5,000-barrel spill, utilizing aircraft, vessel application systems, or a combination of the two. Historically, this would also be a rare event. A tiered performance standard for having these capabilities in place would insure early and dedicated response. In the event of a large spill, these assets would still be used to meet the early threat and prevent significant damage while other assets are enroute. For spills of more than 5,000 barrels, tank vessels would have to provide suitable additional capability, or participate in an industry sponsored stockpile/equipment capability utilizing pooled public aircraft. This system would be very rarely used, and would act as the "catastrophic fire house" for spills of significant damage potential.

A third option would be to target tier response based on historical spill data. During the 20-year period between 1973 and 1993, there were 11 spills between 5-10,000 bbls (barrels). Of those, six were in the Gulf of Mexico. Thirty-three of the 59 dispersible spills larger than

1,000 bbls have also been in the Gulf of Mexico. Since this is an area of intense activity including tank vessel transits, offshore oil production, and underwater pipelines, it may be prudent to require additional capability for this area.

The OWG has recommended that the Coast Guard consider the concept of an overall capability improvement provided by the second and third options. Response based on historical data and perceived risk provides for a viable, effective and efficient capability. Members of the working group are less interested in meeting planning standards than real response capability. It is believed that a combination of private resource capability that meets a performance standard for the majority of tanker spills, backed up by a larger capability in partnership with the Coast Guard for those very rare events, is an attainable and realistic goal.

Other topics the PAT continues to look at for potential OWG formations:

- Use of Coast Guard aircraft related to dispersants;
- The Occupational Safety and Health Administration's Spill Response Training Matrix;
- The Response Resource Inventory for greater uniformity and national access;
- An examination of Spill Response Lessons Learned;
- Cost Documentation/Resource Tracking;
- Industry protocols for over-the-top transfers of flammable cargoes; and
- Oil Spill Removal Organization (OSRO) process.

The SCAA/APICOM partnership allows the Coast Guard to tap into the "front line" experiences of industry representatives. This dynamic partnership provides practical guidance to the process of finding ways to respond to spills more effectively. Though the Coast Guard possesses substantial experience in managing spill response efforts, it is the response industry perspective that, when factored in, contributes to meaningful operational improvements — they are the primary resources to which the nation turns for response. This partnership establishes the forum for a forward-looking dialogue to be conducted with the focus on identifying feasible solutions to problems of mutual interest.

Any questions should be directed to LCDR Scott Bates, G-MOR-3, Office of Response, 202.267.0447.



USCG clean-up contractors working on the beach on a spill in Dutch Harbor, AK. USCG photo.

BIMCO / PTP Partnership: *Working Towards Common Goals*

By LCDR Mary Jager, Program Analyst for the Office of Marine Investigation and Compliance Analysis

History

The Baltic and International Maritime Council (BIMCO) and the United States Coast Guard share similar outlooks and have common goals — this makes them very successful partners. After years of working together informally, a formal partnership was confirmed on September 10, 1998 in Stockholm, Sweden. Ronald Bergman, President of BIMCO and RADM Robert North, then-Coast Guard Assistant Commandant for Marine Safety and Environmental Protection, signed the Partnership Agreement.

In a speech announcing the partnership, RADM North discussed the importance and goals of this relationship. Among them, he addressed the need for partnerships to define the vision of ports and waterways in the 21st century and to determine what shortfalls must be overcome to attain that vision. To address any forthcoming shortfalls, he stressed the importance of having full stakeholder participation when selecting an approach to close any gaps at international, national, regional and local levels. RADM North further detailed the purpose of the partnership as helping to develop a systematic approach to deal with the following issues:

- Improve communications and the working relationship between the Coast Guard and the shipping industry represented by BIMCO;



Photo courtesy Corbis Photos.

- Promote vessel safety and prevent loss of life, damage to property, and damage to the environment from commercial vessels;
- Employ a cooperative program of well-defined activities that address mutual goals;
- Develop and employ non-regulatory approaches to enhance the safety of marine transportation through Partnership Action Teams;
- Implement a quality process to analyze marine safety issues and recommend improvements; and
- Use this partnership to identify and resolve marine safety issues related to waterways management, port safety and security, environmental protection, International Safety Management (ISM) Code implementation, Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 95 development and implementation, and marine casualties, all with the eye toward improving international maritime infrastructure and safety.

Objectives

The partnership objectives are closely aligned with the goals of both organizations, and therefore benefit BIMCO, the Coast Guard, and their corresponding customers. The focus of the Coast Guard's Marine Safety and Environmental Protection Program is to protect the public, the environment and U.S. economic interests through the prevention of

maritime incidents. The Coast Guard's strategy to prevent maritime incidents is through risk management and communication with those in the best position to implement identified safety improvements.

BIMCO is in an ideal position to influence the international maritime shipping industry as the world's largest shipping organization representing 61 percent of the world's ocean going dry-cargo and tanker fleet (covering more than 80 percent of the cargo-carrying capacity of these types of vessels). BIMCO is unique in that its membership is drawn from all trades and types of ships, including owners, brokers and ships' agents, and clubs.

Partnerships are designed to be cooperative, to solicit input and to draw all of the issues into the discussion. Similarities between BIMCO and Coast Guard objective and mission statements and the close alignment of the roles of each organization have made this partnership highly successful. Both the Coast Guard and BIMCO work through the International Maritime Organization (IMO) and believe strongly in international standards and harmonized national and regional application of those standards. Both also favor moving away from the traditional formal regulatory process to refocusing on a performance and risk based management philosophy. Acknowledging the regulatory process as necessary and valid, while seeking non-regulatory approaches to further raise the safety level of those regulations, is part of making a partnership successful.

Partnership Support

In October 2000, RADM North addressed the third International Seminar in St. Petersburg, Russia on "Substandard Shipping – Solution through Partnership." In this speech, he emphasized the "structure" established by the IMO and International Labor Organization (ILO) for addressing areas of risk to safety, the environment, and crew conditions that support the attainment of quality. He noted that the international standards foundation of the structure is the base upon which the stakeholders in the process — owners, flag states, port states, classification societies, charterers, underwriters and others — depend to attain quality. All of these stakeholders are informal partners. He closed his comments by endorsing the concept of partnerships, which he characterizes as being informal close relationships with increased communications or formal agreements to improve the quality of shipping. He further stated that the Coast Guard will continue to employ the concept of partnering for safety and environmental protection, perhaps creating a culture where formal regulatory processes are minimized and refocused from a prescriptive to a performance and risk-based management philosophy.

BIMCO has made similar statements on their Web site where they very strongly endorse international standards and harmonized national and regional application as being essential to the success of their members. In fact, it states that the practical reason for their entering into this partnership is to ensure its voice in advocating viable alternatives to increased regulatory burdens is heard. With such close alignment between the principles' goals and objectives, the partnership satisfies each organization's needs.

Affecting Safety

The BIMCO/Coast PTP partnership has worked on a number of issues including near-miss safety reporting to analyze and decrease the number of marine casualties, Aquatic Nuisance Species and their impact on the marine environment, and strategies to successfully implement ISM requirements for freight vessels. Many other issues are currently being discussed at the executive level and some may become joint projects in the future.

IMISS

The near-miss safety reporting system evolved into the International Maritime Information Safety System (IMISS). The IMISS project began as a result of a suggestion made by an industry member during one of the Coast Guard's PTP public meetings. The Coast Guard took action on this suggestion by researching industry and labor party views about a near-accident reporting system. This was accomplished through a series of workshops. There was a general consensus that a near-accident reporting system was needed to establish prevention measures. The group felt a reporting system would help to reduce the current levels of measured, reportable casualties. The Coast Guard and the United States Maritime Administration joined together with industry through the Society of Naval Architects and Marine Engineers to develop a system. BIMCO and its membership were key players in the system's development. They aggressively marketed the system



Photo courtesy Corbis Photos.

through their publications and volunteered their membership to test the prototype and to use the system once implemented.

IMISS supports the partnership's objective of promoting vessel safety while also supporting both organizations' goals for non-regulatory alternatives for safety issues. IMISS is a maritime safety system that is international, non-attributable in nature, and voluntary. It captures near-casualty, safety and hazardous conditions information. The information collected will form the basis for a feedback system that will be used to mitigate risk in the maritime environment. IMISS is designed to reach the following goals:

- Serve maritime stakeholders, including state and federal government and general public;
- Ensure voluntary submission of reports;
- Guarantee non-attribution for reporter and on feedback implementation;
- Capture/collect information about unsafe situations;
- Capture/collect information about actions taken to avert hazardous situations;
- Create a safer maritime community;
- Identify safety gaps;
- Reduce annual number of Marine Casualties (especially high risk vessel casualties);



- Reduce costs (industry, government, environmental) by preventing casualties;
- Facilitate appropriate preventative actions;
- Analyze collected information and identify trends, lessons learned, and risk levels;
- Produce a variety of output/feedback products, including a searchable database; and
- Foster enhanced interest in safety (culture shift).

Aquatic Nuisance Species

Another issue chosen by the partnership for cooperative effort was Aquatic Nuisance Species. Currently under development at national and international levels are measures to protect the environment from aquatic nuisance species invasions through ballast water exchange and monitoring. In 1990, Congress enacted the Non-indigenous Aquatic Nuisance Prevention and Control Act (NANPCA) to prevent and control infestations of zebra mussels and other non-indigenous aquatic nuisance species in the Great Lakes. In 1996, Congress enacted the National Invasive Species Act (NISA) that amended and reauthorized NANPCA. NISA provides for ballast water management, which works to prevent the introduction and spread of non-indigenous species into the U.S. waters. NISA resulted in mandatory regulations for ships operating in the Great Lakes and on the Hudson River and for additional studies to be conducted through the industry's voluntary reporting and monitoring. NISA also calls for the Coast Guard to engage in foreign negotiations to address the issue. These discussions currently are taking place at IMO. Through the partnership, BIMCO offered the use of its platforms for the testing systems studies enabling the Coast Guard to more fully understand the impact that various alternatives will have on the maritime industry.

ISM Code

The third project agreed to by the partnership was the proactive approach to successful implementation of the ISM Code for all freight vessels by BIMCO's members. BIMCO has actively encouraged its members to become compliant prior to the July 1, 2002 deadline. They have provided training and numerous articles in the BIMCO Bulletin and BIMCO Review (www.bimco.co.uk). BIMCO has made these articles available online for its membership and public access by anyone interested in safety. It has also recently engaged in a cooperative effort with the Nautical Institute to assess whether the ISM Code is working as it was intended or whether particular problems may be inhibiting its proper implementation. BIMCO has fully implemented a proactive approach to identify problems well in advance of the deadline to help its members become compliant. Its approach, agreed to through this partnership, will greatly enhance maritime safety.

The partnership complements the objectives of BIMCO and the Coast Guard as it provides an efficient mechanism for joint Coast Guard-industry action in a results-oriented, non-regulatory environment. The partnership enhances the important role of existing relationships to promote safety with a systematic quality approach. The partnership has been very successful in using the synergy of purpose between the two organizations to promote the flow of information and general understanding of positions in enhancing maritime safety and environmental protection.

American Pilots' Association/ PTP Partnership

By LT Alan Blume, United States Coast Guard Office of Vessel Traffic Management

The important role of pilots within the Nation's Marine Transportation System cannot be underestimated. In a 1947 decision, U.S. Supreme Court noted "pilots are...indispensable cogs in the transportation system of every maritime economy. Their work prevents traffic congestion and accidents which would impair navigation in and to the ports. It affects the safety of lives and cargo... ." In addition, the work of pilots contributes directly to the protection of the marine environment. Clearly, the work of pilots is directly related to the Coast Guard's responsibilities for protecting the safety of navigation and the marine environment on our nation's waterways.

Given the vital role of pilots as part of the marine transportation system and their contribution toward ensuring the continued safety of navigation, mobility and protection of the marine environment on the nation's waterways, there has always been an informal working relationship between the Coast Guard and the nation's state-licensed pilots. In order to improve the contribution this relationship makes to navigation safety and protection of the marine environment, the American Pilots' Association (APA) and the Coast Guard entered into a formal partnership agreement in 1998.

APA and the Coast Guard have been involved in a number of activities that have contributed to improving the safety of navigation and protection of the marine environment on the nation's waterways. Although none of these activities have involved chartering a work group or action team, they are consistent with the intent of the partnership agreement. One of these activities, which also included the U.S. Maritime Administration, was to sponsor a workshop on the master-pilot information exchange. A result of this workshop was a recommendation that pilots consider using a master-pilot information exchange (MPX) card. The purpose of this card is to assist a pilot in conducting an initial conference with a master upon boarding a ship in order to ensure that infor-

mation necessary for both the pilot and the master to safely navigate a vessel in pilotage waters is exchanged. Recommendations from this workshop have also contributed to the development of voluntary guidelines relating to pilotage by the International Maritime Organization.

APA and its members have been active partners in the Coast Guard's Ports and Waterways Safety System Project (PAWSS) at both the national and local level. PAWSS is a major acquisition project to establish and upgrade Vessel Traffic Services in the United States. On the national level, the involvement of pilots helped ensure that PAWSS was designed to meet the needs of those who use Coast Guard Vessel Traffic Services. On the local level, the involvement of state pilot associations and individual pilots have helped best target PAWSS investment in those ports where it will make the greatest contribution to navigation safety and protection of the marine environment.

Recently, APA participated with the Coast Guard, as well as the Society of Naval Architects and Marine Engineers, the U.S. Army Corps of Engineers, the U.S. Maritime Administration and the U.S. Naval Academy in planning and conducting a workshop on channel design and ship controllability. This workshop was designed to implement a recommendation contained in the Secretary of

Transportation's 1999 Report to Congress, "An Assessment of the U.S. Marine Transportation System" to assess the relationship between current and projected vessel characteristics and handling capabilities and the criteria used to design and construct dredged channels in the U.S.² This workshop, which was attended by representatives from throughout the U.S. as well as Europe and Japan, provided an excellent opportunity for channel designers, naval architects, vessel masters and pilots, and the Coast Guard to identify areas that should be addressed in the future to improve the safety of navigation in dredged channels.

The Coast Guard and APA recognize the value of open communication in any working relationship. Therefore, their partnership plans to initiate a project intended to identify and document the attributes that contribute to a strong, positive working relationship between local state pilots' associations and the Coast Guard. This project is also intended to help individual pilots as well as Coast Guard Captains of the Port or Officers in Charge Marine Inspection (OCMI) better understand each other's roles and responsibilities.

The formal partnership agreement between APA and the Coast Guard recognizes the benefits to maritime transportation that are realized both

nationally and locally when state pilots and the Coast Guard work together. It takes efforts within and outside of this partnership to improve the safety of navigation and to protect the marine environment on the nation's waterways. Further, these relationships make a significant contribution to the continued safety and reliability of the U. S. Marine Transportation System. It is expected that the working relationships that exist between the pilots and the Coast Guard will become more important in the years ahead. There will be many challenges to face in order to accommodate the forecasted increase in the nation's water-borne trade, including significant increases in both the size and number of ships transiting our waterways. This partnership is one instrument in use to successfully meet those challenges.

¹ *Kotch v. Board of River Port Pilot Commissioners*, 330 U.S. 552, 558 (1947).

² U.S. Department of Transportation, *An Assessment of the U.S. Marine Transportation System: A Report to Congress* (September 1999), p. 97.



Two ships passing each other in the Houston Ship Channel. This maneuver is referred to as the "Texas Chicken." USCG photo.

Crew Endurance Management Brings Together Chamber of Shipping of America and the U.S. Coast Guard

By LT Scott Calhoun, Office of Design and Engineering Standards, U.S. Coast Guard Headquarters

Do you know what a “circadian rhythm” is and how it affects you? What about “sleep inertia?” Any clue how to effectively manage “shiftwork?” Did you know that all of these issues affect safety in every aspect of the marine industry?

Don't feel bad if you can't answer these questions; most people are not able to answer them all. However, knowing the answers and understanding these (and other related concepts) are critical to your safety and those around you. Each question highlights human and organizational factors that affect your ability to do everything, from making simple decisions to driving home from work.

These factors also have a tremendous effect on mariners' abilities to perform their jobs safely. To more actively address these issues of fatigue and alertness in maritime operations, the Coast Guard established a formal PTP partnership in March 2001 with Chamber of Shipping of America (CSA). CSA represents 20 U.S.-based companies that own, operate, or charter oceangoing tankers, container ships, and other merchant vessels engaged in both the domestic and international trades. CSA also represents other entities that maintain a commercial interest in the operation of such oceangoing vessels. This makes them an ideal partner for this purpose.

The purpose of the partnership between CSA and

Crew endurance is the ability of mariners to maintain their performance within safety limits while enduring job-related physiological, psychological, and environmental challenges.

the Coast Guard is to evaluate, develop, and distribute guidance and tools for educating the marine industry on human and organizational factors, specifically, human fatigue and alertness. The tools

and guidance come from research being conducted under the expert guidance of Dr. Carlos Comperatore of the Coast Guard Research and Development Center. This research has developed an initiative called Crew Endurance Management (CEM) that allows marine companies to effectively address fatigue and alertness in their operations.

Crew endurance is the ability of mariners to maintain their performance within safety limits while enduring job-related physiological, psychological, and environmental challenges. A few examples of these challenges are issues surrounding stress, diet, shiftwork, sleep, physical conditioning, and working environments (heat and cold, noise, ship motions, and vibration). Effective management of these challenges, or risk factors, requires a good understanding of how the factors affect human performance in maritime operations.

CEM involves adequate training and education of both the company managers (at all levels) and the working mariners. Such things as understanding crew endurance risk factors, reviewing the marine operation as a system, and knowing how to effectively design the operation and workplace all need to be discussed and understood. This training and education process is extremely important. The part-

nership with CSA will further refine this process and develop the tools and guidance needed to achieve success.

The partnership with CSA will provide opportunities for both the Coast Guard and the maritime companies that CSA represents. CSA, as a respected and premiere maritime association, can help to bridge the gap that sometimes occurs because of the Coast Guard's regulatory nature by encouraging their members' involvement and fostering a good working environment. The professional relationship between CSA and its members facilitates a more open atmosphere that the companies otherwise might not feel when approached by the Coast Guard to address non-regulatory, prevention initiatives.

The Coast Guard also brings a lot of value to the partnership table. They have a vast source of infor-

mation, research, knowledge, and understanding of fatigue and alertness issues. The Coast Guard is heavily invested in learning more about how to effectively address these areas in the marine industry. They are doing so mainly through the CEM Program.

The success of the CEM Program relies on strong educational tools and guidance. Through this partnership, the Coast Guard is developing these tools and guidance, while CSA is helping to evaluate, develop, and distribute them. This unique partnership is an excellent opportunity for one sector of the marine industry to take a look at the tools and guidance being developed. The insight gained through this partnership will prove to be a tremendous asset for both partners, especially as the Coast Guard looks to further develop these materials and make them available to the entire marine industry.



RADM Robert North, then-Assistant Commandant for Marine Safety and Environmental Protection, and Mr. Joseph Cox, President of Chamber of Shipping of America, at the Partnership signing. Photo courtesy CSA.

Partnerships in the Field

In addition to the nine formal PTP partnerships, numerous partnerships are ongoing in the field. Many of these partnerships have been operating with the same principles and ideals of the formal partnerships, and their successes are just as great. Their value to industry serves many purposes, most especially providing a sense of community among local businesses and individuals. A few examples are throughout the next set of pages.



Photo by Kriste Stromberg.

Marine Safety Office Boston

Maritime Incident Resources and Training Partnership (MIRT)

Firefighters, police officers, Emergency Medical Technicians (EMT) and other public safety workers constitute America's first line of domestic defense when crisis strikes. Until 1996, however, no agency in New England had assumed responsibility to train first responders to confront the challenges of shipboard fires and other maritime emergencies.

After a 1996 electrical fire aboard a Liquefied Natural Gas (LNG) carrier docked in Everett, Massachusetts, Coast Guard Captain Dennis Maguire met with a small nucleus of local public safety officials to focus attention on this oversight. News that the Coast Guard does not provide onboard firefighting services came as a shock to many fire chiefs. The outcome of



that gathering led to the formation of the Maritime Incident Resources and Training Partnership (MIRT), which expanded under the leadership of Captains John Grenier and Joel Whitehead.

Marine firefighting has many different challenges as opposed to land-based scenarios. The group learned that they not only needed to impart the technical special skills firefighters would need, it also became apparent that MIRT needed to broaden its scope to include all of

the diverse agencies that might be involved in a maritime incident. Firefighters, Coast Guard officers, EMTs, police, vessel operators, marine terminal managers, emergency management directors, harbor masters, immigration officials, and the

commercial salvage industry had never before worked together. Nevertheless, personnel from those entities are expected to cooperate during an actual incident.

Expert instructors from the Delaware-based Tri State Maritime Fire Safety Association came to Boston to present various training courses to coastal public safety officials from Rhode Island to Maine. The faculty of the Massachusetts Maritime Academy provided vessel stability and naval architecture lessons. Guided by MIRT's Strategic Planning Committee, MIRT also sponsored bi-monthly symposia designed to educate emergency responders and the maritime community.

Table-top and full-scale exercises underscored the need to improve communication, share resources, and adopt a unified decision-making process to maximize responses. This challenge was tested in August 2000 when 75 "players" participated in a computer-driven simulated ship collision in Boston Harbor. MIRT's innovative collaboration brought key officials together for the first time. The drill demonstrated that this is the only practical approach to managing a major maritime incident. Lessons learned will drive MIRT's mission of education and incident pre-planning into the future.

Although well-versed in traditional land-based structural fire suppression methods, firefighters are greatly disadvantaged when confronted by a shipboard fire. Much of the vessel's equipment is incompatible with their tools and training. A ship's complex physical layout is unlike anything most have previously experienced. In addition to the technical challenges, shipboard incident responders often find themselves dealing with a morass of (sometimes conflicting) international, federal, state and local laws and regulations.

The ships' crews (in many cases) speak different languages, or have limited facility with English. Language barriers coupled with non-traditional structures and equipment showcase the overwhelming necessity to better prepare firefighters for inevitable shipboard fires. Lack of preparation is documented with numerous tragedies, costing the lives of ships' crews, firefighters, and passengers. The ramifications of uneducated decisions can be fatal. MIRT provides responders the basic tools to effectively mitigate marine emergencies.

MIRT is a coalition of federal, state, and local public safety and maritime industry officials. Members voluntarily contribute time and energy to organize valuable training and drills, providing incident managers with information needed to make informed decisions. Since forming MIRT, more than 2,400 firefighters, Coast Guard, police, emergency managers, and emergency medical professionals have trained together to prepare for port emergencies. This training investment heightens inter-agency, unified responses to marine incidents and major planned marine events.

MIRT has had many achievements. Among the most notable while not measurable, is the outstanding rapport MIRT fosters. Other tangible accomplishments include the *USS Salem* training drill of 1997, the 1998 training ship *Patriot State* "at-sea" firefighter ship familiarization, and two 1999 passenger vessel evacuation table-top exercises. Additionally, the successful events of Sail Boston 2000, which safely moved more than 30 tall ships, 3,500 recreational boats, and 700,000 spectators in July 2000, was one of MIRT's proudest achievements.

Further, recreational and commercial users of the Port of Boston benefit from MIRT, as do citizens and environmental advocates of the metropolitan area. The ability to successfully respond to maritime emergencies has significantly

improved as a result of MIRT training, drills, networking, and open forum educational meetings.

MIRT was developed from models employed in the Hampton Roads and Delaware Bay regions, and is therefore very replicable. Providence, RI and New York City, NY have taken

steps to create groups mirroring the MIRT concept. Larger communities with federal, state, and local agencies, coupled with a large maritime industry, will inherently build a larger support network. This, however, does not preclude smaller municipalities from forming MIRTs. Recently, the Cape Cod community began establishing a MIRT. Cape Cod responders have conducted drills involving the maritime community and local fire services, gleaned ideas and assistance from the Boston MIRT members. This partnership has achieved a tremendous amount in five years and will continue to enhance not only marine firefighting in this region, but also the relationships that it successfully fosters with outside agencies.

News that the Coast Guard does not provide onboard firefighting services came as a shock to many fire chiefs. The outcome of that gathering led to the formation of the Maritime Incident Resources and Training Partnership (MIRT).

Marine Safety Office Jacksonville

MSO Jacksonville and the Jacksonville Marine Transportation Exchange: Partners in the Port

By LCDR Brian Penoyer, Chief, Command and Coordination Department, MSO Jacksonville

Partners By Design

Incorporated in 2001 and replacing the Jacksonville Waterways Management Council, Jacksonville Marine Transportation Exchange (JMTX) is a local coordination council as envisioned by the Marine Transportation System (MTS) initiative. The JMTX is open to interested commercial, government and other MTS entities and already boasts a broad membership. JMTX's mission is to coordinate the safe and environmentally responsible management of the Jacksonville marine transportation system. The vision of Jacksonville's future is one in which there will be increased awareness of and support for the Jacksonville MTS, and a more effective conduit between local, state, and federal agencies and JMTX members. This vision has, in turn, led JMTX to engage federal, state and local government agencies as key business drivers. From initial Charter to membership to key business drivers, a broad MTS-based partnership has been designed into JMTX from inception.

Early Success

Although still in its infancy, the value of the JMTX / MSO Jacksonville partnership was demonstrated in the February 2001 Qualitative Risk Assessment facilitated by JMTX. When a local operator proposed the Mediterranean Mooring of a 372-foot Roll On / Roll Off container vessel, the Captain of the Port was faced with establishing required Standards of Care. Drawing on the collective expertise in the port of Jacksonville, the JMTX Harbor Safety Subcommittee expeditiously conducted



a risk assessment and recommended Standards of Care to mitigate all the identified risks and safely allow the proposed new cargo service.

How It Works

MSO Jacksonville defines **customers** as those entities, organizations, or individuals that we serve directly on a daily basis, essentially the entire Jacksonville MTS. The MSO's mission is then to partner with their customers in order to meet their Stakeholders' needs. **Stakeholders**

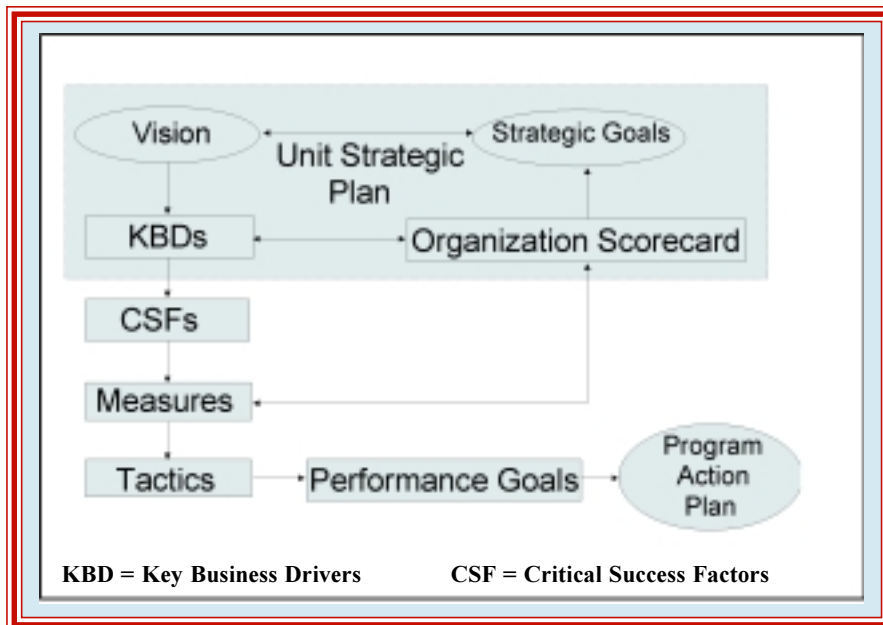
are those entities on whose behalf MSO Jacksonville acts when they facilitate commerce, enforce laws, investigate casualties, aid others in complying with the law, and reduce

risks to people and the environment. Stakeholders include the American public, Congress, and senior Coast Guard leaders.

It might appear that the stakeholders' needs are in direct conflict with the customers'; stakeholders require strict compliance and oversight while our customers, on the other hand, need assistance and cooperation in facilitating commerce. In Jacksonville, the MSO management system emphasizes customer

focus and strong customer relationships (partnerships) recognizing: **1)** stakeholders need customers to prosper; and **2)** MSO Jacksonville can best achieve the stakeholders' goals with the help of customers.

The MSO Jacksonville management system is a Baldrige style, systematic application of proven quality and risk



management principles. The strategic management process (see figure at left) brings customer requirements into planning, as mandated by the National Performance Review. For example, MSO Jacksonville made the strategic decision to use their Commercial Fishing Vessel Safety (CFVS) personnel to train other Coast Guard units (stations and patrol boats). They based this training on local fishermen's concerns that Coast Guard boarding teams did not understand or fully appreciate the CFVS regulations.

This emphasis on customer needs continues at the tactical level, where Stakeholders have directed MSO Jacksonville to address risk-based initiatives, Prevention Through People prin-

ciples, and partnerships in all of their programs. Accordingly, at least one critical success factor in each of MSO Jacksonville's programs addresses customer involvement. Program Action Plans draw upon the expertise and needs of customers for daily port operations, as illustrated by the 2001 Mediterranean Mooring Risk Assessment and the JMTX recommended Standards of Care.

In summary, the JMTX / MSO Jacksonville partnership has provided the Captain of the Port with a "Board of Directors" comprised of the very best local maritime expertise and experience. Together JMTX and MSO Jacksonville are implementing the MTS vision for the Port of Jacksonville.

Marine Safety Office Huntington

Synfuel Marine Transportation Risk Assessment

By CDR Lincoln Stroh, Commanding Officer, MSO Huntington

Section 29 of the 1980 Crude Oil Windfall Profit Tax Act offers a tax credit for producing fuel from non-conventional sources. These non-conventional fuels are called synthetic fuels or "synfuels." One type of synfuel is derived from mixing coal and oil together. From the Coast Guard's perspective, this oil-coal synfuel merges the unregulated "marine transportation" world of coal with the regulated world of oil.

MSO Huntington conducted a Marine Transportation Risk Assessment of coal-oil synfuel in October 2000 to determine the risks of synfuel to the marine envi-



ronment. A 25-member workgroup assessed the risks during a two-day period and derived a robust set of Standards of Care for the marine transportation of synfuel. At the request of the workgroup, and given the low-risk nature of the synfuel, the Captain of the Port (COTP) Huntington recommended to the District Commander that the Standards of Care be self-imposed by the synfuel producers, transporters, and consumers with commensurate consideration given by the Captain of the Port for accidental releases into the environment.



One of the oil refineries involved in the MSO Huntington partnerships. Photo courtesy MSO Huntington.

The marine transportation risk assessment and subsequent District approval of the Standards of Care for the Western Rivers epitomizes the five principles of Prevention Through People. A **quality approach** was taken in that the suppliers' and customers' needs were analyzed during the risk assessment. The **mariner was honored** by heeding his input and following his recommendations during the risk assessment. A **non-regulatory solution** was derived through the development and implementation of Standards of Care. A **shared commitment** was established by the industry's self-imposition of the Standards of Care and the Coast Guard holding these companies accountable to the Standards. And finally, the **risks were managed** through a systematic, proven risk assessment that derived commensurate risk interventions, or in this case, Standards of Care.

The Standards of Care for the marine transportation of synfuel developed by the Risk Assessment Workgroup are as follows:

1. Loading/Unloading
 - Operating Procedures
 - Mooring Procedures
 - Use of Deflectors
 - Arrangement of Breasting Barges
 - Tending Barges
 - Reduction of end load on Barge
 - Regulate Last Pass Loading Speed
2. Fleeting:
 - Operations Manual
3. Transporting:
 - Draft Management
 - Protective positioning of Barges
 - Response Plan
 - Use of Double Hull Vessels
4. Incidental Water:
 - Disposal at reception facilities in accordance with NPDES regulations

For more information on the Standards of Care for the marine transportation of synfuel, please contact the Eighth Coast Guard District or MSO Huntington.

Marine Safety Office Huntington

Ohio River Valley Waterways Management Plan

By LTJG Carissa VanderMey, Chief, Planning Department, MSO Huntington

During 1996 and 1997, extensive periods of high and low water on the Ohio River and its tributaries in the Captain of the Port (COTP) zones of Pittsburgh, Huntington, Louisville, and Paducah highlighted the need for a coordinated planning initiative. While these events were effectively handled, lessons learned revealed several areas that could be improved through cooperative planning. From those lessons the Ohio River Valley Waterways Management Plan (ORV-WMP) was developed in cooperation with MSO's Huntington, WV, Paducah, KY, Louisville, KY, and Pittsburgh, PA, river industry representatives, and the U.S. Army Corps of Engineers. The plan not only sought input from the agencies but also those companies charged with managing and safely using the river.

The ORV-WMP was developed using a set of preplanned strategies or actions for all parties involved in a potential river crisis. The plan specifically covers incidents involving high and low water as well as those crises concerning ice flow on the

Ohio River and its tributaries. As each COTP zone has unique considerations, geographic-specific annexes were developed for each zone. These annexes address such issues as specific gauge reading, action levels, telephone calling trees, etc.

In 2001, ice played a major part in river navigation mostly in the Pittsburgh area and especially on the Monongahela River. Numerous times throughout the season MSO Pittsburgh worked off of the plan and established the Ohio River Ice Committee. They scheduled multiple conference calls to address navigational issues. Representatives from the Army Corps of Engineers, National Oceanic and Atmospheric Administration, MSO Huntington and the towing industry all shared local knowledge regarding ice conditions (location, thickness, etc.), weather forecasts, and emphasizing those concerns for river

navigation and fleeting areas. The use of the Coast Guard Auxiliary aircraft was a reliable asset and was also used in long range over flights.

During a future river crisis, all parties represented in the ORV-WMP will perform the following missions through a cooperative waterways management system:

- Reduce impacts to navigation and commerce caused by the river crisis in the safest and most effective manner possible.
- Minimize casualties, including groundings, collisions, injuries, and barge breakaways attributable to the rivers crisis.
- Safely evacuate/assist people in distress as necessary.
- Respond to oil spills and hazardous materials releases caused by the river crisis in accordance with established safe practices.
- Conduct post-flood surveys on marine transportation related facilities to assess damages that may increase the potential for pollution during the resumption of normal operations.

Extensive cooperation between the Coast Guard, the Army Corps of Engineers, and the river industry has resulted in a broad-based, mutual understanding of the needs and roles of the various parties during unusual river conditions. This broad-based understanding has resulted in the development of a sequenced approach to changing conditions. Initial indications of unusual river conditions, as measured by river gages and as indicated in



Coal barge along the Ohio River. Photo courtesy MSO Huntington.

National Weather Service forecasts, now result in immediate cautionary notices and the activation of a teleconference system. Furthermore, stringent steps are then taken if the situation deteriorates based on a consensus partnership forum consisting of the entire river community.

The ORV-WMP recognizes that various government agencies and industrial communities are mutually focused on the safe use of the rivers. This cooperative approach has proven highly effective for government and industry alike.

Marine Safety Office Houston – Galveston

By LT Douglas Simpson, Waterfront Facilities Branch, MSO Houston – Galveston

Ship Rider Information Exchange Program

Under the auspices of the Ship Rider Information Exchange Program, MSO Houston-Galveston has entered into agreements with Bergesen d.y. ASA and Pleiades Shipping Agents S.A. These agreements allow vessel inspectors to ride on many of the chemical and oil tank ships that frequent Houston, the nation's largest petro-chemical port. The inspectors get to see bridge resource management, cargo operations, tank cleaning evolutions, and



engine-room procedures first hand. This exposes them to the unique aspects of the tanker industry and hones their inspector skills. The ships' crews get direct access to USCG inspectors and develop insight into U.S. Coast Guard enforcement of U.S. and international requirements. Furthermore, these agreements provide the opportunity to tell the MSO Houston-Galveston story, gain valuable perspective, and forge relationships with the mariners that ply the Houston Ship Channel.

Society - Port State Control Partnerships

For more than six years, MSO Houston-Galveston Compliance Department and Port State Control (PSC) Branch have been meeting on a regular basis with all of the major classification societies that have offices in Houston. Many specific and mutually beneficial partnership projects have resulted from this long-term partnership relationship. The first in 1997-98 was a year-long effort to have every PSC inspector

witness an International Safety Management (ISM) Code audit by class prior to the 1998 initiation of ISM. Most recently, MSO Houston-Galveston hosted a multi-day ISM-STCW (Standards of Training, Watchkeeping and Certification) enforcement workshop, using Coast Guard exportable training. Several International Association Classification Societies (IACS) and more than 30 members from the surrounding industry participated. Exchange training opportunities for class surveyors and USCG inspectors are in discussion.

Marine Safety Office / Group Los Angeles / Long Beach

By LT John O'Conner, Chief of Waterways Management, MSO / Gru LA / LB
and CAPT Manny Aschemeyer, Executive Director of the Marine Exchange of LA / LB Harbor

The Vessel Traffic Service (VTS) in Los Angeles-Long Beach (LA/LB) is a unique public/private partnership between the Marine Exchange of LA/LB, the U.S. Coast Guard, the State of California Office of Oil Spill Prevention and Response (OSPR), the Ports of Los Angeles and Long Beach, the Port of Los Angeles Pilot Service, and Jacobsen Pilot Service (Port of Long Beach). The need of a VTS in LA/LB was identified in the Port Needs Study mandated by the U.S. Congress-enacted Oil Pollution Act of 1990, as well the State of California's Oil Spill Prevention and Response Act of 1990. A partnership was formed in 1994 to meet these requirements quickly and in the most cost effective manner by leveraging the Marine Exchange's established Vessel Traffic Advisory Service (VTAS) and its close tie to the port community. The Marine Exchange, which is governed by a 15-member Board of Directors comprised of members of the maritime industry, is responsible for maintaining the facilities and equipment and organizing the opera-

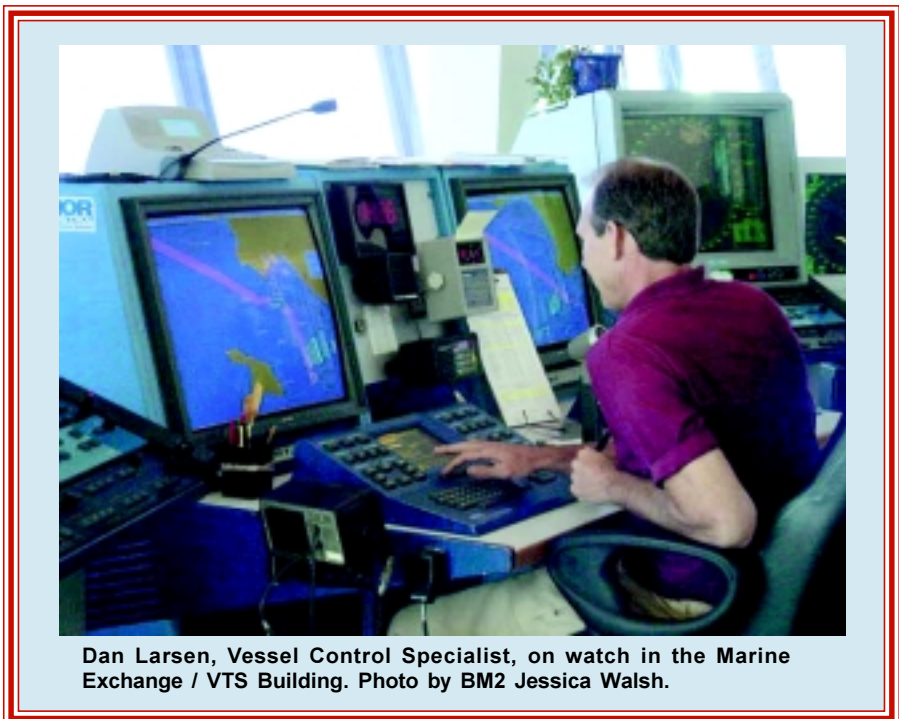


tions in conjunction with a staff of six Coast Guard watch-standers.

The Marine Exchange of LA/LB has been serving the maritime community in that area since 1923. It was established atop the Port of Los Angeles' newly built Warehouse 1 to be the communication link between ships offshore and their owners and agents ashore using horseback runners and lookouts waving signal flags or using flashing signal lights. In 1981, building on its information function, the Marine

Exchange began operating the voluntary VTAS to provide traffic information to vessels in their main approaches to LA/LB. Driven by the need to enlarge and modernize the VTAS, the Marine Exchange moved in 1989 to its current location in Angel's Gate Park, overlooking the port complex.

After the need for a more formalized VTS with mandatory participation requirements and regulatory authority was mandated, OSPR initiated steps to establish an interim



Dan Larsen, Vessel Control Specialist, on watch in the Marine Exchange / VTS Building. Photo by BM2 Jessica Walsh.

VTS until the anticipated federal VTS came on line. The Marine Exchange was asked to upgrade their VTAS with the participation of the Coast Guard, and a unique partnership was formed. The Coast Guard agreed to provide six watchstanders, which would allow the VTS to invoke Captain of the Port (COTP) Authority when necessary, and the Marine Exchange would be responsible for maintaining the facilities and equipment. The VTS has since evolved into a seamless traffic management service, where the VTS manages traffic outside the Federal Breakwater within a 25 nautical mile radius from Point Fermin Light, and the Port of Los Angeles Pilot Service and Jacobsen Pilot Service manage traffic inside the breakwater, within their respective ports. All of these components are integrated through a shared electronic vessel tracking picture and display and constant communications.

VTS user fees fund the \$1.8 million annual operating budget of the VTS and the Coast Guard bears the cost of its six watchstanders. This represents a considerable cost savings from the \$5 million annual budget that the Coast Guard estimated it would cost to maintain a federal VTS. The practice of charging a user fee to fund the VTS is unique in the United States, but is commonplace in other ports throughout the world. In Rotterdam, these fees are assessed as a direct VTS user fee, while in Canada, the federal government partially recoups the cost by charging a marine service fee that covers VTS and aids to navigation usage.

There are several advantages of the partnership in addition to the federal cost savings. The Marine Exchange/VTS provides the Coast Guard with a 72-hour advance notice

of ship arrivals and monitors compliance with COTP “holds” to aid in port state control. They also provide search and rescue and law enforcement support and are the back-up location for the Coast Guard Operations Center in case of an emergency. The benefit for VTS users is that they get more control over operations. The Marine Exchange Board of Directors is the managing body that oversees operation of the VTS. This board consists of representatives of the users, with the Coast Guard COTP serving as an advisor. This arrangement has established the VTS of LA/LB as not only one of the few fee-based VTS’ in the world, but as the only VTS that is managed by its customers.

Future plans to strengthen the partnership and take advantage of the benefits provided involve continuing to focus on technology as a means to make traffic management more efficient. The Marine Exchange is currently refining its “Portsource” Web site to provide “one-stop” shopping for maritime information concerning the ports, their cargos and their facilities. These plans also include the upgrade of the radars and processing equipment and the installation of a microwave link between the Coast Guard Operations Center and the VTS that will provide an uninterrupted channel for voice communication, radar and computers.

The establishment and continuous improvement of this unique relationship has resulted in a small, nimble organization that is managed by the users in partnership with the state and federal government. It has evolved from an interim solution to a permanent one and is used as a model of how much can be accomplished through public/private partnerships.

Marine Safety Office Puget Sound

MSO Puget Sound and the Washington State Ferry System

By LCDR Thomas Miller, Chief, Domestic Vessel Branch, MSO Puget Sound
and Mr. John Dwyer, Chief, Prevention Department, MSO Puget Sound

The Washington State Ferry (WSF) system is the largest in the nation. WSF has been in operation since 1951 and currently operates 29 vessels. More than 1,700 employees annually perform an average of more than 180,000 trips and carry nearly 27 million passengers. For 50 years now, this operation has presented a unique challenge for both the regulator (U. S. Coast Guard) and the operator (WSF), keeping this essential piece of Washington’s daily transportation system safely operating throughout Puget Sound, the San



Juan Islands, and Canada.

The enormous size of the WSF operation, coupled with its daily necessity for commuters and tourists, demands devoted interaction between the local Marine Safety Office (MSO) and WSF. Both organizations realize that working together is the most effective way to ensure sufficient and safe day-to-day service. Although the Coast Guard and WSF have historically come to the table from different perspectives (regulatory vs. operator), both have always shared the common goal of

providing a safe means of marine transportation for the public. Despite this shared goal, the different perspectives have typically meant that the Coast Guard would impose new requirements that WSF would then strive to meet, or that WSF would build or modify vessels that the Coast Guard would review and inspect to ensure they met applicable requirements. Little, if any, partnering in order to develop jointly acceptable solutions would normally occur.

In the last decade, however, changes in international and domestic regulations have prompted a more coordinated process towards making safety improvements. Initiatives in both international and domestic lifesaving and crew performance requirements provide more varied alternatives to compliance. This change requires a more partnership-oriented approach to develop solutions.

Senior leadership within MSO Puget Sound and WSF understand that benefit to be gained by a more active partnership in pursuing safety. Each continues to pursue ways to enhance the safety of daily ferry operations. This partnering relationship has created a more proactive and open approach by both organizations to responding to ferry casualties or equipment problems. This includes identifying solutions in advance, while also exploring safe alternatives to normal compliance methods. This approach has resulted in a higher degree of trust and cooperation between operator and regulator has developed. One example of this approach is WSF and MSO Puget Sound's working groups. They developed an approach to how new lifesaving equipment would be provided, and the new training the crews would receive.

One of the most significant and proactive offshoots of the MSO-WSF partnering relationship has been the joint recognition of the need for an evaluation of crew endurance within the ferry system. Like many of their counterparts in the marine industry, the ferry system employs a schedule that results in shiftwork. Shiftwork regularly tests the limits of the regulatory work hour/rest standards. This concern is being addressed by a team effort between the Coast Guard Research and Development (R&D) Center, MSO Puget Sound, and WSF. This has resulted in a study to evaluate crew endurance within the WSF system.

The working group that is studying crew endurance realized that success would require appropriate labor union involvement in the

research. Had the working group lacked full support of the labor unions in this effort, the participation by crewmembers in the data collection phases would have been minimized and reduced the credibility of the results of any analysis.

Currently, two labor unions are actively participating in the completion of this crew endurance study: the Master, Mates and Pilots (MMP) and the Inland Boatman's Union (IBU). As a result of the unions' involvement, high quality data was collected in a sampling program. The data collection approach was developed by the R&D Center and performed under the guidance of both the Research and Development Center and MSO Puget Sound representatives. Subsequent analyses identified opportunities to significantly enhance crew endurance and enable early interruption of a casualty "chain," further improving an already historically safe operation. Currently, watch schedule improvements, lighting improvements, and employee health/rest education are being investigated, implemented and evaluated as potential long-term fixes.

Beyond the obvious benefits of completing a study of this nature – enhanced safety and well being of WSF personnel, as well as improved safe operation of the WSF fleet – other benefits have also been realized. The significant time demands and logistical support for the MSO, WSF, and labor union study coordinators have required tremendous coordination and support between all parties. This has substantially strengthened the partnering relationship and trust between MSO Puget Sound, WSF and the labor unions. Additional communication channels have developed and other marine industry elements have demonstrated interest in similar efforts. The capabilities of the Coast Guard R&D Center have been showcased, increasing awareness on the waterfront of opportunities for improved development of research into other areas beyond crew fatigue.

Although not yet complete, the early success of the crew endurance study highlights the importance of pursuing a partnership-oriented approach to

continuing safety improvements. This is especially true in an ever more complex, consistently more demanding passenger service trade. The Coast Guard – WSF relationship is strengthening from a black and white, hard and fast process of meeting the "letter of the law," to a proactive partnership that analyzes the WSF vessel-operating system to find the best ways to improve safety. For more than 26,000,000 passengers per year, the benefits are obvious.



A ferry boat travels along the Puget Sound. Photo by LCDR Kevin Kiefer.



Mariner's Seabag

EX PARTE COMMUNICATIONS

By Karen Adams, G-M Regulatory Coordinator,
Office of Standards, Evaluation and Development

The Coast Guard is fortunate to have an outstanding rapport with the public. We have effectively used partnerships and advisory committees to raise concerns, vet issues, collect valuable data, and assemble comprehensive and workable regulations. The Coast Guard works very closely with these partnerships and the general public in many of the 60-70 active informal rulemakings under the Administrative Procedure Act (APA). The APA governs the informal rulemaking procedure that requires public notice and comment and ensures open and fair communication with no one entity given an unfair advantage. The expansive use of partnerships has resulted in full public participation in rulemaking actions ensuring robust and frank discussions while remaining equitable. However, while the Coast Guard enjoys an open exchange of ideas and options, once rulemaking commences, the Coast Guard must adhere to the rules for *ex parte* or "off-the-record" communications.

By definition, *ex parte* communication in the regulatory process is oral or written communication between the public and a government official without public notice. *Ex parte* communication occurs when a communication is not on the public record and the public is not given reasonable notice. The APA is silent on *ex parte* communication for informal rulemaking. For this reason, among others, the Department of Transportation (DOT) and Coast Guard developed an *ex parte* communication policy. This article will explain those rules and describe situations when Coast Guard employees and other government officials can and cannot discuss regulations under development.

There are three primary reasons for *ex parte* rules. First, a government agency needs to make fair and open decisions. By restricting communication to the pre-rulemaking stage and comment period, no one entity will have access to the decision makers or government officials during rulemaking. Once the rulemaking commences, everyone is given an opportunity to express opinions, which are placed in the docket. Additionally,

everyone has access to and may comment on these comments because they are placed in the public docket for all to read. Second, there should be no appearance of bias or prejudgment. If discussions are held with individual members of the public without public notice during rulemaking, then the agency may compromise its impartiality. Third, the rules provide a means to protect the integrity of the decision process when communications inadvertently occur. Later in this article, we discuss how to remedy the undesired consequence of *ex parte* communications.

PRE-RULEMAKING STAGE

During the pre-rulemaking stage, DOT and the Coast Guard encourage public participation. The Office of Management and Budget publishes a semi-annual Regulatory Agenda in the spring and fall of each year in the Federal Register. The public has an opportunity to view all the regulations in development. The agenda categorizes the regulations by their development stage (NPRM, Final Rule, etc.) and indicates when the agency anticipates the next action will be completed.

When contact occurs prior to publishing the Notice of Proposed Rulemaking (NPRM) and the contact forms one of the bases for issuing the rulemaking, then the substance of the contact will be discussed in the preamble. This is particularly relevant when an advisory committee or partnership recommends a policy direction. When Coast Guard receives a petition for rulemaking, this will also be noted in the preamble. On the other hand, when general information is collected, the specific contact(s) will not be noted in the preamble. For example, we may collect information regarding a piece of equipment, cost of equipment installation, or the prevalence of devices. This general information may be used to generate the regulatory assessment and would be discussed in the preamble; however, the sources may not be cited.

Prior to issuing a NPRM, every attempt is made to alleviate any of



the public's concerns that the government officials are predisposed to one outcome. Although Coast Guard personnel work closely with industry partners, all agency personnel are cognizant not to mislead or misrepresent a regulatory alternative. For example, if a government official is discussing one of several alternatives under consideration, the audience is apprised that no decision has been made regarding any of the alternatives and that it is only one option under consideration. Simultaneously, the audience should be aware that the government official cannot express the agency's opinion about one alternative vis-à-vis another option because no decision has been made regarding the final policy. For this reason, the Coast Guard will not release draft NPRMs or specific language from NPRMs. These practices ensure fair and open decision-making because there is no verbal or written communication indicating bias or prejudgment associated with any rulemakings, even in the pre-rulemaking stage.

RULEMAKING STAGE

Once the NPRM is published in the *Federal Register*, the rulemaking process commences. The *Federal Register* is accessible electronically at the Internet address <http://www.nara.gov/fedreg>. Generally, a comment period will be open for 90 days. The comment period may be longer or shorter depending on the complexity of the rulemaking, general interest from the public and affected regulated community, and impact on industry, state, local and tribal governments, or similar consideration required by legislation or executive orders. During this time, all interested parties are encouraged to submit comments, negative or positive, to the docket. Specific comments with supporting documentation help generate a better Final Rule.

Unlike the old docket system, the public no longer has to visit Washington, D.C. to view the comments in the docket. Comments are now available electronically via the DOT Docket Management System. This system may be accessed at <http://dms.dot.gov>. Once you enter the Web site, enter the last four or five digits of the docket number (i.e., 2001-1110, type 1110) to retrieve the comments. All comments received from the public will be posted within a few working days of receipt. The public is encouraged to

comment early in the rulemaking phase. This is an excellent opportunity to review other people's comments and state the reasons you agree or disagree with comments already submitted.

During the comment period, DOT policy states that public contact off the record should be minimized. Agency personnel can address the rulemaking in very general factual terms. For example, if agency personnel are asked to speak at an industry day meeting or professional conference, the speaker can briefly describe what has already been published and request the public to submit comments to the docket. Agency personnel cannot answer specific questions regarding future policies or new policy directions. This type of information would be considered *ex parte* because those persons attending the conference would unfairly derive a benefit not offered to all members of the public.

If the Coast Guard receives a request for a public meeting and the agency decides a public meeting would be helpful, a notice announcing the meeting will be published in the *Federal Register*. During the meeting, agency personnel will summarize the proposal and clarify information already published, but no new information will be offered. A public meeting is an excellent opportunity for the public to orally present comments and vet issues among themselves on the record. All written comments received during the meeting, as well as a summary of the meeting, will be placed in the docket. Generally, the comment period will remain open two to four weeks after a public meeting. The public is encouraged to respond to comments received during the meeting as well as any other comments in the docket.

If a government official meets with interested parties and inadvertently discusses the rulemaking, a summary of the meeting pertaining to the rulemaking will be placed in the docket.

Once the comment period closes and the agency begins preparing the Final Rule, there should be no further discussions between the public and government officials without public notice. If information is collected during the comment period or while preparing the Final Rule that substantively changes the direction of the rulemaking, the agency will publish a Supplemental Notice of Proposed Rulemaking or Interim Rule, reopen the comment period, and solicit more comments regarding that change. Again, the *ex parte* rules apply while the rulemaking is reopened for public comment.

In summary, the *ex parte* rules are in place to ensure the decisions and policies derived by the Coast Guard are not prejudiced or biased and all rulemakings are developed in an open and fair environment. By applying these rules, the public communicates with government officials at the same time and no one is disadvantaged or misled about any future policies.



Nautical Queries

Deck Questions

- When navigating using DGPS (Differential Global Positioning System) you may expect your position to be accurate to within _____.
 - 10 meters
 - 20 meters
 - 50 meters
 - 100 meters
- When using GPS (Global Positioning System) you may expect your position to be accurate 95% of the time to within _____.
 - 3 meters
 - 20 meters
 - 50 meters
 - 100 meters
- Each small passenger vessel that operates on the high seas, or beyond 3 miles from the coastline of the Great Lakes must have a Category 1 (406 MHz) EPIRB that _____.
 - is in good operating condition and is stowed near its charger
 - will float free and clear of a sinking vessel and automatically activate
 - is protected against all physical hazards
 - All of the above
- Which EPIRB transmits a distress alert that is received and relayed by an INMARSAT satellite?
 - Class A EPIRB
 - Class B EPIRB
 - L-Band EPIRB
 - Category 1 EPIRB
- BOTH INTERNATIONAL & INLAND** One of the signals, other than a distress signal, that can be used by a vessel to attract attention is a(n) _____.
 - red star shell
 - searchlight
 - burning barrel
 - orange smoke signal
- BOTH INTERNATIONAL & INLAND** A sailing vessel is proceeding along a narrow channel and can safely navigate ONLY inside the channel. The sailing vessel approaches a vessel engaged in fishing in the narrow channel. Which statement is TRUE?
 - Each vessel should move to the edge of the channel on her port side.
 - The vessels are required to exchange signals.
 - The fishing vessel is directed not to impede the passage of the sailing vessel.
 - Each vessel should be displaying signals for a vessel constrained by her draft.
- Geographic range is the maximum distance at which a light may be seen under _____.
 - existing visibility conditions, limited only by the curvature of the Earth
 - perfect visibility conditions, limited only by the curvature of the Earth
 - existing visibility conditions, limited only by the intensity of the light
 - perfect visibility conditions, limited only by interference from background lighting
- The upper vertex of a great circle track is at longitude 156° E. Sailing eastward, the great circle track will cross the equator at longitude _____.
 - 114° W
 - 110° W
 - 66° W
 - 66° E
- When anchoring in calm water, it is best to _____.
 - maintain slight headway when letting go the anchor
 - wait until the vessel is dead in the water before letting go the anchor
 - have slight sternway on the vessel while letting go the anchor
 - let the anchor go from the stern with the anchor cable leading from the bow
- When the dew point of the outside air is higher than the dew point of the air in the cargo holds, you should _____.
 - energize the exhaust blowers
 - energize the intake blowers
 - not ventilate the cargo holds
 - ventilate the cargo holds

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



Nautical Queries

Engineering Questions

- Which of the terms listed represents the ratio between the highest and lowest fuel oil pressure at which the burners will remain ignited on a main propulsion boiler?
 - Air / fuel ratio
 - Modulating band ratio
 - Firing range ratio
 - Turndown ratio
- An indicator card or pressure-volume diagram, shows graphically the_____.
 - compression ratio of the engine
 - volume
 - relationships between pressure and volume during one stroke of the engine
 - relationships between pressure and volume during one cycle of the engine
- Steam drains from fuel oil heating coils can be returned to the condensate and feedwater system _____.
 - through a direct connection to the heating drain header
 - through a vacuum drag line connection to the fuel heater
 - after being collected in the drain inspection tank
 - after first passing through the DC heater
- Fuses are rated in _____.
 - voltage
 - amperage
 - interrupting capacity
 - all of the above
- The purpose of bilge keels is to _____.
 - lower the center of gravity of the ship
 - reduce the amplitude of roll
 - reduce pitching
 - reduce yawing
- Clogged or partially obstructed exhaust ports on a diesel engine can cause_____.
 - overspeeding of the engine
 - failure of the engine to shut down
 - no effect of engine performance
 - high exhaust temperatures
- The speed of a synchronous motor is varied by _____.
 - interchanging any two of the three live leads
 - changing the voltage of the system
 - changing input frequency
 - increasing field excitation
- What should you do with your emergency positioning radio beacon (EPIRB) if you are in a liferaft during storm conditions?
 - Bring it inside the liferaft and leave it on
 - Bring it inside the liferaft and turn it off while the storm passes.
 - Leave it outside the liferaft and leave it on
 - Leave it outside the liferaft and turn it off
- An important design characteristic of an explosion relief valve for a diesel engine is the ability to _____.
 - Open slowly to permit gradual reduction of crankcase pressure
 - Open quickly against crankcase pressure to prevent possible explosion
 - Close quickly in order to prevent an inrush of air
 - Close slowly to permit proper seating of the valve disc and neoprene sealing surfaces
- AC voltmeters are generally calibrated to read the _____.
 - Instantaneous voltage
 - Average voltage
 - RMS voltage
 - Peak voltage

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