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ON THE COVER

The melding of advanced training via computer simulation and heightened maritime security initiatives to battle piracy is embodied in the Transas anti-piracy simulation module. See story on page 46.

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Meet the *Contributors*

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Story p. 10

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Maritime Training & Security: Catching Up & Fighting Back

A quarterly business journal strives to focus tightly on individual issues and topics in each edition. Certainly, that's the case here at *Maritime Professional*. As we kick off our second year of publishing the youngest of New Wave Media's four print titles, it is also a good time to look back at our first. Our initial successes have developed a sophisticated readership that grows daily, right alongside our groundbreaking maritime industry web site of the same name. The Web site *www.maritimeprofessional.com* counts among its registered members more than 25,000 industry professionals, many of them blogging regularly, and who also make up the bulk of our print readership. This makes *Maritime Professional* one of the most interactive products on the market today. Over the course of the past 12 months, you helped make that possible.

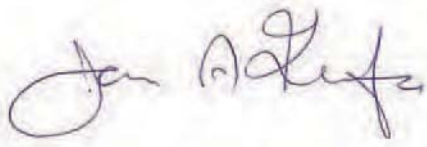
Our first quarter edition boasts increased readership and support. It also homes in on two of the most important aspects of ocean shipping today; maritime security and maritime training. The two are not mutually exclusive. As it turns out, these topics and the issues that bind them together combine many times throughout these pages to present compelling training initiatives. These and other insights, expert analyses and depictions of high-tech equipment all remind us that the security of the supply chain is just as important to your bottom line as is the safe navigation of the ship that calls on a port.

Also in this edition are interviews with not one, but two maritime professionals (like yourself) who today are helping to shape the global climate that we train, work and trade with others in. This necessarily involves reacting to market trends, current events and regulatory forces; all of which impinge upon your business plans. Training, therefore, becomes especially important in context of all of that. If, increasingly, that seems like 'rocket science,' then that's because the world we operate in is also becoming much more complex.

In this edition, some of the foremost maritime training experts on the planet come together to school you on what's new, why that's important and where you and your employees can go to come up to speed. That's also something you won't find anywhere else.

As the greater global economy slowly continues its tenuous rebound, the maritime industry (upon which all things depend) also attempts to do the same. When we launched *Maritime Professional* magazine just one year ago in the midst of the ongoing financial crisis, we also knew that to succeed in that climate, we would have to do it right. This editorial product reflects that unwavering commitment, as well as your growing support.

Rounded out by expert analysis of the global maritime security situation from the IMO, prominent flag states and qualified maritime security professionals, all of the comprehensive coverage needed by maritime professionals everywhere is right here in a publication of the same name. Firmly established with global reach and now launching our second year, we invite you to read on and find out why.



Joseph Keefe, Editor | **keefe@marinelink.com**

The List People & Companies

Insights

Embarked Guards Successful as Counter Piracy Strategy

By William H. Watson

Until a permanent solution is found to the scourge of piracy off the Horn of Africa, the shipping community has successfully begun to rely on self-protection in the form of Privately Contracted Armed Security Personnel (PCASP). To date, no commercial vessel with an embarked armed security team aboard has been captured by pirates.

The practice of using armed guards as part of an overall security strategy, in combination with applying the latest Best Management Practices (BMPs), is condoned by the Republic of the Marshall Islands (RMI), although caution is urged both in choosing to embark the PCASP team and in complying with various laws and regulations being imposed by port and littoral coastal states, as well as by the Suez Canal.

While PCASP teams have proven effective, the RMI continues to urge adherence to BMPs. The RMI worked with various industry groups to develop the first BMPs relating to counter-piracy strategies and has continued to be directly involved in the evolution of the process which is now in its fourth revision. The RMI was a charter signatory to the New York Declaration, a document presented through the United Nations Contact Group on Piracy off the Coast of Somalia (UNCGPCS), in which major flag States agreed to promote adherence to BMPs by their respective fleets.

The RMI was also a charter signatory to the Washington Declaration, a document designed to focus global attention on the plight of seafarers subjected to pirate attacks and those presently held captive by pirates. Through this agreement, the International Maritime Bureau (IMB) was nominated to serve as a clearing house for information relating to the effects of piracy on seafarers.

"The RMI Maritime Administrator is deeply concerned with the safety and security of vessels flying the RMI flag and especially for the crews of those ships," said Captain Thomas F. Heinan, Deputy Commissioner of Maritime Affairs, RMI. "We see it as our role to offer guidance to vessel owners and operators on plans relating to embarking PCASP prior to authorizing their use," he continued.

Planning is Critical

The first issue in choosing to use an armed team for security is to conduct a risk assessment of the intended voyage. Attention must also be paid to the ports where guards will be embarked and disembarked and intervening port calls (or a Suez Canal transit) where arms or guards will be aboard. The RMI Maritime Administrator has issued numerous Marine Notices, Maritime Safety Advisories and Ship Security Advisories regarding these issues, offering guidance to vessel owners and operators.

"The Suez Canal Authority and an increasing number of littoral States surrounding high risk area (HRA) waters are tightening their regulations relating to embarked PCASP teams and their firearms," said Capt. Heinan. "Most now require a Letter of Non-Objection from a vessel's flag State for the embarkation of the teams; the Administrator issues those letters after reviewing the particulars of the voyage," he continued.

Once the decision to retain a Private Maritime Security Company (PMSC) has been made, owners and operators are cautioned to fully vet candidate companies. One standard acceptable to the RMI Maritime Administrator is that the PMSC be a member of the Security Association for the Maritime Industry (SAMI). Ensuring that the PMSC and the PCASP team are fully qualified, properly trained and equipped, and operate under a responsible "use of force" plan are seen as critical to a successfully protected voyage through the HRA.

One issue in evaluating a proper PCASP is the size of the team and the complement of arms and ammunition to be embarked. A troubling trend by pirates is the recurring strategy of employing multiple skiffs and/or repeated attack runs, seemingly designed to cause the PCASP to exhaust their ammunition as a prelude to a successful attack. Although no commercial ship with an embarked armed PCASP has been captured by pirates, intelligence analysts conclude pirates have an interest in overwhelming a PCASP protected ship in order to cast doubt on the viability of the practice.

In order to evaluate the performance of the growing number of PMSCs, the Administrator requests owners and operators or vessel masters to complete assessment forms on the PCASP

team's performance. "This allows the Administrator to build a database of these 'report cards' on the teams," Capt. Heinan said. "We also share these assessments with SAMI, so an industry-wide database of assessments can be built. This will help maintain the highest standards of quality among the PMSCs," he concluded.

The Broader View

The RMI understands that the use of PCASPs is a short-term solution to a long-term issue. Toward that end, the RMI remains fully involved with the UNCGPCS, its working groups, and with the International Maritime Organization (IMO) to develop strategic solutions to the piracy issue. These two international bodies are also striving to find a consensus among member states in implementing BMPs. Further, the RMI continues to work with military and intelligence organizations to support multi-national efforts designed to counter piracy.

The Author

William H. Watson is Maritime Security Liaison at International Registries, Inc. (IRI), the maritime and corporate administrator of the Republic of the Marshall Islands (RMI). Will also holds a commission as Deputy Commissioner of Maritime Affairs in the Office of the RMI Maritime Administrator and represents the RMI at the United Nations Contact Group on Piracy off the Coast of Somalia (CGPCS). He is vice president and governor of the Maritime Security Council and represents the maritime sector on the National Council of ISACs (Information Sharing and Analysis Centers). He has lectured at the Global Maritime and Transportation School at the U.S. Merchant Marine Academy at King's Point and the International Maritime Law Institute on Malta.

Insights

By Dr. Jim Giermanski

Where Did Customs Go?

Trade, Security & Training headline CBP's new role(s). Are they adequately prepared for any mission, anymore?

Almost being bankrupt with an immediate need for revenue, the First Congress passed the Tariff Act of July 4, 1789 which was signed by President Washington on July 31, 1789, creating the Customs Administration and the nation's Ports of Entry. This first agency of the federal government became an organization of Collectors *...to regulate the Collection of the Duties imposed by law on the tonnage of ships or vessels, and on goods, wares and merchandises imported into the United States.*

For nearly 125 years, Customs funded virtually the entire government, and paid for the nation's early growth and infrastructure. These collectors, under the direct authority of the Secretary of the Treasury, supervised the construction of over 300 lighthouses, became the first Coast Guard, the first Veteran's Administration by assisting the nation's war veterans, the first Public Health Service by providing for the well-being of merchant seamen, the first Bureau of Standards by standardizing the nations weights and measures, the first Immigration and Naturalization Service responding to immigrants seeking refuge in the United States, and even Drug interdictors by having Customs Mounted Inspectors apprehending liquor smugglers during Prohibition. Following the creation of separate agencies, Customs was left with its original mission, the collection of revenue and the proper function of our ports systems in supporting that function.

The New Customs

Today, Customs has a new mission. As published in **US Customs Today,** "And now, as we join the Department of Homeland Security, we face what may be our greatest challenge to date ... protecting our nation and its people from acts of terrorism within our own borders," the mission of Customs has become under DHS, one of anti-terrorism. Therefore, how well does the new Customs or CBP perform its traditional role? There have been serious complaints of ineptitude in dealing with imports and exports, in-bonds, transshipments, and trans-carriage issues involving primarily the importation of goods into the United States. Is the basic training now provided to our Customs and Border Protection officers at the Federal Law Enforcement Training Center (FLETC) adequate for today's global supply chain? To find out I evaluated the training syllabus to see what educational areas of study and practice are covered in the program, how many hours are devoted to those areas, and what percent of the total training hours are devoted to certain areas in which one would expect a Customs official to have expertise.

Access to and a Broad Description of the 2005 Syllabus

A retired CBP Supervisor told this writer that many other retired and current CBP officers are concerned about the shift of training away from ports and trade-related matters. Their concern is based on the natural link between historical Customs training connected to the collection of tariffs and duties, the control and knowledge of actual contents of in-bond shipments, knowledge and control of cargo manipulation within transshipment and trans-carriage shipments and anti-terrorism since shipping containers are perfect hosts for weapons of mass destruction. Therefore, I obtained a 2005 CBP training syllabus, the one reportedly in use today to review. Insiders also revealed that the training reflected in this syllabus is totally different from previous training Customs officials had in trade matters, such as the Harmonized Tariff Schedule of the United States (HTSUS), vessel and container inspection techniques, and historic Customs matters like duties and tariffs that need to be properly applied to products imported into the United States. Today, the apparent focus is not on these areas but, instead, on "people" to include air passengers, luggage, border crossers, crewmembers, etc.

Training Areas

The training program in the 2005 syllabus for CBP officers is 14 40-hour weeks, a total of 560 hours. However, actual training appears to be 526 hours of instruction in classroom subjects, lab work, physical training, and hands-on applications of CBP functions like immigration matters, legal, inspection techniques and many more areas. I examined the amount of training in the following subject matters in relation to the total hours of training:

- ***Personal defensive*** (firearms, arrest techniques, self defense and the use of the baton)
- ***People-focused*** (questioning, observing, passenger processing, finger printing, non immigrant classification, and immigrant classifications, etc.)
- ***Terrorism***
- ***Trade***
- ***Merchandise Classification***
- ***Cargo inspections.***

I was specifically looking for Customs trade and cargo training as a percent of total training. I did not attempt to evaluate the law enforcement training typically devoted to legal matters, personnel matters, physical education training, hazmat, agriculture, and training involving electronic sources of information such as the automatic identification service (AIS), the Treasury Enforcement Communication System (TECS); and the National Security Entry Exit Registrations System (NSEERS) which alone consumed many hours of training. There were also practical exercises involving equipment such as scanning techniques, report writing, seizure processing and more.

I looked at the major thrust or focus of training – what stands out with respect to the hours devoted to it, assuming that the intensity of instruction is relatively equal in quality. Without doing empirical research into the program one has to make generalized statements about the training content and hours of coverage in broad classifications without going into quality of instruction, class size, and equipment employed.

Hours of Training

Taking 526 hours of class time and dividing it up into a people-focused, trade, terrorism, cargo related, and merchandise classification instruction revealed that people-focused instruction included the treatment of immigrants and non-immigrants, crewmembers, passengers, and the questioning, observing, and fingerprinting of people as opposed to looking for or examining cargo. The instructional hours devoted to physical defense training given to CBP students in people-focused criterion were also examined:

- ***People, 98 hours of instruction or about 19% of the instructional hours***
- ***Self-defense*** (firearms 36 hours, defensive tactics 18 hours, baton 8 hours, and defensive tactics, 18 hours, or a total of 76 instructional hours or about 15%
- ***Trade, 23 hours or about 5%***
- ***Cargo Inspection including passenger luggage, 20 hours or about 4%***
- ***Merchandise Classification, 4 hours or about .007%***
- ***Sea Container training, 2 hours or about .003%***
- ***Processing land conveyances, 2 hours or about .003%***
- ***Processing Air Conveyances, 2 hours or about .003%***

There is a clear focus of instructional hours (98 hours) on legal and illegal entry of people and how CBP should treat these people, and on the areas of firearms use and safety, and self-defense techniques (78 hours). Combined, these two segments

The Author

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constitute 176 hours of the total 526 hours of training, or 33% of the total instruction given to new CBP trainees. It also seems clear that the former concepts of trade, containers, tariffs, and duties are no long important enough for a trainee's professional preparation. Even CBP's new mission of anti-terrorism accounts for only 10 hours, or about .019%, about two percent of the total hours of training they receive. And how is it possible that 4 hours of merchandise classification are sufficient? It is clear that the current focus on immigration-related issues as opposed to trade issues is a distortion of proper Customs officers' basic training including their new role of securing the United States against terrorism.

Unanswered Questions

How can DHS acknowledge the fact that 90% of all cargo moving into and out of the United States is by vessel and the containers they carry, and subsequently provide only 2 hours of instruction on sea containers out of a 526 hour program? Yet FLTC training for CBP does just that. How can a cadre of immigrations-handlers do the work of trade specialists who provide for our security in a unique and truly distinct manner by collecting appropriate taxes on imported products, inhibiting the export of prohibited products, and at the same time providing a deterrent to the tremendous security vulnerabilities vessel, truck, and rail traffic pose at our seaports and land ports-of-entry. The historical role of Customs has disappeared within DHS along with the security inherent in historic Customs duties of supply chain and port security functions it used to provide to this nation. *And, that's a very big problem.*

Insights

UK Perspective on Piracy off Somalia

By Stephen Askins

On 5 January, the Foreign Affairs Committee ("FAC") published a wide-ranging report into piracy off Somalia with its conclusions reflecting the international and commercial issues that arise. It remains to be seen how the UK government will respond, although they have already agreed to allow armed guards on UK-flagged vessels and have issued guidelines setting on the certification process that maritime security companies must follow. In this article, we consider the likely impact of the recommendations made.

In terms of the overall problem the FAC recognises that the ability of the international community to build a stable Somalia state is extremely limited. Although peace and stability are clearly important goals, Somalia is experiencing widespread famine and, despite the international and domestic efforts over the past decade, it is a still a miserably corrupt and divided country. The FAC report promotes continued support of the Transitional Federal Government and one can only hope that the richer nations "enhance the sensible diplomacy and the kind of patient engagement that might help Somalia achieve peace" ("The Price of Failure" by J. Norris and B. Bruton January 30 2012). A key aspiration is a greater willingness to prosecute those engaged in piracy and to avoid falling back on the "catch and release" policy which sees would-be pirates sent back to Somalia. The FAC noted that the key challenge lay in obtaining the necessary evidence. Relying on the process of local courts is one thing but there is the real challenge in getting crew members to appear in Court. Even if crew members are willing, the timetabling and last minute adjournments of hearings make it impossible for a crew member who may well be at sea for another owner to commit to the process. Imaginative solutions – such as the use of video links to give evidence – need to be explored, if this is to work. The UK must be prepared to prosecute pirates in the UK where other local courts cannot or will not take them.

The FAC's recommendations also go to a number of specific commercial issues and, in particular, to the use of armed guards and the payment of ransoms.

Armed guards

The issue of armed guards still divides opinion, but their acceptance is now more widespread and the UK's change to a cautious acceptance is supported by the FAC. Indeed guidelines have already been provided by the Home Office ("HO"). However, the HO's attempt to clarify the situation may give rise to real practical difficulties for UK-registered ship-owners who want to make use of armed guards, especially where they seek to do so at short notice. All private security companies ("PSCs") who wish to put teams of armed guards on UK-flagged ships must apply for a section 5 certificate under the Fire Arms Act 1968. As part of this process, the ship owner must also submit a counter-piracy plan and a signed statement that the detailed guidance issued by the Department for Transport ("DfT") on the use of armed guards has been complied with. The details of each guard will also have to be submitted to the HO, and if the guard ceases to be "employed" during the validity of the section 5 certificate, then the HO must be informed again. In practical terms, it is likely that any such applications by a PSC could take up to three months, which is likely to put UK-flagged vessels in a short-term quandary whilst the certification process catches up with their on-going operating schedule.

It should also be noted that the guidelines only apply to the high-risk areas associated with Somali pirates and, significantly, do not apply in the areas such as off the Gulf of Guinea where similar problems are emerging.

Having weapons on board must also mean that more guidance is needed on the use of lethal force and self-defence in a hijacking situation. It is a strange position that the UK probably has more regulation and accountability for the use of armed police than for civilian armed guards in what is a law enforcement role. The FAC recognises that key questions arise over the issue of self-defence and the use of lethal force in the context of the protection of a vessel and crew from a hijacking.

Master's Authority and Self-Defense

The DfT Guidance stipulates that any contract for the use of armed guards must include a "clearly defined command and control structure". The interim guidelines suggest that the "minimum force necessary" should be used to prevent the illegal boarding of a vessel and to protect the lives on-board. The guidelines also state that the Rules for the use of Force ("RUF") should provide for a "graduated response, each stage of which is considered to be reasonable and proportionate to the force being used by the attackers". In relation to the need for individual security guards to make decisions, the guidelines continue that "neither the Master nor the security team leader can command a member of security team against that person's own judgment to use lethal force or not to use legal force". This is significant and appears at first reading to cut across

The issue of armed guards still divides opinion, but their acceptance is now more widespread and the UK's change to a cautious acceptance is supported by the FAC. Indeed guidelines have already been provided by the Home Office.

the fundamental idea that the Master has ultimate control and that there is a chain of command on board akin to that which most of the operators will have encountered during their prior military experience. The concern of those looking at the matter on behalf of the owners is to try and ensure that the Master is not implicated in any unlawful use of force which may possibly arise if he took on any responsibility for the actual targeting and firing on third parties.

Ransoms

The report expresses its concern regarding the growth of the payment of ransoms and the escalating costs of piracy to the maritime industry but concludes that this reflects the commercial reality and the lack of viable alternatives for the release of the crew. Despite the recent high profile rescue of hostages held ashore, military intervention remains high risk. It remains a sobering statistic that more people have died as a result of direct or indirect action by the military than at the hands of the pirates.

At present there are only 6 commercial ships being held, one of which is approaching its second year in captivity. There have been only 3 taken in recent months, which is a reflection of the success of the industry to protect the ships. However, the indications are that this lack of success on the part of the pirates could see a hike in the amounts demanded and paid. If that leads to an increase in duration then the crew are exposed to a greater risk of mistreatment. It must be right that the law does not make the victims of extortion guilty of a criminal offense through paying a ransom. Importantly, the FAC stresses that the Government should concentrate on the recovery of ransoms and prosecutions, rather than making it more difficult for companies to secure the safe release of crew. This clarification will be especially welcomed by those ship owners and insurers who find themselves dealing with a hijacked vessel.

Summing Up FAC Efforts & Reporting

Overall, the FAC has produced a comprehensive and realistic appraisal of the challenges and industry awaits the UK government response with interest.

Note: As MarPro went to press, there had been no formal response from the UK government.

INCE & CO
INTERNATIONAL LAW FIRM

The Author

Stephen Askins' first career was as a Royal Marine. He joined Ince & Co in 1990 and was one of the first solicitors to work in the Ince Piraeus office, where he stayed for ten years, becoming a partner in 2000. Stephen's primary area of expertise and experience is shipping wet (Admiralty) and dry. He advises on all areas of Admiralty law as well as on contractual issues arising out of charter parties and bills of lading etc. Stephen was part of the team that handled the Prestige, and more recently was involved in The MSC Napoli and The New Flame. Contact him at stephen.askins@incelaw.com.

United States Coast Guard Academy

Rear Admiral Sandra L. Stosz

Superintendent of the United States Coast Guard Academy.

by Joseph Keefe

In a business journal that lists as its primary quarterly focus, "maritime training and maritime security," the list for inclusion in our "professional profile" feature was a short one. At the top of that list was Rear Admiral Sandra L. Stosz, who assumed the duties of the 40th Superintendent of the U.S. Coast Guard Academy in New London, CT in June 2011. As the leader of the Department of Homeland Security's most visible training institution, she finds herself today on the forefront of education initiatives to improve competence in the field of maritime security and a renewed effort to regain lost skill sets in the marine safety divisions. An hour spent with this 30+ year Coast Guard veteran leaves no doubt that she is the right person for the job.

Fresh from her previous billet as Director of Reserve and Leadership at Coast Guard Headquarters, where she was responsible for developing policies to recruit, train and support approximately 8,100 Coast Guard Reservists, Stosz also spent time as Commanding Officer of the Coast Guard's recruit training center in Cape May, NJ. This Coast Guard Academy alumna, with an MBA from Northwestern's Kellogg School of Management in 1994, knows education. A little less than nine months into her new role, Stosz' efforts are already yielding fruit.

Image courtesy of U.S. Coast Guard

Balance, Diversity and Value, too

Stosz assumed command at New London as the school continues to increase its minority admissions – up from 12 percent in 2008 to 24 percent in 2010 – but she also realizes that this is but one small part of what it will take to continue improvements in the Academy's curriculum and the quality of the officers that are eventually produced because of it. Stosz cautions against defining diversity simply in terms of race and gender. At last June's Change-of-Command ceremony, Stosz insisted, "We'll know the nation has succeeded in its efforts when there are no more firsts like this one and I am remembered as the 40th Superintendent of the Coast Guard Academy, not the first female Superintendent." In a February 2012 interview with Maritime Professional, she added, "people have a tendency to think about a diverse student body only in terms of gender or race, but we think about it terms of the wide demographic that we serve. We have cadets from almost every state and protectorate – and we have a handful of international cadets, too."

Looking to the larger picture, Stosz strives to demonstrate the value of the academy to the industry and the American public. She explains, "We know the value of the academy within the Coast Guard, and what we deliver to DHS and the nation and the maritime industry. We need to further cement our public-private relationships, especially with memorandums of understandings and that sort of thing. These efforts add value to our product." Underscoring that commitment, the Academy's latest training initiative, one certain to please domestic waterfront stakeholders, was signed with the American Waterways Organization (AWO) in February.

The AWO MOU will operate in much the same way that the coast Guard's ship rider program for commissioned officers allows marine safety personnel to experience and better understand the industry that they regulate. For Coast Guard Academy cadets, the agreement aims to establish, promote, and execute a summer training program that allows cadets to interact with towing companies and ride commercial towing vessels. Stosz further says that it is important to ensure that both the Coast Guard and the towing vessel industry are on the same page as they transition into a towing vessel inspection regime. The MOU is just one more place where increasing Coast Guard outreach will facilitate trust and increase the knowledge base of Coast Guard personnel. And, Stosz' people will be at the heart of it.

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Education – and Training

Prior to arriving at the Academy, RADM Stosz also served as Commander of the Coast Guard's only recruit training center in Cape May, NJ. When asked about the key difference(s) in teaching officer candidates and enlisted recruits and what that assignment that would someday help academy graduates be better supervisors – and perhaps more importantly – leaders to the personnel that they will someday command, what she had to say was telling.

"The thing you have to understand is that many of the folks who come through Cape May have bachelor's degrees and even master's degrees. Many of them aspire to go to officer candidate school, as well. But, the key difference between the two is that enlisted training is an eight week program as opposed to a 200-week college experience. One is an institution of higher learning with a strong professional development and training component and the other; an eight-week program where folks are sometimes in a state of shock for the entire time. It is a high intensity environment."

Stosz goes on to describe her deep respect for enlisted personnel, some of which stems directly from her twelve years spent at sea. "What I came to understand at Cape May is that these are usually young, vulnerable people from different backgrounds and they are going to be the future of the Coast Guard. But, you've only got eight short weeks to do it right for them. This type of 'servant' leadership delivers a dedicated service member; someone who wants to become part of something bigger than themselves. These recruits will be retained longer than those 'trained by the hammer.' I bring along all of that to the Coast Guard Academy. You learn to put the people you are leading at the center."

Stosz also points to the fact that Coast Guard enlisted personnel, as a group, typically test better than their peers in other services. She adds, "You can't look down on a workforce that is increasingly sophisticated and instead, you have to provide better leadership. Today, we promote a strong core of mutual respect between enlisted personnel and officers. That starts here at the Academy."

Changing Curriculum: Changing Attitudes

ADM Robert Papp took the reins of the Coast Guard about one year before Stosz took charge at the Coast Guard Academy. At the time, he ruffled a few feathers when he declared that sea time for Coast Guard personnel, while not an absolute requirement, was to be considered something that every officer should have. In a service with such a wide range of mission sets, not everyone agreed with that edict. Stosz, however – and herself with 12 years at sea, including command of two cutters – couldn't agree more. She told *Marpro*, "The value of sea time is indisputable. It goes back to traditions, the history and the very character of the Coast Guard itself. We're a seagoing service; a maritime service. And we do give our cadets and officer candidates sea experience throughout their time on board – as a minimum, 16 weeks of underway time while cadets. Once they graduate as ensigns, we're still sending the vast majority of those officers (as much as 85 percent) to seagoing billets. The value of that shared experience; the wardroom, the technical experience, all of it, cannot be overstated."

At all of the maritime schools and not just the Coast Guard Academy, the curriculum has had to adjust to reflect profound changes on the waterfront. For example, less than one-half of state maritime academy graduate now obtain merchant mariner licenses. At the Coast Guard Academy itself, perhaps the two biggest concerns in terms of evolving skill sets has to be the need for competent marine safety and credentialing personnel and a heightened understanding of the Coast Guard's increased maritime security role. Stosz addresses the challenges pragmatically.

"We have established programs to get our cadets out into the real world, to get commercial training that provides the necessary familiarization. This includes a program which allows cadets to leave the academy with a record of their training and experience that could lead them towards a license. We are not able – like the maritime academies – to provide for a full license experience in four years. It just isn't possible with all the other requirements we have for our candidates. And a lot of our people would like to get a license, but it falls into sometimes the 'too hard' locker when you've got multiple other missions to accomplish."

Stosz continues, "It's more than the license. It's getting an appreciation for what that entails and making it part of their curriculum. That includes ship structure and naval architecture, laboratory work that teaches how to get a ship off the beach (salvage), complex engineering behind unloading, etc. That class is being added. We also have a ship rider program. Our program is based upon the one for junior officers from the inspection divisions and sectors and we're bringing that right back to the cadets. The AWO MOU allows our students to get out there on brown water boats and start the process of acquiring necessary credentials to become a certified USCG inspector."

The homeland Security focus is a little harder. Stosz admits, "No specific training has necessarily been added to the curriculum, but where the cadet would actually see that is in their summer training programs. They are going out to not just ships, but our 3rd and 2nd class cadets are going out to sectors and seeing that port security through the eyes of the Maritime Port Security Units." Stosz admits, "No specific training has necessarily been added to the curriculum, but where the cadet would actually see that is in their summer training programs. They are going out to not just ships, but our 3rd and 2nd class cadets are going out to sectors and seeing that port security through the eyes of the Maritime Port Security Units."

Stosz also points to another area where the Academy has taken a lead role in certain security issues. The nascent Maritime Center for Strategy and Policy and Maritime Security, a Coast Guard 'center of excellence,' is now standing up at the academy. In April, an Arctic Symposium will touch upon safety, SAR, and security issues in the Arctic. She explains, "The academy brings the academic perspective to these issues and the symposium brings the outside world to our cadets."

Full Circle: Steady Helm in Changing Seas

A 1982 graduate of the Coast Guard Academy, a thirty-year career has brought RADM Stosz full circle back to where her college education first began. Along the way, the academy itself has seen many changes, all of which Stosz aptly puts into perspective. "I came into the academy 34 years ago in 1978 – that was a generation ago – let's put this in context. Since then, we've had OPA 90, the Magnusun Fisheries Act, 9/11, hurricane Katrina, Deepwater Horizon, Desert Storm and the current conflicts. We've been involved in all of that. What I'm trying to convey is that our mission has expanded since 1978

UNITED STATES COAST GUARD ACADEMY

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from a narrower focus than that which we see today. That context is important. We were a STEM focused school then and we're a STEM focused school now (Science, Technology, Engineering and Math). We remain as a school which provides a leader of character with a STEM education. And, we strive to produce 70-75 percent STEM majors. That's important. Our nation is in dire need of that type of professional. We focus on developing a graduate who can fundamentally go out to the workplace and start to perform."

RADM Stosz benefits from the leadership and efforts of her predecessor, RADM J. Scott Burhoe. Under his guidance, the school ranked as a top college by the New England Association of Schools and Colleges and was listed as the number one college in the northeast by U.S. News and World Report. The school had five Fulbright and three Truman scholars during his tenure. Stosz therefore has big shoes to fill. No one doubts that she is up to the task.

Stosz believes that anybody in America can see themselves in a Coast Guard uniform. "Our mission set is diverse. You can save people, you can clean up spills, you can protect people, and on and on," Getting people ready to do just that has always been a big part of her career, and she isn't done yet. She adds, "We need to enhance and work relationships and provide value to industry through our graduates. It's about building trust between the government and the private sector." That's just the kind of message that the domestic waterfront wants to hear. So far, so good. **– MarPro**

Interview

Arab Shipbuilding & Repair Yard Co. (ASRY)

Shaikh Daij, Chairman, ASRY

By Greg Trauthwein

While small in stature at just 760 sq. km. with a population of 1.2 million, the Kingdom of Bahrain, an archipelago in the Persian Gulf just east of and connected by causeway to Saudi Arabia, seeks to grow its stature in the world marine market to become a global maritime and logistics center by 2030. Central to this success is the Arab Shipbuilding & Repair Yard Co. (ASRY), fresh from celebrating its 35th year in business and investing $188 million in expanding its facilities. On a recent trip to Bahrain, MarPro was able to spend some time with ASRY's Chairman Shaikh Daij bin Salman bin Daij Al Khalifa to get his take on his company's and his country's emerging role in the global maritime market.

ASRY's Chairman Shaikh Daij bin Salman bin Daij Al Khalifa.

HOW WOULD YOU DESCRIBE YOUR MANAGEMENT PHILOSOPHY?

I would say pragmatic. I want a job done the best way possible. This means my management style is one based on the principle of inclusion and discussion, including all management, from Board level to discussions just between Chairman and CEO.

HAS THIS APPROACH CHANGED SINCE YOU'VE TAKEN THE HELM AT ASRY, AND IS SO, HOW?

No. My approach hasn't changed since becoming Chairman of ASRY. In fact my management style is the same as when I was President of Customs, Bahrain and Chairman of the Bahrain Airport Co. I have the same management style in my role as Chairman of the General Organizsation of Sea Ports (GOP). With my policy of inclusion you have to be an active listener.

THE SHIPREPAIR BUSINESS IS A CYCLICAL ONE. HOW DOES ASRY BALANCE INVESTMENT IN ITS YARD, EQUIPMENT AND PEOPLE WITH THE POSSIBILITY OF WIDE SWINGS IN REVENUE?

When I took over the helm of ASRY in January 2007, it was undoubtedly a challenge, but a challenge which has produced the new ASRY. We have a totally new management team, a very good success rate, a high level of service to our clients and we have diversified into the offshore oil and gas market, the naval repair sector and, most recently, into a joint venture to design and build floating electricity generating stations for use worldwide.

WHAT DO YOU COUNT AS THE LEADING CHALLENGE(S) TODAY TO RUNNING AN EFFICIENT AND PROFITABLE SHIPREPAIR BUSINESS FROM THE POSITION OF:

POLITICAL, LEGISLATION & /WORLD EVENTS?

Of course a shipyard cannot influence or control political events, in the same way that we can't control the weather! The same is true with the political situation, whether it be in Bahrain, the rest of the Arabian Gulf, or further afield. However, with regard to legislation, we have always been at the forefront of 'green' issues at ASRY. The yard was the first major shipyard in the Middle East to invest in a sludge treatment plant, and we are now investing heavily in a new sewage treatment plant, a new water desalination plant, and expanding our existing grit treatment plant. We are seeing the use of more and more hydroblasting on ships undergoing repair in the yard and are certified to ISO 9001 and 14001, ISO 28000 and 208580, ISO/IEC 27001 and 27002 and ISO 18001 (OHAS), as well as being ISPS Code Certified.

TECHNOLOGICAL INNOVATION?

ASRY started life in October 1977 offering basic shiprepair

and maintenance work on VLCCs. We have come a long way since then and have invested heavily in technology, now we are a 'one-stop-shop' for all types of ship and offshore repairs. In recent years we have noticed a trend among some shipowners, especially those with large newbuilding programs, who are not looking for large steel renewal jobs, but want to repair at a yard that can offer the latest in systems and specialist skills in mechanical and machinery repairs. Anticipating this trend, ASRY has beefed up its technical services of late and today we can meet any repair request from our customers.

COMPETITION?

It is true that ASRY is facing increased competition, but this has always been the case since 1977 when the yard opened for business, Today, however, this competition is coming from new yards in the Middle East, notably in Oman and Qatar. But these are brand new yards, without a track record. ASRY is now in its 35th year of continuous operations. We have a fantastic track record, offer a very high quality service, have a loyal client base of owners and managers, both Arab and International; and a skilled workforce. We also offer exemplary service to all of our customers, with a fair pricing policy. I believe competition is a good thing. If you are afraid of competition then shut up shop!

HOW HAS THE SHIPYARD FARED DURING THE MOST RECENT ECONOMIC DOWNTURN?

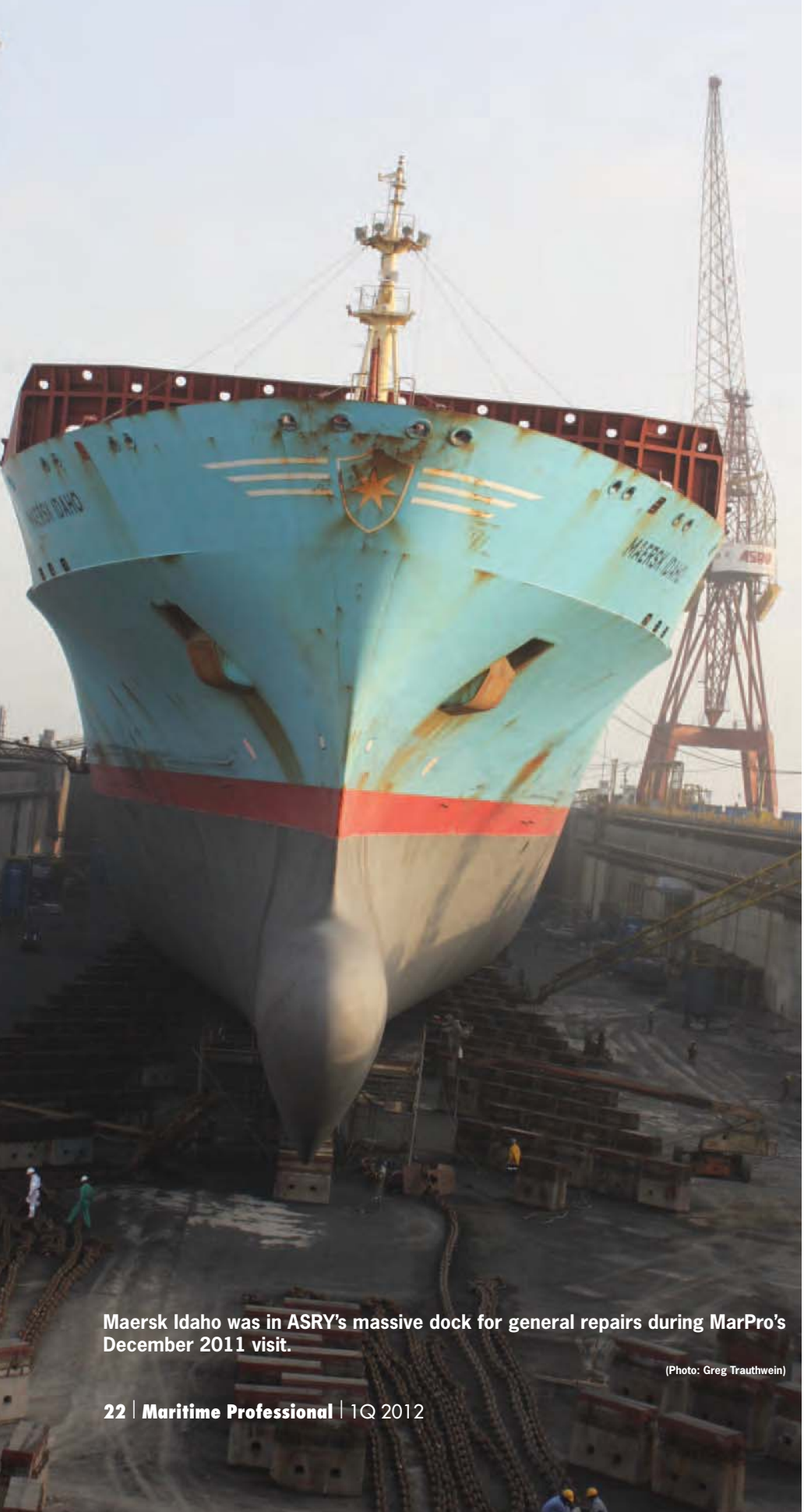
Like all other major ship repair yards ASRY has been hit by the recent global economic crisis. We had exceptional years in 2007 and 2008, but were then hit by the global recession in 2009. There was a false dawn in 2010, when the market was supposed to improve, but this didn't happen and we made a small loss. But this wasn't the end of the world. We have hit bottom, the only way now is up. 2011 saw the yard make a small profit and I'm upbeat and positive that 2012 will be a stronger year for ASRY and I truly believe that the market will pick up in 2013.

IN YOUR OPINION HOW DOES THIS ECONOMIC DOWNTURN COMPARE/DIFFER FROM PREVIOUS TROUGHS IN THE SHIPREPAIR BUSINESS?

Ship repair is a cyclical industry – it is totally dependent on global and regional trade. When this slows down, owners don't spend much money on repairing their ships. Previous recessions have been shorter, today's one has been much longer, mainly due to two reasons: a global financial recession arriving at the same time as a shipping recession. You could say the 'Perfect Storm' – but not perfect for ship repairers.

ASRY RECENTLY CELEBRATED ITS 35TH ANNIVERSARY. HOW IS ASRY – TODAY – MOST SIMILAR AND MOST DIFFERENT FROM THE COMPANY WHICH BEGAN OPERATIONS IN 1977?

Today's ASRY is definitely not the same yard that started business back in 1977. Then the yard was looking to undertake run-of-the mill repair work on large tankers, today if you look around the yard you will see all types of ships, from the smallest tug to the largest tanker. You will also see naval vessels and offshore jack-up rigs. What differentiates the old ASRY from the new ASRY is that we have diversified in a number of ways. I've just mentioned that we are now very much involved in the repair of naval vessels, from the US Navy, the Royal Navy and Royal Fleet Auxiliary, as well as the Bahrain Navy; and are fast becoming the jack-up rig repair yard of choice in the Arabian Gulf. In another recent major diversification move, ASRY has entered into a joint venture with Centrax, the British power generation packaging specialist, to design and build Power Barges – floating electricity generating stations – this is a major turning point for the shipyard. Though shiprepair will remain our core business we will not put all of our eggs in one basket and will continue to go for selective diversification.



Maersk Idaho was in ASRY's massive dock for general repairs during MarPro's December 2011 visit.

(Photo: Greg Trauthwein)

ASRY HAS INVESTED IN A MASSIVE NEW 1.38KM REPAIR QUAY WALL AND OFFSHORE FABRICATION AREA, TO MEET THE NEEDS OF A GROWING OFFSHORE ENERGY BUSINESS IN YOUR REGION. PLEASE DISCUSS THE RATIONALE BEHIND THIS INVESTMENT AT THIS TIME?

The investment of $188m in a facilities expansion program during a major recession was a calculated risk. The time was right for ASRY to move forward into a new phase in its history. ASRY had to change. The yard needed more alongside repair space, as we were having to work on vessels double or even triple berthed. The new repair Quay Wall is designed for both ships, three 300,000dwt vessels simultaneously, and jack-up rigs. We also saw a niche in the offshore fabrication market – hence the establishment of our offshore division, ASRY Offshore Services (AOS) and the new fabrication area. I see great potential in the offshore oil and gas sector, with AOS contributing 40% of all sales in 2011, mostly for jack-up repairs and upgrades. I see this sector growing more and more. We also needed the new facilities to successfully face the competition from the new yards opening in Oman and Qatar.

ASIDE FROM THE OFFSHORE MARKET, WHERE DO YOU SEE POSITIVE OPPORTUNITIES, BY MARKET SECTOR, FOR GROWTH IN THE COMING 12 TO 24 MONTHS?

As mentioned previously, we see great potential in the naval repair sector. We are increasingly working for the US Navy's 5th Fleet which is homeported in Bahrain, as well as working on vessels for the Royal Navy. ASRY has a cooperation agreement with the UK shiprepair A&P Group for the repair of Royal Fleet Auxiliary vessels operating in the Arabian Gulf. With more vessels arriving to make up the Coalition Forces fleet in the region, there is definitely more work to be gained from this sector. Our two large slipways, among the biggest in the world, are ideal for the docking of large anchor-handling tug/offshore supply vessels, a market that we are further developing. Meanwhile, on the more

> “Meanwhile, on the more technically demanding side of the business we are looking to the LNG fuel conversion market, the fitting of new noise abatement technology, as well as gaining a share of the 39,000 vessels that will require the fitting of ballast water treatment systems within the coming five years, under new IMO regulations. With the global merchant fleet increasing in number there is enough work for everyone.”

technically demanding side of the business we are looking to the LNG fuel conversion market, the fitting of new noise abatement technology, as well as gaining a share of the 39,000 vessels that will require the fitting of ballast water treatment systems within the coming five years, under new IMO regulations. With the global merchant fleet increasing in number there is enough work for everyone.

DOES ASRY HAVE ASPIRATIONS TO EXPAND GLOBALLY, AND IF SO, WHAT WORLD REGIONS OUTSIDE OF THE MIDDLE EAST TODAY PRESENT THE MOST PROMISING PROSPECTS?

The new ASRY is always looking to expand and diversify. Currently we are focussing on our own facility in Bahrain. I can’t be exact about any plans to start ship repair operations overseas, but we are always looking to the future and if the time and the opportunity is right for us, then we will move. But only when the time is right.

WHAT DO YOU SEE AS ASRY’S BIGGEST STRENGTH AND WHERE CAN YOU IMPROVE IN THE COMING YEAR? HOW AND WHY?

ASRY’s biggest strength is its experience – 35 years of working for the world’s fleets. This is backed up by a strong, experienced management team, skilled workforce and an active global network of agents. ASRY is well known by ship owners and managers around the world as one of the friendliest yards to repair in. Of course there are always areas for improvement. We are currently looking at ways to reduce costs across all operations within the yard, while at the same time improving productivity. Marketing activities have been significantly increased, both in the Arab market and the International market, to maintain our existing loyal customers, while at the same time introducing new shipowners and rig operators to the ASRY style of shiprepair. We have introduced a flexible payment system for customers in these difficult time and try to be flexible as regards to drydock availability to meet the fluctuating needs of our customers.

Port Security

These TWICs Aren't for Kids

by John C.W. Bennett

In the TWIC credentialing rulemaking of January 2007, TSA and the Coast Guard estimated the 10-year implementation cost to government and the private sector at between $694 million and $3.2 billion. And those estimates don't include any costs associated with implementing TWIC reader requirements.

U.S. Coast Guard illustration by Petty Officer 1st Class NyxoLyno Cangemi

The year 2012 marks the fifth anniversary of the first general issuance of the Transportation Worker Identification Credentials (TWICs), as well as the time for the first recipients to renew their cards. So it's an appropriate time to review the TWIC Program—where's it been and where's it going?

The TWIC Program was started by the Transportation Security Administration (TSA) in December 2001 in response to the Aviation and Transportation Security Act, which directed TSA to work with airports to enhance their access control and to consider how biometric technologies could help positively identify those seeking access to secure areas of airports. Late the following year saw enactment of the Maritime Transportation Security Act of 2002 (MTSA), which mandated issuance of a biometric transportation security card to control unescorted access to the secure areas of MTSA-regulated vessels and facilities. TSA then decided to focus the TWIC Program on implementing the MTSA mandate. While TSA is responsible for the development and issuance of the credential, as well as evaluation of card readers, the US Coast Guard is the enforcement agency in the maritime sector.

A STANDARD CREDENTIAL?

As originally conceived, TWIC would be a standard credential for 10-15 million workers in all modes of transportation. It would minimize redundant credentialing and background checks, and its encoded data would be compared to a facility's local data base to determine a worker's authority to enter a given secure area. Sadly, it hasn't worked out that way and it isn't likely that it will.

The original TWIC vision has not come to pass because the Program has not been fully implemented as yet. It won't come to pass because future implementation will diverge from the original model and because some state port authorities will still conduct their own background checking and badging systems, using their own criteria, to target concerns such as cargo theft and drug smuggling.

In the face of numerous objections to the reader requirements proposed in 2006, the decision was made to first issue regulations requiring a TWIC as a credential for gaining unescorted access to MTSA secure areas, and to deal subsequently with requirements for biometric access control technologies to confirm the identity of the card holder. Shortly after this, the SAFE Ports Act of 2006 became law and with

it, legislatively mandated deadlines for (1) implementing the TWIC Program at the nation's ports in three risk-based phases, (2) issuing or denying TWICs to all then current holders of merchant mariner documents, (3) starting a pilot study on card readers in the maritime environment, (4) a report to Congress on the results of the pilot study, and (5) final regulations for card readers. None of these deadlines was met, with delays ranging from weeks to years, and the last two still not accomplished.

ENROLLMENT & CREDENTIALING

TSA and the Coast Guard issued a joint regulation in January 2007 that established the credentialing part of the Program. Through a contractor, TSA began to enroll maritime workers in the Program and issue their cards that October. There were initial customer horror stories, such as over 20 people booked for the same 15-minute appointment window with only one screener on duty and 20-minute wait times for telephone assistance from the Help Desk. Times for card issuance after enrollment were in the six to eight week range instead of the advertised 10 to 30 days. These problems appear to have subsided (the current average enrollment time is under nine minutes) as the result of allocation of additional resources and the initial enrollment peak having crested. With only new entrants to the industry and individuals needing replacements applying for TWICs, enrollment centers have been cut back. Many in the industry are concerned that TSA is not planning for sufficient capacity to handle the volume of TWIC renewals, which starts ramping up by this fall.

TSA originally estimated it would have to issue about 750,000 TWICs. When the credential rule was published in 2007, the estimate was up to 1.2 million. As of mid-January, there have been a little over 2 million enrollments and just under 2 million cards have been activated. Without a requirement to use card reading machines to

(U.S. Coast Guard photo by Petty Officer 2nd Class Renee C. Aiello)

Coast guardsman examining a TWIC Credential.

(U.S. Coast Guard photo/Petty Officer 3rd Class Renee C. Aiello).

The Government Accountability Office (GAO) reported last year that its undercover investigators had been able to obtain TWICs by submitting counterfeit identity documents at enrollment centers. If they could do it, wouldn't terrorists be able to do it too? Even card readers would not block such TWICs.

compare an individual's fingerprints with biometric information stored on the credential, TWICs are being used like any ordinary photo ID at most MTSA-regulated vessels/facilities. The Department of Homeland Security (DHS), parent agency of both TSA and the Coast Guard, maintains that the TWIC Program, even without readers, keeps maritime port facilities vital to the US economy from being vulnerable to terrorist activities. Without any formal assessment of the TWIC Program's effectiveness in this regard, the main contention is that it provides a thoroughly vetted work force, providing the port facility operator the assurance that the TSA is satisfied that persons presenting TWICs to obtain unescorted access do not present a terrorist threat.

DOES TWIC = ENHANCED SECURITY?

Does the TWIC Program in its present form really enhance security or reduce the risk of terrorism at MTSA-regulated entities? It turns out that TSA lacks internal controls to ensure only eligible people get TWICs. The Government Accountability Office (GAO) reported last year that its undercover investigators had been able to obtain TWICs by submitting counterfeit identity documents at enrollment centers. If they could do it, wouldn't terrorists be able to do it too? Even card readers would not block such TWICs.

With readers not in common use, do you even need an authentic, valid TWIC? In theory, before a TWIC holder is allowed into a secure area alone, his or her TWIC is examined to ensure that (1) the person matches the picture on the card, (2) the card hasn't expired, and (3) the card's security features don't indicate that the card has been tampered with. Numerous truckers claim, however, that they often aren't even asked for their TWICs when entering ports. There are other reports that some facilities do not appear to check their employees' TWICs when the Coast Guard inspectors are not around.

Last year's GAO report also indicated that its investigators had been able to enter secure areas of "more than one port" using counterfeit TWICs and that security officers never questioned the authenticity of TWICs presented for access (the report didn't separate access attempts using counterfeit TWICs from those using valid TWICs obtained fraudulently.) Further, the same GAO report indicated that the Coast Guard had checked almost 130,000 TWICs with handheld readers over a 19 month period ending in early January 2011 and found 96% were valid. This means over 5,000 cards weren't valid. The cause of the invalidity was not reported, as the Coast Guard's enforcement data base at the time did not have a ready means to isolate TWIC violations or enforcement actions. The Coast Guard also told GAO that, as of that January, it had identified only 11 known attempts to present counterfeit TWICs and four instances of people attempting to use someone else's TWIC for access. And even if the gate guards are checking TWICs properly, they may have a tough time distinguishing a fake card from an authentic TWIC with deteriorating security features. (Both TWIC fading and delaminating have been reported around the country.) The bottom line is that, in practice, an authentic TWIC has not always been required to gain unescorted access.

TWIC READERS: THE PANACEA?

Will using TWIC readers eventually fix most of these issues? Universal use of TWIC readers in the biometric mode would presumably prevent successful use of TWICs that were expired, counterfeit, or someone else's. (DHS's efforts in response to the GAO to strengthen identity verification in the TWIC application process should reduce the possibility of fraudulent acquisition of authentic TWICs.) But readers are not likely to be adopted universally and, where adopted, may not always be used in the biometric mode. First, it is not clear that TWIC readers will be able to perform fingerprint comparisons within acceptable time frames. In 2007, the National Maritime Security Advisory Committee made its recommendations on TWIC readers, including that the access determinations be made in no more than three seconds in the biometric mode, to ensure smooth access flow during peak periods. While TSA has been very closed-mouth about the results of the testing it did on TWIC readers between August 2008 and May 2011 in its Congressionally directed pilot study, study participants have revealed that at least some of the tested read-

ers did not come close to this standard. TSA's report to Congress is apparently still hung up in the review process above TSA's level, but TSA representatives have repeatedly said the report will not include data on actual reader performance.

Second, the details of the eventual TWIC reader requirements are unknown at this point. But whatever the final regulation mandating the use of TWIC readers looks like, it will not require all MTSA-regulated facilities and vessels to use the readers all the time, let alone in the biometric mode all the time. In March 2007, the Coast Guard issued an Advanced Notice of Proposed Rulemaking (ANPRM) in which it asked for comments on its "preliminary thoughts" on TWIC reader requirements. The ANNPRM proposed grouping vessels and facilities into three tiers based on the perceived risk from a terrorist incident.

Vessels carrying CDCs in bulk or certificated for more than 1,000 passengers, and facilities that receive them, were placed in the highest risk category, with a requirement for a biometric match, card authenticity check, and card validity (not expired/revoked) check for every entry. Vessels carrying HAZMAT other than CDCs or certificated for 500-1,000 passengers and facilities receiving them would have to do the electronic authenticity and validity checks for each entry, but a biometric match would only be required on a random basis not less than once a month at MARSEC Level 1. (At higher MARSEC Levels, this group would have to conduct the biometric match for each entry.) All other vessels and facilities would continue, at all MARSEC Levels, to use the visual checks currently in force, with the Coast Guard performing electronic verifications of TWICs with hand-held readers during inspections and spot checks.

The ANPRM specifically warned that both the risk groupings and their reader requirements could be changed when the detailed regulatory proposal (a Notice of Proposed Rulemaking or NPRM) was issued, based on public comments on the ANPRM and the results of TSA's pilot study. Most industry commentators supported the risk-based approach to reader requirements, but not necessarily the Coast Guard's use of specific cargos or passenger numbers. For example, the American Association of Port Authorities suggested first assessing overall risk at the port level and then evaluating an individual facility's risk on a variety of factors, including nearby facilities.

REGULATORY & LEGISLATIVE VARIABLES

Work on a proposed reader regulation is ongoing. Its issuance has been a moving target, but the Coast Guard, with access to the results of the pilot study, says it's on track for publication later this year. Congress is another factor that may impact the shape of the NPRM. There are indications that the Coast Guard may be shifting its view of risk as a result of legislation removing TWIC requirements for mariners not serving on vessels requiring MTSA security plans (recently implemented by a Coast Guard Policy Memo). Congressional reaction to TSA's pilot study report, once it's delivered, could have a more direct impact. Once the NPRM is published there will be a month or two during which the public may submit comments and public hearings will be held. Then the Coast Guard will have to spend time considering the comments it receives, before it issues the final rule, which probably won't happen until 2014. That rule will have to allow an extended time for the industry to comply with its requirements before they become legally enforceable.

APPLES TO APPLES: ADD UP THE METRICS

So, is the TWIC Program worth all the time and effort, not to mention money? An accurate costing of the program is not available. In the TWIC credentialing rulemaking of January 2007, TSA and the Coast Guard estimated the 10-year implementation cost to government and the private sector at between $694 million and $3.2 billion. And those estimates don't include any costs associated with implementing TWIC reader requirements. According to the GAO, TSA's TWIC Program funding through 2010 amounted to over $111 million and FEMA had expended a like sum for TWIC-related security grants. To this must be added the $265 million or so paid by or for TWIC applicants to date, as well as their time and travel.

It's clear the original vision of universal use of readers for biometric matching all the time will not be realized. From a security perspective, each departure from that ideal reduces the effectiveness and value of the Program. But it is not true that, as one Congressman said "without any readers, TWIC is about as useful as a library card." A "fully" vetted maritime work force is certainly worth something in a multi-layered approach to protecting the maritime transportation system from terrorism. Perhaps, however, risk-based analysis should be applied not only to determine where and when TWIC readers are required, but also to decide which workers really need to undergo vetting for the TWIC itself.

The Author

John C. W. Bennett has been the President/Chief Executive Officer of Maritime Protective Services since January 1994. During that time he has managed the international operations of a specialist maritime security company with offices on two continents and a worldwide practice, as well as personally participating in the development of maritime security assessments and plans, the conduct of security audits, design of security exercises, and other maritime security services. In 2006, he was appointed a Distinguished Visiting Research Professor at the University College, Florida Institute of Technology. In 2011, Mr. Bennett was selected to join the Federal Bureau of Investigation's INFRAGARD vetted collaboration on Critical Infrastructure Protection with the private sector. He holds a B.A. from Swarthmore College, a J.D. from Georgetown University Law Center, and has written several articles in the maritime trade press. He is the author of the well respected blog, "Maritime Transportation Security News & Views," which is carried on the Maritime Professional website.

Now, that's just SMART

Simulation for Maritime Assessment, Research & Training. At Maritime Professional Training, it all adds up to performance based training. For clients and the broader maritime industry itself, it means a safer and more competent workplace.

By Joseph Keefe

At the Maritime Professional Training (MPT) facility located in Fort Lauderdale, FL, Project 2010 – a journey intended as a means to update a wide range of MPT courses, enhance the learning experience and provide cost effective training to students – is well underway and already yielding fruit. In business for more than 29 years, the privately held, 65,000 square foot Maritime Training Center and ISO 9001:2008 certified company has since added another $1.5 million USD to further enhance its training, evaluation and assessment missions. Eventually, the total expenditures to make "Project 2010 and Beyond" a reality will top $5 million. MPT hopes to finish all of this in time for their 30th anniversary.

S.M.A.R.T.

MPT's simulation facility, aptly named the S.M.A.R.T. Campus, conducts Simulation for Maritime Assessment Research and Training and has long provided to the maritime industry a variety of regulatory compliance courses in addition to research projects for port development and familiarization training. Project 2010 upgrades will include the installation of fourth Full Mission Ship Simulator Bridge designed for Advanced Dynamic Positioning and AHTS training, an additional state-of-the-art ECDIS lab and a new DP Lab for both Basic and Advanced Course offerings. Almost 30 years after its inception, MPT nevertheless begins this decade as one of the most technologically advanced maritime training facilities in North America.

MPT's current package of simulation equipment is – in a word – impressive. This includes 3 full mission simulators, each capable of acting interactively or independent of one another and also featuring tug simulation, as well. Unit numbers 2 and 3 emulate tugs in conventional, ASD, or z-drive modes and include winch controls. Rounding out the facility's training capabilities are 8 partial task radar simulators, 4 partial units with radars and screens, 12 ECDIS training stations with Transas technology and 6 simulators for DP operators. Beyond this, and at no more than 6 month intervals, components are upgraded as necessary. Partly a function of the Project 2010 initiative, these improvements extend companywide: laboratories, classrooms, welding and everything else in between.

At the heart of MPT's current and future training initiatives is (Captain) Ted Morley, Chief Operations Officer of the Fort Lauderdale-based school. In addition to his normal duties, he is also in charge of Marine Simulation Training Facility's design, construction, implementation, and operation. Despite that demanding schedule, Morley still finds time to go to sea in a professional role, something he says keeps him current with industry trends and allows him to bring back real life experience to MPT's clients.

Morley's career includes time spent onboard vessels ranging from super yachts to super tankers, during which he worked his way up from deckhand to Master. He currently holds a USCG Master's License, Unlimited Tonnage as well as several foreign certificates and is currently pursuing his Master's Degree in Marine Education. And, as if that wasn't enough, he actively participates in maritime advisory committees in the U.S. as well as overseas and he has authored several articles and papers on Maritime Training and Ship Safety. Recently, he (and MPT) were a much sought after source of expertise by a wide range of media as they covered the *Costa Concordia* incident.

REALISM – AND REALITY

The MPT equipment upgrades include an effort to ensure the most realistic simulation possible. Fed with fiber optic lens, each channel has its own CPU. The installation features newly upgraded F32 Projectors that supply up to 8000 lumens each projected onto a

120' (36.5m) curved screen to provide a visually immersive environment that greatly improves

on direct-view displays. The upgraded installation will also feature Projection Design's patented

Multi Image Processors supplying image adjustments at the pixel level, which provides a level of

realism unmatched in other display solutions. As MarPro goes to press, those upgrades were being completed. The realism and sensation of motion are dramatic. Bring your sea legs.

The real-life look and feel to MPT's offering is particularly important, especially since Ted Morley and his staff fully embrace the concept of 'performance based training.' He explains, "At MPT we mandate performance-based training that provides for not only regulatory compliance but we also demand performance from students. People can and do fail classes. Everyone who comes here knows that they will not be certificated unless they achieve the required skills."

MPT, therefore, is anything but a for-profit diploma mill. All students start their experience at MPT by seeing their full-time, on site career counselor, who guides mariners to the right classes, for the right reasons. And the curriculum is as adaptable as it is wide. Morley explains, "If a client has a need, then we can move forward quickly without bureaucracy and restraints of a school board or perhaps legacy union oversight. Everyone at MPT is a mariner (except for the CFO) and everyone is certificated and some still actively sail on their licenses. Our part time mariner instructors bring real world experience to the classroom." Last year alone, more than 10,000 students attended training through MPT. The facility also hosts many unique training programs providing specialized training and assessment tailored to meet individual and corporate standards.

As a function of its favorable geographic location, state-of-the-art equipment and experienced instructors, MPT enjoys a diverse, but balanced client base. Morley says that about 60 percent of their business stems from corporate clients with the rest, private individuals right off the street. Those clients include shipping companies, harbor pilots, towing and offshore

MPT
MARITIME PROFESSIONAL TRAINING
Fort Lauderdale, Florida

> "At MPT we mandate performance-based training that provides for not only regulatory compliance but we also demand performance from students. People can and do fail classes. Everyone who comes here knows that they will not be certificated unless they achieve the required skills."
>
> – Captain Ted Morley, MPT COO

corporations, management firms, military sealift command, passenger vessels and super yachts, as well as students from all over the world. For all of them, Morley insists, "We have the obligation to make sure people can handle that ship. And, we understand that if ships and the professionals that operate them are not safe, we won't survive."

GLOBAL REACH / INNOVATIVELY AFFORDABLE

Students and clients have 24/7/365 access to the MPT portal from virtually anywhere. The innovative, online career management system in one place houses and helps mariners manage and recover their full complement of documentation. The service, provided free-of-charge, also keeps students aware of new rules and regulations, provides advice on how these will impact their credentials and then gives guidance on how to stay in compliance. All certificates are available on line for those who need to produce those proficiencies locally on the job. And, just as MPT continues to improve the technology side of the facility, the new portal also shows their long view of a client's requirements. Amy Beavers, MPT's VP in charge of regulatory compliance adds, "We want to be their (the students) long-term solution."

Combining affordability, convenience of location and a superior but demanding training and evaluation regimen, MPT

MPT: One Stop / High Tech Training

Train for Real Life Situations	Practical Assessments	Yachtmaster Certificates
Regulatory Compliance	Shiphandling	STCW Safety Training Courses
License & Certification Training	Onboard Training	Advanced Fire fighting
STCW, USCG, MCA, RYA, BMA	Docking & Undocking Maneuvering	Medical Courses
Custom Designed Bridges	Emergency Maneuvering	ISPS Security Officer Certification
Models	Heavy Weather Maneuvering	Crew Vetting / Virtual Interviews
Dynamic Positioning	Port Familiarization/Development	65,000 square foot campus
Voyage Planning	Navigation / Radar / ARPA	DNV Class A 325 degree main bridge
Twin Screw, Azipod, Z-Drive	Electronic Navigation	Custom Vessel Digitizing
Ratings Training	Tug to Ship Interactions	Virtual Sea Trials - Pre or Post Vessel
Accident Investigation	Ship to Environment Interactions	
Bridge Team Building	OOW, Chief Mate, & Master Modules	

The above chart shows just a part of the total menu of training available at MPT.

brings together all of the ingredients necessary for clients to achieve success. Morley adds, "We have a great relationship with the local hotels and attractive pricing. And, our training is extremely competitive in terms of cost." But pricing and convenience is only one part of the financial picture.

According to Morley, shipping companies can save insurance premium costs by demonstrating their commitment to a safer ship. Performance based training, says Morley, is the way to go. He adds, "Trending is important. MPT does a lot of assessments. All companies want to know how their employees did – subjectively and objectively. The practice of 'Virtual vetting' – whereby a company might evaluate a bunch of mariners to see which, if any, is going to be promoted or hired – is gaining popularity." Now, and working for the insurance companies themselves, MPT evaluates mariners to determine risks inherent in Captains and Mates, before they are hired. The practice is extending MPT's reach into a broader international market.

A DNV-approved Maritime Training Center and an ISO 9001:2008 company, MPT arguably operates the most complete full-service private maritime training school in the country. In terms of technology alone and when finished with the planned improvements, the school will certainly be the nation's most technologically advanced. Morley calls the latest push to upgrade all of its equipment "MPT's quest to become the premier provider of maritime training."

Behind the scenes, MPT employs NavSim Services as the Prime Vendor for the upgrade and Projection Design as the hardware supplier (Furuno, Sperry, Anschutz, and MT hardware to name a few), with Transas USA continuing as the software provider. Transas also provides the Navi Sailor 4000 ECDIS unit for the school.

MPT's S.M.A.R.T. campus upgrade is yet another example of MPT's ongoing commitment to providing the very best learning environment for their clients and closely follows the commencement of the new Dynamic Positioning Lab, due to be unveiled in late winter. With the stated goal of continually meeting and exceeding the requirements of various Flag State regulations and the new STCW Code, while also supporting client efforts to streamline costs and develop a more efficient yet realistic training process, it is difficult to imagine what more MPT could do. Nevertheless, the effort continues. That's just SMART thinking. That's MPT.

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MSRC's Hat Trick

…the "Hat Trick" metaphor is much more than a play on words for this Canadian-based training asset. For any port authority or engineering firm interested in port development, the simulation facility represents one of the most comprehensive combinations of equipment, technology and pilotage expertise available anywhere.

By Joseph Keefe

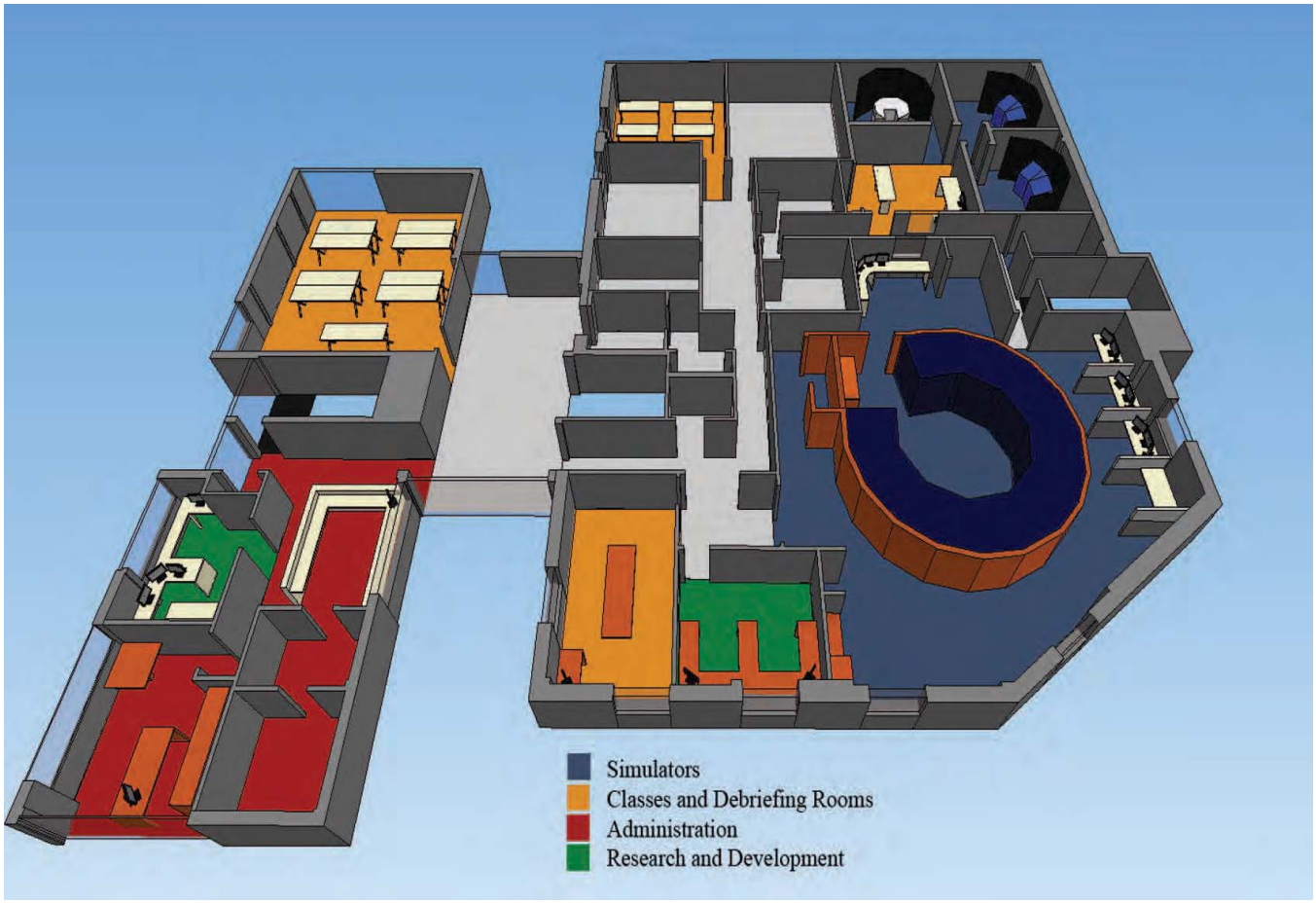
MSRC Facility in Quebec, Canada

Like no one else in the business, the Quebec-based Maritime Simulation and Resource Center neatly packages technology, in-house expertise and a wide range of state-of-the-art simulation equipment.

As technology continues to impact the waterfront in many ways, maritime regulators have responded with a myriad of new training and certification requirements designed to bridge competency gaps. At the same time, the maritime training sector – private, public, for-profit and not-for-profit – have all (arguably) done a pretty good job in keeping up. Realistic and meaningful simulation training for all aspects of seafarer's duties are in place; here and abroad. All of these training facilities have their particular strengths. That said; the in-house depth of knowledge represented by 75 active and working pilots, augmented by still more who have retired after decades of experience, may well leave the Maritime Simulation and Resource Center (MSRC) located in Quebec, Canada at the head of the class. Where some facilities have one or more of the key components necessary for a great training protocol, MSRC has all three: technology, in-house expertise, and a plethora of state-of-the-art equipment. Paul Racicot, Director of MSRC, in February described his facility as "...one which involves a different type of training: done by pilots, for pilots." He adds, for emphasis, "Our own pilots are our toughest and most demanding customers." With as many as 75 working St. Lawrence Seaway pilots as his principals, his words take on special meaning.

AMONG THE NEWEST – AND THE MOST EXPERIENCED

First established in 2005 for the specific purpose of having a training facility for the Corporation of Lower St. Lawrence Pilots (CLSLP) apprentices and its existing pilots, MSRC counts itself among the newest of the many simulation facilities now dotting North America. Backed by and initially started by a $3 million investment from its own (75) pilot members, and now boasting some of the world's most modern and up-to-date equipment, the facility is anything but short of experience. It exists today to serve not only those pilots, but anyone seeking skill improvement techniques, the design of appropriate



Maritime Simulation and Resource Center (MSRC) located in Quebec, Canada

ship handling scenarios for pilots as well as for masters and officers, highly realistic tug escort and tug assisted berthing and unberthing operations with large vessels, and to run the necessary simulation exercises in order to validate each individual project.

The Corporation of Lower St. Lawrence Pilots (CLSLP) is a private entity and MSRC is one of its subsidiaries, owned completely and solely by the group of pilots. According to Racicot, the initial discussions surrounding the acquisition of the simulator never included making the MSRC a profit center for the CLSLP. He explains, "However, we are keeping the MSRC busy with other business that helps us absorb some costs, but our pilots and apprentices have always the priority when establishing the training schedule." Nevertheless, MSRC annually trains more than 350 professionals from different pilotage districts in Canada, USA, and Brazil, as well as from the Canadian Navy and some international Ship Owners such as Euronav. Racicot adds, "We are having discussions with other groups of pilots from Central and South America."

DEEP KNOWLEDGE: WIDE RANGE OF FOCUS

The nature of MSRC's work also remains as wide and varied as its knowledge base is deep. Each port development study is a project on its own. It is not unusual for MSRC to take on as many as 10 different projects, each taking 20 to 30 days of simulation (for Port Development project, each day of simulation requires at least 3 to 4 days of work prior/or after the project) in a given year. This augments the MSRC core mission of research specifically performed for its CLSLP parent. "These include tasks involving developing new applications adapted to our own district for the PPU's, studies on the increasing sizes of vessels for some of our ports and other similar functions," says Racicot, whose own CV includes years at sea spent as a navigation officer for an oil major, as well as a BBA (finance) from Laval University and an MBA from the Université du Québec à Montréal in 2007. He joined MSRC as Director in 2006.

Rounding out MSRC's offerings are signed MOUs with other organizations such as the Canadian Hydrographic Service, Environnement Canada, Defence Research and Development

"We also has several partners who are experts in particular fields that can be brought in to facilitate special classes if a customer desires something unique that the onsite staff does not have the required level of expertise in."

– Paul Racicot, Director, Maritime Simulation and Resource Center.

Canada. Racicot adds, "We also has several partners who are experts in particular fields that can be brought in to facilitate special classes if a customer desires something unique that the onsite staff does not have the required level of expertise in." None of this, therefore, is done in a vacuum. Augmenting the initial $3 million initial investment, MSRC continues to modernize the hardware and invests constantly in order to benefit from the latest versions of software developed by Kongsberg via their LTSSP (Long-Term System Support Program). This includes applications that provide an in-house database compilation capability, enabling MSRC to build, modify or customize simulated geographic areas and ship models to suit client-specific requirements as well as that of the CLSLP.

THE HAT TRICK: COMBINING TECHNOLOGY, EXPERTISE AND TECHNOLOGY

In this case, the "Hat Trick" metaphor is much more than a play on words for this Canadian-based training asset. For any port authority or engineering firm interested in port development, the simulation facility represents one of the most comprehensive combinations of equipment, technology and pilotage expertise available anywhere. One of few facilities that can combine three full mission tug bridges and a large ship full mission bridge into a single fully integrated simulation exercise or scenario, allowing the examination of human factors as well as pure maneuvering/design principles, MSRC's in-house pilotage expertise ensures that clients get a workable solution that can be fully demonstrated and validated, using high fidelity interactive simulations.

MSRC has numerous testimonials to its value and prowess, but perhaps none more revealing than that sent by Towing Solutions, Inc. The firm has participated in several training sessions at the Maritime Simulation and Resource Centre in Quebec City and their President, Captain Gregory Brooks, said recently, "We especially appreciate that the staff is not only largely made up of senior pilots and a few naval officers all of whom have exceptional knowledge of ship handling and advanced navigational skills, but they also are extremely well versed in the operation of the simulator itself. This later feature is the one that we appreciate the most, as their staff literally has the ability to identify and fix problems when they surface, where most other facilities in North and Central America

MSRC Class A Full Mission Simulator

cannot. Needless to say, this capability leads to a much higher customer satisfaction level."

Brooks went on to describe other advantages of working with the facility, including MSRC's ability to create, in house, accurate area models which allows them to respond quickly to a customer's requirements. Brooks adds, "All in all, this is one of the finest simulation facilities in the world today."

TRAINING FOR PILOTS: BY PILOTS

Where others talk about the expertise brought in from real life experiences of their students, and on occasion, the instructors themselves, MSRC counts on this sort of input every day. According to Captain Brian Stanley, SENL Pilot from the Atlantic Pilot Authority, MSRC training entails well written course material, very competent instructors and a first rate simulator. "Having completed the AZIPOD simulation training, the Error Detection and Use of Advanced Radar Techniques in Restricted Waters course and just recently the ECDIS training at the MRSC, I can honestly say that this training facility is second to none in this field," he said recently, continuing, "The instruction is tailored for the professional mariner and in many cases deals directly with circumstances and situations that pilots and masters find themselves faced with on a daily basis. Thus the training is very relevant and up to date in our ever changing environment which is itself an achievement."

The Maritime Simulation and Resource Center describes itself as an asset of the Corporation of Lower St. Lawrence Pilots, a leader in training and development, offering unique expertise in navigation safety in North America. It is difficult to argue with any of that, especially the last part. Created, designed, owned and operated by working marine pilots who operate in one of the longest and most demanding service areas on the planet, MSRC fulfills the training research needs of its internal client base every day. Professional mariners and port officials, from all over North America and beyond, are slowly catching on to that metric. And, that's because MSRC is more than just a state-of-the-art simulation training facility. It's also a world class center of expertise. According to the clients (and owners) – which include 75 of the most experienced pilots anywhere – the last part makes all the difference.

T Training

Advanced Approaches in Familiarization & Job Training

by Murray Goldberg

The expectations placed on the modern mariner are far greater than in the past. Vessel-specific systems are becoming so sophisticated that more is required of the mariner than simple operation of those systems. True competency also requires some understanding of the underlying technologies and their interactions. This knowledge is needed to appreciate and respect the consequences of incorrect operation and to make intelligent decisions when presented with novel situations or emergencies. Several recent and tragic maritime accidents lend validity to this claim.

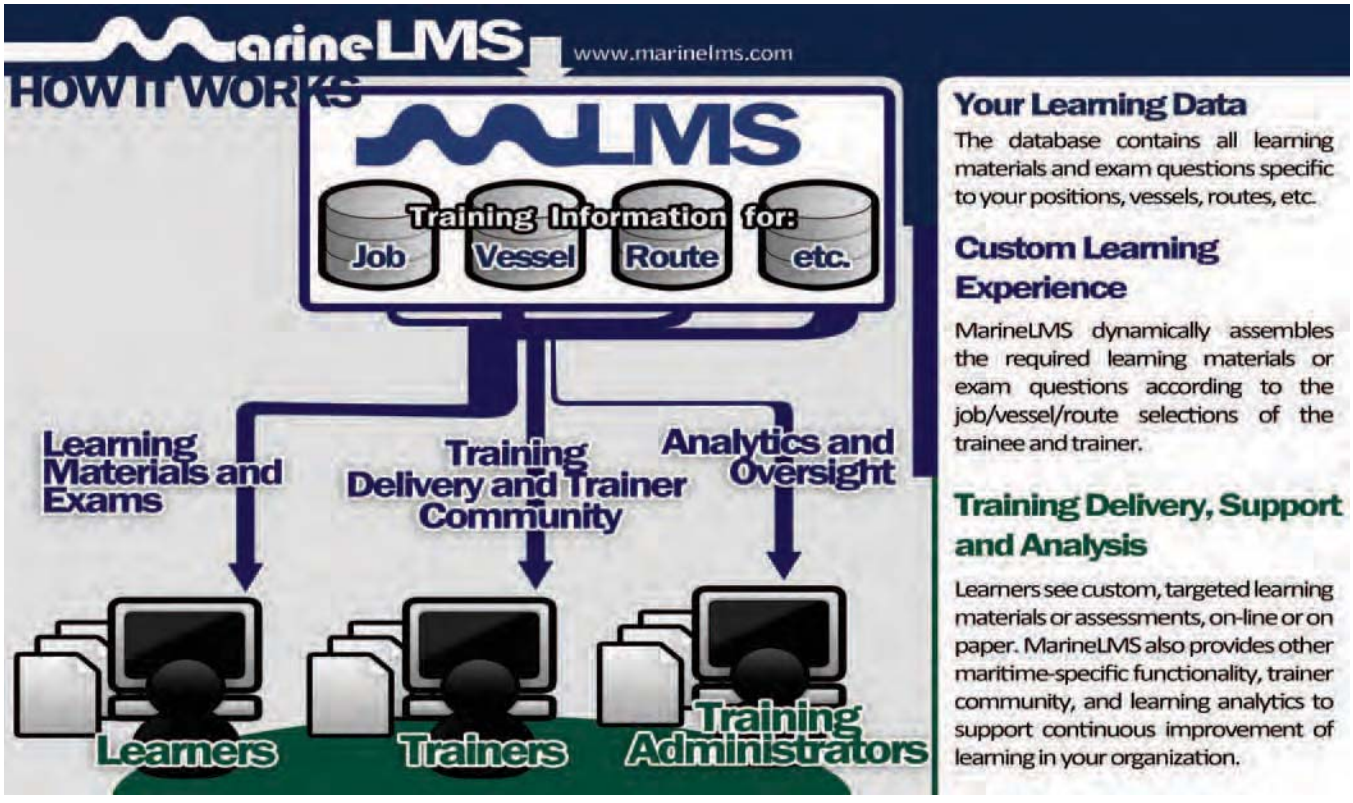
This increased systems sophistication and the consequent need for deeper knowledge require that vessel operators examine how they perform job training and familiarization. This article looks at existing job training and familiarization practices, and then examines how the British Columbia Ferries System Inc. (BC Ferries) is using MarineLMS to improve training outcomes and experiences.

THE SHORTCOMINGS OF EXISTING PRACTICES

Job training and familiarization is a requirement of STCW, but not deeply defined by it. Job routines, vessels, routes and equipment vary tremendously from operator to operator. As such, the specifics of job training and familiarization are largely left to the individual vessel operators.

Despite this variability, a staple that forms the basis of a many familiarization and training programs is job shadowing. Job shadowing is an excellent technique for a prospective employee to gain an understanding of what a job entails, or for a newly trained employee to consolidate knowledge and "put it all together". However, as a primary pedagogical approach to convey knowledge, it is flawed. It suffers in several key respects:

- ***Job shadowing is so highly variable in delivery that it is difficult to codify and train to company-vetted best practices. Mariners being shadowed pass on, to some degree, their own way of doing their job. This can be dangerous.***
- ***Even if the mariner being shadowed is highly skilled and knowledgeable, they may be a poor trainer or a poor communicator.***
- ***It is difficult to measure the performance of training via job shadowing. This makes early problem identification and continuous improvement almost impossible.***



> "Job shadowing is so highly variable in delivery that it is difficult to codify and train to company-vetted best practices. Mariners being shadowed pass on, to some degree, their own way of doing their job. This can be dangerous. Even if the mariner being shadowed is highly skilled and knowledgeable, they may be a poor trainer or a poor communicator."

No safety-critical training organization can afford these fundamental training shortcomings. Therefore, new techniques are required to teach seafarers the knowledge which forms a foundation for the skills acquired through hands-on training.

This issue has been recognized by a number of vessel operators and therefore we are beginning to see some excellent examples of the use of new technology in familiarization and job training. One example is BC Ferries – one of the largest ferry operators in the world. BC Ferries is a user and defining customer of MarineLMS – the first learning management system (LMS) created specifically for maritime familiarization and job training.

WHAT IS MARINELMS?

MarineLMS was created in response to BC Ferries' desire to have the best trained mariners in the world. It is now available to other vessel operators, maritime schools and shipyards.

An LMS is web-based software used for the delivery, management and tracking of training. Trainees use an LMS to access the learning materials provided by the training organization and to take exams. Trainers use the LMS to track trainees, deliver exams and to connect and communicate with other trainers in the organization. Training managers use the LMS to access training reports and analytics which can identify problem areas in need of improvement. In all, an LMS is a central location for all training-related resources, management functions, and analytics to support continuous improvement. The benefits are so powerful that the majority of large training organizations (universities, colleges and corporate training environments) use an LMS to deliver and support their training and education activities.

MarineLMS at BC Ferries

TRAINING AND REFERENCE

MarineLMS provides centralized access to BC Ferries' learning materials and activities for job training and familiarization. While the majority of the use of MarineLMS occurs by trainees and their trainers, the training resources remain accessible and always up to date for all employees of BC Ferries for use throughout their careers.

ANALYTICS AND CONTINUOUS IMPROVEMENT

MarineLMS provides a comprehensive set of learning analytics which help training administrators monitor the success of their training program. For example, reports indicating, on average, how long trainees spend on each page of learning content highlight poorly written pages or those in need of consolidation or division. Likewise, exam analytics indicate poorly performed questions and exams, and highlight common misunderstandings by providing answer distribution reports. These are incredibly useful in identifying training problems before a safety or performance issue emerged as a result. They also form a core set of key performance indicators which can be tracked as part of a program of continuous training improvement - something that all vessel operators should either have in place or be planning.

DATA MANAGEMENT

MarineLMS understands the maritime concepts of jobs, vessels, routes, terminals, equipment and so on. Although this is important in terms of providing a familiar and easy to navigate learning environment for the mariner, it is even more important in terms of being able to efficiently manage the vast quantities of data that can be housed in the MarineLMS database. For example, at BC Ferries, there are dozens of job positions operating on 35 vessels and 47 terminals. At any time an employee may require the training resources for any combination of a particular job, vessel and route. To respond to such a demand, MarineLMS dynamically assembles the resources required to meet the learning objectives into a single, seamless, cohesive training and reference guide. It does so by combining company-wide, job-specific, vessel-specific, route-specific, terminal-specific and equipment-specific information and lessons (as required) from the database into a training document which appears as though it had been written by hand expressly for the selected job, vessel and route.

This dynamic assembly mechanism means that information about, for example, a piece of equipment, is only recorded in one location in the database regardless of how many vessels that equipment may be used on. Therefore, when some information about that equipment is in need of an update, it is edited in one location only and all affected learning materials are automatically updated. Another data management aspect of MarineLMS is its web 2.0 feedback mechanism ensuring data correctness. In large data systems such as BC Ferries' MarineLMS implementation (approximately 6,000 learning pages and growing), identifying errors or omissions in a timely fashion is not possible for a small training team. Therefore, MarineLMS provides a feedback mechanism which allows all users (trainees, trainers and management) to report an issue the moment they see it. This is akin to how Wikipedia's content is maintained by all users. In this case, feedback is first vetted and approved before it results in an update to the learning materials. This not only distributes the workload and reduces maintenance costs, but it also engages all users in "ownership", therefore increasing buy-in and reducing change-management issues. This system has been a big success and is well used at BC Ferries.

ASSESSMENTS

At BC Ferries, written examinations are used as part of the clearance process. They are also used to determine when a trainee has learned the requisite foundational knowledge and is ready for on-board familiarization and job training. Trainees are evaluated not only for general job knowledge, but also for knowledge of specific vessels, routes and/or terminals. MarineLMS therefore is capable of dynamic exam creation - customized to the selection of job, vessel, route and/or terminal being examined. MarineLMS also randomizes exams to ensure that no two exams are identical, and uses question categorization to ensure that all exams cover the required material and are of roughly equal difficulty.

ON-LINE AND PAPER

A fact of life for most maritime organizations is that internet connectivity is not always available. However, traditional LMSs almost universally assume 100% connectivity. MarineLMS, being built for the maritime training context, provides both paper and web-based alternatives for all critical activities.

COMMUNITY

Research and experience have taught us that trainees can learn as much from one another as from organized training. Likewise, when trainers have a venue for collaboration and sharing of ideas, best practices disseminate more quickly and training leaders and mentors emerge. As such, MarineLMS has a community feature which may be used as a trainee community, a trainer community or both. It allows for discussions, the formation of groups, and for the creation of a resource library.

OTHER FEATURES

Finally, MarineLMS supports other maritime-specific functionality. For example, there is a module for passage planning and training. This module allows trainees to view passage details and "navigate" passages visually on an interactive map at any scale. MarineLMS will also soon have a competency tracking feature to record and report on employee competencies.

IN PRACTICE

MarineLMS has been used at BC Ferries for roughly two years. It currently supports the training activities for Deckhands, Watchkeeping Officers, Equipment Operators, some Terminal Attendants and Risk Awareness Administrators. When fully rolled out, it will support training for all 3,500 operational employees across the deck, engineering, terminals and catering departments.

The Author

Murray Goldberg is the CEO of Marine Learning Systems (www.MarineLS.com), maker of MarineLMS. A researcher and developer of learning management systems, his software has been used by millions of people and companies, worldwide. Email: Murray@MarineLS.com

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International Maritime Organization

A Coordinated Future for Maritime Policy Making?

By Koji Sekimizu, Secretary-General, International Mari time Organization

The oceans are an absolutely essential component of human lives, livelihoods and the environment that sustains us. More than 70 percent of the globe is covered by oceans, and it is no exaggeration to say that the health of the oceans, and the well-being of humanity and the living environment that sustains us all, are inextricably linked.

Ocean and coastal areas are major contributors to the global economy and fundamental to global welfare; whether as the setting for a vast range of direct economic activities, as the catalyst for vital environmental processes, or as home to the majority of the world's population - more than 40 per cent of the world's population (upwards of 2.8 billion people) live within 100 kilometres of the coast. The use of ocean space and maritime resources has been, and continues to be, an essential component of global economic growth and prosperity.

At the same time, as surely nobody can be unaware, the world today faces immense and unprecedented challenges. Indeed, many would agree that we are potentially on the verge of huge, even cataclysmic changes.

Just as we seemed to be recovering from the financial crash of 2008 and the recession that followed, the European debt crisis has arrived to throw the financial foundations of our society into turmoil once again. The global population has passed 7 billion and is continuing to rise. Shortages of vital commodities such as oil, grain, rice and even water are looming on the horizon. Africa continues to face famine; and all this against a background of global warming and climate change.

And today the oceans, too, are beset by many problems. The fragile and interconnected nature of ocean ecosystems and human activities has, in recent decades, become all too apparent. From climate change and its diverse impacts on oceans, through to the destruction of and damage to marine ecosystems, the loss of biodiversity and the degradation of the natural environment, including from overfishing and destructive fishing, human impact on the ocean has been profound.

Later this year, the UN Conference on Sustainable Development, Rio +20, will focus global attention on how the world can move towards a so-called "green economy" – which has been defined as "A system of economic activities related to the production, distribution and consumption of goods and services that result in improved human wellbeing over the long term, while not exposing future generations to significant environmental risks and ecological scarcities." Shipping is an essential part of any economy – and the green economy will be no exception.

The sustainable development and growth of the world's economy will not be possible without similar sustainable growth in shipping and, therefore, in the entire maritime sector. And, despite the current global economic problems, growth in the longer term seems inevitable.

When I speak of shipping, I include within this blanket term all the ancillary activities that are vital to support the actual management and operation of ships and the movement of cargo. Activities such as the operation of maritime traffic management systems and global communication systems, ports and multi-modal connections are all components of this

multi-faceted sector. Looking to a slightly broader horizon, shipbuilding and classification, ship registry and administration, ship repairing, ship recycling, maritime education and training, could all be included under the same umbrella as, indeed, could search and rescue services, maritime security agencies, coast guards and maritime law enforcement agencies and many others, too.

Not only is shipping cost-effective, it is also relatively safe, secure and environmentally sound. Global and liberal, it provides reliable mass transportation for energy, materials, foods and industrial products, all over the world, and at a price that society can afford, and is willing to pay.

The development of a sustainable maritime transportation sector within the overall global supply chain is essential. But achieving it is by no means straightforward and there are several challenges that need to be overcome. Among these I would include:

- overregulation and, in particular, the prospect of regional or unilateral regulatory measures for ships;
- threats to maritime security;
- piracy and armed robbery;
- a shortage of competent seafarers, particularly officers, to operate the increasingly sophisticated vessels that make up the global fleet;
- high-quality engineering officers will be particularly in demand as tighter emission regulations require ships to burn lighter fuels in sophisticated new engine designs;
- lack of or insufficient maritime infrastructure such as ports and terminals, intermodal connections, vessel traffic management systems, maritime zone monitoring and control mechanisms;
- the continuing threat of pollution; and
- lack of cohesive and connected maritime transportation policies.

There are, of course, equally important opportunities that offer tremendous scope for optimism and enthusiasm. Energy efficiency and emission control measures, such as the Energy Efficiency Design Index established by IMO to monitor and reduce GHG emissions, for example, offer opportunities for innovation and the emergence of new technologies, as well as the chance to reduce, considerably, operational costs for ship operators.

Governments, whether in developed or developing countries, in established or emerging economies, along with the shipping and maritime industries and the world community, should work together to make necessary investments and take actions to bolster the future of the maritime transportation system and ensure that shipping continues to be environmentally friendly, properly supported and protected from security risks – including that of piracy, currently the most invidious threat facing the industry.

To achieve sustainable development in shipping, it is important to establish a coordinated approach to maritime policy-making. Energy efficiency, new technology and innovation, maritime security, maritime traffic management and the development of maritime infrastructure are the key objectives, and these must be underpinned by the principle of global standards – standards developed and adopted through IMO.

IMO is, and remains, primarily a technical body, with a proud reputation for solving the safety, security and environment-related technical problems that face the maritime community. However, in this century, the challenges that face the shipping industry cut across a wide range of political, technical and legal issues. IMO should, therefore, provide the forum for discussion and in-depth analysis of these issues from all angles. I believe the Organization should also reinforce its support to developing countries. We should be ready to help them improve their efficiency and increase their capability to participate fully in maritime activities. Each country should have its own maritime development policy and IMO should be able, through its technical co operation programme, to assist in the implementation and enforcement of IMO instruments. Meeting the needs of developing countries should be central to IMO's work, as part of the United Nations family.

I should to like to see IMO developing into the place where global, integrated and unified policies for shipping and the maritime transport system as a whole are discussed and developed. I think that a coordinated and comprehensive policy approach to maritime transport in all its facets and taking into account all its impacts is the way forward, and I believe IMO is the logical arena for such policy formulation at the international level.

"...and there are several challenges that need to be overcome. Among these I would include threats to maritime security, piracy and armed robbery, a shortage of competent seafarers, particularly officers, to operate the increasingly sophisticated vessels that make up the global fleet and high-quality engineering officers will be particularly in demand as tighter emission regulations require ships to burn lighter fuels in sophisticated new engine designs."

Koji Sekimizu, Secretary-General, IMO

Simulator Anti-Piracy Training

The Transas anti-piracy simulation module is another arrow in your quiver in the fight against crime on the high seas.

The rise in pirate attacks against merchant shipping in the Somalia and Indian Ocean region was had the corresponding impact of an increase in the number of maritime security companies offering armed boarding teams to prospective shipping clients whose vessels find themselves in perilous waters. The ransom demand of $10 million USD for the release of just one ship has also exacerbated the problem. The situation clearly needed proper training both for merchant vessel crews and armed boarding teams alike. Simulation training heavyweight Transas responded immediately to the crisis.

In response to industry demand, Transas developed an anti-piracy training module which is already proving to be an asset to maritime academies, shipping companies and armed boarding teams around the World. The new module is fully compatible with Transas' very successful NTPRO 5000 series of navigation simulators and comprises two distinct functions; a Suspicious Vessel Module and an Armed Team Response Module. Both modules can be run at the same time to allow the successful training of both merchant bridge teams and armed boarding teams within the same scenario. The Suspicious Vessel functionality includes a group of vessels comprising a mother ship and a number of skiffs. The vessels can be located by the instructor into a cluster during a standard training scenario.

The Officer of the Watch (OOW) can identify the contacts by radar but not by AIS, which is usually one of the first signs that something is suspicious. The instructor can then program for the skiffs to probe the ship in a friendly manner by having the occupants of the boat simulate fisherman. At any point within the scenario, the instructor can change the hostility of the fishermen to that of pirates holding AK47's and RPG's. This functionality allows merchant deck officers to conduct evasive maneuvers and also to practice their security and anti-piracy procedures including activating the Ships Security Alert System (SSAS), starting fire pumps, closing all upper deck doors, increasing speed and maneuvering with minimal wheel to prevent the vessel slowing down.

The hostility of the occupants in the skiffs can be changed by the instructor during the scenario so that the reactions of the bridge team can be monitored. Taking this functionality

A member of this vessel's armed boarding team on the bridge wing tracking a hostile skiff as it transits the Internationally Recommended Transit Corridor (IRTC).)

one step further, the second part of the module was developed to allow the armed boarding team to be incorporated within the training scenario. The Armed Team Response simulator works using laser rifles linked to a set of special cameras with the capability to indicate the fall of shot from the rifles onto the simulator's screen. The use of standard pellet rifles and guns which are then modified to carry the laser system allows for a range of fire arms to be used within the scenario. This is important as different armed boarding organizations use different fire arms and therefore personnel can be trained in their exact weapon of choice during the scenario.

The use of both modules within a piracy attack environment exponentially increases the training capability of the full mission bridge simulator. Within one scenario you can practice Rules of Engagement (ROE), the interaction between the civilian bridge crew and the armed boarding teams, the bridge team's use of maritime civilian equipment such as ECDIS and Radar to identify hostile targets, the training of armed boarding teams in the use of maritime equipment such as Radar and ECDIS and the bridge team in the procedures required to deter a boarding. Having recently completed the Ships Security Officer's Course (SSO) with a reputable maritime security organization, Transas Simulation Business Development Manager James Norwood told MarPro in February, "These two functionalities are at the cutting edge of maritime software training and meet a growing training requirement within the Maritime Industry at present. Having completed seven years in the Royal Navy it was felt important that a qualified member of the Transas sales team went on a dedicated armed boarding team course to ascertain the issues concerned with armed teams onboard merchant vessels." That course provided the development team with the background knowledge to develop the module which is capable of training both merchant bridge teams and armed boarding teams together in a safe but realistic environment.

The 4 day SSO course itself was very good with a number of recent cases of pirate attacks presented on power point to the candidates as well as lot of theoretical work on how to deter boardings. However, the course did lack the simulation capability which has now been developed so as to allow future and current SSO candidates to be immersed into a simulation pirate attack environment with a real bridge team in order to witness the issues faced when placed in that situation. Norwood continued, "Since launching this module we have seen a growing interest in the Industry from maritime security companies wishing to train their crews in ROE and the conduct of operating on the bridge of a merchant ship with its civilian crew in that environment." Like the growing regulatory burden that now impinges upon the greater maritime sector, so too does the scourge of piracy impact training and competency-related requirements. Now, the simulation-based training

A skiff approaching a vessel

that provides the industry with competency-based credentials has also reached the growing need to ensure that the security aspect of a vessel is as well attended as is the need for safe navigation, environmentally compliant operations and everything in between. Transas, not surprisingly, is among the first to formalize an educational program that does both.

Good Barriers = Good Neighbors

by Luke Ritter

Even though fences are not normally something associated with the water, the old parable about good fences making good neighbors undoubtedly applies to the maritime industry as well. Preventing unauthorized access to a sensitive facility is just as important whether the perimeter in question is wet, or dry. But the degree of difficulty associated with protecting a waterside perimeter can be significantly greater.

Merriam-Webster defines a barrier as a: "structure that prevents or hinders movement or action." Preventing or hindering movement or action can benefit all who come in close proximity to a sensitive waterside facility – except, of course, an adversary.

Establishing a clearly demarcated waterside perimeter, using an impenetrable barrier solution, serves multiple purposes, namely: it clearly identifies the limits of approach to a facility; it establishes an outer ring of protection; it simplifies the security response protocols and patrolling requirements; and it eliminates any confusion that can exist on the water with regard to where a perimeter is actually located. In short, good (waterside) barriers make good neighbors.

DECISION POINTS

Attacks carried out by terrorists, saboteurs, and others with illegal intent all have the potential to significantly disrupt the core business being conducted inside of an established waterside security perimeter. Ultimately, the crimes perpetrated by these individuals can serve to threaten operations, and subsequently reduce the competitive posture of the businesses, facilities and nations, that are targeted.

There is a fairly wide variety of marine barrier solutions being offered on the market today. These barriers can be fixed or mobile, permanent or temporary, configurable or standard, and on. In light of the array of configurations and specifications that are currently being offered, it is important for a buyer to stay focused on performance. This may actually be the most important decision point, particularly when it comes to a security solution that is required to perform in a marine environment. Salt water conditions are notoriously hard on equipment, and fielding barrier technologies that operate effectively, while floating on the sea, adds an additional level of complexity to the challenge.

THE SECURITY IMPERATIVE FOR WATERSIDE BARRIERS

Security professionals with waterside perimeters are faced with a difficult challenge: find the right balance between effective security measures and normal waterborne operations. It is not unusual for sensitive waterside facilities to be located in close proximity to marine terminals, public marinas, and other facilities that accommodate routine waterborne operations. At the same time, it is essential for any sensitive facility to have a reliable outer security perimeter. The demarcation of this perimeter is usually obvious when it is on land, and will often be easily identified by a fence, earth berm, or other recognizable feature. Perimeters on the water, however, can be much more difficult to identify.

Landside perimeter security typically includes some combination of a standard solution set of fences, sensors and patrols. Unfortunately, waterside perimeter security does not enjoy this level of standardization and usually lacks a key component - the marine equivalent of a fence.

The typical landside fence serves a dual purpose. It is there to literally mark the perimeter, but it also serves to prevent or hinder unauthorized access. The typical waterside perimeter does not have this benefit. Unless a waterside security barrier is installed, the marine outer perimeter is typically a notional line on a chart. Even when this boundary is marked with buoys, those markers do not serve the same dual purpose. They do not block access.

Why then is it so rare to see a “fence” in the water? Using physical barriers on a waterside perimeter makes sense for the same reason that it does on land. And the same dual benefit is available if the right barrier solution is employed. Waterside security barriers can and should be used to clearly mark perimeters as well as prevent or hinder unauthorized access.

LAYERED DEFENSE

In order to establish and maintain a secure operational environment, facilities must have the fundamental ability to control access (landside and waterside). The ability to determine if an individual or vehicle is authorized to enter/exit, has a reason for being in a facility, and has the required authorization to be in a sensitive or controlled area, remain in effect for both the landside and waterside perimeters of a facility. The same layered, defense in depth strategies that are efficient and effective on land, should be used on the waterside of a facility, and for the same reasons.

Even when maritime patrolling is employed to secure a waterside perimeter, a boat and crew cannot be everywhere at all times the way a barrier can. Additionally, if the patrol area is large enough, boat crew response may be limited by other factors such as visibility, engine speed and dispatching support if the related surveillance and monitoring is done remotely.

Often on a landside perimeter, guard teams who respond to a breach are not the first line of defense. A waterside perimeter should not be any different.

By installing a waterside barrier, the waterborne guard teams who respond become a second line of defense, similar to the equivalent landside security operation.

STATE OF THE MARKET

The waterside security barrier market is fragmented and includes multiple firms offering solutions with wide variations on product features, capabilities, and service requirements. This industry segment also lacks uniform comprehensive performance standards to assist consumers with product comparisons.

Successful implementation of waterside security barrier systems is heavily dependent upon a number of case-specific factors associated with each individual project, including: the profile of anticipated security threats; site-specific maritime conditions (e.g. tides, swells, sea state, harbor configuration, etc.) and other security-specific goals and objectives. "Best-Fit" recommendations for barriers should take into account the relative importance assigned to each of the chosen specifications.

Many of the leading barrier suppliers claim to offer turnkey or near-turnkey solutions, meaning that they offer to customize their products to client specific needs so they are ready for immediate use. Since several waterside security barrier suppliers appear to have similar offerings, it is important for buyers to shop for an overall barrier "solution," not just a product. Ultimately, a solution should be tied to rigorous performance metrics and a pre-determined Concept of Operations.

WATERSIDE SECURITY PERFORMANCE METRICS

Some of the most common criticisms currently found in the waterside security barrier market include:

- Instability in rough seas and high currents
- Reliability problems while operating in a marine environment
- Inadequate stopping power
- Difficulty covering a large geographic area
- High maintenance costs

A waterside security barrier purchasing decision should include at least three key considerations that take into account all of the challenges listed above: A) Operational Employment & Maintenance, B) Stopping Capacity/Stopping Power, and C) Total Lifecycle Cost. A closer examination of these three key considerations illustrates how complicated the planning process for barrier employment can actually be.

OPERATIONAL EMPLOYMENT & MAINTENANCE

The variety of hardware and installation choices that exist within the barrier market also come coupled with an equally diverse set of operational cost and maintenance considerations. For example, challenges that have been identified with inflatable barriers include the fact that some boats can actually jump this type of barrier, safety concerns associated with adjusting the floats, and performance issues related to deflation. Barrier solutions using nets can have inferior stopping power due to post-impact penetration, may be vulnerable to multiple boat attacks, and can have issues with inherent instability in rough seas or strong currents.

The material that is used to fabricate the barrier solution is an important consideration for operations and maintenance. Some solutions have connectors, fittings and other components that may be subject to metal fatigue, corrosion, and require significant preventative and corrective maintenance.

Concept of Operations and related operational conditions, such as sea state, current, seasonal weather anomalies, and other geographic features and conditions must be carefully considered as part of a barrier purchasing decision.

It can be helpful to also factor in some additional fundamentals when planning a barrier purchase. These include: Has the barrier been tested by an independent and reliable authority? Is the system currently being used by similarly situated and reputable reference source? And finally, are the performance specifications and related warranty claims adequate to account for the expected operational and environmental conditions at the designated site?

STOPPING CAPACITY / STOPPING POWER

Stopping capacity refers to the foot-pounds of energy that a barrier can capture, and stop. This metric does not consider the time and distance that may also be required to stop the object in question. In other words, a barrier such as some of the net systems that are available on the market, may actually allow a threat object to travel a significant distance, post-penetration, before the object is actually stopped. This may be a concern if the barrier must be deployed in close proximity to the asset being protected.

Stopping power refers to the same foot-pounds of energy required to capture and stop and object, but also takes into account time and distance. For this reason, it may be a more relevant measure of overall barrier performance. It's also important to consider stopping power as it relates to an attempted breach by multiple threat objects. If a barrier is only capable of capturing and stopping a single object, but the stopping power is diminished for any additional objects (such as a swarm attack) it may not be a suitable solution.

TOTAL LIFECYCLE COST

Barrier purchasing decisions will normally include some combination of hardware, installation services, and a maintenance package. The effective life of a marine barrier, and any associated warranty, will tend to vary from vendor to vendor depending upon the materials that are used, the environmental conditions expected at the installation site, and the business policies of the contractor.

It is important to pursue value-based solutions that consider total lifecycle cost. In other words, it may not make sense to save money up-front on the hardware and installation, if all of the savings will be given back over the life of the system through maintenance expenditures. A careful calculation of total lifecycle cost, that anticipates all projected operational and maintenance expenses over the entire life of the system, as well as the duration of that expected life, is a valuable decision support tool.

Ideally, an efficient and effective waterside security barrier solution should provide maximum stopping power for a wide variety of threat scenarios, serve as an effective deterrent and a barrier to unauthorized access in all sea conditions, and operate in a harsh marine environment effectively with minimum operational and maintenance requirements.

A reference to the book Animal Farm comes to mind: All barriers are created equal. Some barriers are more equal than others.

GOOD BARRIERS

"Ex Scientia Tridens" (from knowledge, seapower), the U.S. Naval Academy motto, reminds us that knowledge and maritime security are mutually inclusive. In the waterside barrier business, one size definitely does not fit all. For security professionals looking to implement a waterside security barrier solution for the first time, or to upgrade an existing solution, it is critically important that the new barriers are selected with the security mission in mind. Ask the barrier provider to work with you on your Concept of Operations. Require your consultant to explain how and why each component of the barrier system was selected. And build a tailored solution that is a custom fit for your environmental conditions, budget, and operations.

The Author

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Admiralty's Three-Pronged Solution for ECDIS and ENC

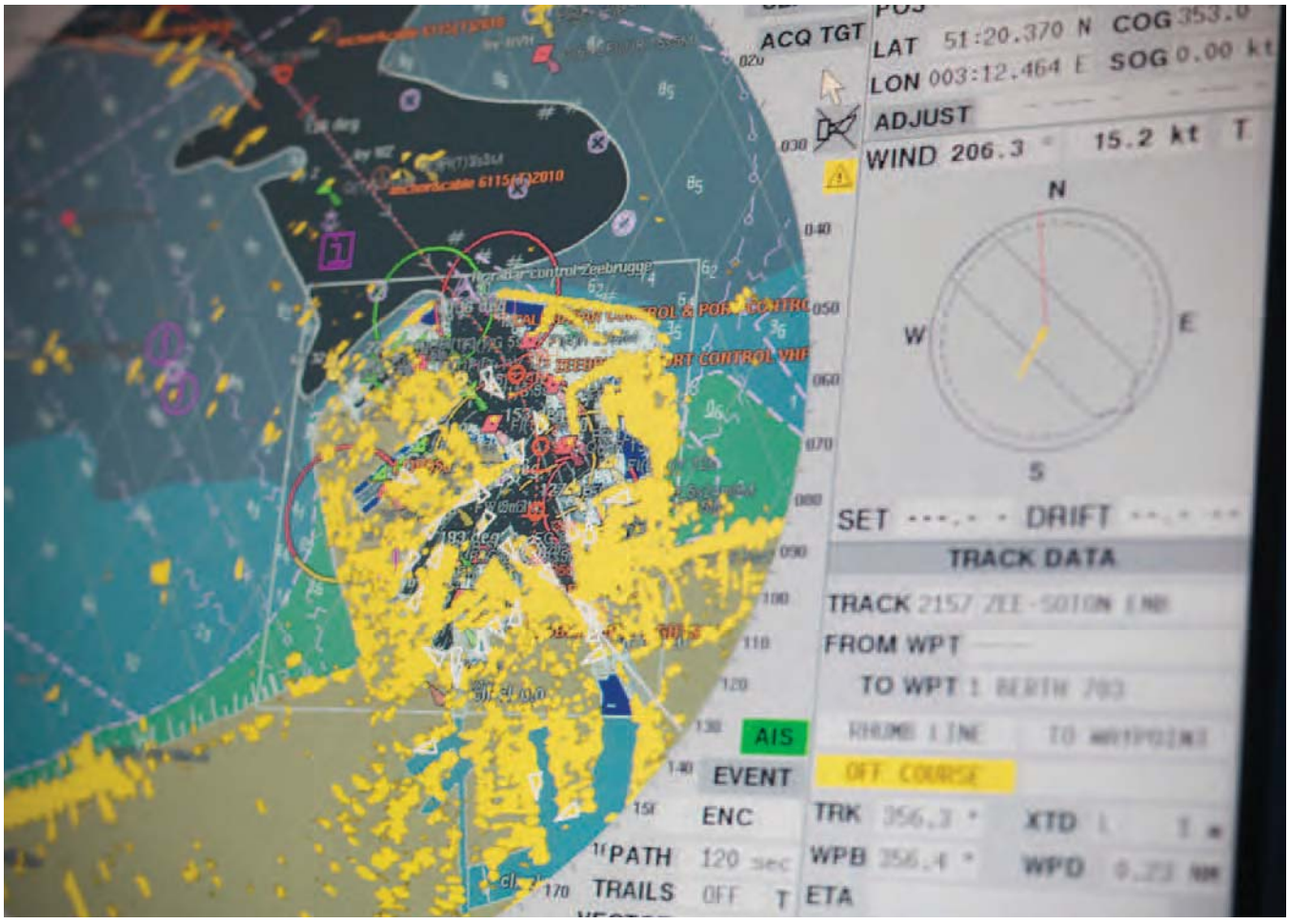
As the world's leading source of ENCs, Admiralty's initiatives support shipping companies in developing the skills they need to get the most out of digital navigation.

As the sales brand of the United Kingdom Hydrographic Office (UKHO), a global provider of paper and electronic nautical charts, a major focus for Admiralty in 2012 is supporting the maritime industry as it works to meet the challenges of ECDIS compliance. Out of this effort springs three practical initiatives that Admiralty is launching. First, a free Workshop aiming to demystify the planning process, secondly, a promotion offering free training places on IMO Model ECDIS courses, and thirdly, a training module specifically looking at how to correctly use the information within the ENC.

Driven by robust feedback from mariners attending recent Admiralty workshops, it is clear that a high demand for information about ECDIS and ENCs exists, as well as confusion about training and regulatory requirements. Details about Admiralty's three-pronged approach are as follows:

Digital Integration Workshop

- The workshop presents and explains the actions required by a shipping company to ensure the safety and efficiency benefits of ECDIS are realised across their fleet. To achieve this potential, a shipping company will need to ensure not just that ECDIS is operated correctly but that all the issues surrounding implementation are properly co-ordinated.
- The concept for the workshops is that the transition to ECDIS is a voyage, not just a list of do's and don'ts. Capt Hailwood (course convener) asks the questions that superin-



Maritime Professional

2012 Editorial Calendar

Q1 Training & Maritime Security — Ad Closing: Feb 15th

Publish: March 2012

MarPro explores the most important aspects of ocean shipping today. Maritime training, safety, regulatory compliance and crew welfare will all be covered in detail. Learn how port security and anti-piracy measures will protect your people, physical assets and ultimately, your bottom line.

Bonus Distribution:

CMA Shipping
March 19-21 Connecticut
American Waterways Operators
April 17-20 Washington, DC
Houston Offshore Finance Forum
May 2 Houston, TX

Q2 Maritime Risk — Ad Closing: Apr 15th

Publish: May 2012

Risk runs the gamut from finance to operations, security to safety and prevention and response. This edition also takes on loss control, insurance and regulatory developments. Define, control and mitigate your maritime risk within the pages of this edition of Maritime Professional magazine.

Bonus Distribution:

Posidonia
June 4-8 Athens, GR
Marine Money Week
June 19-21 New York, NY

Q3 Classification Societies, Quality & Design — Ad Closing: July 15th

Publish: August 2012

MarPro zeroes in on naval architecture standards, machinery, engines, ship hull forms and maintenance issues. Classification society personnel define and audit quality and influence design, regulatory and shipbuilding standards. Find out how, why and when each will impact your bottom line.

Bonus Distribution:

SMM
Sept 4-7 Hamburg, DE
American Waterways Operators
Oct 10-12 Seattle, WA
SNAME
Oct 24-26 Providence, RI

Q4 The Environment: Stewardship & Compliance — Ad Closing: Oct 15th

Publish: November 2012

Corporate Stewardship means going green for the right reasons. This issue also examines and analyzes Regulatory Compliance, Planning & Prevention and Salvage & Response.

Bonus Distribution:

Int'l Workboat Show
Dec 5-7 New Orleans, LA

tendents and seafarers are asking, explains where the answers lie and where they need to go to find them. By the end of the presentation, they should be fully informed of what they need to do and how to do it.

• Audience questions from a recent workshop include: "What problems are liable to arise if the organization I intend using for ECDIS generic training has not been approved by the flag State?", "Is ECDIS type-specific training the same as ECDIS familiarisation?", "Why must you also use paper charts when operating ECDIS in Raster Chart Display System (RCDS) mode?"

Officer Training Promotion

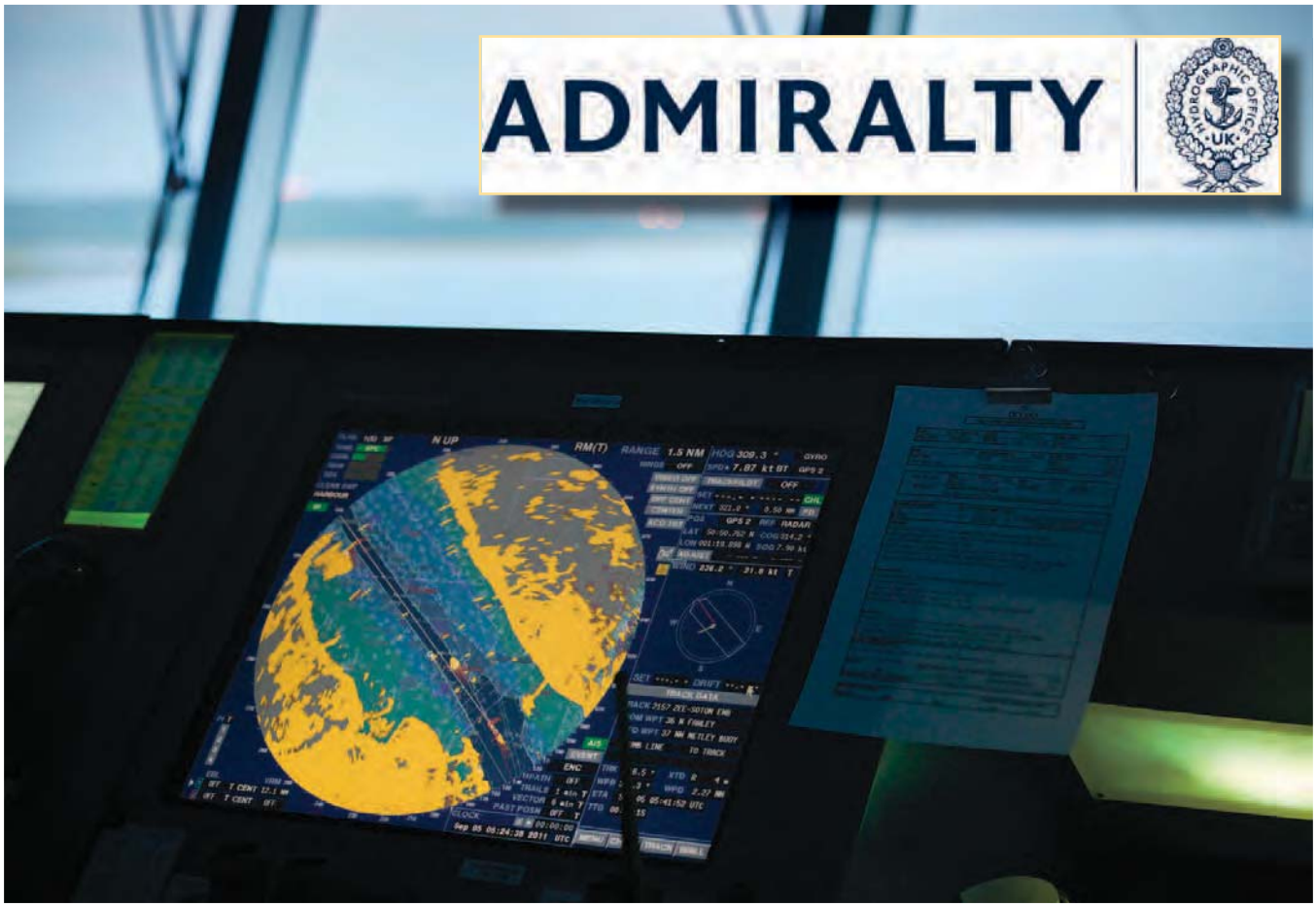
Admiralty will be running a promotion offering ECIDS users the chance to win a sponsored place on an IMO Model Course 1.27 for the operational use of ECDIS. Throughout 2012, Admiralty will be giving away 200 free places on the Model Course. Although the workshops can't begin to accommodate the large numbers of seafarers worldwide that require training over the next 6 years – as many as 160,000 deck officers worldwide – it is a gesture that will hopefully get more people in the industry talking about ECDIS training and help raise awareness of requirement and its importance. The offer is open to all deck officers worldwide.

Already, Admiralty workshops have been held in Athens, Greece, Shanghai, China and Singapore, with others planned to coincide with CMA Shipping in Stamford, CT (19-21 March), Tokyo, Japan (18-20 April), Athens, Greece (4-8 June) and Hamburg, Germany (4-7 September). All sessions have been conveniently planned to coincide with major shipping expositions and trade shows. Registration for the workshops can be accomplished at: www.regonline.co.uk/admiraltyworkshops

IMO Model Course: ENC Training Module

• Admiralty has developed an additional module which can be added on to the IMO Model Course 1.27 to help develop ENC skills

• ENC skills are only covered briefly in current courses. There are key differences between navigating with paper charts and ENCs and, in addition to the safe operation of the many different types of ECDIS, it is vital that mariners understand how to correctly use the information within the ENC. For example, how different layers and symbols display, and which layer is most appropriate for different scenarios. The module should help mariners feel more prepared to use an ECDIS when they leave the classroom.



TWIC

Ten TWIC Tips

By Rick Eyerdam

Homeland Security recognizes the vulnerability of the port system, especially cruise ships, yet outsources the key to access – the Transportation Security Identification Credential often wrongly called the Transportation Workers' Identification Card (TWIC) – the issuance of the port terminal passkey to a least competent denominator. Meanwhile, the overburdened agency plods forward toward mandatory use of the sloppy TWIC system, but refuses to examine each and every empty container entering a port, where illegal immigrants often successfully lurk and IEDs could be stacked five-high. In the air, the TSA prevents tiny vials of baby oil in carry-ons but allows the Drug Enforcement Administration to load shipments of drugs or guns or money sent by Latin American narco-terrorists to local gang members who sometimes work as criminal informants in the US, without notifying Customs, TSA or the airlines. Change is unlikely in either scenario, but port and terminal administrators have a chance to avoid some of the potential TWIC pitfalls by following these 10 tips:

1 Wait until the USCG notice that TWIC readers will be mandatory, but prepare in advance.
The USCG is currently testing a range of TWIC readers at ports from California to the Port of the Miami River. None of them are 100 percent successful. Some suffer from over-design, others from persistent operator error. Others have been turned into paperweights by second tier investors who want to sell the units cheap then bundle the software as an expensive service contract. Follow all the steps in this article so that you are ready for mandatory implementation and have a plan. But don't buy a TWIC reader until the USCG publishes its final list of approved instruments and announces the date for mandatory implementation.

2 Consider traffic flow
Look at your terminal gates and decide whether they are designed for trucks, cars, personnel or any combination. Truck-only gates can accommodate fixed mounted TWIC readers at the level of the truck window. However, the USCG will also require the gate security guard to inspect the TWIC card and match the card image to the face of the cardholder. In this case, the truck driver cannot open his door because the fixed mounted TWIC reader must be within arm's reach through his window. Consider adding portable steps for the guard to climb cab window high, otherwise the gates will be clogged at peak hours. In many cases, the battery powered portable TWIC readers are more versatile.

3 Think about the skill set of your least smart security guard.
TWIC readers are offered with a wide selection of options that are not necessary to meet the basic USCG requirement; which is the successful reading of the TWIC card and recording of the data. In most cases, especially hand-held units, one security guard must be capable of signing out and the next guard on duty must be capable of signing in on the same TWIC reader, with a procedure including a pin number. If you ask too much of your hourly rent-a-guard, you can expect to be disappointed.

4 Think about the skill set of your facility security officer
If you opt for a TWIC reader array that also tracks employee arrival and exit times, where your TWIC visitors visited last week and also generates a report of your busiest times, don't write these options into the Facility Security Plan. Keep the FSP simple, however complex and agile your reader is supposed to be. That will reduce the risk of unanticipated failure of the FSP, when your FSO cannot produce the reports for each and every shift and the USCG comes to see them.

5 Don't plan for any interphase.
Some TWIC vendors have visions of real-time, sophisticated data floating on a cloud that can be shared by many stakeholders and increase connectivity, transparency and domain awareness. Don't believe it or rely on it. Buy the reader that reads the card every time. Upgrade later.

6 Don't order a unit until you speak to an FSO at an operating terminal and to a gate guard who is using the exact device you plan to buy.
This way you can determine if you are part of a beta test or benefiting from the experience of some other, similar user group. If you are the test case, you deserve consideration for assisting in development and you certainly can insist on free upgrades to beta units and beta software as you help the vendor develop them.

7 Appoint a devil's advocate.
Vendors are almost always charming and impressive and armed with deep pockets for meals and libation. Their job is to identify an ally on the team selecting TWIC reader technology. Balance their charm with the appointment of a focused skeptic whose job it is to challenge every claim and demonstration offered after that second bottle of fine wine.

Require your terminal's TWIC cardholders to protect their TWIC cards with rugged, waterproof holders, and urge you clients to do the same.

DHS outsourced TWIC card manufacturing and distribution to the least expensive sub-vendors. The sub-vendors sold it down again and then bought the least expensive cameras and computer equipment to produce the actual cards. Even the best made TWIC blanks have a two year expected lifespan. And the more you use them – USGC currently prefers a swipe in and a swipe out – the more they wear out, especially the low quality photos, which are essential. Spend the money on high quality holders when the TWIC cards are new.

Plan for the inevitable two-year turnover in your USCG Sector, especially field personnel and the COPT.

It may take at least a year after TWIC cards become mandatory and the facility security plans have been amended before each USCG sector develops its own operational policies for inspection of the TWIC process and fulfillment of the FSP. However, USCG personnel turn over every two years or so and not always from a port posting to another port posting. Document, as best you can, the current COTP requirements and update them in writing to be presented at the next change of command.

Don't pay in full until the system is operational.

When it comes time to purchase your TWIC reader, do not pay in full until the system is completely operational. Escrow the balance if necessary. But there is no incentive for excellence when entrepreneur TWIC vendors have all the cash.

Bonus advice: If it sounds too good to be true, it is.

The Author

Rick Eyerdam is an award winning editor, author and expert in business coverage, most recently international trade, ports, shipping, logistics and commerce. He is on the steering committee of Sea Cargo Americas and Air Cargo Americas. An occasional panelist and moderator at maritime industry conferences, Eyerdam earned a bachelor's degree in English and in Government from Florida State University. He taught journalism at Florida International University and held editorial roles with various daily newspapers and trade periodicals. An avid boater and fisherman, Eyerdam is the founder and first president of the Florida Keys Artificial Reef Association.

Long-Awaited TWIC Reader Report Issued

On February 27, 2012, the DHS Secretary forwarded the Final Report on the TWIC Reader Pilot Program to Congress. It's clear that TWIC reader implementation will not be a matter of simply locating some machines at your entry points. Highlights of the Report include:

- TWIC reader systems can make access decisions without causing traffic backups when designed, installed, and operated consistent with the characteristics and business needs of the facility or vessel operation, but there is no one-size-fits-all solution.
- Reader robustness, quality, reliability, and performance varied. Contactless readers were preferred by Pilot participants, as contact readers were more susceptible to water and debris intrusions.
- TWIC reader implementation will require advanced planning and attention to detail by facility and vessel operators. Installation time, effort, and cost varied widely: Times averaged from 45 days for operations using mostly portable readers; while the average time for container terminals was 180 days. Costs ran from around $15,000 for one small vessel operation to over $2.2 million for a particular container terminal.
- Except for Pilot participants using portable readers predominately, the cost of access control systems, infrastructure upgrades, and installation generally far outstripped the simple cost of readers.
- Operations that use the TWIC card as a site access card, in addition to identification, can eliminate the costs of operating their own badging system.
- Portable readers offer a viable solution for operations with small TWIC holder populations and access points with minimal traffic.
- Training both security personnel and the general employee population on the operation and use of the readers will be absolutely essential.

Next steps:

Congress has tasked the Government Accountability Office to provide the appropriate committees with an assessment of the Report, while the US Coast Guard is using the information gathered during the Pilot Program in drafting its proposed TWIC Reader Requirements regulation to be issued later this year.

STATISTICS

Container Security

Remote Tracking Matures, Expands

According to a new research report from the analyst firm Berg Insight, the number of active remote container tracking units deployed on intermodal shipping containers was 77,000 in Q4-2011. Growing at a compound annual growth rate (CAGR) of 66.9 percent, this number is expected to reach 1.0 million by 2016. The penetration rate of remote tracking systems in the total population of containers is estimated to increase from 0.4 percent in 2011 to 3.6 percent in 2016. Berg Insight's definition of a real-time container tracking solution is a system that incorporates data logging, satellite positioning and data communication to a back-office application.

Installed Base of Active Container Tracking Units (World 2010–2016)

Year	2010	2011	2012	2013	2014	2015	2016
Number	50,000	77,000	131,000	218,000	377,000	640,000	998,000
Growth	—	+ 27,000	+ 54,000	+87,000	+159,000	+263,000	+358,000

According to Berg Insight, the market for container tracking solutions is still in its early stages. Aftermarket solutions mounted on high value cargo and refrigerated containers will be the first use cases to adopt container tracking. Some prominent vendors are focusing on inland transportation in North America, which is so far the most mature market for container tracking solutions.

Shipping container tracking is a subset of asset tracking and aims at securing assets and increase operational efficiency. Berg Insight's definition of a real-time container tracking solution is a system that incorporates data logging, satellite positioning and data communication to a back-office application. Tracking and monitoring of shipping containers came into focus after 9/11. Many companies saw an opportunity and started ambitious projects, but neither the technology nor the market was ready at the time. Today, mobile and satellite networks can provide ubiquitous online connectivity at a reasonable cost and mobile computing and sensor technology delivers high performance, as well as excellent usability. All of these components combined enable the delivery of supply chain management, security management and operations management applications linking containers and enterprise IT systems.

Intermodal shipping containers are standardized, reusable containers used in intermodal transport systems worldwide. Container trade is the fastest growing segment in seaborne trade, having grown nearly 10 percent annually since the 1980s. Maritime transportation and the increased containerization of goods are key enablers to make the global supply chain work efficiently. Today, more than 80 percent of international trade goods are carried by sea.

There has been a consolidation trend in the container tracking market in the past two years with several major M&A activities. Berg insight anticipates that there will be a continued strong focus on container transport security and increased supply chain visibility in the coming years which will favor the container tracking market. Tracking solutions can help transportation chain stakeholders to comply with regulations and security programs as well as increase the transportation efficiency. Proving the commercial value, finding efficient solutions for reverse logistics and bringing down hardware prices are key components to increase the adoption rate for container tracking solutions.

Container Tracking and Security is a comprehensive report from Berg Insight analyzing the latest developments on the container tracking and security market worldwide. This strategic research report from Berg Insight provides you with 100 pages of unique business intelligence including 5-year industry forecasts and expert commentary to base business decisions. www.berginsight.com. About the report:
http://www.berginsight.com/ShowReport.aspx?m_m=3&id=135

(Photo: Greg Trauthwein)

Stats

Maritime Professionals, Education — & Employers too!

Times are a changin' ...

Maritime training has changed measurably over the years. In particular, the training academies and institutions that provide such training have morphed into something that your Grandfather probably wouldn't recognize either. But, the final part of the equation involves the employers that come knocking when the training is done. Without a doubt, the world of opportunity for maritime professionals everywhere has expanded right alongside all of it. Less than half of the Massachusetts Maritime Academy's students today opt to obtain a seagoing license in stark comparison to just 32 years ago, when every single one of 175 cadets who left Buzzard's Bay on graduation day did so with a seagoing ticket. And, yet, today's waterfront job market is far more robust.

Just take a look at the trending of graduation numbers and marine licensing rates for those students from the Massachusetts Maritime Academy. The numbers are anything but new, but they also depict at least one aspect of the stark change in what constitutes today's "maritime education."

	1980	2008	2009	2010	2011
Graduates	175	214	257	252	267
Licensed	175	112	122	122	108
Non-Licensed	0	102	135	130	159

In 2011, just 40 percent of MMA cadets opted for the license track. No wonder: seven undergraduate programs are now offered, up from just two a couple of decades back. These include International Maritime Business (IMB), Marine Safety and Environmental Protection (MSEP), Marine engineering (ME), Marine Transportation (MT), Emergency Management (EM), Facility Engineering (FE) and the newest addition to the curriculum, Energy Systems Engineering (ESE), (which has a license option) deals with managing energy, understanding renewable energy alternatives, improving on existing systems designs to improve efficiency and brokering energy. Beyond this, MMA also offers two Master's programs provided in an executive format; Facilities Management and Emergency Management.

Data gleaned from an expansive list of employers that hired MMA graduates during the period of 2008-2011 is also telling. As curriculum changes to meet the changing demands of industry, so does the type of employer that comes calling at the nation's maritime academies.

According to the Academy, every recent graduating class is almost fully employed with 90 days of graduation. The trend for the marine engineers who go to sea is that that are staying for shorter duration with exceptional job opportunities ashore (mostly fortune 500 companies dealing in power production). The mates are finding work in near coastal and inland water ways (fast ferries & tugs). Notably, the offshore drilling sector is hiring and looking for traditional seagoing graduates, as well as those from the non-seagoing programs. The cruise ship industry actively seeks and hires MSEP graduates, supporting the safety & compliance positions. Finally, the undergraduate commercial shipping program has been placing cadets on foreign flag LNG vessels, where companies are inclined to hire at graduation – equating to several seagoing positions for each class.

Notable employment opportunities during the period surveyed (and this list was by no means exhaustive and was culled back significantly to fit within the constraints of a print publication) included the following private companies, government agencies, armed forces and a myriad of others:

Employer (number of hires)	Employer (number of hires)	Employer (number of hires)
AHL shipping	General Electric (9)	Seaboats INC.
AIS (National Marine Fisheries Service)	Heidmar	Seacor Holdings Inc.
Alaska Marine Highway System	Hoegh LNG (6)	Sodexo
AMO (3)	Ingram Barge	SeaRiver Maritime
APM Terminals (3)	Intracorp	Shaw Group (4)
Aramark (3)	IOMM&P	Siemens Power Generation (2)
BAE Systems	Kirby Marine (6)	Sealift inc.
Bechtel (6)	Kraft Foods - Environmental	SpecTec (2)
Bouchard Transportation	Kuehne and Nagel, Inc. (2)	Tennessee Valley Authority
BW Gas (4)	Life Cycle Engineering (2)	TMC (6)
Celebrity Cruise Lines (9)	Maersk Line Limited	Trane (2)
Clean Harbors (7)	MEBA (8)	Transatlantic Lines
CT Dept of Environmental Protection	McAllister Towing (2)	Transocean (6)
Cross Sound Ferry	Military Sealift Command (43)	Travelers Insurance
Crowley (5)	Moran Environmental Recovery	Triumvirate (4)
Dominion Energy	NASSCO, San Diego, CA	U.S. Coast Guard (7)
Edison Chouest (4)	NAVSEA	United States Marine Corps.
Electric Boat (2)	NCL	United States Navy (3)
Entergy (4)	Noble Drilling (12)	U.S. Nuclear Regulatory Commission
Hornbeck (3)	Nuclear Regulatory Commission	University of Rhode Island
Exxon Mobil (4)	Otto Candies (18)	US Air Force
Federal Air Marshal Program, DHS	Overseas Shipholding Group	US Army (2)
FEMA (2)	Penn Power Systems	US Army Corps of Engineers
Florida Power & Light (2)	Portsmouth Naval Shipyard (6)	US Shipping
Foster Wheeler North America Corp.	Power Advocate	Wheelabrator (5)
G & H Towing (2)	Reinauer Transportation (2)	Wartsila (3)
General Dynamics NASSCO (3)	Royal Caribbean Cruise LTD	Woods Hole Oceanographic Inst (4)

Are you hiring graduates from the Massachusetts Maritime Academy – or any of the other six similar institutions providing comparable educations? Your competition (depicted above) certainly is.

D Directory

Maritime Training & Security

Baier Marine Co., Inc

Baier Marine manufactures hatches, coamings, steel doors and deck fittings for the commercial marine market. The Baier line of premium, ABS-certified, quick-acting flush hatches are cast from high-strength aluminum and galvanized steel. These models have long been a favorite of the Alaskan fishing fleet, tug and OSV operators, aluminum boat builders, and others. Baier also makes a huge selection of steel multi-bolt manholes.

www.baiermarine.com
email: sales@baiermarine.com
telephone: 800-455-3917

Bluewater Maritime School

Bluewater Maritime School provides training for professionals and entry level personnel. We are designated by the state of Florida as the State Maritime Training facility. The school is approved by State Vocational Rehabilitation, Veterans Rehabilitation Training, and Veterans Training under the Montgomery and Post 911 GI Bills. We have provided training to Harbor Operations for both NS Mayport, FL and NS Kingsbay, GA and the Marine Firefighting Divisions for both Duval and St. Johns counties in Florida, as well as the Jacksonville Sheriff's Office Marine division.

www.bluewatermaritmeschool.com
E-mail:info@bluewatermaritimeschool.com
Telephone: 904 766 4797

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Boll Filter Corp. is the US subsidiary of Boll & KIrch Filterbau GmbH, the worldwide leader for Lube Oil, Fuel Oil and Ballast Water Filtration equipment. Our filtration equipment protects your investment in engines and increases the reliability of your vessels. New Filtration equipment, original spare parts and factory trained service are available from our US office in Novi, MI.

http://www.bollfilterusa.com
Telephone: 248-773-8200
E-mail: sales@bollfilterusa.com

Corporation of Lower St. Lawrence Pilots

A leader in training and development, the Maritime Simulation and Resource Centre (MSRC) of the Corporation of Lower St. Lawrence Pilots offers unique expertise in navigation safety in North America. The MSRC is able to offer high-level training and actively contribute to the development of maritime projects, thanks to its skilled and dynamic personnel. It also features an in-house database compilation capability, which enables it to build, modify or customize simulated geographic areas and ship models to suit client-specific requirements.

http://sim-pilot.com/en/index.php
Telephone: 418 692-0183
E-mail: pracicot@pilotesbsl.gc.ca

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Geobrugg Security Engineering is a globally operating security solutions provider. Active in port security we provide different types of boat barriers to stop any intruding vessel. Our fix installed boat barrier is the most impact resistant barrier in the market whereas our floating boat barrier offers you the flexibility you may look for. Additionally to port security solutions, we provide special Anti-Pirate solutions to effectively protect against the threat of the RPG. All our products are made out of high tensile steel wire which guarantees the strength but also flexibility to stop high energy impacts.

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www.mctc.edu
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www.traklok.com
E-mail: info@traklok.com
Telephone: 865-927-4911

ABS Nautical Systems

ABS Nautical Systems, a division of ABS, is a leading provider of integrated asset management software for the maritime industry.

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For more information visit: **www.eagle.org**

The Tundra Group

The Tundra Group is a Canadian, privately-owned and operated risk and security management consultancy. Since 2004, Tundra has provided services to governmental, non-governmental and corporate clients both domestically and internationally. Tundra's core specialties include security assessments, crisis management, protective services, intelligence analysis and security and safety training services. Providing comprehensive risk management solutions, Tundra MDS is a leader in providing innovative maritime security services and accredited maritime training and can provide physical security solutions backed by operations centers that use integrated networked radar systems that provide small target situational awareness and proactive alerting systems. Tundra MDS has functioning maritime operations centers in the Port of Aqaba, Djibouti, Thailand, Barbados and Canada and can support individual vessels and shipping companies through all major transit routes.

www.tundragroup.ca
Telephone: 705 428 0544
E-mail: info@tundra-security.com

Mid Ocean Marine (MOM)

MOM is a privately owned company specializing in niche U.S. Flag maritime transportation projects. MOM is joint venture minded and seeks partners where core competencies complement one another. Related companies include Mid Ocean Tanker Company LLC (a joint venture between Mid Ocean Marine and private equity firm Alterna) and VanEnkevort Tug & Barge, Inc. (www.vtbarge.com), a U.S. flag bulk transportation company servicing the mining, steel and construction industries on the Great Lakes. VTB operates the most modern self-discharging dry bulk ATB "Great Lakes Trader" and has been a forerunner in converting existing vessels into self-discharging, articulated tug barge units. Of the 7 ATBs on the Great Lakes, VTB has been involved in the conversion and/or ownership of 5 of them.

www.midoceanmarine.com
Telephone: +1 (203) 299-0678.

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C2	Bayonne Dry Dock & Repair Corp.	www.bayonnedrydock.com	(201) 823-9296
31	Blue Water Maritime School	www.bluewatermaritimeschool.com	(904) 766-4797
13	Boll Filter Corporation	www.bollfilter.com	(800) 910-2655
3	Corporation of Lower St. Lawrence Pilots	www.sim-pilot.com	(418) 692-0183
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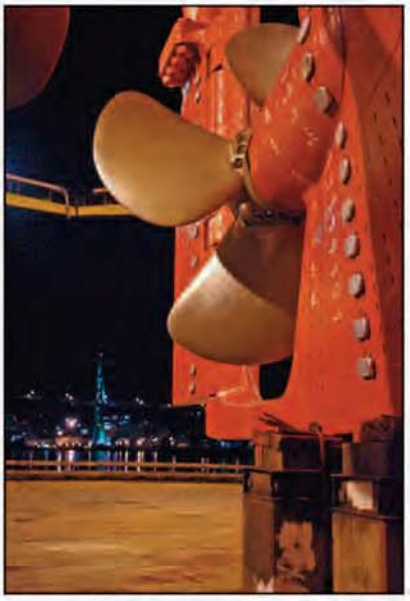

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