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2011 World Yearbook

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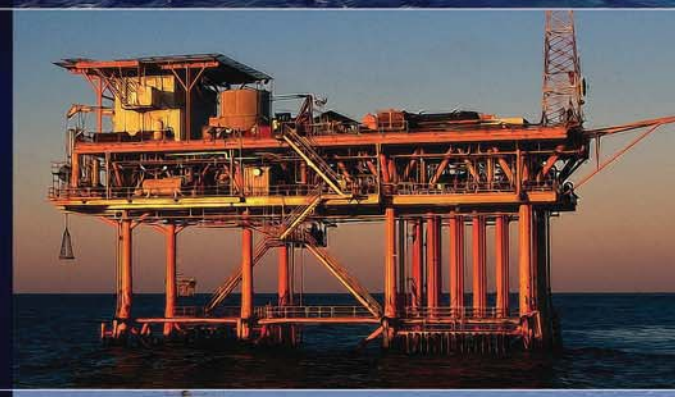

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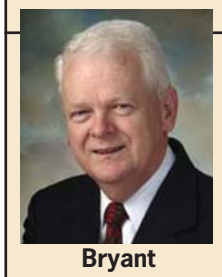
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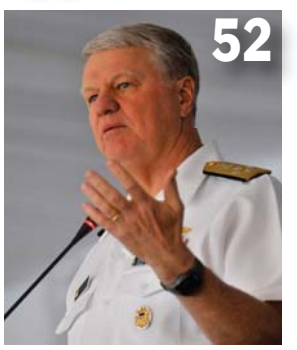

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In my nearly 20 years serving as editor of *Maritime Reporter & Engineering News* I have been afforded a wealth of opportunities and experiences, but the pinnacle surely has been access and a pair of meetings, last summer and last month, with the head of the U.S. Navy, **Chief of Naval Operations Admiral Gary Roughead**. Admiral Roughead (pictured below), was in Newport, RI last month to accept the *Seamaster Award of 2011*, the highest honored bestowed annually by MR sister-publication *Marine Technology Reporter*. In spending time with the Admiral and his staff, both last month and a meeting at his residence in Washington, D.C. last summer, I've walked away with a unique insight on the man and his mission; and just as importantly an inclusive picture of how the Navy is scouting, adopting and integrating leading edge technology in building its force of the future. This being our Annual World Yearbook, I thought it fitting to share this via a feature on Admiral Roughead, starting on page 52.

When I look back at the first *Maritime Reporter* "Yearbook" I had a hand in creating in 1992, and compare each edition along the way, the end product is significantly changed over the years. Then — with the internet in its infancy and not widely in use — you would open the magazine to find page after page of tables, data and statistics; information that today is available with a keyword search and a 'click.' Today we deliver insightful overviews of key markets and the forces that move them, providing information and analysis that is designed to help you steer your businesses to a profitable path in the year(s) to come

This June 2011edition will forever hold special meaning to me for an entirely different reason, as it is the home for our first **"Don Sutherland" Photo Contest**, so named in memory of the man who for more than 10 years filled our pages and those of sister-publication *MarineNews* with his unique prose and hundreds of indelible images. Don Sutherland was a superb photographer, a colleague, a friend and a sounding board, and more importantly a passionate proponent of all things maritime, particularly the people who dutifully define this market. The end result of our first-ever photo contest far exceeded our wildest expectation, as we drew nearly 1,700 images from more than 20 nations. On the cover is the Grand Prize winning photo, an incredible shot of the **Sunda Kelapa Old Harbor in Jakarta, Indonesia**, submitted by Budi Prakasa of Jakarta. The image is notable not only for its quality, but for tying together the many facets of maritime, from the modern ship to the upper left to the local's boats in the center and the old ship to the right. Starting on page 44 is a stellar collection of images that represent a unique perspective on — and from — the global maritime community.

CNO Admiral Gary Roughead in Newport, RI, May 17, 2011, to accept his "Seamaster of 2011" award from MR sister-publication *Marine Technology Reporter.*

Gregory R. Trauthwein, Editor & Associate Publisher | **trauthwein@marinelink.com**

ON THE COVER

Pictured on this month's cover

is **Grand Prize Winner** of the inaugural Don Sutherland Photo Contest. The image, take by Budi Prakasa of Jakarta, Indonesia, was taken by at Sunda Kelapa Old Harbor of Jakarta, Indonesia, in January 2009. See the other category winners with coverage starting on page 44.

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Mike Petters

President and CEO, Huntington Ingalls Industries (HII)

Mike Petters leads America's largest military shipbuilder, Huntington Ingalls Industries (HII), which began operations in March 2011, when Northrop Grumman Shipbuilding began operating as the newly formed and publicly owned HII. Petters spent time last month with Maritime Reporter & Engineering News *to discuss challenges ahead.* ***• by Greg Trauthwein, Editor***

How would you describe your management style?

Petters I believe that you should work very hard at making sure that all of the lines of authority, accountability and responsibility are aligned. And that there is clear understanding in the organization about where authority and responsibility reside, and who's accountable. I think when you have that in your organization, you can have a very efficient organization and very clear communication. I guess it's more of a philosophy of making sure that folks know who is accountable for particular areas of responsibility, and then, give them the authority to go and execute.

How did the recent creation of HII create a stronger shipbuilding company?

Petters I think that, in general, when a business unit of a large corporation separates from that corporation, you're trying to really accomplish a couple of things. First of all, you are trying to create more focus inside the organization towards customers, employees and the owners of the business. Second, you want to create more agility in the business. You end up with an organization that is much more focused and agile in responding to changes.

Northrop Grumman was a very good owner of this business, but over time the philosophy of total systems integration and platform integration changed, and towards the end of the decade there was not a lot of synergy between the shipbuilding piece of the business and the rest of Northrop Grumman.

The business of building Navy ships has obviously changed since you started at Newport News in 1987: in your opinion, how has this business changed most significantly for the positive?

Petters I think that the capability that we are putting into these ships is incredible. When you think about the missions that the navy is being called on to execute today, if you were to compare "A day in the life of the United States Navy" yesterday and 25 years ago, you would see an incredibly more diverse set of missions going on today, and I think that is a direct result of the capabilities that are being put into those platforms.

We are the major super power on the planet today, and we're the only one that sits on two oceans, and so our success over the next period of time will depend on how well we are able to manage those common areas at sea. And I think we are going to need a very strong naval presence to do that. I think you are seeing that in real time right now.

(Photo by Ron Elias)

Mike Petters talks with Ingalls shipbuilders (l to r) Kevin Jarvis, director, business development, Willie Williams and Kenny Tolar, hull department.

Over the course of your career, what do you consider to be the most significant technological development or evolution that has worked to make the construction of military ships more efficient, and why?

Petters I think that it almost sounds trite because we've made it look so easy, but I think modular construction and design for affordability have been tools that have been brought to bear in this program that have really been the productivity improvements that have driven the capability improvements.

The legend around the shipyard is that when you buy your second set of steel toes that's when it becomes a career for you. • *Mike Petters*

The amphibious transport dock ship, Green Bay (LPD 20), the fourth ship of the San Antonio-class built on sea trials in the Gulf of Mexico, July30, 2008.

(Photo by John Whalen)

Shipbuilders pour rudder casting for the aircraft carrier Gerald Ford (CVN 78) at Newport News Shipbuilding.

(U.S. Navy photo by Mass Communication Specialist 3rd Class Nicholas Hall/released)

The aircraft carrier USS George H.W. Bush (CVN 77) transits the Atlantic Ocean on October 10, 2010.

(Photo by Chris Oxley)

The fast attack submarine USS Texas (SSN 775), on alpha sea trials, May 18, 2006.

The chairman of the joint chiefs has talked about our (country's) fiscal issues as being a huge security risk for the country. I don't think it's any secret that we're going to have to figure out how to do what we do, better, and more affordably. The people that are able to do that, in the end, will be successful.

Mike Petters

The amount of capability that you get at sea today for the dollars that you spend is tremendous compared to what you got 25 years ago. That's driven by technology and capital investments, as well as investments that we've made in the people that do the work. This capability makes the Navy more relevant that it has ever been.

What do you consider to be your greatest accomplishment in your career?

Petters You know, I don't know how to answer that question. I come to work every day looking for an opportunity to support our customers, to give our shipbuilders a chance to do their very best work, and to make sure that we are good stewards of both taxpayers dollars and of shareholder investments. If the team does well, I feel very satisfied with that; I feel accountable if the team comes up short. That's made for a very rewarding career in a very tough industry.

When did you realize that maritime would become a career for you?

Petters That's a good question. The legend around the shipyard is that when you buy your second set of 'steel toes' that's when it becomes a career for you. I was in the Navy before I came to the shipyard, and I can't say that I really aspired to be in a shipyard, because I was actually in a shipyard in the Navy, and I had a few options when I came out. What I've found inside the shipyards is that you have a chance to do something where you grow everyday, you're part of something that is much bigger than yourself, and when you wake up in the morning you want to go to work because you are surrounded by people who have a passion for what they are doing. These folks in this business — across this industry, frankly — they come to work everyday with the opportunity to use their heads, their hands and their hearts to do something that is in the national interest; and I just get excited by that. I don't know that I ever made the decision that I wanted to be in the maritime industry, I found myself in the industry and I love every minute of it.

What do you consider the biggest two or three challenges to running a successful, efficient shipbuilding operation?

Petters We're going to have to accelerate our thinking of shipbuilding as a process that has lots of players. As a result, there are lots of well-understood techniques to understand the value stream, to do value stream mapping and to improve the efficiencies of those value streams. I think we're going to have to do that given the environment that the nation is going through, relative to its fiscal issues. The chairman of the joint chiefs has talked about our fiscal issues being a huge security risk for the country. I don't think it's any secret that we're going to have to figure out how to do what we do better and more affordably. The people that are able to do that, in the end, will be successful. Also, the health of any company is defined by its ability to attract talent, to attract technology and to attract capital. And healthy companies are able to do all three of those things, and when you're not able to do that, then the company starts to falter. And so, we spend a considerable amount of our energy working those three issues to make sure that we are able to attract capital and talent that we need and that we understand technologies that we need to invest in. They can be shipboard capabilities or they can be production technologies; in either case, that's a sign of a healthy company. Those have been the issues for any company in any industry for a long time, and I think that will continue to be the case going forward.

How is HII investing today?

Petters We've been investing significantly in our facilities. In the past decade we've invested over $1B of capital into our principal shipbuilding facilities to prepare them for the production challenges of the future. We invest heavily in our people, in terms of training, our apprentice programs, our workforce development partnerships with various states. And we keep our eyes on, and keep thinking about technologies we need relative to where we think the fleet requirements are going to go in the future.'

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Costa Favolosa Set for Delivery

Costa Favolosa, the new flagship of Costa Cruises, completed official sea trials, and the naming ceremony is scheduled for July 2 in Trieste, with an event dedicated to the 150th anniversary of the Unification of Italy. The ship, the 15th in Costa's fleet, built by the Fincantieri shipyard in Marghera (Venice), completed her first crossing during which tests were conducted to verify the correct operation of the various systems, equipment and engines. During the tests at sea, the Costa Favolosa was brought up to her maximum speed (more than 23 knots) which was maintained for 8 consecutive hours to test the ship's endurance. There was also a "crash stop," meaning a complete stop at maximum speed to determine in how many meters the ship comes to a stop during an emergency. During the test known as the "UMS," the Costa Favolosa sailed for 6 straight hours only using the automatic energy and propulsion system controls. Finally, with the "black out" test, the electric power was cut off to check that all ship functions automatically returned to normal when the power was restored.

After completing her trials, Costa Favolosa returned to the shipyard in Marghera to complete the fitting out of the interiors prior to being placed into active service. The Costa Favolosa will be ready for delivery on June 30, 2011.

The 114,500 gt, 420m euro Costa Favolosa has accommodation for up to 3,800 guests and will be the largest ship flying the Italian flag. The sister ship of the Costa Favolosa, the Costa Fascinosa, currently under construction in the Marghera shipyard, is scheduled for delivery in the spring of 2012. These two ships are part of the Costa group fleet's expansion plan, which began in 2000, a plan worth $13.9b.

As her name suggests (Favola is Italian for "fairy tale"), the Costa Favolosa (www.costafavolosa.com), is a veritable "fairy tale ship," a "contemporary enchanted castle" with a combination of atmosphere and state-of-the-art hi-tech fun.

The main innovations on board include six new veranda Suites with their own jacuzzis and a new entertainment area for teenagers (but other age groups will enjoy it too), with 4D Cinema, PlayStation World, and a bar with ice-cream, drinks and popcorn. There will also be a new children's open-air Aqua Park water playground with its own pirate galleon.

Facilities will combine the very best of the Costa product: the Samsara Spa, one of the largest and most exclusive wellness centers ever built on a cruise ship; a large central lido extending over two decks, with a sliding glass roof and giant movie screen; a Grand Prix driving simulator; and a golf simulator. The brand new design aft pool area will be particularly large and inviting: 1,000 sq. m. of space dedicated to relaxation and entertainment with 160 sun loungers, whirlpool tubs and an invigorating waterfall. The shipboard gym will offer all the latest state-of-the-art Technogym equipment, including machines with Internet access, so you can surf the Internet while you work out. On board there is also a Costa Concept Store conceived by Emilio Robba, a designer with an international reputation, where you can find an exclusive collection of products and souvenirs selected specially for Costa Cruises.

The Costa Favolosa's position at the cutting-edge of cruise ship building technology also extends to environmental compliance, which has always been a Costa hallmark. Like other fleet members, the Italian company's new flagship will be equipped for "cold ironing," namely a system whereby the ship is plugged into shoreside electrical power, enabling generators to be shut down during stopovers in port.

IMC: Ferry Designs Ready from Wärtsilä, Deltamarin

Integrated Modular Customized (IMC) ferry designs by Deltamarin and Wärtsilä. The vessels combine cost saving modular construction with a tailored execution of the passenger and freight arrangements.

In October 2010, Wärtsilä and Deltamarin announced a cooperation to develop a series of ferry designs. The fruition of that partnership has been realized, as the Integrated Modular Customized (IMC) designs are now ready for extensive model testing and for introduction to the ferry market. Ferries have traditionally been expensive to build, primarily because it is not feasible for them to be standardized. In essence, each ferry is custom designed, and they represent less than one percent of the world's shipping fleet.

Similarly, operational costs tend to be high because of the regional and seasonal nature of the business, and as a result of port and weather restrictions. "The value of this IMC integrated project is in the fully optimized solution that we can offer to ferry owners and operators," said Aaron Bresnahan, Vice President, Cruise & Ferry Segment, Wärtsilä Ship Power.

Deltamarin is contributing its range of design and engineering services, including a tender package, contract design, and specifications for ferry owners and the designated shipyard.

Wärtsilä machinery and systems are fully integrated into the designs to achieve the greatest possible fuel savings and emission reductions. The IMC designs will be prepared for conventional as well as future fuels, including LNG.

Every effort is being made to achieve the lowest possible building costs. Deltamarin's contracting services also support the owners and assist shipyards during construction, when necessary.

Deltamarin has developed its own Parametric Design method for ships, which splits the design into pure cost elements and revenue generating aspects.

This method opens the possibility for modularization of construction, machinery, large equipment and onboard systems. The objectives: newbuilding cost savings and simplified maintenance of the ship.

A notable strength of the IMC ferry designs is that they can be readily adapted to changes and developments requested by the owner.

The Parametric approach makes it possible to demonstrate design changes immediately, and the design is re-optimized in order to comply with regulations, best fuel consumption and overall performance.

Metalcraft: TOW Boat Delivered to USN

Metalcraft Marine won a contract by the U.S. Navy for the construction of eight of its 26 ft. Tow Boats, which will be used to support the Navy's spill recovery, support and salvage ops. Fully loaded the aluminum tow boat can reach speeds of 34 knots with its Iveco NEF 450 hp engine rated at 420 hp (309 kW) driving a UltraJet 305HT High Thrust Waterjet via a ZF 280 gearbox. During sea trials bollard pull tests achieved 3800 lb. Thrust vectoring is with Ultra's Hydromechanical control system with a single helm lever and the hydraulic power-assist steering provides light and responsive directional control. The hull structure is built to ABS and IACS standards and features a compact forward wheelhouse with enough room aft for bulky cargo and equipment. Hand rails are removable for line handling, and the transom is equipped with a folding dive platform. The stern of the vessel is equipped with Norman pins to help guide tow lines. When the vessel is in storage, the Norman pins double as kickstands, allowing the vessel to rest on its bottom plate with no additional support for stability. The helm station is outfitted with a Furuno Navnet electronics package, with a pair of Bostrom helm seats for the 2 crew. The cabin is equipped with Hammond Arctic Wolf heating and air conditioning, as well as microwave and coffee maker for crew comfort. The vessel is also transportable by air in a C130 or C17.

Zhejiang Shipyard Starts Work on First SPP17 PSV

In May 2011, Sinopacific Shipbuilding Group's Zhejiang Shipyard started work on the manufacture of the SPP17 PSV series of offshore support vessel for Bourbon. The ABS-certified ship is the eighth ship to be manufactured on the company's small ship line. The SPP17 PSV ship is another model autonomously designed by Sinopacific Shipbuilding Group, following after the SPA80 AHTS ship.

The new ship has a total length of 61.8 m, a width of 14m, and a depth of 5.8m, with a designed draft of 4.3m and a maximum draft of 4.9m.

The waterline is 61.6m, the deadweight tonnage is 1,700 tons, and its service speed is 12 knots.

Incat Crowther to Design 42m Wave Piercing Cat Passenger Ferry

Incat Crowther secured a contract to design a 42m Wave Piercing Catamaran Ferry for Quicksilver Bali. The Indonesian operator runs day tours and dinner cruises out of Bali, using the Incat Crowther-designed Wave Piercing Catamaran Quicksilver 6. Under construction at PT Caputra Mitra Sejati Shipyard, the vessel will be built to Lloyd's Register and carry 450 passengers. In addition to passengers, the vessel will carry up to 50 crew, many of whom work at the operator's pontoon at Nusa Penida Island. At this pontoon, the operator offers activities including snorkeling, semi-submersible scuba, jet skiing and even tattooing. The vessel is configured to not only transport this small army of support staff to the pontoon, but also to allow meetings and briefings onboard during the outbound voyage.

Many features have been implemented to increase passenger comfort, such as window washing platforms on both decks. The main deck interior cabin features seats for 268 passengers, and has a large bar at the aft end. Adjacent to the bar is a dual-entry cool room, which allows for quick loading of supplies, and immediate access from the bar. Behind the bar and cool room are extensive amenities. A total of 15 toilets are fitted. The mid deck cabin seats 168 passengers. The vessel will be powered by four Caterpillar C32 Acert C engines, each producing 1080kW. Propulsion is carried to KaMeWa 50A3 waterjets via ZF3050/D gearboxes and cardan shafts. The vessel will have a service speed of 26 knots and a top speed of 30 knots. Extensive long-range fuel tanks will be fitted, giving the vessel a delivery range of 800 nm.

World-First Incat LNG Ship

Incat Tasmania announced the name of the customer for what is being called the world's first high speed passenger RoRo ship powered by LNG. The 99m LNG ship was contracted by South American company Buquebus in November 2010. However, for commercial reasons, Buquebus requested that its identity be kept under wraps. They have now announced that they will operate the vessel on their River Plate service between Buenos Aires, Argentina and Montevideo, Uruguay. The yet to be named vessel is under construction at the Incat shipyard at Prince of Wales Bay at Hobart in Tasmania, Australia. Delivery is anticipated to be in the Southern hemisphere during spring 2012.

Hull 069, with capacity for over 1,000 passengers and 153 cars has a projected lightship speed of 53 knots, and an operating speed of 50 knots. The vessel will be the first installation of LNG powered dual fuel engines in an Incat high speed ferry, and the first high speed craft built under the HSC code to be powered by Gas Turbines using LNG as the primary fuel and marine distillate for standby and ancillary use.

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When a Gas Tanker Got Caught in Japan's Tsunami

Capt. Mukesh's gas carrier though battered by the Tsunami while at Kashima Port came out in one piece to discharge its lethal cargo which could have done inconceivable damage.

All seafarers might agree that the closest thing to 'hell on earth' is being on a gas tanker in a port during a Tsunami. In command of Flanders Tenacity, Capt. Mukesh Yadav had just berthed his gas carrier, under Exmar Shipmanagement, at Kashima port in Japan on that ominous day, March 11, 2011. All set to discharge the 23,500 tons of propane cargo he noticed severe vibrations. Thinking that someone may have wrongly started the engines, he rushed out of the cabin to find that a severe earthquake was underway. Soon he learned through the VHF that a tsunami was due to hit the coast shortly.

Being saddled with such heavy odds, he could not help conjuring images of massive walls of water smashing his ship against the rocks. The gas carrier had enough propane to destroy the port if it escaped or if the tanks suffered an explosion. He made frantic bids to pull out attempting to call for tugs and a pilot to guide the vessel out of the port, but these efforts were in vain as everyone had deserted the port sensing danger. Communication lines were already down and there was neither help nor assistance possible. "My greatest concern was for the safety of my 24 member crew," related Capt Yadav. "There were over 15 other vessels in and around the port besides innumerable tugs, boats and smaller craft that could pose a danger to the gas carrier in case of a collision. As the waves began coming we lost our moorings and started being dragged astern. We started the engines and prepared to drop both anchors. Just then we saw one of the vessels Rokkosan, losing its mooring and come rushing directly at us. We barely made it in time to use the engines astern and avoid immediate collision. Luckily the vessel changed course and came alongside parallel to our own vessel.

"To complicate matters, hardly had we got the Rokkosan out of the way, than we noticed another vessel China Steel Integrity right at our stern. We dropped both anchors and cut down speed but our vessels' sterns collided. We were still safe. Our vessel then continued to suffer collisions from the smaller boats and tugs. At one stage we hit the jetty which caused a gash to the side of our vessel and we began taking in water into the engine room."

The tsunami waves kept coming at intervals of 15 minutes; the water depth in the port dropped and rose by several meters. The vessel ran aground a number of times and rose with the rising tide. At one stage the ship began to list making the ship's capsizing a reality. But Capt. Yadav decided to heave up the anchor and move the vessel outside the channel. As the port anchor could not be raised, it was decided to cut the anchor chain.

Capt. Yadav's immediate worry was to prevent the ingress of water into the engine room. If the water submerged the generators they would stop functioning, cutting off the power supply to the compressors used for cooling the gas to maintain it in a liquefied condition in the tank. The damage to the vessel being extensive it was risky going into deep waters. The water kept flooding the engine room. If the cooling stopped the gas would start bubbling out and eventually crack the surface of the tanks. Worse still there was no electricity in the port because of the power failure after the earthquake.

"With no tugs coming to our rescue and both our anchors down, we got our vessel moving out," said Capt. Yadav. "We were about 2/3rd of a cable length from the exit of the channel when the anchors bit into rocks which caused our vessel to stop. I used ballast to list the vessel until the gaping hole in the side of the vessel was above the water level. That came as a big relief as we prevented further flooding of the engine room. But then to make matters worse, I realized the rudder had been damaged and bent, making navigation difficult. We finally moved out to sea but kept to the shallow waters where we anchored."

They remained at anchor for at least two weeks before discharging the cargo and later taking the ship to the repairs yard.

Posted by Joseph Fonseca on ***MaritimeProfessional.com***

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ECDIS Model Course Hits the Street

Recently published by the IMO Secretariat as an STW43 paper on their IMO documents site, this version of the course (ECDIS Model Course 1.27 / 2010 edition) is meant for distribution provided it is unaltered in any way. The document should be regarded as immediately relevant to ECDIS training course development and approval processes.

The ECDIS Model Course revision – a very long work in progress, especially through the IMO validation process – is at last here. After considerable international peer review, modification and validation, the IMO Subcommittee on Standards of Training and Watchkeeping (STW43) must still vote on it at their next meeting, scheduled to take place in June 2012. According to well-placed MarPro sources, approval of this final draft is expected. Assuming that happens, this revision will then officially replace the original MC 1.27.

The revision is important in that Part A (Framework) includes a simulation performance standard for ECDIS training, complete with added details and justification placed in the appendices for the instructor. Significantly, the new version also includes full course content as well as detailed guidance on exercises and practical underway assessment. In a nutshell, ECDIS training should be and now is all about practice in solo navigation training, as well as the all-important (graded) demonstration of the integration of ECDIS skills with all aspects of navigation. Also according to our MarPro source, "Because this revision is so focused on specific content in underway navigational contexts, MC 1.27 should no longer be regarded as generic training."

Although technically still in draft form – at least until June 2012 – the course itself will quite likely undergo no further edits, including any correction to the pagination errors, or inclusion of new reference texts. It is all over, beyond the screaming and shouting, apparently. In this case, "Final Draft" probably means, "comment all you want, but what you see is what you will get when the STW subcommittee finally votes on it." The current and likely final version is the product of more than 18 months of negotiations, but since the STW subcommittee only meets every 18 months to vote and conduct other business (they last met in January 2011), the vote for ratification will not take place (somewhat embarrassingly) until June 2012, well after implementation begins.

The likely strategy, going forward, will go something like this: Post a final draft as soon as possible – properly vetted – and hope it will have the same validity as an approved document. On a huge leap of faith, it is then up to stakeholders to believe this and move on with their own implementation. On this side of the pond, for example, the National Maritime Center (NMC) typically signs off on courses according to the approved IMO Model Courses. And, on a more positive note, the legacy trade schools and the maritime academies have about one year to get their courses re-written, staff trained and the bugs worked out of their simulator software. It's all good, right?

Built over a very long period, the ECDIS amendments to STCW came only after years of getting the training right – from courseware to simulation. With many competing interests in the Model Course creation business, along with those stakeholders who wanted to see the training requirements as watered down as possible, the IMO ultimately wanted something "clean" and they have gotten it. In real practice and in the world of STCW, Model Courses are only regarded as guidance. And yet, flag state authorities will usually choose not to produce their own regulations in training, instead insisting course developers to follow the Model Course nearly to the letter. Global guidance, at least in these instances, also translates into regulation at the local level.

In a world where so many mariners are content to get the lowest impact training possible, the incorporation of STCW into global training and competency schemes has a real place. The mariner, on one hand cannot be faulted for wanting to compress the ever-growing list of regulatory burdens that impinge upon his or her off time. On the other hand, the typical passenger (you, for example) on a Boeing jetliner would not be content with a new pilot certified to be capable solely on the basis of a written test or a collection of unsupervised CBTs.

U.S. Merchant Marine Academy Professor Christian Hempstead told MarPro recently, "I believe that STCW, in spirit, offers the best chance our generation will have in returning to journeyman competence in the seafaring profession. If we mariners and trainers do not insist on demonstrated competence as a condition for the privilege of watchstanding, management and shore side systems will see to it that the profession is substantially overtaken by technological innovations. Lest we reverse the present trajectory, the risk of high losses through incompetence will become a self-fulfilling prophesy in short order."

The formulation of meaningful Model STCW course content will be a key component to achieving and maintaining global mariner competence going forward. The new ECDIS Model course is a very good start. And that's because the mentoring by senior mariners and indeed the credentialing of the new mariner by those who have also spent meaningful time at sea is fast becoming a thing of the past. – MarPro.

NOTES: STW stands for the IMO Subcommittee on Standards of Training and Watchkeeping. The number 43 references the meeting event. The STW 43rd "session" is scheduled for June 2012 and the Model Course will be voted on as "Agenda item 3". The document itself is regarded as Annex 1. Therefore, STW 43/3/1 is the title of the final draft of the revised model course. This same document is also now available at:

http://www.ecdisregs.com/get_pdf.php?id=102&action=download

Posted by Joseph Keefe on MaritimeProfessional.com

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Furthering Compliance or Compromising Compliance Programs?

Whistleblower Rewards

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THE APPS WHISTLEBLOWER PROVISION

The importance of effective environmental compliance programs in the maritime industry has been demonstrated time and time again over the past two decades. Shipping companies are regularly being fined millions of dollars in the U.S. for violations of the Act to Prevent Pollution from Ships ("APPS") and other environmental statutes, and federal district courts are regularly awarding crewmembers tens of thousands of dollars, sometimes hundreds of thousands of dollars, under the APPS "bounty" provision for reporting to the U.S. Coast Guard illegal discharges of oily bilge water and sludge. These awards are given under Section 1908(a) of APPS, dealing with criminal enforcement, which provides that "[i]n the discretion of the Court, an amount equal to not more than ½ of such fine may be paid to the person giving information leading to conviction."

Environmental violations in the maritime industry have been uncovered in many ways, including through port-State control inspections, satellite tracking, international cooperation, and tips from competitors. The most common way, however, at least over the past few years, is the whistleblowing crewmember. According to the Department of Justice ("DOJ"), more than half of the criminal maritime cases being referred from the U.S. Coast Guard are initiated from whistleblower reports. As a result, the odds of environmental malfeasance being discovered by DOJ have significantly increased because of the aggressive use of the whistleblower bounty provisions in APPS. In some cases the use of this provision may have furthered compliance, but in a significant number of cases it has undermined a company's compliance efforts.

Historically, whistleblower rewards in the U.S. date back to 1863 with the federal False Claims Act, which makes awards available to whistleblowers who report fraud by government contractors. While the application of the APPS statutory provision began in this manner, the recent increase in the frequency and amount of such awards indicates that the rewards under this provision have gone far beyond the historical purpose of uncovering hard-to-detect illegal conduct. Rather, the recent use of the provision appears to have incentivized crewmembers to report environmental violations in the first instance to the U.S. Coast Guard rather than through the company's chain of command, thus depriving the shipowner, operator and/or manager (hereafter referred to as "operator") the ability to react in a timely and responsible manner to correct any environmental deficiency that may exist shipboard.

MANY REWARDS VIOLATE PUBLIC POLICY

The international maritime community has made important progress over the last 20 years to develop more robust shoreside management systems for commercial vessel operations. One of the more important steps in this effort was adoption by the International Maritime Organization ("IMO") of the International Management Code for the Safe Operation of Ships and for Pollution Prevention ("ISM Code") into the International Convention for the Safety of Life at Sea ("SOLAS") and to make compliance with the ISM Code mandatory for all vessels. The ISM Code required the implementation of a comprehensive Safety Management System aboard each vessel to ensure compliance with applicable safety and environmental protection standards. The ISM Code also required the identification of a Designated Person Ashore ("DPA") to serve as a direct link between shipboard personnel and the highest levels of the shoreside management company. In addition, the ISM Code mandated a series of periodic, external audits to evaluate compliance with the defined management standards and identify opportunities for improvements in the management system. Many operators have established additional internal procedures to encourage the shipboard crew to report safety or environmental compliance problems anonymously to shoreside management. Some operators have also increased training for shipboard personnel to emphasize the need for strict adherence with the company's environmental compliance policies and to underscore the importance of reporting environmental compliance problems promptly to the Master, the superintendent, the DPA under the ISM Code, or other shoreside management personnel. These systems have been designed to get real-time information regarding safety or environmental compliance problems into the hands of shoreside managers, so they are in a position to respond promptly and effectively. But, the abuses of the APPS reward program by crewmembers who appear to be motivated primarily by the potential for a substantial financial award are directly undermining the viability of the management systems that have been implemented in good faith to improve overall safety and environmental compliance.

In the last 3½ years, more than one third of the maritime prosecutions have resulted in significant awards to the whistleblowers, often to multiple whistleblowers. The awards have ranged from about $40,000 to over $400,000 per individual. These amounts are generally significantly more than most seafarers stand to earn in years, and for some more than they would likely earn in a lifetime. Thus, these awards incentivize some crewmembers to report wrongdoing directly to the U.S. Coast Guard in the hopes of getting a substantial financial reward, rather than to the ship's Master, an internal or external auditor, a port superintendent, or the DPA.

In case after case over the past few years, crewmembers who have observed environmental compliance issues aboard vessels have simply ignored company policies and procedures that require such problems to be reported promptly to the Master, superintendent, or DPA. Even though these crewmembers have typically certified that they understand and agree to comply with the company's policies and procedures, they have made conscious decisions not to disclose their information to the management company, but to gather photographic and/or documentary information surreptitiously regarding the ongoing environmental violations and wait – often for months while the violations continue – to cash in on the information by disclosing it to U.S. Coast Guard personnel after the vessel arrives in a U.S. port.

In certain cases, these crewmembers have even falsely certified in writing to the operator that they were not aware of any environmental compliance issues aboard the ship, while they continued to gather evidence of environmental violations they knew to be ongoing. In one recent case where the whistleblower was awarded $200,000, he clearly knew violations of the International Convention for the Prevention of Pollution From Ships ("MARPOL") were against the company's policy. In fact, he had signed a MARPOL declaration affirming to the operator that he was aware of no MARPOL violations less than one week prior to turning over to the U.S. Coast Guard a thumb drive containing a detailed narrative, as well as several videos and photographs depicting alleged illegal discharges that had occurred several months before. This is just one example of many of whistleblowers scheming for a reward rather than being truly concerned with environmental compliance. Had many of these whistleblowers been concerned with environmental compliance, the reports of wrongdoing would have been made months earlier to other port States, the ship's superintendent during a regular visit, the company's DPA or internal/external auditors. This "gaming of the system" is borne out by the recent sophistication of, and planning behind, the whistleblower disclosures. In many cases, the whistleblowers provide a thumb drive to the U.S. Coast Guard or to someone else for delivery to the U.S. Coast Guard, such as a representative of a seafarer's ministry, often containing PowerPoint presentations, detailed narratives, one of which was titled "IN USCG, I TRUST," and videos and photographs with embedded legends depicting how an illegal discharge occurs. In many of these instances, the illegal activity depicted in the presentations occurred months before and the whistleblowers held this information while awaiting a port call in the United States, despite the fact that the illegal discharges continued to occur. Such calculated conduct, designed to prevent the operator from learning of ongoing environmental violations while gathering evidence intended for later consumption by the U.S. Coast Guard, directly undermines the effectiveness of the manager's Safety Management System and represents a perversion of the public policy rationale for the APPS reward system. Crewmembers who engage in this type of intentional deception should not be considered eligible for monetary rewards under APPS. They should, instead, be exposed for what they are – opportunists whose actions are contrary to the goal of enhanced environmental compliance within the maritime industry.

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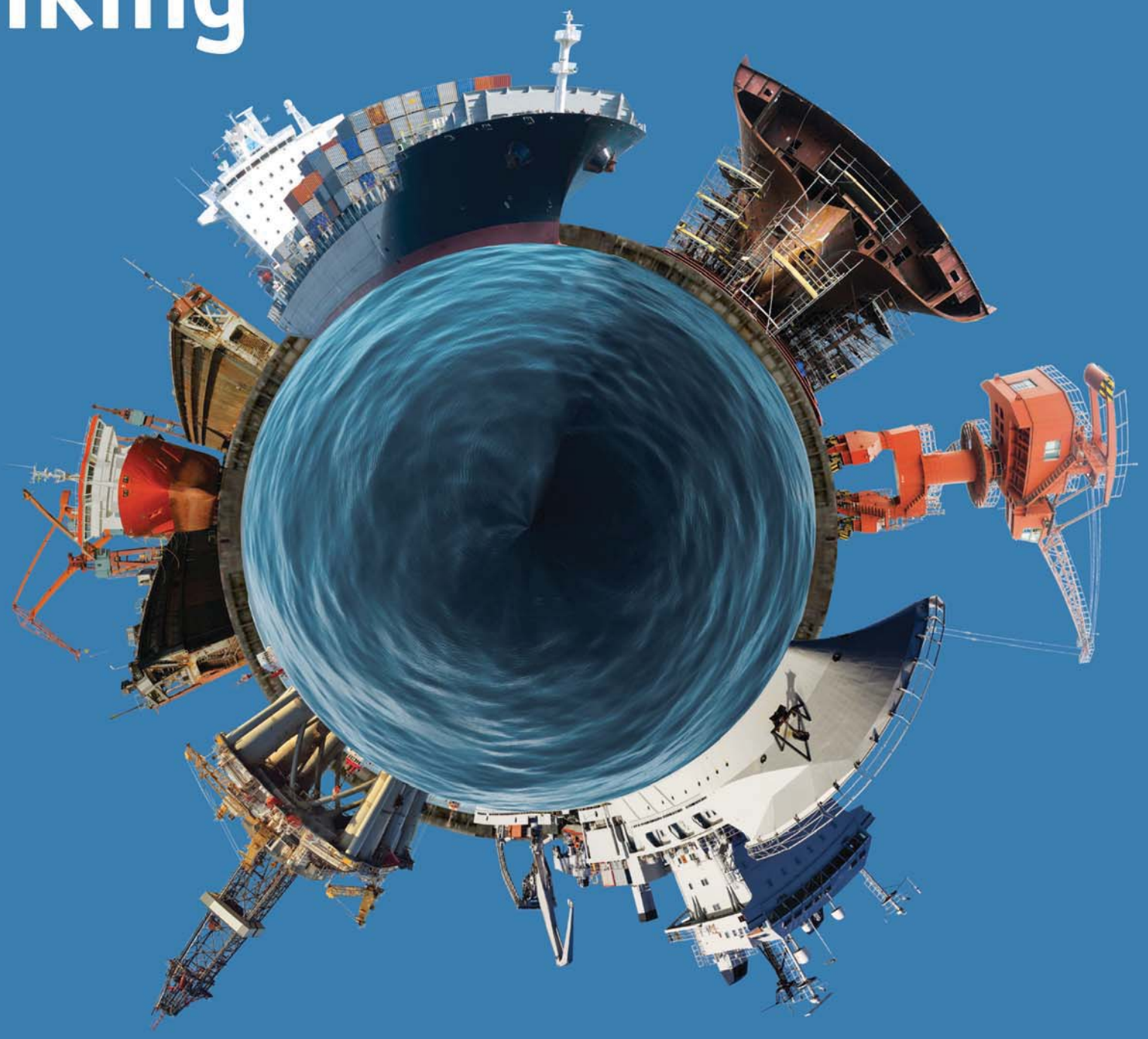
significant criminal penalties, and strong incentives for whistleblowers to report discharges, however, underscore the importance of adopting compliance programs and instituting proactive compliance measures that go even beyond the ISM Code. The most effective response for vessel operators is to re-double their efforts to train their crewmembers on the importance of environmental compliance, schedule regular, unannounced audits to monitor environmental compliance aboard their ships and strengthen their efforts to foster internal reporting without fear of reprisal.

In this regard, the operator must also rely heavily on the periodic attendance by the vessel's superintendent, and clear standards need to be established to ensure that the superintendent's shipboard visits include a thorough assessment of the environmental compliance practices aboard the ship. The superintendent must carry a clear message that non-compliance will not be tolerated. The superintendent should also periodically carry out a comparative analysis of the vessel's Oil Record Book and sounding log, conduct interviews with the unlicensed engine room crew, and perform a technical inspection of the vessel's pollution prevention equipment. The company must take every opportunity to communicate loudly and clearly that MARPOL violations will not be tolerated, that the company is genuinely interested in receiving information regarding environmental compliance problems, and that the company will act promptly when such information is received to identify the source of the compliance problem and to correct it. The operator might also consider incentivizing its internal reporting program by offering modest cash awards for accurate, timely information regarding environmental deficiencies. These measures could help to isolate and neutralize those crewmembers who refuse to utilize the available internal reporting procedures because they are motivated primarily by the prospect of a huge financial reward from the U.S. authorities.

By implementing the enhanced compliance and verification measures discussed above, companies may be able to avoid becoming the government's – and the whistleblower's – next target. In light of the foregoing, if a whistleblower offers information regarding a MARPOL violation to a U.S. Coast Guard port-State control inspector, the inspector should ask a number of questions in evaluating that information, including: 1) How long did the whistleblower "sit on" the information?; 2) Did the whistleblower ignore other available procedures for reporting the information to the operator or to other port State officials?; 3) Did the whistleblower violate internal policies of the operator by failing to report the information to the company?; and 4) Does it otherwise appear that the actions of the whistleblower delayed or thwarted an effective response to the environmental deficiency? If the answer to any or all of these questions is in the affirmative, that information should be weighed carefully in evaluating an appropriate enforcement response, and even if a decision is made to proceed with an enforcement action, it should disqualify the whistleblower from eligibility for a financial award under APPS. It is imperative that U.S. government officials support the systems set forth in international conventions, such as the ISM Code, and not issue awards to whistleblowers that, in many cases, allow illegal discharges to continue, and further incentivize other whistleblowers to undermine the environmental compliance programs that vessel operators have taken pains to develop.

Joined up thinking



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About the Authors

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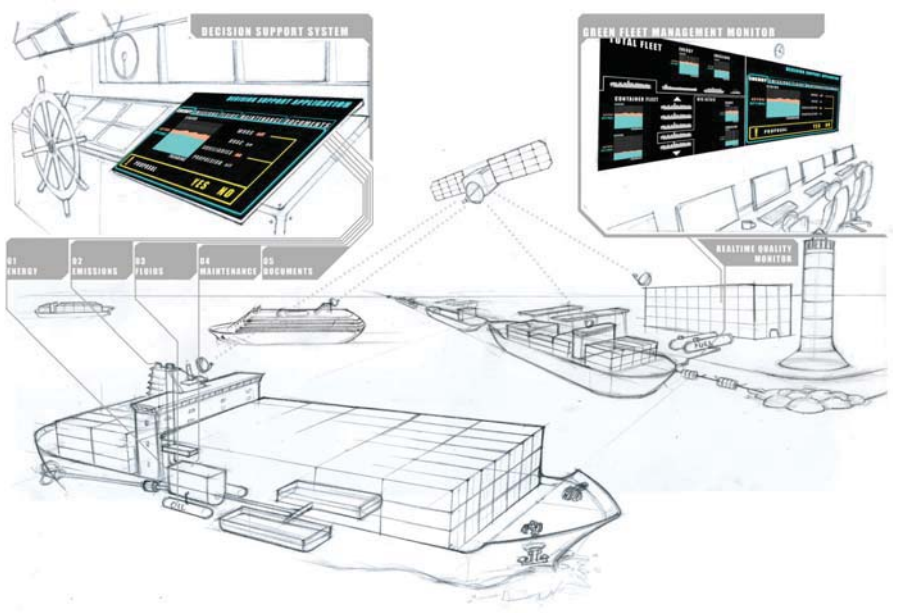
Today's vessel owners and operators continue to adopt the latest equipment onboard their ships. Battery and drive technology for hybrid propulsion, advanced navigation and bridge systems, dynamic positioning systems, diesel electric propulsion, new HVAC technology, electronic fuel injection and valve control systems, shore power connections systems and ballast water management systems are just a few of the new, emerging technologies that lower energy consumption, comply with new regulatory measures, reduce emissions or increase crew and passenger comfort and safety. However, the addition of these technologies creates a new challenge: What does it take to keep the equipment in service? This question is critical to each vessel, and disoperation may force a ship to remain idle until addressed. Consequently, servicing and maintaining the new technology becomes of paramount importance to the onboard crewmembers who are not as familiar with the new equipment. The challenge is even greater for port captains and superintendents who are required to manage entire fleets in varying worldwide locations where each vessel's on-board systems differ. For example, our customers have asked us if we can support their marine needs when a vessel is operating in hard-to-access locations such as the West coast of Africa. Such requests present a unique challenge to all suppliers. To best serve our customers, we, too, need new technologies, tools and processes to support their crews and our equipment as they travel around the world.

Higher bandwidth, low cost satellite technologies enable many of these new service tools, such as remote monitoring. Remote monitoring allows a vendor to "dial-in" to a system remotely to provide diagnostics. A proper remote monitoring system only allows an operator to access on-board systems if the crew first grants access. Once the vendor has access, a land-based expert can review the ship's issue and provide trouble-shooting advice to the crew. The owner benefits from the vendor's ability to access the vessel regardless of its current location. Additionally, real-time advice is faster, more practical and far less expensive than sending a service technician to the vessel's location. This will keep a ship on charter instead of heading back to port.

A similar benefit may result by deploying built-in diagnostic and condition-based monitoring software. Both systems observe the usage, operational and performance data and product health. While the built-in diagnostics only look at the product, condition-based monitoring software can monitor multiple products or systems, as well as ancillary-related processes. Before a problem arises, the software alerts the crew so preventative action can be taken before a problem occurs. For example, the system will alert the crew if a temperature threshold or a predetermined number of operating hours has been exceeded. Some vessels may have multiple products and applications that use different condition-based monitoring systems. Diesel generators, for example, may be on one system while the propulsion equipment may be on another. Additionally, the vessel could have other programs such as a fuel consumption monitoring system. Having many programs often requires various computer platforms to host the programs, in addition to multiple access points on the vessel's systems. An event could cause alerts from each of these programs, which may hinder the crew from isolating the root cause of the problem. One solution to consolidate the multiple programs is to use an on-board data concentrator. This concentrator becomes the sole platform to host multiple programs and provides the crew with just one view. It also gives access to a land-based vendor or ship superintendent.



To assist land-based personnel, fleet-based data concentrators are also available. A fleet-based concentrator aggregates data from multiple vessels. This allows real-time comparison of usage, performance and condition data across the fleet. A superintendent can then share best practices between crew. For example, he can compare fuel consumption across a fleet, or multiple vessels, with comparable operation profile, voyage plan, etc. to help him determine what makes one vessel more efficient than others. As a result, the operator can uncover these differences, enabling him to implement corrective actions and best practices across the fleet. Condition-based monitoring and data collection also helps operators by extending time between dry-dockings. By analyzing various performance data, the owner can potentially fine tune his vessel profile and equipment performance to extend time between dry dockings. Classification society concerns can be assured with real-time data, from bottom paint performance to engine cylinder health.

These tools are not the only ones that depend on advancements in satellite communication. Because the cost to transmit large files has decreased, online access to existing information can now be made available to crews. Vendors can, and do, offer dedicated, password-restricted websites that hold vessel-specific information for crews. Typical stored information includes technical drawings, a list of parts, instruction manuals or back-up copies of software programs. Vendors can also keep databases that track issues, changes and solutions for a vessel and fleet. A ship owner can easily transition this valuable data service history from crew to crew. This information sharing benefits new crews who can use it to explain to a service engineer how a recurring problem manifests itself. A port captain can then use this information to highlight fixes or track ongoing problems to others in the fleet as vessels travel between service areas. For example, a vessel may have an intermittent issue that takes a generator off-line. The database will highlight the problem to a vendor and allow the operator to document the issue and occurrences. Quick access to drawings, back-up programs or details on previous issues with corresponding resolutions will help the crew resolve issues quickly and accurately.

In addition to these new tools, vendors can broaden existing processes to address some of the challenges of new technologies. These methods are standard best practices that have proven to increase vessel availability. One involves the use of service personnel during commissioning, sea-trials or classification acceptance tests. During this time, the service technician becomes familiar with the vessel and the crew begins to forge a relationship with the service technician. Once the commissioning or trials are done, the service employee now has thorough knowledge of the ship he is servicing, and he has also cultivated a strong relationship with crewmembers, who are now assured of his expertise. More importantly, the service technician can assist the crew in becoming more familiar with new equipment and provide practical usage and service training. If a crew is operating its first diesel electric propulsion vessel, the service engineer can, for example, show the crew how the power management system operates, as well as how to access parameters on the propulsion drive.

These activities can also be part of an overall training plan, which typically includes land-based education performed in a classroom setting at an operator facility, shipyard or vendor facility. Such training involves the use of operation and programming guides, as well as hands-on teaching, to facilitate discussion points so the crew understands vessel operations. The crew can be trained on how a diesel electric system operates, how to start a generator or how to set up a switchboard.

(Continued on bottom of page 24)

Increasing interest in tests for

Vortex Induced Motions

About the Authors

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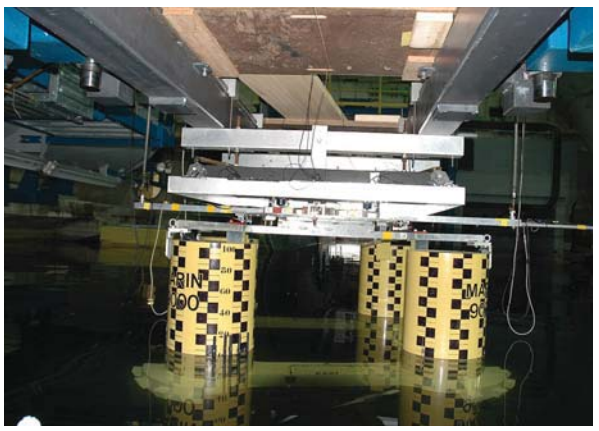
For MARIN, 2010 was a very busy year for Vortex Induced Motions (VIM) tests. The DeepDraft Semi of SBM Atlantia Inc., the Bigfoot TLP of Chevron and the Papa Terra field two-body, semi-submersible and TLWP of FloaTec are some of the structures MARIN has tested recently. All the VIM tests were successfully carried out in MARIN's Depressurized Towing Tank. Measuring 240 m x 18 m x 8 m, this basin has proven extremely suitable for testing due to its long tow length and large crosssection area. A uniform current flow was simulated by towing the model in calm water. Optimized test programs were carried out to investigate the VIM response. The tow tests clearly indicate that VIM response is dependent on current heading, velocity, hull design and column draught, shape and its orientation.

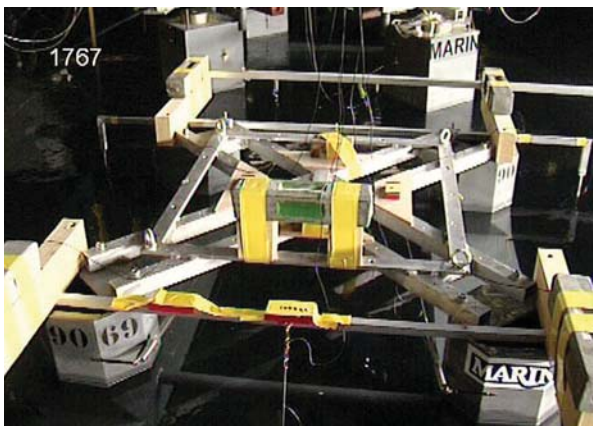
For most tests, a simple and easy-to-use set-up was created based on previous projects, utilizing an air bearing system and vertical mooring springs. The air bearings mean that the models can be tested at the correct mass/displacement ratio, which is important for TLPs. They have an extremely low friction in the horizontal plane and restrict the heave, roll and pitch motions of the structure.

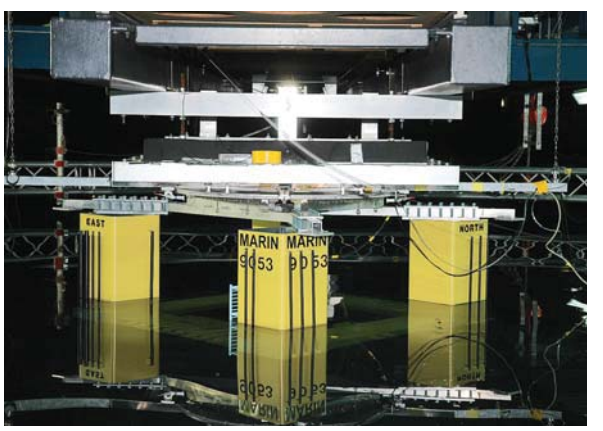
This setup ensures a set of 'clean' tests, where the total damping and flow patterns originate from the structure's hull alone. In addition, the tow heading of the model could be changed very quickly and efficiently in the basin.

CHALLENGING TWO-BODY VIM TESTS

The two-body VIM tests - with a TLP coupled to a semi-submersible in close proximity – were particularly challenging. Comparing the results for the TLP alone with the coupled tests sees the VIM response of the TLP change. If the TLP was downstream of the semi-submersible, this could relate to current shielding effects and an unsteady or disturbed inflow to the TLP. However, when the TLP is located upstream, the VIM motions change, probably due to the coupling with the hawser and semi-submersible. These tests again show that VIM is particularly important for fatigue issues and that it remains an important phenomenon that should be taken into account during the design stage.







Keep Your Vessel in Operation

(Continued from page 22)

This training provides the crew with practical experience with new equipment and enables them to better support the equipment installed, thereby maximizing their service.

Parts availability is another important aspect of great customer service support. To support vessels as they travel the globe, vendors should provide a supply chain for parts around the globe as well. One approach is to work with crewmembers on critical spares. Service engineers, for instance, can work with the crew to review on-board spares during any vessel visit. A vendor should also work with port captains and superintendents on any land-based spares. Fleet spares can be minimized by reviewing commonality and holding them at a centralized port location. To keep the inventory close to the vessel, the operator and vendor should discuss the vessel's upcoming charters. However, while vendors can take advantage of online tools like vesseltracker.com, these tools may not reflect accurate vessel position and charter. Therefore, a discussion between vendor and operator enables a vendor to ensure support during the voyage at particular locales. One approach is to inform service people in advance of the vessel and equipment installation. Another technique is to advise the operator of parts' locations in advance and let him know whom to contact to access those parts, should the need arise. To minimize those needs, tools like on-board diagnostics and remote monitoring are in place.

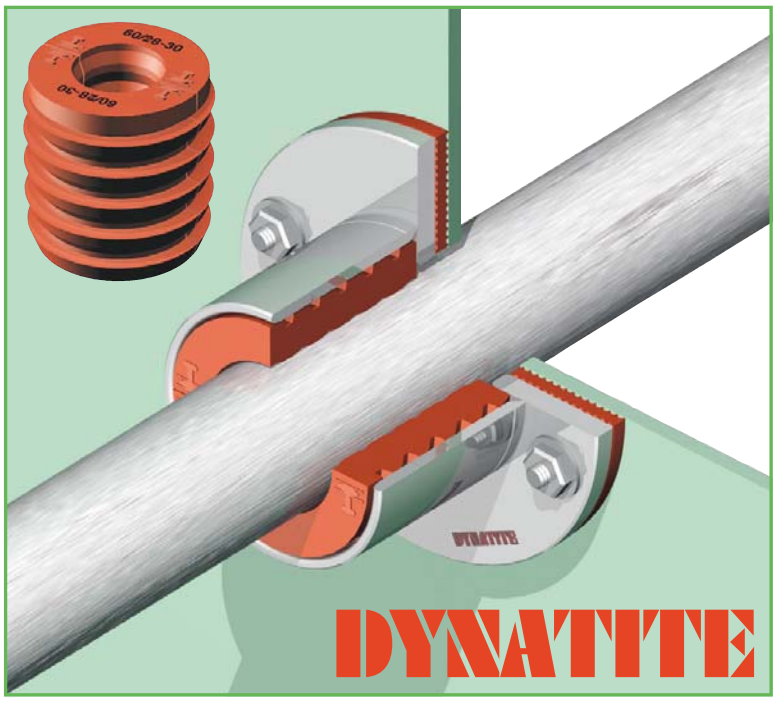
When combined, all of these items comprise a vast arsenal that a vendor can deploy to help owners and operators not only use the new technologies most efficiently, but to ensure fleet and vessel availability regardless of location. While the new technology is important, complete lifecycle support for the vessel and the technology is equally important. Vessel owners should consider this support before the equipment is purchased to ensure complete vessel availability that meets and exceeds vendor and customer expectations. Ultimately, the technologies can only deliver the benefits if they remain in operation and the vessel remains on charter.

FIRESTOP/WATERSTOP SEALING SYSTEMS FOR CABLE & PIPE TRANSITS IN SHIPBUILDING/OFFSHORE

A COMPLETE PORTFOLIO OF PROTECTIVE SYSTEMS WITH EXCELLENT PERFORMANCE AND OPTIMUM DURABILITY

EXPERTISE-DEDICATION-QUALITY-DURABILITY

Our development, test and production facilities are among the most advanced in the world. The factory is equipped with state of the art machines, which are tailor made to the requirements of our company. We work to a high-level ISO system, with unmatched involvement. Continuous investment in design technologies combined with highest quality polymers, is our guarantee for the safety of lives and equipment. That is why BEELE Engineering is internationally recognized by all relevant certification institutes and classification societies. Based on several decades of experience, we offer sealing technologies covering a wide range of applications. We provide safety for today, tomorrow and for the entire service life of your project.



DYNATITE®

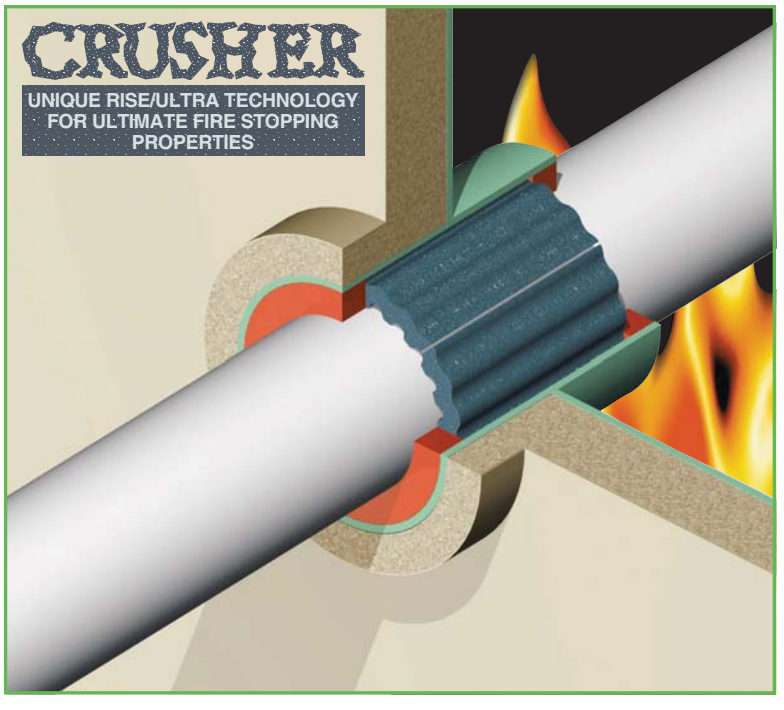
NEW TECHNOLOGY

- For applications where a high degree of (instantaneous) tightness is required.
- Dynamic sealing when a disaster occurs.
- Plugs are compressible and will return to their original shape after shock pressure.
- Easily withstands shock pressure loads of up to 15 bar (220 psi).
- Ideal solution for the columns of offshore rigs and collision bulkheads.
- For blast walls and subsea equipment/installations
- Breakthrough - dynamic compression
- Based on high-tech rubber grade and engineered profiling, the DYNATITE® plugs can be substantially compressed and get tighter with excessive pressure.

NOFIRNO®

NEW TECHNOLOGY

- Approved for harshest fire ratings for pipe penetrations (A, H and Jet Fire class).
- Allows substantial movement of the ducted pipe within the conduit.
- High pressure ratings - designed for gas and/or water-tight penetrations.
- Prevents corrosion inside the penetration.
- Longest service life and best Total Cost of Ownership on the market.
- NOFIRNO® rubber sleeves and sealant will remain stable and not be consumed by fire.
- Breakthrough - MULTI-ALL-MIX® SYSTEM
- Approved for any combination of cable and/or metallic, GRP or plastic pipes!



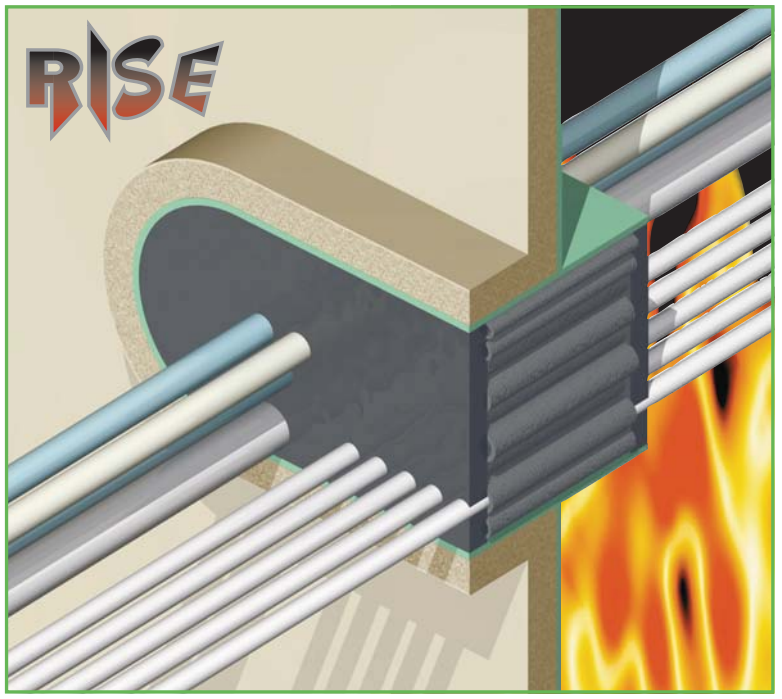
CRUSHER®

NEW TECHNOLOGY

- Most simple and effective system for all plastic pipe penetrations.
- RISE®/ULTRA C-FIT crushers squeeze down and seal opening during a fire.
- RISE®/ULTRA wraps to be used for oversized conduit sleeves.
- NOFIRNO® sleeves for filling larger spaces.
- NOFIRNO® sealant adheres well to plastics: fair degree of water tightness feasible.
- Breakthrough - adhesion of the system to the conduit sleeve and the remainders of the plastic pipe
- RISE®/ULTRA compound forms an adhesive mass during fire exposure to maintain mechanical stability!
- Approved for a multiple mixture of plastic pipes.

SAFETY DEVICES: CABLE & PIPE TRANSITS

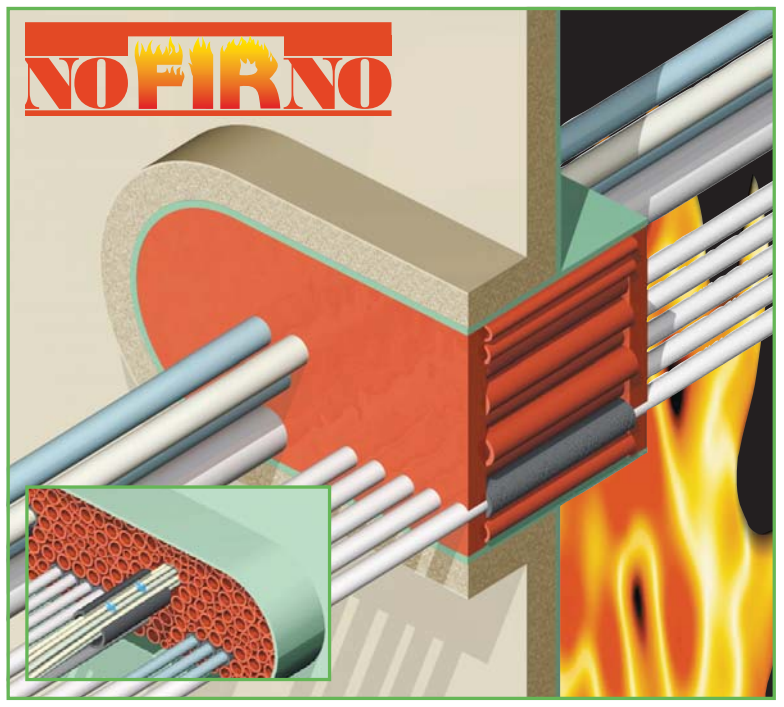
Minimizing the risks of fire and flood is the core business of BEELE Engineering. In our over 35 years of experience, we've developed a broad range of products that protect crew, assets and installations. Products that are a result of continuous hi-tech R&D efforts. Our customer-focused approach guarantees a continuous flow of new and improved products that respond to the demanding requirements of our customers. This, combined with our intensive testing programs in our recognized laboratories, is the best guarantee for product usability, ease of maintenance and long term safety. Our advanced systems have been tested to harshest environments and have delivered proof for decades in shipbuilding, offshore and industry.



RISE®

PROVEN TECHNOLOGY

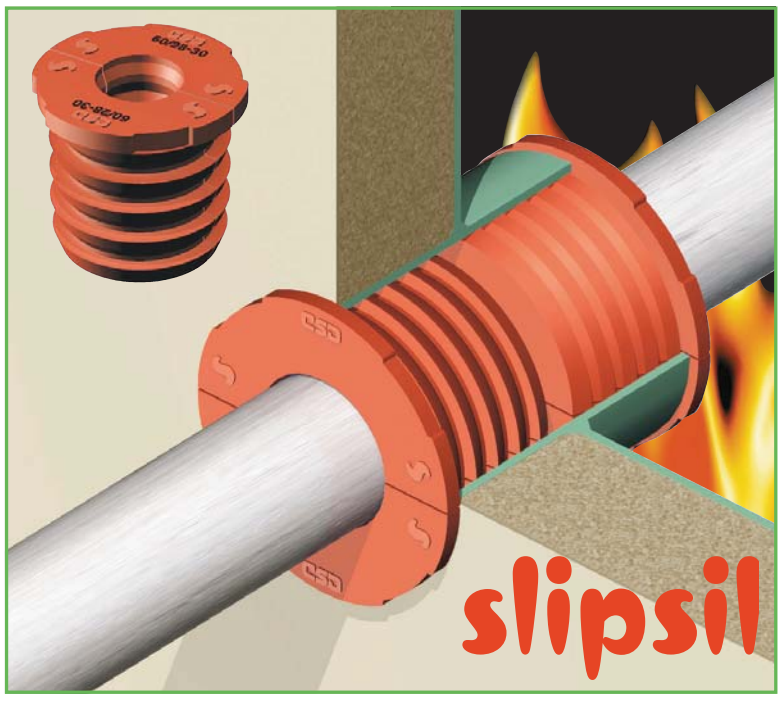
- For fire, gas, smoke and watertight sealing of multi-cable penetrations.
- Compact system. No precise fitting parts.
- No metal parts, no corrosion.
- Most cost-effective way of installation.
- No pre-engineering or special conduit frames.
- No restrictions on cable types and sizes, no insulation in front of the penetration needed.
- Adding or removing cables an easy matter.
- RISE® EXTEND-A-FRAME applicable for upgrading block systems - doubles the usable space!
- Proven - for new and upgraded installations
- The system of choice in shipyards worldwide for almost 20 years!



NOFIRNO®

NEW TECHNOLOGY

- For fire, gas, smoke and watertight sealing of multi-cable penetrations.
- Further improvement of the RISE® sealing system offering similar installation advantages.
- Multi-filler sleeves in sets of 10 to speed up filling of the larger spaces in transits.
- Made of the highly endothermic NOFIRNO® rubber grade.
- NOFIRNO® rubber will not be consumed by fire.
- NOFIRNO® sealant forms a ceramic char under fire load.
- Jet Fire tested for harshest applications.
- A-0 and H-0 tested without the use of any insulation.
- Breakthrough - bundled cable sets approved
- The system of choice for highest fire ratings and harshest environment!



SLIPSIL®

PROVEN TECHNOLOGY

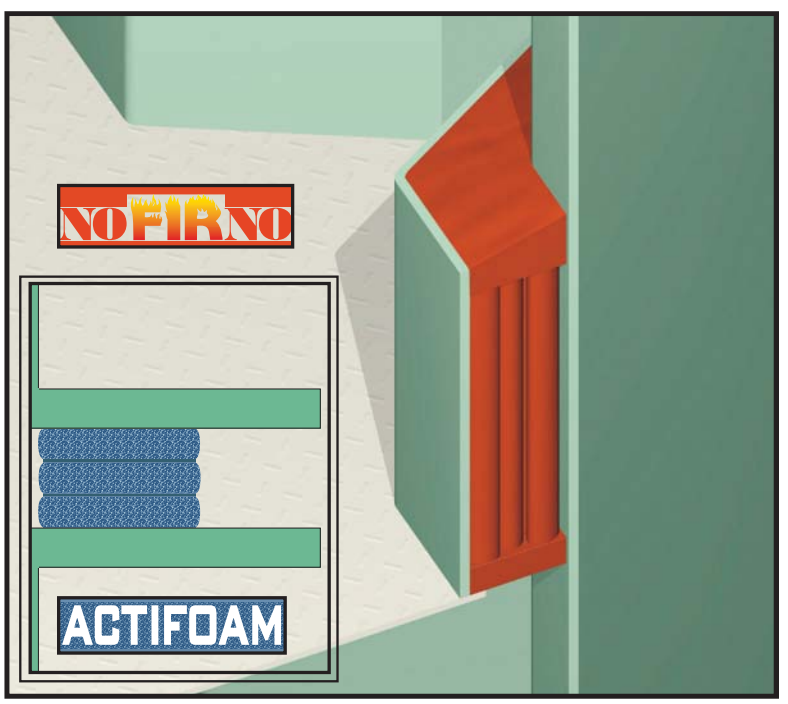
- Designed to provide fire safe, gas and watertight seals for pipe and cable penetrations.
- For transits carrying single or multiple metal pipes with the same diameter (hydraulic and pneumatic lines).
- Installs in a couple of minutes.
  Lubricate and push - that is it!
- No bolting or other mechanical devices required.
- Absorbs mechanical stresses, vibration and prevents galvanic corrosion problems.
- Wide temperature range: -50 °C up to +180 °C.
- Approved for ducting plastic pipes.
- Proven - optimum tightness ratings directly after installation but also during many years of service life.
- Stress relaxation avoided by engineered profiling.

FIRESTOP/WATERSTOP SEALING SYSTEMS FOR CABLE & PIPE TRANSITS IN SHIPBUILDING/OFFSHORE

CSD®

NEW TECHNOLOGY

- Conduit sleeves made of stainless steel 1.4571.
- Newest capacitor discharge welding technology.
- Avoids crevice corrosion.
- Overall corrosion prevention by an unique passivation process. Successfully tested according to DIN EN 60068-2-52 to simulate 20 years sea water exposure.
- Ceramic or PTFE (Teflon) coating inside the flanged conduit sleeves. NOFIRNO® gaskets available.
- Flanged conduit inlets milled to exact dimensions of the SLIPSIL® and DYNATITE® plugs and rounded off to avoid any damage to the plugs during insertion.
- Breakthrough - corrosion protection, even in seawater conditions, guaranteed for many years
- For cases where durability of the installation counts.



NOFIRNO® & ACTIFOAM®/ULTRA

- *Structural gap sealing systems for harshest fire exposure.*
- NOFIRNO® filler sleeves and NOFIRNO® sealant for structural gaps between floors and corrugated (blast) walls.
- Highly flexible (non-aging) rubber parts absorb vibrations and, to a fair degree, displacements.
- Watertight, fire tight, H and J-class acceptance.
- ACTIFOAM®/ULTRA is a single or multi-layer sandwich construction.
- High thermal insulation values. No water absorption.
- Specially developed for horizontal gaps between stacked modules on processing platforms.
- Breakthrough - ACTIFOAM® sheets can be layered with RISE®/ULTRA sheets to various heights.

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Business Model for Maritime Security

By Dennis L. Bryant

Osama bin Laden is dead. Al Qaeda is on its heels. Should we jettison maritime security? The answer is emphatically No!

Al Qaeda, even in its current disorganization, is capable of inflicting significant damage. That is the nature of asymmetrical conflict. There are other terrorist groups around the world, some affiliated with Al Qaeda, others not.

There is, though, a more important reason for maintaining — and improving — the maritime security program. That reason goes to the heart of the maritime industry. In our capitalist world, the maritime industry exists in large part to make a profit. If the industry (or a particular company in the industry) fails to make a profit over the long term, it will cease to exist. During the nineteenth century, there were many companies that made fine buggy whips. When consumers quit buying buggy whips and the companies lost money, they went out of business. Some industrial companies encountered high costs when their employees were injured on the job. Those companies found that it cost less to reengineer the process so as to reduce injuries. Poorly built ships tended to be unseaworthy and require costly maintenance. Owners found that it was less expensive in the long run to purchase more robust ships.

Fortunately, the maritime industry has incurred minimal direct losses due to terrorist attacks. The October 6, 2002 attack on the tanker Limburg off Yemen and the July 28, 2010 attack on the tanker M Star in the Strait of Hormuz are two of the few exceptions. The maritime security measures put in place after the horrific terrorist attacks of September 11, 2001 have undoubtedly played a role in keeping terrorist attacks against the maritime sector to a low level.

There is another aspect to maritime security, though, that is often overlooked – its origins.

On April 27, 1999, President Bill Clinton issued a memorandum establishing the Interagency Commission on Crime and Security in U.S. Seaports. The memorandum stated that, while United States seaports are an integral part of the nation's commerce, they are too often a major locus of crime, including drug trafficking, cargo theft, and smuggling of contraband and illegal aliens. The Commission was directed to undertake a comprehensive study of the nature and extent of the problem of crime in US seaports, as well as the ways in which governments at all levels are responding. The potential threat posed by terrorists and others to the people and critical infrastructures of seaport cities was mentioned once, almost as an after-thought. The Commission's final report was issued in the autumn of 2000.

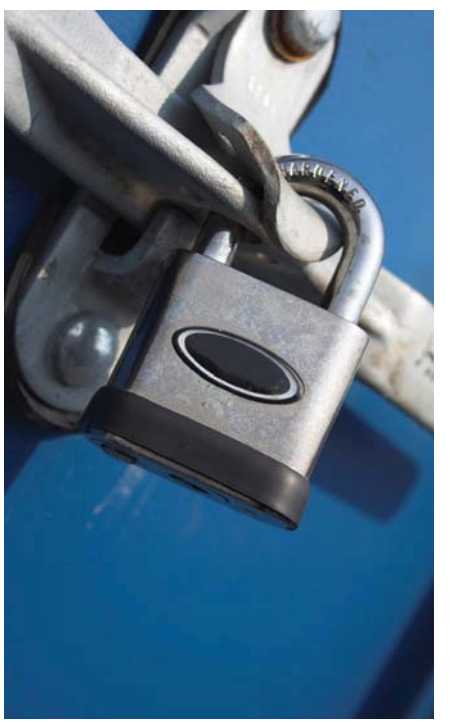
The 259-page report includes 20 major recommendations. Of those twenty, only four mention terrorism and in only one of those (focused on vulnerability and threat assessments for terrorism at US seaports) is terrorism given more attention than is crime.

The Port and Maritime Security Act of 2000 (S. 2965), sponsored by Senator Hollings, was introduced to implement the recommendations of the Interagency Commission. Like the report itself, the bill focused largely on the threat posed by criminal activity in US seaports. Little attention is paid to terrorism. In fact, in the 24-page bill, the word "terrorism" is used four times and the word "terrorist" appears just once.

There are two principle reasons for the lack of attention to terrorism in both the Interagency Report and the bill introduced in Congress to implement it. First, seaport crime was seen as by far the bigger threat. Second, everyone knew that reducing the crime threat also reduced the terrorism threat. Unfortunately, the reverse is not necessarily the case.

With the 9/11 terrorist attacks, the focus changed. The Port and Maritime Security Act morphed into the Maritime Transportation Security Act of 2002 (MTSA). Counter-terrorism went from being a tag-along to being the principal focus of the legislation. The United States Government got the international community on board, leading efforts at the International Maritime Organization (IMO) to adopt the International Ship and Port Facility Security (ISPS) Code of 2002. Considerable effort, both by governments and the private sector, was put into enhancing security so as to reduce the risk of maritime terrorism. As mentioned above, this effort has been largely successful.

Now is an opportune time, though, to reflect on the original problem: maritime crime. It is costing the industry and the economy millions, more likely billions, of dollars. While we have been looking for terrorists and terrorism threats under every rock and inside every container, we have allowed the criminal element to continue their activities.



Now is an opportune time, though, to reflect on the original problem: **maritime crime** ... it is **costing** the industry **billions**. While we have been looking for terrorists and terrorism threats under every rock and inside every container, we have allowed the criminal element to continue their activities.

I suggest that the time has come for the maritime industry – ship owners/operators, terminal owners/operators, port authorities, and insurers, among others – to examine their business processes paying attention to reducing the monies lost to crime. If the government is largely kept out of this examination then we can avoid the development of regulations and requirements without regard to cost, as sometimes happened with maritime security when its only goal was counter-terrorism. The solution also need not be "one size fits all". On the other hand, though, it will not do any of us any good if groups put their heads in the sand and deny that there is a problem.

Maritime crime is a major problem and demands a serious solution. We need to dust off the eleven-year-old Report of the Interagency Commission on Crime and Security in U.S. Seaports. There are undoubtedly similar reports in other nations and jurisdictions, as well as many prepared in the private sector. Careful review will show which recommendations have already been fully implemented, which have been partially implemented, and which got lost in the counter-terrorism shuffle. Industry (not government) can then decide which recommendations to implement, and which need to be addressed in ways different than government bureaucrats seized upon.

Under the standard business model, projections are run on the expected costs and the expected benefits of various courses of action. The same model can be applied to maritime security. If the projected cost of a particular security system exceeds the projected benefits, don't do it. But look beyond just this year's balance sheets. A new ship or a new crane is not purchased with the expectation that it will turn a profit in its first year. A security system is (or should be) viewed in no different light.

During this period where economic recovery is still somewhat precarious and reducing overhead is paramount, improving maritime security from a business prospective (rather than from a government perspective) promises to be a win-win development.

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Morrelly Homeland Security Center

A LIFT to Homeland & Port Security

By Greg Trauthwein, Editor

The story surrounding the creation of the Morrelly Homeland Security Center in Bethpage, NY, is not far afield from similar clusters of expertise around the world. Faced with the loss of traditional defense business on Long Island, the center is the result of government investment and the brainchild of a dedicated group of executives and corporations that collectively aspire to meld their accrued knowledge and experience with emerging technologies to create a new center of excellence, with an eye on the future technological needs across many markets.

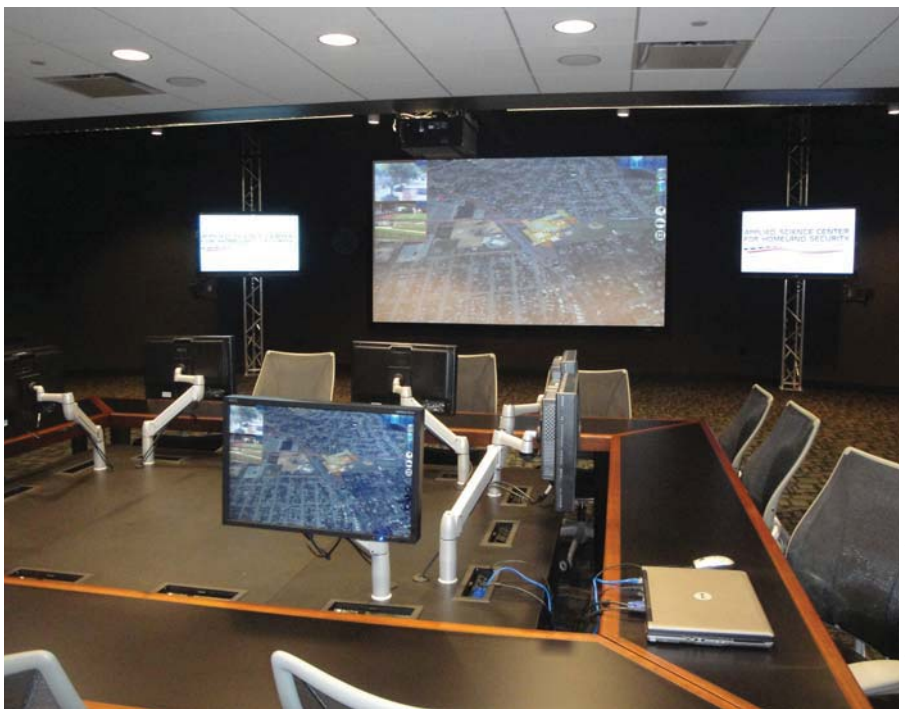
While Morrelly Homeland Security Center is not a maritime security entity, per se, the technologies it is creating are designed to be "plug and play" for any number of homeland security operations, including the ever-expanding field of maritime and port & harbor security.

The purpose of the Morrelly Homeland Security Center is to develop, design and produce products for the Homeland Security Market. The ultimate goal is to get like-minded companies under the same roof to achieve this.

"They [Ken Morrelly and Phil Teel of Northrop Grumman] really took to heart the new mission, as he recognized the potentially huge, new market for Homeland Security products and services in the wake of 9/11, and recognized that the companies best situated to address this need are the defense companies," said Frank Otto, President, Long Island Forum for Technology (LIFT) and President of the Homeland Security Foundation, which is part of the LIFT family. Command, Control and Surveillance technologies are the central foundation of the Homeland Security Foundation, Otto said.

While the story surrounding the center is not unique, the center itself is, due in large part to one of its chief drivers and namesake, Ken Morrelly.

Housed in the building where engineers built the famed F14 Navy fighter jet and the Lunar Lander, the Morrelly Homeland Security Center is a three floor, 90,000 sq. ft. Command, Control, Communications, Computer and Intelligence facility that was established with a $25m grant from New York State. Beyond brick and mortar, finance and technology, the Center — by the admission of the Research Partners — is equal parts Ken Morrelly's heart and soul: a drive to rebuild the technology tradition upon which Long Island was built, as well as a means to provide a new level of protection mandated by the terrorist attacks and subsequent threats of September 11, 2001. "We are one of the original tenants, and we got involved with the project about four years ago when we were still working in a 'virtual' building," said Water Poggi, founder, Retlif Testing Laboratories, one of the project's founding tenants. **"I remember Ken Morrelly taking us around the building when the only residents were a bunch of dead pigeons. But we saw merit in this because of the strength of the core tenants.** Even though we were working virtually, from the start we held monthly meetings and Strategic Planning Sessions. It was actually these Strategic Planning Sessions that were critical to the center moving forward following Ken's untimely death." While it was Morrelly's vision that helped create the building, he passed away just months shy of its official dedication in 2010.



(Photo Courtesy Applied Science Foundation for Homeland Security)

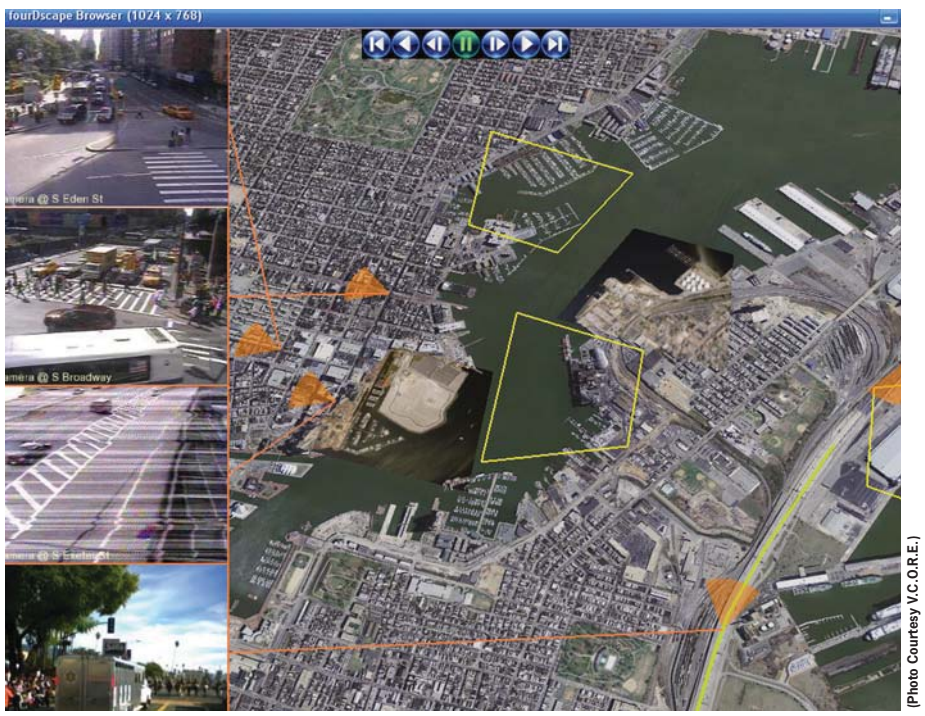
The COIN, or Cyber Operations Integrated Network Facility.

"This is a group of focused companies, a group where there is virtually no competition, and that can react very quickly [to each other and market needs]," said Retlif's Poggi.

"From my point of view, when Ken started talking on how to use technology to forward first response, I thought we could fit into a part of the solution," said Eduardo Browne, CEO, V.C.O.R.E. Solutions. "At the time of this journey beginning, the Department of Homeland Security was evolving; it was a huge fog which has taken six years to become more clear."

The facility is also unique because it brings together technology developers and suppliers with the end users. "The Morrelly Homeland Security Center is unique," said Otto. "It's not just the member companies, but it also houses the end users, the customers, such as the Nassau County Office of Emergency Management," as well as a burgeoning list of others, Otto said. This is important because the customers actually share the facility, and thus are uniquely positioned to help the residents and the center to create systems and technologies based on specific need. "Bringing together all of these group's was Morelly's vision; it was profound, and he cherry picked all of us for the project," said Retlif's Poggi.

"One of the coolest things about the center, it allows us to gather all of the players together in one room, to really talk about the real problems," said Albert Koenigsberg, President & CEO, GEOcommand. "Collectively at the center, the strength is that they bring in relationships with the customers – for example the Department of Homeland Security – together with the corporate entities and academia."



(Photo Courtesy V.C.O.R.E.)

Quite simply V.C.O.R.E. technology takes massive amounts of data and allows command and control personnel to seamlessly "fly" to and through a situation

THE PARTNERS

The tenants of the Morrelly Homeland Security Center each offer a piece to the overall puzzle, meaning that the Center

(Photo Courtesy Applied Science Foundation for Homeland Security)

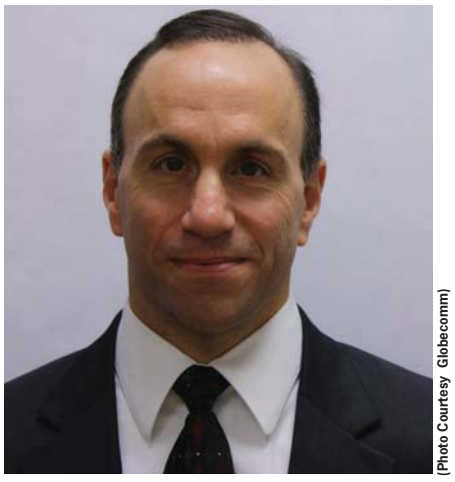
"The Morrelly Homeland Security Center is unique. It's not just the member companies, but it also houses the end users, the customers."

Frank Otto, President, LIFT and of the Homeland Security Foundation

(Image Courtesy Retlif)

"I remember Ken Morrelly taking us around the building when the only residents were a bunch of dead pigeons. But we saw merit in this because of the strength of the core tenants."

Walter Poggi, Retlif



(Photo Courtesy Globecomm)

Globecomm's satellite communications equipment and services provides the transport mechanism for all voice, data and video information ... at the Morrelly Homeland Security Center.

Paul Scardino, VP, Globecomm Systems Inc.

(Photo Courtesy V.C.O.R.E.)

(V.C.O.R.E.)brings together Balfour's patented fourDscape technology, a four dimensional browser, and PMC's M.C. Access&trade solution to manage facilities mission critical infrastructure assets.

Eduardo Browne, CEO, V.C.O.R.E.

seeks partners that are complementary, not competitive. For example, Globecomm's satellite communications equipment and services provides the transport mechanism for all voice, data and video information in situational awareness and first responder applications at the Morrelly Homeland Security Center. Globecomm also provides a key systems integrator capability that allows the commercial implementation of The Center's solutions, said Paul Scardino, Vice President, Corporate Sales and Marketing, Globecomm Systems Inc.

Globecomm, headquartered in Hauppauge, NY, is one of the two large corporate partners serving as foundation for the Morrelly Homeland Security Center, providing the critical satellite communication links that are essential not only for first-responders to communication, but for monitoring and surveillance for the duration of an operation. Globecomm, together with Northrop Grumman, make up the two biggest players among the research partners in the Morrelly Homeland Security Center.

Globecomm was involved in the Morrelly Homeland Security Center project from its inception, as Globecomm's then president and co-founder, Kenneth A. Miller, was intimately involved with numerous technology projects in New York, and he worked directly with Ken Morrelly. Miller never had the opportunity to see the physical manifestation the project, as he passed away before the center opened, in July 2008, said Scardino.

Retlif Testing Laboratories currently has three employees at the Morrelly Homeland Security Center, with a maximum capacity of about seven in its space. The center is designed to create products to serve homeland security operations: "When products are developed, they have to go through competence testing to confirm that they not only work, but that they work in the environment for which they are intended to be used," said Retlif's Poggi. "Retlif's role is to ensure that the products work in the real-world environment for which they are designed. That's

(Photo Courtesy GEOCommand)

"The ports are a critical infrastructure that present huge threats, and if we can't bring these technologies together to better protect our ports, than shame on us."

Albert Koenigsberg, President & CEO, GEOcommand

the expertise we bring to the center."

Created by Balfour Technologies and Power Management Concepts (PMC), V.C.O.R.E. was the first company to be launched in the new Morrelly Homeland Security Center (MHSC). V.C.O.R.E. Solutions was created to provide real world solutions for homeland security, emergency preparedness, and rapid response environments.

V.C.O.R.E. offers an interoperable virtual four-dimensional visualization platform. It brings together Balfour's patented fourDscape technology, a four dimensional browser, and PMC's M.C. Access&trade solution to manage facilities mission critical infrastructure assets for authorities responsible for securing and protecting infrastructure, borders, ports, transportation hubs. The platform enables incident commanders, police and fire personnel, first responders, as well as security personnel and property management with vastly expanded awareness of developing situations in wide open border terrain, dense urban areas, or inside critical infrastructures.

Quite simply, the technology takes massive amounts of data and allows command and control personnel to seamlessly "fly" to and through a situation, providing to first responders and decision-makers an unprecedented and invaluable birds-eye view, designed to ensure situations are managed and controlled as quickly – and with a little loss of life and infrastructure – as possible.

GEOcommand is a recent addition to the team, and it offers a comprehensive, multi-community solution for information sharing among emergency responders. Its unique combination of services and GIS-based software allows the free exchange of data necessary for situational awareness, protecting the public and first responders in both day-to-day and large-scale incidents. The GEOcommand solution bridges technology gaps between agencies, integrates existing software and workflows, allows local maintenance and administration, and establishes complete interconnectivity between adjoining communities with mutual aide agreements and multiple first responder organizations.

GEOcommand is unique, in that it is a 'middle-ware' company that allows for the smooth exchange of data from disparate sources. "We help to smooth and integrate the flow of data, including visual, biological, and pre-

(Photo Courtesy Retlif)

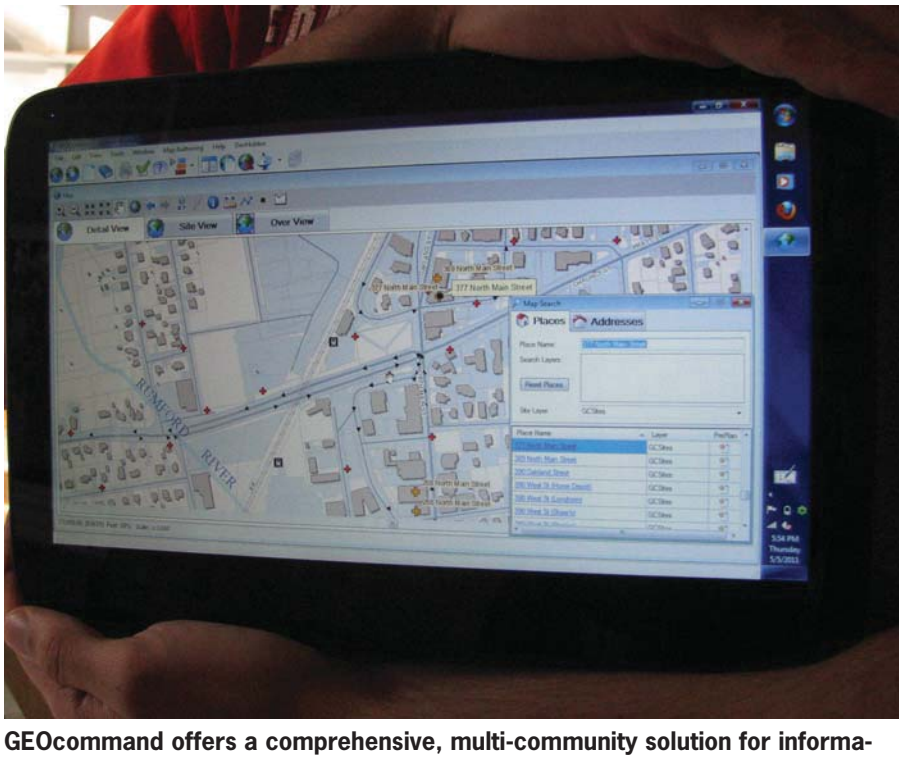
Retlif is the partner tasked with testing the new technologies, to ensure not only that they work, but that they work in the intended environment. "Retlif's role is to ensure that the products work in the real-world environment for which they are designed. That's the expertise we bring to the center," said Walter Poggi.

planned information from and between fire departments, for example," said GEOcommand's Koenigsberg. "The ports are a critical infrastructure, These are open, critical infrastructures that present huge threats, and if we can't bring these technologies together to better protect our ports, than shame on us."

GEOCommand was brought into the fold in the autumn of 2010, when Koenigsberg was researching public safety on the internet, and he discovered the Balfour technology. "That is some super cool technology."

Strategic Planning Partners (SPP) LLC is one of the small, partners in the Morrelly Homeland Security Center, but it is strategically key to opening the center's offerings to the maritime community, said Michael Griffin, co-founder and Director of Emergency Preparedness Service at SPP, with Peter Sammis, both former U.S. Coast Guard officers with a plethora of industry insight and contacts. "Coming off of active duty, we decided that we really wanted to help bridge the gap between government and the private sector," said Michael Griffin, co-founder and Director of Emergency Preparedness Service at SPP. "At the Morrelly Center, we are helping the partners to advance the system, to open the pathways to the world of port security. As we are the only non-technical partner at the center, we act as a sounding board to look at the new technologies being developed."

"I always, as a small business, see the strength in partnerships," said Griffin. "When companies can share expertise as we do at the center, it strengthens the whole, as everyone in that building has a hand in the world I work in," said Griffin of SPP. "We put our heads together to help solve problems, and as a non-profit entity, it helps to bring a lot of the potential customers in the door."



(Photo Courtesy GEOCommand)

GEOcommand offers a comprehensive, multi-community solution for information sharing among emergency responders.

TURNING A PROFIT

While each of the partners is dedicated to building a solution to myriad homeland security needs, each also is engaged in private business with the need to operate efficiently and profitably. Most admit that the center is in its infancy and the long-range return on investment is still not clear. "The companies at the center pay rent, a rent which is fairly higher than market value because of all of the amenities, particularly the access to other like-minded companies and connections to the end customer," said LIFT's Otto.

"Have I made any money there? No. Will I make money there? Probably, but it will take some time," said Retlif's Poggi.

"We have done several small projects because we are primarily in the infancy of the business development stage now," said Globecomm's Scardino. "But we continue to bring in prospective clients and partners. It is still open and evolving and all Resident Research Partners are excited by the potential capabilities."

Griffin of SPP is quick to point out that, as a smaller company member, the center is a boon for him to help open doors. "If we approach (potential customers) as individual companies, we are just another company knocking on the door looking for business. It carries significantly more weight if the foundation comes knocking." said Griffin.

V.C.O.R.E.'s Browne is bullish on not only the direction of the center, but the business as well. "We have been booking business, and we have been hiring people and continue to grow. Today we have nearly 20 people; we intend to double that in 12 months," said VCore Solution's Browne. "Ken was clear from the outset that we were going to build a business channel, and he has proven to be right."

THE PARTNERS

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AFCO Systems is a green revolution in data center resource management solutions. **http://afcosystems.com**

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GMATS

Evolving as a Global Training Asset

By Joseph Keefe

Legacy of excellence dates back to the 1960's. Cutting-edge development of customized education and training programs for the global maritime industry continues on today – and tomorrow.

Though it is no secret that the Global Maritime and Transportation School (GMATS) offers some of the most extensive maritime and transportation professional education available in the world today, industry leaders may also be surprised to learn that the most visible name in maritime education in North America is as agile as it is big. In fact, and at the heart of the GMATS mission is its ability to quickly and efficiently develop training programs designed to meet the specific needs of a company or organization. Expanding rapidly from its formal roots in 1994, the school now stands at the epicenter of any number of training initiatives, spanning four divisions of learning.

DEEP ROOTS

Continuing Education for maritime professionals actually began at Kings Point in the 1960's with the Nuclear Ship Savannah Project, where Savannah's engineers received specialized nuclear engineering training at the U.S. Merchant Marine Academy. Eventually, and responding to demands presented by the transportation industry itself, the unique resources of the Academy were made available through the establishment of the USMMA Continuing Education in 1994. The five-year period that followed resulted in a dramatic increase in both the size and scope of its courses and programs. In 1999, the name of the program was changed to the Global Maritime and Transportation School (GMATS).

GMATS TODAY

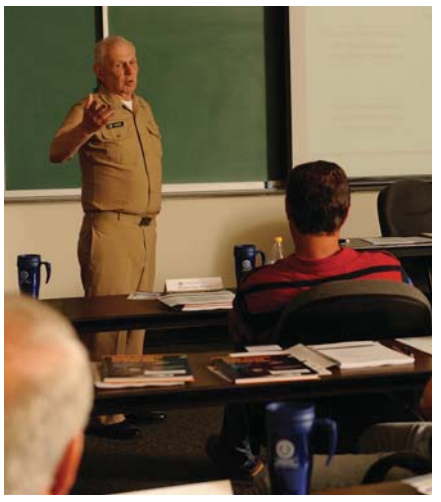
As reflected in its mission to "prepare private sector, government, and military professionals to be global leaders and innovators in maritime operations, intermodal systems, and transportation security," the reach of GMATS extends into virtually every sector of maritime and transportation disciplines. Co-located with the U.S. Merchant Marine Academy on 82 acres on Long Island Sound in Kings Point, NY, GMATS is divided into four separate divisions that embody the scope of its curriculum, research studies and technical assistance:

Table 1

- Nautical Science and Military Training
- Marine Engineering
- Transportation Logistics and Mgmt.
- Research and Special Projects

You probably already know that GMATS provides the Basic Officer Training Course (BOTC) for all new uniformed candidates who enter into the National Oceanic and Atmospheric Administration (NOAA) Corps. Beyond this, however, and within the GMATS divisions depicted in Table 1, more than 140 professional education and training programs are offered. Equally important is GMATS' ability to develop specialized, customized education and training programs that meet the specific needs of any transportation organization. Last year alone, 4,000 students and their sponsoring organizations took advantage of the GMATS menu of course offerings, reflecting a growing client list that includes numerous government, military, and commercial entities.

State-of-the-art Transas simulation and ECDIS equipment.



Captain George Sandberg instructs BRM students.

GMATS Instructor Christian Hempstead.

CUSTOMIZED SOLUTIONS

Apart from its standard commercial course offerings designed to meet U.S. Coast Guard and international training requirements, GMATS also specializes in developing training programs designed to meet the specific needs of a company or organization. Drawing upon more than 300 subject matter experts to provide instruction, GMAT faculty – academia from other colleges and universities, and guest lecturers from private-sector, military, and government organizations who are experts in their field – bring a wealth of diversity and talent to the classroom. Where appropriate, classroom presentation is augmented by extensive use of the Academy's laboratories, simulators, and waterfront vessels.

THE REINAUER EXPERIENCE

In May, and as a perfect example of its nimble learning platform, two customized STCW-compliant Bridge Resource Management (BRM) courses were put together by GMATS for Reinauer Transportation Company. Using intensive case study material, award-winning professor (Captain) George Sandberg led students through a myriad of lessons involving situational awareness, decision making, leadership, crisis management, communication, master/pilot relationships, and voyage planning. Incorporating much more than the required U.S. Coast Guard and STCW mandated content, the course(s) also included extensive use of the latest version of Transas NaviTrainer 5000 simulators, as well as Transas ECDIS units and the lively interaction of as many as four different student-piloted vessels in the same exercise. Significantly, the exercise(s) were customized for the type of equipment typically employed by Reinauer's Mates and Captains, adding to the realism and utility of the learning experience.

In addition to the BRM curriculum, participants also were presented with the GMATS 8-Hour Advanced Simulation Training certificate. The simulation, led by GMATS ECDIS subject matter expert Christian Hempstead, included integrated training involving safe navigation and maneuvering of multiple towing vessels and barges in various conditions of visibility, wind, current, challenging traffic and emergency situations. Hempstead, widely regarded as North America's foremost authority on ECDIS training for professional mariners, tailored the simulation directly to the needs of the Reinauer's professional mariners. The full course, BRM plus simulator training – also attended by this writer – was a powerful learning experience.

Although Reinauer's bridge personnel were already compliant with all aspects of their licensing requirements, the New York-based marine transportation group regularly elects to provide continuing education for their marine personnel. As is usually the case, they chose GMATS in this instance, rotating two groups of 19 mates each through the customized program. Frank Kuziemski, Fleet Manager for Reinauer, also oversees training requirements for the 75-vessel operation from his Staten Island offices. He told Maritime Reporter in June, "GMATS' ability to bring together large groups is

Full mission Kongsberg Simulator.

important to us. Not everyone can do that." As a regular client of GMATS, Kuziemski added that the newly upgraded, state-of-the-art simulator equipment was also a key factor in their decision to use GMATS.

OUTSIDE THE BOX

Some GMATS training programs, with special arrangements, can be offered onsite at the client's facility. And, well beyond the full array of STCW-compliant and U.S. Coast Guard approved course offerings that augment GMATS' better known military training programs, the innovation continues. Transportation professionals can also choose from a wide menu of other, industry-related GMATS Programs – most eligible for VA Benefits – that include:

- **ODU Business Gateway and GMATS Partnership in Engineer Training:** Old Dominion University's (ODU) and the Global Maritime and Transportation School (GMATS) have partnered to present training for the Professional Marine Engineer. Together ODU and GMATS will provide comprehensive courses available to both Maritime Companies and the Individual Mariner.
- **GMATS and American Military University (AMU) Partnership:** AMU is a member institution of the American Public University System (APUS), which is regionally accredited by the higher learning Commission (HLC) of the North Central Association and, nationally accredited by the Accrediting Commission Distance Learning Education Training Council. GMATS has established a cooperative agreement with AMU. Under the degree granting authority of AMU, a Master's of Arts degree in Transportation and Logistics Management and Associates Degree in General Studies are offered. Numerous GMATS courses have transfer credits to AMU as part of these degree programs.
- **MASTER'S DEGREE PROGRAM:** Particularly relevant for transportation professionals and military reservists, this degree can be completed in a distance learning format at home, at sea, or abroad. GMATS courses can be completed in one and two-week increments that are ideal for the busy professional and for military reservists completing two-week annual training programs at GMATS.
- **ASSOCIATES DEGREE PROGRAM:** Designed for students who seek a two-year degree as either their final degree in higher education or the foundation for further study at the bachelor's level. Part of this program is offered at GMATS as part of the Crew Advancement Program.
- **THE MATE 500/1600 GT LICENSE PROGRAM WITH TOWING OFFICER ENDORSEMENT**

Perhaps better known for its service to military groups and federal employees, the broader mission and performance of the Global Maritime and Transportation School has long since eclipsed that important, but narrow sector of the maritime transportation training demographic. Conveniently located within easy reach of three major airport hubs and boasting access to state-of-the-art simulation and training equipment, GMATS has not only emerged as an industry leader in delivering high-quality regulatory training but also in its ability to deliver tightly focused, customized programs. That's hardly surprising, but it is, at the same time, also hard to beat anywhere else. – MR.

http://gmats.usmma.edu

Offshore Wind Spend

$55 Billion Forecast by 2015

By Adam Westwood, Lead Author, Energy Business Analysts Douglas-Westwood

There is now almost 3GW of offshore wind capacity online worldwide with in excess of 2GW currently under construction. Total planned capacity is currently in excess of 100GW. The industry has moved out of its infancy and, whilst there are major challenges ahead, it is now becoming increasingly independent from the onshore wind industry.

MARKET FORECAST

Between 2006 and 2010 a total of 2.5GW of offshore wind capacity has been installed. Over 11GW of new capacity will be added over the next five years. The UK, Germany and China are the three biggest markets, which together will install almost 9.3GW or 83% of total global capacity for the period.

This growth in installation translates into $55B of offshore wind capital expenditure being forecast for the 2011-2015 period. Between 2008 and 2010 expenditure has doubled year-on-year due to increased activity and increased costs. Expenditure will grow to over $17.4B annually in 2015. Whilst there is a dip in 2014, the spread of expenditure is expected to smooth this out. The UK is the largest market, with over $21.7B of expenditure and peaks in 2012 of $7.3B and $5.8B in 2015. Germany too has growing expenditure through the period rising from $217B in 2010 to $6.2B in 2015.

EUROPE

Europe is still very much the focus for offshore wind activity. Installations off the UK continue to increase pace, German projects are now entering construction, Belgium continues to develop at a modest pace and activity is imminent again off the Netherlands.

With 4.4GW of new capacity coming online, the UK is the biggest market for the 2011-2015 period. Installation rates around 2013 and 2014 are slightly lower ahead of the first Round 3 and Scottish Territorial Waters projects.

Having long promised market growth, Germany is now starting to live up to expectations, with construction underway on the first commercial projects.

Recent licensing of projects off the Netherlands has given a boost to the market here after a lack of commitment and uncertainty has clouded the outlook in the past few years. Contracting on approved projects can now get underway.

(Photo Courtesy Wärtsilä)

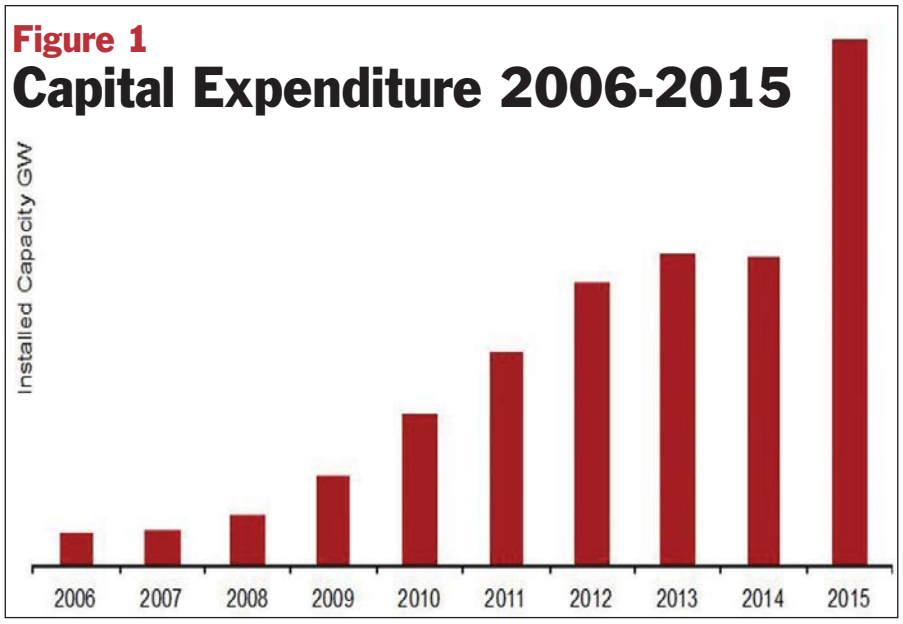
ASIA

The Asian market is perhaps the most exciting. With little visibility on activity to date, the emergence of China in particular has surprised many. It is the third largest market in terms of expenditure between 2011 and 2015. With projects reaching completion in as little as three years (compared to typically six to ten in Europe) we see significant upside potential here.

We anticipate that China could become the world leader in offshore wind, overtaking the UK early in the next decade. Having entered the offshore wind industry only recently, the country has massive ambition. A succession of small projects is now underway with construction of many larger projects imminent. With firmer legislation and tariffs due imminently, the growth is expected to be rapid – as happened once China set onshore wind tariffs and policy. The imminent implementation of massive smart grid upgrades will boost the potential of offshore further.

Elsewhere in Asia, South Korea is emerging as a potential growth area. Ambitious plans call for 5GW of offshore wind capacity by 2019. The first site of 1GW is moving ahead, the first phase of which will see 20 test turbines installed in 2013, with the remaining turbines following quickly.

Figure 1
Capital Expenditure 2006-2015



Opportunity Knocks

The proliferation of Offshore Wind energy projects globally has created an opportunity for the maritime industry to fill a specialty niche. Pictured left, Wärtsilä and Aker Solutions recently agreed to jointly develop a new and environmentally sound concept for offshore wind farm installation vessels.

NORTH AMERICA

The approval of the 130-turbine Cape Wind offshore wind farm is of great significance to the industry in the US. The fate of that project has long been expected to herald the potential of other offshore wind projects in the country. The project's progression will necessitate new legislation and policy on offshore wind. The Obama administration has taken a positive stance on offshore wind to date, which is promising. The difficulties come with how implementation will be carried out amongst different states.

There are now a large number of proposed projects. By European standards, many of the proposals would be classed as optimistic at best but others are progressing. The next year should offer project developers the necessary clarity in terms of legislation.

With Cape Wind inching towards construction, the US supply chain must now respond. With no dedicated manufacturers or contractors, early projects may struggle to control costs.

MARKET DYNAMICS

Costs have plateaued for the main part; large scale investment in the supply chain has been met by demand from project developers. With the ramp-up in construction expected to continue for much of the next five years, cost savings are expected to be mediocre. The demand upon the financial sector is rising. Confidence

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Europe is the focus for offshore wind activity. Installations off the UK continue to increase pace, German projects are now entering construction, Belgium continues to develop at a modest pace and activity is imminent again off the Netherlands.

amongst investors is slowly growing but cautiousness remains. The reliance on the European Investment Bank to support projects is risky. Further commitment from Governments is needed beyond the near-term future in order to give comfort to the banks and private equity. The level of investment required is unlikely to match investor's appetites otherwise.

Supply chain development is happening quickly and there is greater distinction between the offshore and onshore sectors. A year ago the UK may have had the most offshore wind capacity in the world but it had little to show for it. Twelve months on and multiple offshore turbine manufacturers are establishing themselves in the country and other areas of the supply chain are following suit, re-invigorating troubled manufacturing companies. In 2010 turbine manufacturers Siemens, Clipper, Mitsubishi, GE and Gamesa all committed to a UK presence. Off Germany, careful investment over the past five years is paying rewards, with German companies now taking a large share of the European market.

To date there have been few options for developers in terms of turbines. Vestas and Siemens have held dominance over the market with their 3MW and 3.6MW turbines respectively. The advent of 5MW class turbines has helped open the market with 5MW and 6MW turbines from Repower Systems and the 5MW Multibrid turbine from Areva Wind. These smaller manufacturers are now taking market share from the leaders as projects off Germany move forward and larger-still UK projects draw near.

Technology progression is visible and offers the potential for greater efficiency and cost savings. Developing installation techniques, such as increasing the use of dynamic positioning on vessels, appears to be demonstrating time savings. Many new installation vessels are under construction in Asian yards from existing and new operators seeking to win a share of the burgeoning industry. With projects using larger hardware in more demanding locations, newbuild vessels must be specified to cope with the changing nature of sites.

Changes in the operations and maintenance phase are taking place. The first offshore accommodation platform has been installed at Horns Rev II with a further two contracted for other projects. Personnel transfer vessels will be in high demand and are evolving to suit the needs of new projects. Turbine reliability is often an area manufacturers shy away from offshore, although Repower Systems has been boasting of over 97% availability on its 5MW turbines at the Alpha Ventus project off Germany – comparable to an onshore site. These are figures investors want to hear and which bring confidence to the industry.

CONCLUSIONS

With over 3GW of capacity online by the end of 2010 and a further 2GW under construction, the offshore wind industry is stronger than ever. While the UK has helped build the momentum in recent years (and will continue to do so) the large German market is now coming to life with project construction finally underway. Outside of Europe there is a spark of activity in China which could generate the largest market worldwide in as little as ten years.

Global Overview

Offshore Windfarms in Operation, Under Construction and Planned

(in MW)

	In operation	Under construction	Planned
Canada	-	-	1,750 MW
United States	-	-	23,865 MW
Albania	-	-	1,259 MW
Belgium	195 MW	-	1,594 MW
Denmark	876 MW	12 MW	873 MW
Egypt	-	-	1,200 MW
Estonia	-	-	1,700 MW
Finland	30 MW	-	3,736 MW
France	-	-	3,000 MW
Germany	185 MW	335 MW	25,105 MW
Ireland	25 MW	-	1,828 MW
Italy	1 MW	-	2,147 MW
Malta	-	-	200 MW
Netherlands	247 MW	-	5,423 MW
Norway	2.3 MW	-	10,435 MW
Poland	-	-	299 MW
Romania	-	-	500 MW
Spain	10 MW	-	500 MW
Sweden	163 MW	-	2,857 MW
United Kingdom	1,341 MW	2,238 MW	43,652 MW

The offshore wind power industry has some way to go to prove it can take its place as a sustainable part of the energy mix, according to Offshore Proof, a survey commissioned by PwC of major players in the industry including developers, manufacturers and utilities firms.

Source: GBI Research, PwC analysis (data gathered April 2011)

The Authors

Ian Jones is an analyst for DW, contributing to the firm's commissioned research, commercial due diligence and published market studies in the oil and gas and renewable energy sectors. Recent work includes a major study on building an industry for RenewableUK (Formerly BWEA), a major strategic study on Norway's offshore wind options and 2020 targets for the UK's Department of Business, Economics & Regulatory Reform. He is a contributing author of DW's renewable energy publications including The World Wave & Tidal Energy Market Report and The World Offshore Wind Market Report.

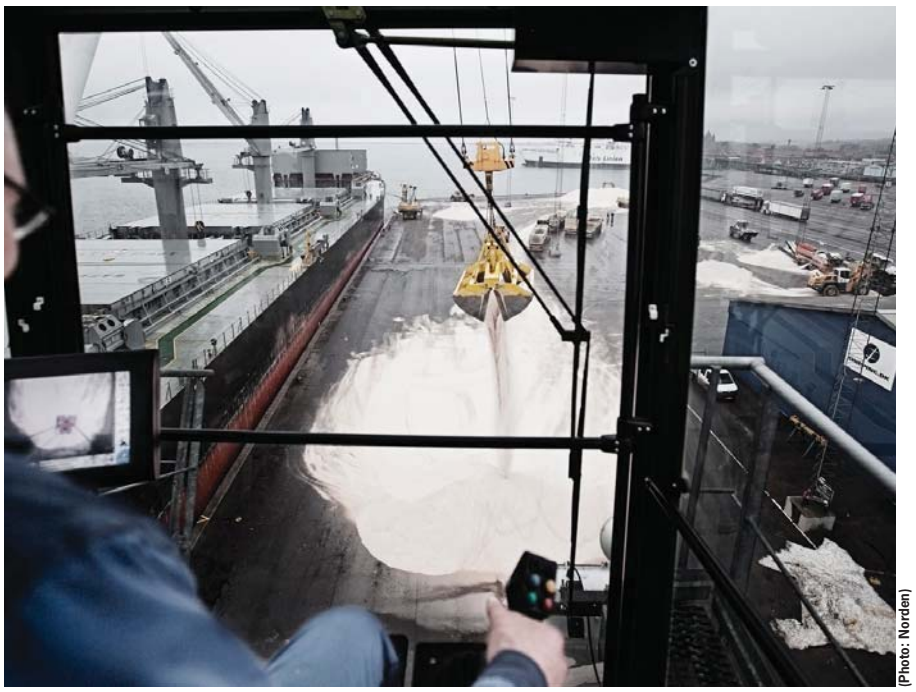
As a senior analyst, **Frank Wright** project manages commissioned research and market studies with a focus on renewable energy. He studied mechanical engineering at the University of Edinburgh and then worked for Aberdeen Drilling Consultants as a project engineer. He then completed a postgraduate degree in Industrial Design Engineering including a design project with Unilever. At ITI Energy he worked as a technology analyst carrying out detailed market assessments and developing R&D programme proposals. Prior to joining Douglas-Westwood, Frank led market analysis activity at Scottish Enterprise in offshore wind and was on the selection panel for the Wave and Tidal Energy: Research, Development and Demonstration Support (WATERS) fund.

Danish View on

Bulk Carrier & Tanker Markets

Many Danish shipowners operate globally with substantial fleets of tankers and dry cargo vessels in different categories, and typically in various vessel pools. Maritime Reporter finds out the views of the market by some main players in both sectors.

By Henrik Segercrantz .



(Photo: Norden)

PRODUCT TANKER MARKETS

The tanker segment of Maersk Tankers, the tanker arm of the A.P. Moller - Maersk Group, ranges from 300,000dwt VLCCs down to below 25,000dwt, trading worldwide on the major tanker routes, but also regionally in Asia and in Europe. Apart from being present in the VLCC market, Maersk Tankers operates the world's largest product tanker fleet, 144 vessels in December 2010, and is also present in the gas carrier market. The total operated fleet amounts to 255 vessels with 23 ongoing newbuildings. Maersk Tankers, in April 2011, has eight VLCCs of the Nautica class in the fleet with four vessels under construction, at STX. "Currently there is surplus on the VLCC market, which is quite fragmented. There are a lot of owners with one, two, three, four ships," said Tommy Thomassen, Senior Director at Maersk Tankers. "I am not sure we can take out the surplus with slow steaming, especially when we do it when in ballast only. Whether we are able to place our ships better with slow streaming, that is what makes a difference." He notes that it is a different market than the container market, "which is very consolidated, with a few large operators that control the fleet." The tanker market is much more fragmented and nowhere near the level of optimization as the container fleet. "A lot of ships are trading spot, even VLCCs. If you are too late then there is no cargo," Thomassen notes. "Currently we reduce our costs if we can slow steam in ballast conditions. In that term, it also reduces our loss. Today, all VLCC operators are running with a loss." The first of four newbuildings being built by STX in South Korea, Maersk Saga, is to be delivered this spring. The vessel is the first of such ships with waste heat recovery and is equipped with many environmental features.

Thomassen says they have discussed sharing the benefits from slow steaming with their clients, also when carrying cargo. "The interest has been limited, but they are surely interested when we talk about environmental issues. The incentives are not there in the current commercial value chain." Describing the benefits for a VLCC, he says: "A speed reduction from 15 to 10 knots in ballast reduces consumption from 80t/day to below 40t/day, with a corresponding CO2 reduction." **The normal speed at ballast is 15 knots. The incentives for savings are huge. If we can reduce the loading to 45-50%, we are down to about half the cost and half the CO2 emissions. This corresponds to savings of some $20,000/day.**

Nordic Tankers currently operates approximately 90 tanker vessels having owned 10 ships before January 2010,

"Currently there is surplus on the VLCC market, which is quite fragmented. There are a lot of owners with one, two, three, four ships," said Tommy Thomassen, Senior Director at Maersk Tankers. "I am not sure we can take out the surplus with slow steaming, especially when we do it when in ballast only. Whether we are able to place our ships better with slow streaming, that is what makes a difference."

when Clipper sold some chemical tankers to Nordic Tankers and became a 31% shareholder in the company. The other main shareholder is Indian company Siva with 30.9%. The company's goal is to be a leading global operator of chemical and product tankers with more than 150 ships by 2013. "2010 was a difficult tanker market condition. We are also looking at 2011 to be challenging although there are some signs that improvements could be coming during the course of 2011 leading in 2012," says Tommy Thomsen, CEO. The fleet owned, time chartered, managed an in the Nordic Womar Pool consists of 6 own product tankers, 16 6,000-20,000dwt chemical tankers, some 50 managed chemical tankers up to 22,000dwt and some 30 chemical tankers in the Nordic Womar Pool.

The company is focusing on chemical tankers up to 25,000 dwt. "So far the fleet has predominantly been employed in the Atlantic Basin, where we generate the best time charter returns," Thomsen said. The company entered in a pool operation with Womar, operating below 20,000dwt chemical tankers in Asia "where we see growth coming." The company is also building up a 19,000 dwt stainless steel tanker pool for round the world service and around the US - Caribbean transport business. "This market is a niche market, requiring specialized stainless steel tonnage with multiple tanks. The company operates some 18 ships on that market right now," notes Michael Adeltoft, Vice President. "We have been in that market for some 25 years and the commodities cover the whole spec."

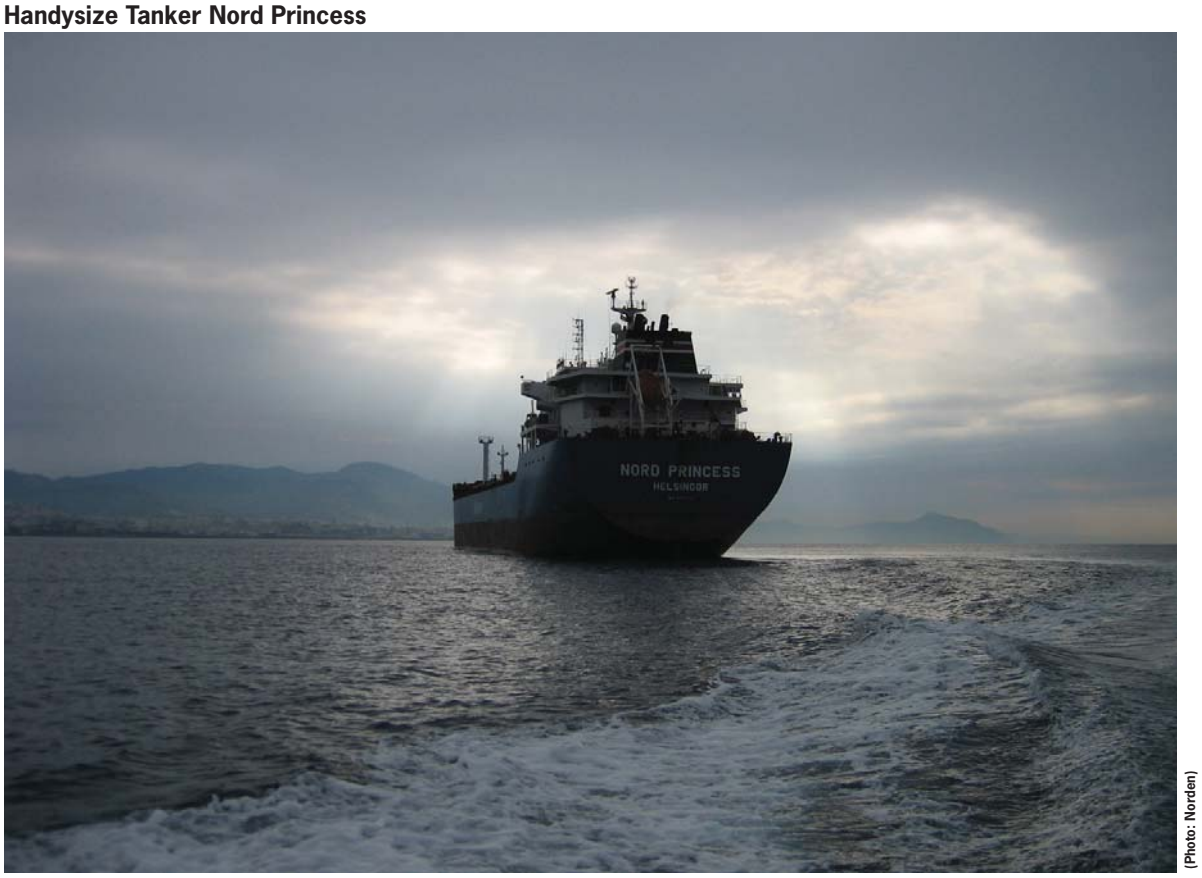
In Northwestern Europe, the company is one of the five largest vessel operators with stainless steel tanks. The US Gulf is also a stainless steel market with 10,000 to 20,000 dwt vessels. "Often the ships leaving the US Gulf would have 8-10 customers' cargo onboard to be distributed in the Caribbean and on the North Coast of South America," Thomsen points out. "Nordic Tankers is the market leader in this area." On the coated tank side, the company is operating Trans-Atlantic and is building up operations in the Asian market segment.

"Adjusting for inflation, we currently see the shipping business at a 20-year low," Thomsen points out, showing a graph of the time charters of Handysize vessels bottoming at some $10,000/day. However, Thomsen notes that there is growth in industrial production and, with that, also a further demand for their types of cargoes. "The net growth of 5,000dwt chemical tankers is coming down, from 7% last year to 5% this year and 4% next year and no growth thereafter." Having been in the shipping market for more than 30 years, Thomsen has been through a couple of cycles like this. "The market, we are convinced, will come up. The question is the timing. Our guess is that we will begin to see an improvement during the course of this year and then could see quite strong improvement in 2012."

This year, Dampskipsselskabet Norden A/S is celebrating 140 years and operates a fleet of some 180 dry cargo vessels and some 44 product tankers. In dry cargo, the company is active in all five major segments and in product tankers in Handysize with some larger MR and LR1 vessels. The Handysize and Post-Panamax bulkers as well as the product tankers operate in pools. The Norient product carrier pool is the world's third largest. Since the lows of the second quarter of 2009, when the active fleet had been cut by 86 vessels from a year before the company is again growing its fleet and added 72 vessels during the first nine months of 2010. "The company applies an asset light business model and owns 24 of the vessels," says Martin Badsted, Senior Vice president, with the rest on long or short term charter.

"We are still investing in tankers. We built six vessels last year and are to buy at least ten more in the coming years. We intend to have an own fleet of more than 25 units. Right now, there is a structural oversupply because of the newbuildings coming onto the market," Badsted notes. He thinks the orderbook situation going forward is very moderate in their small product tanker segment. "Even though it is a little early (to say) we are convinced that the structural factors that will support the market growth going forward are still in place. Gradually we believe the demand will be eating its way into the supply situation. But it is not something that we believe will aggressively explode." He considers the dislocation between where the products are produced and consumed,

Handysize Tanker Nord Princess



(Photo: Norden)

an increasing number of specifications and the ability for refineries to produce these specifications will increase the transportation demand in the product tanker segment.

Main products for Norden are fuel oil, gasoil, gasoline, naphtha and jet fuel. "2010 saw some highlights. Oil demand grew 3.2% in 2010, which was the highest growth in oil demand since the 1970s," notes Lars B. Christensen, Senior Vice President in charge of the tanker segment of Norden. The growth brought oil consumption back to the level of consumption in 2008. "However, we also saw a fleet growth of 14%, so we were only catching up again from the big loss of oil demand from the second half of 2008 and 2009." Christensen thinks the challenge today is how to absorb the newbuildings while waiting for the demand side to catch up. He points out that the best deals can be done when the freight rates are low and the ship prizes are low, and "when you can see a little light in the tunnel, with a more balanced supply to demand market."

"Growth in oil demand and economies is moving east," notes Christensen, and shows a chart of where investments in refineries take place. "The growth is in the emerging world in Asia, in India and in China. China is now the biggest car market in the world which means they need gasoline. For us it means two things: there will be more transportation in Asia and into emerging economies and likewise some of these refineries will also be targeting the western hemisphere where they have better grades where they can attract a higher price form, in Europe and the States. That means we will have seagoing transportations moving east to west."

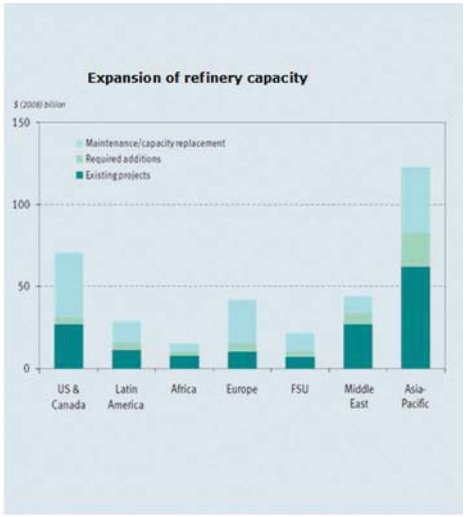
On the vessel newbuilding supply side Christensen describes the large growth of 2009, 12% in LR1 and 16% of the MR fleet, and also in 2010 with 7% and 9% respectively. The Handysize market is expected to decrease by 6% in 2011, having decreased by 5% in 2010. "Now when going into 2011, the growth in LR1 and MR is back to normal growth figures of some 5%. We do believe that we will gradually see a much better balance between supply and demand. A better balance down the road will also mean a better market in general."

Christensen notes that the hotspots on the market this year included the severe ice conditions in the Baltic, the stop in oil exports from Libya, resulting in longer transportation routes. "In general the tanker market has been excellent west of the Suez and very slow in the East. In the States, thanks to an early driving season, the market became more active." He describes that there is a surplus of diesel and gas oil in the US, which is exported to South America. "Instead of the tonnage discharging in the US returning to Europe it meant longer voyages to South America, increasing rates. The rates have been in the range of 18 to 20,000 per shipday on Trans-Atlantic transports. It is a fairly well-balanced market at this moment."

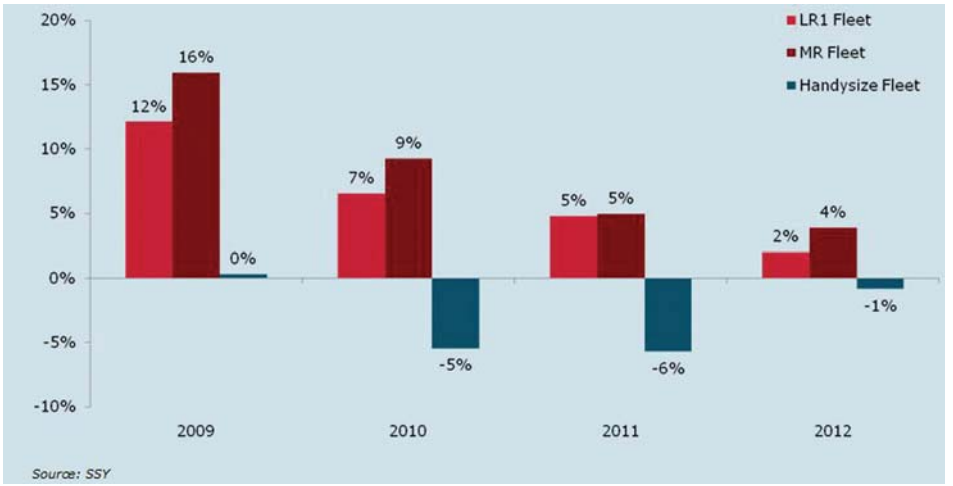
Norden has a target to grow the fleet of owned vessels from 15 ships of today to at least 25 ships by 2013. The company is focusing on acquiring modern second hand ships, 3 to 4 years old.

Another Danish company active on the product carriers market is J.Lauritzen A/S. Lauritzen Tankers operates a fleet of 13 clean petroleum product carriers, as member and partner in the newly established Hafnia Management pool of product tankers. The sector is aimed to grow. Torben Janholt, CEO at LJ.Lauritzen, comments the modest $12m EBITDA result in the product tanker sector, compared to $156m from its bulker business, reflecting "the pretty bad market, but also that we are in a phase where we are building up the new activity."

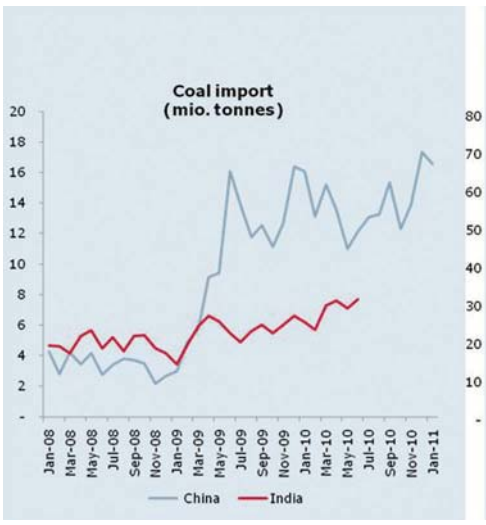
OIL CONSUMPTION & REFINERY CAPACITY

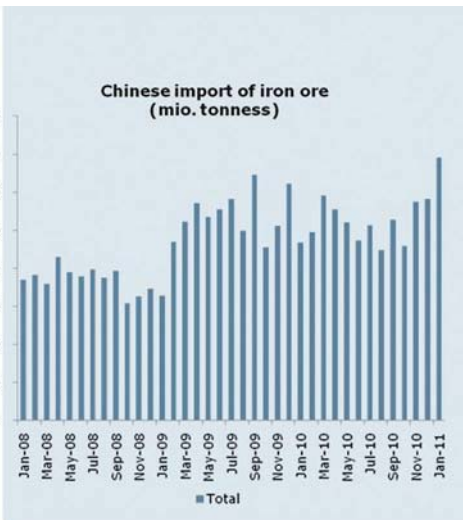


TANKER SUPPLY

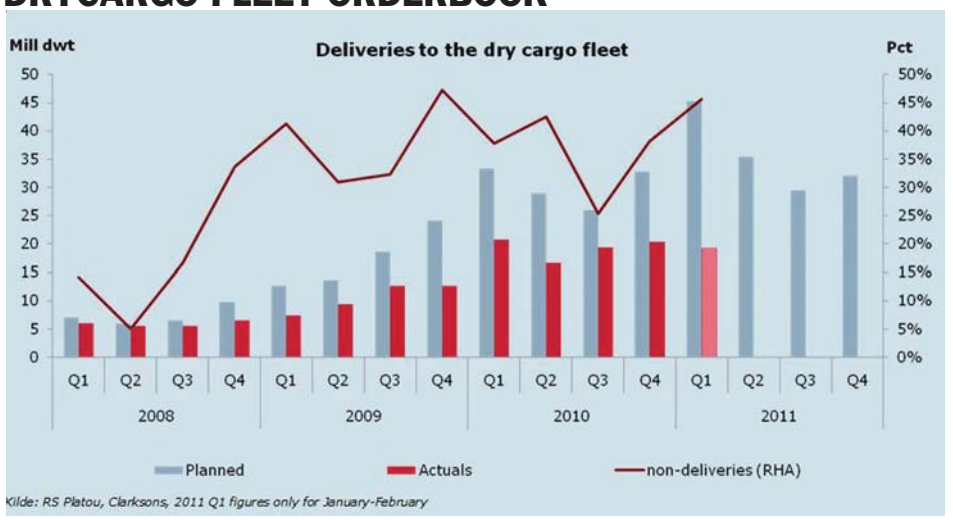


COAL IMPORT & CHINESE IRON ORE IMPORTS





DRYCARGO FLEET ORDERBOOK



"Some of the challenges we have seen this year were the flooding in Australia, reducing the production of coal of somewhere between 20m and 30m tons. This was compensated by transports from the US West coast and US East coast raising the ton miles. Another large event was the Japanese earthquake and tsunami. Japan will need more material to reconstruct. We believe there will be decisions made regarding nuclear power. This will increase the need for coal, up to ten million tons into Japan."

The fleet consists of 14 product carriers ranging between 40,000dwt and 55,000dwt vessels, with four owned and the remaining time-chartered and managed. The newbuilding program consists of seven 50,500-52,300 product carriers at Guangzhou Wenchong Shipyard Shipyard in China. "What we see is that the various refineries around Japan have increased their capacity of products," Erik Donner, President of Lauritzen Tankers, said, commenting on the current situation in Japan. "I do not foresee this as a long-term positive effect, as they will eventually repair their refineries, but on the medium term and on the medium range we can see a positive effect." He also notes the additional vessel coming on the market through newbuildings in the medium range of product carriers, in 2011 an increase of about 9%, in 2012 down to 6-7%, and by 2013, only 1%. "This is also why we are more positive towards the future on the tanker side than we have been the last couple of years. In 2011, there will be only slight improvements on the market." He notes that the growing market has sofar been absorbed by the large number of newbuildings. "But this is changing." Also new refinery operations in the Middle East will positively affect also the MR product range. The effects of the improving markets on earning will not be that dramatic though, "but we will see gradually increased earnings," he said. "I think the market in the United States will increase, slowly, maybe to a level we saw before 2008, but I do not see it growing on top of that." Due to increased energy efficiency, he does not think we will see a growth in demand over and above what we saw before. "The tanker market in North America has been very active during the beginning of this year as they have been building up storage." Lauritzen Tankers handles the ECA area sulphur restrictions by switching to low sulphur fuel when operating in an ECA area. "This is not a problem for us, except that it will be more expensive, of course," Donner says.

DRY CARGO MARKETS

Norden A/S last year carried 42m tomes of dry cargo. The market is global. Western Europe and North America caters for nearly 40% of the market, with China some 20%, India 10% and South America, some 7%. 45% of the cargo transported was coal, 12% iron ore. The third biggest commodity, at 9% was grain. "Some of the challenges we have seen this year were the flooding in Australia, reducing the production of coal of somewhere between 20m and 30m tons. This was compensated by transports from the US West coast and US East coast raising the ton miles," says Thomas Jarde, Vice President at Norden in charge of Dry Cargo. Another large event affecting the dry cargo market was the Japanese earthquake and tsunami. "Japan will need more material to reconstruct. We believe there will be decisions made regarding nuclear power. This will increase the need for coal, up to ten million tons into Japan," Jarde assumes.

Also in the bulk carrier market there is a very heavy oversupply of newbuildings. "This result in a much slower market than we had a few years ago, combined with smaller volumes in transport." He notes that fortunately, last year, only 67% of the ships expected to be delivered were actually delivered. "The orderbook is huge and corresponds to 65% of the global fleet, the Capesize being the worst. Beyond that, the orderbook is a little bit

New Orders of Bulk Carriers (by Size)

(incl. chemical carriers) (Mill.dwt)

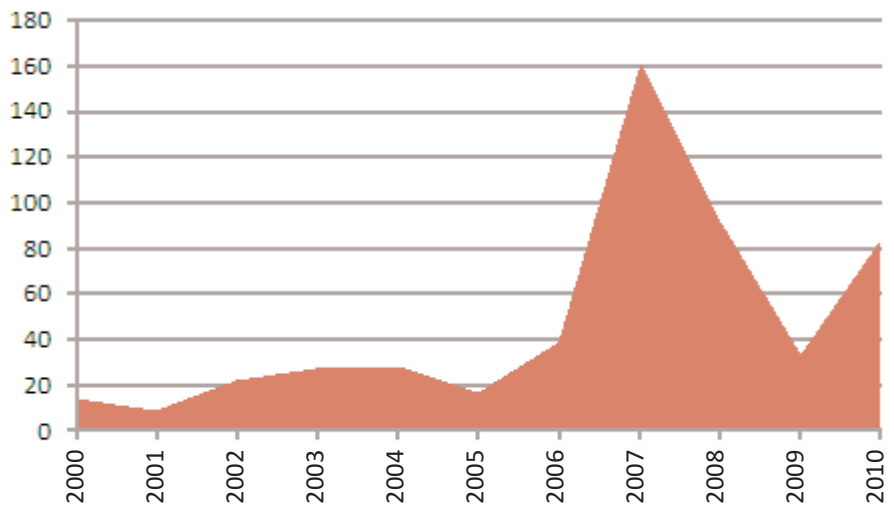
Year	10-59,999	60-79,999	80,000+	Total
2000	6.5	3.7	4.3	14.5
2001	3.5	2.2	3	8.7
2002	7.7	4.8	9.4	21.9
2003	7.7	7.7	12.6	27.9
2004	9.5	4.5	14.8	28.8
2005	6	1.8	9	16.8
2006	14.6	2.3	22.2	39
2007	38.6	7.1	115.9	161.6
2008	31.7	5.1	54.6	91.4
2009	11.8	3.4	18.4	33.6
2010	**21.1**	**6.3**	**56**	**83.5**

New Orders of Tankers (by Size)

(incl. chemical carriers) (Mill.dwt)

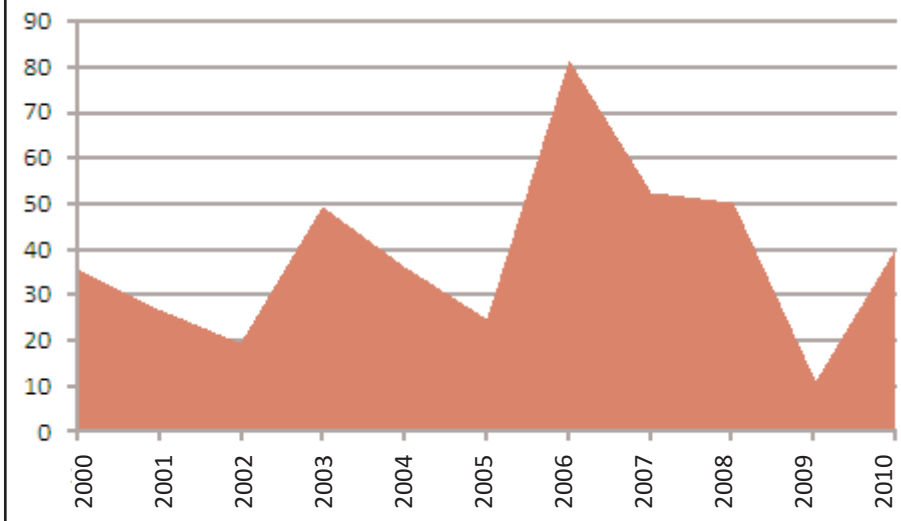
	10 to 69,999	70 to 119,999	120-199,999	200,000+	Total
2000	4.4	6.2	5.8	19.3	35.7
2001	5.8	10.2	3.3	7.6	26.9
2002	5.8	6.8	2.8	3.9	19.3
2003	10	15.2	8.7	15.5	49.3
2004	7.8	10.9	4.5	13	36.2
2005	7	5.8	1.1	11	24.9
2006	16.2	21.6	13.3	30.3	81.5
2007	15.4	13.5	8.3	15	52.2
2008	6.3	5.3	5.8	32.8	50.1
2009	1.4	0.6	3.3	5.8	11.1
2010	**2.1**	**6.8**	**11.3**	**19.9**	**40.1**

Bulk Carrier Orders 2000-2010



(Source: The Platou Report 2011, RS Platou Group • www.platou.com)

Tanker Orders 2000-2010



(Source: The Platou Report 2011, RS Platou Group • www.platou.com)

smaller but by much. For this year there is expected around 400 ships increase in the sectors we are involved in, Handysize, Handymax, Panamax and Capesize. We still are quite worried or concerned of this forward supply."

Luckily there is still a strong cargo demand, especially from China. "Some 600m tons of iron ore were imported last year and maybe some 10% more this year, but still not enough to encounter the huge oversupply of tonnage in the market. Coal has also been heavily moving into China, the main driver on the market, and to India, one of the countries with the largest growth." Jarde points out that the coal market was still less than 100m tons per year. "Some analysts say the expected growth of the market is 10% while the fleet is expected to grow by 14%, so there is an imbalance there." He notes that iron ore major VALE is building a fleet of extremely large iron ore carriers in order to ship their own iron ore, mainly to China. "We are fairly small in Capesize, the segment being most affected by this, but I think this will have a general effect also on the Panamax vessels, to a certain extent. This is also seen on the market, with index below 10,000, while Panamax and Handymax are trading around 16,000. Capesize has been detached from the rest of the market," Jarde notes. "They are at the level when people are considering to lay-off."

But when looking at the whole picture things look quite bright for some. Jarde notes that the price for transporting iron ore (to China) is $175 per ton. "Iron ore costs less than $30 to produce and the cost of trade is now $8, so there are obviously some mining companies making an extreme amount of money." He says the iron ore imports to China are dependent on what can be supplied at this point.

Norden is focusing on a 15% annual growth in their dry cargo sector. The company just received a contract for transporting 10m ton coal annually from Spitsbergen for 2011-2016.

Lauritzen Bulkers is by far the biggest activity within J.Lauritzen A/S. It is one of the top five handysize bulk pool operators in the world, with 100 vessels in the pool. Some 19 vessels are fully owned, 25 part owned and the remaining fleet are on time charter, pool partners or on joint charters. The fleet consists of the entire range of vessels from 27,000 dwt Handysize bulker, Handymax and Panamax vessels and up to 180,000dwt Capesize bulk carriers. The Handysize, all vessels fitted with grabs, comprises some 75% of the ship-days of the company. The business is carried out from offices in Singapore, Stamford and Copenhagen. "In Stamford, we have always been an industrial carrier," notes Ejner Bonderup, President, Lauritzen Bulkers A/S. "This is part of our strategy," he says, as opposed to being a tonnage provider by time chartered out business. Lauritzen Bulker is slowly and steadily increasing its fleets also in Handymax, to gain critical mass. In Panamax and Capesize, it is a question of creating a foundation in the business, with time-charter contracts of 5, 10 or even 15 years with good reliable customers. "We are clearly tonnage providers in the bigger segments of the business." Bonderup believes the recent tsunami catastrophe in Japan will have a positive effect on the bulker market, in the longer term. "But we are in for a huge newbuilding program within the dry bulk sector, and over the next couple of years we will have some challenges in this sector. The demand size actually looks positive and healthy. Our problem is the number of ships coming into the market." The newbuilding program of Lauritzen Bulkers consists of 29 vessels, 42% of which are its own. Half of the company's newbuildings are Handysize vessels,

PICTURE

PERFECT

MR's inaugural photo contest attracted 1,614 images from more than 20 nations.

MARITIME REPORTER AND ENGINEERING NEWS
1st Annual Photo Contest

Welcome to the inaugural photo contest in the storied 70 year plus history of *Maritime Reporter & Engineering News*. The contest was conceived following the untimely death of long-time contributor **Donald Sutherland**, who many of you encountered over the years or in the pages of MR or sister-publication MarineNews. Don was a colleague, a friend, and a fierce proponent for the maritime industry and mariner, delivering to us hundreds of indelible images and tens of thousands of words, whether it was covering the maritime response in New York City in the wake of the terrorist attacks of September 11, 2001; spending three weeks in the Gulf to record the aftermath and impact of Hurricanes Katrina and Rita; or his 'everyday' coverage of the people, boats and companies in and around the Northeast U.S.The photo contest exceeded our wildest expectations, delivering more than 1,614 images submitted from more than 20 countries. We solicited entries in five categories: Boats & Ships; Offshore Structures; People; Maritime Scenes; and Weather. The result was nearly 1700 images that embody the broad swath of the global maritime community, from small boat ops in Jakarta to the largest ships traversing the deepest oceans. On the cover of this edition is the Grand Prize Winner; and on the ensuing pages you will find the category winners, as well as a selection of images and topics that our judges found compelling.
In particular I would like to recognize and offer a sincere thanks to two of our judges, Jonathan Atkin and Susan Evans Gore.

Atkin is a New York-based photographer, producing aerial and ship-to-ship maritime photography for cruise lines, port agencies, towing companies, and cargo operators worldwide. He has completed numerous assignments for consumer and corporate publications from *The New York Times* to maritime annual reports. Jonathan is also a working captain, with a USCG 100 Ton Master's License. **http://shipshooter.com**

Evans Grove is an American artist living and working in New Jersey. She graduated from the School of Visual Arts in NYC with a BFA in Photography. Her work has been exhibited in the United States, Europe, and Japan. Susan also serves as Publications Director at The Society of Naval Architects and Marine Engineers. **http://www.susanevansgrove.com**

WINNER, MARITIME SCENES
Jan Berghuis, The Netherlands
Photographed March 2009

Bosun cutting the remaining part of a broken tow wire

MARITIME REPORTER
AND
ENGINEERING NEWS
1st Annual Photo Contest

WINNER, OFFSHORE STRUCTURES
Charles Abbott, Long Beach,California
Photographed December 2009 • Effects: Enhanced for luminance, highlights and shadows

Cargo operations, oil platforms Elly/Ellen, CA.

RUNNER UP, MARITIME SCENES
Jac Keo, United States
Photographed February 2009 • Effects: Color Corrected, Sharpened

Calm after the storm #4, Ventura, CA

RUNNER UP, MARITIME SCENES
Bartlomiej Jarecki, Szale, Poland
Photographed May 2009 • Effects: Sharpness applied

Slamming of Bow on Waves,
taken in the South Atlantic onboard containership San Allesio.

WINNER, WEATHER SYSTEMS
Julius Taylor, Beaufort, North Carolina
Photographed March 2009

Nor'Easter, Beaufort Inlet, NC

OVERALL WINNER (ON THE COVER)
Budi Prakasa, Jakarta, Indonesia
Photographed January 2009

This taken evening day at Sunda Kelapa Old Harbour of Jakarta, Indonesia.

RUNNER UP, PEOPLE
Thomas Rollins, Columbia, Illinois
Photographed July 2010

Cutting in a tight spot, St. Louis Mississippi River

MARITIME REPORTER
AND ENGINEERING NEWS
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WINNER, PEOPLE
Mike Finnigan, Palm Coast, FL
Photographed September 2009

Lifeboat Davit Dancing

RUNNER UP, SHIPS & BOATS
Kerry Walsh, Milwaukie, Oregon
March 2009

A Chilly Day North on shore of St. George Island, Alaska

RUNNER UP, OFFSHORE STRUCTURES
Danny Cornelissen, The Netherlands
March 2011

Lifting heavy offshore pipes inside the Port of Rotterdam

RUNNER UP, MARITIME SCENES
Danny Cornelissen, The Netherlands
Photographed May 2009

Ropes to Stay; Euromax terminal Port of Rotterdam

View from the Top with Chief of Naval Operations (CNO)

Admiral Gary Roughead

U.S. Navy Chief of Naval Operations (CNO) Admiral Gary Roughead recently spent some time with Maritime Reporter & Engineering News — upon receiving the 2011 Seamaster award from sister-publication Marine Technology Reporter — to share his view on the status and future challenges of the U.S. Navy.

By Greg Trauthwein, Editor

(USN Photo Chief Mass Comms Specialist Tiffini Jones Vanderwyst/Released)

The U.S. Navy and its strategy is still relevant.

While such a statement may seem painstakingly obvious, it is a question, literal or rhetorical, that is often asked of U.S. Navy Chief of Naval Operations (CNO) Admiral Gary Roughead and his leadership, as they work to ensure that the Navy not only meets and completes its missions globally – both planned and unplanned – but lays the foundation for the force of the far future based, in part, on technologies that today do not exist.

To be clear, today's U.S. Navy is not your father's Navy. While the force still depends on a growing fleet of new, technologically advanced ships and boats, today more than ever it seeks to identify and integrate new and emerging technologies, from cyber-space to a burgeoning fleet of unmanned systems — in the air, on the surface and underwater — to enable it to conduct its diversity of missions as efficiently, economically and safely as possible.

"My job is to be able to bring the ideas, the technology, the applications, the operational concepts together in such a way that they benefit the work that we do for the nation," said Admiral Roughead. "And it is also particularly interesting to do it in this time, when we are seeing such an explosion of technology."

Since the end of the Cold War and President Reagan's quest for the 600 ship Navy, the size of the U.S. naval force has been on a protracted downward spiral, leaving today's fleet with 288 ships. While advanced technologies have made today's vessels more capable and flexible than their predecesors by a wide margin, the fact is today's U.S. Navy is stretched perilously thin.

In remarks delivered earlier this year to the Senate Appropriations Committee's for Defense, Admiral Roughead said, "Today we have about 70,000 Sailors deployed globally with 40 percent of our ships and aircrafts and submarines deployed as well. **To deliver the above, we have been pushing the fleet hard. We have 288 ships today. It is the smallest fleet since 1916, when our interests and responsibilities were nowhere near what they are today. And that's why 313 ships remains the "floor" of our future force.** And why sustaining fleet capacity is essential to reaching that floor." To illustrate this point, Admiral Roughead recounts "a day in the life of the U.S. Navy," on the eve of the recent activities in Libya.

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CNO Admiral Gary Roughead

"I think everyone can appreciate how busy the Navy is today, as you follow events around the world. A few years ago, shortly after I became the Chief of Naval Operations, we put in place a strategy that addressed what we believed we as a Navy needed to be able to do," he said. "I was asked that question at a venue on the eve of going into Libya. I knew what we were going to be doing, but it was not out in the public domain at that point. And someone asked me the question, 'Is it still relevant, and do you still think that we're going to do those sorts of things?' And I thought for a moment, and at that moment, we had our strategic ballistic missile submarines on patrol, as they have been for decades, every day, 24 hours a day. We had two aircraft carriers in the North Arabian Sea, so we had a nuclear deterrent. You also had a conventional deterrent. We had positioned submarines and ships off the coast of Libya to put in the first strike, that would begin the takedown of the air defense system, so that the follow-up operations could take place, and that the Libyan government would stop killing its own people. Most of those missiles that were fired into Libya came from our submarines, to include the SSGN, the converted ballistic missile submarine – that was its first use in combat. We were controlling the sea because we wanted to make sure that there was nothing flowing into the country, so power projection and sea control. If you lived a little farther to the east and dropped down on the east coast of Africa, we, along with several other countries, were doing maritime security, to call it counter-piracy. And then if you moved a little farther to the east, we had one of our carrier strike groups on the way to the Middle East to conduct combat operations in Afghanistan that, within 24 hours, moved into a humanitarian assistance mission in Japan, where we were able to support the Japanese government and the Japanese people. We brought our divers in to be able to clear some of the channels going into the ports, to facilitate the flow of humanitarian assistance. So in just that one day, essentially everything that we were called upon to do was being done."

The Navy has been battling to maintain a 313-ship fleet for many years, and to date, with some notable recent contracts signed, it appears to be on its way.

In his remarks to the Senate Appropriations Committee's for Defense, Admiral Roughead summarized: "We've secured a fixed-price dual award for 20 littoral combat ships as the secretary has mentioned.

We've addressed our strike fighter capacity with a multi-year F/A-18 procurement and pending a decision on the Continued Resolution, we will build two Virginia class subs per year, another DDG-51, start the mobile landing platform, construct and refuel our aircraft carriers as planned, and continue the design of our replacement strategic submarine."

BUSINESS WITH THE NAVY

A key initiative for the future of the U.S. Navy is increased integration of unmanned systems across the fleet. Unmanned systems — in the air, on the surface and underwater — deliver to the U.S. Navy a technological advantage to keep sailors out of harms way.

"One of the things that we have done is that we have not really stood up separate organizations for unmanned and manned," Admiral Roughead said, noting

"When I get up in the morning and I want to know how active the pirates in Somalia are going to be, I don't ask my intelligence officer, I ask the oceanographer, because he's going to tell me how rough it is, and the pirates don't like to go out when it's really rough.

that initially the thought was to organize these activities separately. "My thinking is that the real power of what we're doing with manned and unmanned is how you use them together; and for that reason, we're bringing the like types of activities into one organization."

Admiral Roughead contends that the Navy leadership is changing its approach to technology, to be able to make decisions based more on the opportunity, the potential, and then really focus on those capabilities that the Navy needs.

In addressing his chief concern regarding the use of unmanned underwater systems — the availability of a power source to give these vehicles up to 70 days' endurance — Admiral Roughead cited a breakthrough that he sees as truly transformational in nature.

"I go back to what truly transformed submarine warfare. When Hyman Rickover had the breakthrough that he had (he directed the original development of naval nuclear propulsion). **It wasn't a new sail design. It wasn't a new hull design. He was able to put in place on a submarine limitless power."**

Admiral Roughead noted that the Navy is in the process of designing the future ballistic submarine, the follow-up to the Ohio class. "We will begin production of that submarine at the end of this decade. I think it's also important to realize that that submarine will be in service and its last patrol will be in 2080, and so to get your head around the technology that's going to be required to keep that submarine essentially invisible for the next seven decades is quite a challenge, but it's also an exciting opportunity."

Photo by Ron Elias

Aegis guided missile destroyer William P. Lawrence (DDG 110) sails the Gulf of Mexico during sea trials on January 25, 2011.

In the challenge to have manned and unmanned systems working in unison, Admiral Roughead views two platforms today, the Littoral Combat Ship with its huge mission bay; and in the submarine community, the large tubes on the SSGN as terrific for being able to carry unmanned payloads. "We look ahead in the Virginia class submarine, we are very focused on something that we call a Virginia Payload Module, that basically puts the same size of tube into a Virginia class that would have to be stretched a bit to be able to carry the types of payloads that we envision for the future. That will probably demand a unit of unmanned operators to be able to do that, to be able to operate them, to be able to maintain them."

Waterjet Warships

The use of waterjet-powered high-speed ferries is accelerating, paving the way for military use

By Edward Lundquist

Several large ferries have reliably employed waterjets to provide high-speed operations, and correspondingly more revenue generating trips than the slower ferries they replaced. Some of these ships are serving as prototypes for naval applications. Australian shipbuilders Austal and Incat have both built high-speed catamarans that have been used as car and passenger ferries.

There are a number of fast ferries in service or building that employ waterjets. Their experience is helpful in matching the proper waterjet system for the naval requirement.

Bornholmstrafikken's fast ferry H/F Villum Clausen, was built by Austal in Freemantle, powered by GE two LM2500 gas turbines and four Rolls-Royce Kamewa 112 SII waterjets. The 282-foot catamaran established a new world's one-day distance record in 2000 when it covered 1,060 nautical miles transiting between Malaysia and India while the fast ferry was enroute to Denmark, at an average speed of 44 knots. It was the longest distance traveled in a 24-hour period by a commercial passenger vessel. Villum Clausen can load 215 cars and 1055 passengers. It can achieve 48 knots and can make the Ronne, Denmark-to-Ystad, Sweden run in 1:15.

Austal also built the 416-foot diesel-powered trimaran auto ferry Benchijigua Express for Fred. Olsen, S.A., service in the Canary Islands. Benchijigua Express is built to the same basic hull design as the General Dynamics USS Independence LCS design. The trimaran operates with four MTU 20V 8000 diesel engines, rated at 9,100kW. The pair of engines in the after engine room power a Rolls-Royce Kamewa 125 SII steerable waterjet. The pair in the forward engine room together power a Rolls-Royce Kamewa 180 BII booster waterjet. Benchijigua Express can achieve speeds of up to 42 knots. The ferry has a capacity for 123 cars and 1,291 passengers.

Austal made available by lease the 331-foot Westpac Express (HSV 4676) for intra-theater use by the III Marine Expeditionary Force in the Pacific theater of operations. Westpac Express has four Caterpillar 3618 diesels, rated at 7200kW each, and four Rolls-Royce Kamewa 125 SII waterjets. Westpac Express can operate at speeds up to 37 knots. Military Sealift Command Far East officials say the Marine Corps is very pleased with the flexibility that Westpac Express offers in moving units of Marines with their vehicles-and even helicopters-throughout the region quickly without requesting airlift support. The stern ramp equipped ferry can carry more than 900 Marines, as well as 153 HUMMWVs or 12 AAVPs and 20 LAVs. Most recently, Westpac Express participated in the US response to the Japanese earthquake and tsunami.

(Photo Courtesy of Austal)

Taking Shape at Austal in Ala. is the USN's Joint High Speed Vessel (JHSV).

Austal is not the only fast ferry builder down under. Australian shipbuilder Incat and its U.S. subsidiary Bollinger Shipyards, has built several high-speed waterjet vessels for the U.S. military. Based on successful catamaran ferry designs, Joint Venture (HSV-X1) was chartered to the US Army TACOM and operated by the Navy and then Army. Joint Venture displaces 1,740 tons fully loaded, is 96 meters long, and can achieve speeds up to 48 knots. The catamaran uses four Caterpillar 3618 marine diesel engines

with four Wärtsilä-Lips LJ150D steerable waterjets. The Army liked the HSV concept so much, it chartered another wave piercing catamaran for the Theater Support Vessel Advanced Concept Technology Demonstrator (ACTD) role. Named Spearhead (TSV)-1X, while the Navy chartered Swift (HSV 2) to support the Mine Warfare Command and perform LCS experimentation. The 321-foot Spearhead is powered by four Ruston 20RK270 marine engines, driving four Wärtsilä-Lips LJ120E waterjets through Reintjes gearboxes. The 321-foot Swift is fitted with four Caterpillar 3618 high density diesel engines and four Wärtsilä-Lips water-jets that allow speeds in excess of 47 knots at lightship and 39 knots fully-loaded up to sea-state 3, with a range of 4400 nautical miles at 40 knots and 6500 nautical miles at 25 knots. Australian shipbuilder Incat Tasmania Pty Ltd is building what they say is the world's first high speed passenger RoRo ship powered by LNG (Liquefied Natural Gas). The 325-ft. fast ferry can achieve speeds of 50 knots, and can carry 1000 passengers and 153 cars. The ship is being built for South American operator Buquebus, which will operate the vessel on their River Plate service between Buenos Aires, Argentina and Montevideo in Uruguay. The all-aluminum 34-knot Lake Express was built in 2004 at Austal USA in Mobile, Ala. The 192-foot Lake Express operates between Milwaukee, Wis., and Muskegon, Mich., and can carry 46 cars. Four MTU 16V 4000 M70 diesel engines producing 3000hp each drive four independent Kamewa 80 SII waterjets. Italian shipbuilder Rodriquez Cantieri Navali, Messina, Sicily, has constructed an 82-meter monohull ferry, Aquastrada, that will be able to carry up to 1246 passengers with a maximum payload of 56 cars or 22 cars and 110 meters of truck lanes. The four MAN B&W Diesel Ltd 18VP185s (rated at 3700 kWb each), driving Lips waterjets through Reintjes gearboxes, will be located at the aft end of the aluminum ship, to optimize interior volume for vehicles. Fully loaded, the ferry will make 39 knots and the quadruple VP185 engines will drive Wärtsilä Lips LJ91E waterjets through Reintjes gearboxes. Waterjets permit the ferry to rotate 360 degrees around its centre; move laterally for mooring; and stop from full in less than four ship lengths.

Fincantieri's Riva Trigoso shipyard in Genoa built the 1,000-tonne MDV 3000 Jupiter-class Ro-Ro fast ferries Aries and Taurus, the biggest fast ferries in the world, for Italian state-owned operator Tirrenia. Four MTU 20V 1163 20V TB73 L units rated 6,500kW each and two GE LM 2500 systems rated at 22,000kW each are connected to the largest steering water jets ever built. This class has two gas turbine-driven booster waterjets and two diesel-shaft powered wing steering waterjets. The Greek 140-meter monohull Aeolos Kenteris is one of the largest of the fast ferries. Built in France in 2001, she is capable of 40 knots, carrying up to 442 vehicles and more than 1,700 passengers. She now works in the Red Sea between Safaga, Egypt and Jeddah, Sauidi Arabia.

The CODAG propulsion plant features two GE LM2500+ gas turbines and two Pielstick 20PA6B STC engines. Each gas turbine is connected to a two-stage Renk BS 210 gearbox and a Kamewa 200 511 steerable and reversible waterjet, while the diesels are connected via a Renk AUSL 72-reduction gearbox la seven-bladed Kamewa 140 511 steerable and reversible waterjet. Aeolos Kenteris also has a pair of electrically-driven bow thrusters for close maneuvering.

United States Marine, Inc. (USMI) completed acceptance trials of the first of 10 Mark V Fast Patrol & Intercept Craft (MKV-PB) constructed under a NAVSEA FMS Contract for the Kuwait Naval Force (KNF). The all aluminum craft is based on USMI's XFPB and MKV class designs configured to meet KNF requirements for a fast patrol/pursuit craft. The craft is powered by twin MTU 12V4000 M90 diesel engines each producing 2,735 bhp driving Rolls-Royce 63 SII water jets through ZF reduction gears.

(Photo Courtesy of UltraJet)

Dutch Navy Landing Craft is fitted with twin UltraJet 410 Waterjets.

The World Deepwater Market

By Lucy Miller, Douglas-Westwood

Since Douglas-Westwood's first coverage of the Deepwater sector in the 1990s, the sector has developed into a vast multi-billion dollar business. The spectacular growth of this industry has been supported by some astonishing technology advances. The industry has been, however, seldom free from political interference, environmental debate and commercial challenges and this has never been more evident than in the past 12 months. The intention of this article is to examine the present state of play, drivers of activity and future outlook for the deepwater sector, drawing upon Douglas-Westwood's industry-leading research.

For oil companies the overall outlook for 2011 is positive, with Barclays Capital estimating that worldwide

E&P budgets will increase 11%

INDUSTRY DRIVERS

Deepwater E&P activity is driven by a variety of supply-side and demand-side factors:

1. The potential for world-class (multi-billion barrel) discoveries
2. The lack of new opportunities onshore or in shallow waters and the need to offset decline from existing reservoirs
3. New technological advances that improve technical and economic feasibility of deepwater developments

In recent years, the world has witnessed oil price shocks driven by situations where supplies have become very tight as spare capacity is absorbed by growing demand for energy across the world. Future projections of oil supply and demand suggest that this situation is likely to be repeated again. Energy is becoming more expensive as the resources we extract become more technically demanding and intensive to access. Ultimately, a future peak in world oil supply is inevitable; the only question remaining is the date that this will happen. The implication of this supply scenario for the global energy markets is that we will expect to see a sustained increase in oil prices as supplies tighten in the run-up to the peak year. This will impact on deepwater developments to the extent that they will become more economically viable as the oil price rises. Developments that were marginal at $60/bbl will undoubtedly be more vigorously pursued in an environment where the long-term expectations of oil price are $80/bbl and upwards.

For oil companies the overall outlook for 2011 is positive, with Barclays Capital estimating that worldwide E&P budgets will increase by 11%. The longer-term outlook indicates that subsea – predominately deepwater – developments will continue to play a major part in the portfolios of the majors IOCs (such as Total, Shell, BP and Exxon) and some NOCs (such as Petrobras and Statoil).

Regional Updates

AFRICA

One of the key regions of the deepwater 'Golden triangle', Africa is currently the largest center of deepwater capital expenditure. Most of the major deepwater developments in this region are located off Angola and Nigeria. Notable exceptions include NEMED (Egypt), Jubilee (Ghana) and Aseng (Equatorial Guinea).

Angola – The country has, in recent years, had a reputation as a "deepwater tiger", with its output at 1.8 million bpd in 2010. Major projects that have recently come onstream in Angola include Camelia and Greater Plutonio, while those planned or underway include Pazflor, PVSM and CLOV.

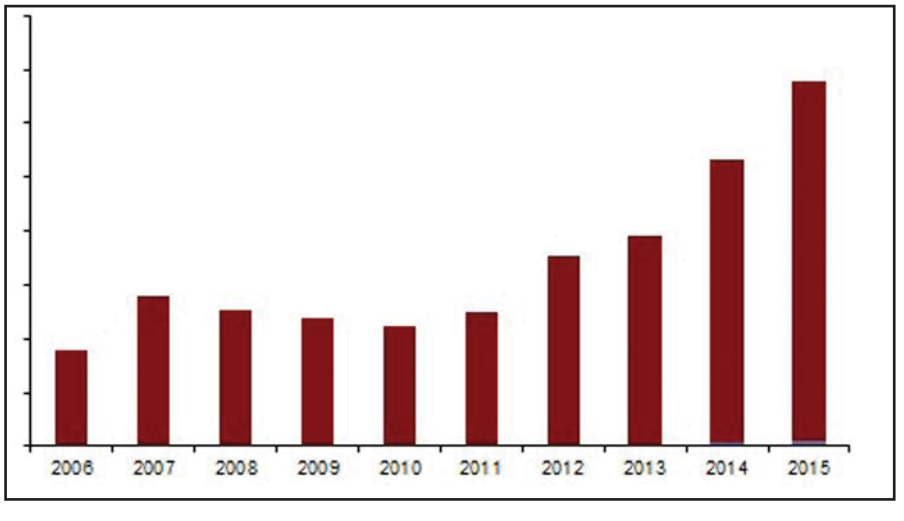
Nigeria – Already has an established deepwater oil and gas industry with major players including Shell, BP, ExxonMobil, ENI, Chevron, Total and ConocoPhillips. Production is underway from the Agbami, Okoro Setu and Akpo projects and development is underway at Usan. Planned projects include Aparo, Ukot, Bosi, Bonga South and North West, Uge, Egina and Nsiko.

LATIN AMERICA

Brazil has seen numerous deepwater projects come onstream recently:

- Cidade de Sao Mateus FPSO testing on the Lula (Tupi) field in May 2009
- Frade FPSO on the Frade field in June 2009
- P-53 FPSO on the Marlim Leste field in December 2008
- P-51 FPSO on the Marlim Sul field in January 2009
- Cidade de Niteroi FPSO on the Marlim Leste field in March 2009
- Espirito Santo FPSO on the Parque das Conchas project in July 2009
- Cidade de Santos FPSO on the Urugua field in July 2010
- Capixaba FPSO located at the Cachalote field in June 2010
- Cidade de Angra dos Reis FPSO on the Lula (Tupi) field in October 2010.
- P-57 FPSO on the Jubarte field in December 2010.
- Cidade de Sao Vicente FPSO extended well test on the Lula North East field in April 2011

Nearly 30 deepwater prospects have been identified off Brazil since 2003 and Petrobras plan to deploy at least 23 FPSO and a number of FPSS and TLP by 2020. The Brazilian NOC entered into a framework agreement with Cameron for $500 million of subsea trees (138 trees plus 18 sets of tooling) initial delivery slated for 2011 and to continue until 2014.



NORTH AMERICA

USA – A large cloud of political uncertainty also continues to sit stubbornly over the US Gulf of Mexico following the Macondo spill in 2010. According to BOEMRE US GoM oil production has fallen significantly since the incident and within two years of the accident it will be 35% lower – equivalent to a fall in overall US crude production of 11%. Recovery is expected in the US Gulf over the next five years, but at present activity levels are depressed and contractors continue to report that the region is difficult. The outlook for 2012 is poor, but recovery is expected from 2013 onwards, based on indentified prospects. There is a risk that new safety and environmental regulations will make permitting in the Gulf sufficiently cumbersome to prevent or delay its full recovery.

ASIA

Production in Asian waters has until recently been restricted to shallow water fields, but there are now a number of deepwater projects underway or producing. Though some areas of Asia are considered relatively benign in metocean terms, India's Bay of Bengal suffers from harsh wind and wave conditions apart from during a four month weather window and many Asian countries are routinely visited by typhoons. These factors support the use of FPSO that can disconnect and head for safe ports. Future deepwater projects include the continuing development of the Krishna Godavari Basin (India), the Gehem and Gendalo fields (Indonesia) and Gumusut-Kakap (Malaysia).

WESTERN EUROPE

Western Europe is a mature region, with much shallow water production, but little deepwater activity to date. However, there is the potential for future deepwater developments in the previously little explored waters west of Shetland, the so-called 'Atlantic Frontier', as well as the waters of the Mediterranean.

Norway – A new hub development at Luva could unlock other nearby discoveries and encourage new activity in a relatively unexplored part of the Norwegian Sea. In addition to opening up a new area for E&P activity, the development could

benefit other discoveries in the Norwegian Sea by redirecting existing gas flows and freeing pipeline capacity sooner than the present infrastructure will allow. Confirmed plans have not been announced for Luva or the potential satellite fields, but first production will likely be after 2017.

UK – Deepwater prospects situated in the 'Atlantic Frontier' include Laggan &Tormore (2014) and Rosebank & Lochnagar (2017). The current development concepts revolves around a long distance tie-back for Laggan & Tormore and an FPSO for Rosebank & Lochnagar.

PIPELINES

DW's deepwater model includes forecast expenditure on trunklines as well as infield flowlines and risers. Trunkline expenditure over the 2011-2015 period is dominated by Eastern Europe and the FSU, which is expected to account for 53% of the $38bn forecast. Most of the major deepwater pipelines planned for this region will bring Russian gas to European consumers via the Black Sea. Compared to the upstream market, the pipeline market is much more politicized and the viability of these Russian projects is heavily influenced by geopolitics, potential consumer markets and the viability of alternative supply routes (such as LNG or onshore pipelines). Few upstream deepwater developments are visible in the region and therefore the majority of deepwater Capex forecast in this region is related to pipeline projects. As a major exporting region with predominately shallow water fields, the Middle East shows a similarly sparse Capex profile.

FORECAST

DW forecast a global Capex of $218 billion for the 2011-2015 period – 87% more than the amount spent in the preceding five year period.

African and Latin American developments are expected to drive the forecast spend, with African developments largely concentrated on Angola and Nigeria. Latin America is likely to experience substantial growth, exceeding Africa's deepwater expenditure towards the end of the forecast period, driven by Petrobras' development of its Campos and Santos (pre-salt) fields off Brazil. There are some interesting prospects in North Africa but these may be hampered in the short-term by the political uncertainties. The importance of Asia as a deepwater region should not be overlooked. Asian deepwater expenditure over the 2011-2015 period is expected to amount to 8% of our forecast Capex, with most of the main developments occurring off India, Malaysia and Indonesia. Three main elements dominate deepwater spend during the 2011-2015 period: drilling and completion of subsea wells, floating production platforms and pipelines (trunklines).

CONCLUSIONS

In the global context, the overall outlook for the global deepwater business is clearly one of significant long-term opportunity with substantial growth in activity in West Africa, Brazil and Asia. Political intervention and uncertainty is not a new challenge for the oil industry but it does threaten to over-shadow the great technical progress in recent years that has resulted in remarkable feats of engineering and the ability to explore for oil in water depths of up to 3,000m. As deepwater projects become increasingly capital-intensive there is an economic challenge for E&P companies and a significant potential prize for international oilfield service and equipment vendors.

The World Deepwater Market Report 2011-2015 and Deepwater Quarterly Updates Service. Building on previous editions, the new report provides a detailed country-by-country and component-led analysis as well as an exploration of deepwater production designs, sector trends and development prospects. It also offers comprehensive deepwater case studies. Douglas-Westwood also offers a new dynamic service tailored to meet the individual needs of industry professionals.

Buy This Report

The World Deepwater Market Report 2011-2015 is based on Douglas-Westwood's 20 years of experience forecasting the sector. Unique and proprietary data covers historic and forecast deepwater capital expenditure breakdowns for Africa, Asia, Australasia, Eastern Europe & the FSU, Latin America, Middle East, North America and Western Europe. Each regional forecast is detailed by main component: Drilling and Completion - Subsea Completed Wells, Surface Completed Wells, Subsea Production Hardware, SURF, Pipeline Systems, Floating Production Systems by Type and Subsea Processing Hardware. The Report can also be purchased with our new Deepwater Service which combines an annual report with five-year industry spend forecasts updated each quarter, dedicated real-time analyst support and on-site presentations. **Further information is available at Web: www.dw-1.com • Email: research@douglaswestwood.com • Tel: +44 1227 780999**

The Author

Lucy Miller is an analyst with DW and has conducted market analysis on a variety of DW's commissioned research projects for clients in the oil and gas sector, as part of commercial due-diligence and published market studies. She has contributed to studies including 'The World LNG Market Report', 'The World FLNG Market Report' and the 'The World Floating Production Market Report'. Her analysis has been quoted by Bloomberg, Citigroup, Upstream, Penn Energy and World Oil among others. Lucy has a background in the offshore O&G and previously worked for FoundOcean. She has a degree in Economics and Geography from the University of Leicester.

Lefèvre Powers Bourbon Ahead

Few maritime companies have had the impact on the maritime and offshore markets as Bourbon, the French corporation which in the past decade has been steadfast in its mission to build and maintain one of the world's newest, largest and most technologically advanced fleets of offshore service vessels. Maritime Reporter caught up with Bourbon's CEO, Christian Lefèvre, to discuss the tumult of the past 24 months, and the promise of the coming 24.

By Greg Trauthwein, Editor

(Copyright Bourbon)

Christian Lefèvre, Chief Executive Officer of Bourbon.

How did the global economic crisis make Bourbon a stronger company?

Lefèvre Bourbon has come out reinforced from the crisis as we looked at what was happening as an opportunity rather than as a threat. Bourbon resisted well and built a genuine bridge over troubled waters, thereby allowing the Group to maintain its growth strategy. In a world economy marked by a major recession and volatile oil prices, oil & gas clients became ever more demanding as a greater choice was being offered to them and they naturally opted for more efficient and economic vessels. Bourbon adjusted to the new market conditions, avoiding overcapacity, while at the same time continuing to ensure high quality of service, availability and the greatest choice to its clients. More than ever, the assets of our modern, innovative and cost-efficient fleet, combined with our strong safety performance standards and a highly targeted newbuilding strategy, have demonstrated that Bourbon was well positioned in a challenging market context and even continued to envisage the future as we launched our new development plan mid-2010.

Can you comment on how Bourbon is investing today?

Lefèvre While navigating through challenging seas, we never lost sight of the next strategic move that would help us preserve our competitiveness. Following on the previous strategic plans launched in 2003 and in 2007, Bourbon announced its "2015 Leadership Strategy" in June 2010 and committed to another $2b worth of investments in future growth. The particularity of this new, ambitious, plan is the modularity of investments. Indeed, contrary to previous plans where orders were launched continuously, Bourbon now has the capacity to adapt the management of investments on the basis of a segment by segment market analysis, enabling us to make investment decisions at the right time at the right place and in the right proportion. Thanks to the Bourbon 2015 Leadership Strategy, we will offer our clients a large fleet of 600 innovative and high performance vessels for deepwater and shallow water, four years from now. This ambitious plan will allow us to take advantage both of the growth in the deepwater market and the renewal of old shallow-water vessels. We have planned for 50 vessels to be built for shallow-water operations and 30 for deep-water, in addition to some 64 crewboats, totalling all in all 144 vessels. As of March 31, 2011, Bourbon's fleet counts 418 vessels for an average age of 5.5 years.

(Copyright Bourbon)

The support operation with the IMR Bourbon Jade, Bourbon's vessel in Angola.

Geographically, what are the most interesting business areas today and why?

Lefèvre Bourbon is present in all production areas as it accompanies demand where it is to be found. Historically, Bourbon has developed in West Africa, namely in Angola and Nigeria. West Africa continues to be highly important for Bourbon, building up on our 20-year presence in the region. We grow either by opening new affiliates, as recently in Australia, Turkey and Russia, or by setting up local partnerships on a win-win basis, which allow us to share operational functions, investments, practices and values. Bourbon also pursues its growth in areas where new discoveries are being made, namely in Brazil and Africa.

What are the biggest challenges running a safe, efficient shipping company?

Lefèvre Listening to and satisfying clients is the daily challenge for Bourbon, focusing on:

- safety of people, assets and environment onshore and at sea
- reliability and availability of vessels for continuity of service
- operational cost cuts
- personnel's skills to guarantee quality of service

The human factor is of significant importance to Bourbon and we are convinced that our unique positioning and the young profile of our fleet help us attract highly competent people. It is important to underline that in the context of the Bourbon

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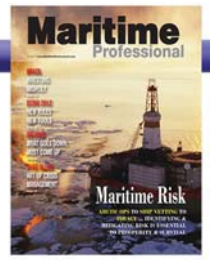


2015 Leadership Strategy, we are aiming at a workforce of 12 000 highly qualified workers. We are thus in the process of recruiting qualified and experienced people whom will be able to train to the highest safety and operational standards of our industry in the Bourbon Training Centers, situated across the world.

What are the most influential technical advance that has made the business of operating ships more profitable?

Lefèvre Bourbon's choice to build vessels in series is a major breakthrough in the offshore marine services industry and represents a significant advance in terms of customer satisfaction. This strategy of series newbuilding touches naturally upon the issue of price and therefore costs to customers, but it also entails the standardization of the vessels, which in turn secures their greater availability upon clients' demands and facilitates crews' training and maintenance. For example, the characteristics of the Bourbon Liberty series (Bourbon Liberty 100 are Platform Supply Vessels, PSV and Bourbon Liberty 200 are Anchor Handling Tug Supply vessels, AHTS) imply direct savings towards customers' costs, namely diesel electric propulsion reducing fuel consumption by up to 30%, the engine room's innovative design, which has brought it on deck, increasing cargo capacity by up to 30%, the dual dynamic positioning, DPII, in series saving time for operations. Production in series also allows for greater availability, competitive day rates, well trained crews benefiting from continuous and innovative training, namely through the Bourbon Training Centres, its PSV, AHTS, ROV and crewboat simulators. Furthermore, building in series also induces safest operations as processes are the same on each vessel of the series. As a market leader, we are convinced that Bourbon has a role to play in driving forward market standards and this is precisely what we have done with our series newbuilding strategy.

About Bourbon

Bourbon offers to O&G clients a large fleet of innovative, safe, high-performance and new-generation offshore vessels. With more than 8,300 professionals and 418 vessels as of March 31,2011, Bourbon is currently present in more than 35 countries. Bourbon's Marine Services Activity encompasses offshore oil and gas support services, along with coastal protection. It offersa large range of services through a latest-generation fleet of Offshore Supply Vessels and Crewboats, suited to meet the specific requirements of clients worldwide. Bourbon's Subsea Services Activity involves comprehensive or modular services for Subsea operations, offering flexibility and maximum expertise to oil operator clients through dedicated vessels for Inspection, Maintenance and Repair (IMR) of platforms, IMR engineering services and supervision of offshore operations, as well as a fleet of subsea robots (ROVs) capable of operating at great depths.

(Copyright Bourbon)

Platform towage operation with the AHTS Bourbon Liberty 205 at Trinidad and Tobago.

Rig Permits Have Accelerated Meaning

GOM Sees Better Days

(Photo courtesy Laborde Marine)

Laborde's Jean Pierre Lab OSV.

By Susan Buchanan

The permitting process for offshore drilling in the U.S. Gulf sped up this spring as more companies complied with new safety regulations, according to the Bureau of Ocean Energy Management, Regulation and Enforcement, while policy observers said gas prices above $4 a gallon spurred the Obama Administration to action. Marine industry members along the Gulf Coast believe Washington is on the right course now, but said that BOEMRE still needs to distribute permits more quickly.

In Late May, Port Fourchon Executive Director Chett Chiasson said "for the shallow portion of our business, permits have been coming at a good rate, while deepwater permits are much slower to be had. We feel a direct impact from the issuance of offshore drilling permits, and by my calculations 14 deepwater permits have been given out since the moratorium ended in October, and 12 of them will be serviced by Port Fourchon."

He continued, saying "I'm pleased to see that, but by the same token it equates to only half of the 28 drilling rigs or so that were shut by the deepwater moratorium" that extended from late May to early October of last year.

"Traffic is still down considerably at the port since the spill, but it's improving," Chiasson said. "We're 40% below normal now after having been down 60% last summer. We're moving in a positive direction as more permits are issued."

Chiasson continued, "we didn't have the number of layoffs at Port Fourchon following the spill that we feared." Worst-case scenarios didn't materialize because of several factors. "The Port Commission assisted tenants by giving them lease-rate reductions of 30% from July 2010 to June 2011, and by freezing escalation rates on rents."

Companies held onto skilled workers. "But when people quit or retired, their positions often were not filled," Chiasson said. About 5,000 workers are employed at the port, which is used by over 250 companies on a daily basis. The port has 125 tenants.

PACE OF OFFSHORE PERMITTING *NOT FAST ENOUGH*

Cliffe Laborde, managing member at Laborde Marine Management, LLC, in New Orleans, called BOEMRE's current pace of issuing deepwater permits "rather anemic." But he said "the fact that they have at least started issuing them has provided a glimmer of light and hope to deepwater maritime interests."

And he said with President Obama's renewed recognition of the role of offshore drilling in the U.S. economy and national security, "we are cautiously optimistic that Secretary of Interior Salazar and BOEMRE Director Bromwich will encourage bureaucrats at BOEMRE to expedite the issuance of pending permits so that the industry can get back to finding and producing oil and gas safely offshore." Laborde Marine's business covers two segments — crewboats and supply boats. In addition to New Orleans, the company has offices in Morgan City and Lafayette, La., Houston and Brazil.

At BOEMRE, New Orleans-based spokeswoman Eileen Angelico provided a tally of permits issued recently, and said "in deep water, 14 unique wells have been permitted as of May 23, since Oct. 12 of last year. In shallow water, 55 new well permits have been approved since June 8 of last year."

Angelico said "offshore wells that were suspended during the moratorium wouldn't have applied for new well permits, rather they would have applied for revised, new well permits, or sidetrack or bypass permits, or revised sidetrack or bypass permits." The 14 "unique" deepwater wells receiving permits as of May 23 included one, new Shell Offshore Inc. well that's located 137 miles south of Lafayette, La., and 13 other wells — for which activity had been suspended by the moratorium.

Angelico pointed to the following drilling-permit figures and explanations from BOEMRE's website. For deepwater permits requiring subsea containment in the event of a leak or spill, BOEMRE said "since an applicant first successfully demonstrated containment capabilities in mid-February, we have approved 36 of these permits for 14 unique wells, with 20 permits pending, and 25 permits returned to the operator with requests for additional information, particularly information regarding containment" of oil.

And for deepwater activities not requiring subsea containment, 38 of those permits have been approved, with two currently pending, since new

Conrad Industries Morgan City deepwater shipyard.

Conrad Industries Morgan City shipyard

Gary B. Lipely, Director of Marketing & Sales, Conrad Industries

(Photo courtesy Greater Lafourche Port Commission)

Chett Chiasson, Port Fourchon Executive Director.

safety and environmental standards were implemented from Oct. 2010 to early 2011, BOEMRE said. Activities in this category include water-injection wells and procedures using surface blowout preventers.

SLOW DRILLING CONTINUES TO AFFECT GULF MARINE INDUSTRY

In Morgan City, La., Gary Lipely, marketing and sales director at Conrad Industries, said "Conrad performs both new construction and repairs at our four shipyards. Overall, our new construction segment does not directly depend on offshore activity as much as the repair segment, so our new construction side did not experience any significant impact" from last year's moratorium and the recent pickup in deepwater permits.

Conrad Industries builds and repairs deck, tank

(Photo courtesy Greater Lafourche Port Commission)

Port Fourchon's current bulkhead construction project in Slip B.

(Photo courtesy Greater Lafourche Port Commission)

Vessels stacked in Port Fourchon in January.

and crane barges, lift boats, industrial vessels and ferries at yards in Morgan City and Amelia, La., and in Orange, Texas.

However, Lipely said, "our repair segment was down 29% in the first quarter of 2011 compared to first quarter 2010. We believe that was due to the moratorium and subsequent difficulty in obtaining drilling permits that have caused some of our customers to decrease or eliminate drilling and drilling-support activities in the Gulf."

As more permits are issued, the offshore drilling outlook has started to brighten, he said. But, he added "in our opinion, the increase in domestic permit activity will not improve boat building this year. At best, we should see some improvement in the first half of 2012."

Also in Morgan City, David Barousse, business development director at Fleet Operators, Inc., said "unfortunately, drilling vessels are still stacked, or tied up with crews removed, all around South Louisiana, which means that drilling activity is still very low." Fleet Operators owns and charters supply vessels for the offshore oil and gas industry.

Barousse said that in recent months, "a handful of oil and gas operators, who have made sure they are compliant with BOEMRE standards for offshore facilities, have generated maintenance and repair work that smaller vessels have been able to take advantage of. That has been a shot in the arm for our business."

He said any increase in drilling permits will help South Louisiana's marine industry, particularly the deepwater sector.

JUDGE ORDERS FEDS TO ACT ON PERMIT APPLICATIONS

On May 10, U.S. District Judge Martin Feldman in New Orleans ordered offshore energy regulators to act within 30 days on six, pending permit applications filed by companies that have contracts with Ensco Offshore Co., the Gulf company challenging last year's offshore drilling ban.

The U.S. unlawfully delayed permits for deepwater drilling after the BP spill last year, the judge ruled in Ensco Offshore v. Salazar in U.S. District Court, Eastern District of Louisiana. Under federal law, the U.S. Dept. of Interior, which oversees BOEMRE, must act, either favorably or unfavorably, on drilling permit applications within a reasonable time, Feldman said.

LOUISIANA'S PREPARED FOR FLOODING LAST MONTH

Already hammered by last year's oil spill and drilling moratorium, marine companies in South Louisiana spent much of last month taking precautions for high water. At the bottom of the Atchafalaya River, Morgan City was flooded following the mid-May opening of the Morganza Spillway, northeast of Baton Rouge. The last time the spillway was opened was nearly 40 years ago.

Lipely said "three of our four shipyards are located in South Louisiana, one along the Atchafalaya River in Morgan City and the other two in Amelia along the Intracoastal Waterway. We have temporarily discontinued operations at our Morgan City shipyard — which is located on the Atchafalaya River outside the protection of the levee system — and have taken steps to safeguard our assets and mitigate the effects of this situation."

He said vessels under construction and key pieces of equipment were moved to the company's other shipyards. "Production personnel, as well as support and administrative staff, have been relocated to our other facilities in the area."

At Fleet Operators, Barousse said his company built walls with sandbags around the homes of some of its employees living in low-lying areas.

GULF INDUSTRY ALSO EYES CUBA'S PLANS

Meanwhile, in another Gulf-related matter, officials in Cuba — which is 90 miles from Florida — expect offshore drilling to begin this year. Industry members worry that if Cuba were to suffer an offshore spill, the long-standing U.S. trade embargo on Cuba could hamper cleanup efforts.

American companies with spill technologies are restricted from doing business with the island.

Big, New Ships Drive Traffic Gains

The "Sunshine State" still commands the Lion's share of cruise ship departures

In the U.S. Maritime Administration's annual review of the North American Cruising industry — *North American Cruise Statistical Snapshot, 2010* — it is clear that cruise shipping continues to grow in popularity despite the economic downturn. The industry hit a number of historical highs, but relied on discounting to keep ships full. A few of the recent findings include:

• **During Q4 2010**, a record 18.2 million passenger nights were booked on North American cruises, up 13.5 percent from a year earlier.

• **For the year**, 69.7 million passenger nights were booked, **up 9.4%** from the year before.

• **Larger Ships, Higher Utilization** In 2010, the world's largest cruise ships entered the North America cruise market. These four ships accounted for 10 percent of the Q4 2010 capacity. In 2010, for example, 42% of the less than 2000-passenger cruise ships had utilization above 100%, while 90 percent of the larger ships had utilization above 100%.

• **Over the last five years,** the average size of ships (per cruise) **increased by 14.2%** to 2,272 passengers.

(Photo: STX Europe)

The Biggest Ships are Driving Traffic:
Pictured is Royal Caribbean's Allure of the Seas. The 225,000-gt Oasis class vessel is 1184.4 ft. (361m) long and can accommodate 6,360 passengers

N. American Cruise Passengers by Cruise Line

(Passengers in Thousands)

Cruise Line	2008	2009	2010
Carnival Cruise Line	3,550.5	3,831.7	3,977.0
Royal Caribbean International	2,619.2	2,222.3	2,503.5
Norwegian Cruise Line	1,039.3	1,096.0	1,171.4
Princess Cruises	1,009.4	972.7	1,023.2
Holland America Line	626.6	649.3	653.1
Celebrity Cruise Line	382.9	405.9	642.3
Disney Cruise Line	396.4	391.8	320.6
Costa Cruise Line	79.3	64.7	97.0
MSC Italian Cruises	25.6	67.0	77.0
Cunard Line	118.4	79.8	71.6
Regent Seven Sea Cruises	28.2	23.9	22.5
Crystal Cruises	15.8	13.9	14.0
Silversea Cruises	9.6	8.9	12.0
Azamara Club Cruises	7.8	5.9	7.6
Oceania Cruises	3.9	5.6	6.7
Seabourn Cruise Line	3.4	4.0	4.9
SeaDream Yacht Club	4.0	4.7	4.3
Fred Olsen Cruise Line	11.9	8.5	0.0
Windstar Cruises	2.2	1.7	0.0
Total	**9,934.4**	**9,858.4**	**10,608.7**

TOP 15 N. American Cruise Passengers by Departure Port (Passengers in Thousands)

Departure Port	2008	2009	2010
Miami	2,114.1	2,043.8	2,151.4
Fort Lauderdale	1,187.5	1,276.8	1,758.6
Port Canaveral	1,225.8	1,189.2	1,298.6
New York	476.7	402.8	555.9
San Juan	521.0	506.6	521.7
Galveston	403.3	385.9	428.9
Tampa	392.5	401.5	424.9
Long Beach	365.1	415.0	413.5
Los Angeles	606.6	412.3	374.3
Vancouver (CN)	406.3	425.0	272.4
New Orleans	184.6	243.2	260.5
San Diego	416.5	412.9	242.4
Baltimore	46.3	165.9	214.5
Cape Liberty	163.1	156.5	197.7
Mobile	145.7	134.6	182.8

Source: U.S. Maritime Administration

Quality Audits Embraced, Not Feared

By Captain Inderjit Arora,
President & CEO, QMII

A process based management approach to implementation of the ISM and ISPS Codes and other relevant standards (ISO 28000) allows marine operators to remain viable and prevent losses. But, top management must be willing and 100 percent invested.

Mariners have never been fond of audits. Indeed, honest Masters often find themselves blamed if, during their tenure, too many Non Conformities (NC) are reported. In reality, the only bad NC is the one the organization does not know about. And yet, some firms absolutely do not want to know. The NC stems from an audit and therefore the audit is an unwanted intrusion into the working routine of the vessel.

VIMSAS (Voluntary IMO Member State Audit Scheme) audits have introduced another variable to the mix. Flag States, never fond of audits in the past to begin with; now accept them as a necessary evil. But, if the NC drives Corrective Action (CA) and Preventive Action (PA) is data driven, conventional wisdom says audits should be a welcome arrow in the quiver of a quality-driven operator. Sadly, this is rarely the case.

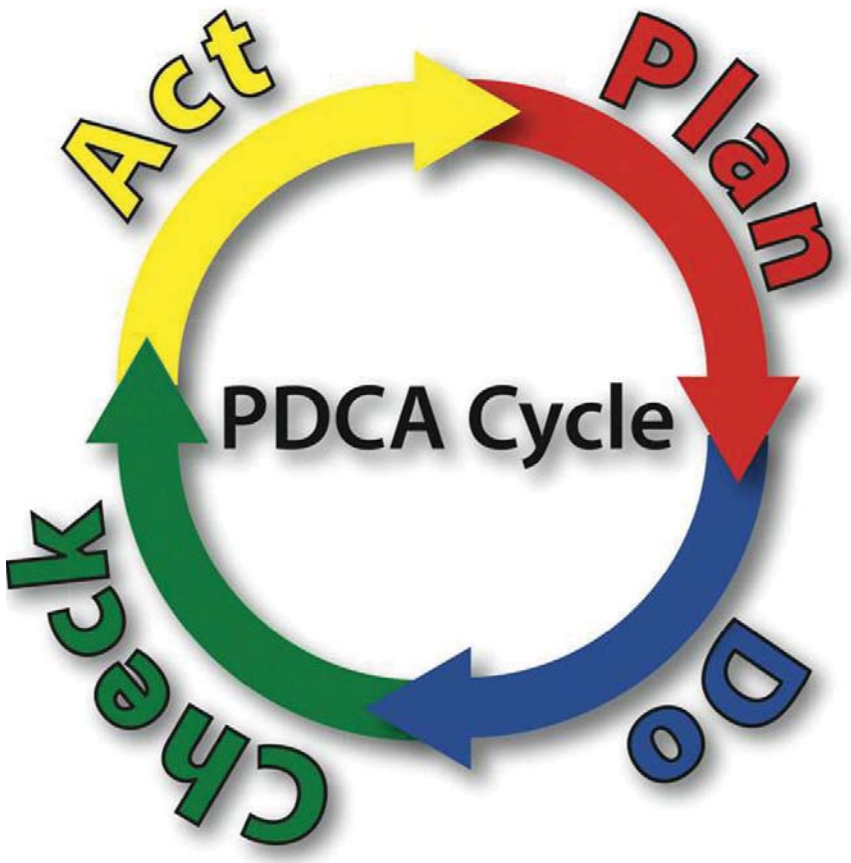
BLAME GAME: A VOYAGE TO NOWHERE

The culture of blame on merchant ships is a reality. If and when something goes wrong – you blame someone. In an industry so deeply rooted in a culture of insurance premiums, the fear that the P & I Clubs might not pay (if blame is not attributable to an individual) is very prevalent. As operators attempt to meet the objectives of the ISM and ISPS Codes and other protocols, they should instead be led by Flag States to not ask "who" when things go wrong, but instead lead their inquiries to solve the "why" and "how" of system failures. In the end, individual failures are often a consequence of the system failing to select and/or train the correct individual(s) for a job.

AN ESSENTIAL INGREDIENT: MANAGEMENT BUY-IN

Quality is the responsibility of each individual. That said, the ultimate responsibility for quality can never be passed off down the chain to the ships and crews who man them. C-level Management must take responsibility for system performance, with continual improvement the underlining goal. Therefore, responsibility for quality is passed down only if it is bundled with the resources to get the job done. It has been shown, time and time again, that lack of buy in by management is the number one variable responsible for establishing a fearful audit environment, ultimately leading to failure of the quality system.

Starting with the IMO, Flag State, and operator and all the way down to the ship itself, each party must be a stakeholder in the system. Ship operators will use and improve their system only when everyone understands that identifying opportunities for improvement will never be met with punishment; on the contrary, they will be valued. A confidence then emerges that the system will allow people to produce outcomes which safely meet supply chain requirements, produce profits and protect the environment.



Conversely, the delegation of management responsibility for ensuring quality to auditors instead of granting employees the authority to make it work is a serious mistake. Ask yourself this: When was the last time you saw a company or Flag State actually declare the state of the safety and security implementation to employees, customers and other stakeholders and then explain how they plan to improve it?

When top management commits itself, leading the various procedures and processes, much of the fear and apprehension associated with audits by the rank-and-file eventually evaporates. Only then will the crew accept that an audit is a vital part of any quality program, valued for what it is: an independent look at the system to confirm how well it allows users to meet requirements. Improvement opportunities, identified during day-to-day work, should then be welcomed.

DEMANDING A QUALIFIED AUDITOR

The other 10 percent of the solution resides with the Auditor/Audit Team. A well-trained auditor understands that their role is to look for evidence of system conformity, rather than with aim of somehow finding non-conformity. Where the system does not appear to meet requirements, the auditor must serve the audit client by providing detailed, objective evidence explaining why not. Maintaining this integrity gives those under the microscope no reason to feel defensive or that they have any reason to fear this valuable interaction. Finding qualified auditors to perform audits can be problematic, but it is also necessary.

To a certain extent, the perceived poor quality of maritime auditors is one of the reasons for a lack of management commitment. Today, and primarily because they know the environment, a large percentage of maritime auditors are mariners themselves. This can be a mixed blessing, especially since like any profession, auditing has its own concepts and training requirements. In general, auditing begins with ethics and performance-based objectives; not ulterior motives.

The quality audit process has failed, in part, because Maritime Quality experts have failed to assist others in appreciating how the bottom line is positively enhanced by addressing and predicting potential NCs, as well as changing processes before the NC occurs. A process-based system, as required by both the ISM and ISPS Code (and ISO 28000 standard), will ensure that the system does not wait for audits in order to recognize NCs. It is only when maritime professionals commit to the process-based management system to implement (measurable) objectives, ensuring the interactions required by – for example – the ISM Code, will seafarers use the resources to best advantage.

SHOW ME THE MONEY

Ultimately, it is all about the bottom line. Management systems are instinctively understood and respected by organizational leaders when they show how the core process converts the needs of customers into cash in the bank, while the support processes sustain the core process. Leaders can then explain the obligations and benefits of their system to the employees.

SELECTION, RETENTION AND INVOLVEMENT OF MANPOWER

Clearly, a fundamental issue facing the maritime industry is the shifting and uncertain manpower situation. The inability

to retain competent seafarers often results in transient, disinterested mariners who look to serve their time, but not necessarily buy into a quality scheme. When the auditors are brought in, a process-based system requires total commitment from each link in chain starting with the seaman up the Captain and on to the C-level shipping executive and on to the Flag State level. Further, it requires the commitment from charterers, customers, P&I Clubs, PSC (Port State Control), suppliers and so on. This combined commitment can only come with a stable workforce that regularly returns to the same company or ship. The industry therefore, may as a RCA (Root Cause Analysis) of many of its problems, find that retaining seafarers may actually be the one remedy that brings across-the-board commitment – and therefore, Quality itself.

SELF AUDITS: EMPOWERING THE WORKFORCE

Auditing should not take the place of self and supervisory monitoring. Monitoring necessarily involves the people who perform and supervise the work – particularly the DP, CSO, Superintendent and so forth – and it is they who should be (first) observing how well their processes are fulfilling objectives. Auditors used as a single source of management quality input are inefficient and indicative of system failure. Eventually, the first set of NCs coming from internal sources will remove the fear of audits.

Internal process monitoring should result in rapid improvements that build a culture that further helps employees to determine and meet the process requirements. Where organizations lack the culture of the system approach, individuals are typically blamed for any and all failures. Eventually, these individuals fall back and rely solely on the occasional visit by their auditor. Is it any surprise that this visit is feared?

INVOLVING THE TEAM: AT SEA AND ASHORE

Clause 12.1 of the ISM Code 2010 now specifies at least one annual internal audit. The spirit of the change revolves around the premise that the audit would not be the only means of monitoring, had the spirit of clause 12.2 of the code had been implemented with enthusiasm. Further, if the results (clause 12.5) of the audits are required to be brought to the notice of all, it would involve every member of the team. In all this, the company is trying to meet the objectives as required by clause 1.2.1. The feedback of facts and problems must flow and the system must use it as input to improve the system continually.

The company must involve the employees by ensuring that the system encourages self monitoring and employee suggestions. Management reviews are therefore an integral part of the system and the outcomes are to be shared widely. Further customer feedback, as well as that received from other stakeholders should also be presented for management review. Non-conforming products and audit reports should be considered as assets to spur improvement.

FEAR OR CONTEMPT OF AUDITS = A DYSFUNCTIONAL SYSTEM

The very first indication of a dysfunctional quality system chain is the undercurrent fear of audits. Beyond this, sole dependence on auditors to improve or fix the system is a major flaw on many mer-

Starting with the IMO, Flag State and Operator and all the way down to the ship itself, each party must be a stakeholder in the system. Ship operators will use and improve their system only when everyone understands that identifying opportunities for improvement will never be met with punishment; on the contrary, they will be valued. A confidence then emerges that the system will allow people to produce outcomes which safely meet supply chain requirements, produce profits and protect the environment.

chant ships, which because of the main asset (the ship), often operating far from management's physical location, becomes the only means of assessment. This it should not be the case. The Master and his crew should be encouraged to be the main eyes and supervisors of the management system, but the primary responsibility of bringing them on board should really be the commitment of top management. Suggestions and dependency on auditors is the starting point of the fear culture and a false measure of efficiency.

AUDITORS ADDING VALUE: A WELL-DEFINED NC

Auditors add value by examining evidence of how well the system is helping its users to predict potential NC by analyzing data and getting useful information from it. This information should provide the trends and analysis to make decisions on resources and measures to improve efficiency and cut loss before it occurs. Auditors add value by reporting NCs objectively, based on actual requirements and supported by the evidence observed. And, in the end, that should be the only expectation from a good auditor: a well defined objective NC.

CONFLICTS OF INTEREST: THE FOX IN CHARGE OF THE HEN HOUSE?

Flag State Administrations and Registered Organizations (RO) and Registered Security Organizations (RSO) should support the auditing system by avoiding conflicts of interest. When, for example, an RO represents the Flag State for certifications, and then also chooses (or is nominated by principals) to be the consultant and trainer, a compromise on both the objectivity and ultimate of the audit comes into question. Independence of the auditing institution must be a commitment of every stakeholder in the maritime industry. That premise is not unique to quality auditors alone; it stretches across the breadth of the supply chain.

AUDITS: REASONED PROCESSES TO IMPROVE QUALITY

An audit of any of the so-called quality codes is hopefully carried out by independent, mature auditors for the sole purpose of determining whether or not system in place is working as desired. With top-to-bottom client buy-in, and if a non-conformity is discovered, it should be respected as the starting point to initiate the CA process and therefore should be welcomed. The entire evolution, however, depends primarily on the total commitment of management to the process based management approach to implementation of the ISM, ISPS Codes and other relevant standards. A viable, safe and profitable merchant marine hangs in the balance.

About the Author

Captain Inderjit Arora is President and CEO at QMII, serves as team leader for consulting, advising, auditing and training clients in management systems, including many courses conducted for the USCG. He is a Master Mariner with a 32-year record of achievement in both military, mercantile marine and civil management.

25 YEARS of client success 1986 - 2011

Quality & Regulatory Audits: Embraced, not Feared

Checklist for Operators

1. **Auditors don't improve a system:**
   - Auditors have never improved a system and never will
   - It is the TM (Top Management) which improves a system by its commitment.
   - The author of this article argues and urges organizations to recognize that the best service their auditors can provide is be objective and give an organization correctly written NC (Non Conformities) based on a requirement, clear evidence and by stating the nature of the NC

2. **Non Conformities (NC) are integral to any system improvement. They should be welcome:**
   - The only bad NC is the one not known to the organization
   - A NC is the starting point for a Correction and Corrective Action (CA) based on RCA (Root Cause Analysis).
   - All potential NCs are data driven. Organizations must analyze data to get information and recognize trends to predict potential NCs.

3. **Maritime Industry can meet the objections and functional requirements of the ISM Code by ensuring that:**
   - Auditing is objective
   - Auditing must never be mixed up by considering the auditor a SME (Subject matter expert)
   - Advice from auditors is counterproductive and kills an organization. It is the TM which should be responsible for CA. Moreover auditors compromise their independence as auditors by providing advice.
   - An auditor performs yeoman service by giving a well worded objective NC encompassing the requirement, evidence and nature of the NC.

4. **Auditors must be qualified as auditors:**
   - Just being a mariner is not sufficient
   - Like other disciplines auditing is a profession and requires expertise, ethics and maturity Competency based on exposure must be strengthened by training and certification as an auditor.

Bellwether of U.S. Shipbuilding Past & Future

Moore Dry Dock Company

By Wes Starratt PE

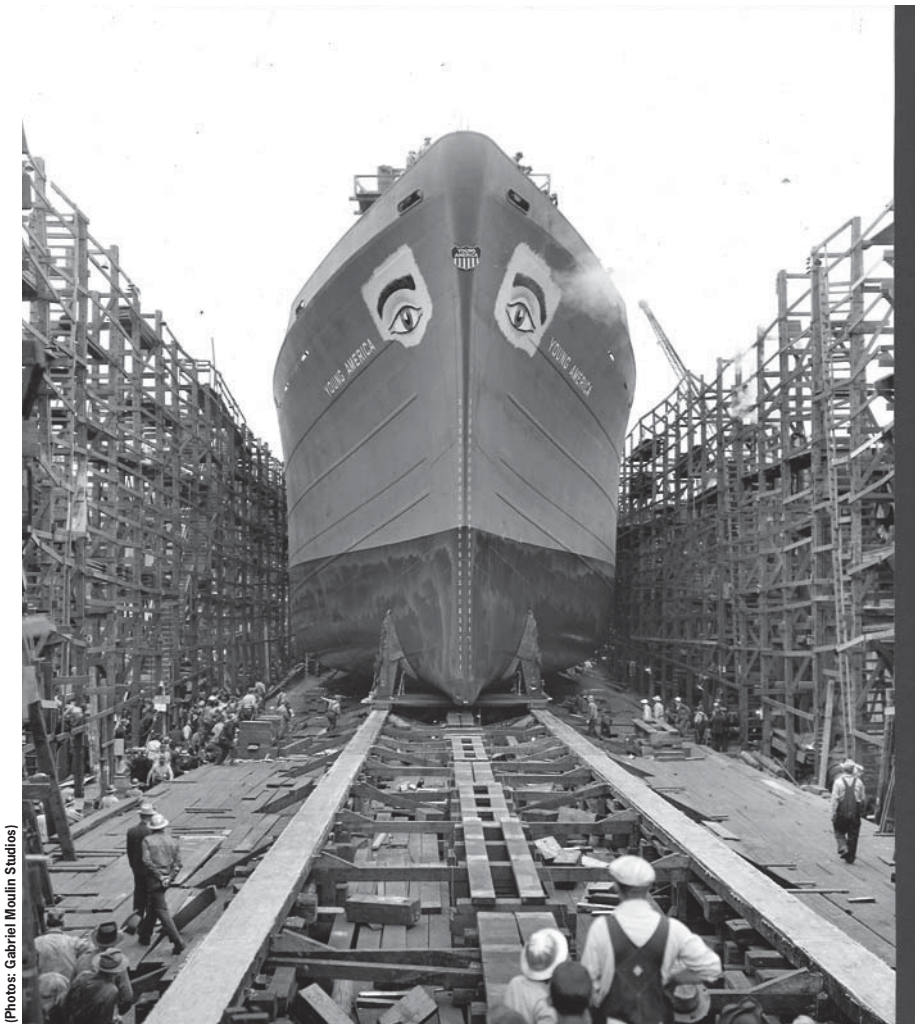
Established as Moore and Scott Iron Works in San Francisco in the year preceding the Great Earthquake and Fire of 1906, Moore Dry Dock Company was destined for a boom and bust life through two devastating national depressions and two major world wars when the company couldn't build ships fast enough to meet the demand. "Boom and bust" is also the story of the shipbuilding industry in those years, and remains so to this day. Moore survived the great depression of the 1930s by means of a program of diversification into structural steel erection and bridge building. But later, during the post-World War II years, such diversification was no longer an option, as the American shipbuilding industry was faced not only with the post-war glut of ships as well as competition from the low-cost shipyards in Asia. Seeing a future with little opportunity, Moore Dry Dock Company finally closed its gates in 1961, and put its shipyards up for sale, ending a vibrant chapter in the shipbuilding industry of the San Francisco Bay, where it is said that, during World War II, more ships were built than at any other location at any time in the history of the world, and where there is only one full-service ship-repair yard today. Hopefully, that is not the fate of the dynamic American shipbuilding industry, which continues to struggle in the face of fierce international competition.

(Photos: Gabriel Moulin Studios)

Moore Shipbuilding Company: Sign previewing the World's Launching Record for six ships to be launched on one tide, set for October 11, 1919.

AN INTERVIEW WITH THE LAST SURVIVING MOORE EXECUTIVE

For this article, we were fortunate to be able to interview 99-year-old James R. Moore, the nephew of Robert S. Moore, the co-founder of Moore and Scott Iron Works, and a former vice president of Moore Dry Dock Co. Jim Moore traces the start of the company back to 1905, with the founding of Moore & Scott National Iron Works in San Francisco, which did some ship repair and tugboat building, in addition to structural steel work. But its drydock facilities were limited. In 1909 the company bought a small shipyard on the Oakland Estuary, purchased some large floating drydocks in Washington, had them towed to the Bay Area, and changed the name of the firm to Moore Dry Dock Company. Business grew slowly at first, but Moore noted that "During the First World War, 57 ocean-going freighters and tankers were built at the yard, and later during the Second World War, even more ships were built. Between the two wars, shipbuilding declined, and bridge-building and structural steel erection became the mainstay of the business."



(Photos: Gabriel Moulin Studios)

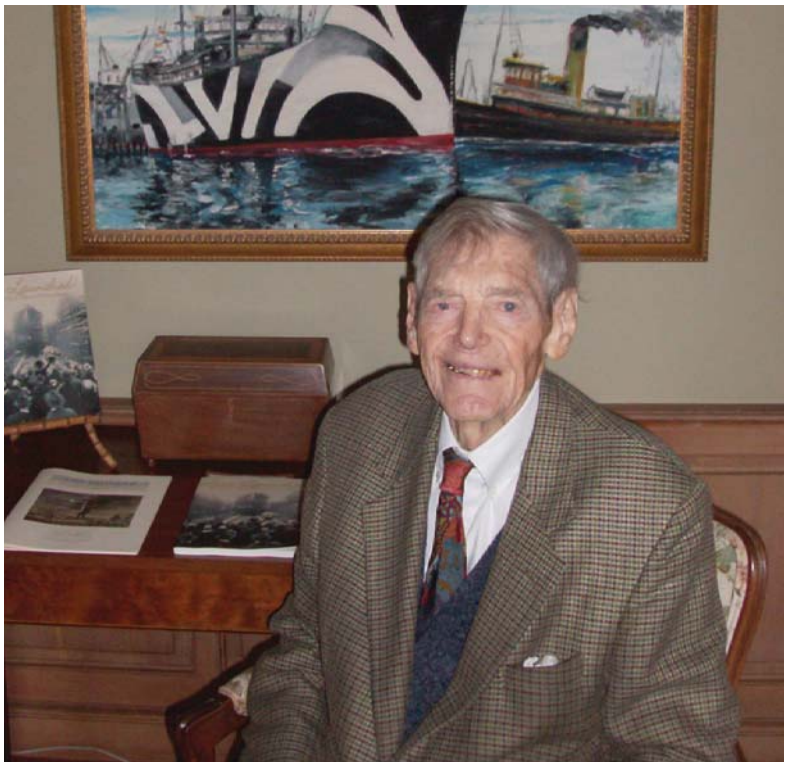
Moore Dry Dock Company, Oakland, CA. S.S. "Young America", C-2 Type Freighter, Being Launched. Under construction for the United States Maritime Commission. September 7, 1942.

The first vessel built at the Oakland yard was the Associated Oil Company's "Coalinga" in 1910, followed by a double-ended steel ferry for Western Pacific Railway. During the First World War, the yard was actively engaged in building ships to replace those being torpedoed in the Atlantic, as well as to provide ship-repair and dry-docking services. Consequently, the shipyard was becoming an exceedingly busy place with 12,000 workers on its payroll. Ship building slips were not vacant for long, and when one hull slid down the ways, a crane would lower the keel plate for the next addition to America's Emergency Fleet. Moore claims that "The World's largest shipping record was first broken in October 1919 when the yard launched six ships in one day: three 10,000-ton tankers and three 9,400-ton freighters."

DIVERSIFICTION IN A DEPRESSED ECONOMY

Shipbuilding work dramatically decreased during the post World War I years and employment plunged. Harking back to its roots as an "iron works," Moore Dry Dock's management decided to diversify and become engaged in the fabrication and erection of structural steel for numerous buildings and bridges in the Bay Area, including the Dumbarton Bridge in the South Bay. Other bridges built by Moore Dry Dock included several bascule bridges in San Francisco and across the Oakland Estuary, as well as a number of bridges in the Sacramento Delta.

The firm also fabricated the structural steel for numerous bay-area buildings including Temple Emanuel and the Shell Office Building in San Francisco, and the Scottish Rite Temple and the Paramount Theatre in Oakland. However, the company did not forget its shipbuilding roots, and Moore Dry Dock responded to the ongoing demand for barges and river boats, while building at least five automobile ferries for the Key System and Southern Pacific in the Bay Area and two ferries for San Diego Bay. But, for Moore Dry Dock, the biggest prize came about as a result of the US Government's economic stimulus program which included the San Francisco Oakland Bay Bridge. So, at the depth of the depression, the company constructed all of the foundation caissons for the towers and the center anchorage of the Bay Bridge, as



James R. Moore in January 2011. Mr. Moore, (who will be 100 this year), was the Vice President of The Moore Dry Dock Company from 1940 to the end of the company's operations in 1961. He is the nephew of Robert S. Moore: one of the company's founders in 1905, and he is the son of Joseph A. Moore, the successor owner to the founder: Robert S. Moore.

well as for the cantilever span on the east of the island.

One of Moore Dry Dock's more unusual projects in the early 1940s was the fabrication and erection of the structural steel frame to house the mammoth 184-in. cyclotron on the University of California's Berkeley Campus where so much of the wartime nuclear research took place.

Meantime, Jim Moore pointed out that dramatic changes were taking place in the shipbuilding industry. One was the use of prefabrication and the pre-assembly of major ship sections, and the other was the dramatic change from riveting to submerged-arc automatic welding. Those revolutionary techniques made it easier to build ships on a production-line basis and were soon to be put to the test in the greatest shipbuilding program that the world had ever witnessed.

AS THE CLOUDS OF WAR BEGIN TO FORM (AGAIN)

In 1937, with war clouds growing in Europe, the U.S. Congress created the United States Maritime Commission to "develop and maintain a merchant marine," and gave it the task of building 50 new ships a year. The following year, the Commission entered into its first contract with Moore Dry Dock for two C3 cargo ships, and not long after for two more ships. By the Spring of 1939, Moore Dry Dock was becoming a busy shipyard once more, as the work force increased and powerful cranes and welding equipment were purchased.

By 1940, with the company in negotiations with the U.S. Navy for auxiliary ships, it became obvious that additional space was needed, and the Moore Dry Dock purchased an adjacent parcel of land from the Western Pacific Railroad. By 1941, in collaboration with the government's Defense Plant Corporation, work began on transforming still another site on the Oakland Estuary into a modern shipyard with all of the facilities that were involved.

Two Navy submarine tenders were built in the new facility while the four C-3s cargo ships were nearing completion for the Maritime Commission. Work was also underway on submarine tenders and additional cargo ships. Following the Japanese attack on Pearl Harbor, the demand for both Navy and cargo ships, as well as ship repair services became intense. Moore Dry Dock acquired additional land on both sides of its yard and built additional facilities.

With successive blocks of ship contracts being awarded by the Maritime Commission, additional emphasis was placed on the prefabrication of major ship sections and their assembly into ever-larger units that could be lifted and transported to the shipways. Shipyard employee rolls at Moore Drydock's yards soared to more than 37,000 workers, and the yard was launching two ships per month. The work never stopped, and at night the shipyard was ablaze with light. During World War II, dry-docking facilities in the East Yard included two large floating drydocks, one small floating drydock purchased from the Navy, and three marine railways.

Meantime, new shipyards were being built, while every existing shipyard on San Francisco Bay was expanding its facilities, including the US Navy's Mare Island Ship Yard in Vallejo and its Hunters Point Drydock in San Francisco, and Bethlehem Steel Company's yards in Alameda and San Francisco. At the same time, Kaiser Industries built four new shipyards on the mudflats of Richmond, and Bechtel built Marin Ship, a new shipyard in Sausalito. Jim Moore stressed that he "could count 14 shipyards in the Bay area that were building ocean-going ships including Bethlehem Steel in San Francisco and Alameda, United Engineering in Alameda (directly across the estuary from Moore Dry Dock), and General Engineering in Oakland."

It is estimated that during World War II Bay Area shipyards employed some 200,000 workers, leading Jim Moore to comment, "I believe that throughout history, no other area in the world has ever produced as much ship tonnage as the Bay Area did during World War II. There were hundreds of ships built, averaging about 8,000 dwt. Moore Dry Dock Company alone built about 175 ocean-going ships and about 40 other vessels of different types."

But, when World War II came to an abrupt end, the demand for new ships fell off precipitously. Soon there was what can only be described as a "glut of ships". As

a consequence, Moore Dry Dock Company, in order to survive, tried to return to its structural steel work. Apparently, the demand wasn't there, and the lack of shipyard business meant decreasing payrolls and more idle facilities at the yard. Jim Moore noted that the average employment during the 1950s must have been about 700, and it kept going down.

THE DEMISE OF SHIPBUILDING ON SAN FRANCISCO BAY

After 15 years of struggling in the anemic economy of the post-war years and, "In consideration of the shrunken demand for its products and services and the intensifying competition prevailing in the company's principal markets, a decision was made to sell the plant of the Moore Dry Dock Company." Jim Moore added "It was also the Japanese yards that were a factor in that decision. They are very efficient, and so too were the South Korean yards with an enormous investment in large graving docks with big overhead cranes and assembly areas."

Jim Moore emphasized to us that "During its 56 years of existence, the company had been through two World Wars and two major nation-wide economic depressions, it had built a total of more 175 ocean-going ships, including 86 C-2 wartime freighters for the U.S. Maritime Commission, as well as countless steel buildings and bridges throughout northern California.

"During the depression between the two wars, the structural steel erection business, as well as bridge building kept the company moving."

Finally, It needs to be pointed out that Moore Dry Dock was not alone in closing its shipyards. Kaiser and Bechtel each closed its yards shortly after the end of the war. Later, Bethlehem and the others closed their yards, and a few years later the U.S. Navy closed its Mare Island Shipyard in Vallejo where scores of navy ships of all types had been built for more than 100 years, and its Hunters Point Yard in San Francisco.

Today, on San Francisco Bay, there remains the historic San Francisco Drydock which is being operated as a ship repair yard by a large defense contractors and survives because of the large floating dry dock that was purchased with the assistance of the Port of San Francisco and is now used mainly for the maintenance and repair of cruise ships and tankers calling at the bay. On the other hand, there are some encouraging signs for the future of ship repair and shipbuilding of ferries and other harbor craft in the bay area with the establishment of a drydock and ship-repair facility in Alameda. There, Bay Ship & Yacht has demonstrated that it can maintain and repair the wide variety of ships and boats on the bay and could eventually build some of the growing fleet of aluminum catamaran passenger ferries, as well as the tugs, barges, and other boats that ply San Francisco Bay. It has been pointed out that it might be helpful to shipbuilding in California if the state were to enact legislation, similar to that of the State of Washington, that mandates that ferries operating in the state must be built in the state.

Global Expansion of CAT Power, Service

*Maritime Reporter recently had the opportunity to tap a trio of executives – **Nigel Parkinson**, GM, Caterpillar Marine Power Systems, **Florian Gruber**, Director, Global Sales and **P. Jaime Tetrault**, Director, Global Product Support – from one of the largest and wide spread marine power brands in the world, Caterpillar, for insights on a range of topics from technology to market development.*

Emissions regulations are becoming increasingly challenging in North America and globally. In order to address these needs, Caterpillar has been working closely with the US EPA and has successfully developed what we call "Emissions upgrade kits." The goal of these kits is to allow our customers the option to reduce vessel emissions without having to replace the engine.

Nigel Parkinson, GM

Please provide an overview of the offerings of CAT Marine.

Parkinson: Caterpillar Marine Power Systems (CMPS), with headquarters in Hamburg, Germany, was created in 2003 to bring together all sales and service activities for Cat and MaK branded marine products within Caterpillar Inc. This organization provides marine power solutions (high and medium speed engines with outputs from 11 kW to 16,000 kW) and customer service from a single source for the global marine market. CMPS coordinates and strives to improve all marine sales and service activities with one simple goal: to ensure our customers' satisfaction in a consistent manner.

Our objective is to serve as an innovative market leader in the high-speed and medium-speed marine diesel engines in all segments in which we participate. We have consolidated the Cat and MaK engine capabilities into one organization to combine our forces and harness the synergies that will deliver our strategic objectives. One organization – two brands: This philosophy embraces huge efficiencies and strengthens our position.

How has the global economic slowdown affected the business of CAT Marine?

Gruber: The multiple industries Caterpillar as a corporation serves were among the hardest hit during the trough and the marine industry was not exempt from the negative downturn of the economy. Despite the economic difficulties, we delivered stable results, invested for the future and continued to strengthen our foundation for growth.

Has it affected your strategy?

Parkinson & Gruber: Our strategy to deliver excellence on board to our customers has not wavered in spite of market conditions. We understand our customers' bottom line may have potentially been impacted by the trough and have strategically remained focused on developing solutions catered to help them deliver exceptional results. We are committed to remaining a market leader in the marine industry and strive to build long-term partnerships with our customers. Understanding our customers' key value propositions has guided Caterpillar Marine Power Systems to engage in a strategically-segmented approach to the marine industry and adjust to our customers' short-term needs. Our long-term strategy to identify and develop emerging markets as well as become a more complete provider of systems solutions has not changed as a result of the economic conditions.

Tetrault: In fact, the economic situation in marine was a catalyst for developing a robust Product Support/Aftermarket strategy. Recognizing that a market shift was upon us, we pulled together our product support experts and developed a strategy to define the metrics and processes necessary to achieve our goal of Product Support excellence. As related to the aftermarket sales, CMPS has also seen a downturn in opportunity for parts sales. However, through deployment of our Product Support Strategy which focuses primarily on dealer service capabilities, we've been able to maintain our positive parts sales trends and even increase our net sales.

Where do you see recovery in the marine business, by global region and/or by market sector?

Gruber: Globally, we have seen a strong growth surge in emerging markets, particularly Asia and Brazil, and we are looking to maximize our opportunities in both of those markets from a prime sales and product support standpoint. From the perspective of the market sectors, the rate of recovery varies. For example, the offshore sector is performing well, leveraging the strength of the oil and gas industry. On the other hand, the pleasure craft sector was impacted quite heavily by the recession and has a longer road to recovery. Fortunately for Caterpillar, we can rely on our product support benefits and services, such as Cat Financial, to offer our customers flexible options.

Tetrault: In the aftermarket business, marine operators have been postponing scheduled and preventative maintenance in an effort to defer costs. This has resulted in a shift of opportunity into 2011 and 2012. However, it has also increased the number of major repairs each year. Strangely enough, the volume of parts sales lost to the postponement of maintenance is easily matched with the volume gained in large part sales. This is an indicator to Caterpillar that from a macro perspective, postponing maintenance isn't a long term solution to cost avoidance. Ultimately, we want to work with our customers in extending maintenance intervals based on conditions internal to the engine which would indicate that it is possible to run for a longer period of time without effectuating a maintenance event.

What are the critical market forces that help to shape your product and services?

Gruber: The key market forces driving the marine industry are emissions regulations and increasing overall fuel efficiency. Now more than ever, customers are demanding complex, customized solutions tailored for their marine applications. This is largely in part due to the varying emissions regulations around the globe that are becoming increasingly stringent. Additionally, many of our marine customers are become more and more global in terms of their operations and need global service solutions for their vessels, even in the most remote locations.

Tetrault: From a product support perspective, heightened competition from the "grey market" has increased our focus on differentiating the value of original equipment and parts. We feel it is important to improve our communication to our customers on the differences between our original equipment and the grey market suppliers.

Additionally, today our customers are becoming much more global, and thus are expecting more consistent product support capabilities from the Cat dealer. As a result, this globalization has driven an increased focus by CMPS on increasing the global service capabilities to a common high level. This is being done through a process of evaluating the service capabilities of these dealers leveraging a metrics based process called the Marine Service Assessment. This assessment focuses on the customer experience in the service space, and thus the most important touch point. Globalization has been a blessing for our customer support business, as it highlights the value of the Cat distribution network, both in terms of dealers and parts. We still have a way to go to achieve what we consider Product Support Excellence, however, this shift in market forces and globalization has helped us in our strategy development.

How is CAT investing today in its marine products and services to better position it for future success?

In the customer support area, **Caterpillar is investing heavily in training** for both our dealers and our customers. We have three global learning centers where we have many of our training assets, including engines, control systems, and even full diesel electric simulators.

Jaime Tetrault

Director, Global Product Support

Parkinson: We have continued to invest heavily in R&D, primarily focusing on power solutions that can help our customers deliver outstanding marine performance in a highly sustainable manner.

Tetrault: One of our key initiatives in Caterpillar Marine Power Systems is to consistently win with our customers. The effort we have made to exceed our customers' expectations is strongly illustrated by the progressive product support programs we have initiated in recent years. We commissioned an extensive, comprehensive study of our customers to get an accurate picture of what the customer desired from Caterpillar Marine Power Systems and the Cat dealer network in terms of service. The results were astoundingly simple: our customers value consistent service around globe, regardless of vessel location. We subsequently developed the Marine Service Assessment (MSA) program to objectively assess marine dealers and identify tactical improvements individual dealer locations can implement to deliver the legendary service our customers have come to not only expect but demand. We will continue to actively engage our customers to determine how we can develop solutions to help them achieve superior results in their operations.

In the customer support area, Caterpillar is investing heavily in training for both our dealers and our customers. We have three global learning centers where we have many of our training assets, including engines, control systems, and even full diesel electric simulators. We are also supporting our dealers to build and develop their own training capabilities to allow an increased penetration of service training to the technical level without the need to travel to these major learning centers. With more than 1,000 new technicians entering the Cat dealer network each year on a global level, service training is a major need.

What can our readers expect to see new from CAT in the coming year?

Parkinson: We see systems integration as a key trend in the coming years and our product development strategy is to provide a complete product line offering the right products to deliver comprehensive power solutions for vessels around the globe. Emissions regulations remain a key industry driver and will continue to shape Caterpillar offerings this year and in the future. Emissions regulations are becoming increasingly challenging in North America and globally. In order to address these needs, Caterpillar has been working closely with the US EPA and has successfully developed what we call "Emissions upgrade kits." The goal of these kits is to allow our customers the option to reduce vessel emissions without having to replace the engine. We've designed our solution to be a retrofit to be installed at the point of a major overhaul. EPA approval was granted in early 2011, and we now have a full offering of 3500 upgrade solutions. Globally, we see these kits as an advantage for customers who operate in waters where there are economic advantages for lowering vessel emission levels. I would encourage any customer with a 3500 engine to contact your local Cat dealer and inquire about these kits and how we can help you reduce your operating costs.

What do you count as the biggest challenges in serving the maritime sector (versus the other sectors you serve?);

Parkinson: In comparison the different industries Caterpillar as a corporation is involved in, the marine industry offers dynamic and unique challenges. One of the key challenges is the overall mobility and complexity of the industry, which creates the need for highly-tailored products and solutions. The industry is especially challenging in terms of service: conditions vary from vessel to vessel, there's no such thing as a standard engine room. Often, the mobile nature of the marine industry requires that we go to the vessel to perform service which presents unique challenges in comparison to a traditional worksite.

Tetrault: In terms of product support, today we are experiencing increased competition in the aftermarket from total service providers. These are entities that are capable of servicing the entire engine space. The advantage they bring to the customer is simplicity in one single point of contact. The disadvantage is a lack of specialization in the engines, and the common usage of non-original parts. We've found that many of our customers were often not aware that these service providers were not using original parts. We encourage our customers who elect to use these service providers to demand original parts to the extent possible. Secondly, we are experiencing increased competition from Parts Agents. These agents do not provide any service other than searching the globe for the parts at the lowest cost. Often they bundle original and non-original parts, creating confusion and a lack of accountability should a part fail prematurely.

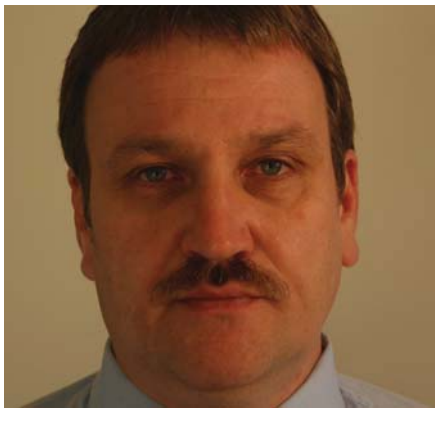
What are the challenges in running an efficient manufacturing operation today?

Parkinson: The global nature of our business requires efficient manufacturing operations worldwide. In 2010, more than two-thirds of Caterpillar sales as a corporation came from outside the United States. A key challenge to Caterpillar in terms of manufacturing operations is ensuring we remain geographically close to our global customer base. In circumstances when we are not geographically close to customers, it is imperative to implement the correct logistics services to ensure we're delivering the correct parts in a timely manner. To achieve optimal operational efficiency, Caterpillar utilizes the Caterpillar Production System to streamline processes and manufacturing activities while aggressively eliminating waste among Caterpillar facilities, suppliers and dealers. Created in 2005, the Caterpillar Production System drives the creation and development of enterprise-wide processes to improve safety, quality and velocity as well as cost management. CPS has been integral to Caterpillar as we strive to be a global leader in safe and efficient manufacturing operations.

What do you consider to be the most important trend in your business to be? (ie. what's happening today that will affect your business in the coming decade):

Gruber: Across several of the marine segments, we have seen a trend of more and more diesel electric installations in marine applications and we expect that pattern to continue. As a result of the increased diesel electric installations, the demand for system integration has subsequently increased.

Tetrault: In the aftermarket space, we are witnessing the consolidation of many of our customers under larger operating companies. This results in more global benchmarking on best practices, and of course, capabilities. Caterpillar is very excited about this trend as it challenges us to constantly improve our dealer capabilities, parts inventories, and customer satisfaction. As the world becomes a smaller place, we need to ensure that we can communicate, operate and perform at world-class levels in any operating environment.



Globally, we have seen a strong growth surge in emerging markets, particularly Asia and Brazil. .

Florian Gruber,

Director, Global Sales

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MAN Diesel & Turbo Launches ME-GI

Dual-Fuel Low-Speed Gas Injection Engine

In May MAN Diesel&Turbo launched its newly developed low speed dual fuel engine at the company's Diesel Research Center in Copenhagen Denmark. Hosted by Thomas S. Knudsen, Senior Vice President Low-Speed MAN Diesel & Turbo, the engine was presented for some 300 clients, licensees and media representatives.

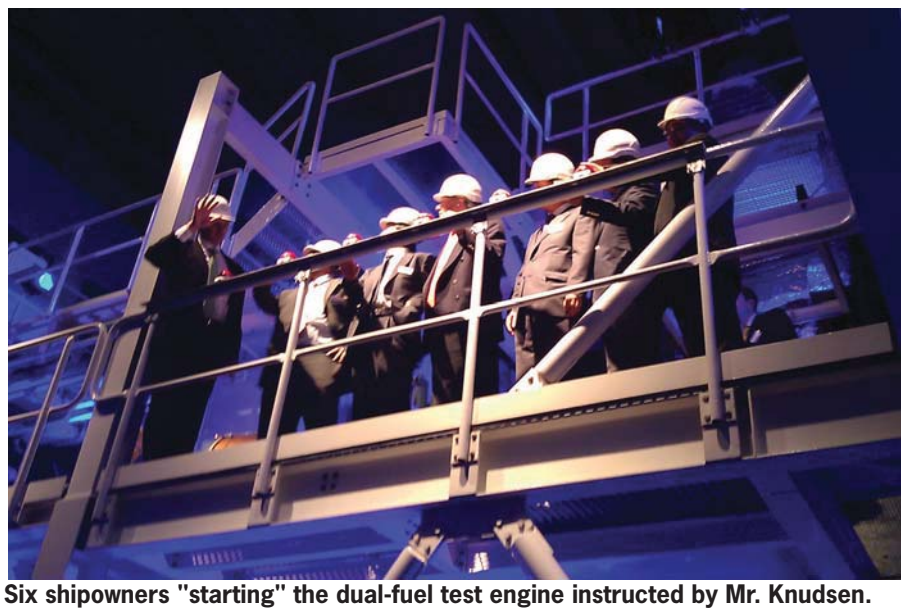
By Henrik Segercrantz

MAN Diesel&Turbo has since the 1990s worked on developing a low speed two-stroke engine which can use compressed liquefied natural gas as fuel. Sofar the dual fuel engines in maritime use have been medium speed engines. The new ME-GI engine, which is currently being approved by the major classification societies, is capable of operating on gas using only 5% heavy fuel oil. The gas, compressed to nearly 300 bar, is fed into the cylinder a fraction of a second after feeding a small amount of traditional fuel, either heavy fuel oil or diesel oil, to ignite the gas.

MAN Diesel & Turbo's 4T50ME-X R&D research engine rebuilt as a 4T50ME-GI engine operating on natural gas has been tested since last year. The performance of the GI gas injection principle has now been verified, and the technology is soon ready to be applied for a range of the company's low speed engines. All MAN B&W ME, ME-C & ME-B engines can be delivered with the GI system. It can also be retrofitted on these engines. Typical engines anticipated for this technology are the medium bore engine types S70ME-GI, S65ME-GI & S60ME-GI. "The ME-GI engine is available for ship deliveries from mid 2013 and for retrofit installation from the end of 2012," Ole Grøne, Sales Manager of Low Speed engines at MAN Diesel&Turbo, told the audience.

Korea's Daewoo Shipbuilding & Marine Engineering Co., Ltd. (DSME) has provided the ME-GI's pertaining, high-pressure, cryogenic gas-supply system, based on a separate development agreement between the two companies.

The technology used in the design of the new two-stroke ME-GI engine combines the MAN Diesel&Turbo ME-C design with the GI-design of the first MAN B&W dual-fuel engine, the 12K80MC-GI-S, constructed back in 1994 by licensee Mitsui to produce electricity in Chiba in the Tokyo Bay area. This engine has proven to be reliable, available and safe in operation. Differing from this engine, the new GI engine is fitted with electronically controlled fuel injection. This has simplified the design, and allows for precise dosing of the two fuels exactly when needed, providing a large degree of adaptability for meeting future emission regulations. One main market target for the new engine is LNG carriers. Depending on relative price and availability, as well as on environmental considerations, the ME-GI engine gives shipowners and operators the option of using either gas or heavy fuel oil. Having a gas-burning two-stroke low speed diesel engine aboard an LNG carrier also provides for unmatched propulsion efficiency. Being a low speed engine, MAN claims it provides the highest thermal efficiency of any system on the market for propulsion of LNG carriers. In their presentation, the company said ME-GI is perfectly safe for a single screw application, and twin or single screw should be decided on by hull considerations only.



In a spectacular theatrical event Thomas S. Knudsen, Senior Vice President Low-Speed, MAN Diesel & Turbo unveiled the company's ME-GI two-stroke dual-fuel test engine for the invited audience at the company's Diesel Research Center in Copenhagen Denmark.

Six shipowners "starting" the dual-fuel test engine instructed by Mr. Knudsen.

The new two-stroke ME-GI test engine has an integrated gas supply system.

The engine can use a wide range of gas qualities as there is no requirement for the methane number and no maximum limit for the hydrogen content. By using gas as fuel, the CO2, NOX and SOX and particulate emissions are reduced. Test engine measurements show a NOx reduction of some 24% and a CO2 reduction of 23% compared to running with diesel oil. As the traditional engines, the dual fuel version can also operate in conjunction with a waste-heat recovery system, and meets Tier III emission requirements when combined with the company's exhaust gas recirculation (EGR) system. MAN Diesel&Turbo has recently also introduced its own waste-heat recovery WHRS Marine Generator Unit and is currently in the process of streamlining its compact production version EGR system.

MAN Diesel&Turbo sees significant opportunities arising for gas-fuelled ton-

nage as fuel prices rise and modern exhaust-emission limits tighten. The company sees a broad potential market for its ME-GI engine, extending from LNG and LPG carriers to other oceangoing vessel segments such as containerships and other vessels operating on a fixed route. As such, the ME-GI engine represents a highly efficient, flexible, propulsion-plant solution.

"We see many potential applications for the ME-GI's increased flexibility and greater control both within the LNG sector and generally within marine transportation, as operators seek to control costs and emissions," said Søren H. Jensen, Vice President and Head of Research & Development, Marine Low-Speed. "With the addition of the ME-GI engine to its existing portfolio, MAN Diesel&Turbo now offers the two-stroke

Thomas S. Knudsen, Senior VP, Low-Speed, MAN Diesel & Turbo.

market's most comprehensive array of prime-mover solutions all the way up to 98-bore."

Both pilot fuel-oil and gas fuel injection is required for the ME-GI dual-fuel engine's combustion chamber. This is done using different types of valves arranged in the cylinder head. The ME-GI engine head is fitted with two valves for gas injection and two for pilot fuel. The pilot-oil valve is a standard ME fuel-oil valve. MAN B&W ME-C and ME-GI engines are broadly similar and share the same efficiency, output and dimensions. In comparison, the ME-GI engine's key components are its modified exhaust receiver, modified cylinder cover with gas-injection valves and gas-control block, an expanding top gallery platform, high-pressure fuel-supply pipes, and mounted gas-control units. Double-wall piping is applied for the high-pressure gas produced by Daewoo's cryogenic gas-supply system. Despite the high gas pressure, MAN Diesel&Turbo claims that thanks to the Diesel Cycle combustion process of the engines no methane slip (leakage) occurs with the ME-GI engine.

New ABS Management Team


Grove


Tikki

ABS announced a series of management appointments, following the appointment of Christopher J. Wiernicki as the new CEO, in concert with the recent naming of Todd Grove as CTO.

Joining Wiernicki's new management team is Robert Gilman, as President and COO of ABS Americas Division. Assisting Gilman will be Derek Novak, as VP Vice President, Operations and Matt Tremblay who will replace Novak as VP, Engineering for the ABS Americas Division.

The new President and COO of the ABS Pacific Division will be Eric Kleess. Taking over as President and COO of the ABS Greater China Division will be Richard Pride. In the ABS Europe Division, John McDonald recently assumed the position of President and COO. The ABS NS Division continues to be led by Karen Hughey, President and COO. Through the appointment of Demetri Stroubakis as Senior Vice President, Global Operations the organization is increasing its focus on service delivery for its expanding client base. Mark McGrath, currently President and COO of the ABS Pacific Division, will transfer to ABS' HQ to serve as the Corporate Training Officer. Adam Moilanen will transfer to ABS' HQ as VP and Chief of Staff. Robert Giuffra has been appointed to serve as Senior VVP, Quality and Service. Dr. Kirsi Tikka will assume the position of VP and Chief Engineer for ABS.

APL President Eng Aik Meng Resigns

NOL Group announced the resignation of Eng Aik Meng as President of its APL shipping business. The container transportation and logistics group has named Kenneth Glenn, currently President of its North Asia Region, as his replacement.

NOL said Mr. Eng will leave the company September 1, 2011, to take a new position outside the transportation industry. Mr. Eng joined APL in 1993, holding positions in Strategic Planning and as head of its Intra-Asia Trade. He left in 2007, but returned in 2008 as President of APL. Mr. Glenn is a 32-year industry veteran, who joined APL in 2000. He was the company's top executive in India when it introduced that country's first private freight-rail business, IndiaLinx, in 2007. Since January 2009, he has been North Asia President. Mr. Glenn was the Senior Vice President in charge of APL's Asia-Europe Trade from 2000 to 2005.


Eng Aik Meng, resigned as APL president.


Kenneth Glenn will replace him.

Before joining APL, Mr. Glenn spent 21 years with Sea-Land Corporation in a variety of executive roles, including Vice President of the Asia-Europe and Atlantic Tradelanes and Vice President and General Manager for the former Soviet Union. APL is the world's seventh-largest container shipping line. It is a leader in the Intra-Asia and Trans-Pacific trades.

Odfjell Names Iversen SVP/CFO

Odfjell appointed Terje Iversen as new SVP/CFO for Odfjell SE. He will start in this position not later than September 1, 2011. Iversen is currently employed by the maritime industrial company Bergen Group ASA as CFO. Odfjell's present CFO, Haakon Ringdal, is appointed Executive Vice President in Odfjell SE. In this role he will act as deputy for the President/CEO.

New President of BMT Fleet

BMT Fleet Technology Ltd, a subsidiary of BMT Group Ltd. appointed Dr. Gordon Fleming as President. Dr. Fleming joins BMT from Rolls Royce where he led the company's activity with respect to the new Canadian Naval and Coastguard Shipbuilding Programs that are unfolding as part of the National Shipbuilding Procurement Strategy.

Gjesdal Appointed CFO of Kvaerner

Eiliv Gjesdal has been appointed Chief Financial Officer (CFO) of Kvaerner. Gjesdal is following the appointment of Jan Arve Haugan as President and CEO. Gjesdal joined Aker Solutions in 2002.

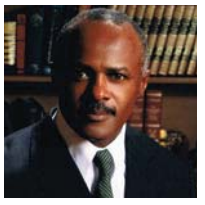
Gilje New VP of L-3 Valmarine

L-3 Valmarine appointed John Egil Gilje as vice president and director Sales & Marketing of L-3 Valmarine. Gilje will report directly to Finn Inge Langeland, managing director of L-3 Valmarine.

Fernandez COO at Trailer Bridge

Trailer Bridge, Inc. appointed Scott W. Fernandez as Chief Commercial Officer. Fernandez will be responsible for the Company's sales and marketing efforts effective immediately, and be based out of the Company's headquarters in Jacksonville, FL. He replaces Adam E. Gawrysh, Jr.

New Federal Pilotage Services to Galveston, Texas City, Lake Charles



Federal pilotage service is now available by the recently formed NW Gulf Federal Pilots in the Ports Galveston and Texas City, Texas, as well as in Lake Charles, Louisiana. The NW Gulf Federal Pilots service U.S. flagged vessels in coastwise trade under

enrollment and operate independently of state pilots. Captain Graylin Gant established the NW Gulf Federal Pilots to meet t he needs for federal pilotage required by law in the various channels served.

www.nwgulffedpilots.com

Gibbs & Cox Appoints Tallant VP

Gibbs & Cox appointed Shawn Tallant as Vice President of Business Development and Strategy. In this role, Tallant will develop and oversee strategic business plans and execute corporate business growth activities for Gibbs & Cox's complete portfolio of U.S. government agencies, domestic and international commercial clients.

Shell Move Forward with FLNG

Shell announced its final investment decision on the Prelude Floating Liquefied Natural Gas (FLNG) Project in Australia (100% Shell), building the world's first FLNG facility. Moored far out to sea, some 200 km from the nearest land in Australia, the FLNG facility will produce gas from offshore fields, and liquefy it onboard by cooling. The decision means that Shell is now ready to start detailed design and construction of what will be the world's largest floating offshore facility.

From bow to stern, Shell's FLNG facility will be 488 m long, and will be the largest floating offshore facility in the world – longer than four soccer fields laid end to end. When fully equipped and with its storage tanks full, it will weigh around 600,000 tons – roughly six times as much as the largest aircraft carrier. Some 260,000 tons of that weight will consist of steel.

The FLNG facility will tap around 3 trillion cubic feet equivalent of resources contained in the Prelude gas field. Shell discovered the Prelude gas field in 2007.

Some 110,000 barrels of oil equivalent per day of expected production from Prelude should underpin at least 5.3 million tons per annum (mtpa) of liquids, comprising 3.6 mtpa of LNG, 1.3 mtpa of condensate and 0.4 mtpa of liquefied petroleum gas.

ABB Strengthens Marine Presence in Brazil

ABB will strengthen its marine business presence in Brazil, in order to serve the growing market in Latin America more effectively. Latin America has quickly become a key strategic area for ABB's marine business.

Future plans, which include the establishment of a new Azipod C factory, marine service center and specialized Azipod service center, will help ABB to serve Brazil's fast-growing shipbuilding industry and to fulfill the requirement for local content.

"Our portfolio fits well into Brazil's shipbuilding plans and development, and our investments show ABB's commitment and confidence in the Brazilian market, and we believe this will gain us a preferred position to supply thrusters for 28 drilling units for Petrobras," " said Heikki Soljama, head of ABB's Marine and Cranes Business Unit.

Several locations have been evaluated for setting up the new Azipod factory, including Pernambuco, Santos, and Rio De Janeiro, although the final decision has yet to be taken. The planned factory will have the annual capacity of over 30 Azipod units. The actual construction schedule will enable timely thruster delivery to Petrobras drilling units from Brazil.

A service center is also planned to be opened by 2014 in Brazil. It will have dedicated and specialized Azipod service personnel, a dedicated workshop and tooling to assist in overhauls and refurbishment. The service center will also provide spare parts for the local market.

ABS Opens Office in Stavanger

The American Bureau of Shipping (ABS) announces the opening of an office in Stavanger, Norway to further extend its global reach and provide dedicated support to its growing Norwegian client base.

ECO Announces Aggressive Newbuild Campaign

Edison Chouest Offshore (ECO) announced plans to design and construct eight new deepwater platform supply vessels. ECO currently owns and operates a large fleet of high-capacity platform supply, fast supply, anchor handling, construction, tractor tug, well stimulation and specialty vessels deployed worldwide. ECO now owns and operates one of the largest deepwater

MTU Detroit Diesel now named Tognum America

MTU Detroit Diesel announced a name change to Tognum America Inc., effective June 1, 2011. Tognum America, like MTU Detroit Diesel before, is a subsidiary of the Germany-based Tognum Group and is responsible for the sales and service of MTU engines and MTU Onsite Energy distributed energy systems in North and Latin America. MTU Detroit Diesel evolved out of a partnership between MTU Friedrichshafen and Detroit Diesel to create one global entity focused on the off-highway engine market. Today as Tognum America, the company continues to build on the strong foundation of these two engine manufacturing giants to serve the needs of off-highway customers throughout North and Latin America.

MRG signs with Hempel

Marine Resources Group (MRG) signed a three-year exclusive agreement with Hempel USA for marine coatings for their fleet of tugs and barges. Under this agreement, Hempel will provide the fleet with coatings and technical services for dry dockings and shipboard maintenance worldwide. Marine Resources Group tug and barge companies throughout the United States offer a broad range of marine services. The companies include Foss Maritime Company, based in Seattle, Washington, Oakland-based AMNAV Maritime Services, and two companies based in Honolulu, Hawaii.

ROV-capable fleets in the world, in conjunction with its subsea affiliate, C-Innovation.

Chouest acknowledged that three in the new class of eight PSVs are in the early stages of construction, as well. "Our design plans also take into account the potential of future modifications for deployment in the Arctic," he also noted. ECO currently has under construction, at two of its south Louisiana shipyards, the hull and superstructure for a 361' Arctic ice class anchor handling tug supply vessel, slated for delivery in early 2012 to Shell in Alaska.

The newly announced group of eight vessels is in addition to a total of 25 other newbuilds ECO and its affiliates already have under construction at shipyards in the U.S., Brazil and Poland. Chouest anticipates the new group of vessels, under construction at Chouest affiliate shipyards North American Shipbuilding (Larose, LA), La Ship (Houma, LA) and Tampa Ship (Tampa, FL), will be delivered within the next 12-36 months.

ABS NS Grows in Egyptian Market

ABS Nautical Systems was selected as the fleet management software provider for Arab Maritime Petroleum Transport Company (AMPTC). AMPTC owns and operates a fleet of LPG Carriers, Crude Oil Tankers and Product Carriers operating in the spot market worldwide that was established by member counties of the Organization of Arab Petroleum Exporting countries.

Berman Joins Holland and Knight

Holland & Knight announced that Brad L. Berman joined the firm as Partner in the firm's New York City office. Berman served as Executive Director of the Liberian International Ship & Corporate Registry (LISCR).

ALBERT Wins Canal Contract

Italian Naval Architecture and Marine Engineering firm Alberto ALBERT was awarded a project to develop for Italian Logistic firm MOVENDO International the transport of gravels for the concrete to be used during the extension of Panama Canal. The service began in January and employs two 91.4 x 24.4 x 5.5m Chinese hopper barges conceived for the transport of basalt gravels in bulk on deck from Pacific Side to Atlantic Side of the Gatun lake. The system is composed by a standard tug pushing the barge stern by means of a connection properly designed, RINA classed and builded in Panama. Once loaded on board the gravels by GUPC crushing plant the barge is pushed to Atlantic side berth were the gravels (7800t each voyage) are discharged by means of three conveyors, 700 t/h each, parked on board.

Faststream: Rising Demand for Technical Shipping Candidates

The latest report by shipping industry recruiters Faststream reveals that there is a rising global demand for ex-seafarers in shore based positions. In its Maritime Employment Review - Technical Shipping published May 20, 2011, Faststream revealed an upswing in candidate placements in 2010/11. Globally speaking, the average age of a technical shipping candidate in the past 12 months was 42 and the average salary $89K.

Key findings of the report include:

- UK employers feeling impact of immigration cap
- Growing demand for technical people from commodity houses
- Classification societies hiring again
- Tech superintendent salaries firm
- Continued growth of Singapore as a ship management center
- USA dominated by tanker hires

The report also shows that the churn in the ship management sector has led to more candidate movement in the past 12 months than in 2009 and that more than ever before is being asked of mid and senior level technical employees.

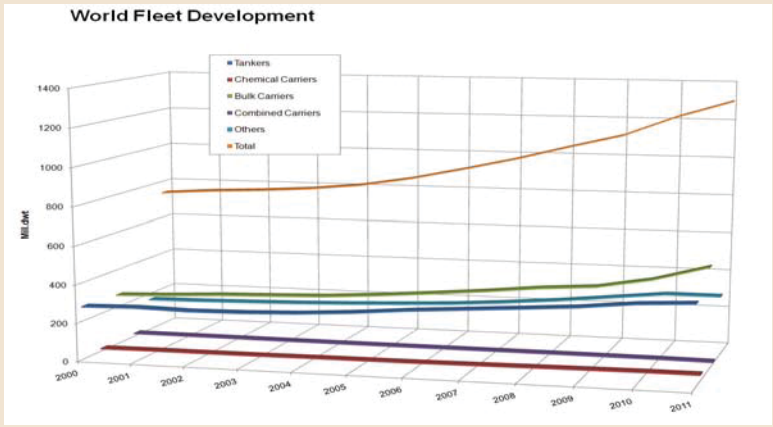
"There are more jobs out there and there are good candidates too. We are not however seeing the speculative hires of the boom years, when companies were snapping up experienced technical staff and then worrying about finding them something to do. Today the challenge for employers seeking to bring in new blood or expand their operations is persuading candidates to move job and possibly relocate," said Mark Charman, Faststream's group managing director. "At the best of times it can be a difficult task to ask a good candidate in employment to take the leap and join your company, but against a backdrop of a difficult housing market, pessimism and uncertainty surrounding the general economy and a general sense of caution, employers searching for experienced and polished technical shipping people need to communicate the strength of their companies and be prepared to be flexible."

www.faststream.com

World Fleet Development (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	276	13.5	264.8	15.2	166.7	736.2
2001	281.3	15	274	14.6	169.3	754.3
2002	274.9	15	287.4	13.8	174.7	765.9
2003	278.8	15.4	295	12.6	181.2	783
2004	287.9	17.3	303.3	12.2	189.6	810.3
2005	304.1	18	320.7	11.7	200.5	855
2006	326.9	19.2	341.9	11.7	213.3	913
2007	344.4	21.4	365.1	11.3	232.5	974.8
2008	362.1	24.4	392.9	11.3	255.5	1046.2
2009	380.8	26.4	411.1	10.5	283.9	1113.5
2010	408.9	28.6	459.2	9.7	312.3	1218.7
2011	**422.6**	**28.5**	**533.6**	**6.8**	**312.3**	**1303.7**

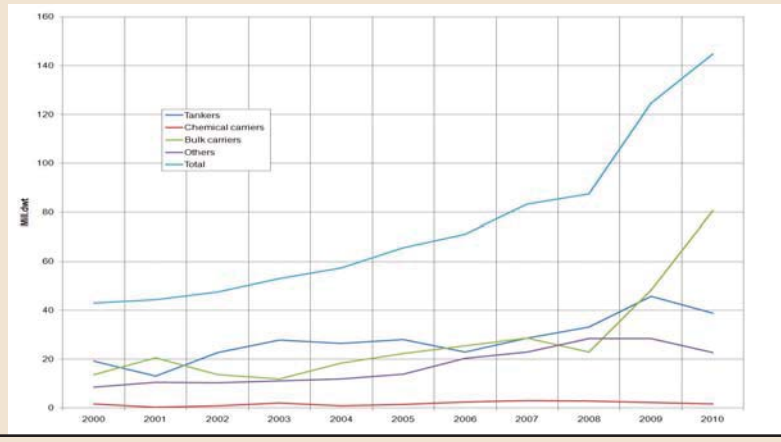
(Source: The Platou Report 2011, RS Platou Group • www.platou.com)



Deliveries (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	19.2	1.7	13.6	N/A	8.5	43
2001	13.1	0.2	20.6	N/A	10.5	44.4
2002	22.7	0.8	13.6	N/A	10.4	47.5
2003	27.9	2	11.8	0.2	11.2	53.1
2004	26.4	0.8	18.3	N/A	11.9	57.4
2005	28	1.5	22.3	N/A	13.8	65.6
2006	23	2.4	25.5	N/A	20.3	71.1
2007	28.7	3	28.6	N/A	23	83.3
2008	33.2	2.9	22.9	N/A	28.4	87.4
2009	45.7	2.2	48.3	-	28.4	124.7
2010	**38.9**	**1.7**	**80.6**	**0.6**	**22.7**	**144.8**

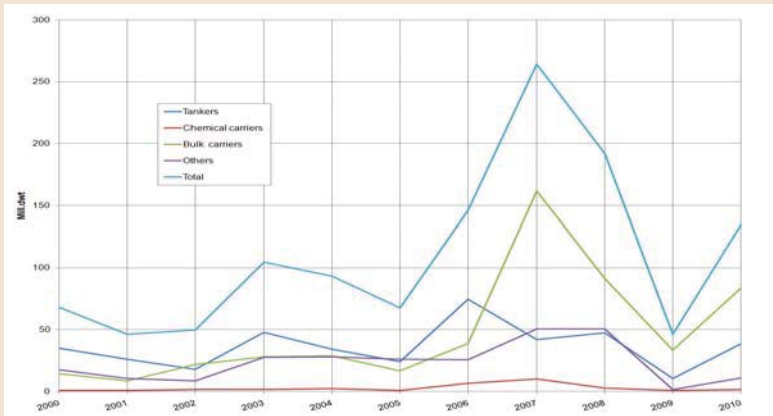
(Source: The Platou Report 2011, RS Platou Group • www.platou.com)



New Orders (Mill.dwt)

	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	34.9	0.9	14.5	0.2	17.5	67.9
2001	26.2	0.7	8.7	N/A	10.5	46.1
2002	17.7	1.6	21.9	N/A	8.4	49.6
2003	47.9	1.4	27.9	N/A	27.5	104.7
2004	34	2.2	28.8	N/A	28.1	93.1
2005	24	0.9	16.8	N/A	25.9	67.6
2006	74.7	6.8	39	N/A	25.7	146.2
2007	42.1	10.1	161.6	N/A	50.5	264.3
2008	47.4	2.7	91.4	N/A	50.5	192
2009	10.3	0.8	33.6	N/A	1.5	46.2
2010	**38.5**	**1.6**	**83.5**	**-**	**10.8**	**134.4**

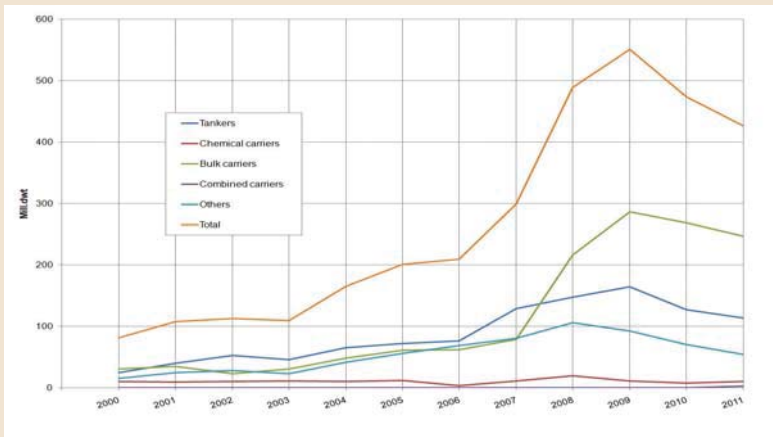
(Source: The Platou Report 2011, RS Platou Group • www.platou.com)



Orderbook (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	24.8	10.4	30.5	N/A	15.5	81.2
2001	39.3	9.5	34.3	0.2	24.5	107.8
2002	52	10	22.4	0.2	27.9	112.5
2003	45.3	10.8	30.3	0.2	22.9	109.5
2004	65.1	10.2	48.4	N/A	41.2	164.8
2005	72	11.6	60.6	N/A	56.2	200.4
2006	76.5	3.3	61.4	N/A	68.1	209.3
2007	128.7	11	78.9	N/A	80	298.6
2008	147.7	19	216.1	N/A	105.7	488.5
2009	164	11.3	286.3	N/A	92.2	551
2010	126.8	7.7	268.7	N/A	70.5	473.7
2011	**113.4**	**9.7**	**246.5**	**2.8**	**53.7**	**426**

(Source: The Platou Report 2011, RS Platou Group • www.platou.com)



Tonnage Sold for Recycling, Lost & Other Removals (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	13.9	0.2	4.4	0.6	3.1	22.1
2001	19.5	0.2	7.2	0.8	4	31.7
2002	18.9	0.4	6	1.2	3.9	30.4
2003	18.8	0.1	3.5	0.7	2.8	25.9
2004	10.2	0.1	0.8	0.5	1	12.7
2005	5.1	0.3	1.2	0	1	7.6
2006	5.5	0.2	2.2	0.3	1.1	9.4
2007	10.7	0.4	0.7	0	1.4	13.2
2008	14.9	0.5	4.7	0.8	4.3	24.8
2009	17.1	0.5	9.9	0.9	6.7	35.1
2010	20.4	1.3	6.3	0.1	7.7	35.8

(Source: The Platou Report 2011, RS Platou Group • www.platou.com)

Second Hand Prices of 5 Year Old Tankers (Mill.dwt)

Start	MR Prod	Afra max	Suez max	VLCC
2000	19	24	35.5	53
2001	25.5	41	49	70
2002	20.5	31	38	60.5
2003	21	28	37	52
2004	28	38	48	72
2005	39	56	71.5	106
2006	45	61.5	75	113.5
2007	45	64	81	118
2008	50	68	93	136
2009	38	53	71	102
2010	25	40	56	82
2011	**27**	**40**	**58**	**85**

(Source: The Platou Report 2011, RS Platou Group • www.platou.com)

Second Hand Prices of 5 Year Old Bulk Carriers (Mill. Dwt)

	Handymax	Panamax	Capesize
2000	16	17.5	28
2001	15.5	16	27
2002	12.2	13.4	22
2003	14.8	16.5	27.5
2004	20.5	27.5	45
2005	31	38	64
2006	25.5	29	55
2007	40.5	45.5	80
2008	73	88	138
2009	26.5	30	49
2010	28	34	55
2011	**31.5**	**37.5**	**52**

(Source: The Platou Report 2011, RS Platou Group • www.platou.com)

For anyone doing business in the U.S. marine industry, the U.S. Maritime Administration published earlier this year a statistical analysis which should not be missed, the ***U.S. Water Transportation Statistical Snapshot — February 2011***.

Excerpted here are some of the key analysis. For the full report, visit:

http://www.marad.dot.gov/documents/US_Water_Transportation_Statistical_snapshot.pdf

- In 2009, **U.S. ports accounted for 8% of global vessel calls**, ranked second behind China.
- In 2009, 6,996 oceangoing vessels made **55,560 calls at U.S. ports**, down 7% from 5 years earlier.
- Over 5 years, the average size of vessels calling at U.S. ports increased by 9%
- In 2009, U.S. water trades (foreign and domestic) amounted to **2.0 billion metric tons**.
- **Seafarer wages increased by 27%** in five years. The largest increase was for captains, mates and pilots.
- **19,100 jobs were added** in 5 years in water transportation and related industries, an increase of 8%.
- In 2009, container trade accounted for 17% of U.S. waterborne foreign trade, up from 14% 5 years before.
- In 2009, **44% of U.S. foreign trade was moved by vessel** in value terms, up from 42% 5 years earlier.
- In 2009, Gulf ports accounted for 34% of U.S. vessel calls, up from 31% five years earlier.
- In 2009, about 52 percent of those employed in water transportation (33,000) were seafarers.

U.S. Foreign Trade by Mode, 2004-2009

Trade	2004	2005	2006	2007	2008	2009
Billion Dollars						
Total (All Modes)	2,284.6	2,574.5	2,879.9	3,105.2	3,391.1	2,615.7
Waterborne	958.6	1,122.3	1,278.7	1,398.7	1,623.8	1,162.4
Container	536.9	603.8	670.3	736.6	800.5	651.3
Overland	726.6	800.3	870.0	925.1	961.7	751.7
Air	599.3	651.9	731.2	781.4	805.6	701.5
Percent of All Modes						
Waterborne	42.0	43.6	44.4	45.0	47.9	44.4
Container	23.5	23.5	23.3	23.7	23.6	24.9
Overland	31.8	31.1	30.2	29.8	28.4	28.7
Air	26.2	25.3	25.4	25.2	23.8	26.8

Source: U.S. Bureau of Census, Foreign Trade Division, www.census.gov/foreign-trade.

Global Vessel Calls by Country and Vessel Type, 2009

Country	Tanker	Cont.	DryBulk	Ro-Ro	Gas	Combo	Gen.	Total
China	5,088	43,690	12,942	1,017	325	73	3,930	67,065
U.S.	19,641	18,206	8,587	4,951	704	135	3,336	55,560
Japan	3,727	22,094	9,066	4,974	1,942	11	4,477	46,291
Singapore	9,780	14,658	10,987	1,538	861	198	2,346	40,368
Brazil	6,609	9,975	7,386	1,020	158	81	2,075	27,304
S. Korea	3,812	12,892	5,253	2,335	737	31	2,222	27,282
Taiwan	2,584	13,281	4,116	185	333	3	967	21,469
Italy	6,740	7,902	1,764	3,388	263	14	1,212	21,283
India	7,230	4,372	6,856	297	711	28	1,583	21,077
Australia	2,584	3,794	10,434	1,601	434	41	1,332	20,220
Top 10	67,795	150,864	77,391	21,306	6,468	615	23,480	347,919
Other	106,134	142,891	59,269	32,187	10,772	795	30,214	382,262
Total	**173,929**	**293,755**	**136,660**	**53,493**	**17,240**	**1,410**	**53,694**	**730,181**

Notes: The calls were by oceangoing vessels of 10,000 DWT or greater. See glossary for vessel descriptions.

Source: Maritime Administration, Vessel Calls at U.S. Ports, www.marad.dot.gov/data_statistics.

U.S. Foreign Container Trades by U.S. Port , 2004-2009

(Million Metric Tons)

Port	2004	2005	2006	2007	2008	2009	% Ch. 2004-09
LA/LB	53.6	57.1	66.5	69.7	69.8	57.5	7.3
New York	23.6	26.8	27.8	29.9	31.9	27.8	17.8
Houston	14.6	15.3	16.3	17.6	18.4	16.3	11.6
Savannah	11.6	13.6	14.5	17.1	18.7	15.7	35.3
Seattle/Tacoma	14.5	18.3	17.6	18.9	17.9	15.3	5.5
San Francisco	9.6	10.9	11.4	11.7	11.8	11.6	20.8
Norfolk	10.1	10.9	11.9	12.3	12.9	10.5	4.0
Charleston	10.8	12.1	11.2	11.3	10.9	7.7	-28.7
Miami	8.5	9.7	9.3	8.8	8.3	7.6	-10.6
New Orleans	5.0	4.6	5.5	6.0	5.7	5.2	4.0
Top 5	117.8	131.0	142.7	153.2	156.7	132.6	12.6
Top 10	161.8	179.1	192.2	203.3	206.2	175.1	8.2
Total, Container	187.6	205.8	220.6	231.6	235.2	200.6	6.9
Total Non-Container	1,118.0	1,145.3	1,160.0	1,144.3	1,141.3	1,001.4	-10.4

Source: U.S. Bureau of Census, Foreign Trade Division, www.census.gov/foreign-trade.

Vessel Calls at U.S. Ports, U.S.-flag and Jones Act Fleets, 2004-2009

Vessel Type	2004	2005	2006	2007	2008	2009	% Ch. 2004-09
U.S.-Flag							
Tanker	3,591	3,676	3,421	3,581	3,378	3,222	-10.3
D/Hull	1,882	2,012	2,190	2,669	2,686	2,745	45.9
Product	2,449	2,532	2,455	2,527	2,440	2,388	-2.5
D/Hull	1,361	1,372	1,474	1,665	1,799	1,919	41.0
Crude	1,142	1,144	966	1,054	938	834	-27.0
D/Hull	521	640	716	1,004	887	826	58.5
Container	2,992	2,605	2,465	2,557	2,477	2,668	-10.8
Dry Bulk	128	131	77	99	97	102	-20.3
Ro-Ro	1,079	1,238	1,364	1,243	1,152	909	-15.8
Vehicle	227	451	565	484	496	391	72.2
Combo	0	0	0	0	0	1	na
General	102	95	53	37	44	20	-80.4
All Types	7,892	7,745	7,380	7,517	7,148	6,922	-12.3
Jones Act							
Tanker	3,591	3,662	3,386	3,545	3,351	3,191	-11.1
D/Hull	1,882	1,998	2,155	2,633	2,659	2,714	44.2
Product	2,449	2,518	2,420	2,491	2,413	2,357	-3.8
D/Hull	1,361	1,358	1,439	1,629	1,772	1,888	38.7
Crude	1,142	1,144	966	1,054	938	834	-27.0
D/Hull	521	640	716	1,004	887	826	58.5
Container	1,583	1,579	1,490	1,417	1,275	1,272	-19.6
Dry Bulk	78	72	38	63	55	59	-24.4
Ro-Ro	779	856	868	842	735	579	-25.7
Vehicle	0	97	113	120	109	102	na
Combo	0	0	0	0	0	1	na
General	73	63	25	14	17	4	-94.5
All Types	**6,104**	**6,232**	**5,807**	**5,881**	**5,433**	**5,106**	**-16.3**

Notes: The calls were by oceangoing vessels of 10,000 DWT or greater. DH—double-hull. Jones Act Fleet—Vessels built in the U.S. and registered under U.S.-flag; or vessels reconstructed in the U.S. and registered under U.S.-flag; or foreign-built vessels forfeited for violation of U.S. law and registered under U.S.-flag. These vessels have unrestricted coastwise trading privileges.

Source: Maritime Administration, Vessel Calls at U.S. Ports, www.marad.dot.gov/data_statistics.

U.S. and Global Waterborne Trades, 2004-2009

(Million Metric Tons)

Trade	2004	2005	2006	2007	2008	2009	%Ch. 2004-09
Global	6,963.0	7,272.3	7,635.2	7,943.4	8,139.3	7,752.0	11.3
Coal & Coke	659.7	687.6	728.6	771.8	797.2	792.1	20.1
Iron Ore	586.6	657.5	721.3	781.0	840.0	907.5	54.7
Petroleum	2,485.8	2,576.3	2,668.3	2,746.2	2,745.7	2,638.5	6.1
LNG	131.3	141.7	159.5	171.4	172.8	172.0	31.0
Grain	273.0	273.0	290.0	303.0	323.0	313.0	14.7
Container	918.0	1,020.0	1,134.0	1,265.0	1,317.0	1,191.0	29.7
Other	1,908.4	1,916.1	1,933.4	1,904.9	1,943.5	1,737.9	-8.9
U.S.	1,305.6	1,351.0	1,380.6	1,375.9	1,376.5	1,202.0	-7.9
Coal & Coke	71.5	74.9	80.4	88.1	107.5	73.5	2.8
Iron Ore	18.6	21.6	17.9	17.1	18.7	6.6	-64.5
Petroleum	622.5	638.8	624.1	617.6	606.0	567.7	-8.8
LNG	17.9	16.1	15.7	18.6	10.1	11.7	-34.8
Grain	108.4	102.3	111.4	122.1	118.9	113.2	4.5
Container	187.6	205.8	220.6	231.6	235.2	200.6	6.9
Other	279.1	291.5	310.5	280.8	280.1	228.7	-18.1

Sources: Global Trade—Clarkson Research, www.clarksons.net; U.S. Trade—U.S. Bureau of Census, Foreign Trade Division, www.census.gov/foreign-trade.

Vessel Calls at U.S. Ports, 2004-2009

In 2009, 6,996 oceangoing vessels made 55,560 calls at U.S. ports. Vessel calls were down 7% from five years earlier. 2009 was the third consecutive year of decline. The declines were spread over all of the major vessel types. Of the 2009 calls, 35% were by tankers, 33% were by containerships, 15% were by dry bulk vessels, 9% were by RoRos, and 6% were by general cargo ships. 95% of the tanker calls were by double-hull (DH) vessels, up from 73% 5 years earlier.

Type	2004	2005	2006	2007	2008	2009	% Ch. 2004-09
Tanker	19,316	20,118	21,231	21,724	20,907	19,641	1.7
DH	14,055	15,869	17,747	19,026	19,036	18,631	32.6
Product	11,572	12,217	13,282	13,277	12,662	11,815	2.1
DH	7,712	8,799	10,252	10,811	10,952	10,887	41.2
Crude	7,744	7,901	7,949	8,447	8,245	7,826	1.1
DH	6,343	7,070	7,495	8,215	8,084	7,744	22.1
Container	18,279	18,542	19,591	19,863	18,735	18,206	-0.4
Dry Bulk	11,631	11,406	12,508	11,040	10,363	8,587	-26.2
Ro-Ro	5,317	5,663	6,318	6,077	5,964	4,951	-6.9
Vehicle	3,065	3,652	4,182	4,084	4,102	3,336	8.8
Gas	916	969	961	917	769	704	-23.1
LNG	173	203	213	202	171	201	16.2
Combo	459	414	334	235	180	135	-70.6
General	3,967	3,935	4,054	3,948	3,660	3,336	-15.9
All Types	**59,885**	**61,047**	**64,997**	**63,804**	**60,578**	**55,560**	**-7.2**

iShip Harnessing Data in Marine Operations

By Alex Piquer & Kurt Gibson, W&O Jacksonville, FL

iShip represents a shift to a process based approach in the maritime industry, the first step is the technologies required to address specific problems but the true change comes with the ability to visualize, analyze and optimize the entire vessel as a system.

The value of iShip's "out of the box" technology comes from simply putting ready to use data in the hands of people that know how to use it to drive maintenance, equipment and process improvements. Most marine operators are interested in optimizing overall vessel fuel consumption and analyzing key performance indicators such as main engine generator, and boilers as well as shipboard service systems ship service air compression, fresh water production and fuel oil and cargo heating and hotel loads. iShip allows operators to define parameters to analyze and then provides the technology, infrastructure and service to deliver on those needs.

The system has many advantages in its ability to create information that can be used to make operational and business decisions on the vessel and across the fleet. This system brings together information from many of the isolated systems on the ship without requiring any changes to the existing controls. One major advantage is that thanks to over 400 existing interfaces and customization capabilities from OSIsoft, regardless of the engines, vessel automation, navigation systems, ship automation, etc. iShip provides an interface that is the same on all the vessels across the fleet.

W&O, a global supplier of marine valves, pipe, fittings, engineered products and valve automation systems introduces iShip, an integration of instrumentation and vessel automation information management platform designed specifically to address the emerging challenges of the maritime industry. iShip was developed by the W&O Integrated Solutions Group to provide real-time operational and event data so vessel operators and engineers can visualize, analyze, distribute, collaborate and act. iShip is built on the PI System data management infrastructure from OSIsoft, LLC, to connect to and acquire operating data from existing machinery, control, instrumentation, bridge systems, as well as key instrumentation and control elements supplied as part of the iShip platform. The PI System stores this time-stamped data at its original resolution virtually forever, creating a continuous record of ship system operations that is secure and easy to access by everyone in your company that needs it.

Using standard configurable PI System Visualization Analysis and Reporting tools, iShip applications such as FuelProof, DynaTrim, AutoReport, and FuelSwitch provide automation and optimization of vessel operations. iShip also enables visualization and distribution of actionable information out of all the data allowing analysis and optimization at many levels. The information may be distributed in a variety of ways depending on the context and needs of the user from corporate KPI dashboards displaying vessel and fleet summary data to complex optimization analytics combining data from several systems and involving calculations and rules. One of the key features is that it is open, flexible, modular and scalable so the user can easily extend system functionality by creating their own reports, displays and applications using PI System tools provided. iShip leverages the same OSIsoft technology used successfully in shore side industries like power generation, oil & gas, pulp & paper for the past 30 years.

APPLICATIONS VERSUS INFRASTRUCTURE

Other measurement and optimization packages currently being offered are typically stand-alone systems that often address a single issue but add more complexity to a ship's systems by requiring separate computer systems and additional service contracts. iShip is unique in that W&O has partnered with leading technology providers to create applications which address important concerns for the maritime industry such as fuel custody transfer, energy efficiency, and emissions management and at the same time provides a total information infrastructure that leverages the wealth of data and information available from existing vessel automation and third party systems. The information can be accessed in many ways depending on the context and the needs of the user. It enables operational improvement by allowing users to benchmark and identify targets and act upon operational and process improvement opportunities. iShip enables situational awareness by allowing users to make sense of operational data through powerful yet familiar analytical and collaboration tools.

On the vessel, iShip provides applications such as FuelProof which allow ship engineers to monitor and optimize fuel and energy system efficiency. The system also provides real-time visualization and analysis of system interactions in a secure environment which is separate from individual control and automation system and accessible throughout the vessel or throughout the corporation. For shore side manager's iShip provides automated reports and KPI dashboards that can be prepackaged or user defined to allow the user to see the information that they want to see (financial, operational, etc.). The system is also capable of interfacing to and delivering data to other important enterprise software systems used by the business including maintenance, ERP and business intelligence applications.

THE ISHIP APPROACH

- **Define** Vessels and Fleets have different needs depending on vessel class and operational profiles. One type or brand of measurement system is not suitable for all types of vessels and iShip does not take a one size fits all approach. W&O is able to leverage nearly 40 years of maritime knowledge and key technology partnerships to design systems which fit the needs of a single vessel or an entire fleet.
- **Integrate** W&O ensures that the technology and systems provided as part of iShip as well as third party systems and automation are seamlessly integrated into a single information infrastructure.
- **Collect** Data sources usually originate from multiple vendors' devices creating islands of data. This data, while related, is not easily analyzed and may only provide minimal value understanding how your processes can be improved or change over time.
- **Historize** Marine systems produce extremely large amounts of data from a wide variety of disparate data sources and many man-hours are spent traversing these systems in order to answer simple questions. iShip brings all relevant data from disparate sources into a single system and delivers it in a uniform and consistent manner.
- **Find** Many marine operators are inundated with a vast volumes of data from disparate sources that originate from online measurements, batch processes, manual entries, periodic calculation results or various databases. With iShip you have the option to organize and find data according to equipment name and type in addition to using instrument identification nomenclature.
- **Analyze** iShip enables you to analyze and aggregate real-time and historical data and events into user-defined actionable information or key performance indicators (KPIs). It will analyze data into actionable information.
- **Deliver** iShip allows users to maximize interconnectivity between systems and people, facilitate the sharing of information and have existing systems leverage each other's capabilities and data. You no longer have to deal with islands of data that were created over time, which makes analysis, visualization, reporting and hence decision making difficult.

ISHIP APPLICATIONS

W&O has partnered with leading technology providers including Emerson Process Management Flow Division, WR Systems, and Amot Controls to develop several modules designed specifically for maritime needs. These applications include:

- **FuelProof - Bunker**: Mass flow measurement technology eliminates errors and ambiguity from one of the largest vessel operational costs; fuel purchasing. By integrating the flow measurement into the iShip system, FuelProof provides real time visibility and guards against problems during the fuel transfer.

The automated reporting system provides instant verification both on the vessel and at the corporate level.

- **FuelProof - Efficiency**: Combining fuel consumption, engine performance, and energy loads into a consolidated application structure enables unparalleled analysis and optimization capabilities. The ability to benchmark performance on a single vessel or across and entire fleet along with visualization of energy usage and implementation of performance management algorithms will guarantee a more effective approach to vessel operations.
- **FuelProof - Emissions**: State-of-the-art vessel emissions monitoring providing online measurements of NOx, SOx, CO2 and PM. This module will offer documented and verifiable ECA compliance standards.
- **FuelProof - FuelSwitch**: As ECA rules expand, operators must implement and improve fuel switching operations. FuelSwitch provides the analysis and optimization tools to ensure compliance and performance during these critical operations.

W&O is developing additional applications which will continue to complement the power of the iShip infrastructure.

New Integrated Shaft Coupling Design

VULKAN Couplings introduced a combination of the proven RATO DS coupling with a directly connected Composite shaft. The high radial stiffness and the comparably low axial and bending stiffness makes the RATO DS suitable to work not only as a torsional coupling but also as an integrated misalignment coupling when rigidly connected to an intermediate shaft. At the rear end of the intermediate shaft a torsionally stiff misalignment coupling creates the second bending flexible pivot thus providing a double cardanic design. This new combination consisting of RATO DS and intermediate shaft is called VULKAN Integrated Shaft Coupling (ISC). It was found that the angular deflection of the RATO DS causes – even at high misalignment levels – a rather low strain level compared to the torque load and thus a low power loss. Therefore no misalignment coupling is required between RATO DS and shaft. The intermediate shaft can be directly connected to the inner ring of the coupling whereby the RATO DS is radially not supported.

The mass of the intermediate shaft is limited by the radial natural frequency of half the shaft and the inner part of the RATO DS. The design radial natural frequency is selected not to be less than 120% of design rpm.

www.vulkan.com

HyperSizer v6

Collier Research released HyperSizer v6 structural sizing and analysis software for reducing weight, maintaining strength, and improving the manufacturability of complex composite and metallic designs. Developed and proven at NASA, the software—the first ever commercialized by the agency—has a track record of 20 percent weight reduction in high-profile government and commercial aerospace projects. HyperSizer integrates with FEA solvers in a continuous, automated iterative loop, conducting trade studies and examining millions of potential design candidates down to the ply, even element, level. The software ensures structural integrity through an extensive suite of failure analysis predictions that are validated to test data. The tool also enhances manufacturability by minimizing ply drops, identifying and controlling laminate transition drop/add boundaries, and defining best ply shapes and patterns. Hypersizer can be used from preliminary design to final analysis. Serving as the analysis hub and automating data transfer during both design and manufacturing cycles, HyperSizer integrates with FEA software, such as Nastran and Abaqus, and with composite CAD tools, such as CATIA and FiberSIM. HyperSizer ensures that design and analysis departments are kept current and working with the same design data.

www.hypersizer.com

DataLog Fuel Monitoring

FloScan's new PC software, DataLog, was designed to satisfy requests for recording fuel usage data for NOx emissions reporting and to simplify fuel inventory control. DataLog also provides the captain with valuable real-time fuel flow data to pinpoint the engine speed to improve fuel economy by 20% or more. And the individual supply and return fuel flow rates and temperatures keep track of the engine's health and performance. Fuel flow parameters recorded and displayed include: Net fuel flow rate; Net fuel usage total; Supply flow rate and temperature; and Return flow rate and temperature.

www.floscan.com

Multiflex: A Modular Concept for OSVs

Imtech Marine launched its modular Multiflex concept, which offers customers freedom of choice, selecting the most competitive, required technologies via one point of contact, Imtech Marine, and create an optimum custom made total solution. The technology modules include Diesel-Electric Propulsion, Power Distribution, Vessel Automation, Dynamic Positioning, Navigation & Communication, HVAC (Heating,Ventilation & Air Conditioning), Fire Protection & Fire Fighting and Safety Systems. The worldwide service network of Imtech Marine provides 24/7 maintenance and service support throughout the ship's life cycle.

www.imtech.eu/marineoffshore

Proline Promass 83X/84X Coriolis Flowmeter

Endress+Hauser announced the Proline Promass 83X/84X Coriolis flowmeter, the first large four-tube Coriolis flowmeter. The 14-in. diameter flowmeter is for measuring the mass flow, density and temperature of oil, gas and other fluids in large pipes at rates up to 4,100 tons/hr with extreme accuracy and precision. The 83X model comes standard with fully traceable 0.1% flow accuracy, and optionally with a flow accuracy of 0.05%. The 84X is suitable for custody transfer applications, featuring MID (OIML R117) and PTB approvals.

www.us.endress.com

PosiTector 6000 Coating Thickness Gage

DeFelsko offers the PosiTector 6000 coating thickness gage, which the manufacturer claims is smarter, faster and more powerful. Both Standard and Advanced models feature built-in memory, onscreen statistics, USB mass storage, and new Fast mode. Advanced models also include hi contrast reversible color LCD, Scan mode to store continuous readings, onscreen help, real time graphing, picture prompting and more. Changes have been made to memory storage and downloading capabilities. PosiTector.net will allow users to upload stored measurements, generate detailed and customizable reports, and share your results with your colleagues via a secure internet connection.

www.defelsko.com

Converteam for Ultra Deepwater Drillships

Converteam was selected by Hyundai Heavy Industries (HHI) as designer and supplier of electrical systems for three newbuild ultra-deepwater drillships for Noble Corp. The Hyundai Gusto P10000 designed drillships, rated for operations in up to 12,000 ft. water depth, are under construction by HHI at its Ulsan facility in South Korea. The first vessel is due for delivery to Noble in early 2013 with the third due in early 2014. Converteam's responsibility is for a mission critical package of electrical works which includes major components of the electrical power generation, power distribution, propulsion systems and drilling drive systems.

New Tech for Submarine Wireless Battery Monitoring

Raytheon Anschütz introduced a wireless battery monitoring technology. The core of the system is a new sensor that features a measurement concept to provide high failure safety while contributing to cost savings during installation and servicing. The Wireless Battery Monitoring System (WBMS) is the central measuring and evaluation system for main batteries aboard submarines. It continuously and directly indicates the most important data on the condition of the batteries and consequently supplies decision aids for operational and tactical intents. The WBMS consists of a main control unit for monitoring and calculation, wireless cell sensors and wireless transceivers to transfer the data from the battery cells to the control unit.

The new wireless sensor measures voltage, acid temperature and acid level of every battery cell. Compared to conventional battery monitoring the monitoring of every battery cell raises failure safety, data availability and reliability of the whole system.

www.raytheon-anschuetz.com

Portable Gas Detection from Martek Marine

Martek Marine is introduced a new range of portable gas detectors at Nor-Shipping in May. MARINE QUATTRO and MARINE EXTREME have been developed to address concerns over the death and serious injury suffered by seafarers from oxygen-depletion in tanks and void spaces. Amendments to SOLAS 1974 are scheduled to come into force on January 1 2012.

Under the provisions, ship owners will be required to use both fixed and portable hydrocarbon gas detection systems onboard all new oil tankers of 20,000 dwt.

The carriage requirements for portable instruments for measuring oxygen for tankers are included in the regulation, which will be applicable to all new and existing tankers.

Martek now offers both portable and fixed solutions for Volatile Organic Compounds detection, with the fixed version to be mounted in A/C inlets, accommodation areas and engine rooms - areas that are identified as having higher risks of benzene.

MARINE QUATTRO and MARINE EXTREME include patented sensor diagnostics, meaning that owners can now calibrate multi-gas detectors every 12 months should they choose to do so, while single gas detectors would never need calibration during their lifetime.

www.martek-marine.com

Conrac

CONRAC showed the latest version of its series of widescreen Marine Panel Computers, specified to run all marine applications, from automation and control to ECDIS, Radar and Navigation. Available in different screen sizes and configurations, with and without touch screens. Entirely new is a rugged 46-in. large-screen display with integrated touch function for use as Digital Chart Table. Different mounting options can be offered. Another innovative product is a 38-in. display in "stretched" format. Supplied with a fully integrated industrial PC, there is the choice between various configurations to suit the individual application. There are models with different IP ratings ranging from IP20 for indoor use to IP65 specially designed for continuous use in strenuous environments. The "stretched" format with an aspect ratio of 16:4, equals so to speak the top half of a 42-in. display, and hence provides the ideal format for use in applications with height restrictions where conventional displays cannot be used. Alternatively, the display can be used in portrait format.

www.conrac.us

E'Loo

E'LOO introduced a state-of-the-art Electronic Bidet targeting the luxury yacht market. E'LOO bidets replace the present stand alone bidets and offer eco friendly features such as warm seats for comfort, 3-level water pressure, man/lady warm-water cleaning, air dryer, active carbon deodorizer, UV light, germ resistant poly-carbonate seats, night light … to name a few, as well as eliminates the use of toilet paper! E'LOO bidets are easy to install and replace most conventional yacht toilet seats. E'LOO offers a leasing program with a full replacement warranty for up to five years. **www.elooglobal.com**

Measuring Hull Paint Performance

MACSEA offers an independent hull monitoring service designed to save fuel and reduce emissions by detecting hull fouling as early as possible. The new service, Hull Medic, uses automatic onboard data acquisition to gather salient ship performance data and transmit it ashore for detailed analysis. Hull Medic will typically review 100,000's of a ship's data records per month, providing statistical analysis for earlier detection of hull fouling. Hull Medic calibrates each ship's propeller as a power absorption dynamometer, using propeller characteristics and "clean-hull" ship performance data. **www.macsea.com**

No-Water Unimal

The Del Mar Model 2901 no-water urinal from Waterless is designed for use onboard U.S. Navy ships as well as on a variety of commercial, cruise, and privately operated vessels. The urinal system saves thousands of gallons of water each year and reduces urinal maintenance. At only 11 inches wide, 15 inches long, and 12.8 inches in diameter, it complies with ANSI Z124.9, equivalent federal standard and uses standard U.S. Navy NAVSSES-approved bolts and drain parts for connection.

www.waterless.com

Vantage View Instruments

Vantage View instruments read performance data for Smartcraft, NMEA2000, J1939, GM MEFI and Indmar compatible engines. The Master Tach with LCD screen displays a wide range of vital functions including: GPS speed, engine data, faults and warnings. The 270 degree digital stepper motors display accurate data in real time. The dials have large easy to read graphics and red LED backlighting for easy viewing in low light conditions and the LCD screen can be viewed in direct sunlight. Waterproof plug in connectors, remotely mounted navigation switches and user programmable alarms makes the Vantage View system easy to install and set up.

www.livorsi.com

Metallic LED Vaporproof Fixture

Phoenix Products announced the release of the Metallic LED VP Series of vapor proof fixtures. Aiming to keep the design of traditional "jelly-jar" fixtures, the Metallic LED VP uses a patent pending module to house a Bridgelux LED light source rated for 50,000 hours of illumination. These versatile fixtures are UL 1598A listed for marine, outdoor, saltwater environments; UL 844 listed for hazardous locations; ABS listed; IP66; and LM79 tested and certified.

www.phoenixproducts.com

Wireless Process Transmitter

Omega's new wireless process transmitter for sensors with voltage or current output converts process signal to wireless up to 120 m (400'). It accepts 0 to 1V, 0 to 5V, 0 to 10V and 4 to 20 mA signals. Free software for monitoring, recording, and data logging is included. This product features low power operation/sleep mode for long battery life and works with Omega's UWTC-REC family of wireless receivers. Price Starts at $265.

http://www.omega.com/pptst/UWPC-2-NEMA.html

MacLux Series of Lighting

Cargotec developed MacLux, a new MacGregor lighting system for cargo holds that is resistant to vibration, temperature changes and corrosive environments. Cargotec's MacLux lighting system for cargo holds uses LED technology to produce a high light output from a low power input. MacLux hold lights are available in 21W and 40W versions for different lighting needs; a 40W LED lamp produces the same lumens as a 200W halogen lamp. The lights' robust plastic bodies fulfil IP66 requirements, their compact dimensions enable easy installation in restricted spaces.

www.cargotec.com

MARITIME REPORTER AND ENGINEERING NEWS

Serving the information needs of the maritime market since 1939

2011 Editorial Calendar

January — Ad Closing : December 17

Feature: International Naval Technology
Market: Maritime Security
Technical: Training & Education Facilities & Systems
Product/Directory: Maritime Fuels, Lubes & Additives

BONUS DISTRIBUTION:
ASNE Day Feb. 10-11

February — Ad Closing : January 21

Feature: Cruise & Passenger Vessel Annual
Market: Satellite Communications Roundtable
Technical: The Arctic: Special Ships for Special Needs
Product/Directory: Coatings & Corrosion Control

BONUS DISTRIBUTION:
Seatrade Cruise Shippping March 14-17

March — Ad Closing : February 18

Feature: Ship Repair & Conversion
Market: IT & Software Solutions
Technical: The Integrated Bridge
Product/Directory: Marine Propulsion Equipment

BONUS DISTRIBUTION:
CMA – Shipping March 21-23

April — Ad Closing : March 18

Feature: Offshore Annual
Market: U.S. Navy Fleet Report
Technical: Heavy Lifting: Deck Machinery & Cranes
Product/Directory: Shipyards – Newbuild and Repair Facilities

BONUS DISTRIBUTION:
OTC May 2-5
Maritime Security Info, May 4-5

May — Ad Closing : April 22

Feature: Training & Education Edition
Market: Patrol, Escort Craft & RIBS
Technical: Ballast & Wastewater Treatment
Product/Directory: Marine Electronics Buyer's Guide

BONUS DISTRIBUTION:
Norshipping May 24-27
MACC June 14-16

June — Ad Closing : May 20

Feature: Annual World Yearbook
Market: Tanker Technology
Technical: Pump, Valve & Valve Actuation Technology
Product/Directory: Software Solutions

July — Ad Closing : June 17

Feature: The Green Ship Editon
Market: Salvage & Recovery
Technical: Oil Spill Remediation
Product/Directory: Diesel Engine Technical Guide

BONUS DISTRIBUTION:

August — Ad Closing : July 22

Feature: Top 20 Shipyards of the World
Market: Marine Electronics – The Integrated Bridge
Technical: Winch, Rope & Wire
Product/Directory: Maritime Tools: Welding, Cutting & Machine Tools

BONUS DISTRIBUTION:
Offshore Europe Sept. 6-8
NEVA Sept. 20-23

September — Ad Closing : August 19

Feature: Marine Propulsion Annual
Market: Deepwater Offshore Technology
Technical: Next Generation OSVs
Product/Directory: Insulations, Pipes, Pumps & Valves

BONUS DISTRIBUTION:
OTC Brasil Oct 4-6

October — Ad Closing : September 16

Feature: Marine Design Annual
Market: Arctic Ops: Designing Ships & Offshore Structures
Technical: Maritime Security: U.S. Coast Guard Annual
Product / Directory: CAD/CAM & other Software Solutions

BONUS DISTRIBUTION:
Europort Nov. 8-11
SNAME Nov. 16-18
MAST Americas Nov. 14-16

November — Ad Closing : October 21

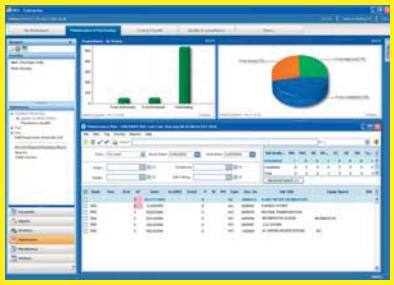
Feature: Workboat Annual
Market: Training & Education: Keeping in Compliance
Technical: Dynamic Positioning: Harnessing the Power
Product / Directory: Deck Machinery & Cargo Handling Equipment

BONUS DISTRIBUTION:
Workboat Nov. 30-Dec 2

December — Ad Closing : November 18

Feature: Great Ships of 2011
Market: Brazilian Maritime Market
Technical: Drillships & Semisubmersibles
Product/Directory: Maritime Fire & Safety

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



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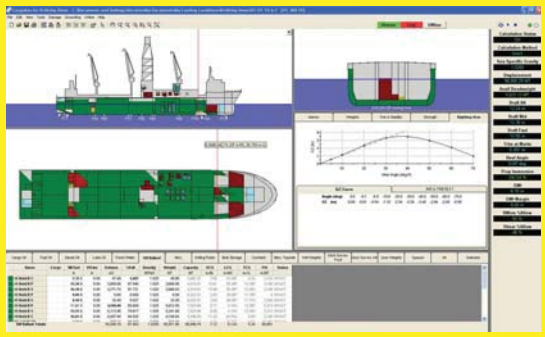
www.abs-ns.com

Herbert-ABS
Software Solutions LLC
Setting the standard for stability, load management, and emergency response software solutions for the marine and offshore industries



www.herbertsoftware.com

ABS Nautical Systems

ABS Nautical Systems has released the next generation of its asset management software, NS5 Enterprise. NS5 Enterprise is designed to advance usability, speed, reporting, and overall software performance. Developed with owners and senior management in mind, it was developed to provide 24/7 access to the status of fleets in real-time.

www.abs-ns.com

Absolute Software

Absolute Software provides solutions to monitor the location and status of mobile assets – both on land and at sea – on a worldwide basis. The company's latest vehicle management platform, The Fleet Information System, is a secure application with modules for registering and tracking mobile assets, GPS and RFID tracking, dispatching and routing and generating reports. The platform is compatible with all major web browsers and is available in three editions for the Land Mobile, Maritime, and Fisheries.

www.absolutesw.com

Amarcon

Amarcon has launched the new OCTOPUS suite of hardware and software products. OCTOPUS-Onboard is a modular decision support system for ships and other floating structures. Shipping and offshore companies have used OCTOPUS-Onboard since 2003 for route and operation planning, heading and fuel consumption. The new OCTOPUS-Onboard features a Dynamic Positioning (DP) capability forecast function. The OCTOPUS-DP functionality forecasts whether a vessel is capable of maintaining her position and heading in changing environmental and weather conditions.

www.amarcon.com

Compusult Ltd

Compusult is a computer consulting firm focused on developing scientific applications to support environmental data acquisition and management. Its latest product is the Web Enterprise Suite XI: an integrated suite of applications for data discovery, access, retrieval, and delivery. The suite, comprised of over a dozen components, was built to Open Geospatial Consortium/ISO interoperability specifications, designed to allow seamless data transfer.

www.compusult.net

Dassault Systèmes V6

3DVIA, the newest of Dassault Systèmes' six brands, aims to allow consumers and businesses to communicate in 3D. Its products include 3DVIA Virtools, a complete development and deployment platform; 3DVIA Studio, a social development environment that connects directly to 3DVIA.com's 3D content warehouse; and 3DVIA Composer.

www.3ds.com

Herbert Software Solutions, Inc.

Herbert Engineering Corp. (HEC), established in 1963, is a naval architecture firm that provides ship design services and software products for the marine industry. Its signature product, the CargoMaxTM shipboard stability and load management software, has been implemented for over 25 years by Crude Oil Tankers, Product Tankers, LPG / LNG Tankers, Chem Tankers, RoRo, General Cargo, Container Vessels, Passenger Vessels, Barge / ATB / ITB, Drill Ships, FPSO / FSO, RVs and Military Vessels. **www.herbertsoftware.com**

Intergraph

Intergraph provides engineering and geospatial software to businesses and governments in more than 60 countries worldwide. The company recently updated its I/LEADS records management solution for the public safety and security industry. The new I/LEADS version 9.0 works with industry-standard platforms, such as Oracle Database 11g, SQL Server 2008, Microsoft® Windows® 7 and Microsoft Windows Server 2008. The updated software also includes an enhanced General Permits module, designed to allow flexibility in various types of permit management.

www.intergraph.com

Krill Systems

Krill Systems is a leading maritime vessel monitoring manufacturer in the recreational and commercial market. Our products offer intuitive understanding of complex critical systems at a glance, while being extremely easy to setup and use.

www.krillsystems.com

LucoTech

LucoTech offers consulting and development services based on Microsoft .NET framework technologies and specializes in customized information management software. The company's software product, BoatSys, is designed to handle most of the daily work for a tow boat, tug boat, or other vessel that needs to report its activities. The system was also developed to track moving targets in real-time using GPS and plot them on a map. BoatSys is designed for online or offline operation.

www.lucotech.com

Maintech Maintenance

Founded in 1994 by professionals in the marine, drilling, service, and manufacturing industries, Maintech aims to provide solutions for CMMS. The company installs and operates CMMS for drilling rigs, pipelaying/derrick barges and ships, dredges, supply boats, dive boats, tugs, vehicles and buildings. For the past five years, Maintech has also worked on graphic and web design and database development.

www.maintech-usa.com

MarineCFO

MarineCFO announces the latest addition to MarineCFO Enterprise Software, Marine HSE. This module consolidates the functions necessary to manage employee safety, training, drug testing and certifications. Additionally, Vessel certification management is included in the module with active alerts as a vessel nears a certification renewal. Incident reporting, deficiency tracking, injury management and claims management are included in the module. The module allows marine companies to consolidate all data required to manage the HSE requirements of their business.

www.MarineCFO.com

Mariner

Mariner helps avoid threats to safety and security, and prepares users to respond when emergencies occur. CommandBridge, Mariner's software platform, is designed to allow watch-standers, command-and-control centers, and intelligence analysts to interpret information and make actionable recommendations. Users can configure the system to create automated rules-based situation management; highly-visual, interactive geospatial, timeline, and dashboard visualizations; and response tools.

www.marinergroup.net

MESPAS

Swiss-based software developer MESPAS recently announecd the release of R5.13, the latest version of its fleet management software system. The updated edition features 80 new functionalities and modifications, making it the largest ever released in MESPAS' 17-year history.

www.mespas.com

Multi-Communications Systems

Multi-Communications Systems & Services, Inc. is a family owned minority corporation that has been serving customers in South Eastern Michigan since 1979. Multi-Com's initial business has been designing, deploying and maintaining low voltage systems that integrate closed circuit television cameras (CCTV), access control, broad-band cable television (CATV) distribution systems, public address/voice evacuation, network backbone cabling as well as some automation control. Multi-Com networks support security, monitoring systems, sound systems, control systems and data collection.

www.multi-communications.net

Navarik

Navarik provides physical operations software and information services for the commodity trading industry. The company's software services automate physical trade operations and maritime shipping logistics for crude oil, refined products and bulk commodities. The Navarik Inspection TM is designed to automate business processes; to improve performance from inspection firms, terminals and vessels; and to determine the quantity, quality and status of cargos. Navarik also supports other energy and commodity areas, such as coal and bulk agriculture products, and manages Green House Gas (GHG) emissions data.

www.navarik.com

Seagull Counter Piracy Training

Seagull has recently released the new Seagull Training System (STS) – a laptop or desktop computer containing the Seagull Training Administrator and Onboard Library of Computer Based Training (CBT) modules. The Seagull Training Administrator program is designed to address administration requirements including personnel evaluation and training, and allows the user to construct training profiles for all crew members. The computer is intended for immediate use once it is shipped, as the required software comes pre-installed.

www.seagull.no

ShipDecision

ShipDecision, in conjunction with Canfornav, has developed a Comprehensive Emissions Performance Reporting Module to address Emissions Reporting guidelines for Operators participating in Green Marine. The CEPR Module compiles operational data from vessel records, making it faster and simpler to generate reports by vessel and across a fleet. The reporting functionality also enables trend analysis. Reporting addresses Pollutant Air Emissions: SOx emissions (level 3); and NOx emissions (level 3). It also calculates GHG emissions (levels 3,4,5).

www.shipdecision.com

ShipTracks

ShipTracks is a vessel tracking AIS software system. The system includes a customizable display where each login can be modified to best fit the user's needs. All programming is done in-house, and the program is designed for easy integration with existing databases and processes. Additional features include unlimited zoom capability, ship notes and group sharing, maps and data layers, enhanced reporting, historic playback, custom alerts and advanced filtering.

www.shiptracks.com

Shiptrak LTD

Shiptrak's software is a web-based application designed to monitor vessel operations. Designed to project information in real-time to create a log of events, the software can be used to create reports and view financial data, including cost estimates, purchase invoices, and disbursement accounts. Shiptrak is based on Java software and runs on an Oracle 10g database and 10g Application server, and can export documents using Microsoft Word, Excel, or Adobe pdf file formats.

www.shiptrak.net

Sinex Solutions

The Sinex Solution provides data and reports to companies in the marine, aviation, railroad, mining and construction, property management, medical, and trucking industries. The program is designed to allow users to manage labor and work flow with its time estimate, time-tracking, and task assignment features. Additional features include trend monitoring and analysis, automatic scheduling, configuration management and control, maintenance cost estimates, and training classes and user qualification tracking.

www.sinexsolutions.com

Spectec

Spectec's AMOS Business Suite is a Windows-based program designed to handle daily ERP functions for organizations with multiple locations. The program can run as a server/client application or as a stand-alone configuration for a single PC. AMOS is designed to allow for data sharing across departments on one technical platform to eliminate re-entry and errors and provide instant information-sharing.

www.spectec.net

Veson Nautical

Veson offers the shipping industry two interrelated products: IMOS, for company organization and management, and Veslink Onboard, for vessel tracking. IMOS consists of nine modules: chartering, operations, financials, planning, trading, demurrage, pooling, data center, and data services, intended for use by dry bulk, tanker, LNG, chemical, container, and barge companies. Veslink Onboard issues vessel status reports which are routed via email or secure Internet to onshore company offices, where they can be imported using IMOS.

www.Veson.com

VNS International

For the past 12 years, VNS International was been providing software solutions to the marine and hospitality industries. Its Management Administration and Planning (MAP) software offers over 30 modules that can be run separately or at once. MAP is written in PHP, Java, C++ and SQL, allowing it to support Window, Mac, and Unix platforms and other related databases such as MYSQL.

www.VNSINT.com

BUYER'S DIRECTORY

This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR assumes no responsibility for errors. If you are interested in having your company listed in this Buyer's Directory Section, contact Mark O'Malley at momalley@marinelink.com

ALUMINUM

Mandel Metals, 147 Main Street, Chardon, OH

ATTORNEYS

Blank Rome, 600 New Hampshire Avenue, NW Washington, DC 20037, Washington, DC , Germany , tel:(202) 944-3565, fax:(202) 772-5858 , www.blohmvoss.com

AUTOPILOT SYSTEMS

AG Marine, 5711 34th Ave NW 2nd floor, Gig Harbor, WA

AZIMUTH CONTROLS

Prime Mover Controls, 3600 Gilmore Way, Burnaby, BC V5G 4R8, Canada

BALLAST

HF Sceintific- Watts Water, 3170 Metro Parkway, Ft. Myers, FL

BOATBUILDER

Alaska Ship and Drydock, Inc., 3801 Tongass Avenue, Ketchikan, AK , tel:907 225-7199, fax:907 247-7200, dward@akship.net contact: Doug Ward, www.akship.net

BOATBUILDING AND DESIGN

Brunswick Commercial and Government Products, 420 Megan Z Avenue, Edgewater, FL Molde, Norway , tel:(386) 423 - 2900, fax:386-423-9187, BCGPinfo@brunswick.com

BOW AND STERN THRUSTERS

Omnithruster Inc., 2201 Pinnacle Parkway Twinsburg, Ohio 44087, Cleveland, OH 44139, USA , tel:330 963-6310, fax:330 963-6325, widmer@omnithruster.com contact: Kurt Widmer, www.omnithruster.com

CAPSTANS

Coastal Marine Equipment, 20995 Coastal Parkway, Gulfport, MS 39503-9517, USA , tel:228-832-7655, fax:228-832-7675, sales@coastalmarineequipment.com contact: Ralph Waguespack, www.coastalmarineequipment.com

COATINGS/ CORROSION CONTROL/ PAINT

Eureka Chemical Company, 234 Lawrence Ave., South San Francisco, CA , tel:888-387-3522, sales@fluid-film.com

International MetalFusion Corp., PO Box 23279, Houston, TX 08003, USA , tel:409 515-0532, fax:409 419-0762, sales@metalize.net contact: Abad Rebollar, www.metalize.net

COMMUNICATIONS

Japan Radio, 1011 SW Klickitat Way, Bldg B Suite 100, Seattle, WA 98134, USA

COMMUNICATIONS SERVICE

David Clark, PO Box 15054, Worcester, MA 01615, USA , tel:1-800-298-6235, Sales@davidclark.com contact: Sales Department, www.davidclark.com

COMPOSITE SHAFTS

Centa Corp., 2570 Beverly Drive #128, Aurora, IL 60559, USA , tel:630-236-3500, fax:630-236-3565, bobl@centacorp.com

CORDAGE

Helkama Bica Oy, Lakimiehenkatu 4, KAARINA FI-20780, Finland , tel:+358-2-410 8700, sales@helkamabica.fi

CORROSION CONTROL

International MetalFusion Corp., PO Box 23279, HOUSTON, TX , tel:409 515-0532, fax:409 419-0762, sales@metalize.net contact: Abad Rebollar, www.metalize.net

COUPLINGS

Centa Corp., 2570 Beverly Drive #128, Aurora, IL 60559, USA

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DECK MACHINERY- CARGO HANDLING EQUIPMENT

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Nabrico Marine Products, 1050 Trinity Road, Ashland City, TN 37016, USA

Smith Berger Marine, 7915 10th Ave. S., Seattle, WA 98108, USA

DIESEL ENGINE- SPARE PARTS & REPAIR

Motor-Services Hugo Stamp, 3190 SW 4th Avenue, Ft. Lauderdale, FL 33315, USA , tel:954 763-3660, fax:954 763-2872 , www.mshs.com

DRIVES

Konrad Marine-, 1421 Hanley Road Hudson, WI 54016 USA

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Avtron Industrial Automation, 7900 E.Pleasant Valley Road, Independence, OH , tel:216 642-1230/ext 1263, fax:216 642-6037, mduskey@avtron-ia.com contact: Mark R. Duskey, www.avtron-ia.com/marine.htm

ELECTRICAL SERVICES

Ward's Marine Electric, 617 SW 3rd Avenue Fort Lauderdale, Fort Lauderdale, FL , tel:(954) 523-2815 x124, fax:(954) 523-1967, sales@wardsmarine.com

ELECTRONICS/NAVIGATION COMMUNICATIONS SERVICE AND

Japan Radio, 1011 SW Klickitat Way, Bldg B Suite 100, Seattle, WA 98134, USA

ENGINE AND COMPONENT ALIGNMENT

Dynamold, Inc., 2905 Shamrock Ave., Fort Worth, TX 76107, USA , tel:817-335-0862, fax:817-877-5203, pmpeck@dynamold.com contact: Michael Peck, www.dynamold.com

GALLEY EQUIPMENT

Jamestown Metal Marine Sales, Inc., 4710 Northwest 2nd Ave., Boca Raton, FL 33431, USA

LOIPART AB, P.O.Box 694/Metallgatan 2-4, ALINGS?S , tel:+46 322 668 360, fax:+46 322 637 747, loipart@loipart.se

GOVERNORS

New York State Canal Corporation, Interchange 23, Rt 9w, Albany, NY

GYROCOMPASS

AG Marine, 5711 34th Ave NW 2nd floor, Gig Harbor, WA

HOISTS

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HVAC

Jamestown Metal Marine Sales, Inc., 4710 Northwest 2nd Ave., Boca Raton, FL 33431, USA

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Pennecon Energy, 2 Maverick Place, Paradise NL , tel:709 726-3490, mn1@pennecon.com contact: Eddy Knox, www.pennecon.com

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WQIS (Water Quality Insurance Syndicate), 60 Broad Street 33rd Floor, New York, NY

INTERIORS

Jamestown Metal Marine Sales, Inc., 4710 Northwest 2nd Ave., Boca Raton, FL 33431, USA

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Rustibus, 2901 WEST SAM HOUSTON PKWY, NORTH SUITE E-325, HOUSTON, TX , tel:832-203-7170, fax:832-203-7171, houston@rustibus.com contact: Dominic Jordan, www.rustibus.com

SATELLITE COMMUNICATIONS

Delta Wave Communications, Inc., 8001 Hwy 182 E. Morgan City, LA 70380, Morgan City , tel:(985) 384-4100, fax:(504) 617-6393, tom.clark@deltawavecomm.com

SEATING

ShockWave Suspension Seating Solutions, 2074 Henry Avenue Sidney, BC V8L 3S6 Canada , tel:1-250-656-6165 Ext. 232, sean@shockwaveseats.com

SHAFTS

Centa Corp., 2570 Beverly Drive #128, Aurora, IL 60559, USA , tel:630-236-3500, fax:630-236-3565, bobl@centacorp.com contact: Bob Lennon, www.centacorp.com

SIMULATION TRAINING

Transas Marine USA, 18912 N.Creek Parkway Ste 100, Bothell, WA 98134, USA , tel:425 486-2100, fax:425 486-2112, gtoma@transasusa.com contact: George Toma, www.transasusa.com

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WINCHES & FAIRLEADS

Coastal Marine Equipment, 20995 Coastal Parkway, Gulfport, MS 39503-9517, USA , tel:228-832-7655, fax:228-832-7675, sales@coastalmarineequipment.com

Nabrico Marine Products, 1050 Trinity Road, Ashland City, TN 37016, USA

Superior Lidgerwood Mundy, 1101 John Ave., Superior, WI 54880, USA

WINDLASSES (ANCHORS)

Coastal Marine Equipment Inc., 20995 Coastal Parkway, Gulfport, MS 39503-9517, USA , tel:228-832-7655, fax:228-832-7675, sales@coastalmarineequipment.com contact: Ralph Waguespack, www.coastalmarineequipment.com

WIRES & CABLE

ICC Cable Corporation, 2125 Center Avenue Suite 401, Fort Lee, NJ , tel:(201) 482-5750, fax:(201) 482-5751, jkim@icccable.com

ICC Cable Corporation, 2125 Center Avenue Suite 401, Fort Lee, NJ , tel:(201) 482-5750, fax:(201) 482-5751, jkim@icccable.com contact: Jang Kim, www.icccable.com

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Marine Surveyor
Location: Fort Lauderdale, Florida

- **Ability to perform class and statutory on yachts and special purpose vessels of less than 75 meters**
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- **Ability to perform tonnage calculations**
- **Possess a minimum of 5 years experience in the maritime industry**

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The Academy is located in Buzzards Bay at the mouth of the scenic Cape Cod Canal and is a special mission college within the Massachusetts university college system.

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BAE SYSTEMS

Job Posting Title: Commercial Sales Manager - New Vessel Construction
Job Location: Arlington, VA
Job Posting Number: 361417

Full Job Description:
OPENING
BAE Systems is a premier global defense and security company with approximately 100,000 employees delivering a full range of products and services for air, land and naval forces, as well as advanced electronics, security, information technology solutions and customer support and services.
DESCRIPTION
This position provides mid-grade level BAE Systems Sales Manager focused on the development, capture plans, marketing and management Commercial Sector and non-USN Government maritime new construction and repair opportunities, resulting in winning, implementing and executing new construction contracts leveraging BAE Systems Ship Repair capabilities and shipyard capacity. The initial focus will be the exploration and selection of critical market segments and assisting the individual yards with investment plans and business case analyses to further improve BAE Systems competitive position in these market segments. This Maritime (commercial and Other Government) Sales Manager will be responsible for interfacing with the appropriate shipyard leadership, Customer Representatives, BAE Systems Corporate leadership and Senior Stakeholders to win business, assist in the development and execution of commercial and other Government strategies to align with BAE Systems strategic planning leading to maritime domain growth. This Sales Manager will understand and leverage the customer's vision, budgeting and planning activities to best meet growth targets in the commercial and other government sectors. This Sale Manager will be responsible for interfacing internally within BAE Systems Ship Repair at the appropriate level to gain sufficient insight and buy-in for development and execution of a BAE Systems Maritime Strategies, business alignment and contract execution plan. This Sales Manager will be responsible to work across the enterprise to assist in the identification the additional capabilities and resources required to execute the BAE Systems Maritime strategy as it applies to the commercial and other government business sectors.
ADDITIONAL REQUIREMENTS
Education:
Bachelors Degree in a related field
Required experience:
8-10 years of experience in a related field
Primary Roles and Responsibilities:
•Identify and develop BAE repair capabilities to the Commercial & non USN Government market.
•Develop and implement a market account plan for specific customers with the market domain.
•Conduct customer visits and performs research to understand current and emerging customer needs, requirements and repair and conversion market trends.
•Establish build and maintain customer relationships and assesses competitor capabilities.
•Research strategic partnerships.
•Develop and execute strategic and tactical plans, both short and long range for the pursuit and successful capture of key opportunities.
•Lead the development and evaluation of the technical and management content and contractual compliance of proposals.
•Provide management with information to identify critical areas of the opportunity's win strategy to minimize risk and maximize the profitability of win.
•Participate in bid decisions, the development of cost strategies and phase reviews
NOTE: This position may require up to 50% travel.
CLOSING
People are the greatest asset in any Company ...
BAE Systems is committed to a high performance culture and provides an environment that challenges our employees to be remarkable and obtain their full potential.
We are an EEO/Affirmative Action Employer that understands the value of diversity and its impact on a high performance culture.
Join us ...
HOW TO APPLY:
To apply to this position, please visit our website at http://www.baesystems.jobs and reference requisition number 361417.
The direct link to the position is: http://www.baesystems.jobs/job_detail.asp?JobID=1792501 .

BAE SYSTEMS

Job Posting Title: Commercial Sales Manager - East Coast Ship Repair
Job Location: Arlington, VA
Job Posting Number: 361419

Full Job Description:
OPENING
BAE Systems is a premier global defense and security company with approximately 100,000 employees delivering a full range of products and services for air, land and naval forces, as well as advanced electronics, security, information technology solutions and customer support and services.
DESCRIPTION
Market BAE Commercial & non USN Government Ship Repair and conversion capabilities in the US Northeast and East Coast.
• Responsibility for following markets MSC (GOGO vessels),MSC operator (GOCO vessels), Commercial East Coast, USCG/MARAD /USACE
This position provides mid-grade level BAE Systems Sales Manager support focused on the development, capture plans, marketing and management Commercial Sector and non-USN Government maritime new construction and repair opportunities, resulting in winning, implementing and executing new construction contracts leveraging BAE Systems Ship Repair capabilities and shipyard capacity. The initial focus will be the exploration and selection of critical market segments and assisting the individual yards with investment plans and business case analysis to further improve BAE Systems competitive position in these market segments. This Maritime (commercial and Other Government) Sales Manager will be responsible for interfacing with the appropriate shipyard leadership, Customer Representatives, BAE Systems Corporate leadership and Senior Stakeholders to win business, assist in the development and execution of commercial and other Government strategies to align with BAE Systems strategic planning leading to maritime domain growth.
This Sales Manager will understand and leverage the customer's vision, budgeting and planning activities to best meet growth targets in the commercial and other government sectors. This Sale Manager will be responsible for interfacing internally within BAE Systems Ship Repair at the appropriate level to gain sufficient insight and buy-in for development and execution of a BAE Systems Maritime Strategies, business alignment and contract execution plan. This Sales Manager will be responsible to work across the enterprise to assist in the identification the additional capabilities and resources required to execute the BAE Systems Maritime strategy as it applies to the commercial and other government business sectors.
ADDITIONAL REQUIREMENTS
Education:
Bachelors Degree in a related field Required experience:
8-10 years of experience in a related field
Primary Roles and Responsibilities:
•Identify and develop BAE repair capabilities to the Commercial & non USN Government market.
•Develop and implement a market account plan for specific customers with the market domain.
•Conduct customer visits and performs research to understand current and emerging customer needs, requirements and repair and conversion market trends.
•Establish build and maintain customer relationships and assesses competitor capabilities.
•Research strategic partnerships.
•Develop and execute strategic and tactical plans, both short and long range for the pursuit and successful capture of key opportunities.
•Lead the development and evaluation of the technical and management content and contractual compliance of proposals.
•Provide management with information to identify critical areas of the opportunity's win strategy to minimize risk and maximize the profitability of win.
•Participate in bid decisions, the development of cost strategies and phase reviews.
NOTE: This position may require up to 50% travel.
CLOSING
People are the greatest asset in any Company ...
BAE Systems is committed to a high performance culture and provides an environment that challenges our employees to be remarkable and obtain their full potential.
We are an EEO/Affirmative Action Employer that understands the value of diversity and its impact on a high performance culture.
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Captain-Pilot
Job Location: USA, Paducah, KY New Orleans, LA

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Areas Of Operation: River, Inland, and offshore waterways.

Principal Responsibilities:
•Responsible for the safe and efficient operation and performance of his crew, vessel, and tow.
•The Captain/pilot must also strive to see that company policy, rules, and regulations are followed.
•Must report to the office all violations of policy or violations of federal, state, or local laws.
•Conducting monthly drills and safety meetings in accordance with policies and procedures.
•Ensure that work completed in accordance with Company safety policies and practices.
•Ensure all crew members on vessel receive instruction on how to do jobs properly and monitor performance.
•Carry out all duties assigned under the Vessel Security Plan as the designated vessel security officer.
•Ensure that each crew member knows the cargo of each barge in tow and has an understanding of any hazards associated with said cargoes.
•Enforce all Company policies and vessel specific guidelines in support of the Crew Endurance Management System onboard all vessels.
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Qualifications:
•Must retain a U.S. Coast Guard license endorsed for service and a minimum of three years of experience.
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The Technical Marketing Manager for Maintenance
Job Location: USA, Whippany, NJ

The technical marketing manager for maintenance will provide technical and traditional product management skills for a portfolio of marine cleaning and maintenance products. The portfolio includes equipment and highly regulated cleaners for tanks, cargo holds, sanitation and engine room systems.

The marketing manager will manage product life cycles and direct efforts with suppliers, technical management, and supply chain on a global basis.

Additional responsibilities include:
• Development of new products and turnkey solutions that meet customer needs for regulatory compliance, cost-performance, and environmental and crew safety
• Generate budgeted equipment sales volumes globally for maintenance product portfolio
• Manage supplier relationships and instruct operations on business requirements
• Develop product collateral, including product data sheets, sales presentations, and demonstration kits or apparatus

Requirements:
Bachelor of Science (BS) or equivalent in marine transportation, marine engineering, chemistry or chemical engineering; a Master of Science or Master of Business Administration is preferred
5+ years maintenance/cleaning chemical experience, preferably in the Maritime Industry
Understanding of chemical product regulations, preferably knowledge of IMO and flag administration rules
Up to 25% travel, Domestic & International

Please send resumes to hr@drew-marine.com. Any submissions should include the position title in the email subject.
Company Profile:
Drew Marine is a recognized leader in providing technical solutions and services to the Global Marine Industry. Drew Marine leads the industry in innovative technology, responsive delivery, and cost-effective solutions to unique marine challenges. With over 81 years of business, Drew Marine provides exceptional value, with products and services that help our customers achieve operational efficiency and regulatory compliance when and where needed. Drew Marine is a privately owned global company servicing the maritime industry.

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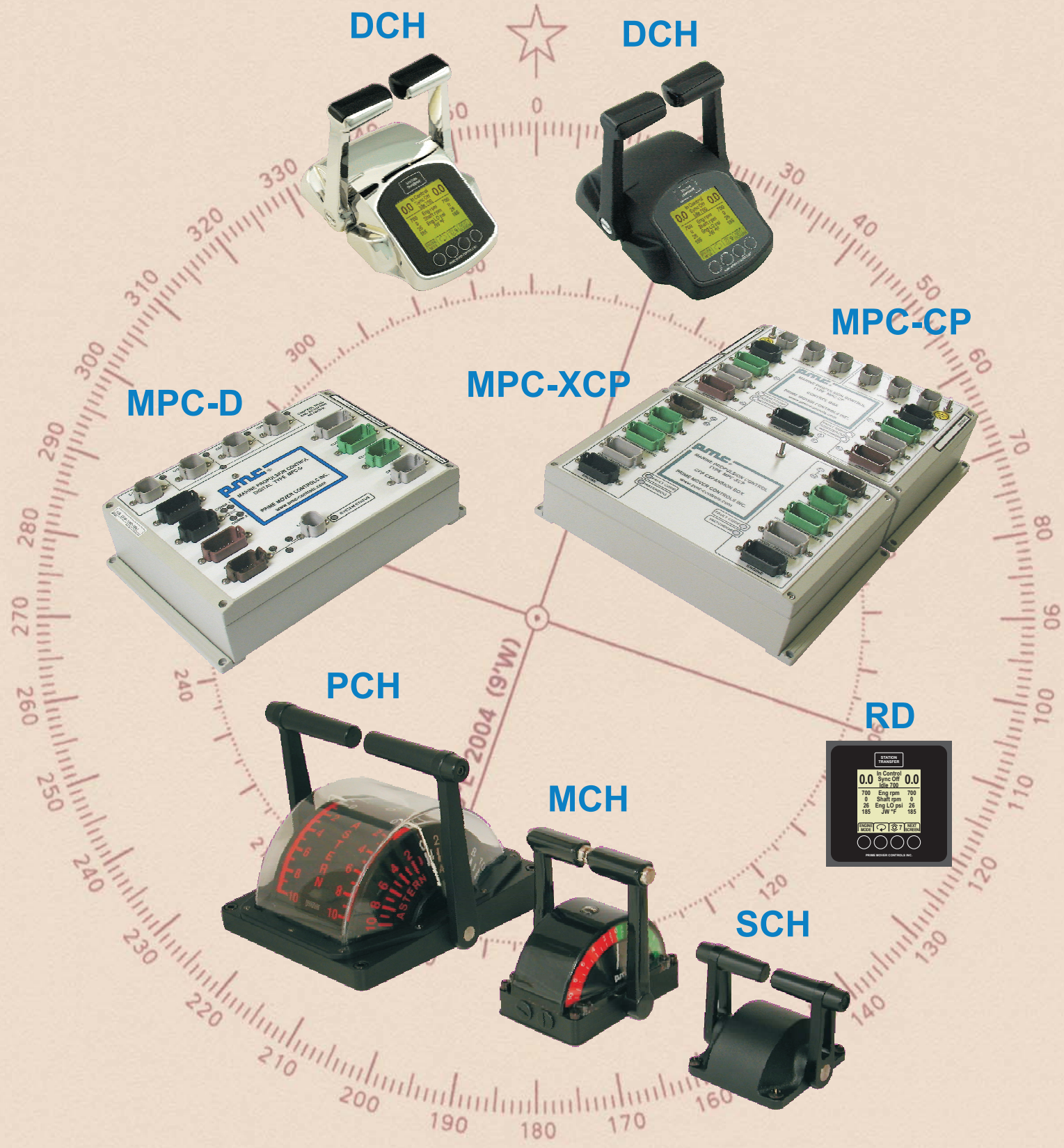

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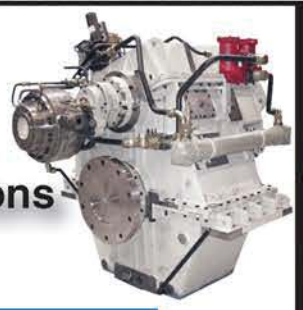

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