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MARITIME REPORTER AND ENGINEERING NEWS

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March 2011

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18,000 TEU Containerships

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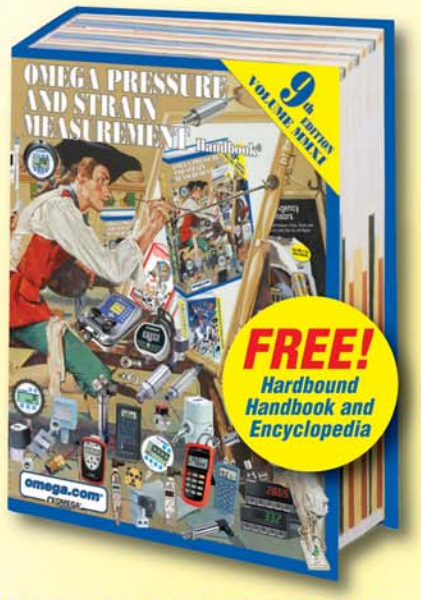

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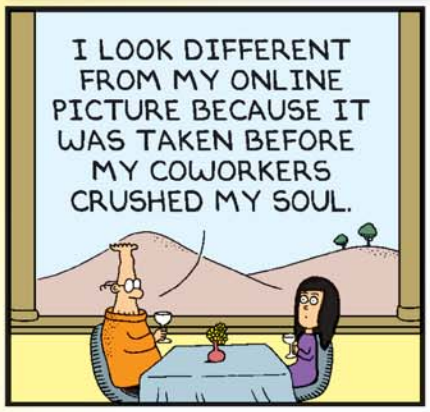

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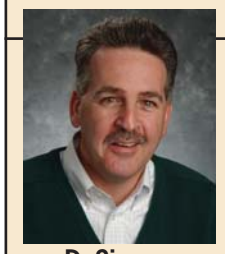
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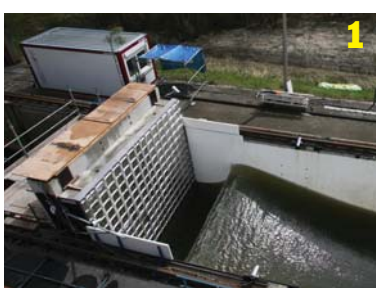
Also in this edition

SLOSHING TEST

MARIN's Hydro-Structural Services (HSS) led part of this research by setting up a confidential and exclusive JIP, "Sloshel", together with Gaztransport & Technigaz (GTT), BV and Shell. Ecole Centrale Marseille, ABS, Chevron, LR, DNV and ClassNK joined the project later on.
See story page 30



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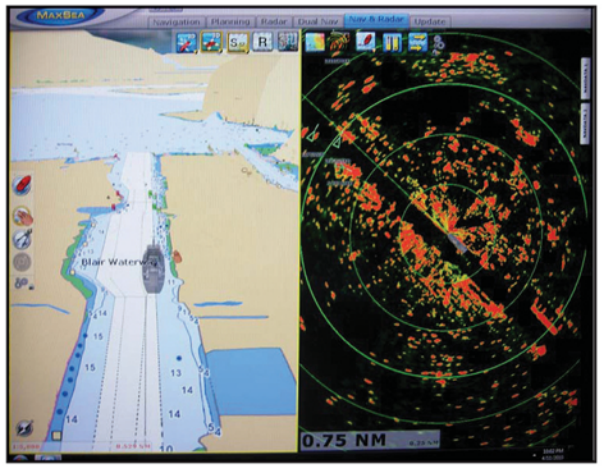

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I have often made the observation that the maritime industry is inherently conservative. Admittedly, this is a broad characterization, particularly given that the "industry," from our perspective, includes from: inland towboats to oceangoing tankers; small passenger ferries to mammoth cruise liners; fast patrol RIBS to aircraft carriers; and nearly everything in between.

While the adoption rate of new technology still pales in comparison to other modes of transport, particularly air, I can see a marked and rapid change underway; an acceleration and incorporation of technological development driven primarily by emerging regulations relating to the environment, training & education, and maritime security. Simply put, maintaining 'business as usual' could easily result in 'out of business' for those who staunchly resist change for no good reason.

Industry leader Maersk is the perfect embodiment of this, as the company is no stranger to accepting the challenge of scouting, developing, adopting and incorporating advanced marine technologies into its fleet of ships and business practices. As most of you may already know, the company made history late last month with the order for 10 (with an option for 20) 18,000 TEU containerships for delivery between 2013 and 2015. The order with Daewoo Shipbuilding & Marine Engineering Co. is significant for a long list of reasons, particularly as it comes on the heels of the worst economic crisis in a generation. The "Triple E" (**E**conomy of scale; **E**nergy efficiency; **E**nvironmentally improved) class is covered in this edition starting on page 8, and you can be sure of continued coverage in these pages as the vessels take shape in South Korea.

As most of you already know, the proliferation of Software Solutions – designed to make operations safer, more efficient and cost-effective – in the maritime sector is now starting to pick-up pace, driven in part by continued tremendous advances in computing powered, coupled with the rapidity with which information can be sent to and from vessels on the move, and in no small part due to the acceptance by shipowner/operators young and old. Our Software Solutions roundtable this month presents insights from a diversity of product and service providers. The feature, which starts on page 46, by my own admission runs a bit long, but quite frankly there is so much meat on this topic that I made the call to dedicate a few extra pages to the effort, so as to not leave out such juicy bits as SpecTec CEO Giampiero Soncini's call out to the industry to **"WAKE UP! We are in 2011, not 1911!"**

Technical issues aside, all eyes personal, political and corporate are one the rapidly evolving situation in the Middle East, analyzing how initial instability and change evolve to affect our business. In late January I was in Dubai for a whirlwind week of visits with local companies, getting first-hand insights as the workings and opportunities of business in and around the Middle East. At the time of the visit, all indications pointed to a resurgence of maritime and offshore activities, tempered with a still recovering economy and the region-wide effects of UN sanctions on Iran on the maritime companies that service that country. In this edition are intial reports, with much more to come.

ON THE COVER

Pictured on this month's cover

a rendering of the mammoth 18,000-TEU containership ordered by Maersk from Daewoo. See the full story on this huge ship, including details on its innovative propulsion arrangement, starting on page 8. **(Image Courtesy MaerskGroup)**

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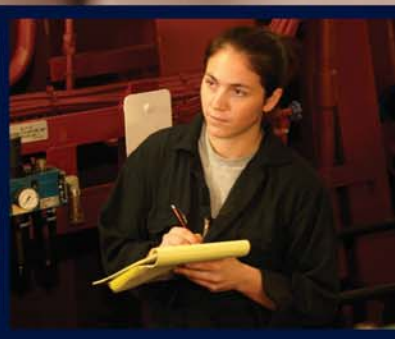

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(Image Courtesy MaerskGroup)

Maersk Makes its Mark (again)

Meet the 18,000 TEU Containership

Maersk Line has ordered 10 of the record breaking 18,000 TEU container ships from Daewoo Shipbuilding & Marine Engineering Co., Ltd., Korea for delivery 2013 to 2015.There is an option for an additional 20 vessels.

Ships of this size, sometimes referred to as "Malaccamax" have been talked about for more than 10 years and rumors of the Maersk order have abounded in recent months. Malaccamax refers to the largest ships able to negotiate the Straits of Malacca. Reduced draft was one of several reasons to adopt a twin island design with twin engines powering two smaller diameter propellers rather than one large one (requiring greater depth of water).

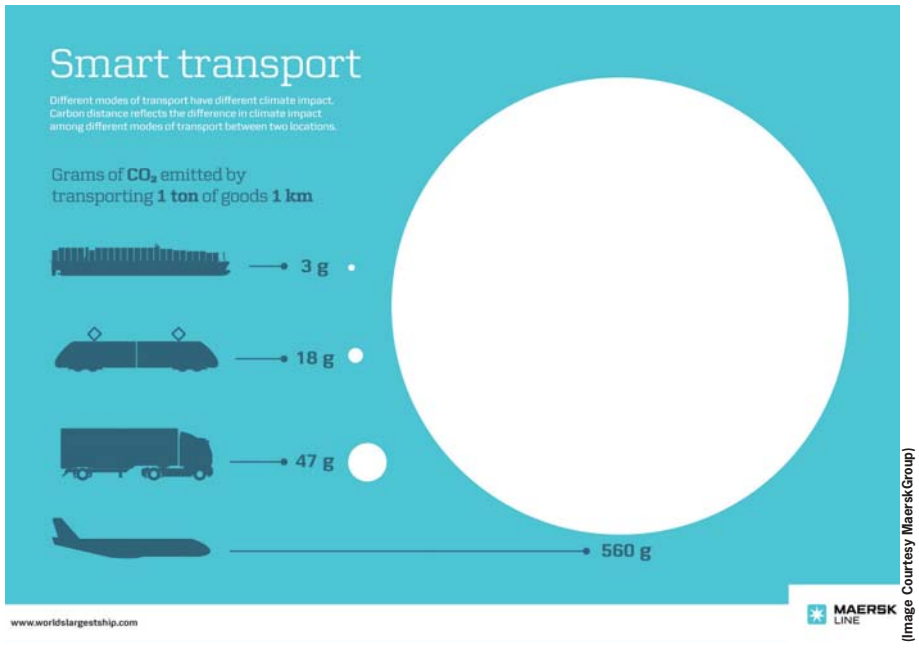
This new, giant container vessel class will be known as Triple-E, based on the three main purposes for their creation: Economy of scale, Energy efficiency, Environmentally improved. The new class will have 16 percent more capacity than Maersk's present largest Emma Maersk 'PS Class' ships. Contributing to the larger container capacity is positioning the engines further aft rather than midships. The dimensions of the new Class is 1312 x 193.5 x 239.5 ft. (400 x 59 x 73 m).

The Triple-E Class design reduces CO2 emissions and features Waste Heat Recovery equipment that will produce 20 percent less CO2 per container moved compared to Emma Maersk and 50 percent less than the industry average on the Asia-Europe trade lane.

Compared to the present largest container ships of around 13,000TEU, the Triple-E Class will offer a fuel saving of approximately 35 percent per container. Although the maximum speed will be 25 knots, the hull and propulsion systems are designed to profit from slow steaming, rendering fuel consumption benefits of 20 percent at 22.5 knots, 37 percent at 20 knots and 50 percent at 17.5 knots.

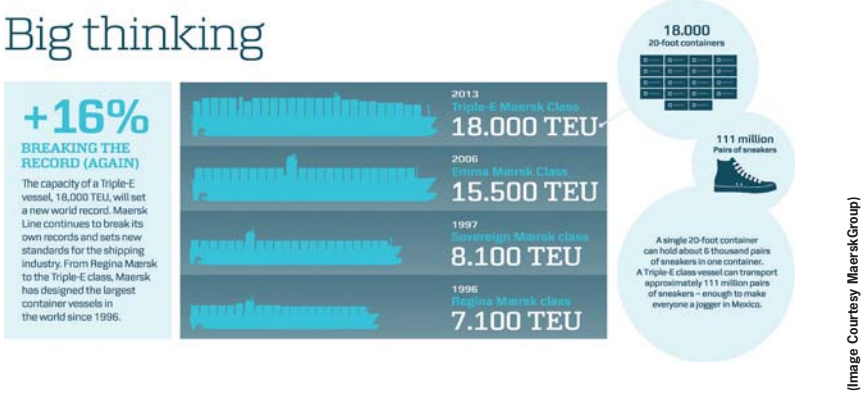
Propulsion Details of Triple-E Class

The Maersk Triple-E will be the world's largest container vessel class yet the propulsion system is remarkable for its relatively small size and high efficiency. Contrary to postulations in earlier studies for this size of vessel, it does not



(Image Courtesy MaerskGroup)

Hallmarks of the "Triple E" Class
Economy of scale, Energy efficiency, Environmentally improved



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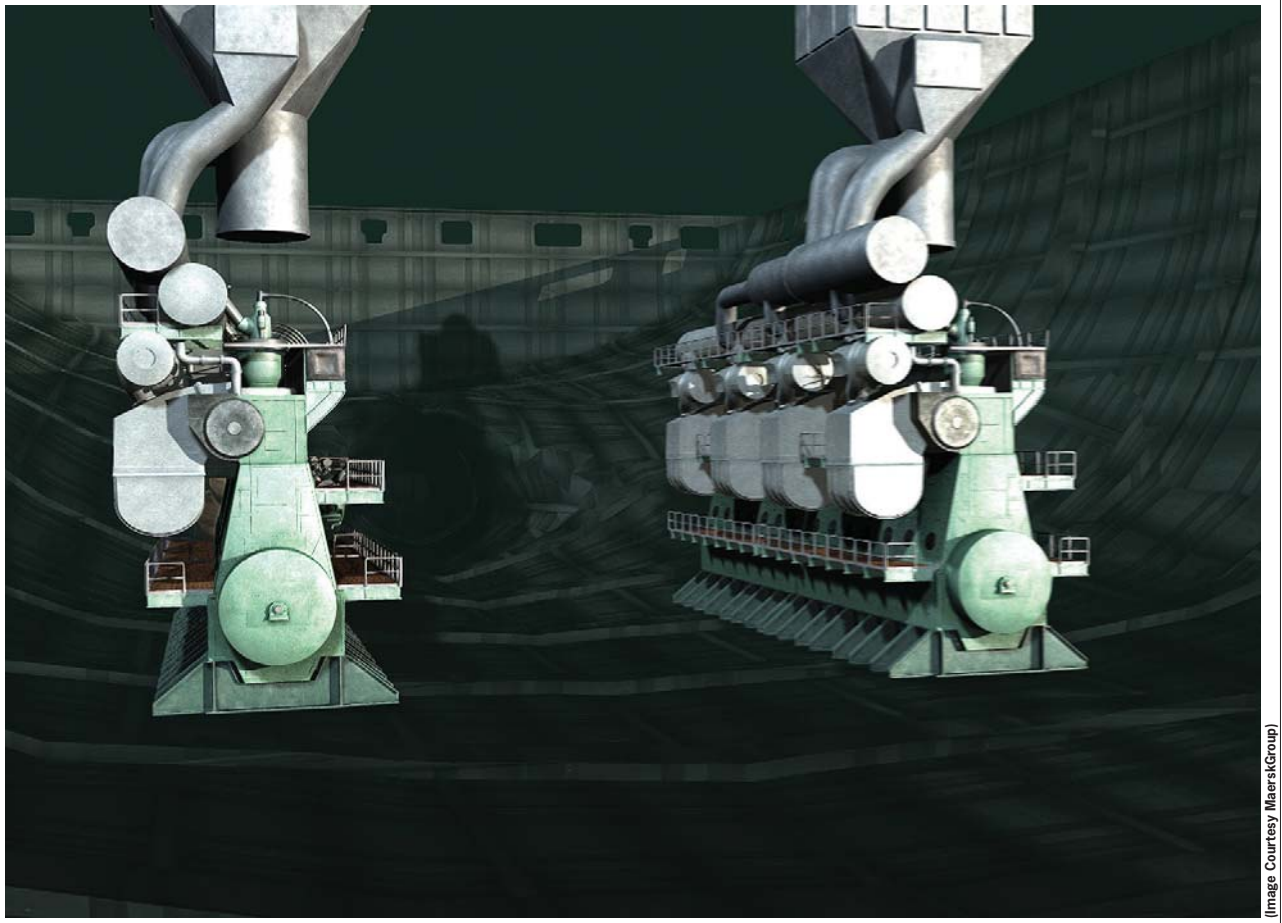

(Image Courtesy MaerskGroup)

The Maersk Triple-E will be the world's largest container vessel class yet the propulsion system is remarkable for its relatively small size and high efficiency.

require the monster 18 cylinder engine with propeller of record breaking proportions. The adoption of a twin skeg propulsion system with two engines driving two propellers heralds a new era in container ship design producing the vessel's world record efficiency. In keeping with the present and future economic and political climate, Maersk have paid very much attention to the "Green Credentials" of this ship. They have resisted the opportunity to go for a faster ship of 25+ knots, with ever larger engines but instead aimed at a top speed of 23 knots, some two knots slower than the Emma Maersk PS Class.

The lower speed of Triple-E means a lower total power requirement of around 63 MW, considerably less that the 80MW of the PS Class. The lower speed also introduces the opportunity of using an engine with a lower rpm, such as the recently announced MAN B&W G series of ultra long stroke engines. Not only does the G series have a lower specific fuel consumption, it allows the use of a higher efficiency larger diameter propeller. A vessel of this size using a single large diameter propeller would run into draft restrictions that are overcome with the adoption of a twin screw solution. The Triple-E will use two four bladed propellers of 9.8 m diameter, compared to Emma's single six bladed propeller of 9.6 m diameter. This twin propeller arrangement produces greater total thrust than the single propeller and with fewer blades creates less resistance. The estimated net benefit for Triple-E is a four per cent energy saving over the PS class single screw propulsion system.

By Keith Henderson as posted on MaritimePropulsion.com

(Image Courtesy MaerskGroup)

MSC Completes Antarctica Resupply

Military Sealift Command-chartered containership MV BBC Ems (pictured right) departed McMurdo Station, Antarctica, Feb. 13 after delivering more than 84,000 sq. ft. of vital supplies in support of Operation Deep Freeze. ODF is an annual U.S. Air Force-led mission to resupply the remote scientific outpost.

BBC Ems followed MSC tanker USNS Richard G. Matthiesen, which delivered more than 5.5 million gallons of diesel, gasoline and jet fuel to McMurdo Station Jan. 29 to Feb. 5.

MSC ships deliver 100 percent of the fuel and about 80 percent of the supplies that the researchers and support personnel who live and work across Antarctica — up to 1,100 in the summer months — need to survive and work over the course of a year. **"Resupplying the Antarctic only happens once a year — it's the window of opportunity," said John Joerger, tanker project officer at MSC headquarters in Washington, D.C.** "If we didn't provide the fuel and supplies, they would have to shut the station down. They need it for heat, they need it for their vehicles, helicopters and all the things they do. If they don't have fuel, they can't survive in the Antarctic."

An MSC dry cargo ship and tanker have made the dangerous voyage to Antarctica since the station was established in 1955.

BBC Ems arrived at McMurdo Station's ice pier Feb. 5 carrying cargo that was loaded on board in Port Hueneme, Calif. Supplies aboard the 469-foot ship including food, household goods and research equipment; "everything you need to run a small city for a year," said Timothy Pickering, cargo project officer at MSC headquarters.

It took 59 Sailors from the Williamsburg, Va.-based Navy Cargo Handling Battalion One and 65 members of the New Zealand Defence Force working around-the-clock three days to offload BBC Ems' cargo. They then loaded the empty ship with cargo to be transported off the continent, including ice core samples carried back to the United States in three 40-foot refrigerated containers. The ship also took on trash and recyclable materials for disposal.

This year marks the final Antarctic voyage for MSC's T-5 tanker class, of which Matthiesen is a part. Five tankers were built in the mid-1980s and chartered by MSC until 2003, when the command purchased four of the five.

"This is the last McMurdo Station port call for a T-5 tanker, a milestone in 26 years of dedicated tanker support by MSC, the Champion-class tankers and the U.S. merchant seamen who crew them in support of Operation Deep Freeze," said Rear Adm. Mark H. Buzby, commander, MSC. "MSC will continue support to Operation Deep Freeze, but this marks the end of a proud era for the Champion-class tankers." The T-5s have been replaced for most Department of Defense fuel transport missions by two newly built tankers that came under charter to MSC in late 2010 and early 2011.

Washington Watch Good News & Bad News

More than one initiative in play to ensure that the domestic maritime industry, otherwise lacking DOT support, still gets its fair share of infrastructure spending. How that funding is meted out may change. Who ultimately gets the money certainly will. — **Posted by Joseph Keefe on MaritimeProfessional.com**

The most visible advocates for inland river operators made their presence known at various congressional offices recently in an effort to spur legislation that would revive flagging inland waterways projects. Almost one year after the Army Corps of Engineers Inland Waterways Users Board endorsed a strategic plan for infrastructure construction, WCI – the national public policy organization in charge of advocating "a modern and well-maintained national system of ports and inland waterways" – is pushing federal legislators to formalize the process. WCI is supported by waterways carriers, shippers, port authorities, shipping associations and waterways advocacy groups from all regions of the country.

Recently, Waterways Council officials pleaded their case during dozens of courtesy calls to congressional offices. The **Inland Waterways Capital Development Plan**, the result of a collaborative effort of Corps professionals and inland waterways stakeholders, looks for almost $20 billion in spending over the next two decades, for new and larger locks and refurbishment of existing infrastructure. As a possible component of the proposed 2010 Water Resources Development Act, WCI hopes that the inland infrastructure initiative will find some traction in the 112th Congress.

As a part of recent activities Congressman Hal Rogers (R-KY), Chairman of the House Appropriations Committee was presented Waterways Council, Inc.'s (WCI) 10th Annual Leadership Service Award. Rep. Rogers was presented the WCI award for his work championing ports and waterways issues at a dinner on February 16, 2011 in Washington, DC. For his part, Rogers, who is also chairman of the House Appropriations Committee, told WCI attendees that legislators were aware that aging infrastructure had to be addressed.

Recent efforts will not end the Waterways Council, Inc. (WCI) efforts of the Hill. In March, WCI officials will address the news media about the President's FY 2012 budget and outlook for the U.S. Army Corps of Engineers' Civil Works program, the state and importance of lock and dam infrastructure to the nation, and the prospects for the Inland Waterways Capital Development Plan in the 112th Congress. The event is open only to the media, but also highlight's WCI's continued outreach on behalf of their constituents.

LEGISLATION REGARDING HMT FUNDS

U.S. Senator Kay Bailey Hutchison (R-TX) co-sponsored legislation with U.S. Senator Carl Levin (D-MI) intended to ensure crucial maintenance is performed on the nation's ports. **The Harbor Maintenance Act of 2011** requires that all funds collected by the Harbor Maintenance Trust Fund (HMTF) be used for costs to maintain and repair harbors and ports, and not diverted to unrelated initiatives.

"It is vital to both our state and national economy that our ports are properly maintained. Each year our Texas ports have more than 500 million tons of cargo pass through them," Sen. Hutchison said. "This flow supports over 1 million Texan jobs and accounts for more than $135 billion in economic value. To maintain their vitality we must ensure that money from the Harbor Maintenance Trust Fund is only spent on projects that will keep our ports up to date and able to support America as vibrant channels of commerce."

Created in 1986, the HMTF was intended to provide a stable, long-term source of funding to pay for maintenance costs for federally maintained harbors. The concept was that taxes would be imposed on users of the system, particularly shippers of goods passing through those harbors. The revenues from users would be placed in the HMTF, where it would be used promptly and exclusively for harbor maintenance. According to Hutchinson, while HMTF revenue has steadily increased, harbor maintenance appropriations since 2003 have stagnated, resulting in a growing backlog of critical harbor maintenance.

As a part of recent activities, Congressman Hal Rogers (R-KY), Chairman of the House Appropriations Committee (center), was presented Waterways Council, Inc.'s (WCI) 10th Annual Leadership Service Award from Cornel Martin, WCI President and CEO (left) and Rick Calhoun, WCI Chairman of the Board (right).

Because the revenues and expenditures of the HMTF are part of the overall budget, if the trust fund does not spend all of its revenues, the "surplus" helps offset deficits in the rest of the general budget.

The HMTF legislation sponsored by Senator Hutchison includes a guarantee that requires that the total amount appropriated from the HMTF each year be equal to the trust fund receipts plus interest as estimated by the President's budget for that year. If an appropriations bill spending HMTF revenue that does not meet this requirement is brought to the House or Senate, any member would be able to make a point of order against it and the bill would not be allowed to be considered in that form without an overriding vote on specifically spending less than the projected annual HMTF revenue and interest.

Both Texas Senators, Hutchison and Cornyn, are co-sponsors of the Harbor Maintenance Act of 2011. The official text of the bill was not yet available, and it was unclear if the measure would also reform wording to eliminate the shortsea HMT assessment as a way to spur increased domestic coastwise shipping and alleviate highway abuse, pollution and congestion. At least four other bills have been proposed for that purpose, with no success.

AS EARMARKS GO AWAY, SO GOES THE DREDGING MONEY?

Elsewhere and even as WCI officials lobby federal lawmakers for additional infrastructure improvements, **the budget slashing on Capitol Hill is threatening to derail for federal funding – traditionally routed through the Army Corps of Engineers – for port dredging projects.** Ahead of the rush to expand width and depth and at many U.S. ports as a response to the scheduled completion of the Panama Canal expansion project in 2014, competition is fierce for limited funding.

The ports of Miami, Charleston, Savannah and a raft of others would like to be among the ports ready and able to accept the newest generation of mega-container vessels that will soon able to transit the deepened Panama Canal. In a year where the push to cut budgets everywhere – on the local, state and federal levels – not all will make the cut.

Those that do could benefit not only from the increase in tonnage, or merely keeping what they already have, but also by becoming regional "niche" coastwise or shortsea distribution hubs. Cargoes offloaded in the deep sea ports could theoretically be transported by smaller feeder vessels to other domestic ports, especially if the shortsea portion of the HMT is repealed.

Because the President has this year threatened to veto any appropriations bills that included earmarks, funding for dredging port studies and other infrastructure projects are going to be that much harder to obtain. And (arguably), amid the seemingly bad news about funding, it is actually possible that the new rules will help the Army Corps of Engineers to make the right decisions on which ports should be deepened. Not every port needs to be deepened in order to create a more efficient transportation system.

And, while this seemingly simple truth makes great sense, politicians accustomed to playing the earmark game to bring home the bacon may have to go back to their districts empty handed.

As the budget battles play out, there will be winners and losers in the struggle to fund port infrastructure. On the other hand, just a few ports on the East and Gulf Coasts, properly prepared to take on the new megaships, will translate into a winning shortsea formula for consumers, the highway Trust Fund and U.S. taxpayers. Is that so difficult to understand?

Where are all of the IceBreakers?

Congress entrusted the US Coast Guard with icebreaking. What happened?

Posted by Dennis Bryant on MaritimeProfessional.com

At the end of World War II, the United States had seven Wind Class icebreakers. When built, they were the most capable and technologically advanced icebreakers in the world. Up until 1966, the US Navy operated four of the icebreakers and the US Coast Guard operated the other three.

In that year, the four Navy icebreakers were transferred to the Coast Guard, which assumed sole responsibility for US government maritime missions on surface waters of the polar regions (Arctic and Antarctic).

The last of those icebreakers, the USCGC Northwind (WAGB 282) was decommissioned in 1989. By then, the Coast Guard had two Polar Class icebreakers – the USCGC Polar Star (WAGB 10) and the USCGC Polar Sea (WAGB 11).

These breakers, commissioned in 1976 and 1978 respectively, carried both diesel electric and gas turbine engines driving three shafts with controllable-pitch propellers. Using the diesel electric engines, each ship produced 18,000 horsepower; the gas turbine engines were capable of producing 60,000 horsepower; and together the engines could provide a demand thrust of 75,000 horsepower.

This made them the best conventionally-powered icebreakers in the world, capable of breaking up to six feet of ice at a continuous speed of three knots.

Plans called for construction of additional icebreakers as the Wind Class ships reached the ends of their operational lives, but the monies were never appropriated. The USCGC Healy (WAGB 20) entered service in 1999. It is more devoted to scientific research than to classic icebreaking. While larger than the Polar Class breakers, it is less powerful, with diesel electric engines producing 30,000 horsepower for the two shafts with fixed pitch propellers. The Healy is considered "Polar Capable" rather than "Polar Class." It is designed to break 4.5 feet of ice continuously at three knots. In 1996, the Polar Star went into the special status "Caretaker" with a minimal crew. It is now planned for decommissioning later in 2011. The Polar Sea is undergoing an extended shipyard availability, with the goal of returning to service in 2012. There are no current plans to build another US icebreaker. The United States icebreaking program is, in some respects, similar to the US manned space program – relying on foreign craft to get the job done. It is time for Congress and the American public to realize that we are a polar nation and it is vital to our national interests to have the capability to operate year-round in Arctic and Antarctic waters.

Welcome Back $100 Oil

So why can't the carriers build the cost of bunker fuel into their freight rates, instead of slapping on emergency surcharges at the rise of a barrel? **Posted by Greg Knowler on MaritimeProfessional.com**

The cost of crude oil almost hit $120, but anything over about $80 a barrel has annoying implications for the world's transport services providers. Airlines are already scrambling to introduce fuel taxes and shippers can expect to see hefty bunker adjustment factors coming down the pipeline soon.

Ultimately, of course, it is the carriers' customers who will end up footing the bill. And that is where the injustice in the fuel surcharges system lies.

Over the last few years factories in China have had to cope with a steady increase in costs, a sustained assault on their bottom lines. While I agree that it is hard to dredge up sympathy for factories and their sweatshops whose business models were based on paying workers as little as possible, the "factory of the world" has embarked on a painful process of change. A couple of years ago Beijing introduced tougher labor legislation and has been regularly raising the minimum wage. It has also adjusted tax rebates that reduce the profit margins on manufacturing low-cost goods exported by the millions of boxes from factories in South China.

The availability of migrant labor has dried up as government stimulation measures provide workers with employment closer to home. The end result has been a higher payroll.

On the manufacturing side, the low value toys and textiles produced by South China's factories use plastics, chemicals and paint that are affected by high oil prices The end result is that raw materials cost more.

Yet despite their higher operating costs that are a direct result of this more expensive crude oil, manufacturers and cargo owners in China's giant export industry do not have anyone down the supply chain pipeline to pass an "oil surcharge" on to. Low value items have very low profit margins and prices are intensely competitive, so for these manufacturers any increase in costs has to come out of their own pockets. Shippers have long complained that the cost of fuel as an operational expense should be carried by shipping lines and built into the setting of freight rates, not slapped on as an additional charge per container whenever the oil price spikes.

BAF should go the way of the dodo, along with all the other surcharges that shift risk and costs down to liner customers. It is an unwelcome approach to what should be a straightforward business. Take a look at what it costs you to move a particular shipment and build that into your freight rates.

Isn't that how pricing a product works?

Mammoet Raises Cabo de Hornos

On January 29, 2011 Mammoet Salvage refloated the research vessel Cabo de Hornos safely and redelivered her back to her owners, The ASMAR Shipyard in Talcahuano, Chile. The vessel was being built at the ASMAR Shipyard located in Talcahuano Naval Base when on February 27 2010 one of the largest earth quakes ever recorded hit the central region of Chile. The movement of the earthquake caused an accidental premature launch and the vessel slid into the sea. The Cabo de Hornos was planned to be launched on that February 27 in a formal ceremony in presence of the Chilean President. After the premature launch and several minutes drifting, the vessel was picked up by the Tsunami and washed back on to land on the opposite side of the shipyard.

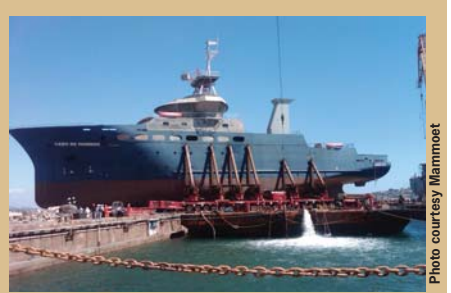

Photo courtesy Mammoet

On November 12, 2010, the salvage contract to refloat the Cabo de Hornos was awarded to Mammoet Salvage. Mammoet Salvage offered an unconventional salvage solution by proposing to drive the vessel on to a flattop deck barge with the Self Propelled Modular Trailers (SPMTs) from other operating companies in the Mammoet Group. The barge would be completely submerged in dry-dock and the vessel would be floated off.

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Greatship Global Invests in Rig

Singapore based Greatship Global Energy Services a subsidiary of Greatship India Ltd is in an expansion mode. **Posted by Joseph Fonseca on MaritimeProfessional.com**

Greatship Global Energy Services Pte. Ltd. (GGES), a Singapore incorporated subsidiary of Greatship (India) Limited (GIL), which is a subsidiary of The Great Eastern Shipping Company Limited, has placed an order for construction of One (1) Mobile Offshore Self Elevating Drilling Rig - Letourneau Super 116 (E) with Lamprell Energy Ltd. The Rig is due for delivery in Q3 FY13 (Q4 calendar 2012). The Rig is an Independent Leg Cantilever type Jack up rig with 15000 PSI pressure rating, designed to operate in water depths of up to 350 feet and will have a rated drilling capacity of 30,000 feet. The Rig is a state of the art cyber rig, built with the latest technology, equipments and systems. This is the third jack up rig which will be owned by GGES after entering into a Memorandum of Agreement for the purchase of 350 feet jack up drilling rig "Greatdrill Chetna" last month which is currently in chartered on bareboat basis by GGES. The flagship company, G E Shipping is India's largest private sector shipping service provider enjoying a formidable presence in the international maritime industry. The company has two main businesses: shipping and offshore. The shipping business is involved in transportation of crude oil, petroleum products, gas and dry bulk commodities. The offshore business services the oil companies in carrying out offshore exploration and production activities, through its wholly owned subsidiary Greatship (India) Limited.

The shipping business operates under two main businesses: dry bulk carriers and tankers. A sizeable part of the tankers enjoy approvals from oil giants like SHELL, BP, EXXONMOBIL, CHEVRONTEXACO, TOTALFINAELF and BHP. G. E. Shipping's profits dropped steeply last year to $84m from $295m which the company netted in the previous fiscal.

G. E. Shipping has a fleet strength of 32 vessels and eight are on order five of which are dry bulk and three tankers.

Fort Schuyler

Civil War-era fortress now home to the State University of New York Maritime College.

Posted by Dennis Bryant on MaritimeProfessional.com

During the War of 1812, it became apparent that US coastal defenses were woefully inadequate. Plans were made for construction of a series to forts along the Atlantic seaboard to defend against future attacks. Fort Schuyler was sited on Throgs Neck, the southeastern tip of the Bronx, where the East River meets Long Island Sound, to protect New York City from naval attacks from the Sound. The fort was dedicated in 1856, but wasn't completed until shortly prior to the Civil War. It was named in honor of Philip Schuyler (1733-1804), a politician who also served as a Major General in the Continental Army. At one time, the fort was fitted with over 400 guns, including 12-inch guns on recessible carriages. The coastal artillery was not removed until 1935. During the Civil War, Fort Schuyler was used as a prisoner of war facility. In 1938, the fort was ceded to the State of New York, which moved the New York State Merchant Marine Academy to the site. The fort also houses the Maritime Industry Museum, with exhibits on the history of the United States maritime industry, commercial shipping, the merchant marine, and the Port of New York. The NYS Maritime College is the oldest state maritime school in the United States, founded in 1874. It offers bachelor's degrees in marine, mechanical, and electrical engineering, as well as naval architecture. Members of the Regiment of Cadets in the four-year program spend one year at sea, primarily on the training ship Empire State VI. Upon graduation, most sit for US Coast Guard licenses as either a Third Mate or a Third Engineer. Most also receive commissions as Ensigns in either the US Navy or the US Coast Guard.

(Photo courtesy SUNY Maritime)

Diesel Electric Propulsion

Wärtsilä Low Loss Concept

As the popularity of diesel electric propulsion increases, attention is being focused on ways of improving the system which is often criticized for being bulky and heavy. A traditional DE ship propulsion system consists of two or more propulsion units. Each unit comprises of a generating set (engine and generator) plus a drive system with its own propulsion transformer, frequency converter for speed control and propeller system. The transformers are heavy and take up considerable space. The number of propulsion units used in a medium sized vessel ranges from at least four up to as many as seven.

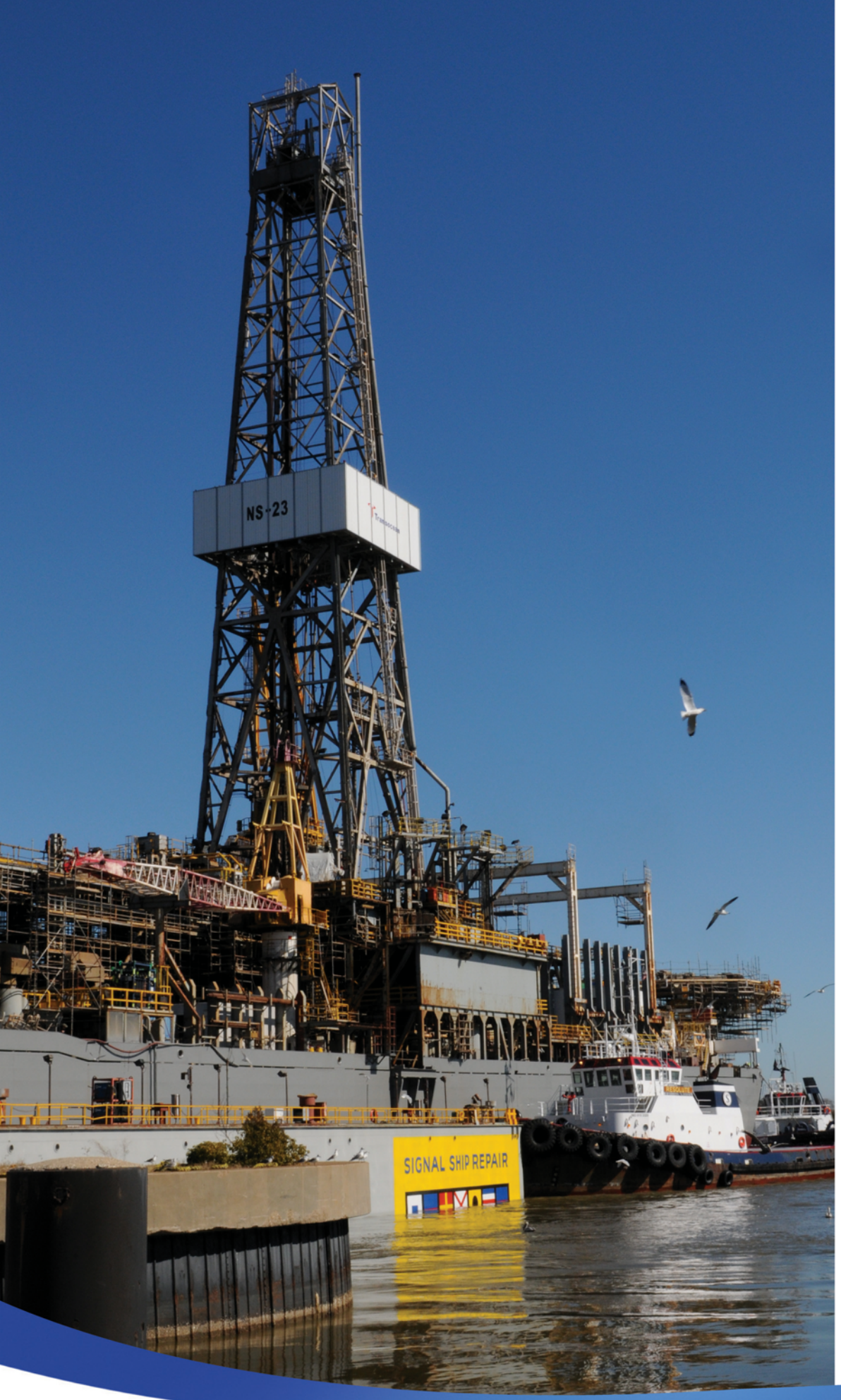
In an attempt to solve some of these negative features, Wärtsilä has produced a Low Loss Concept (LLC) for DE installations that offers improved performance at lower cost. This is achieved by avoiding the use of heavy and space consuming transformers in the DE power distribution systems. It has the additional benefit of improved levels of redundancy. In the LLC system, the propulsion transformers are eliminated and replaced by one or two Low Loss Concept transformers in a central location. Each transformer becomes part of the switchboard unit and controls several propulsion units. Wärtsilä LLC is available for low voltage (690V) and medium voltage (6600V) applications, covering power requirements of 5-70 MW. Low-voltage systems have already been installed on some 65 vessels, and medium voltage installations are in development.

As the genset power is applied directly to the speed controlling frequency converters, eliminating the propulsion transformers increases the system efficiency by two to four per cent and decreases the current supplied from the switchboard to the frequency converter by ten percent. The resulting efficiency can deliver significant fuel savings in the region of between $40,000 and $135,000 depending on the vessel size/type and operational profile. The basic LLC concept of two propulsion units served by one LLC transformer can be used with low-voltage power distribution for installed power levels up to 14 MW. For higher powers there is LLC Quattro using four LLC transformers connected in a ring extending the propulsion power range up to 20MW.

In traditional designs of medium voltage (6600 V) systems, propulsive powers of between 30 to 40 MW can be realized. Using the LLC design, enables the use of medium voltage systems in large vessels and offshore platform applications to increase up to 70 MW of installed power,"

The first complete LLC system was delivered in 2004 and installed on the MV Normand Skipper, a platform supply vessel (PSV). By the end of 2010, some 70 ships featuring low-voltage versions of the Wärtsilä LLC have been delivered. Pilot sales of Quattro LLC began last year and medium- voltage versions of the LLC solution are being marketed for use in vessel and drilling platform applications

Posted by Keith Henderson on MaritimePropulsion.com



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Top 20 Carriers Suffer
Reliability Declines

Following two consecutive increases in the second and third quarters of 2010, container service reliability fell back in the fourth quarter, according to Drewry Maritime Research's latest Schedule Reliability Insight report.

The proportion of the 3,027 vessel calls arriving on time at selected ports around the world during October-December decreased to 55%, down from 60% in the third quarter. The 4Q10 reliability performance was slightly better than the 53% on-time score recorded in the same period of 2009.

The transpacific trade easily outperformed the other major East-West trades with an on-time percentage of 64%, an exact replica of the trade's results from 3Q10. In comparison, Asia/Europe/Med services slipped back by 16 points to 50% reliability, while transatlantic services continued their fall from the heady heights of 2Q10 by registering an on-time score of 55%, comparing unfavorably with the previous quarter's 66%.

Drewry's report found that only eight of the top 20 container lines, as ranked by vessel TEU capacity, were able to improve on the 55% on-time industry average and the same three carriers from the previous quarter occupied the top positions in the latest report albeit in slightly different order: Maersk Line retained the number one slot with an on-time score of 70.2%; APL grabbed second place with 67.7%, while Hyundai Merchant Marine was just edged out into the bronze position with 67.6%.

"It is always difficult explaining fluctuations in service reliability, but considering the near universal declines it is fair to say that most of the big carriers were caught out by the unusually bad weather and port disruptions in the fourth quarter," said Simon Heaney, editor of Schedule Reliability Insight. Only three of the major carriers, MOL, "K" Line and CSAV, managed to improve their reliability percentages in 4Q10, with CSAV achieving the biggest rise of 9.9 points from a low base of 35.6% in 3Q10.

Heaney stated "Hopefully, these worse than expected results were just a blip caused by events outside of carriers' control. From talking to carriers, we know that many view reliability as a key differentiator, so we would expect that to translate into higher on-time percentages in the near future. We certainly urge shippers to make schedule integrity a key component in the next round of global tenders."

Drewry anticipates that the 1Q11 reliability performance will suffer as a consequence of events in Egypt as liner operations face extensive delays even if the Suez Canal remains open.

DNV Touts LNG Shipping for N. America

DNV's new report, Greener shipping in North America, proposes that LNG is the most efficient and economical way to meet air emissions requirements in the U.S. and Canada that take effect in August 2012. Environmental Control Areas (ECA) will gradually be enforced along the North American coastlines. They will have full force in 2015 and 2016, leaving shipowners a limited number of options for modifications to their ships if they want to continue trade in North America. Specifically, the use of LNG fuel for a ship would reduce nitrous oxide (NOx) emissions by 85-90%, sulphur dioxide (SO2) and particulate matter by almost 100%, and it would result in 15-20% less greenhouse gas emissions. DNV's report is the first study of US and Canadian domestic shipping and recommendations to meet new environmental legislation for North America. The report says that implementing LNG fuel on a significant portion of the fleet is the best and most cost-efficient solution for reducing environmental emissions in North America. The report covers:

- North American shipping statistics
- New environmental legislation for ship emissions in North America
- LNG's economic performance
- LNG's environmental performance
- LNG technology
- LNG safety
- LNG availability

http://www.dnv.com/resources/reports/

Hickman Rowland,
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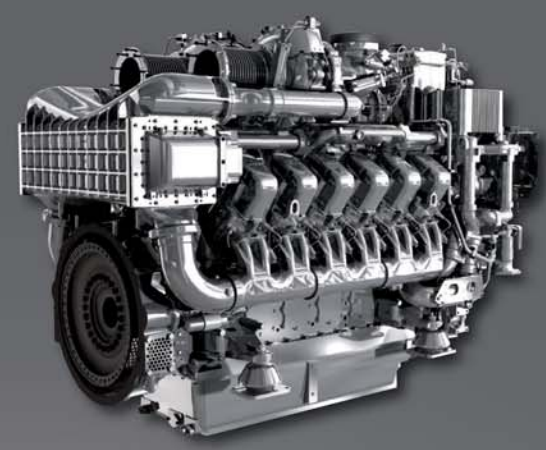

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Maximizing Maritime Economics

New Method to Forecast Ship Resale Price

By Sidney Levine

When the shipping market bubble burst in 2008 the usual methods for estimating ship resale prices became temporarily unworkable. Valuing ships is central to our business, so we needed a new appraisal method. We based that method on the strong correlation between charter rates and ship prices. It is a logical choice because charter rates measure earning power and earning power is a prime determinant of the value or price of any asset. By analyzing more than 20 years of data, we were able to devise a method to calculate resale prices for many sizes and ages of tankers and dry bulkers. We call these prices 'Shadow Prices' because of the indirect way that they are derived. A characteristic of Shadow Prices is that they tend to forecast price moves in the ship sale and purchase market.

Charters are usually negotiated quite quickly, while ship sales, influenced by those charters, take much longer to complete. So today's charters have a direct influence on future prices. At the very least, Shadow Prices are an important leading indicator. We have made this new technology the main part of our new SHIPPING MONITOR. Each issue will include the short term history and forecast of ship resale prices as well as their long term historical distribution. For a complimentary copy of the Shipping Monitor

Email Sydney Levin at: SPL@SHIPINTEL.COM

Recent Ship Sales

(Source: Shipping Intelligence, New York, NY)

Date	Name	DWT	YB(age)	Price
Bulk Carrier				
01/19/11	OCEAN WALKER	18,040	81(30)	$2.100
01/17/11	FANI	23,245	87(24)	$7.000
01/13/11	SEVEN OCEAN	23,948	96(15)	$14.000
01/12/11	THOR CAPTAIN	25,082	83(28)	$3.800
01/12/11	ANDRONIKI	29,159	84(27)	$6.000
01/17/11	WADI HALFA	31,948	85(26)	$7.300
01/17/11	ALWADI AL GADEED	31,957	85(26)	$7.300
01/12/11	EL CONDOR PASA	33,476	01(10)	$22.000
01/24/11	ADELINE DELMAS	33,504	86(25)	$6.500
01/24/11	DELPHINE DELMAS	33,520	86(25)	$6.500
01/24/11	CAROLINE DELMAS	33,611	86(25)	$6.500
01/24/11	BLANDIN DELMAS	33,660	86(25)	$6.500
01/12/11	JORITA	36,663	85(26)	$8.400
01/19/11	SIAM PEARL	38,023	83(28)	$5.300
01/12/11	MARYBELLE	42,569	87(24)	$10.500
01/17/11	ANTONIS	45,090	84(27)	$8.300
01/26/11	JIN MING	45,564	82(29)	$7.500
01/19/11	BEST FORTUNE	63,179	82(29)	$5.800
01/12/11	SUN	63,251	83(28)	$6.000
01/12/11	FIVE STARS UNION	64,135	82(29)	$6.200
01/12/11	KIRTI	68,255	86(25)	$10.000
01/26/11	PACIFIC EAGLE	73,592	04(7)	$35.200
01/24/11	NORDSTAR	150,661	83(28)	$14.600
01/12/11	CASTILLO DE GORMAZ	153,572	89(22)	$17.000
Chemical Carriers				
01/12/11	SUN CROWN	1,999	87(24)	$1.500
01/19/11	SHINY DEE	6,050	07(4)	$8.500
01/12/11	TJORE ELIEZER	9,220	08(3)	$5.800
01/13/11	STELLAR ACACIA	12,000	10(1)	$25.000
01/17/11	FAJA DE ORO II	44,999	95(16)	$12.000
Containerships				
01/19/11	SUDERTOR	5,364	00(11)	$4.300
01/19/11	HAL ALEXANDRA	8,350	96(15)	$7.200
01/12/11	MERKUR LAKE	12,576	84(27)	$7.500
01/26/11	SINAR BANTAN	14,971	02(9)	$13.600
01/26/11	ASIAN TRADER	22,735	91(20)	$7.000
01/24/11	TAICANG DRAGON	34,325	08(3)	$28.800
01/12/11	OOCL XIAMEN	43,093	03(8)	$26.600
Reefers				
01/17/11	FIONA	5,232	86(25)	$1.600
RoRo				
01/13/11	PARNAVERA	3,300	03(8)	$12.500
01/17/11	OMO WONZ	3,500	81(30)	$1.400
Tankers				
01/24/11	VANGUARD	47,059	92(19)	$9.000
01/24/11	SPOTLESS	47,084	91(20)	$7.000
01/24/11	DOUBTLESS	47,086	91(20)	$7.000
01/19/11	FREJA SCANDIA	53,540	10(1)	$40.000
01/24/11	SUMMIT AFRICA	73,427	09(2)	$42.300
01/24/11	TAMARA	95,793	90(21)	$9.000
01/24/11	GENMAR PRINCESS	96,648	91(20)	$8.000
01/17/11	OPAL QUEEN	107,181	01(10)	$34.000
01/27/11	PACIFIC SPIRIT	113,000	08(3)	$54.500
01/13/11	SFAKIA	250,267	86(25)	$16.000
01/12/11	GRAND	263,097	94(17)	$20.000
01/12/11	FRONT SHANGHAI	298,971	06(5)	$91.300
01/13/11	SUNRISE JEWEL	302,440	92(19)	$36.000
01/13/11	GRAND SEA	310,444	08(3)	$99.900
Tweendeckers				
01/13/11	FGM ISTANBUL	5,050	80(31)	$1.000
01/26/11	SOUTHERN STAR	6,503	83(28)	$1.200
01/26/11	EAST STAR	6,760	84(27)	$1.500
01/26/11	STARFORD 3	7,110	85(26)	$1.800
01/12/11	SUNROAD TSUWANO	9,640	05(6)	$11.500

Incat Crowther Launches 118-ft Monohull Crewboat

Incat Crowther launched the 118-ft Monohull Crewboat Siem Piata. The vessel was launched by ETP Engenharia Ltda in Rio de Janeiro, Brazil, it completed sea trials and was delivered to Siem Consub for service to Petrobras. Developed primarily at Incat Crowther's USA office in Morgan City, La. Siem Piata will perform the role of a P2 crew boat in the Siem Consub fleet. The vessel is certified to BV and Brazilian Maritime standards. The main cabin contains seating for 60 passengers in large reclining seats, some at tables. There are also generous luggage storage racks, a beverage counter and two toilets. The vessel features a large aft main cargo deck devoted to crew transfer and cargo carrying. Siem Piata has a deck cargo capacity of 50 tons.

Photo courtesy Incat Crowther

The vessel is powered by three Caterpillar C32 main engines, each driving a Hamilton HM72 waterjet. A ZF3050 gearbox will provide gear reduction and clutching. A single 100 hp bow thruster will be mounted forward for station keeping purposes. Primary electrical power is derived from a pair of Caterpillar C4.4 gensets each producing 99kw. The vessel also features a fire fighting monitor (6,000 liters/min) for combating off-ship fires and a purpose designed transfer platform has been arranged on the foredeck to further suit the Petrobras P2 vessel requirements.

Equipment List

Length o.a.:	.36m
Length wl	.32.9m
Beam	.7.5m
Draft hull	.1.2m
Passenger capacity	.60
Crew capacity	.10
Ship's fuel	.15,100 liters
Ship's water	.5,800 liters
Cargo fuel	.30,200 liters
Cargo water	.30,200 liters
Deck cargo	.50 tons
Deadweight	.85 tons
Service speed	.20 knots
Installed power	.3 x 1,400 bhp
Main engines	.3 x Caterpillar C32 ACERT
Propulsion system	.3 x Hamilton HM721
Gensets	.2 x Caterpillar C4.4
Survey	.Bureau Veritas
Construction material	.Marine Grade Aluminum

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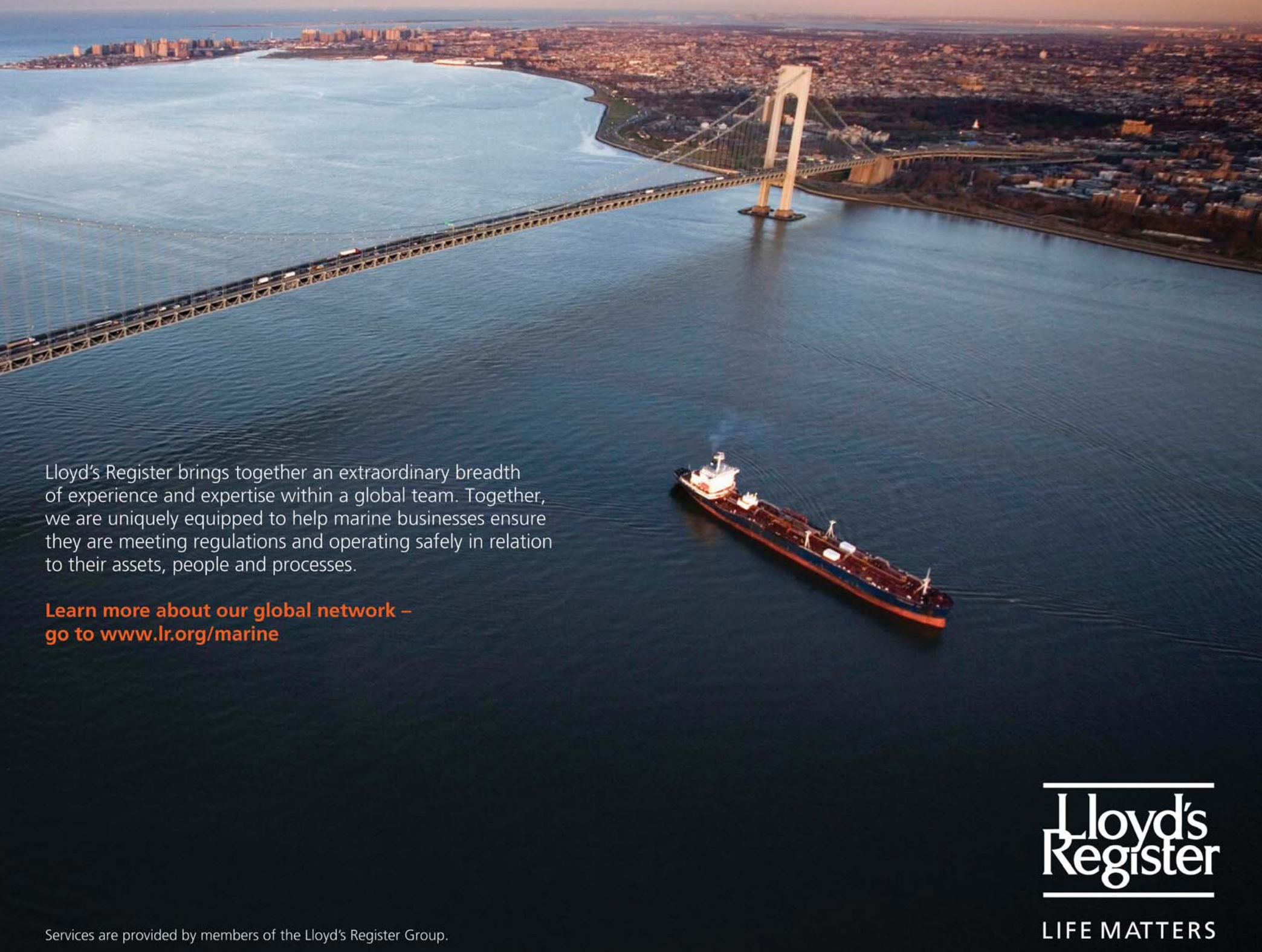

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Learn more about our global network – go to www.lr.org/marine

Lloyd's Register

LIFE MATTERS

Vizada Launches VSAT Service

Vizada launched Pharostar, a proprietary VSAT (Very Small Aperture Terminal) fixed satellite communications service and the latest addition to its maritime broadband portfolio. Based on iDirect technology, the service provides standard IP data speeds of 1024 kbps for multiple applications such as internet, email and VoIP.

RALion Contract For Australian Research Vessel

RALion, a Joint Venture between Robert Allan Ltd. of Vancouver, B.C., Alion Science and Technology Corporation of McLean, Va., and Alion Science and Technology (Canada) Corporation of Kanata, Ontario, has just been awarded a contract to design a new Research Vessel for the Commonwealth Scientific and Industrial Research Organization (CSIRO), an agency of the Government of the Commonwealth of Australia. The contract has been awarded by Sembawang Shipyard Pte. Ltd. of Singapore who will build the vessel under contract to Teekay Holding Australia Pty. Ltd. (as Project Managers). This ice-strengthened research vessel will be 292 ft. in long, and will replace the existing R/V Southern Surveyor.

SeaArk Delivers 55-ft. Pilot Boat to Colombia

SeaArk Marine delivered Isla Tesoro, a 55 ft. Dauntless RAM Pilot boat to the Armada Nacional De Colombia. The vessel is assigned to DIMAR at the Port of Cartagena.

The vessel is powered by twin MAN R6-800 diesel engines rated at 800 hp (588 kW) @ 2300 rpm each coupled to twin Ultra Dynamics UltraJet 410 waterjets with JetMaster joystick controls, via a ZF360 reduction gearboxes. During sea trials this pilot boat achieved a top speed of 28.6 knots with a comfortable cruise of 23 knots. The SeaArk Dauntless Class vessel is based on a proven hull designed by C. Raymond Hunt & Associates, of Boston, MA, and is constructed of all-welded marine grade aluminium.

The vessel features a deep-vee variable deadrise hull that produces a smooth, dry and stable ride. All enclosed cabin spaces are fully climate controlled.

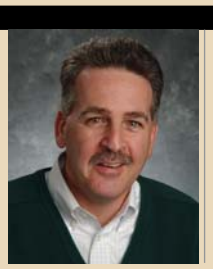
The pilothouse includes hydraulic/suspension seating for a crew of three, with additional seating for six passengers. The electronic suite includes extensive communications equipment, fully integrated radar with GPS, plotter, AIS and SAT NAV equipment.

Photo SeaArk

Isla Tesoro Equipment List

Boat Builder	SeaArk Marine, Inc.
Location	Monticello, AR, USA
Designer	C. Raymond Hunt & Associates
In Service with	DIMAR, Armada Nacional De Colombia
Type	Pilot Boat
Construction	Aluminum
Length, o.a.	56.6 ft. (17.2m)
Beam, o.a.	18.6 ft. (5.6m)
Draft	4.6 ft. (1.4m)
Displacement	39,000 lb. (17.6 ton)
Diesel engine	Twin MAN R6-800 (800hp/588kW @ 2300 rpm)
Propulsion	Twin UltraJet 410 waterjets
Reverse & Steering Controls	UltraJet JetMaster Joystick
Speed	28.6 knots
Gearboxes	Twin ZF360 1.125:1 reduction ratio

About the Author



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Learn from Mistakes with

Your Insurer's Help

An author once wrote that the only real mistake is the one from which we learn nothing. Insurance carriers take that wisdom to heart, because we recognize that the best way to stop future losses is to understand past losses and what went wrong.

Sometimes a business will simply have bad luck – a string of events will combine in an unforeseeable way and lead to a loss. But when insurers study the database of claims filed, we most often find that human error has played a role.

Businesses who work closely with their insurance agent and the insurer's underwriters, risk control advisors and claims professionals can tap into our "lessons learned," whether they are analyzing a loss that has already occurred or trying to prevent one from happening in the future.

The following three anecdotes – with circumstances modified to protect any sensitive information – show how companies benefit when they work closely with their insurance team.

THE CASE OF THE LEAKY PACKAGING

A company that imports a plant-derived oil product from overseas was having trouble with the shipments it was receiving.

The oil, which is extremely caustic, was packaged in bladders that were then encased in 20-foot bulk containers. When the importer received the containers and opened them, the oil was everywhere, stripping the paint from the container's interior and leaving the company with a toxic mess instead of a salable product.

In addition to filing a claim, the company asked the insurance agent to help it determine how to solve the problem for future shipments.

The insurer's risk control representative examined the bladders and realized the oil was not simply leaking out of an opening; it was permeating the bladder walls themselves.

The oil, which is extremely caustic, was packaged in bladders that were then encased in 20-foot bulk containers. When the importer received the containers and opened them, the oil was everywhere, stripping the paint from the container's interior and leaving the company with a toxic mess instead of a salable product.

The insurer knew similar bladders were being used successfully in similar applications. By examining the leaky bladder manufacturer's specifications and comparing them to bladders that worked well, the risk control representative discovered that thicker materials and a tighter weaving process apparently made the difference. The process of analyzing the original loss, determining the cause and finding alternatives was a win-win. The company could refuse future shipments unless sturdier bladders were used, allowing it to continue to serve its customers. And the insurer knew that it would not be seeing more claims for product loss and disposal of goods.

THE CASE OF THE TOO-LARGE SHIP

A shipyard had taken an order for a vessel that was redesigned to increase in size after work was underway. After a long period of hard work and intense activity, the ship was nearing completion. Only as they prepared to launch the ship did the builders realize they had a problem. The vessel, as altered, was now so heavy that there was a real question of how it could be safely launched without destroying the dry dock or ruining the ship.

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The shipyard brought in insurance experts to determine the best course of action. With a $25 million ship and a $3 million dry dock on the line, neither the shipyard nor the insurer wanted to think about a worst-case scenario. But the ship had to be moved; it could not stay in its snug berth forever.

Unfortunately, no matter how the experts penciled out the numbers, the end result was going to be grim. There was a 90 percent or better chance that launching the ship would sink both it and the dry dock. The solution was to disassemble part of the ship, launch what was left and then bring in specialty haulers to reassemble the completed vessel.

The scientists had not considered such factors. In checking with the crystal manufacturer, they discovered the crystal (valued at more than $1m and taking more than a year to replace) would be fine in forces up to 5 Gs, but that in temperatures below 40 degrees or above 120 degrees, it could crack.

In this case, the partnership of the shipyard and the insurer averted an almost-certain loss and allowed the shipyard to continue its operations without the disruption that would have occurred if the dry dock had been damaged.

THE CASE OF THE CRYSTAL SHIPMENT

An American company developed a sophisticated laser system that could accurately measure the lens used in cameras, telescopes and other precision equipment. A Japanese company was very interested in evaluating the prototype before placing an order.

The scientists were experts in lasers, but knew little about transportation. They planned to stabilize their prototype carefully in a wooden box, put it on a truck bound for the local airport and then have it flown to Japan on a cargo plane.

They met with their insurance agent and carrier representative to make sure they had adequate coverage. In discussions, the insurance team learned that the heart of the laser system was a manmade crystal purchased from another company. Not only was the crystal worth more than a million dollars, but it also would take almost a year to replace if anything happened to it. Thinking through the planned transit, the insurance team asked the scientists how the crystal would be impacted if it were exposed to significant G forces or temperature variations during the trip. The scientists had not considered such factors. In checking with the crystal manufacturer, they discovered the crystal would be fine in forces up to 5 Gs, but that in temperatures below 40 degrees or above 120 degrees, it could crack.

Since the shipment was taking place in the dead of winter, exposure to cold during transportation was clearly an issue. The company opted for a temperature-controlled container, and the shipment was made without problems – but only because the insurance team was on hand to ask the right questions.

THE MORAL OF THE STORIES

Insurers believe that companies would much rather continue their business uninterrupted by losses than be in the position of filing a claim against their insurance coverage. An insurer may be on the hook monetarily for losses, but the insured company also faces costs, whether they are out-of-pocket deductibles, disruption to business or disappointed customers. That is why both insurers and their customers have a common interest in avoiding claims.

In the end, not every accident can be prevented. Ships will sink in horrific storms. Warehouses will burn to the ground despite sophisticated sprinkler systems.

And theft will occur as criminals find new ways to circumvent cargo protection systems. But by working closely with their insurance agents and their carrier's team of experts, businesses can learn from their mistakes, reduce human error as a factor, and make costly losses much less likely.

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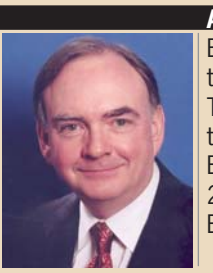
Caveats of Long-Term Charters

About the Author



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The U.S. Government, acting through the Military Sealift Command (MSC), enters into time charters for ocean transportation services. MSC treats these time charters as commercial type contracts and incorporates into them the U.S. Government's standard commercial type contract terms and conditions. A 2009 decision by the Armed Services Board of Contract Appeals (ASBCA) demonstrates the risks contractors run when entering into charters containing these commercial terms. Specifically, the ASBCA narrowly limited the monetary recovery to which a contractor is entitled in the event the Government terminates for its convenience a charter. With the expected reduction in military budgets, contractors need to consider the impact of the ASBCA decision when entering into charters and alternative forums for monetary recovery should a charter be terminated. While this article focuses on long term charters, contractors are at financial risk even for short term or voyage charters. Contractors competing for long term charters typically have to arrange to acquire and re-flag the vessel being offered. The successful contractor must obtain financing and make a significant initial investment in upgrading the vessel to meet U. S. flag standards. These costs are then amortized in whole or in part over the life of the charter. At the same time, every U.S. Government contract contains a termination for convenience clause, which permits the government to terminate the contract for any reason provided it pays the contractor compensation pursuant to the terms of the termination clause and governing regulations. The standard termination for convenience clause found in the Federal Acquisition Regulations (FAR) permits the contractor to recover, among other things, unamortized startup costs as well as costs continuing after termination that cannot be avoided. The clause, FAR § 52.249-2, Termination for the Convenience of the Government, provides that the contractor is entitled to recover the "costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto. . . ." The FAR cost principle applicable to terminations provides for the recovery of unamortized start-up costs and further provides for the recovery of costs continuing after termination which cannot be discontinued upon termination. FAR § 31.205-32(b) and (c). The standard termination clause also provides for recovery of settlement expenses, such as the cost of settling with suppliers whose subcontracts must be terminated and submitting a termination proposal to the Government. Thus, under the standard termination clause the contractor may recover the unamortized costs of reflagging the vessel as well as ownership costs continuing for a reasonable period after termination allowing the contractor to sell or find an alternate use for the vessel.

The commercial-type contract termination clause, however, is worded differently and provides only that "the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges the Contractor can demonstrate to the satisfaction of the Government using its standard record keeping system, have resulted from the termination." FAR § 52.212-4(l). The percentage portion of the clause poses little difficulty. MSC time charters typically have per diem hire rates, so determining the percentage complete is rarely disputed. Even for lump sum voyage charters, MSC typically will determine percent complete in terms of hours or days. The difficulty arises from the second part of the clause, namely in addition to being paid a percentage of the contract price, the contractor is entitled to "reasonable charges the Contractor can demonstrate . . . have resulted from the termination." The ASBCA concluded that the terminology means only costs in the nature of the settlement expenses that are provided for under the standard termination clause, discussed above. Thus, the ASBCA concluded that the contractor was not entitled to recover any unamortized start-up costs incurred to reflag the vessel or any costs of ownership following termination. While the ASBCA decision concerned a long term charter that was terminated in its final months, the ruling applies irrespective of when the charter is terminated. Also, the commercial type termination clause in question is used in all MSC charters, be they long term or voyage charters. Assuming for the moment that the appeal was correctly decided, MSC needs to consider whether the use of the clause in long term voyage charters is reasonable. Commercial contracts in general rarely have termination clauses allowing the buyer to terminate at will and without cause. While the Government's right to terminate for convenience has long been recognized, the governing regulations and case law have always required that the contractor be compensated fairly and not left at a financial loss solely as a result of the decision to terminate. The termination of a long term charter almost guarantees that the contractor will suffer a financial loss unless it is compensated for unamortized start-up costs and costs unavoidably continuing following termination. Commercial-type contracting principles and procedures arose from the Federal Acquisition Streamlining Act of 1994, and were intended in part to ease the regulatory burden on contractors selling commercial supplies and services to the Federal Government. But commercial supplies are typically items that companies maintain in inventory or that can readily be resold in the commercial marketplace. Similarly, a commercial service is one which the contractor regularly provides to commercial customers. In either case, the consequences of a termination rarely involve more than a restocking charge or redeployment of service workers. A long term time charter is not analogous to either situation. Since Federal Government contracts essentially are contracts of adhesion with respect to standard terms and condition – i.e., government agencies cannot simply negotiate the language of standard contract clauses – MSC should consider reverting to the standard FAR termination clause when entering into long term charters. If not, then contractors must either assume the financial risk of termination or be able to include that risk in pricing the initial term of the contract without being prejudiced in MSC's price evaluation.

The ASBCA decision in question, Appeal of Red River Holdings, LLC, is now on appeal in the District Court of Maryland, but even if the decision is reversed, it is not clear that the ASBCA would be required to follow the District Court's ruling. Moreover, in view of the ASBCA's decision, as long as MSC continues to use the commercial-type contract termination clause, it is not clear that MSC could agree to pay unamortized start-up costs and continuing ownership costs in settling termination claims. Therefore, contractors must consider forums other than the ASBCA. Under the Suits in Admiralty Act, disputes concerning maritime contracts can be brought in the federal district court in which the contractor is located. Those courts are not required to follow the ASBCA decision and while district courts may be inclined to show certain deference to the ASBCA given its expertise with Government contracts, when enacting the Contract Disputes Act of 1984, Congress intentionally left the district courts with jurisdiction over maritime contracts in recognition of the district courts' historical role and experience with maritime and admiralty issues. There also are several legal reasons why a district court could decide not to follow the ASBCA decision. For example, while the commercial type termination clause provides in part that the "Contractor shall not be required to comply with the [FAR] cost principles . . ." it does not render those principles inapplicable if the contractor wishes to rely on them. As stated, the Termination cost principle expressly provides for recovery of both unamortized start-up costs and costs continuing after termination that cannot be avoided. The authors of the FAR's commercial-type termination clause presumably knew of the Termination cost principle and what it provides for. Had they intended that the provision not apply to commercial contracts, presumably they would have drafted the clause to exclude or modify the Termination cost principle. Also, while the termination clause provides that the contractor may recover "reasonable charges [that] have resulted from the termination," it also provides that the "Contractor shall not be paid for any work performed or costs incurred which reasonably could have been avoided." (Emphasis added.) The ASBCA limited those costs to settlement type expenses, but the language of the clause tracks very closely with the Termination cost principle that provides for recovery of costs "continuing after termination [which] [d]espite all reasonable efforts by the contractor . . . cannot be discontinued immediately after the effective date of termination." A court could reasonably conclude that drafters of the commercial type termination clause knowingly chose language that tracks with Termination cost principle because the drafters believed those continuing costs to be allowable. Finally, allowing additional compensation for "work performed . . . which reasonably could not be avoided" seems at odds with the ASBCA's narrow interpretation of additional costs being limited to settlement type expenses, which do not involve additional work.

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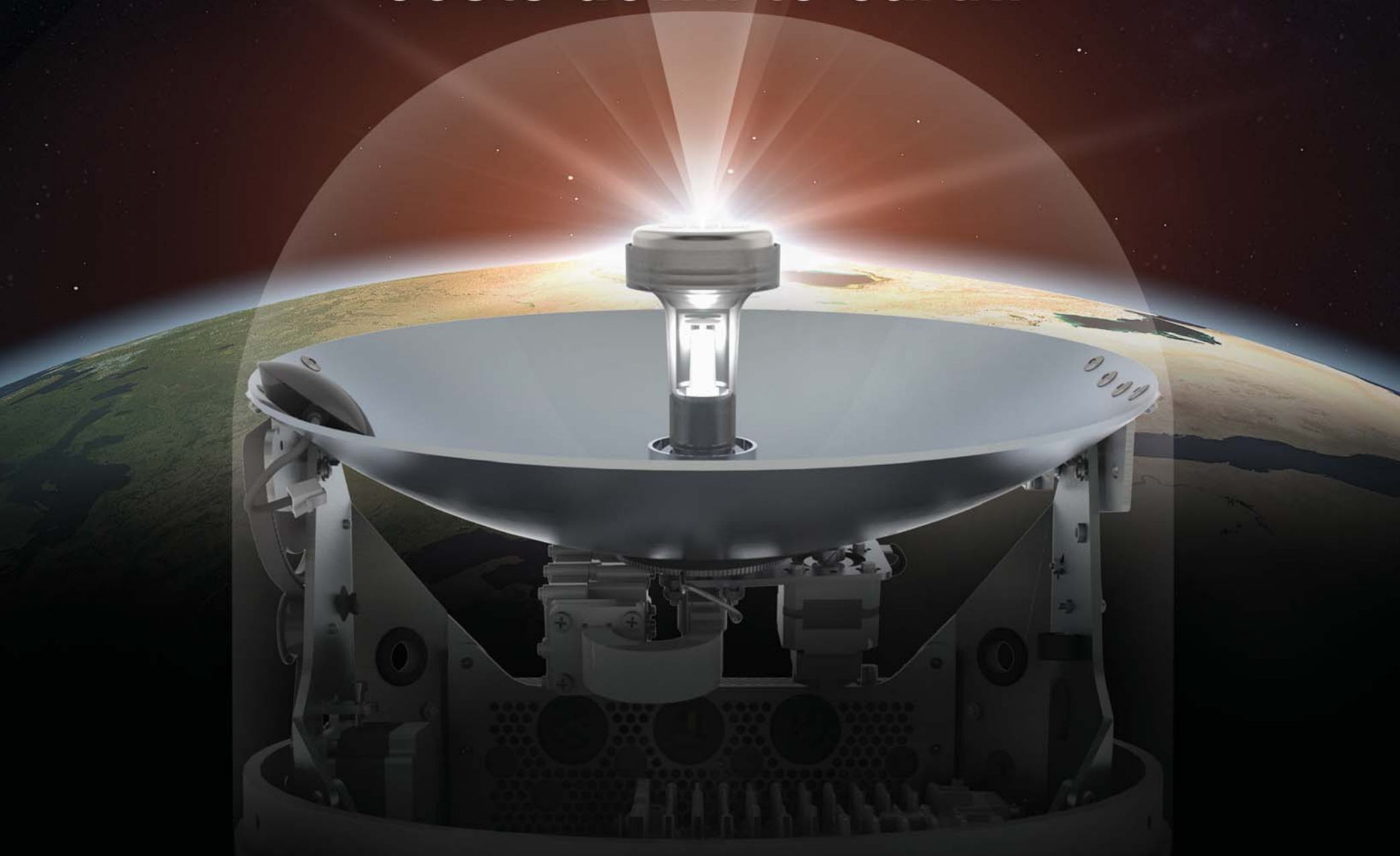

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Payment of Ransom

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The call to the owner, frequently at night, from the agent reports that the company's ship has been hijacked by pirates in the Indian Ocean. The crew is apparently unharmed, but has been forced to sail the ship to an anchorage off the coast of Somalia. The favorite pirate strongholds have been located near communities such as Harardhere, Hobyo, and Eyl in northern Somalia. There are several pirate groups and a few independent operators, but they all have similar patterns. Once control of the vessel has been obtained, the master is forced to sail to the Somali coast. The master is also

required to notify the agent or owner of the hijacking. Negotiations for payment of the ransom for release of the vessel, its crew, and its cargo commence shortly thereafter. In typical cases, negotiations take six to ten weeks. Negotiations can take longer in some cases, as when the vessel is carrying a valuable or unusual cargo (such as when a VLCC loaded with crude oil or a cargo ship loaded with military weapons has been seized). Occasionally, the pirates decide to retain the vessel for a while to use as a mothership from which to launch further assaults. Eventually, though, the vessel runs low on bunkers and thus loses its usefulness.

The owner is then faced with a demand from the pirates for payment of ransom. As the parties haggle over an amount, the owner is confronted by moral and legal dilemmas. Morally, is it right to pay monies to criminals? The answer clearly is "no", but it is also clearly the lesser of two evils, since the pirates will continue to hold the vessel, its crew, and its cargo until ransom is paid.

The more difficult question relates to the law: Is it legal to pay monies to the pirates? The answer to the legal question is "It depends."

If there was any doubt as to where British law stood on this issue, that was resolved by a recent decision of the UK Court of Appeal. The chemical tanker Bunga Melati Dua, while on a voyage from Malaysia to Rotterdam, was hijacked by pirates in the Gulf of Aden on August 19, 2008. Plaintiff had a cargo of biodiesel on the tanker when it was hijacked. On September 18, 2008, plaintiff cargo owner served a notice of abandonment on defendant insurers. The notice was promptly rejected. The tanker, its crew, and its cargo were released by the pirates on September 29, 2008 upon payment of a ransom of $2 million by the tanker owner. The tanker resumed its voyage, reaching Rotterdam on October 26, 2008. Unfortunately, the market for biodiesel fuel is seasonal. The cargo had an insured value of $13,326,481.75 (including freight). Plaintiff claimed a loss of $7,608,845.30, following the delayed sale of the biodiesel. Defendant insurer denied the claim and litigation ensued.

Plaintiff asserted that it suffered an actual total loss (ATL) of the cargo when the hijacking occurred and that the law should not take account of the payment of ransom by the tanker owner as a relevant, legitimate reason for calculating the possibilities of recovery. Defendant insurer asserted that the cargo was not irretrievably lost as there was a good chance of negotiations for payment of ransom bearing fruit. Most importantly, defendant asserted that payment of ransom was neither illegal nor against public policy and therefore the prospects of recovery should be taken into account for purposes of applying the test of irretrievable deprivation. Plaintiff responded that payment of ransom, which amounted to submission to extortion, was so undesirable from the point of view of the public interest and universal principles of morality, that it could be no part of an insured's duty to preserve its property from loss by succumbing to a ransom demand. Thus, the property in this case should be considered irretrievably lost, physically and legally, where the only means of recovering it was to do something that an insured could not reasonably be expected or required to do.

The court stated that piratical seizure in the circumstances of this case, where there was not only a change, but a strong likelihood, that payment of a ransom of a comparatively small sum, relative to the value of the vessel and its cargo, would secure the delivery of both, was not an ATL. It was not an irretrievable deprivation of property, but a "wait and see" situation. Capture or seizure is not automatically an ATL situation. Rather, it is fact specific.

After discussing the British law relating to recovery for ATL of marine cargo and the circumstances surrounding modern-day Somali piracy, as compared to the previous experience with traditional piracy and capture, the court squarely addressed the issue of the legality of the payment of ransom.

The court noted that there is no British legislation against the payment of ransoms. In fact, a ransom payment is subject to recovery as a 'sue and labor' expense under British insurance law. While pirates, the enemies of mankind, may not enforce an agreement to pay a ransom, there is no universal morality against the payment of ransom, the act not of the aggressor but of the victim of piratical threats, performed in order to save the property and the liberty or life of hostages. There is no evidence of such payments being illegal anywhere in the world. This is despite the realization that the payment of ransom, whatever it might achieve in terms of the rescue of hostages and property, itself encourages the incidence of piracy for the purpose of extracting more ransoms. As an aside, the court opined that its position might be different if the perpetrators were shown to be terrorists rather than typical pirates.

Ultimately, the court concluded that there is no universally recognized principal of morality, no clearly identified public policy, and no substantially incontestable public interest which could lead the courts to state that the payment of ransom to the Somali pirates should be regarded as a matter that stands beyond the pale, without any legitimate recognition. There are only elements of conflicting public interests, which push and pull in different directions, and have yet to be resolved in any legal enactments or international consensus.

The UK House of Lords has also examined the problems posed by Somali piracy. Its report on the matter included testimony from Mr. Gavin Simmons, head of international policy at the UK Chamber of Shipping, who explained his view that a "fragile status quo" had been achieved that was "delivering our people and ships back", the safe return of whom was the priority. Mr. Jan Kopernicki, co-chair of the UK Shipping Defence Advisory Committee, testified:

At first sight, paying ransoms is an anathema . . . and we are very familiar with the argument that it might fuel further activity, but . . . the priority is around the safety of seafarers. . . There is . . . a conversation emanating from Washington about suggestions to make payment of ransoms in some way illegal, [but] there is a very good international discussion perhaps not to support the American move. . . We do have a concern that if a view were taken that paying ransoms was illegal, the process would go underground, and that would be far, far worse. None of this is good but this is an extremely difficult situation and at the moment, thankfully, we have had very little loss of life.

Lord Malloch-Brown, minister of state at the UK Foreign and Commonwealth Office (FCO), testified: "We are very clear that while we recognize this practice goes on, we will not be a party to it. We do not endorse or condone it, we do not participate in it, but it is a reality of this situation."

The House of Lords Report concluded, in pertinent part: "We support the status quo whereby the payment of ransom to pirates is not a criminal offence under United Kingdom law. We recommend that the Government continue to monitor the potential risks of monies reaching terrorists."

The situation in the United States is unclear and unsettling.

As of the date of writing this article, no US ship has been hijacked and held for ransom by Somali pirates (although there was one instance in 2008 where a US-owned foreign-flag ship was hijacked and held for ransom, which was paid). One US ship – the Maersk Alabama – was

boarded by pirates on April 8, 2009. The pirates departed in the ship's lifeboat, taking the master, Captain Richard Phillips, with them. A US Navy warship, the USS Bainbridge (DDG 96) arrived on scene shortly thereafter. One pirate transferred to the warship for medical care. The other three pirates were killed by Navy Seals several days later and Captain Phillips was freed. No ransom was ever demanded or paid.

Research has failed to find any reported US court decisions on legal issues relating to payment of ransom to pirates for return a hijacked vessel.

There has been, though, a significant development on the political side. On April 13, 2010, President Obama issued an Executive Order finding that the deterioration of the security situation and the persistence of violence in Somalia and acts of piracy and armed robbery at sea off the coast of Somalia constitute an unusual and extraordinary threat to the national security and foreign policy of the United States. Acting under the authority of International Economic Powers Act and the National Emergencies Act, he declared a national emergency to deal with the Somali threat. The effect of the Executive Order has been to threaten persons subject to the jurisdiction of the United States with prison and/or fines for, among other things, any provision of funds for the benefit of any person whose interests are blocked pursuant to the Executive Order. The Office of Foreign Assets Control (OFAC) has since issued information regarding specially designated nationals (SDNs) identified in the Annex to the Executive Order, several of whom are alleged to have ties to piracy in waters off Somalia. OFAC expects persons who might be subject to US law, including banks and insurance companies, to check with it prior to paying ransom to Somali pirates in an effort to ensure that monies are not for the benefit of a SDN. The process is largely opaque and it is unclear how OFAC determines where any ransom monies eventually go. To date, though, OFAC has not blocked payment of any ransoms to Somali pirates for release of hijacked ships, their crews, or their cargoes.

The position of the UK Government seems to be that, while it does not support the payment of ransom to Somali pirates, it will not stand in the way, unless possibly there was clear evidence that the ransom monies were going to terrorists. The position of the US seems to be that it presumes that ransom monies are going to terrorists and demands the right to examine each proposed transaction (payment of ransom to Somali pirates) so as to be reasonably sure that is not the case. While the two different approaches have ended up with the same result to date (ransom payments have invariably been made), the impact is different. The UK Government basically turns a blind eye and retains a modicum of plausible deniability. The US Government, on the other hand, in addition to introducing delay into the negotiation process, has made itself complicit in the payment of ransom to the Somali pirates. Obviously, each of the two governments believes that their handling of this very difficult issue is the preferred one. Other nations have been less forthcoming regarding their policy regarding payment of ransom to pirates.

The world continues to hope that the piracy problem in the Indian Ocean will be resolved soon. Until that day, the Somali pirate will continue to hijack ships

New Tests Advance Sloshing Knowledge

In April 2010 full-scale wave impact tests on the MarkIII membrane containment system were performed by MARIN, which mark the latest in a series of dedicated impact tests. An outline of MARIN's efforts to advise the industry about reducing the risks of sloshing.

Sloshing is the violent motion of a liquid in a partially filled tank. Liquid natural gas (LNG) transported at -162ºC is under consideration here. The LNG industry is concerned about the effect of sloshing loads on containment systems and their supporting structures. The fact that the motion in a tank is a function of many parameters and that the resulting impact – spatially localized and including several physical phenomena - interacts with a complex containment system has made sloshing assessment extremely challenging.

LNG carriers have an excellent track record therefore sloshing seemed to have been mastered. However, advancement is required because the conventional assessment of new membrane LNG carriers traditionally follows the comparative approach along with a filling level limitation on the current fleet. Experience is therefore lacking to assess new designs for FLNG units operating with partially filled cargo tanks.

During the last decade a profound knowledge basis has been created. Together with the industry, MARIN has carried out several investigations. The focus was twofold. On the one hand, commercial and Joint Industry Projects such as SALT, COMFLOW, HAWAI and Off-Loading operability addressed the reduction of sloshing occurrence by focusing on the factors that define sloshing. These included environmental conditions, shape and dimensions of the vessels, number, size and geometry of LNG tanks, the filling level of the LNG tanks and the coupling between the motions of the floating structure and the LNG.

EXTENSIVE RESEARCH

On the other hand, the investigation focused on the sloshing loads and the containment system integrity. This is the subject of extensive international research. MARIN's Hydro-Structural Services (HSS) led part of this research by setting up a confidential and exclusive JIP, "Sloshel", together with Gaztransport & Technigaz (GTT), Bureau Veritas and Shell. Ecole Centrale Marseille, the American Bureau of Shipping, Chevron, Lloyd's Register, Det Norske Veritas and ClassNK joined the project later on. The Sloshel project includes full- and large-scale testing of membrane containment systems, numerical developments carried out by Bureau Veritas and validation studies undertaken by the consortium members.

Results of the first full-scale tests carried out by MARIN at the turn of 2007 were already unveiled in 2009. Unidirectional breaking waves were generated in a flume in order to impact an instrumented transverse wall with embedded test structures, i.e. a rigid structure and the N096 membrane containment system. In 2009, these tests were reproduced at the scale 1 to 6.

MARIN and GTT worked together on the database and developed a physical understanding on the scaling of pressure measurements, the structural behaviour of the containment system during impact and the interaction between the wave and raised elements. Sloshing assessment remains a challenging task but the project has helped to sort out the relevant phenomena to formulate common starting points of the assessment methodologies and it has supported design choices.

USER GROUP

The latest test campaign in the Sloshel project ran in April 2010. New full-scale impact tests on the MarkIII membrane containment system and its rigid equivalent were carried out. A series of 142 tests were successively performed. Pressure, strain, acceleration, global forces and corrugation forces were measured and unique, high-speed video recordings were made. The maximum measured pressure was 56 bar and the measured data, visual inspection and destructive testing showed no damage to the MarkIII containment system.

A Sloshel User Group has been set-up to analyze the database of the latest full-scale tests. All of the existing partners joined the group and expressed their willingness to open up the group to new participants. If you would like to take part in the continuing Sloshel project, you are welcome to contact MARIN.

About the Author

Hannes Bogaert is researcher at MARIN, the Maritime Research Institute Netherlands. MARIN offers simulation, model testing, full-scale measurements and training programmes, to the shipbuilding and offshore industry and governments.
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Marrying Quality, Eliminating Risk

Bureau Veritas Acquires Inspectorate

Bureau Veritas EVP Bernard Anne explains the logic behind one of the most interesting business deals of last year and why, on the waterfront, it may just be one of the most important. The powerful synergy of ship classification with commodities inspection and testing could change both disciplines forever. ***by Joe Keefe***

The deal marrying a prominent commodities inspection and testing group with a ship classification society links two global firms dedicated to reducing risk. Both already have a large maritime presence. Bernard Anne, executive vice president at Bureau Veritas and managing director of Bureau Veritas marine division puts the deal in perspective. "It is a long time since Bureau Veritas was just a classification society. Over the last fifteen years we have been doubling in size every five years by widening both our range of services and our geographical footprint. Our strategy has always been to be number one in the world in conformity assessment and certification services in the areas of quality, health and safety, environment and social responsibility (QHSE)." Getting there meant executing strategy which mixed organic growth with careful acquisition.

First buying into the commodities testing markets in 2007, BV kept an eye on other businesses in that sector. Inspectorate, as it turned out, best complemented the BV network.

And, because Inspectorate was previously owned by a venture capital company, the timing was right. Bernard Anne explains, "We could take a big step towards our goals: Bureau Veritas could realize its investment and Inspectorate could join a successful and growing group with plans to invest."

Bureau Veritas billed the acquisition as a major step forward in its global "buy and build" strategy. Bureau Veritas in 2009 had revenues of Euro2.65bn, more than 900 offices in 140 countries and 39,000 employees spanning a global business suite of services comprised of inspection, testing, audit, certification, ship classification, risk management, outsourcing, consulting and training services.

By the end of this year, the combined firm will employ around 48,000 people, have annual turnover of Euro3bn and more importantly, will be strongly positioned in with increased resources in new and key markets.

As a part of that, BV doubled its number of laboratories to 330, achieving critical size in the promising commodities testing and inspection market.

The Inspectorate acquisition was only part of the story. During 2010, BV also bought four other companies, including Advanced Coal Technology (revenue of around €7 million), one of the leading providers of coal testing in South Africa. Clearly, Inspectorate – which has a presence in every major oil, energy and bulk handling port – was the linchpin. According to Bernard Anne, the move allowed Inspectorate to join a global leader with a diversified portfolio of activities, who understands its business and is committed to investing in further growth. That wasn't always the case with Inspectorate's venture capital parent.

DIFFERENT CULTURE: NEW OPPORTUNITIES

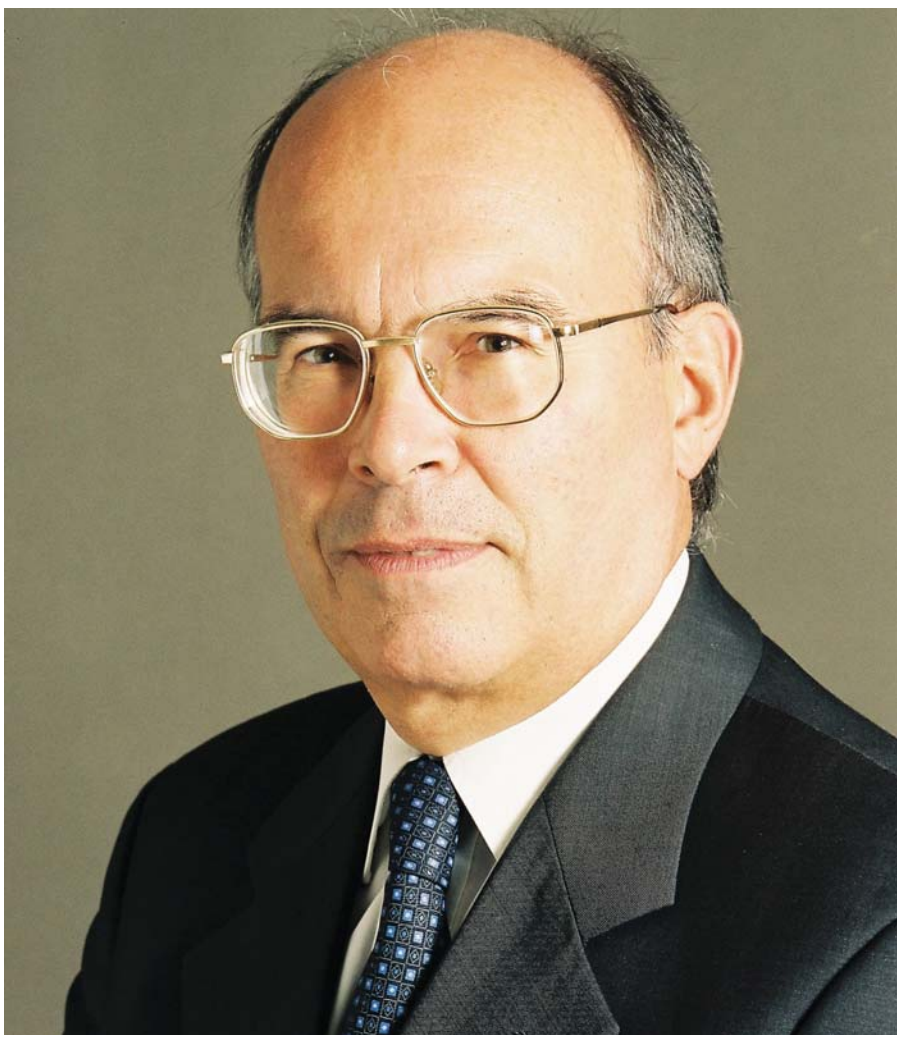
Inspectorate has changed hands more than a few times in the recent past, usually with investors hoping to make money. The Bureau Veritas acquisition represents a different type of corporate owner and a different culture at the top. As Inspectorate brings complimentary technical expertise to the group, backed by Bureau Veritas' commitment to invest in commodities testing, the ability to leverage connections between clients provides a new dimension for both groups.

For Bureau Veritas, known primarily in the maritime sectors as a founding member of International Association of Classification Societies (IACS) and one of world's largest ship classification societies, the access to Inspectorate's laboratory network could allow the parent company to expand its offerings to its shipowner clients. For Inspectorate, the synergies allowed by a potential increase in business from its meat-and-potatoes maritime sector are as yet unknown, but probably bode well for a firm that reported oil and petrochemical revenues to 59 percent of its 2009 revenues.

Inspectorate, perhaps for the first time ever, finds itself engaged in connected activities (marine and commodities) with a business parent that gives access to a myriad of potential clients in ship owners and managers that otherwise might be unreachable.

RISK: THE COMMON THREAD

For his part, Bernard Anne is clearly excited about the future prospects. "Look at where this can lead. As a marine business we class around 9,500 ships, owned in every country on the globe and trading to and from every country on the globe. All of them burn fuel, over 35 percent of the fleet are bulkers carrying commodities and over 20 percent are tankers car-

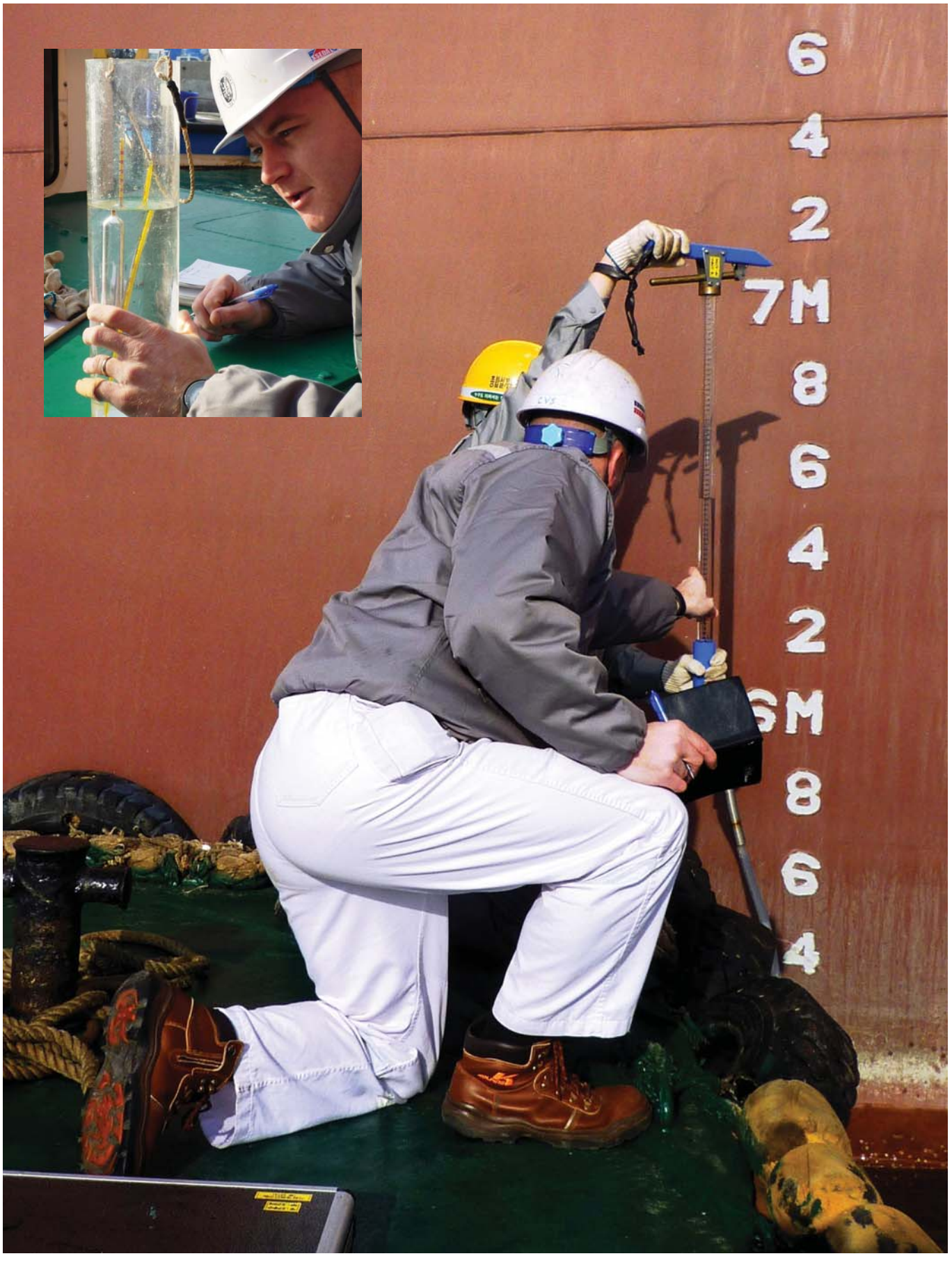


"It is a long time since Bureau Veritas was just a classification society. Over the last 15 years we have been doubling in size every five years by widening both our range of services and our geographical footprint," said Bureau Veritas EVP Bernard Anne

rying oil. All of that fuel needs to be tested, all of the bulk cargoes need to be tested and all of the oil and petroleum products need to be tested. With Inspectorate we now have a presence in every major port. So we can foresee a future where Bureau Veritas is helping the entire supply chain to control risk."

BV's initial thrust is expected to expand bunker testing services for their classed owners, but also explore links between shippers and shipowners to offer integrated and cost effective risk management services. Bernard Anne adds, "Risk everywhere in shipping and trade. By its nature it involves people and companies in different countries, with different cultures, laws, standards and languages. It involves large sums of money and moving goods and exposing them to the dangers of sea transportation. The whole thing is built on trust. Companies like Bureau Veritas and Inspectorate underpin that trust by providing all parties with an independent, globally recognised standard against which their risk can be measured and mitigated."

As Emission Control Areas (ECA) become big news – and by default bigger headaches for shipowners and their class and flag state partners – the Inspectorate acquisition makes even greater sense. Plans to leverage the Inspectorate fuel testing infrastructure and knowhow to complement BV's other maritime efforts are already underway. Bernard Anne explains, "Air emissions from ships are a significant issue for our owners. Currently there are very strict rules on sulphur content of fuel in EU ports which will be extended to all IMO ECA from 2015. This will inevitably increase the demand for fuel testing as owners will have to be sure they are burning the right quality of fuel." Already providing clients with advice on the use of LNG as a fuel and other alternative energy sources, BV will soon be able to help them test fuel quality. Bernard Anne adds, "We have yet to formalize the arrangement, but it is a natural step forward."



For BV, the United States is a particularly appealing place to start. "The U.S. is home to the world's biggest clusters of cruise shipping and we have a strong presence here. Now we can look forward to extending our footprint, giving cruise ship operators better fuel testing, giving offshore operators better product testing, and protecting US consumers and businesses by ensuring the quality and quantity of cargoes coming into the USA." says Bernard Anne. He adds, "As ECA's are developed, shipowners need certainty about what they are burning. Linking Inspectorate's fuel testing with our shipowners will give them a new level of certainty."

CRITICAL SIZE CONNECTS THE FRAGMENTED SUPPLY CHAIN

Bureau Veritas defines 'critical size' as attracting and retaining the best people, support a wide infrastructure though adequate operational income. Bernard Anne explains further, "Customers want the support of a global network, but you can only provide that network if your business is big enough. Now we are – and we will grow further. For the first time, one company can take an overall view of the risk right across a fragmented geographical supply chain, providing solutions at every stage of the process. That will cut costs and improve trade."

Critical size will be especially important in Brazil and China. Last year alone, Bureau Veritas had 25 percent of its revenue in the Asia Pacific through 227 locations, 78 labs and 13,000 employees, including 6,500 in China. With similar strengths in Brazil, especially in the offshore markets, Inspectorate adds to that resource infrastructure. Now more visible in supply chain in both countries, Bureau Veritas will test the ore which is carried in ships that they class, as well as checking outturn condition and quality. As the trade links between Brazil and

China grow, BV expects to be a major facilitator for that expansion.

ECONOMY OF SCALE: SYNERGY WITHOUT SAPPING RESOURCES

Achieving economy of scale in terms of back office operations had to be a key metric in the decision to merge the two global outfits. Synergies are expected from improved operating efficiency notably through optimisation of back-office functions, IT investments, procurement, and laboratories. As BV seeks out cost reductions – reducing duplicate offices, for example – it is too early to say how much that will bring. Bernard Anne qualifies that effort by insisting, "In any case, our focus is on growth, not cutbacks."

In addition to structural synergies, Bureau Veritas' experience and network is expected to accelerate Inspectorate's development, notably by extending Inspectorate's technical expertise throughout the Group's geographical network. Bernard Anne states flatly, "The reasons for acquiring Inspectorate were based on strategic growth. That is the big story. We diversify the group, we penetrate the oil and petrochemicals market, matching our upstream position in the market with Inspectorate's more downstream position and we develop our network globally."

SGS today is arguably the global leader in inspection and testing services, but Bernard Anne is confident that the new-look Inspectorate can soon overtake them. "The competitive landscape is interesting. SGS turns over just over Euro3bn, so we expect to be close to or past that soon. Looking behind us, we see Dekra, TUV Sud, Intertek; all of which are around half our size. When it comes to groups which are also classification societies, then we will be more than double DNV, three times Lloyd's Register and about six times ABS. That is important."

Size alone won't get the job done for Bureau Veritas, but this and a wide range of activities gives them the scope to invest in R&D, the ability to control costs and offer better services at lower prices.

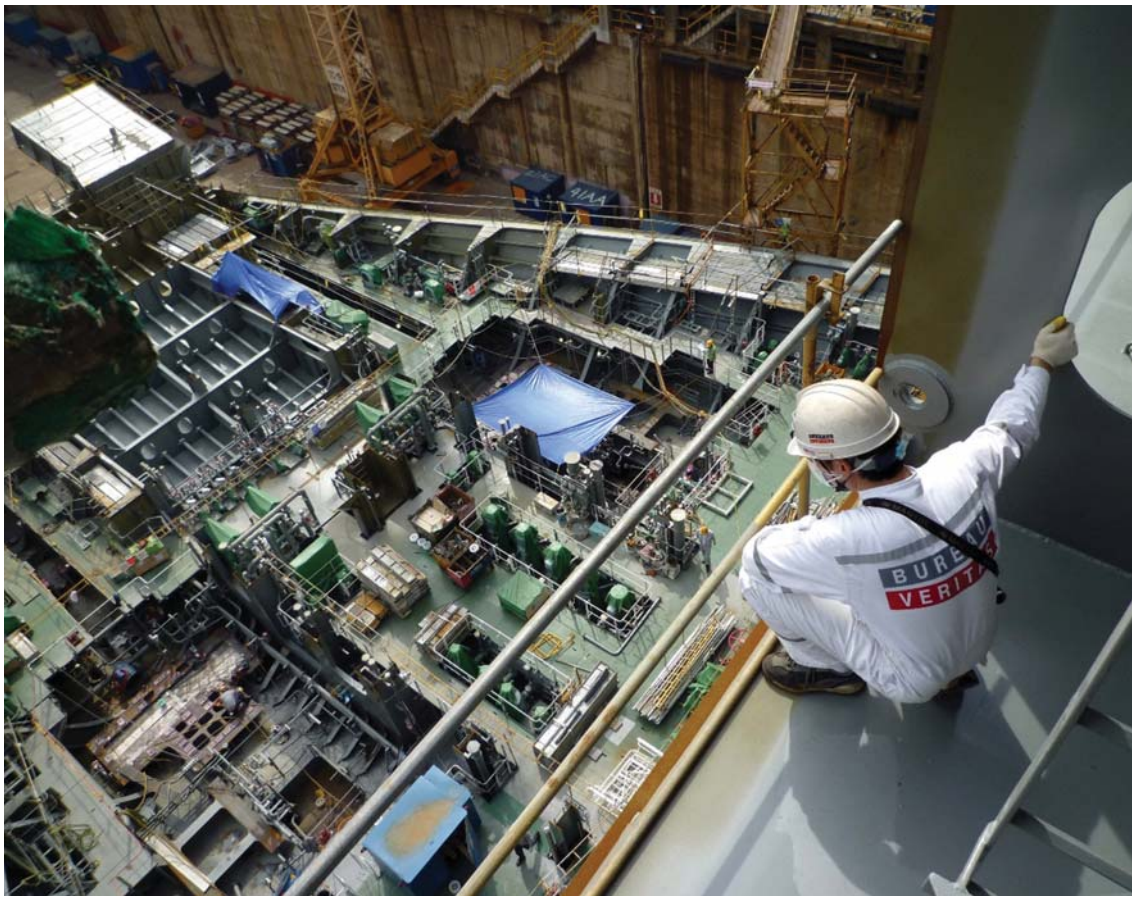
TURNKEY GLOBAL SERVICE

Today's Bureau Veritas classed fleet stands at 9,479 ships totaling 76,6m gt with an orderbook for newbuildings at 2,200 ships totaling over 28m gt. The fleet and orderbook continue to grow, especially since BV remains particularly strong in offshore energy and with the expectation for Deepwater Horizon aftermath to result in demand for more verification. But the traditional marine business made up just 12 percent of the groups' revenues in 2009.

Because Inspectorate's revenues are difficult to quantify where industrial certification of offshore energy structures stops and marine verification begins, Bureau Veritas downplays what to call the services; marine or industry or testing. Instead, says Bernard Anne, "Bureau Veritas will provide all services and link them so the client has a one stop shop for trust and risk mitigation right across their business." For emphasis, he adds, "If you are looking for a massively expanded marine division in Bureau Veritas you will be disappointed. Rather, we will create synergies where they exist across a full range of services. The obvious things are fuel testing, cargo inspection and testing.

For bunker and lube oil suppliers, the chance to do business with an inspection company with deep ties to the world's shipping community could also have its advantages. And, Bureau Veritas fully intends to leverage opportunities in outsourcing and fuel blending which can be now undertaken using Inspectorate's expertise. Bernard Anne insists that this won't come at the expense of integrity. "We are the trusted independent third party who inspects, tests, verifies, measures, and we will not compromise that."

Turnkey trust: that's what Bureau Veritas and Inspectorate are selling on a global scale. That's hardly risky business.



At Grand Bahama Shipyard

Cruise, Merchant Vessels Well Serviced

By Henrik Segercrantz

The Grand Bahama Shipyard Limited is owned by the world's two biggest cruise ship operators, Carnival Corporation and Royal Caribbean Cruises Ltd., each with an equal shareholding of 40 percent, together with the Grand Bahama Port Authority, with a 20 percent shareholding. The ship repair yard based in Freeport, Grand Bahama, services the two shipowners' growing fleets of cruise ships, but also cruise ships owned by other cruise lines. An increasing number of other types of vessels also utilize the yard for service and repairs. With three large floating docks, the yard is today a leading repair yard in the western hemisphere, and by far the world's biggest repair yard for cruise ships.

The quality policy of the yard is to provide a service equal to or exceeding the quality standard required by the customer for refitting and repair of all classes of maritime vessels. The yard has been accredited to ISO 9001:2008 by Lloyds Register since 2003 and is fully certified and operates a Health and Safety Management System that is in compliance with OHSAS 18001:2007 and Environmental Management Systems in compliance with and ISO 14001:2004.

Carl-Gustaf (Calle) Rotkirch took over at the management of the yard, as appointed Chairman and Chief Executive Officer, just at the time when the third new floating dock, acquired from Europe, was being towed over the Atlantic Sea in summer 2008. "It actually arrived a few days late to the yard, in September, as the route had to be changed due to a hurricane," Rotkirch tells Maritime Reporter in a recent interview (which did unfortunately not take place at the yard in the Bahamas, but in an ice cold Helsinki, in February). "Everything went well with the first commercial docking done in December that year," he recalls.

Before arriving at the Bahamas, Rotkirch, a 61 year young Finnish Naval Architect, had behind him an extensive career at various shipbuilder and management positions at the shipyards in Finland. Importantly, he had built ships for both the ship owners of Grand Bahama Shipyard, before taking on his current job.

Grand Bahama Shipyard strategically enjoys the duty-free and tax free status of the tax-free zone of Freeport, Grand Bahama. It also enjoys a solid local currency, pegged 1 to 1 to the U.S. dollar. The repair yard was originally set up, in January 1999, by Germany's Lloyd Werft shipyard, together with the Hong Kong-Bahaman consortium Freeport Harbor Company, owned by Hong Kong-based Hutchison-Whampoa and the Grand Bahama Port Authority. The current ownerships structure has been in place since 2001.

The first floating drydock had Panamax dimensions, as did the cruise ships at that time. The yard had in the beginning some 100 employees. In year 2002 the yard received a second floating drydock, and when the third dock arrived, the company had grown "to a full scale ship repair facility with revenues of over $130 million and an average number of permanent and temporary employees of over 800," as Rotkirch noted in his inaugural speech of that dock. Today Grand Bahama Shipyard operates three floating drydocks and has all the services required to perform

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the most complicated repair, upgrade and conversion projects. The largest Drydock 2 is 300m (985ft) long and has an internal breadth of 58.5m (192ft). The lifting capacity is 82,500t. Drydock 1 measures 268.3m x 33.5m (880ft x 115ft) and has a lifting capacity of 27,000t. The newest Drydock 3 measures 310m x 54.6m (1017ft x 179ft) with a lifting capacity of 54,000t. Consequently vessels up to VLCC size can be dry-docked at the yard. The drydocks are fitted with suitable cranes, Drydock 1 has two 20t, Drydock 2 has two 24t cranes and one 32t cane, and Drydock 3 has two 40t cranes. The yard also facilitates a number of deepwater wet berths available for alongside repairs, with sufficient water depth alongside the piers. A range of workshops provide the necessary support services. These include a steel shop, mechanical shop, pipe shop, electrical shop, rigging store, maintenance shop and warehouse facilities. There is also a large amount of office space on site.

The yard can handle cruise ships up to the size of Royal Caribbean's ms Liberty of the Seas, the largest cruise ship so far dry-docked at the yard, but ms Oasis of the Seas, ms Allure of the Seas, and ms Queen Mary 2 have yet to drydock elsewhere. Carnival Cruise Lines' largest cruise ship ms Carnival Dream has wider decks extending outside the hull and is just at the limit of the capacity of the biggest dock. Drydock 2 was recently refurbished to take on larger ships.

The yard regularly dry-docks and repairs a wide range of other types of vessels than cruise ships including container ships, bulk carriers, oil tankers, gas carriers, RoRo vessels, and offshore craft. It is equipped to carry out the drydocking and maintenance of LNG carriers, and has specialized facilities for this purpose on site, include a cryogenic workshop.

BUSY AFTER THE RECESSION

"Year 2009 was, also for us, a year of recession, due to the financial crisis, as shipowners delayed their conversion and upgrade schedules. But year 2010 was better. Particularly towards the end of last year activities have increased much," Rotkirch said. Grand Bahama Shipyard drydocks about 25 cruise ships per year, and some 70 to 75 merchant ships, altogether between 90 and 100 dockings per year. "Dividing the 1,000 docking days per year for our three drydocks with 100, gives a drydocking time of approximately ten days. Our current workload is on the better side of 90 percent now." In addition there are the vessels coming for alongside repairs. According to Rotkirch the proportion of these is about five percent.

In 2009, Grand Bahama Shipyard did two very large refurbishments, for Holland America Line's ms Veendam and ms Rotterdam, where each of the vessels received a new cabin area aft. Due to the recession, some other projects were put forward, although the yard that year still did two other somewhat bigger projects, in the $10 million range. The projects in 2010 were somewhat smaller, in comparison, except HAL's ms Prinsendam, which received a similar upgrading in the beginning of the year. Also somewhat bigger projects in 2010 were the cabin balcony conversions of three Carnival Cruise Lines' Fantasy class ships. "This is the reason for the somewhat lower net sales of a little below $100 million, of the previous years," Rotkirch notes.

This year, some larger projects are though being scheduled at the yard. One coming project is that of cruise ship ms Grand Princess, where the special Skywalkers Nightclub structure, built over the aft of the vessel, is to be removed. The owner wants to replace that area and weight to allow for other upgrading to be done. Another project, finished a few weeks ago, was that of new suites built above the wheelhouse of Carnival Valor. Also ms Freedom of the Seas will be drydocked, this spring, and another seven cruise ships during the first half of 2011. "I can say that we have clients among all bigger cruise lines, except MSC and Crystal Cruises, so far," he notes. Forty Lanai staterooms on the main deck of HAL's ms Maasdam are to receive access to the deck, through a sliding door.

The bulk of the drydockings done for the commercial vessels are so called "haircut and shave" tasks, as they are called within the industry, including the special surveys required by the classification societies. Commercial ships typically drydock each year or every second year, with special surveys every fourth year. Cruiseship owners strive towards a drydocking period of five years, but today still they take place every second or every third year.

The yard has some 500 permanent employees, mostly Bahamians, including a staff of 80 to 90 people. In addition, the yard hires some 400 expatriate employees from countries all around the world. A number of external supplier companies work at the yard on cruise ship refurbishments. Specialized in interior outfitting, these companies are either hired by the yard or by the shipowners directly. In this case, the yard just charges for its services, including that of material storage, container handling and logistics, etc, and provides facilities for prefabrication work. Each year the yard takes on some ten apprentices from the local technical school, trained at the yard in a four-year program. There are some specialist contractors located at the yard area including Marine Turbo Engineering, Wärtsilä, Rolls-Royce and some local companies.

STRATEGY TO SERVE CLIENTS WELL

"We are currently refining our strategy," Rotkirch says. "We strive at serving the entire shipping industry both through conventional dockings, and upgrades. Concerning the cruise industry we want to serve also through brand alignment and doing tasks to increase the earning capacity of these vessels. This is something we think we understand and can discuss about, with the owners." The yard has a network of suppliers to realize these tasks. The yard itself provides project management and sees to that there are suitable facilities and services to get the work done. "We have put much effort in building up our project management capabilities at the yard," Rotkirch points out. In addition, the yard provides, as part of its project management, work planning functions, and has some engineering capacity. If more engineering work is needed, external capacity is bought in. What concerns merchant ships the yards does "haircut and shave" tasks and somewhat more demanding steel work, work in the engine room and regarding cargo handling equipment and piping. The yard sees to that it has skilled platers and

Carl-Gustaf (Calle) Rotkirch
took over at the management of the yard, as appointed Chairman and Chief Executive Officer, just at the time when the third new floating dock, acquired from Europe, was being towed over the Atlantic Sea in summer 2008.

Carnival Freedom & Emerald Princess in the shipyard.

welders, and skilled employees and facilities for mechanical work, such as engine room work, work on cargo handling equipment, cargo piping, blasting, painting, work on thrusters, fin stabilizers, rudders and propellers.

"Regarding very large lifetime extension projects we are still careful. We want to be assured that we can keep full control of the project with the resources we have and that our clients receive a good service." The yard has been asked to do large drillship conversions. Rotkirch notes the yard would manage everything regarding the vessel but the drilling technology, often the largest share in the project, would have to be outsourced. "This makes it demanding for us to control the entire project, why we have to be very careful," he says. In a larger cruise ship project, for example a cruise ship lengthening, the yard would cooperate with a newbuilding yard and through an organisation set up for the purpose together with the client. "We are still a repair yard with a limited own design capacity," Rotkirch says. He reveals that this year and next year the yard focuses on further developing its productivity and reliability, in order to be able to take on even bigger projects with improved margins. "We are perhaps not most competitive in large steel work dominated projects, but more local shipowners needing access to advanced sub-supplies, they come to us. Our cost level is competitive against repair yards in the US, meaning we have started to receive also US customers, even though US flagged ships have to pay a duty due to the Jones Act customs regulations," Rotkirch notes. A recent project include the lifetime extensions of two Maersk-owned vessels in the US Military Sealift Command's Prepositioning Program, MV LTC John U.D. Page, which was refurbished last summer, with quite much steelwork and engine room work. The second vessel, SSG Edward A. Carter, Jr., is to be refurbished this spring. "This was a definite break-through for us."

"My feeling is that year 2011 will be a good year for us. Everything that we have done and improved regarding training and working productively at the yard is starting to bear fruit. This can today be seen at the yard," Rotkirch reflects.

Tandem Press Brake Helps to

Keep Barges, Towboats, Rolling on the Rivers

Speed is the name of the game on inland waterways, especially in the barge and towboat repair business, where rapid repairs keep equipment utilization rates high and minimize the need for larger fleets or new equipment. The new $30m McGinnis, Inc. facility in South Point, Ohio highlights the importance of quick repairs with an operation that is as close to drive-through service as you can get for a 1000-ton barge that must be serviced on land. McGinnis' environmentally advanced facility can turn around in a day jobs that take days or weeks elsewhere, improving customers' equipment utilization, while meeting the highest "green" standards in the industry. One of the tools that plays a role in this competitive advantage is a 1500-ton, 40-ft. tandem press brake from Cincinnati Incorporated. The ProForm brake lets this shop bend the largest hull parts fast, from a single piece of material, eliminating the need to outsource this work or weld smaller pieces together to produce the same parts. McGinnis provides marine transportation and repair services to the river industry via eight locations along the Ohio River. The company's new facility in South Point includes a 45,000-sq. ft., automated sandblasting and painting facility set on tracks, allowing the entire building to travel to the barge being repaired. Also designed to be environmentally friendly, the steel grit used in sandblasting is recaptured and reused, while a heat recovery system recycles heat generated from rotary compressors, reducing demand for natural gas in the winter months. "As far as we know, this is the only one of its kind in the world," said Rick Griffith, president, McGinnis. Barges come off the river, are moved onto rail car wheel assemblies, and wheeled along a set of tracks, making it easy to maneuver the barges into position for repairs, sandblasting and painting. When multiple barges are in dry dock, the building, on a separate set of tracks, can easily move to a barge for sandblasting/painting work.

To round out the company's quick-turn repair capability, and bring previously outsourced fabrication work back on-site, McGinnis purchased two 750-ton, 20-ft. ProForm press brakes from Cincinnati Inc. The brakes are configured as a tandem to bend large pieces of .75-inch A36 steel plate. "We have the flexibility to bend a range of sizes from 40-ft. pieces used for major repairs to smaller 20-ft. pieces," said Griffith. "The head log (a heavily reinforced section at each end of a barge) on many of these barges is 30-ft. long, and we are one of very few shops on the river that can bend it in one piece."

McGinnis, originally established as the Portsmouth Sand and Gravel Company in Portsmouth, OH in 1913, picked the right spot to set up the new shop. The nearby Port of Huntington, WV, is the largest inland river port in the U.S., primarily due to the volume of coal and petroleum products shipped out of the port. "We're near the mouth of the Big Sandy River," said Griffith. "Last year about 21 million tons of cargo was loaded there and 18 million of it was coal." That high volume, coupled with the fact that new barges can cost as much as $500,000 depending on the current cost of steel, means the barge re-plating and repair business is brisk. **McGinnis repairs between 100 and 150 barges and towboats per month, some as large as 300 feet long by 54 feet wide and weighing 1000 tons.** The company also takes on a few special projects, like putting a new hull on the W.P. Snyder, the oldest stern wheel steamboat in the U.S. – a project commissioned by the Ohio Historical Society. "Out-of-service time is a killer for our customers," said Griffith. "The ability to bend larger pieces of steel plate not only eliminated days of downtime waiting for the pieces to come back, but it also reduced the amount of welding labor on each job. Bigger pieces mean fewer welds."

The new $30m McGinnis, Inc. facility in South Point, Ohio features a 1500-ton, 40-ft. tandem press brake from Cincinnati Inc. to help speed barges and towboats back into service. Below are a "Before" and "After" photo of a recent job.

The ProForm features adjustable stroke length and full-tonnage throughout the stroke. Programmable ram speed allows users to select the optimum speed for large parts to reduce back-bending and ease part handling. The ProForm is available with a variety of tool holders, filler blocks and ram noses to accommodate most major tooling types, including U.S. or European-style tooling.

Reliability was a major factor in McGinnis' decision to purchase the ProForm. "We use the press brake daily, so we depend on it heavily to complete the high volume of work coming through here," added Griffith. "We'd had Cincinnati press brakes before, so we knew the level of quality we were getting." The company also owns a 600-ton, 20-ft. Cincinnati press brake. That machine is headed to Paducah, KY to handle repair work at the McGinnis operation there. While ProForm brakes are capable of holding ram repeatability to ±0.001" (0.025 mm) along the entire length of the bed, the work done at McGinnis relies more on the machine's ruggedness than its precision. "Our fabrication work is pretty straightforward, but still demanding," said Griffith. "We don't challenge the accuracy capability of this machine, but we certainly test its durability." Clevis-mounted cylinders and centerline loading confine operating stresses within the main housings to eliminate cylinder and piston binding. A patented Variable Volume Load Sensing (VVLS) hydraulic system operates at lower pressures and with less heat, reducing maintenance and extending service life. The machine's powerful, PC-based control combines 3D graphics interface with simple touch-screen operation to speed setup and programming. New part programs are generated through manual data entry or by drawing the part in cross-section or flat pattern, then selecting the tooling and bend sequence. "For such a large machine, the Cincinnati press brake is easy to operate," added Griffith. "With the help of an overhead crane and pre-programming the bend angles, we can run the press brake with one operator, which also helps us save on labor."

Email: info@e-ci.com

Blohm + Voss Set to Transform Cruise Ship

Crystal Serenity Set for Major Redesign

Crystal Cruises is set to invest $25 million to keep its largest ship, Crystal Serenity, on the cutting edge of luxury style. More than 400 technicians from around the world, working round the clock for just 14 days, are scheduled for the massive redesign of its 531 Deluxe Staterooms, Penthouses and Penthouses Suites; retail centers; expansive outdoor pool deck and other design projects during a May 8-22 dry dock at Hamburg's Blohm + Voss shipyard. Blohm + Voss was chosen primarily for its location in relation to the ship's itinerary, and when the company started planning the refurbishment 18 month ago, it invited bids from both Blohm + Voss and Lloyd Werft. "They are both excellent shipyards, two of the best in the world," said Edward Carney, Crystal's Director of Technical Operations.

In the past two years, we have invested well over $50 million in our ships," said Gregg Michel, president, Crystal Cruises.

Interior designer, Keith Rushbrook, principal at the Toronto-based II BY IV Design Associates, summarizes the vision: "We wanted modern classic elegance. We wanted Fifth Avenue – crème de la crème New York-inspired living and retail spaces that people love and look forward to spending time in."

All of Crystal Serenity's Deluxe Outside Staterooms, Penthouses, and Penthouse Suites will sport new, floor-to-ceiling tufted headboards, bedside cabinets, wallpaper, sofas, curtains, pillows, and custom carpets in contemporary lines and classic stone, silk, velvet, leather, and crisp linen textures. New modern lighting features and electronic "do not disturb" and doorbell system will allow guests greater personalization of their home-away-from-home.

At face value, lighting upgrades may not be deemed a major transformation, but according to Carney and Alexandra Don, Crystal's Vice President of Hotel Services and Design, the $25m investment is part of a larger plan to not only keep the ship in style, but to reduce its fuel consumption and carbon footprint. "We are changing all corridor lighting from fluorescent to LED lighting, a move that will ultimately help to save energy and fuel," Carney said. "That's the driving factor behind everything we do, as less energy output means less energy used," Don agreed. "It really is a culmination of all the small changes adding up to big savings," she continued. "For example, we're changing out downlighting to infrared coated lamps. It an initial outlay, but you save money over time." Crystal is using DPA Lighting from the UK as its lighting designer. As oil hovers and exceeds $100 per barrel, these small touches carry added importance. "We constantly evaluate how we can be more energy efficient and environmentally responsible," Carney said. Don said the company is well into planning Crystal Symphony's drydocking for 2012, with the design team shaping up. In June 2011 the job will go out for bid, again in the Europe/Germany area as well.

Middle East

Goltens Expands Capability

By Greg Trauthwein

The Goltens name is certainly no stranger to the global maritime community, as the family-owned company has been steadfast not only in the quality of its on-site and in-situ field machining services, but also in its systematic global expansion to 17 countries including 25 facilities since it was started in New York in 1940.

At the helm today is Paul F. Friedberg, President, Goltens Worldwide Services, based in the company's Dubai, UAE office. From here it is Friedberg's mission to ensure that Goltens stays on target with its stated mission: to provide 24/7 global specialized services to fix machinery, minimizing downtime and cost associated with disassembly, removal, transportation and re-installation.

"2008 was a great year for Goltens; 2009 wasn't bad; 2010 should have been better, and in 2011 we will expand our reach in the market," said Friedberg. "We are specialists in diesel engines, and while the company is still mostly focused on the marine market, we have been diversifying to offshore and industrial areas, because when you are only in marine, you can be more vulnerable," particularly when the market and the economy turns downward, said Friedberg. Born and bred in the maritime industry, though, has made the company a specialist in a complex industry that values "up" time. "It is a complex industry, because the ships are always moving around, and it is our job to be where they need us," Friedberg said. He pointed to three core customer expectations that serve as Goltens' mantra:

1. **Respond to needs with precision**
2. **Be where the customer needs us to be**
3. **Provide an independent alternative, which is not tied to any particular manufacturer.**

GETTING AROUND

It was in 2000 that Goltens made the concerted

(Photo: Greg Trauthwein)

"Owners today are trying to prolong repairs and dockings, though at the end of the day, reputable owners realize that you simply have to do it,"

Paul F. Friedberg, President, Goltens Worldwide Services

(Photo: Greg Trauthwein)

effort to expand globally, and on face value the move has paid off: in 2003 the company worked on 4,000 vessels, a number which has steadily risen, culminating last year when it worked on 10,000, according to Friedberg. Since 2000, the expansion of Goltens has included the opening of facilities in Bahrain, Abu Dhabi, Shanghai, India, Fujairah, Korea, Vietnam, Japan, Qatar, Saudi Arabia, U.K. Greece and the Philippines. As of 2009, its network includes more than 1,400 people globally, serving 4,000 customers and 30,000 projects, including 2,000 reconditioned piston rings; 400 reconditioned crankshafts and 4,500 reconditioned connecting rods.

While the growth has been impressive, Friedberg maintains that there is still room for further expansion. In making the decision to open a new shop, he said that after considering resources, the company surveys its customer base to determine ideal locales. Currently, Brazil, South Africa, Australia, Istanbul and Algeciras top the list.

"An investment of $1m at start-up will take you far," Friedberg said, "but bigger facilities, such as in China, may take several million."

A major new investment for the company is an estimated $15m targeted for a new facility in Dubai Maritime City (DMC), a 20,000 sq. m. plot with 40 percent of it built on with workshop and office space. Friedberg said the plan is to move into the new site in one year, and he sees it as an excellent opportunity to significantly upgrade the company's offering in Dubai. A potential sticking point to the Dubai expansion – for Goltens and other maritime companies in the region — has been the delays DMC has encountered in building up its core tenants in the wake of the global financial storm. "It is a bumpy road right now because we are the first ones, and we kind of feel like guinea pigs," admitted Jürg Bartlome, Managing Director, Goltens. "But we think this is an important move," giving Goltens the opportunity to expand and layout the shop exactly the way it wants.

EXPANDED OFFERING

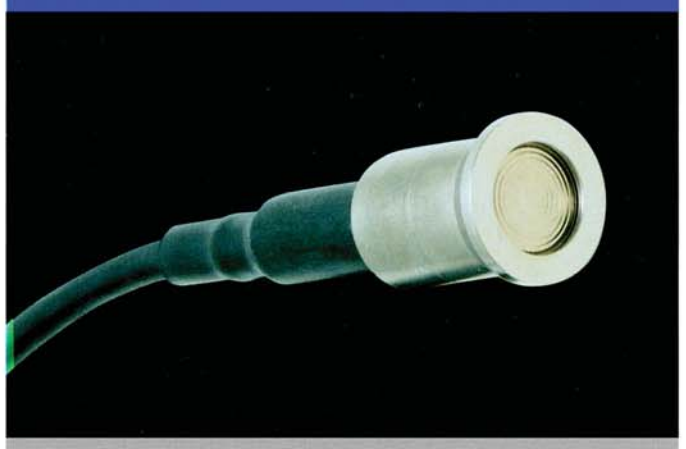
Goltens, much like other maritime companies, was stalled with the recent world economy as shipowners delayed repairs and vessels fell out of service. "Owners today are trying to prolong repairs and dockings, though at the end of the day, reputable owners realize that you simply have to do it," said Friedberg.

While Goltens' core business still lies as a diesel engine specialist, it too has seen the need to broaden its offering, both within and outside of the maritime niche.

Dubbed **"Coordinated Clean Technology Upgrades," Goltens launched a new business line** which offers consultation and advice as to the selection of 'clean technologies', starting with Ballast Water Systems, onboard ships, and will then work with to the owner to buy and install the system. The new business is currently run out of its Rotterdam office, and to date is working toward the procurement and installation of three BWT systems. The plan is to build the business and slowly roll it out into key areas in the future.

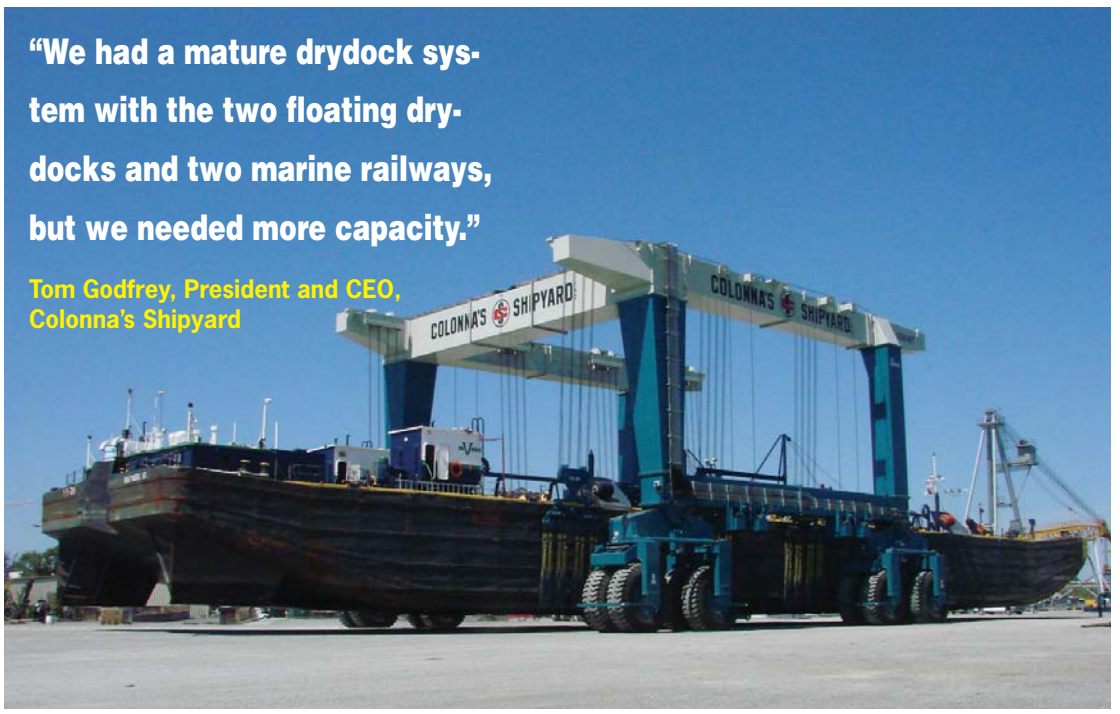
(Photo: Greg Trauthwein)

While Goltens continues to expand, President Paul F. Friedberg maintains: "We are specialists in diesel engines."



Marine Travelift

Colonna's 1000C Mobile Boat Hoist



When Marine Travelift Inc. delivered the world's largest mobile boat hoist to Colonna's Shipyard in December 2009, the two companies launched a new era in the handling of large vessels. The new 1000C, capable of lifting 1,000 tons (2,200,000 pounds), is revolutionizing the way this Norfolk, Virginia-based shipyard approaches its business.

Located on the deep-water, mid-Atlantic Port of Norfolk, Colonna's features a 17,200-ton floating drydock, a 2,800-ton floating drydock and two marine railways. "We had a mature drydock system with the two floating drydocks and two marine railways, but we needed more capacity," said Tom Godfrey, Colonna's Shipyard president and CEO. "We did an in-depth analysis and concluded that a Marine Travelift system would give us greater capacity and greater flexibility than the alternatives."

Today, the yard can eliminate scheduling conflicts due to the increased number of slots available; in other words, the yard isn't tying up the 17,200- or 2,800-ton drydock for a 900-ton vessel, which Godfrey called "a mismatch of capacity." Next, the yard will be better able to accommodate emergency lifts. This ensures quick-turnaround for customers and improved through-put for the yard.

"With drydocks and railways, you have to schedule vessels in sequential order," Godfrey said. "With the Marine Travelift 1000C, we have complete flexibility, and our land can accommodate 12 parallel vessels in any sequence. We can schedule vessels according to exact repair needs and return them to service rapidly."

The Marine Travelift system is capable of lifting many vessel types, including U.S. Navy and U.S. Coast Guard patrol craft and specialty vessels such as casino and dinner boats. "Our customer base is very diversified," Godfrey said. "Over a multi-year time frame, it may be evenly split between government and commercial work."

Marine Travelift's founder conceptualized and manufactured the world's first mobile boat hoist in Sturgeon Bay, Wisconsin, in 1945 — and the world's largest mobile boat hoist, the 1000C, took shape in that same Great Lakes hometown more than half a century later.

www.marinetravelift.com.

Gibdock Repairs Damaged Cargo Ship

A collision involving the three-year-old multi-purpose general cargo/container vessel Ems, owned by Werse Schiffahrts of Münster, Germany, brought a new customer to Gibdock. The 94m long, 5500dwt Ems (formerly the Buluklu and Rhone) - delivered in 2007 by the Torgem yard in Turkey - was alongside in the port of Montril, near Almeria, Spain, when the vessel was struck by the bulbous bow of the ferry Ace 2, formerly Euroferry Atlantica, which had broken free from its moorings. Ems was effectively sandwiched between the Ace 2 and the quay wall, and in the process suffered significant damage to both her port and starboard sides. Ems' hull was punctured, causing a large 5m x 4m hole, while significant damage was also caused to the fuel tanks, main deck, cargo hatches, coamings, hatch covers and gangway. One of the fuel tanks was in fact punctured and caused damage to a pipe inside the fuel tank which in turn contaminated the ballast tank. Although not holed on impact against the quay, the port hull shell plating actually incurred a larger area of damage than was caused to the starboard side.

In all, 22 tons of steel was used to repair the hole in the vessel's side and other work during a 14 day period in Gibdock's No. 3 drydock.

• Gulf Copper Opens New Galveston Fabrication Facility

Gulf Copper enhanced its global fabrication capabilities with the opening of a new facility at its Galveston, Texas location. The $4.35m, 14,000 sq. ft. expansion project was made possible through collaborative funding from the American Recovery and Reinvestment Act.

"Gulf Copper's Galveston location features one of the largest dry docks on the U.S. Gulf Coast," said Jonathan Hale, Gulf Copper Vice President. "Our Galveston fabrication facility sustained serious damage in 2008 from Hurricane Ike. The opening of the new fabrication facility greatly enhances our ability to provide complete repair, conversion, maintenance and emergency services for offshore rigs and marine vessels, plus a wide range of fabricated products." Gulf Copper has provided fabrication services since 1948. The new Galveston facility includes state-of-the-art plate rolling, cutting and welding systems for fabricating high-pressure vessels and piping, along with critical structural steel weldments. From TLP tendon hang-off structures to BOP support frames, suction piles, PLEMs and PLETs, Gulf Copper is now fully equipped to offer a complete range of fabricated products.

• MAN PrimeServ Engine Management Contract

Nakilat's wholly owned fleet of LNG ships is now covered by MAN PrimeServ, MAN Diesel & Turbo's after-sales division, after an EMC maintenance agreement signed with STASCO – the shipping division of Royal Dutch Shell – which manages the Nakilat ships. The contract covers a period of 10 years. The agreement covers maintenance management/planning, assistance from PrimeServ superintendent engineers and fitters, as well as spare-parts for 25 LNG carriers (14 Q-Max and 11 Q-Flex). Each LNG carrier is equipped with two type MAN B&W 7S70ME-C or 6S70ME-C main-engines, and four type 9L32/40 or 8L32/40 auxiliary engines, and turbochargers. The engines power a new fleet of LNG carriers delivered to Nakilat between October 2008 and August 2010.

For the purposes of the EMC agreement, the partners have entered an agreement with the Nakilat – Keppel Offshore & Marine (N-KOM) yard for some of the supporting services, such as the supply of fitters and the handling of specific overhaul tasks. N-KOM is situated in Ras Laffan, Qatar's main site for LNG production and one of the largest LNG export facilities in the world.

The LNG fleet will call regularly to Ras Laffan where MAN PrimeServ, in a joint venture with Qatar Navigation, is currently in the process of establishing a 6,000-sq.-m. service centre, headed by Ole S. Jensen, that will serve EMC vessels as well as other ships visiting Qatar. The service centre is located close to N-KOM and will specialise in fuel equipment, turbochargers, governors and all kind of overhauls as well as retrofits. Essentially, the EMC fixes customers' maintenance costs at a set level, normally a steady monthly outlay that facilitates the advance setting of budgets with any excessive maintenance costs covered by MAN Diesel & Turbo.

• Permanent Insert Repair on Bulk Carrier

Hydrex was contacted to carry out permanent insert repairs on board a bulk carrier that had suffered several cracks in the shell plating of its ballast tanks. In total three new insert plates were installed while the vessel was berthed in Norfolk, Va.

A diver-technician team with equipment was mobilized from the Hydrex office in Clearwater, Fla. When the team arrived with two locally constructed tailor- made cofferdams, they carried out both an onboard and an underwater inspection of the damaged area. Next they removed the part of the bilge keel covering the damaged areas. After the designated ballast tanks were declared gas free, the team prepared and set up all the equipment for the inside work. The divers positioned the first cofferdam on the in-water side of the hull over the first location. Next the old shell plating was removed and a new insert was installed and secured with full penetration welding. The first cofferdam was then removed and positioned over the second crack while at the same time the second cofferdam was installed over the location of the third and final cracked area. The team then removed the shell plating at both locations and positioned and secured a second and third new insert following the same procedure.

• Gibdock Completes Comanav Ferry Special Survey

Gibdock completed work on the ferry Ibn Batouta, for Moroccan operator Comanav. Docked in early September for a 25-day stay at the Gibraltar ship repair and conversion yard, work included the 130m long RoPax vessel's sixth special survey.

Built in 1981 by Harland & Wolff for UK operator Sealink, as St Christopher, Ibn Batouta has space for 1,350 passengers as well as 850 lane meters for cars and road haulage vehicles. It is deployed on Comanav's regular passenger and car service between Tangiers, Morocco and Algeciras, Spain. In addition to carrying out an extensive package of routine works to get the vessel through the demanding sixth special survey to classification society approval, Gibdock was tasked with undertaking a thorough overhaul of the vessel's two Pielstick Crossley 16PC 2V MK5 main engines. These 16-cylinder engines were both completely dismantled and all components taken to Gibdock's specialist onsite workshop for repair and refurbishment before being reinstalled onboard within a very tight time scale. While docked, the yard carried out extensive external hull blasting and painting; withdrew the tailshaft for overhaul; and repaired and refurbished numerous pumps and valves.

Software Solutions

Download the Future

Manage Fleets • Save Fuel • Reduce Maintenance Costs • Optimize Route Planning

No matter your need, the advent of modern software solutions onboard ships and boats rapidly advances in step with shoreside options. *Maritime Reporter & Engineering News* gathered software solution providers for insights on new technology in the pipeline in 2011 and beyond.

— by Greg Trauthwein

The Participants

ABS Nautical Systems
Karen Hughey, President & COO

Germanischer Lloyd SE
Dr. Torsten Büssow, Vice President, Head of Maritime Software

Marine CFO
Joe Galatas, President,

Multi Service
James Bremner, Business Development Manager, Commercial Maritime Payment System,

ShipDecision
Albert Carbone, CEO,

SpecTec
Giampiero Soncini, CEO

Veson Nautical
Jamie Sheldon, IMOS Product Director

The maritime industry is generally regarded as conservative, particularly in regards to adoption of new technologies. As your company/product is squarely in the "new tech" niche, what is your assessment of the industry's adoption of software solutions?

Hughey, ABS NS For a long time this was true, but I believe this is changing. We have seen a growing adoption of fully integrated fleet management tools globally. In the past, best of breed standalone systems were the approach and widely accepted in the industry. However, much of our growth is due to more and more companies requesting an integrated solution such as ours that can manage their fleet's total performance. They are also looking for a company that will be around as long as they are and ABS provides that stability.

Carbone, Ship Decision Most of the executives I meet are well aware that improved technology can be advantageous, yet they are reasonably careful about exploring their options. There is an understandable level of apprehension when a business owner considers moving from a system they've used for many years to a new generation solution, even if the old system has ceased to keep pace with their needs. Executives remember the experience of investing in old generation solutions that required long and expensive implementation phases. In our case, by understanding the unique needs and time pressures of maritime clients, we've created a solution that is intuitive to use and easy to transition to in a very short period of time.

Soncini, SpecTec The maritime world is almost neatly divided in two: those who believe that IT is strategic to the development of their company, and those who don't. From the outside, the difference is staggering. You can go into a company which makes use of IT in a deep, intelligent way, and you can see how well it works; then you just go across the road, and you find a team of Luddities who basically resist IT with all their strengths. During the crisis period, most of these companies have failed, and "pour cause", as it is virtually impossible today to properly manage a shipping company without making use of proper IT infrastructure. And by this I mean proper software and proper hardware. It is absolutely amazing to see some people going around with the latest iPhone or iPad, but then pretend that our software would work on PCs on board which are seven years old! In one case, a new manager of a fleet which was making good use of our software strongly insisted to revert to a paper based system. Can you imagine this happening in any airline or even land based industry? Yet in shipping everything is possible. My personal opinion is that as the market will be getting more and more hard and regulated, only the companies with a strong IT philosophy will survive.

Galatas, Marine CFO Workboat operators are notoriously skeptical of new technologies. These companies are hardcore operators by nature and therefore tend to spend new dollars on hard assets that offer a definitive ROI, which is understandable. Our niche market, software, presents a difficult ROI calculation for owners and operators of marine equipment. It is obvious that workboat companies want to make a move to operating software but calculating value received in order to justify the investment is tricky. As the adoption of technology permeates the industry the data available to support these types of decisions will make investments easier to quantify and support.

Bremner, Multi Service Due to its conservative nature, the shipping and bunkering industry do generally tend to adopt new technology at a more measured rate than many other industries. **This conservatism is for good reason, as the consequences of accidents or mistakes of any kind in the maritime industry can be severe, so ship owners want to be sure that whatever new technology they are considering is going to produce the outcomes claimed with no adverse side effects.**

Specifically, what niche of the global maritime industry do you supply?

Galatas, Marine CFO MarineCFO primarily serves the workboat market. This is a niche not served by full ERP vendors and is a largely untapped market. We have custom solutions for different segments of the work book market including general towing, oil field supply vessel, inland and offshore liquid transportation and bulk cargoes. We target companies that require custom processes and workflow in order to properly streamline their operations. MarineCFO modules assist in client operations from personnel, operations, maintenance, vessel data and core financial management.

Carbone, Ship Decision We are in the business of helping you organize and make sense of all your digital information. Our system pulls together data from multiple sources, processes it, and makes it available in a very powerful consolidated view – and that view helps you make informed decisions to run your business.

Soncini, SpecTec We work with all type of vessels, and in the Oil & Gas and Navies sectors. It is not well known but our product AMOS is used by five Navies, and the trend is growing.

Büssow, GL We supply fleet management and ship operations solutions to

ship owners, managers and operators.

Hughey, ABS NS ABS Nautical Systems is one of the leading providers of integrated fleet management solutions and our system can be configured for the marine, government, offshore & energy and workboat industries.

Sheldon, Veson Our software can be used for any company whose marine expenses are a significant percentage of their overall budget.

Bremner, Multi Service Multi Service provides online procurement and payment solutions for the global maritime bunker industry, and a number of other industries as well. Our maritime payment system ensures that bunker buyers have access to competitively prices bunker fuel anywhere in the world and provides bunker suppliers with new business opportunities. Our credit offering reduces the risk and capital requirements for suppliers.

How is your product/service differentiated from the competition?

Carbone, Ship Decision I'll start with my company's credo: Our systems are built for the sake of business, not for the sake of technology. We know full well that in the world of business, people use computers because they have to, not because they want to. ShipDecision is designed for ease of use; it lets users concentrate on doing their job – not struggling with a computer. When we launched the first module of ShipDecision four years ago, we were at the forefront of bringing Software as a Service to the Maritime sector. The model makes perfect sense because the software is accessible 24 hours a day, 7 days a week, from anywhere in the world. All you need is a web browser. SaaS is ideally suited to the geographically dispersed global Maritime shipping industry. Perhaps most importantly, there is no need to install software or manage IT infrastructure either shore-side or on-board.

Büssow, GL We consider ourselves as the most innovative software provider in the industry at the moment, with a large countercyclical R&D effort, that can provide its clients the highest investment protection at the same time, being part of a large technical advisory group and class society. That also means we are not backed by any other shipping company, i.e. a competitor of our clients, which is often the case with other maritime software providers.

Hughey, ABS NS Our fully integrated software stands as the only solution that offers equipment maintenance, structural maintenance, drydocking, purchasing & inventory and drawings management. Additionally we offer integration with classification that is years ahead of our competition. This integration provides our ABS customers with the machinery and structural data that is used during the class survey process. On the service side, we are also unique because we provide a dedicated Account Manager to be a client's single point of contact from contract signing through the life of the partnership. In addition, we take pride in being a truly global provider that uses full time consultants devoted to our products and services.

Galatas, Marine CFO There are a number of solutions out there that match up with our individual modules but none out there that pull everything together, including full financial management. The origins of MarineCFO are heavily rooted in accounting software so we understand the financial implications of every transaction that hits the database. This means that we can offer financial detailed financial reporting or can easily map to the client's existing accounting system. The other way that our product is differentiated is the ease with which the product can be customized without creating an upgrade problem in the future. We have found that no two workboat companies do things the same way. We are able to easily configure MarineCFO to match the company's workflow internal processes to minimize the impact of implementing new software.

Sheldon, Veson Since 1979, Veson has pioneered software solutions that serve the needs of the maritime shipping industry. This working history has given us extensive market knowledge. We strive to have the best of breed solution in our industry. We work closely with our clients to develop solutions which will make them work more effectively and efficiently.

Bremner, Multi Service Our primary competition is the traditional bunker buying and selling process, which is conducted through various methods of

ABS Nautical Systems

Karen Hughey

We are excited to announce a unique offering available to the offshore industry — a suite of software products — Offshore Asset Integrity Management Program

Germanischer Lloyd

Torsten Büssow

Shipping companies (are starting to) see software solutions as a way to improve their performance and competitiveness in striving to increase quality, speed and efficiency.

ShipDecision

Albert Carbone

Our systems are built for the sake of business, not for the sake of technology ... people use computers because they have to, not because they want to."

Marine CFO

Joe Galatas

The main area of R&D for us is ease of use. We are on a constant quest to make our product easier to use while still maintaining the flexibility which makes us unique.

SpecTec

Giampiero Soncini

I am still confronted on a daily basis with people who simply do not want to use software for their daily activities, while they use it every day at home! I feel like saying to them: Wake up! We are in 2011, not 1911!

Veson Nautical

Jamie Sheldon

It is for this reason that we developed Veslink Offline Forms, a system that enables the transmission of material voyage data from ship to shore but does not require software installation aboard each vessel.

communication (i.e. phone, SMS, email, etc.) and paper-based documentation. As well as helping to connect buyers with new suppliers and vise versa, our product streamlines the traditional bunker procurement process, making it faster, easier and greatly reducing the potential for errors throughout the process.

In your estimation, what has been the biggest driving force for the utilization of IT solutions onboard ships?

Carbone, Ship Decision Across most industries, we are experiencing unprecedented levels of innovation in terms of applying new technologies to business challenges. Operating a ship has so many complex operational, safety, logistics, and regulatory elements that it is a logical step to see Ship Owners adopt technologies to support these complex functions.

Büssow, GL In the past the main driver has been, from my perspective, regulations, e.g. a different class surveying procedure for machinery items, if you deploy a planned maintenance system. This is changing step-by-step: As in other industries shipping companies see software solutions as a way to improve their performance and competitiveness in striving to increase quality, speed and efficiency of operations. This is also supported by a younger management generation coming into responsibility today, which is naturally much more technology prone.

Hughey, ABS NS Companies are reaching out to IT solutions for managing information related to performance, safety and environmental compliance. Having systems that provide this capability is a must for today's ship operators.

Galatas, Marine CFO In my opinion the regulatory environment is the biggest driving force. Companies can no longer rely upon open ended systems to manage things like crew training, crew certifications, vessel certifications, incidents and maintenance. Management must have up to date information that gives them the comfort that all of these items are in compliance and are easily reported to stakeholders and regulatory bodies. In fact, we recently had a client who was awarded a job, in part, because of the safety auditing functions within MarineCFO. It is the ultimate compliment to our product when we can be a differentiator for our client's businesses.

Sheldon, Veson Traditional ship-to-shore communications often prevent shipping operations from running efficiently. In an environment where current information is vital to profitability, much data sits idle due to stunted communication. Companies that employ IT solutions are able to capitalize on a constant stream of up-to-date activity reports.

How are you investing today in your product(s)?

Carbone, Ship Decision I mentioned earlier that Stelvio's full-time, in-house development team is taking advantage of the most up-to-date Web development tools in order to build easy-to-use software that gives users a positive experience. We have a few exciting developments underway that will be announced in the months to come, some of which are ship-based.

CASE STUDY

Ship Decision

By Niels Lorenzen, Canfornav Inc.

As an Operator at Canfornav, I spend a great deal of time monitoring voyages and intervening to prevent problems. Our company uses web-based technology to manage our day-to-day business. Because the system is web-based, our Operations and Chartering departments can log into it anywhere, any time.

To run our business we must exchange hundreds of emails every day with our business partners around the world. The ShipDecision message center allows us to manage these emails with optimum efficiency. Each of our operators can place his or her vessels on a "Watched List". For example, I am alerted as soon as information is received regarding my ships. Before, we each had to sort through hundreds of operations emails to see what was happening with the vessel we were managing. Watched messages can also be transferred automatically to our smart phones, so we can respond to issues no matter where we are. On the weekend we really appreciate this.

When we are alerted that a dispute has happened, we can immediately log into the system, access the information we need, and take corrective actions. Here's an example. On the Labor Day weekend we had the M/V Ruddy loading a cargo of urea in Venezuela.

The operator received a message from the Master on his Blackberry. At the safety meeting prior to commencement of loading, the shippers presented the Master with their usual safety memorandum to sign. It indicated the cargo quantity to be loaded as 22,500 MT. The operator for that vessel logged into ShipDecision. He went to the Cargo Menu, and was able to review the Charter Party confirming the quantity booked was 25,000 MT/10% more or less owners option. Under the Charter Party there was no option for the Charterer to load a lesser quantity at an increased freight rate.

Because our operator could access this information immediately, from home, he was able to take corrective action. The Master was advised to sign the memorandum "For receipt only, without prejudice to the terms and conditions of the Charter Party." He was also instructed to issue a letter of protest and deadfreight letter on completion of loading. The Charterers were immediately advised of the situation and put on notice.

The example I just gave highlights how immediate access to the right information helped us manage this situation with minimum delay, while securing our interest. Because ShipDecision was designed to mirror the way we work in the Maritime industry, the tools inside the system are really practical.

I mentioned the Cargo Menu. It has vastly improved Canfornav's ability to share information between Chartering and Operations. All fixtures are inserted into ShipDecision, including a copy of the "recap", the base Charter Party, and finally the original Charter Party. Operations has instant, on-line access to this information. No more looking for files or searching documents in filing cabinets. When we access our Contracts of Affreightment in the system, we have immediate access to relevant details. We can see at a glance what liftings have been completed, what is in progress, as well as the planned liftings. There is a lot more to the system than what I have described in this brief case example, but the point I want to make is…having immediate access to accurate information, when and where we need it, has become invaluable to our business.

Soncini, SpecTec We are working on AMOS-IS, our Integrity Solution software. It is a massive work, which will include standard connectivity with Automation Plants and Condition Based Maintenance hardware and software, as well as links with 3D graphic solutions designed to facilitate the Maintenance management of large plants. It will also link with financial software in order to provide a complete lookout to managers not only about the classic KPI indicators (which are a standard feature of AMOS today), but a complete dashboard of how the company is performing from all points of views: Financial, Environmental, Safety, Technical. Another area where we are working a lot is remote parameter control, linking AMOS with equipment and suppliers.

Büssow, GL Our pipeline is full with a new release of our ship routing assistant, the GL SeaScout coming out this year, an integration platform to enable condition monitoring coming into practical use the GL MachineryManager, a new high end finance module for our ship management software and a toolset to improve shipping companies processes, the GL ProcessImprover. In addition we are working on a completely new fleet management platform and more tools to support ship operations decisions for more efficiency and safety.

Hughey, ABS NS We continue to strengthen our core products to better meet industry needs and we invest heavily in our software suite to continually improve its overall functionality. The up-

Multi Service

James Bremner

The consequences of accidents or mistakes of any kind in the maritime industry can be severe, so ship owners want to be sure that whatever new technology they are considering is going to produce the outcomes claimed with no adverse side effects.

What's New?

The software side of any business is continually reinventing itself, and the maritime industry is no exception. Below are some of the more recent developments from some of the industry's leading providers

ABS Nautical Systems **www.abs-ns.com**

•Last year, ABS Nautical Systems released NS v5.5 that incorporated more than 130 new functionalities and modifications.
•Integration of the Maintenance & Repair module with the Hull Inspection program now provides users with a single point entry for managing the structural maintenance and repairs for each vessel.
•In support of the ABS Newbuild Program, NS5 ties into the Class Survey information data from ABS.
•A new feature in the NS5 HSQE Manager module is Job Safety Analysis. It can analyze the risks associated with standard jobs, work orders and service requests.
•A handheld scanner technology in partnership with SYS-TEC to provide a more efficient and reliable method to preserve and manage inventory across the fleet.

Germanischer Lloyd **www.gl-group.com**

Last year GL issued a new release (2.1) of our flagship GL ShipManager package, with mnew fleetwide capabilities, integration of class offerings of GL and a Shipserv interface. Two new products: the GL HullManager, which ís a maintenance solutions supporting the hull/ structural maintenance tasks; and GL FleetAnalyzer, a reporting and analyzing frontend that provides flexible and easy to use access information currently hidden in an operating ship management systems.

Marine CFO **www.marinecfo.com**

Released version 3.0 of its enterprise product, with improvements to the Operations, Personnel, Maintenance, Vessel Live and Financial modules including new functionality for inland barge companies, liquid transportation companies and improved employee/crew management tools. Additionally, the security manager and integration manager within the system have been completely overhauled. Also upgraded Vessel Live!, the on-vessel solution to include more features impacting maintenance, crewing and supply ordering.

Ship Decision **www.shipdecision.com**

Last year ShipDecision 3.0 was released, which takes advantage of the most up-to-date Web development tools and offers clients an easy-to-navigate software solution that helps people work collaboratively. In an initiative conceived jointly with Canadian ship owner Canfornav, there was added a new set of features to the Chartering Module of ShipDecision, giving charterers one consolidated view of all information related to a Contract of Affreightment including: all documents and emails pertaining to the COA; cargo type and volume; allotment across a specific number of voyages; and a complete trail of all actions taken to move the cargo.

Veson **www.veson.com**

Veson Nautical introduced new features that enhance the effectiveness of traders, charterers, schedulers, voyage operators, financial managers and decision makers. Particular attention is focussed on the needs of bunker specialists in response to market trends that continue to amplify the impact of their job performance on voyage profitability. Veson continues to invest heavily in inter-system data flow, inter-departmental workflow, and visual decision support.

coming release of our advanced version of the NS5 software, NS5 Enterprise, will offer highly developed usability, reporting, speed and overall performance. Two additional deployment options are also being offered with this release which will greatly increase performance and reduce costs for our clients. We are excited to announce a unique offering available to the offshore industry. Our Offshore Asset Integrity Management Program is a suite of software products designed to provide a holistic approach to offshore asset integrity. It combines Hull Inspection software to manage and track the condition of an asset, along with Load Management Planning software that tracks the weight and configuration changes. Both tie into our new Offshore Rapid Response Damage Assessment (ORRDA) program which employs customized salvage response software to support offshore operators during emergency incidents.

Galatas, Marine CFO The main area of R&D for us is ease of use. We are on a constant quest to make our product easier to use while still maintaining the flexibility which makes us unique. Entering into a software implementation is a difficult process at best and having a product that is logical and easy to use helps to minimize the change management issues related to new technology adoption.

Sheldon, Veson Veson Nautical continues to invest revenues into further development and improvement of our products. We work closely with our clients to understand their business models and be sure that our developments help to improve their operational processes.

Bremner, Multi Service Multi Service is adding fuel test quality data to its product, allowing buyers to see up-to- date fuel quality information by port and by supplier and enabling them to make more informed buying decisions. This fuel data will allow quality suppliers to obtain concrete fuel quality information and show customers and prospective customers that they deliver the quality fuel that they say they do.

What do you consider to be the biggest challenge to advancing IT solutions on ships and boats?

Galatas, Marine CFO The lack of appreciation for technology within today's marine companies. We are dealing with a "cart and horse situation." Technology companies like ours would love to sink more dollars into development but until the technology spend increases within the industry we are limited due to limited financial returns. As the adoption of technology becomes more pervasive in the industry vendors like MarineCFO will be able to offer better and better software as profits can be reinvested in new and exciting functionality. Our industry lags far behind other industries in terms of dollars spent on technology relative to total revenue.

Sheldon, Veson In many cases, software needs to be installed on each individual vessel. This can be very time consuming and expensive, both from an investment perspective and an employee implementation time perspective. It is for this reason that we developed Veslink Offline Forms, a system that enables the transmission of material voyage data from ship to shore but does not require software installation aboard each vessel.

Carbone, Ship Decision The challenge is to introduce complex solutions with simplicity of use. The IT environment on-board has become very complex. And, for the most part, it is unfair to expect mariners to be part-time IT experts. They are already overly busy with their ship-based jobs. So, if you introduce a new software system that isn't simple to use, you will face barriers to acceptance of that system.

Soncini, SpecTec The hard to die mentality of some shipping staff and managers. I am shipping man myself, and in October this year it'll be 40 years that I have been in shipping, 23 of them with AMOS, first as a customer and after as

CASE STUDY

Germanischer Lloyd

With today's hydrodynamic methods and codes (also called computational fluid dynamics) we can very reliably compute how a vessels behaves in water when it is sailing. These methods are standard in ship design to increase design quality and speed and reduce the number of towing tank tests needed. The question is how to use this know how for operational purposes in a shipping company, as the computation times and resources needed are still significant and any "online" answer to an operational question, how should I sail my vessel now, cannot be given. GL has taken this up with two ship operations support software in the market. The GL SeaScout monitors and predicts how a vessel behaves and can be best sailed through bad weather to increase schedule integrity and reduce the risk of damages for crew, cargo and the vessel itself. The EcoAssistant guides the navigators to the optimal trim of the vessel in the current speed and loading condition, i.e. the trim with the least resistance. Given that each vessel has a very specific hydrodynamic behaviour the majority of the computation using proper CFD codes is done before the software is delivered to the vessel.
This is how we combine advanced engineering and practical software tools for shipping companies benefits. On the ship management side we do this for advanced maintenance support for structural integrity and condition monitoring machinery.

SpecTec manager. I have always been proactive with IT, but if I think that I started using AMOS 23 years ago, yet I am still confronted on a daily basis with people who simply do not want to use software for their daily activities, while they use it every day at home! I feel like saying to them: wake up! We are in 2011, not 1911!

Hughey, ABS NS The biggest challenge we have seen is overcoming the change that accompanies the adoption of an IT solution. This typically can be addressed with management support. This may involve bringing in management early in the process so that there is appropriate review and buy-in in all phases including the selection process, implementation of the software and training.

Bremner, Multi Service The biggest challenge in advancing IT solutions on vessels and in maritime companies is illustrating the cost-benefit of adoption. New IT solutions may have a variety of costs associated with adoption, from the actual purchase of the technology to its implementation and use. These costs are concrete, immediate and easily quantifiable. The benefits of an IT solution may be more difficult to quantify, or may take time to achieve. If owners aren't convinced that the benefits exceed those costs by the appropriate margin or multiple, they won't move forward. Cost is always an issue. No one wants to pay software license fees and annual maintenance fees. Shipping companies don't want products that are difficult to use and require significant training, ongoing support and internal effort. Installing software on vessels can be an intensive process as well. Cloud-based solutions will significantly reduce this challenge as available bandwidth increases and its costs reduce.

The past couple of years have been tough economically: from where you sit, what signs – positive of negative – do you see from your maritime clients?

Büssow, GL The improvements are very obvious starting from the profits the liner companies made again, which are directly connected to the freight rates. It should go down the value chain to the charter rates slowly, slowly because overcapacities are still there in some parts of the market. Investment volumes are picking up again and they are not only directed into new vessels, but in operational improvements, such those you can achieve with software and technologies.

Galatas, Marine CFO We are seeing signs of life as our inquiries have increased dramatically over the last few months of 2010 and into 2011. I think that companies are still reluctant to invest capital into projects that they believe are not 100% critical to survival. Software falls into a tricky investment area. Since work boat companies run lean, in good times they are too busy keeping up with the business to deal with a software implementation. In bad times, they are reluctant to spend dollars. The truth of the matter is that if they were to commit to software it would make them more profitable in the good times and more efficient in the bad times. Software implementations are tough but the company must have a core belief that an investment in software is important to their future strategy.

Hughey, ABS NS While the economic downturn has been challenging over the past few years, we are beginning to see a very positive shift for the mar-

itime industry. Demand for our products continues to increase and our customers are committed to investing in technology that helps to reduce their overall operating expenses. In 2010, we signed 83 new clients with a combined total of 1053 vessels, a record in both clients and vessels in a single year spanning our 25+ year history.

Carbone, Ship Decision We need only read the pages of this magazine to see that caution abounds. No one is quite sure how and when the economic pressures will ease, and until they do I think the trend is to operate as efficiently as possible.

Soncini, SpecTec Amazing enough, 2009 has been a great year for us in term of number of software sold, a clear sign that customers understood that in dire straits they need better control of their costs. And 2010 has also been very good, bringing us to the same revenue levels of 2008 which had been a record year. I do not see negative signs from SpecTec point of view, except in one area: finding people with competence. It is my opinion that shipping will suffer enormously from the lack of competent and experienced staff. The only solution I can see to this is making even more use of IT.

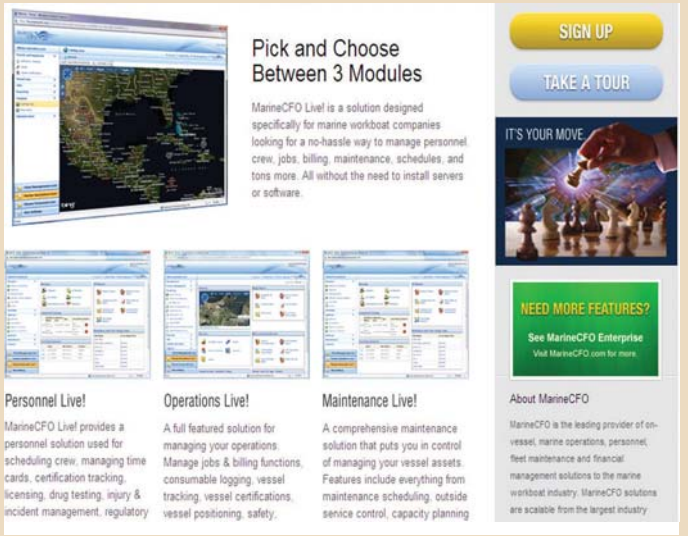
Sheldon, Veson The disruption in the global economy led many ship owners, operators, and charterers to reevaluate how they run their businesses. They realized that they did not always have a clear picture of their exposure to risk. Many companies discovered that the disparate operating systems that they were running resulted in unrealized revenues. After seeking solutions to these operational problems, companies are now running more effectively and efficiently.

Bremner, Multi Service While the industry is improving, there are still challenges ahead. For example, new vessel deliveries and volatility in the Baltic Dry Index will impact rates for some time into the future, but the darkest of the days are past. Recent merger and acquisition activity, debt and equity issuance by ship owners and bunker suppliers show that maritime companies and maritime investors are now more confident about the future, are looking for opportunities and are planning for growth.

CASE STUDY

MarineCFO

Helping your customer close new business is the best compliment for a software product, said Joe Galatas, President, MarineCFO. We recently had a client undergoing a vetting process as part of completing a RFQ for a large oil E&P company. Using data from within MarineCFO the audit was completed quickly and the data and reporting provided from MarineCFO were able to easily demonstrate that our client had an effective training and safety system. The auditor for the company indicated that MarineCFO was an important part of his decision to use the services of this work boat company. The client company was already a great work boat operator but MarineCFO helped them to prove, with firm processes and real data, that they are committed to the health and safety of their employees.



CASE STUDY

ABS Nautical Systems

Seaspan, a prominent marine transportation company and ABS Nautical Systems customer that has a number of ships which are required to dock, has revolutionized its ability to manage systems using NS5. The company uses maintenance and purchasing, crewing, quality and compliance; trying to utilize one enterprise tool that meets most of its needs. The added benefit for Seaspan includes NS5's ability to reduce work, cut back on its duplications, create visibility (especially for maintenance purposes) and simplify processes. In fact, while Seaspan has not physically measured the reduction in costs resulting from NS5, the company believes that NS5 has cut costs through saved time in running processes.

One tangible example of NS5's ability to address Seaspan's needs has been related to its drydocking maintenance. As Drydocking is a detailed technique to inspect, repair, maintain, or alter the underwater portion of a vessel, this process requires accurate planning and specifications including a docking plan, the ship's bottom characteristics and weight distribution, etc.; NS5 simplifies this complex process and allows for streamlined control of maritime maintenance.

"We are in a day and age of technology based solutions, and it's important for us to use these solutions to the best of our abilities to improve workflow, data processing and efficiency," said David Kramer, Fleet Manager for Seaspan. Once Seaspan's initial drydock setup was completed, its subsequent drydocking allowed for easily produced and managed specifications. According to the company, the continuity, consistency and quality of the information is far better than if old specifications are being edited or recreated by the superintendents.

"Drydocking is not a small task, but it's an essential one," said Karen Hughey, President and COO of ABS Nautical Systems. "Our aim is to make this process less time-intensive and as streamlined for our customers as possible."

Seaspan has completed three Drydocks through the system, has recently prepared another five and has ten planned for 2011. During the process, Seaspan has been able to eliminate spreadsheets, and the company hopes to eliminate the need entirely once it provides NS5 to traveling superintendents. Specific to the drydock function, all of the reports generated are able to be packaged into one big file, as Seaspan can attach everything from NS5 to the drydock – all the quality reports, service technician reports, complete history of the work done, the costing, etc.

"We have taken note of ABS Nautical Systems' willingness over the years to work with its clients and to continue developing the software – traits that have given NS5 the step ahead of its competitors," said Kramer.

According to Seaspan, the visibility of the maintenance – or lack of maintenance and the traceability of the information – is a huge benefit. For example, Seaspan's tracking, visibility of accounts, codes used and expenses paid are far easier to see within NS5. NS5 also generates reports for Seaspan that provide an overall summary of the information of all jobs done, as well as a helpful financial summary. NS5 is the first management software used by the company; Seaspan is about nine-years-old, and NS5 was one of the first offerings available. That said, Seaspan chose NS5 based on its proven reliability and cost-effectiveness.

Seaspan is consistently tweaking its use of NS5 and looking to the future for additional improvements. The company is continuously growing (it is running 53 container vessels ranging from small to very large with another 12 deliveries in the next year) and needs a software that can grow with them. Given its satisfaction with NS5, it is considering integrating additional modules, such as Hull Inspection, which would create a beneficial link to the Drydock module.

FLAGSHIP-HCA: Hull Condition Forecasting

(Courtesy of PORTLINE)

FLAGSHIP, the Pan-European maritime transport project part funded by the EU, has developed software that is designed to forecast the condition of a ship's hull over time to help improve the efficacy of surveys and reduce the amount of time a ship is out of service. FLAGSHIP-HCA (Hull Condition Assessment) is designed to accurately predict the condition of a vessel's structure, coating and components, enabling ship owners and operators to schedule maintenance in a more efficient manner and thereby reduce maintenance costs while improving safety at sea.

The principal economic objectives of FLAGSHIP-HCA are to extend the life of the existing fleet of Tankers and Bulk Carriers by up to five years, with a 10% to 20% reduction in service repair costs for ships throughout their life-cycle. In this respect a primary concern for ship owners and Class societies is that of corrosion of the ship's structure and this is the primary focus of FLAGSHIP-HCA.

http://www.flagship.be/

SeaKits Releases V3.0

SeaKits, the developer and provider of the Marine Maintenance System (MMS), has released Version 3.0 of MMS Fleet Solutions providing expanded functionality for workboat fleets, including passenger, tow and service vessels. MMS Fleet Solutions V3.0 provides Port Engineers, Maintenance Managers, and company executives with fleet-level visibility of all planned and corrective maintenance activities including maintenance schedules/forecasts, work orders, and inventory levels. MMS Fleet Solutions leverages Cloud Computing and is available as Software-as-a-Service, requiring no local IT infrastructure or support of any kind.

Boston's Best Cruises (BBC), an early adopter of MMS Fleet Solutions will be using the new fleet-level work management and inventory management features of V3.0. With a fleet of 20 vessels located in Boston and Ft. Lauderdale and personnel leveraged between locations, fleet level parts and work activities provides a distinct advantage in vessel reliability. BBC's Maintenance

MESPAS Launches R5.13

MESPAS AG released version 5.13 of its fleet management software mespasR5. With more than 80 new functionalities and modifications, this software upgrade is the most complex and largest ever released by MESPAS. The most important innovations, according to the developer, relate to the mespas Cube and mespas Reporting Engine. The mespas Cube, installed on board the ships, is a small offshore server. It acts as the hub between the vessel's PCs and the central database ashore. With the Cube, the vessel client architecture was changed from a "single user/single PC" to a "client/server" architecture, which is fully network and multi-user capable. This means, the software can be run on multiple PCs on board the ship, without impinging on the software's ability to synchronize and work with the central database ashore. Since everything is pre-installed and pre-configured on the mespas Cube, there is no IT knowledge or intervention needed on board the ships to ensure the safe and robust running of the software.

The mespas Cube

Grandweld

Making its Move to Dubai Maritime City

by Greg Trauthwein

For more than a quarter of a century Grandweld has built its portfolio of newbuild (both steel and aluminum) construction, repair and conversion. Last year, however, was one of the most challenging in company history.

"We have just finished a challenging year," said Jamal S. Abki, General Manager. "Demand was generally slow, and banks were hesitant to lend. We had a situation where we had to attention our capacity and workforce.

Generally, I believe shipbuilding is getting back on track, but slowly," Abki continued. "It will continue to be challenging, but we see movement. I expect that ship repair will pick up as well."

The company built 30 steel boats in 2010, and currently it is building 15 vessels, with five more in the planning stage. While the majority of its new construction activities are centered on the offshore industry , it is a diverse organization able to build custom or off-the-shelf deigns, assisting when required with its extensive in-house engineering capability.

While 2010 was tough, 2011 and beyond is looking much brighter according to Abki. "This year we are happier as we can see a gradual improvement from both the banks and the clients. We also are seeing a bigger move offshore." Part of the plan to expand to accommodate the region's growing offshore business is opening shop at the delayed Dubai Maritime City (DMC) complex. According to Abki, the permit and licensing phase is complete and the company is at the contract stage to build facilities, for which the company has in reserve $17m for starting up operations at DMC. The original plan was to close the Jadaf facility, but the plan now is to keep Jadaf running and to open shop at DMC.

Dubai Maritime City, buoyed by a recovery economy, is starting to see maritime activities perk up.

(Photo: Greg Trauthwein)

Grandweld– like many yards of its size globally – often finds itself pitted in fierce price wars, particularly against Chinese yards, according to Abki. Grandweld is able to fall back on its full array of shipyard services. "We invest a lot in our engineering and design," said Abki, stressing the inherent value in quality construction, particularly for critical offshore industry operations. Of its 1500 employees, 100 are dedicated to the design department. The company offers a total engineering solution, from custom designs to the latest in advanced software solutions, including ShipConstructor, AutoShip, Maxsurf, and Primavera, to name a few. In addition, Grandweld has a special relationship with Caterpillar in that the majority of the new construction vessels are outfitted with a complete Caterpillar power kit, which opens the advantage of finance through the industrial giant as well.

CONVERSION & REPAIR

Established in 1984, as part of the GMMOS Group (a portfolio company of Abraaj Capital and Waha Capital), Dubai-based Grandweld employs more than 1500 in running separate ship building, ship repair, and ship Conversion divisions. The company offers complete in-house design, construction and commissioning capability, and is proficient in working with more than a few vessel types, including: Anchor Handling Tug; Multi-Purpose supply Vessels; Dive Support Vessels; Platform Supply Vessels; Terminal/Harbor/Escort/Salvage Tugs; Accommodation Barges; Utility vessels; Construction vessels; and Well stimulation vessels. In addition, the company is diverse in that it offers a capability to build aluminum vessels, both to custom and in-house design. In total, Abki anticipates an 80/20% new construction versus vessel repair business break in 2011.

Grandweld has been quite busy with execution of challenging conversion projects for CGG Veritas and Seacor Marine. The CGG Veritas project consisted of conversion of six offshore supply vessels into Seismic Survey Vessels viz. two Gunboats and three cable boats and one workshop vessel. The job included fabrication and installation of aft slipway structure in afloat condition and installing containerized offices, cable winches, gun winches, compressors, hydraulic power packs, generators, oil storage containers, workbenches and stainless steel cable chutes.

The Seacor Marine project involved addition of a fully equipped accommodation module for 14 persons with cabins, mess room, galley, a walk in freezer

Grandweld is a diverse ship construction and repair facility situated in Dubai, able to build both steel and alumimun construction boats. Left is Bourbon Yack, BP 100-Ton ASD Tug and right Al Bahar, a 36m Utility Vessel

(Photo: Grandweld)

(Photo: Grandweld)

room, toilets with quality terrazzo flooring along with associated piping and accommodation fittings. The first vessel, MV Seacor Mariner was delivered to the client in early November to their complete satisfaction and the second vessel, MV Dean Andrew is being delivered in December.

GRANDWELD AT DUBAI MARITIME CITY

Grandweld and Drydocks World Dubai signed a long term ground development lease agreement (Musataha) last summer for a ship building and ship repair facility at the Industrial Precinct of Dubai Maritime City (DMC). Under the Musataha lease agreement, Drydocks World Dubai leases DMC – Industrial Precinct plots SR 1 & 2 measuring 27,055 sq. m. to Grandweld for a period of 25 years. "Grandweld, with two and a half decades of expertise in ship building, repair and conversion, is taking a new step by signing the Musataha agreement", Jamal Abki explained. "The new facility in DMC is an additional milestone for Grandweld and will allow us to double our shipbuilding capacity. Moreover, it offers us extra capacity for docking larger vessels at the ship repair facility that has full and free access to the Arabian Gulf" he said.

Space Layout

- 27,000 sq. m. (Construction space)
- 7,000 sq. m. (Workshop)
- 2,000 sq. m. (Store)

Docking Facilities

- 2 Synchrolift: 3000 & 6000 tons
- Up to 10m draft
- 31 dry berthing; incl. 8 long berths
- Platform size of 100m
- 1x 570m & 1x230m wet berth (exc. Bollards)

"This year we are happier as we can see a gradual improvement from both the banks and the clients. We also are seeing a bigger move offshore."

Grandweld's GM Jamal Abki

NITC is intent on

Building its Fleet; Surviving the Sanctions

By Greg Trauthwein

The National Iranian Tanker Company (NITC) would seemingly be bearish in its mid-term outlook: coming out of one of the world's worst economic tailspins in a generation and only to come face-to-face with the double-whammy of a volatile tanker market and United Nations sanctions against its home country.

Through it all, though, NITC maintains is course for growth, a course established when it was privatized in 2000 and officially renamed NITC. A course that includes taking steps to continually improve its "carbon footprint" and maintain its status as an environmental steward. **A course that has led it to build one of the world's largest, youngest fleet of oil carriers, with a current fleet of 43 ships (including 28 VLCCs) totaling 10.6mdwt, with an average age of six years. The plan is to grow it organically to a fleet of 74 ships and 18mdwt by 2013**, according to Captain R. Ghareh, Area Manager based in the company's Dubai, UAE office, during a recent interview. Regarding the sanctions and their effects, Capt. Ghareh is quick to note that NITC is not on the "blacklist," and that today it is "business as usual; all of our clients continue to use our services."

As 100% of the companies ships are managed in-house, Capt. Ghareh was quick to credit NITC's relationship with DNV as a driving force to ensure that everything from its onboard vetting certificates to its custom software solutions are kept up-to-date and in order to ensure that its operations are transparent and seamless in the event of questions from Port State authorities.

(Photo: Greg Trauthwein)

Capt. R. Ghareh, Area Manager, NITC Tankers

BUILDING THE FLEET

The NITC fleet is dominated by VLCCs, but also include smaller energy carriers, including 9 Suezmax; 5 Aframax; 3 CaspiMax (by 2012); 3 chemical/product carriers in service, with two coming online in 2012; and one LPG ship in service, another scheduled to join the fleet by 2013. Its ships trade primarily in Europe (51%); Asia (26%); and Africa (15%), and the majority of its vessels are chartered to oil majors. In addition to it existing fleet, NITC has an impressive order backlog, currently with existing order for 22 new VLCCs costing a cumulative $3.3b. Noteworthy is the fact that the new VLCCs scheduled to come online will be outfitted with the Ocean Saver ballast water treatment system, according to NITC the first VLCCs with the BWT system installed. With a growing fleet comes growing maintenance and repair, and keeping with its stated policy of running a clean, efficient fleet, the company employs a number of shipyards around the world – from the Gulf to Singapore to Portugal – to ensure its ships are kept in shape. In the coming year, of the company's 28 VLCCs, NITC has tenders out for drydocking bids on fives ships in 2011 for their 5-year docking. Traditionally it has not signed long-term maintenance agreements with any one yard, rather solicits three quotations for each job, then slots them in where it makes the most sense. In addition, Capt. Ghareh noted that NITC Is moving from it planned maintenance system to a condition-based monitoring system to ensure that critical maintenance is performed in a more timely fashion.

STAFF

Today NITC is comprised of 3014 staff worldwide, including 1853 fleet personnel and 576 cadets. The company takes in more than 100 cadets each year (166 in 2008; 115 in 2009; 127 in 2010), and it continues to invest in both at-sea and shore-side facilities to ensure that it's nautical competence maintains pace with the fast growing fleet. A sea, each ship is equipped with accommodation and tutorial facilities for nine cadets and one instructor. On land, NITC maintains its own training department consisting of 15 people to oversee in-house and third-party training operations. In addition, it owns and manages a full-fledged training center and a Caspian-coast Maritime College, supported by a tutorial staff of 45.

In the words of Mohammad Souri

Although Mohammad Souri, NITC's Chairman and Managing Director, could not partake in the press conference in Dubai, he did provide a written statement for the press to make clear a few points, including:

- "NITC is not involved in import of petroleum products into Iran."
- "It is not involved in the transfer of technology relating to oil exploration, refining or LNG"
- "It does not carry any material relating to nuclear proliferation"
- "NITC has never been named or targeted for any of UN, US or EU sanctions and universally has been renowned as a legitimate business partner"

PIRACY PREVENTION

While NITC is a proponent of arming its commercial ships to thwart piracy, it respects and stays in compliance with international and port-state mandates that reject lethal force in the hands of mariners, and pushes the use of non-lethal methods to stop potential attacks.

According to A.R. Darashti, Technical Manater for NITC, , the company employs a number of technical solutions to keep its current fleet of 43 tankers and mariners out of harm's way, including:

- Wire Fencing
- Night Vision Cameras
- A Swedish-make water machine designed to keep the sides of the vessel wet and slippery
- Maintaining higher speeds through known piracy zones.

To date, 16 NITC ships have been the target of piracy aggression, resulting only in minor damages to ships.

www.nitc-tankers.com

TOPAZ EXPANDS TO BRAZIL

Dubai-based Topaz Energy and Marine agreed to acquire two offshore supply vessels in Brazil based on a total delivered price of $40.4m. The vessels, Sea Otter and Sea Marten, were built in 2007 and 2010 and are both Anchor Handling Tug Supply vessels (AHTSV). AHTSV are specialized vessels used in support of offshore oil and gas activity. The vessels are employed on three year time charter contracts with Petrobras, the semi-public Brazilian oil company and the largest in Latin America.


Fazelbhoy

"Brazil offers significant growth opportunity for Topaz, and these vessel acquisitions provide us with an excellent first entry point into the buoyant offshore market," said Fazel Fazelbhoy, CEO of Topaz Energy and Marine. "We will continue to pursue growth through partnerships, vessel acquisitions and new build orders. This acquisition is in line with the next steps of our declared business strategy and builds upon extensive preparations to enter the Brazilian market."

POLARCUS' SHIP NAMED AT DRYDOCKS WORLD

The ultra-modern high ice class seismic vessel Polarcus Alima and Polarcus Samur were named recently at the Drydocks World Dubai shipyard. The two vessels are part of a series of six built for Dubai based geophysical operator Polarcus. Three vessels belonging to the series have been delivered.

Polarcus Alima incorporates sophisticated seismic technology and is capable of towing 12 streamers, with a 100 m lateral separation between streamers. It is a 3D/4D seismic vessel built to the highly merited Ulstein SX134 design and ULSTEIN X-BOW hull. It includes all the latest marine equipment and innovative efficiency enhancing features. It is equipped with environment friendly systems such as diesel-electric propulsion, high specification catalytic converters, double hull and water treatment systems.

Thuraya to Expand Maritime SatCom Offering

Thuraya Maritime Solutions is a satellite communications firm based in Dubai, offering voice and data solutions to two-thirds of the world. The company is dominant in the region it serves, with 300,000 subscribers to date, a nearly 70% market share in its coverage area, according to the company. While the company's strength is voice, and despite the fact that its services are unavailable globally, most notably in the Americas, the company is making a strong push into maritime, concentrating on shipping companies and vessels sailing to and through Asia, the Middle East, Africa and Europe.

"We are a new entrant (to the maritime market), and the biggest challenge is convincing people that we are a viable choice," said Rashid Ahmad, Senior Product Manager. "We will do this with a good product and a good price plan."

According to Ahmad, "We do not have a significant exposure in maritime … to date, it is very small, maybe 5% of our subscribers." Despite this, the company is banking on its strong reputation and ability to dominate terrestrial markets, and is particularly keen to offer competitive pricing: "We are going to offer VSAT-like prices," Ahmad said.

Also in the company's favor is a relatively young satellite fleet, offering stability of service and amenities such as the capability to "spot beam" up to 20% of its bandwith to a particular hot spot in order to ensure that communications in high-traffic areas remains fluid.

By the company's projection, it already offers coverage extensive enough to give it entrance into the maritime industry, with coverage in 140 countries serving 80 percent of the world's ports. The company maintains that is has no current plans to expand in the near future, but if and when it is ready, it would likely involve an outside investor or partner.

Current offerings to the marine market include Thuraya Marine, which offers voice, 'always on' packet data up to 60 kbps, email, fax and SMS; and the compact Seagull, offering voice, 9.6 kbps data, GmPRS data and SMS. Scheduled for launch this month is the Comtech Maritime Broadband Solution, manufactured by Comtech in the U.S. This product offers voice, 9.6 kbps data, GmPRS data and SMS, as well as up to 444 Kbps standard IP and up to 384 Kbps streaming IP. Thuraya NettedComms is an interesting hybrid wireless application, which allows the user to talk instantly to a pre-defined group of users – integrating different telecommunication technologies such as Sat, GSM, PSTN and Radio) at the press of a single button

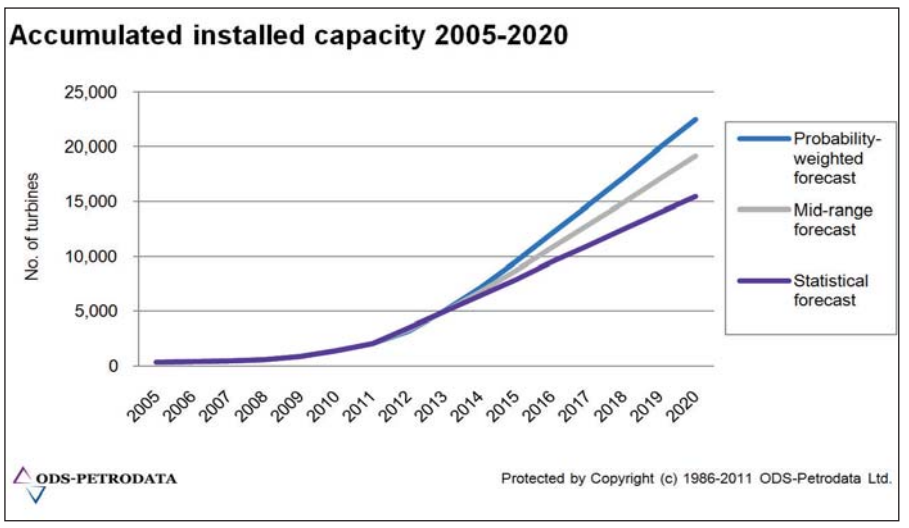
— G. Trauthwein

THURAYA
stay close

The Compact Marine Terminal, is available for about $2k retail, with calls at $0.99 per minute.

Offshore Wind: Cable Laying

Vessels Needed



By Genevieve Wheeler, renewables reporter, ODS-Petrodata

Europe, China and the United States are planning a decade of offshore wind construction to meet renewable energy targets, reduce carbon emissions and establish emerging, billion-dollar industries on their own continents, and the effects will emerge within the vessels market in the coming years. The installation of wind turbines, foundations, transformer platforms and cables requires a robust, capable fleet. Based on the data we have collated and market analysis, ODS-Petrodata expects to see an oversupply of bespoke turbine installation vessels over the next four years and an undersupply of cable vessels hardy enough to connect the next generation of offshore wind farms.

HEAVY LIFT

Three years ago, when ODS-Petrodata began to track the sector, a distinct lack of heavy -lift vessels hampered project development. Crane vessels large enough for foundations and turbines were especially difficult to find. As project locations moved into challenging conditions farther offshore, the barges and self-elevating vessels that installed the first generation of infrastructure became less fit for the task and wind farms experienced construction delays.

One of the largest and most appropriate vessels for turbine installation, MPI's Resolution, was committed to a five-year firm charter with Centrica. Other developers settled for smaller jackups less suited to the North Sea, such as three-legged liftboat KS Titan 2. They began to enlist vessels from oil and gas and civil construction in order to meet deadlines. DOTI chartered one of the largest crane vessels in the world, Heerema's Thialf, to install just six turbine jackets at Alpha Ventus. Although the wind industry did not make the same profits as oil and gas, and could ill afford to pay oil and gas-level day rates, the few vessels able to carry out heavy lifts in deeper waters and higher wave heights found they could charge a premium for the work.

Offshore wind construction activity has increased over the previous 10 years, which helped create today's bottleneck. While just seven European projects were completed by 2000, 13 more went online by 2005. By the end of 2010, a total of 48 wind farms sent power to Europe's grid, and more construction is planned. Northwest Europe, led by the UK and Germany, and China have tendered and approved more capacity. The USA is mobilizing to build projects off its east coast. ODS-Petrodata predicts installation rates will grow between 2011 and 2015. However, there has been a danger of project slippage due to, among other things, a shortage of vessels.

To combat this, the industry began to call for more newbuilds and specialist designs. Turbine installation required a specific setup: one that allowed for not only heavy lifts offshore, but also the transport of several turbine sets. New vessel concepts emerged in the market.

From mid-2008 onwards, vessel owners started to place orders. Turbine and foundation installer MPI ordered two six-legged vessels, the Adventure and Discovery. Construction firm Hochtief commissioned the Thor. Turnkey developer BARD placed an order for the Wind Lift 1. Other vessel owners began to reveal their own plans and began negotiations for contracts and financing.

In addition to experienced contractors, new types of vessel owners entered the market. Multinational utility RWE, which is developing wind farms offshore Germany and the UK, ordered two newbuilds, with an option for one more. Transport vessel operator Beluga Group joined Hochtief to finance and build four vessels; the first is under construction, while the second is due to be ordered imminently. Swire Blue Ocean commissioned a six-legged jackup and has unveiled a maiden assignment on Dan Tysk.

Altogether, 23 new bespoke vessels are due to be delivered to the market between 2011 and 2013. The turbine/foundation installation fleet is due to expand from 25 vessels to a total 44. The additional vessels will increase the rate of complete turbines and foundations installed per year by almost 200 percent, from less than 700 to more than 1,900. This calculation takes into account smaller vessels either returning to their original markets or retiring to operations and maintenance (O&M) service.

Despite these orders, project construction is not expected to reach a level high enough to utilize the entire fleet until 2015, when the UK's Round 3 wind farm construction is fully under way. Factors such as permitting timetables, supplier lead times, environmental impacts, subsidy levels and successful financing affect the timing of offshore wind construction, and therefore, the utilization of the fleet. ODS-Petrodata expects

an oversupply of turbine and foundation vessels for at least two years.

CABLE LAYERS

The cable installation side of the sector, however, tells a different story. Most of the newbuild focus has been directed towards the largest infrastructure of a wind farm, but the project cannot send its power to the grid without well-laid subsea power cables to connect it.

Dynamically positioned (DP) vessels have become the standard for cable laying and burial further offshore. Some, such as the Polar Prince, Team Oman and Normand Mermaid, have crossed over from oil and gas to work in wind. However, in terms of shipyard orders placed, DP cable installers have been almost overlooked since 2008. CT Offshore converted its DP2 RoRo, the Sia, in 2009. Stemat delivered DP2 barge Stemat Spirit in 2010. Beluga has placed a conditional order for a cable layer and Global Marine Systems may pursue a conversion.

Other than this activity, there has little visible expansion to the cable fleet.

"Cable laying vessels represent the most attractive sector in the market at the moment," Scott Hamilton, author of ODS-Petrodata's International Offshore Wind Vessels Market Report says. "However, many cable vessel owners are reporting that without two- or three-year secure charters from developers, it is hard for them to commit to investing in the new vessels and crew which the industry needs to maintain its ambitious deployment rates. "Without this expansion, the offshore industry will be faced with the combination of a critical bottleneck in the supply chain and the potential for cripplingly high day rates for DP cable-laying vessels." The sector's demand for subsea power cable is due to increase at a rate much higher than the demand for heavy-lift construction. Several offshore wind farms will be located more than 70 kilometres offshore, calling for miles of HVDC cable laying. For every project that requires DC export cables, many more will require AC cables. Each turbine in an array must be connected with smaller sections of 33 kV AC cable.

To add to this demand, North Sea countries aim to install high-voltage interconnector cables. Once these plans are financed and go to construction, interconnector activity will further strain the cable vessel supply available for offshore wind.

CONCLUSION

Provided no further heavy-lift vessels are ordered, an oversupply of turbine and foundation installers could be mitigated by the middle of the decade. However, until construction activity in the wind sector is able to utilise the entire fleet, some vessels will have to turn to other markets for work. Furthermore, a shortage of suitable cable installers could delay wind farm construction even further, exacerbating the predicted heavy-lift oversupply. Unless vessel owners begin to add cable vessels to the wind fleet, high-value turbine installation vessels may experience even more downward pressure on the rates they can charge per day. The new **International Offshore Wind Vessels Market Report** from ODS-Petrodata covers the growth of the global offshore wind vessel market – from today's performance to forecasts of future capabilities of the industry through 2020. For more information, please contact ODS-Petrodata via

reports@ods-petrodata.com

Modern Bridge Technology

Developments on the bridge keep pace with electronics innovation in other industries, with a constant eye on making vessel operations safer and more efficient.

Transas Marine recently joined forces between its Simulation and On-board systems customers by launching the concept of the **Transas Global ECDIS Training Network GET-Net**.

With ECDIS mandation on its way and the new STCW ECDIS Training requirements in force from January 1, 2012, the shipping industry is facing a challenging environment. Since most of the crews are truly international, it is desirable to have a good and standardized ECDIS training available in different locations. Transas GET-Net is an international partnership between Transas Marine and ECDIS training providers worldwide. All partnering training centers receive a detailed instructor training and pass quality audit. ECDIS training is based on a Germanisher Lloyd certified training course which follows the ECDIS IMO Model Course 1.27 and already considers the requirements of the Manila Amendments to STCW. The first training centers to enter the partnership are INTERSCHALT maritime systems AG (Hamburg, Germany and Manila, Philippines), COSMOS Training Center (Athens, Greece), eIM Training Center (Piraeus, Greece) and MSG MarineServe GmbH (Hamburg, Germany). Using GET-Net, a shipping company is able to train locally and save travelling costs, at the same time getting a standardized course with a guaranteed training quality.

January 27, 2011 was a milestone in the development of the Remora HiLoad DP as it completed its final sea trials before live field implementation. HiLoad is a deepwater offshore loading terminal, made possible by vessel design and the use of a **Kongsberg Maritime Integrated Automation System (IAS)**.

Built at the Aibel Shipyard, Haugesund, Norway, HiLoad is the first vessel in a new generation of generic offshore loading systems that through state-of-the-art technology, including Remora's patented HiLoad Attachment System and Kongsberg Maritime's IAS; which includes K-Pos Dynamic Positioning, K-Chief marine automation, K-Bridge, and fire, safety, and emergency shutdown system; can control the position of a standard oil tanker that does not have its own thrusters or DP system. This mobile system can be deployed at any field and used for the safe and efficient transfer of oil from an FPSO to any size and type of tanker, effectively replacing the need for a shuttle tanker.

Marine Technologies Bridge Mate IBS includes highly robust and maintenance free computers, class approved redundant networks, Multifunction Workstations (MFW) with touch screens and separate PCs providing multi-redundant application availability. The overall result is an IBS solution that is easy to install and easy to maintain. However, probably the most important characteristic is the ability to provide the mariner with the information required to support his decisions in a comprehensive yet user friendly way, so that he can take any corrective actions required. A bridge solution should ideally be designed in such a way that only essential information is presented to the navigator, enabling him or her to correctly assess the situation in real time. MT's Integrated Bridge Systems adhere to these principles and are fully compliant with IMO regulations and appurtenant standards (e.g., IEC, ISO), as well as being type approved to DNV NAUT AW Class Notation. This stands as proof of MT's commitment to superior quality and performance in their products.

Totem Plus Bridge Navigational Watch Alarm System (BNWAS) monitors bridge activity and raises alarm if the Officer On Watch (OOW) becomes incapable of performing the OOW's duties. The system complies with MSC.128 (75) and IEC62616 Ed. 1. The unit features "Call for Assistance" button in Main and all reset units (can also be activated from external source); Waterproof reset unit for wing installation; Main and secondary reset units installed at working locations on the bridge (max 6 secondary units); amd Remote alarm units installed in Master and Mates cabins as well as public areas (max 20 units in 7 independent groups). It also features an added value "Burglar Alarm" Security mode for unattended and locked bridge in port (second/third stage alarm will be triggered if motion detected on the bridge)

Totem Plus' Bridge Navigational Watch Alarm System (BNWAS)

Furuno's Bridge Alarm System manages the onboard equipment alarms and monitors watch officer's presence for early detection of an emergency. It meets IMO resolution MSC.128(75) for Bridge Navigational Watch Alarm System, and sports 3 operation modes: One-Man, Bridge Attended and Harbor.

A derivative of earlier NACOS navigation command and control systems, more than 1500 of which are operational worldwide, **SAM Electronics'** latest NACOS Platinum series of all-purpose integrated bridge assemblies provide a unique combination of navigation, automation and control functions. Apart

ECDIS Shopping? Start Here

As new regulations regarding the carriage of ECDIS are set to enter force, Mike Pearsall, Business Development Manager at ECDIS Ltd. (http://www.ecdis.org/) compiled for MR a list of ECDIS Providers.

Company	Equipment	WEB Site:
Adveto	ECDIS-4000	www.adveto.com/ecdis.htm
JRC	JAN-2000	www.jrc.co.jp/eng/product/marine/application/navi_ecdis.html
Kelvin Hughes	MantaDigital	www.kelvinhughes.com/equipment/ecdis
Offshore systems	OSI ECPINS	http://osigeospatial.com/offshoresystems/products_and_technologies/navigation_systems/commercial/ecpins_5000.htm
PC Maritime	NavMaster ECDIS	http://pcmaritime.co.uk/comm/products/charting/ecdis.html
Sperry Marine	VisionMaster FT	www.sperrymarine.northropgrumman.com/products/ecdis_integrated_navigation_bridge_systems/
Totem Plus	Totem ECDIS	www.totemplus.com/ecdis.html
Transas	NaviSailor 4000	www.ecdisfit.com
Consilium	Selesmar ECDIS	www.consilium.se/products/ecdis/
Danelec Marine	DM-800E	www.ecdis.com
E_MLX	e-Navigator	www.emlx.co.kr
Furuno	FEA-2807	http://furunodeepsea.com/products/contents/ecdis/index.html
GEM elletronica	ECD-700	www.gemrad.com/products/marine/ecdis.php
Imtech Marine	ECDIS 4500	www.imtech.eu
Maris	ECDIS900	www.maris.no
Raytheon Anschutz	NSC	www.raytheon-anschuetz.com
SAM Electronics	ChartPilot 1100	www.sam-electronics.de/dateien/navigation/ecdis.html
Simrad (formerly Navico)	CS68	www.simrad-yachting.com/Products/Professional/Navigation-Fishfinding/CS68-ECDIS/
Sodena	GECDIS	www.sodena.net/UK/merchant/gecdis.htm
Telko AS	TECDIS	www.telko.no/site/produkter/tecdis
Tokyo Keiki:	ECDIS EC-8500	www.tokyo-keiki.co.jp/marine/e/products/ecdis.html

Source: ECDIS Ltd. **http://www.ecdis.org/**

Furuno's BR1000 Bridge Alarm System.

Kongsberg Maritime's Integrated Automation System (IAS).

NautoSteer AS steering control system from Raytheon Anschütz.

from navigation, these also cover alarm, monitoring and control, propulsion control and power management options for vessels of all types and sizes.

The Platinum series is based on identical components and a common network to provide all navigation functions as well as those for alarm, monitoring and control, propulsion control and power management. A combination of networked architecture and modular components provides unrivalled levels of system scalability so that solutions can extend from a small alarm-type system or a stand-alone ECDIS format to very large, complex configurations for sophisticated vessels such as megayachts and cruiseships. Other main advantages of the Platinum series with its system-wide use of standardised hardware and software include significant improved levels of ease of performance and reliability, enabling crews to concentrate on managing ships safely without undue distraction or stress. Similarly, maintenance requirements are greatly simplified with a much-reduced requirement for spare parts, while continuity of operation is assured by extremely high levels of redundancy supported by extensive self-monitoring facilities and online diagnostics.

A Marine Technologies IBS.

(Photo: Marine Technologies)

MARIS has secured what is believed to be the world's first type approval certification for an independent PC-based radar kit to meet the new Radar Performance Standard (MSC.192(79).

The certification recognizes the MARIS Radar Kit as an integral part of a Radar system, type approved to the latest standards associated with Radar Test Standard IEC 62388.

The new Radar Performance Standard MSC.192(79) and IEC 62388 encompass rigorous performance requirements for marine radar, particularly in terms of target detection in adverse weather conditions where small targets are often barely visible to the radar system.

Steinar Gundersen, MARIS Deputy Chief Executive (Corporate), said that the company had worked with some of the world's most experienced marine radar experts to develop its new PC Radar Kit. With the MARIS PC Radar Kit already in use by system integrators in Europe, the Americas and Asia, certification represented a landmark for the ability of independent companies to compete on performance with complete radar system suppliers, he said. The kit includes a PCI card (Radar interface board, RIB) and the necessary radar software; it operates on a Microsoft XP platform in a PC environment and has the capability to interface with a majority of leading radar and navigation sensors. "The new Radar Standards require that any approved radar must be tested as a system and therefore where appropriate, it is also necessary for equipment integrating with the radar kit to be tested and certified by an approved test authority," he said.

Raytheon Anschütz plans to introduce to the industry by year's end a new steering control system, NautoSteer AS, which is based on CAN-bus technology, whereas all important components such as follow-up amplifiers, autopilots, interface units and alarm monitoring units are connected via redundant CAN-bus systems. This is important, claims the manufacturer, because in case of a failure, the steering control system switches automatically to a redundant CAN- bus, providing secure data communication and built-in whole system reliability. As it serves as one of the more critical technical areas onboard a vessel, NautoSteer AS was developed with regard to fail-to-safe principles. Thanks to its integrated steering failure and wire-break monitoring, the steering control system permanently monitors actual rudder with set rudder and wire breaks to prevent from any unwanted rudder actions such as hard rudders which may cause damages to ship, loading or passengers. In addition, an integrated data integrity monitoring ensures that inconsistencies within the steering system do not necessarily degrade the performance of the system. As another safety-relevant benefit a new and simplified steering mode selector switch separates an independent "Main" non-follow-up steering position from a "Secondary" steering position with CAN-bus based autopilot or follow-up and non-follow-up bustiller controls.

The value of being able to detect small vessels approaching in any weather conditions, and automatically identify potentially hostile behavior, is highlighted by a report of piracy in 2011's first edition of 'Maritime Feedback' (issue 28), a newsletter from CHIRP (www.chirp.co.uk). The 'lesson learned' was that a careful radar watch should be kept on areas of thick low clouds and rain, adjusting range and rain clutter accordingly, the watchkeeper concluded. "While this is good advice, the truth is that, in these conditions, most commercial marine radars will struggle to detect the type of small craft favored by pirates," said Spike Hughes, **Kelvin Hughes'** Commercial Business Director "SharpEye solid state technology is exceptionally effective in detecting small targets, especially in high levels of rain and sea clutter and can prove a valuable tool."

Gaoh , STX to Develop Wind Farm Vessel

UK Wind Energy Services company, Gaoh Offshore signed a Letter of Intent covering the design development and construction of their multi-purpose wind farm development vessel, the Deepwater Installer. Gaoh Offshore and STX Offshore & Shipbuilding Co., Ltd. signed the Letter of Intent [LOI] at the end of 2010. The LOI is for construction at the STX Dalian Shipbuilding Complex in China after a period of joint further development giving both companies a commercial interest in the design. Work will focus on fulfilling the requirements of Round 3 UK wind farm operators. The vessel is a 140m DP2 jack up capable of operating in the central North Sea area on a year round basis and surviving the 100 year storm criteria on site. It can handle up to 16 3.6MW turbines each trip while minimising both port loading and offshore installation time. The design also incorporates a 1600 ton crane and under deck storage to further reduces per turbine installation, commissioning and maintenance costs. This true multi-functionality adds to the design's flexibility and ability to deliver optimal cost efficiencies to safe, efficient and risk optimised installation and field support activities.

EPS M10 Hovercraft

The 68 x 30 ft. EPS M10 Hovercraft, built at the company's facilities in Titusville, Fla., was launched in late 2010 and was shipped to its final destination in early January 2011. EPS M10 is built of non-corrosive, fiber-reinforced advanced composites which are designed to provide significant reduction in operating, maintenance, and through-life costs. It is powered by two 1,000 hp diesel engine, giving speeds in excess of 40 knots.

www.epscorp.com

Pasha Hawaii to Build Second at VT Halter

Pasha Hawaii signed a contract with VT Halter Marine for the construction of a ship to enter the Hawaii/Mainland trade lane. The ship's base price is $144m and is estimated to deliver in the fall of 2013. The new ship represents the second vessel to join Pasha Hawaii's fleet, and will allow the company to provide weekly service between the West Coast and Hawaii. The company also signed an option agreement for the construction of a third vessel with a base price of $137m.

This will be the second Roll-On/Roll-Off Car Truck Carrier built by VT Halter for Pasha Hawaii based on a proven design by the Uljanik Shipyard, Croatia. The Uljanik and VT Halter Marine engineering teams are collaborating with Pasha to finalize the new ship's design and engineering specifications.

Burger Boat Contracts for Steel Passenger Vessel

Burger Boat Company received a contract for the construction of Chicago's Leading Lady, a 98-ft steel passenger vessel, for Chicago's First Lady Cruises, Chicago, Ill. Chicago's Leading Lady is styled after the 1920s luxury cruising yachts such as the former Presidential yacht Sequoia. Chicago's First Lady Cruises will use the vessel for upscale private parties, wedding rehearsal dinners and corporate events, as well as, serve as an official vessel for the Chicago Architecture Foundation River Cruise.

The vessel was designed by Seacraft Design LLC, Sturgeon Bay, Wis. and will be built at Burger Boat Company's Manitowoc, Wis. shipyard located on the western shore of Lake Michigan between Milwaukee and Green Bay.

Chicago's Leading Lady will be powered by two Caterpillar C12 main engines w/ZF gearboxes and will have two Caterpillar C4.4 generators. This vessel is designed to carry a maximum of 350 passengers and will be certified USCG Subchapter K. The interior spaces are climate controlled via a central chiller with remote air handler units.

Ulstein to Build OCV

Working closely with Eidesvik Offshore and their partner Subsea 7, Ulstein has signed a contract for delivering an offshore IMR/ construction vessel of the Ulstein SX148 design to Eidesvik Offshore. The yard and design department at Ulstein have worked on this project for more than two years. The ship is of the SX148 design from Ulstein, which can carry out highly advanced subsea work like inspection, maintenance and repair of oil installations on the sea bottom. Furthermore, the vessel can be used for clearing oil and gas wells and for well stimulation. The moon pool is located centrally in the ship's hangar, in an efficient layout providing a good and safe in-

The 349.5 x 80.4 ft. Eidesvik vessel will be with a top speed of more than 17 knots; accommodating a crew of 90. The ship will be in service for operator Statoil on her completion at the end of 2012.

door work area on the main deck. The vessel is equipped with three ROVs: one for observation and two for operation. It also has an MHS (Module Handling System). Also onboard is a 100-ton AHC (Active Heave Compensated) offshore crane. It will be used mainly for lifting/lowering heavy equipment from/to the sea bottom. The vessel has a high freeboard – which means the work deck is high above the waterline, providing added safety for the deck crew. The vessel is able to carry out demanding operations also under harsh weather conditions. The X-BOW hull line design reduces hull motion from high waves, making it easier to keep on operating. Statoil's operational demands require that the vessel has a good back-up system.

(Photo: Ulstein)

Assembly Line For Tugs

By Alan Haig-Brown

The shipyards of Sarawak are particularly adept at meeting the demands of multiple tug orders. Kian Juan Dockyard in Miri is currently in the midst of a ten-boat order all of which are built to the same design. As of late January this year two units had been delivered and six were scheduling for sea trails. The balances of two units had already been launched and were fitting out alongside. The large open area, extensive covered shop buildings and ample river frontage ease the logistical complexity of this sort of an undertaking. The ability of local suppliers to meet requirements on time and on schedule is equally important. The Miri facility for Scott and English, supplied the twenty 1200-hp Cummins KTA38-M2 main engines for the ten 30 x 8.6-m tugs. Each tug will have 2400 hp turning a pair of 2000 x 1789-mm props through Twin Disc MG5321 DC gears with 5.96:1 reductions. This power will give the tugs a 25-ton design bollard pull and a speed of eleven knots.

(Photo courtesy of Kian Juan Dockyard)

With a 13.6-ft molded depth, each tug has capacity for 203-tons of fuel, 50 tons of potable water, 57 tons of ballast water. Accommodation for crew is provided in two one-man cabins and four cabins for three people each. The boats have sewage holding tanks and treatment systems. They are also fitted with oily bilge-water separators. A 25-ton single-drum towing winch with capacity for 500m of 48mm line is mounted on the after deck. The vessel is also fitted with a quick-release towing hook. Scott & English also supplied the ten boats' 20 Cummins 6BT5.9-powered 78 kW generator sets. The tugs are classed GL +100 A5 +MC, Tug Unrestricted Navigation. The ten tugs are built to the account of Thaumas Marine Ltd, of Sabah, Malaysia. David Chee, spokesman for the owners reports that the vessels are for sale with prompt delivery ex Miri yard at $1.95m net to the owner.

MARITIME REPORTER AND ENGINEERING NEWS

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Dordrecht Fleet Continues to Grow

The Dutch town of Dordrecht was granted city rights in 1220 as its importance as a trading port continued to grow. Goods from the Dutch empire were transferred to river vessels here and the city grew wealthy. Later, much of the deep-sea trade moved to the nearby port of Rotterdam which resulted in heavy bombing during World War II with the destruction of many historical buildings. Spared such destruction, Dordrecht continues to have many fine buildings dating from the prosperous centuries.

Today the city retains an important role as a base for river trading companies and as a home for many of the inland vessel's crews. It is also the location of the De Groot Scheepstechniek. This shipyard recently delivered one of their typically high quality tank vessels to the Dordrecht-based Trendco Shipping Company who will operate the ship for her owners Charlois Shipping CV.

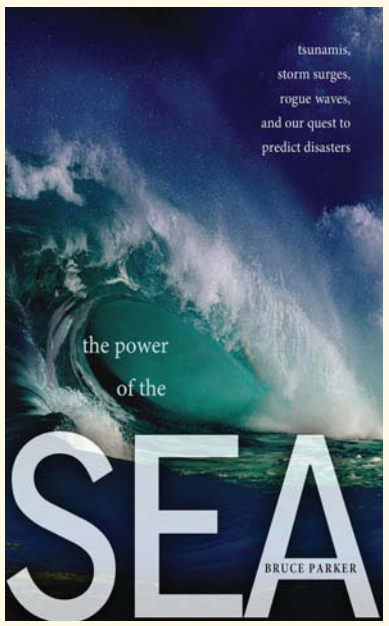
The new tanker vessel, MTS Charlois, named for an area of Rotterdam Harbour, is 135 by 11.5-m with a load capacity of 4300 tons in 5000 cu. m. of hold space. Capable of transporting a variety of petroleum based cargos, the tanker also has the capability to blend cargos onboard through a single pipe system. Heavy oils can be kept at 80 degrees Celsius to facilitate pumping. The ship's double-skinned hull earns it a Type C (Chemical) rating permitting it to transport dangerous liquids throughout the European Inland Waterway system. The ship's hull was built in Guangzhou China through a partnership involving Csaintly Marine Corp. Ltd. and Oosse Maritiem. The hull was transported to the Netherlands by barge and then completed at the De Groot yard. The De Groot Shipyard is also a Cummins Marine Dealer and a full suite of Cummins engines were installed in the vessel. Main propulsion is a pair of Cummins QSK38-M diesels generating 1400 hp (1044 kW) each at 1800 rpm. A Cummins QSK19-M does dual duty as a bow-thruster and cargo pump engine. The MTS Charlois has three Cummins-powered generator sets including a QSB6.7, a QSB4.5 and a 4BT3.9 model. In each designation, the numbers refer to liters of displacement. From time to time, when in the area, vessels of the Trendco fleet moor along the river wall in front of the company offices at Merwekade 77 in Dordrecht. In doing so the MTS Charlois will be continuing a centuries old tradition by which ships have brought prosperity to this river city.

(Courtesy of Cummins)

Left
The QSK19 powered gen set to supply the cargo pump and bow thruster.

Right
MTS Charlois underway near the Haringvliet Bridge.

(Photo by Arie Jonkman, Courtesy of Cummins)



ABOUT THE BOOK

The Power of the Sea:
Tsunamis, Storm Surges, Rogue Waves, and Our Quest to Predict Disasters

Author: Dr. Bruce Parker

Synopsis
The book tells the story of our long struggle to understand the physics of the sea so we can use that knowledge to predict when the sea will unleash its power against us (so we can get out of its way and survive). It interweaves stories of unpredicted natural disasters with stories of scientific discoveries, beginning with ancient mankind's strange ideas about the sea and working up to our latest technological advances in predicting the sea's moments of destruction.

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Available at any online book store (including Amazon and Barnes and Noble) and many local book stores.

Go to:
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"The Power of the Sea"

The following excerpt from Chapter 6, pp.117-121. (about the wave and surf forecasts for D-Day)

By mid-August of 1943 the Allied command had decided that they should land on the beaches of Normandy in the spring of 1944. The success of the operation to drive the Nazis out of northern Europe, Operation Overlord, depended first on winning the beachhead at Normandy on D-Day and then on efficiently moving large numbers of troops and supplies across those beaches. The Overlord planners estimated that it would take at least fifteen weeks to move enough Allied divisions across the English Channel and the Normandy beaches to equal those that Germany already had in northern France and Belgium. That fifteen-week estimate assumed that there would be good weather and good wave conditions the entire time, which was highly unlikely. Accurate predictions of sea, swell, and surf were therefore going to play a vital role in determining the success of both the initial amphibious landing and the subsequent transport of troops and supplies for months thereafter.

By this time Walter Munk and Harald Sverdrup were back at Scripps in California. Sverdrup had set up a training course on wave prediction, and Munk was assisting. Over two hundred officers from the Army Air Force, Navy, and Marine Corps were trained, those officers later participating in the planning and execution of amphibious landings at Sicily and Normandy, and then all landings in the Pacific theater of war, including Iwo Jima, Okinawa, and the Philippines. The course was constantly being modified as improvements were made to the wave prediction technique. The trained officers helped test the Sverdrup-Munk method, and each had to adapt it to the particular coastal region to which he was assigned. To further improve their method, Munk and Sverdrup tried to calibrate the predicted wave heights and periods by comparing them to observed heights and periods during each amphibious landing when it occurred. These were only visual estimates made by the coxswains on the landing boats, but they were still useful. This led to the definition of significant wave height as the average of the highest onethird of the waves, which seemed to be what the coxswains were seeing. Significant wave height would become a critical term in all future wave studies.

In the fall of 1943 a Swell Forecast Section was established in downtown London at the Admiralty weather center, two floors underground because of German bombing. This was one of three centers in Britain involved in making weather forecasts for the D-Day landings at Normandy; the other two were the British Meteorological Office at Dunstable and the U.S. Strategic Air Force center at Widewing. In the Swell Forecast Section were three wave forecasters: two American officers who had been trained at Scripps in the Sverdrup-Munk wave prediction method and one British officer who was more familiar with another technique developed in Britain. The British technique was based on correlations between a number of wave observations and wind observations, which had led to rules of thumb and crude forecasting graphs. Upon comparing the two techniques, the section decided to use the more sophisticated Sverdrup-Munk technique. The section had to first determine the height and period of the swells entering the English Channel from the North Atlantic and determine how high they would be when they hit the five designated landing beaches at Normandy (Utah, Omaha, Gold, Juno, and Sword). Then they had to predict the height and period of waves generated by local winds over the Channel itself. Finally, they had to determine the size of the surf on the Normandy beaches, which involved understanding the effect on waves of the shallow water, the strong tidal currents, and the coastal configuration, the latter including effects of waves hitting the beaches at various angles.

To carry out this work the Swell Forecast Section needed to obtain wave data, so they organized a synoptic network of fifty-one wave reporting stations along the British coast of the English Channel. The data came from visual observations made by His Majesty's Coast-guard lookouts, who usually made three observations per day, each consisting of a wave count over three minutes and an estimate of the height of each wave breaking during that time. There were also underwater pressure recorders at four of the stations. Wave conditions on the Normandy beaches were estimated by studying aerial photographs of the beaches. One fortunate result of the section's work was the discovery that the Cotentin Peninsula usually blocked Atlantic swells from the west so that they did not reach the Normandy beaches. Thus for the beaches they could concentrate on waves and surf generated by local winds. The swells were, however, still important for the long trip across the English Channel to reach Normandy.

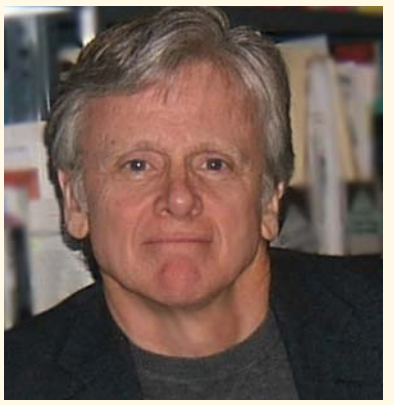
The ultimate objective was to predict waves and surf at the Normandy beaches based on weather forecasts. Each weather forecast was a synthesis of the weather forecasts put out by the three weather forecast centers. The enormous responsibility of synthesis fell to Eisenhower's Chief Meteorologist, Group Captain James Stagg. It was made all the more difficult because the Dunstable and the Widewing meteorologists regularly disagreed with each other. The three weather forecast centers held regular conferences via secure telephone lines that included Stagg and his deputy at Supreme Headquarters Allied Expeditionary Force (SHAEF) and the meteorological officers for the Allied fleet and the Air Force. The Swell Forecast Section listened in on the same phone line as the Admiralty meteorologists. When agreement was reached on the forecast winds for that day, the section would generate sea, swell, and surf forecasts. Stagg took the weather and wave results of each conference to Eisenhower's twice-a-day staff meetings with his commanders. By early April 1944, SHAEF was requiring five-day wave forecasts for the English Channel and adjoining sea areas.

Based on tide and moonlight conditions, D-Day was planned for June 5, with June 6 and June 7 still acceptable if bad weather prevented going on June 5 (see Chapter 2). Starting and stopping such a massive operation could not be done at a moment's notice. Some of the ships involved in Project Neptune (the naval portion of Operation Overlord) were coming from as far away as Scotland and the Irish Sea and so had to begin their voyages days before the expected landing. Thus, weather and wave forecasts had to be made for several days into the future. June was normally a month of good weather, but in 1944 the June weather did not cooperate. Although as usual there had been disagreements between pessimistic meteorologists at Dunstable and optimistic meteorologists at Widewing, the forecast that Stagg brought to Eisen-

hower's 9:30 p.m. staff meeting on Saturday, June 4, was gloomy. High winds, high waves, and heavy cloud cover were expected on June 5. There could be no air cover for the operation, a critical requirement. The waves and surf would make landing extremely difficult, and perhaps impossible. The waves would also reduce the accuracy of the big guns on the Allied ships. At the 4:00 a.m. Sunday staff meeting the bad situation had not changed, and Eisenhower decided to postpone D-Day for twenty-four hours. Hundreds of ships that had already left port had to be turned around. Even ships that had not left port had already boarded their men, and they could not be allowed to disembark. So everyone just waited on board crowded vessels, rocked by the rough seas. But at the 9:00 p.m. Sunday staff meeting on June 5 there was a ray of hope. Stagg had a more promising forecast, the prediction of a short break in the bad weather that might allow the landings to take place on June 6. After discussion with his commanders, Eisenhower made the decision to go. And so the largest amphibious landing ever undertaken was under way once again—more than 160,000 soldiers on ive thousand ships and landing craft were headed for Normandy. Yet, even with all that firepower, it was not clear that it would be enough to overcome the German forces entrenched along the French coast. The bad wave conditions of the previous day had not subsided much when the ships began crossing the English Channel.14 It was a long, rough ride. Seasickness was rampant. Soldiers on the ships that had left port early and had been temporarily turned around had been seasick for days. The heavily laden low-powered landing craft were especially affected by the rough seas, even as the six-to-eight-foot waves slowly reduced to three-to-five-foot waves. Many troops were in their crowded landing boats for at least eighteen hours, in air heavy with sweat and vomit, feeling the constant rolling of the short steep seas and wet from the salt spray that hit them each time their vessel crashed into the next wave. If there was a benefit to the widespread seasickness, it was that it kept the soldiers from thinking about the dangers that would meet them at the beaches and about their loved ones at home whom they might never see again. Many were not scared, because hours of seasickness made them feel like they were dying anyway. Their greatest desire was to get off those boats, even if it meant facing German gunfire.

As they landed on the beaches, the waves and surf had reduced to heights considered just barely manageable by Eisenhower's commanders. Unloading the men onto the beaches was made difficult by waves swamping some of the landing boats and pushing the heavily loaded men around. Landing was already a difficult proposition, even without the waves, because the boats had to avoid the underwater obstacles that Rommel had planted between the low-water and high-water lines, and the men had to avoid being hit by German gunfire. The waves caused many of the specially designed floatable tanks to sink as soon as they were launched. It also made it more difficult for the demolition teams trying to blow up Rommel's obstacles. But in all respects, on the Channel and then landing on the beaches, it could have been so much worse, even disastrous, if the landings had taken place during the higher wave conditions of the day before.

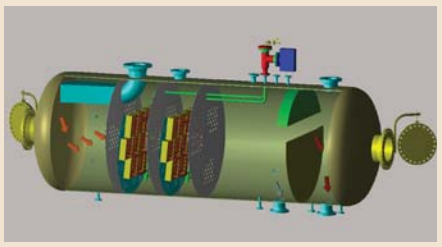
The final contribution of wave prediction to the overall success of Project Overlord came after the Normandy beaches had been secured by Allied forces. Transporting Allied troops and supplies across the English Channel and across the Normandy beaches as quickly as possible was critical to the success of the battles that followed D-Day as the Allies moved toward Germany. But the weather was often not cooperative. Two weeks after D-Day a huge storm hit Normandy that totally disrupted movement of troops and supplies. But even smaller storms had serious effects. The Swell Forecast Section kept records of the relationship between surf heights at Normandy and the tonnage of supplies unloaded from ships each day and found a dramatic correlation. A noticeable decrease in the supplies unloaded occurred whenever the surf increased above two feet. The amount of supplies unloaded decreased by as much as 80 percent as wave heights neared five feet. Above seven feet all unloading operations ceased. The Swell Forecast Section had two representatives on Omaha Beach who prepared twice-daily twenty-four-hour forecasts of the sea state and the surf in support of the cargo operations. These forecasts saved precious hours of unloading, since they allowed the cargo loading to continue up to the very last moment before the surf became unsafe. Without such accurate forecasts, those unloading the cargo could be caught by surprise without enough time to safeguard the ships, ferry craft, barges, and amphibious trucks (called DUKWs). They also allowed loading to begin promptly when conditions had again become safe. When the waves began getting smaller, there was a reluctance to refloat beached craft and begin unloading operations again in case those smaller waves turned out to be a temporary lull, so an accurate wave and surf forecast ensured that the work would begin again as soon as it was safe. Wave forecasts enabled cargo transport to continue into November instead of quitting in September as originally planned. The Germans tied up thousands of troops at European harbors, thinking the Allies would need to capture them for their transport needs, something that was not necessary because of the high efficiency of troop and cargo transport through Normandy, much of that efficiency due to accurate wave predictions. Those men and supplies made the future Allied successes in the war possible.



ABOUT THE AUTHOR

Bruce Parker first experienced the sea as a young boy, working for his father's scuba diving and water ski schools in the Bahamas. Over the years he mixed his encounters with the sea with academic training and research, to eventually become a world-recognized expert in the oceanographic subjects covered in *The Power of the Sea*. He has a PhD in physical oceanography from The Johns Hopkins University. Before leaving NOAA in October 2004, Dr. Parker was Chief Scientist for the National Ocean Service. He is presently a Visiting Professor at the Center for Maritime Systems at the Stevens Institute of Technology.

Hamworthy Improves Separator Performance



Hamworthy signed a contract with FPSO Owner OSX 1 Leasing B.V., a subsidiary of OSX Brasil S.A., for delivery of its newest generation Vessel Internal Electrostatic Coalescer (VIEC) technology to the FPSO OSX-1. Upon completion of customization works currently in progress in Singapore, the FPSO OSX-1 will be delivered by OSX to its customer OGX Petróleo e Gás Ltda. under charter arrangements, for deployment in the Campos basin, offshore Brazil. OSX and OGX are controlled by the EBX Group, owned by Brazilian entrepreneur Eike Batista.

Hamworthy's VIEC technology has been designed to address problems often experienced with emulsion and capacity limits in separators. To enhance the speed and efficiency of the separation process, it forces small water droplets to merge and form larger, sediment drops more quickly.

www.hamworthy.com

New "Green Ship" Engine Room Simulator

The Kongsberg Maritime Simulation & Training department has developed a sophisticated Green Ship Engine Room Simulator (ERS) model based on a Wärstilä 12RT-flex 82C low-speed common-rail engine, built for a Panamax containership of 4800 TEU, with reefer capacity of 800. The scenario for the simulated ship model is a modern Green Ship that is financed and operated by a ship owner who is deeply concerned about environmental issues, and who has built a fuel efficient / low-emission container ship using well-proven, commercially available technical solutions. The simulated ship has a high normal operating speed of 26 knot and the propulsion machinery is adapted for all ambient temperature conditions, ranging from arctic (-40°C) to tropic (45°C), allowing new trading routes. The new ERS model offers highly realistic training based on the above conditions, to ensure optimal performance whilst reducing emissions.

FLAGSHIP-EEM: Fuel Consumption Reduction

(Courtesy of GL Group)

FLAGSHIP, a part EU-funded maritime transport project, reportedly achieved major advances in accurately measuring on-board power requirements and thereby enabling a reduction in fuel consumption through the development of FLAGSHIP-EEM (Energy Efficiency Monitoring). The system is designed to enable data acquisition and analysis to continuously evaluate power requirements at every stage of a vessel's voyage. It provides information that enables improved fuel consumption that can reduce both operational costs and its environmental impact. Designed as a tool for ship owners and operators, FLAGSHIP-EEM supports the crew in making more efficient use of energy on board. Due consideration is given to both the main and auxiliary engines ensuring propulsion and electrical economies are evaluated. It provides transparent information about the current energy use and increases awareness for options to improve efficiency. FLAGSHIP-EEM enables comparison of current consumption to baseline consumption and recent history and establishes a database of operational data.

Watermakers

Racor Division of Parker Hannifin upgraded its Stowaway Series of watermakers. The Racor Village Marine STW is a compact watermaker for marine applications which includes a new touch screen interface control panel. Features include a graphic-rich color touch screen panel which displays status, purity of product water output, water temperature, total hours for accurate service log, and many other functions.

www.villagemarine.com

Bearing Isolator/Shaft Grinding Ring

The Garlock SGi Shaft Grounding Bearing Isolator is a seal to protect bearings from electrical damage as well as from lubricant loss and contamination. Maintenance-free, the Garlock SGi combines the technologies of the Garlock GUARDIAN non-sparking bronze labyrinth seal and the AEGIS shaft grounding ring in a single unit. It is suited for motors controlled by variable frequency drives (VFDs) running pumps, fans, high-speed spindles, and other equipment in "severe-duty" applications.

www.garlock.com

John Deere's Newest Diesel Engine

John Deere Power Systems (JDPS) announced its newest marine engine the PowerTech 6090AFM75 marine diesel engine is the newest addition to the John Deere lineup and boasts up to 317 kW (425 hp).

The new PowerTech 6090AFM75 has 9.0L of displacement and is a 6-cylinder, electronically controlled, turbocharged and air-to-engine coolant aftercooled marine engine. Vertical fuel injectors provide clean burning for lower emissions and improved fuel economy. John Deere is also announcing the ratings for its PowerTech 6068AFM75, 6090SFM75 and 6135SFM75 marine generator drive engines.

Product highlights for the gen-set engines include:

- The PowerTech 6068AFM75 features gen-set ratings up to 191 kVA (153 kWe) at 60 Hz (1800 rpm). The 6.8L is a 6-cylinder, electronically controlled, turbocharged and air-to-coolant aftercooled marine engine.
- The PowerTech 6090SFM75 features gen-set ratings up to 320 kVA (256 kWe) at 60 Hz (1800 rpm). The 9.0L is a 6-cylinder, electronically controlled, turbocharged and air-to-seawater aftercooled marine engine.
- The PowerTech 6135SFM75 features gen-set ratings up to 480 kVA (383 kWe) at 60 Hz (1800 rpm). The 13.5 is a 6-cylinder, electronically controlled, turbocharged and air-to-seawater aftercooled marine engine.

www.deere.com

USCG Water Mist Certification for 3000m³

Securiplex, LLC, a manufacturer of Water Mist systems (a green alternative technology to gaseous fire suppression systems such as CO_2, FM200, or Novec 1230), located in Mobile, AL recently received both an ABS and a U.S. Coast Guard certification for its high pressure Water Mist system to protect spaces up to 3000 m3. Securiplex had already received certification for SOLAS required Local Application Systems. Securiplex systems have been installed in a number of U.S. commercial and Navy vessels.

www.securiplexllc.com

"Socket Lock"

Sea-Fit, Inc., improved and reformulated its socketing resin product, Socket Lock. The new product has improved grip performance and has undergone static, dynamic and shock load testing. In addition, improvements were made to the formulation to increase the product's stability and toughness. To complement the enhancements to the product's performance capabilities, the resin and hardener are now innovatively packaged in environmentally sealed foil packs. To further ensure stability, the components are then placed in plastic containers fitted with vapor lock lids. The plastic container can be used as the mixing vessel and is obviously well suited for corrosive marine environments. Not only is this packaging easy to use, it serves to ensure the product's freshness.

www.socket-lock.com

KVH's TracPhone V3

KVH Introduces TracPhone V3, which the company touts as the smallest and most affordable maritime VSAT System, at 2 Mbps and $0.99 per MB. The ultra-compact TracPhone V3 was introduced at the Miami International Boat Show, and the TracPhone V3 is being touted by the company as the world's smallest maritime VSAT antenna, measuring 14.5 in. (37 cm) in diameter and weighing 25 lbs (11 kg). The TracPhone V3 includes a fully stabilized antenna, a powerful ViaSat ArcLight spread spectrum modem, and a sleek below-decks antenna control unit that are all fully integrated and configured for easy installation. ArcLight spread spectrum technology enables very small antennas like KVH's 24" (60 cm) TracPhone V7 and now, the TracPhone V3 to receive satellite transmissions with the speed and reliability of older, 1-meter VSAT antennas that use TDMA transmission schemes. KVH's high-efficiency RingFire antenna design and dielectric feed rod technology mean the TracPhone V3 offers performance, even in poor weather, and its rugged design is perfect for use on tuna towers and commercial vessels.

www.kvh.com

ISATPHONE PRO iFLY

The iFly Industrial Package from Delta Wave was designed for quick and easy deployment. It is a turnkey package which incorporates Beam's IsatPhone Pro Dock, and external antenna which also incorporates GPS. All is contained in a watertight NEMA enclosure with handle for ease of transport and quick installation in indoor or outdoor environments. The unit also works with Inmarsat's 505 emergency alert service, providing location data. A 30-ft coax cable set is Included, which should satisfy most installation requirements. All connections pre-wired to TNC and SMA bulkhead connectors on the outside of the case for GPS location acquisition and access to Inmarsat's GPRS Network. The kit also includes a corded and cordless handset system that connects to the bulkheaded RJ11 port on the outside the box.

www.deltawavecomm.com

Sealing Welds

WeldSeal is a brush-on methacrylate compound formulated for sealing porosity in welds that will contain gases under pressure or liquids. WeldSeal's low dynamic viscosity enables it to wick deeply into pores and seams and between close-fitting ferrous metal surfaces. After WeldSeal has cured in the porosity or voids, excess material on the surface is easily rinsed away with water, leaving the surface clean and ready for painting or other operations. WeldSeal™ does not alter critical surface dimensions. WeldSeal comes packaged in a 250ml kit with a shelf life of 6-12 months.

E-mail: mail@impco-inc.com

Cargo Care's Emergency Hatch

An emergency rubber sealing which can be used repeatedly is causing quite a stir at maritime trade shows and proving popular with customers. It's a time and money saving solution which provides extra security when needed for bulk and general cargoes.

The Emergency Seal from Cargo Care Solutions is a rubber sealing which can be pressed in the cross joint to give extra security for the weather tightness of hatch covers. It works between a gap of 20mm to 50mm provided there are no wedges or cross joint cleats installed. A complete set for one cross joint consists of one straight length of packing (cut-to-size) and two pieces with 90˚ corners.

Emergency Seal is used as extra security next to the existing hatch cover sealing system and, unlike tape solutions, it can be used many times.

www. cargocaresolutions.com/products_emergency-seals.html

CTOS – Coordinated Turn Optimization System

Humphree released a new drive functionality option for its interceptor trim systems. When turning a boat in planing or semi planing speeds the boat will and shall heel to some extent. However, in many cases the boat heels too much and in some cases not enough, resulting in an unpleasant feeling for the people onboard. In order to increase onboard comfort and safety, CTOS will continuously monitor the rudder position and during the turn, the interceptor blade movement is automatically coordinated with the rudder movement in order to create a heel angle that is comfortable and safe.

Inert Gas Oxygen Analyzing System

The G36 is the first system approved and certified under European MED heading A1/3.54 for fixed oxygen analyzers.The G36 Oxygen Analyzer provides accurate, real-time data for monitoring inert gas and controlling its production. The system is based on a new type of Zirconia cell, which is adapted to the harsh and stressful marine environment.

Email: cmsab@consilium.se

ThrusterSCAN

Kittiwake Developments launched ThrusterSCAN for the offshore market: a tool to help predict failure, enabling preventative maintenance. ThrusterSCAN marks a new era in online condition monitoring for azimuthing thrusters. Individual ThrusterSCAN monitoring units are installed local to each thruster and comprise of a touch screen machine interface, metallic particle sensor, oil condition sensor, moisture sensor, oil temperature sensor and sampling pump. ThrusterSCAN delivers early warning of thruster component damage, lubricant degradation and seal leaks/failures, while providing critical information to help optimize thruster operating parameters and effectively manage overhaul schedules.

MARLIANT: Maritime Client-Server Systems

NetWave Systems started the first deliveries of its MarLiant systems. This IT system specifically designed for the maritime environment is a 'deployment ready' thin-client/server solution, which incorporates dedicated service-processors to cover the 'high availability' and security issues encountered on ships and offshore installations. MarLiant serves as a 'non-stop computing platform' featuring a multi-user Windows environment using client-server technology. A typical system consists of a single, fully redundant application server using Windows Server 2008, in conjunction with a number of solid state Thin Client workstations (measuring 75 x75 mm.) mounted throughout the vessel. The system replaces a network of shipboard PC's and laptops being far more susceptible to viruses, abuse, as well as repair and update complexities and associated costs.

www.netwavesystems.com/marliant

Binsfeld Engineering Inc.
4571 W. MacFarlane, Maple City, MI 49664
www.binsfeld.com
tel: 231-334-4383
email: bob@binsfeld.com
Products: Torque & hp measurement systems; TorqueTrak 10K, TorqueTrak Revolution

Bosch Rexroth Corporation
1953 Mercer Rd., Lexington, KY 40511
www.boschrexroth-us.com
tel: 859-281-3405
email: tim.rockidge@boschrexroth-us.com
Products: Electronic and pneumatic marine propulsion controls

Caterpillar Marine Power Systems
www.cat-marine.com
tProducts: Marine propulsion and auxiliary equipment

Centa Corporation
2570 Beverly Drive #128, Aurora, IL 60502
www.centa.info • tel: 630-236-3500
email: info@centacorp.com
Products: Over 20 styles of flexible torsional damping couplings and drive line shafting and carbon fiber shafting systems

Cummins Inc.
www.cummins.com
Products: Diesel engines

Deutz Corp
Norcross, GA 30093
www.deutz.com • tel: 514-694-8772
email: radtke@deutzusa.com
Products: Diesel engines, propulsion systems, diesel generator sets

Diehl Engineering Company
www.diehlengineering.com
tel: 360-297-8781
email: pdiehl@diehlengineering.com
Descr: Professional engineering firm specializing in marine propulsion power transmission

Governor Control Systems Inc.
3101 SW 4rd Ave., Ft. Lauderdale, FL 33315
www.govconsys.com
tel: 954-462-7404
email: contact@govconsys.com
Products: Woodward, Dynalco, TDI Air Starters, Visatron oil mist dectectors, DCL Emissions

Industrial Power Systems, Inc.
Jacksonville, FL 32207
www.ipsswitchgear.com
tel: 904-731-8844
email: glenn@ipsjax.com
Descr: Manufacturer of switchboards for the marine industry

John Deere Power Systems
Waterloo, IA 50704-5100
www.johndeere.com/jdpower
tel: 515-557-2010
email: jennifero@2rm.com
Descr: 75 to 610 hp marine diesel engines

Konrad Marine
1421 Hanley Rd., Hudson, WI 54016
www.konradmarine.com
tel: 715-386-4203
email: sales@konradmarine.com
Products: Sterndrives

MCR Engineering Co., Inc.
15 Spruce St., North Attleboro, MA 02760
www.mcrengineering.com
tel: 508-699-6992
email: mcr@mcrengineering.com
Descr: Marine propulsion service and parts

Mercury Marine
PO Box 1939, Fond du Lac, WI 54936
www.mercurymarine.com
tel: 866-408-6372
email: mmobgovsales@mercmarine.com
Products: Mercury outboards and MerCruiser stern drive packages

MTU
13400 Outer Drive West, Detroit, MI 48239
www.mtu-online.com
tel: 313-592-8345
email: jeff.sherman@mtu-online.com
Descr: Worldwide provider of diesel engines and propulsion systems

Northern Lights
4420 14th Ave NW, Seattle, WA 98107
www.northern-lights.com
tel: 206-789-3880
email: info@northern-lights.com
Products: Marine generator sets and diesel propulsion engines

PowerTech Propellers
8101 Kingston Rd., Shreveport, LA 71108
www.ptprop.com • tel: 318-688-1970
email: marcus@ptprop.com
Descr: Manufactures marine propellers and investment casting

Propeller Solutions
4620 Santa Fe St., San Diego, CA 92109
www.propellersolutions.com
tel: 800-735-0128
email: bill@propellersolutions.com
Products: Design, sales and service of marine propellers

Renold Hi-Tec Couplings
100 Bourne St., Westfield, NY 14787
www.renold.com
tel: 716-326-7218
email: andrew.broadbent@renold.com
Products: Flywheel mounted, shaft to shaft couplings and drive shafting

Scania USA Inc.
121 Interpark Blvd., Suite 601
San Antonio, TX 78216
www.scaniausa.com
tel: 210 403 0007
email: per.backteman@scaniausainc.com
Products: Diesel engines for marine applications

Scandic Diesel Services Inc.
Notre Dame East 6360
Montreal, QC H1N 2E1 Canada
www.scandiserv.com
tel: 514 228 1299
email: sales@scandiserv.com
Products: Turbochargers, fuel equipment, governors, four stoke components and repairs

Schottel, Inc.
190 James Drive East, Suite 100
St. Rose, LA 70087
www.schottel.com
tel: 504-471-3439
email: nmoerkeseth@schottel.com
Products: Schottel rudder propellers in single and twin propeller version, navigators, combi-drives, pump-jets, transverse thrusters, controllable-pitch propellers

Simplex Americas LLC
20 Bartles Corner Rd., Flemington, NJ 08822
www.simplexamericas.com
tel: 908 237 9099
email: info@simplexamericas.com
Products: Simplex Seals, Simplan Seals, Turbulo Bilge Separators, Nakashima Propellers, Terresolve Environmental Lubricants

Stewart & Stevenson LLC
8631 East Freeway, Houston, TX 77029
www.stewartandstevenson.com
tel: 713-671-6180
email: b.hardy@ssss.com
Descr: Worldwide marine propulsion systems distributor and packager

Thordon Bearings Inc.
3225 Mainway
Burlington, ON L7M1A6 Canada
www.thordonbearings.com
tel: 905-335-1440
email: feedback@thordonbearings.com
Descr: Manufacture propeller shaft and rudder bearings, as well as marine shaft coatings and deck equipment bushings

Thrustmaster of Texas
P.O. Box 840189, Houston, TX 77284-0189
www.thrustmastertexas.com
tel: 713-937-6295
email: jbekker@thrustmastertexas.com
Descr: Thrusters and DPS propulsion

Ultra Dynamics, LLC
1110A Claycraft Rd., Columbus, Ohio 43230
www.ultradynamics.com
tel: 614-759-9000
email: sales@ultradynamics.com
Descr: Design and manufacturer of UltraJet range of waterjet propulsion systems and marine control systems

Woodward
1000 E. Drake Rd., Fort Collins, CO 80525
www.woodward.com • tel: 970-498-3838
email: dennis.pearson@woodward.com
Descr: Manufacturer of power management and engine controllers

WPT Power Transmission Corp.
1600 Fisher Rd., Wichita Falls, TX 76305
www.wptpower.com • tel: 940-761-1971
email: lane@WPTpower.com
Products: Heavy duty clutches/brakes/PTOs with air, hydraulic, mechanical actuation

ZF Marine LLC
3131 SW 42nd St.
Fort Lauderdale, FL 33312
www.zf-marine.com
tel: 954-581-4040
email: martin.meissner@zf.com
Products: Transmissions, controls, propellers, surface drives, shafting

OMSA's New Leadership: Hornbeck, Adams

Offshore Marine Service Association (OMSA) announced a rotation of the association's officers. Todd Hornbeck (above) will succeed Otto Candies III as chairman of the Board, Robert Clemons will advance to Vice Chairman and Ben Bordelon will serve as Secretary and Treasurer. Jim Adams, who had been working in his interim position since August, was named as the association's President and CEO. Todd Hornbeck, CEO Hornbeck Offshore Operators, Inc.; Robert Clemons, Vice President and General Manager of the Americas Division SEACOR Marine, LLC; Ben Bordelon, Executive Vice President of Repair Bollinger Shipyards, Inc.

Ward Joins The McLean Group

The McLean Group middle market investment bank announced that Harry Ward has joined its team and will lead its Marine Transportation and Logistics practice. With a strong background in US and European marine equipment markets, Harry is well-positioned as a specialist in private maritime M&A transactions. Harry is a former US Navy helicopter pilot and is based in Norfolk, VA.

Wiernicki Tapped as Next ABS CEO

ABS President and COO Christopher J. Wiernicki will assume the duties of Chief Executive Officer of ABS following the classification society's annual meeting in April 2011. Robert D. Somerville, currently Chairman and CEO of ABS, will relinquish the CEO responsibilities while remaining Chairman of both ABS and the ABS Group of Companies. Wiernicki, a member of the Board of Directors of ABS, has been working closely with Somerville for the last four years in his position as President and COO. The role of CEO will be in addition to Wiernicki's existing responsibilities.

Commenting on the transition, Wiernicki noted that "The scope of classification services has expanded significantly over the last few years and it is clear that it will continue to change at an even more rapid pace. ABS is determined to be the leader in defining the role of class in this new environment. My primary focus will be to ensure that ABS is at the forefront when it comes to providing the innovative products and efficient services that will define ABS as the class society of the future." Wiernicki, a 17 year veteran of ABS has held a number of other senior positions within the organization including President and COO of ABS Europe Ltd, Chief Technology Officer and President and COO of ABS Group. He joined ABS in 1993 as Vice President of Engineering within the ABS Americas Division. Prior to ABS, Wiernicki was President and Chief Executive of Designers and Planners Inc., one of the leading naval architecture firms in the United States. Wiernicki holds a BS degree in Civil Engineering from Vanderbilt University and Masters' degrees in Structural Engineering from George Washington University and Ocean Engineering from Massachusetts Institute of Technology. Additionally, Wiernicki is a graduate of the Harvard Business School Advanced Management Program.

Halawi Appointed CEO of Thuraya

Thuraya Telecommunications Company, a mobile satellite communications company, appointed Samer Halawi as Chief Executive Officer. Halawi assumed the office on January 23, 2011 following the return of Yousuf Al Sayed to the Etisalat Group.

DePauw Promoted at GE Marine

GE Marine appointed David J. DePauw as Director, Sales and Business Development, for its aeroderivative marine gas turbine business. Most recently, DePauw was Services Director for GE Marine, helping build the marine services business for GE Aviation. Over a three-year period, he led the LM2500+G4 gas turbine development program that included three instrumented engine tests and sales in four target markets: oil and gas, power generation, marine propulsion, and service upgrades. In 2003, as the LM1600/LM2500 Product Line Manager, DePauw used engineering and business skills to lead an LM2500 gas turbine cross-functional business team.

Marine Travelift Promotes Johnson

Jason Johnson was promoted to North American Sales Manager for Marine Travelift, Inc. in Sturgeon Bay. Johnson will be responsible for business development and marine sales in the Americas for the Company. Johnson was hired by Marine Travelift in 2008 as a Sales Engineer. He holds a Bachelor of Science Degree in Marina Management from the Maine Maritime Academy, and serves on the IMI (International Marina Institute) Advisory Committee.

BV, Russian Register Sign Agreement

Bureau Veritas (BV) and Russian Maritime Register of Shipping (RS) signed a three-year co-operation agreement covering the development of joint guidelines for LNG carriers and Offshore Floating Production Units (FPUs). Under the agreement, common guidelines for LNG carriers, based on GAP analyses as well as the BV and RS rules and the IMO IGC Code, are expected to be published in first-quarter 2012. These will include the requirement for operating in Arctic areas. Work on producing common guidelines for FPUs, meanwhile, will start in third-quarter 2011. In addition to the parameters used for the LNG guidelines, these will include feedback gained from work undertaken in connection with a project involving the Shtokman natural gas field in the Russian sector of the Barents Sea, one of the largest in the world.

GAC Extends Network to Bahamas

Lars Heisselberg, Elbert, and Kumar Ganesan, Business Manager, Global Hub Services USA.

GAC strengthened its global shipping network with the signing of an alliance agreement with Bahamian agency Elnet Maritime Co. Ltd., to form GAC-Elnet, effective March 1, 2011. Elnet Maritime Co. Ltd. was founded by shipping veteran Elbert 'Ellie' Hepburn in 2008 after serving a variety of top managerial positions at agencies in Grand Bahamas. Since then, the company has provided effective and efficient first-class agency services to Principals with vessels calling at ports throughout The Bahamas.

Mace Joins Piracy Battle

To help combat piracy, Mace Personal Defense, Inc. a wholly owned subsidiary of Mace Security International, Inc., has formed an alliance with Shipboard Defense Systems, Inc. to develop **The Shipboard Defense System**, a defensive on-board system to repel pirates. The Shipboard Defense System is designed with 300 gallon pressurized tanks that include loop piping installed around a vessel allowing for 100 feet of defensive zones each. When activated, the system disperses a "RAINSTORM" Mace pepper spray.

RR Opens New Singapore HQ

Rolls-Royce opened its new Singapore headquarters office, located at Centennial Tower. The opening was attended by Singapore's Minister for Trade and Industry, Mr. Lim Hng Kiang, and Sir John Rose, Rolls-Royce, Chief Executive, along with senior representatives from customer and partner organisations, and UK and Singapore Government officials. "Singapore is an important center for the Group's operations, we have been active here for over 50 years and are committed for the long term," Rose said.

Measutronics to Open in Seattle

Measutronics opened a new office in Seattle. Headquartered in Lakeland, FL, Measutronics specializes in the integration and sales of positioning and sonar equipment for marine construction, hydrographic surveying, dredging, and structure monitoring.

Harley Expands Service

Harley Marine Services expanded its service to the American Gulf by acquiring the former MGI of Houston, Texas. This business will be operated under Harley Marine Gulf incorporating all of the quality and safety procedures established within the Harley Marine family of companies. Formed in 1976, MGI has eight boats on long term charter but operate twelve double hull barges in all. Four of the barges transfer product between terminals, and eight are bunker barges that work in the Houston, Galveston and Lake Charles areas with two stationed in New Orleans.

NOREQ, Fassmer Cooperate on Torpedo Lifeboat

Noreq AS, a Norwegian producer of maritime deck equipment and Germany's company Fr. Fassmer GmbH & Co agrees to further develop the Torpedo Free Fall lifeboat. Noreq has, since 2008 launched the Torpedo lifeboat as the evacuation method for the future for offshore use and it is fully equipped to meet the demands of tomorrow regarding rules and regulations for the North sea. The cooperation agreement with Fassmer is a confirmation of the interest the Torpedo lifeboat has drawn. In recent years the focus on the capabilities and features of free fall lifeboats offshore has drawn high attention. The Torpedo lifeboat is representing an alternative to ordinary free fall lifeboats. Its design and capabilities have been thoroughly tested at Marintek in Norway and key features such as directional stability and reduced stress on onboard personnel have been recognized as a safer and better alternative to traditional free fall systems.

www.noreq.no/eng/products/9/41/

ILS Launches ILSmart

ILS unveiled a new and improved version of its marine marketplace (ILSmart), designed to provide increased functionality and more business opportunities for its global customer base. "Since our company began, ILS has worked to develop the best forum possible for companies to buy and sell marine parts," said Don Wilson, Vice President of Sales at ILS, "and this new site will provide some much anticipated functionality that we believe will greatly benefit our customers."

ILSmart now allows users to search three unique data sets with one click, providing a consolidated view of all the relevant information pertaining to the item searched. The data sets include: the complete list of inventory on ILSmart, all suppliers listed in the marketplace, and all messages sent on the ILSmart worldwide system.

www.ILSmarine.com

PPG Receives Award

PPG Industries' protective and marine coatings (PMC) business has been selected as the recipient of The Society for Protective Coatings (SSPC) 2011 E. Crone Knoy Award. PPG PMC earned the recognition for the performance of its Amerlock 400 and Amercoat 450HS coatings at the Hoover Dam Bypass Bridge, also known as the Mike O'Callaghan-Pat Tillman Memorial Bridge. Pacific Southwest Coatings, Yorba Linda, Calif., and United/Anco Services, Joliet, Ill., also were honored for their work on the project.

The E. Crone Knoy Award is given annually by SSPC for outstanding achievement in commercial or industrial coatings work that demonstrates innovation, durability or utility. Qualities considered include excellence in craftmanship or execution of work and use of state-of-the-art techniques or products to creatively solve problems or provide long-term service.

Hatteland Appoints New Service Partner in Japan

Tamot Corporation has joined the Hatteland Display worldwide service network after signing a contract with the leading marine display and computer manufacturer on 2nd December 2010. The agreement will see the well established marine service company performing both warranty and non-warranty service for all Hatteland Display products in Japan.

www.hatteland-display.com

Resolve, T&T Bisso Form FiFi Coalition

Resolve Marine Group and T&T Bisso have announced their coalition for Marine Firefighting services in U.S. waters. This agreement combines both companies' extensive firefighting infrastructure to produce overlapping coverage and higher volume firefighting capacity throughout U.S. waters. This coalition was crafted specifically to help tank vessel operators fully comply with the latest Oil Pollution Act of 1990 regulations that will be effective on February 22, 2011.

"The new regulations required a substantial capital investment just to meet the minimum planning requirements," said Captain Farhat Imam, COO of Resolve. "Resolve talked with fellow American Salvage Association (ASA) member T&T Bisso and both agreed that meeting the minimum just wasn't enough. By combining and strategically locating our firefighting equipment – equipment owned and operated by T&T Bisso and RESOLVE -- we can assure tanker operators the best marine firefighting coverage in the U.S."

Mauricio Garrido, President of T&T Bisso, said "Shipboard fires don't occur that often, but when they do you must have the best gear and trained personnel available. The T&T Bisso and Resolve team achieves just that. The decision to pool resources was catalyzed by several tanker operators who opted to list both Resolve and T&T Bisso so as to ensure the best possible coverage and the reluctance of most public fire departments to support the tanker industry. We know that – together – T&T Bisso and Resolve have the most concrete and realistic coverage available."

Seaspan Back at the Helm

Chief Executive Officer, Jonathan Whitworth, announced that the company is returning to its roots with the implementation of a new brand name called Seaspan Marine Corporation. The former corporate identity of Washington Marine Group is now retired, and Seaspan Marine Corporation is taking the helm as the legal entity and parent company for both our marine transportation and shipyard divisions. "This is not so much a change as it is a revival of the existing Seaspan brand," said Jonathan. "Our group of companies have proudly served the BC coast for well over a century, and the Seaspan name has been deeply rooted in the fabric of this Province for over 40 years." Within the rebranding, Seaspan Coastal Intermodal Company's name has also changed to Seaspan Ferries Corporation. There is no legal name change to the three shipyard entities owned by the company.

GAC Norway Expands

Captain Bjørn Kongslie, Commercial Manager

GAC Norway is continuing its expansion with the opening of its newest office at the south-eastern port of Borg Havn, Fredrikstad. The shipping and logistics company was invited to set up a local base as part of plans to generate more traffic to the versatile multi-purpose port which handles all kinds of cargo and vessel calls, from chemical and containers to bulk loads and project shipments to and fro Norwegian industry. GAC Norway's Managing Director, Ahmet Özsoy, says the opening of the Borg Havn office is a natural extension of the company's strategic growth plan, which has recently seen other new bases opening in Sandnessjøen and Bergen.

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

AUTOMATION AND COMMUNICATION SYSTEMS

L-3 Maritime Systems, 9 Malcolm Hoyt Drive, Newburyport, MA 34232, USA

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

BOAT BUILDING AND DESIGN

Textron Systems, 1010 Gause Blvd., Slidell, LA , tel:985 661-3621, fax:985 661-3631, dmirelez@tmls.textron.com contact: Daniel Mirelez, www.textron.com

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

Washburn Doughty, P.O. Box 296, E. Boothbay, ME 04544, USA

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

BRAKE SYSTEMS

Hilliard Corporation, 100 West 4th Street Elmira, New York 14901-2148, NY , tel:607 733-7121, fax:607 732-8979, rdoud@hilliardcorp.com contact: Rob Doud, www,hilliardcorp.com

BRONZE VALVES

William E.Williams Valve, Inc., 3852 Review Avenue, L.I.C., NY , tel:718 392-1660, fax:718 729-5106, sales@williamsvalve.com contact: Kevin Cole, www.williamsvalve.com

CAD/CAM SYSTEMS

Autoship Systems Corp.,, 409 Granville Street Suite 1451, Vancouver, BC V6A 1E1, Canada

CENTRIFUGES

Westfalia Separator, Inc., 100 Fairway Ct., Northvale, NJ , tel:201 784-4395, fax:201 767-3416, Francis.Kennedy@geagroup.com contact: Frank Kennedy, www.wsus.com

CHAINS

Washington Chain & Supply, P.O. Box 3645, Seattle, WA 98124, USA

COATINGS/ CORROSION CONTROL/ PAINT

Eureka Chemical Company, 234 Lawrence Ave., South San Francisco, CA

COMMUNICATIONS SERVICE

Delta Wave Communications, Inc., 8001 Hwy 182 E. Morgan City, LA 70380, Morgan City

COMPOSITE SHAFTS

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

CONTROL SYSTEM-MONITORING/STEERING

Omega Engineering, One Omega Dr., Stamford, CT 06907, USA , tel:203 359-1660, fax:203 968-7192, kkwait@omega.com contact: Dan Jackson, www.omega.com

CORDAGE

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

Yale Cordage, 77 Industrial Park Road, Saco, ME , tel:207 282-3396, fax:207 282 4620, info@yalecordage.com contact: Dick Hildebrand, www.yalecordage.com

COUPLINGS

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

CRANKSHAFT REPAIR

In-Place Machining, 3811 N. Holton St., Milwaukee, WI 53212, USA

DECK MACHINERY- CARGO HANDLING EQUIPMENT

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

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

DIESEL ENGINE- SPARE PARTS & REPAIR

Goltens Worldwide, PO Box 1176, Marion, MA , tel:508 728-3128, fax:508 536 6025

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

DOOR LOCKS

The Brass Works Inc., P.O. Box 566, Deland, FL , tel:386-943-8857, fax:386-943-8810, info@marinedoorandcabinethardward.com

DOORS- MARINE & INDUSTRIAL

Advanced Structures Corporation, 235 W. Industry Court, Deer Park, NY , tel:631 667-5000, fax:631 667-5015, advstrcorp@aol.com contact: Paul Eisenberg, www.AdvancedStructuresCorp.com

Walz & Krenzer, Inc, 91 Willenbrook Rd.Unit B4, Oxford, CT , tel:203 267-5712, fax:203 267-5716, sales@wkdoors.com contact: Melissa Shepstone, www.wkdoors.com

DRIVES

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

ELECTRIC PROPULSION

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

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

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

Mackay Marine, 921 Seaco Avenue, Deer Park, TX 27616-1851, USA , tel:281 478-6245

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

EPC CONTRACTORS AND ENGINEERING

Waller Marine, 14410 W.Sylvanfield Houston, Texas 77014 , tel:281 444 9650

EPIRB

Whiffletree Corporation Inc., PO Box 27, Bridgton, ME , tel:207 647-3300, fax:207 647-3700, glcl@bellatlantic.net

FENDERING SYSTEMS/ BUOYS - DOCK & VESSEL

Schuyler Rubber Co., 16901 Woodred Rd.NE, Woodinville, WA 98072, USA , tel:425 488-2255, fax:425 488-2424, Greg@schuylerrubber.com contact: Greg Armfield, www.schuylerrubber.com

FILTRATION

Boll Filter, 9822 General Drive. Ste. 180, Plymouth, MI 48170, USA , tel:734 451-4680, fax:734 451-4681, Latorre@bollfilterusa.com contact: Michele Latorre, www.bollfilterusa.com

FURNITURE

Wright Computer Products Inc., PO Box 565, Woodbury, NJ

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

Maritime Associates International, 3832-010 Baymeadows Rd. #407, Jacksonville, FL 32217, USA

US Outfitters, 10752 Deerwood Park Boulevard South Waterview II Suite 100 Jacksonville, FL 32256, Jacksonville, FL

GANGWAYS

Ravens Marine, 3295 South Orange Avenue Kissimmee, FL 34744, FL , tel:407-935-9799, fax:(407) 935-9436, matt@ravensmarine.com

GOVERNORS

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

GYROCOMPASS

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

HATCHES & DOORS

Maritime Associates International, 3832-010 Baymeadows Rd. #407, Jacksonville, FL 32217, USA

US Outfitters, 10752 Deerwood Park Boulevard South Waterview II Suite 100 Jacksonville, FL 32256, Jacksonville, FL

HORNS/WHISTLES

Kahlenberg Brothers Co., P.O. Box 358, Two Rivers, WI 54241, USA , tel:920-793-4507, fax:920-793-1346, EKahlen@Kahlenberg.com contact: Erick Kahlenberg, www.Kahlenberg.com

HVAC

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

HYDRAULIC MANUFACTURING AND SALES

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

INSURANCE SERVICES

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

INTEGRATED BRIDGE SYSTEMS

L-3 Maritime Systems, 9 Malcolm Hoyt Drive, Newburyport, MA 34232, USA , tel:978 462-2400, fax:978 462-4497, Jon.Miller@L-3com.com contact: Jon Miller, www.L-3com.com/MPS

INTERIORS

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

Maritime Associates International, 3832-010 Baymeadows Rd. #407, Jacksonville, FL 32217, USA

Thermax Marine-Panel Specialists, Inc., 3115 Range Rd., Temple, TX 76501, USA , tel:813 340-3940, fax:813 264-2507, thermax@panelspec.com contact: John Hutchinson, www.thermaxmarine.com

US Outfitters, 10752 Deerwood Park Boulevard South Waterview II Suite 100 Jacksonville, FL 32256, Jacksonville, FL

JOINER PANELS/FURNITURE

Maritime Associates International, 3832-010 Baymeadows Rd. #407, Jacksonville, FL 32217, USA

US Outfitters, 10752 Deerwood Park Boulevard South Waterview II Suite 100 Jacksonville, FL 32256, Jacksonville, FL

LIFEBOATS/RAFTS

DBC Marine Safety Systems, 101-3760 Jacombs Rd., Richmond, BC V6V 6T3, Canada

LIFESAVING EQUIPMENT

C.M. Hammar AB, August Barks Gatan 15, 421 32 Vastra Frolunda , Sweden

LIGHTING SYSTEMS/ EQUIPMENT

Maritime Associates, P.O. BOX 1788, Crystal Bay, NV 89402, USA

LUBRICANTS

Kobelco Eagle Marine, Inc., 366 Fifth Avenue, Suite 712, NY, NY 10017, USA

Varna Products, 4305 Business Drive Cameron Park, CA 95682 , tel:530-676-7770, fax:530-676-7798, tmcachran@VARNAproducts.com

MARINE & OFFSHORE SIGNAGE

Maritime Associates, P.O. BOX 1788, Crystal Bay, NV 89402, USA

MARINE FLOORING & ACCESSORIES (IMO CERTIFIED)

Tuflex Rubber Products, LLC Marine Division, 1101 Channelside Drive Suite 244, Tampa, FL , tel:1 800-770-6008, fax:813 875-2312, marine@tuflex.com contact: Kristy Nash, www.tuflex.com

METEOROLOGICAL INSTRUMENTS

R. M. Young Company, 2801 Aero Park Drive, Traverse City, MI , tel:231-946-3980, fax:231-946-4772, vsherman@youngusa.com

NAV/COMM EQUIPMENT

Marlink, P.O. Box 433, Lysaker , tel:+32 70 233 220, fax:+32 2 332 3327, customer.service@marlink.com

NAVAL ARCHITECTS, MARINE ENGINEERS

JMS Naval Architects & Salvage Engineers, 34 WATER STREET MYSTIC, CT 06355 06340, USA

NAVIGATION

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

PARTS LOCATOR SERVICE

Inventory Locator Service, 8001 Centerview Parkway Suite 400, Memphis, TN 38018, USA

PARTS/SERVICE AND REPAIR

Westfalia Separator, Inc., 100 Fairway Court, Northvale, NJ 07647, USA , tel:(201) 784-4335, fax:(201) 784-4399, Klaus.Brinkrode@geagroup.com contact: Klaus Brinkrode, www.wsus.com

PIPE FITTINGS/CUTTINGS/CONNECTING/ SYSTEMS

Tube-Mac Industries Ltd., 853 Arvin Avenue Stoney Creek, Ontario Canada L8E 5N8

PROPELLERS

Kahlenberg Brothers Co., P.O. Box 358, Two Rivers, WI 54241, USA , tel:920-793-4507, fax:920-793-1346, EKahlen@Kahlenberg.com contact: Erick Kahlenberg, www.Kahlenberg.com

PROPULSION EQUIPMENT

Ultra Dynamics, Inc., 1110A Claycraft Rd., Columbus, OH

VOLVO PENTA OF THE AMERICAS INC, 1300 Volvo Penta Drive, Chesapeake, VA

PROPULSION EQUIPMENT AND SERVICES

Motor-Services Hugo Stamp, 3190 SW 4th Avenue, Ft. Lauderdale, FL 33315, USA

Sound Propeller Systems, LLC, 9130 15th Pl.S Suite A, Seattle, WA , tel:206 392-0021, fax:206 392-0026, nhansen@soundpropsys.com contact: Norm Hansen, www.soundpropellersystems.com

PROPULSION ORDER TELEGRAPHS

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

RIGID INFLATABLE BOATS

Pennel & Flipo Inc., P.O. Box 1695 Mount Pleasant, SC 29465 , tel:843-270-4191, fax:843-883-3000, orca@pennelusa.com

Wing Inflatables, P.O. Box 279, 1132 Samoa Blvd., Arcata, CA 99521, USA

RUST AND PAINT REMOVAL

Dalseide, 2901 WEST SAM HOUSTON PKWY, NORTH SUITE E-325, HOUSTON, TX , Norway

Rustibus, 2901 WEST SAM HOUSTON PKWY, NORTH SUITE E-325, HOUSTON, TX

SATELLITE COMMUNICATIONS

Delta Wave Communications, Inc., 8001 Hwy 182 E. Morgan City, LA 70380, Morgan City

Intellian Technologies, 9261 Irvine Blvd., Irvine, CA , tel:949 916-4411, fax:949 271-4183, sales@intelliantech.com contact: John Minetola, www,intelliantech.com

SEALS

Kobelco Eagle Marine, Inc., 366 Fifth Avenue, Suite 712, NY, NY 10017, USA , tel:212-967-5575, fax:212-967-6966, hawkins@kobelco-eagle.com contact: David Hawkins, www.kobelco-eagle.com

SEATING

H.O. Bostrom, 818 Progress Ave., Waukesha, WI 53186, USA , tel:262.542.0222, fax:262.542.3784, sales@hobostrom.com contact: Mike Oemichen, www.hobostrom.com

SHAFT HORSEPOWER SYSTEMS

Hillhouse Industrial Marine, 296 Knox Mountain Road, Sanbornton, NH , tel:603 566-4330, fax:603 934 5388

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

SHIPBOARD SURGE SUPPRESSORS

Wright Computer Products Inc., PO Box 565, Woodbury, NJ , tel:856 845 6767, fax:856 384 1145, wcpinc@verizon.net contact: David Wright Sr., www.wcp-usa.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

STORAGE BUILDINGS

ClearSpan Fabric Structures, 1395 John Fitch Blvd. South Windsor, CT 06074 , tel:860-528-1119, fax:860-289-4711, damende@farmtek.com

SURFACE PREP TOOLS

Aurand Mfg., 1210 Ellis St., Cincinnati, OH 45223, USA

Dalseide, 2901 WEST SAM HOUSTON PKWY, NORTH SUITE E-325, HOUSTON, TX , Norway

TANK GAUGING AND SENSORS

Electronic Marine Systems, 800 Ferndale Pl., Rahway, NJ 07065, USA , tel:631 928-5015, fax:732 388-5111, jferencz@emsmarcon.net contact: Joe Ferencz, www.emsmarcon.com

TANK LEVELING INDICATORS

King Engineering Co, PO Box 1228, Ann Arbor, MI 48106, USA

Technical Marine Service,Inc., 6040 North Cutter Circle, Suite 302, Portland, OR 97217-3956, USA , tel:503-285-8947, fax:503-285-1379, SBrox@tms-usa,com contact: Steve Brox, www.Levelcom.net

VALVES

Leslie Controls, 12501 Telecom Dr., Tampa, FL 33637, USA

WASTE WATER TREATMENT

Enwa Water Treatment AS, PB 257 Forus 4066, Stavanger

WATERMAKERS

Reverse Osmosis of SF, Inc., 2860 W.State Road 84, Suite 108, Fort Lauderdale, FL 3331633312, USA , tel:888-768-2993, Info@Reverse-Osmosis.net

WINCHES & FAIRLEADS

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

Markey Machinery, P.O. Box 24788, Seattle, WA 98124, USA

Skookum, P.O. Box 280, Hubbard, OR 97032, USA

Employment/Recruitment • wwwMaritimeJobs.com

Ship Fitters and Combo Welders
Job Location: USA, Tacoma, WA

Vigor Marine is one of seven companies in the Vigor Industrial family. We are a fast paced, highly successful ship repair company. Our creative, flexible style allows for individual solutions to unique customer needs. We are equally comfortable responding to an emergency repair job as we are executing a multi-year maintenance agreement. With West Coast-wide operations, Vigor Marine's projects range from voyage repair to complex dry-dockings.

Vigor Industrial LLC is a thriving West Coast provider of innovative industrial services with services that range from ship repair to specialty coatings to water treatment. Our dynamic operations are united by a focus on quality craftsmanship, respect for each individual, and dedication to the task at hand. Vigor Industrial is committed to working in a safe and environmentally-responsible manner. Vigor facilities are located in Everett, Bremerton, Tacoma and Port Angeles, WA; Portland, OR; and Alameda and San Diego, CA.

We are looking for Ship Fitters and Combo Welders at our Tacoma, WA yard:

(Must have the ability to perform the essential job duties with or without reasonable accommodation and without posing a direct threat to safety or health of employee or others.)

•Complies with craft and shipyard safety and environmental measures

•Performs maintenance, pre-testing, and repair to ensure the structural integrity

•Responsible for basic layout of new or old parts to accomplish fitting task according to marine standards

•Performs welding, scrapping, burning and grinding as required

•Performs, bull rigging as required

•Basic knowledge of testing a tank.

•Ability to do general cutting, scrapping, burning, and cleanup.

•Carbon arc gouging for cleanup and weld preparation

•Wire welding - certifiable in 11018 and/or dual shield (will be tested prior to job offer)

•Ability to read blueprints and/or sketches, recognizing welding symbols.

•Ability to multiply fractions and decimals as required for use in metric and decimal conversions and measurements.

•Ability to communicate effectively as required for the position

Minimum Work Environment Requirements:

•Wear Personal Protective Equipment (PPE) appropriate to current or daily job duties

•Be fit for a respirator

•Carry up to 65 pounds continually, and up to 75 pounds occasionally

•Constantly climb stairs and ladders, up to 200 rungs/steps per hour

•Performs sustained work at various heights, including, but not limited to 100 feet

•Access confined spaces

•Work from one position, seated for 45 minutes, or standing for 2 hours at a time

•Walk to, from and between assigned work areas through out scheduled shift

•Bend, twist, kneel, and reach constantly

•Endure noise, fumes, dust and inclement weather

•Work overtime as needed to meet production demands

Excellent Union Wages and Benefits. You do not need to be a member of the Boilermaker Union to apply, but if you are hired you will have 30 days to join.

Request an Application:

Call the Job Hotline application – 877-778-6729 and follow the instructions

Email – Recruiter@VigorMarine.com and follow the return instructions

We welcome qualified applicants from diverse backgrounds.

Vigor Marine is an affirmative action employer and drug free work environment.

We are not able to offer sponsorship for this position.

*Vigor - Definition

vig•or (v gg?r)

•vitality: great physical or mental strength and energy

•intensity: intensity or forcefulness in the way something is done

•ability to grow: the ability to survive, grow, and thrive

synonyms: stamina, staying power, strength

Human Resources

Vigor Marine LLC

Employment/Recruitment • wwwMaritimeJobs.com

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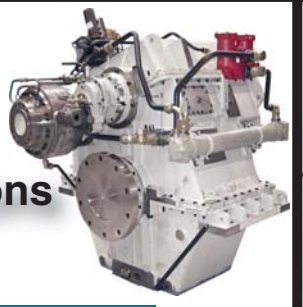

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