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April 2015

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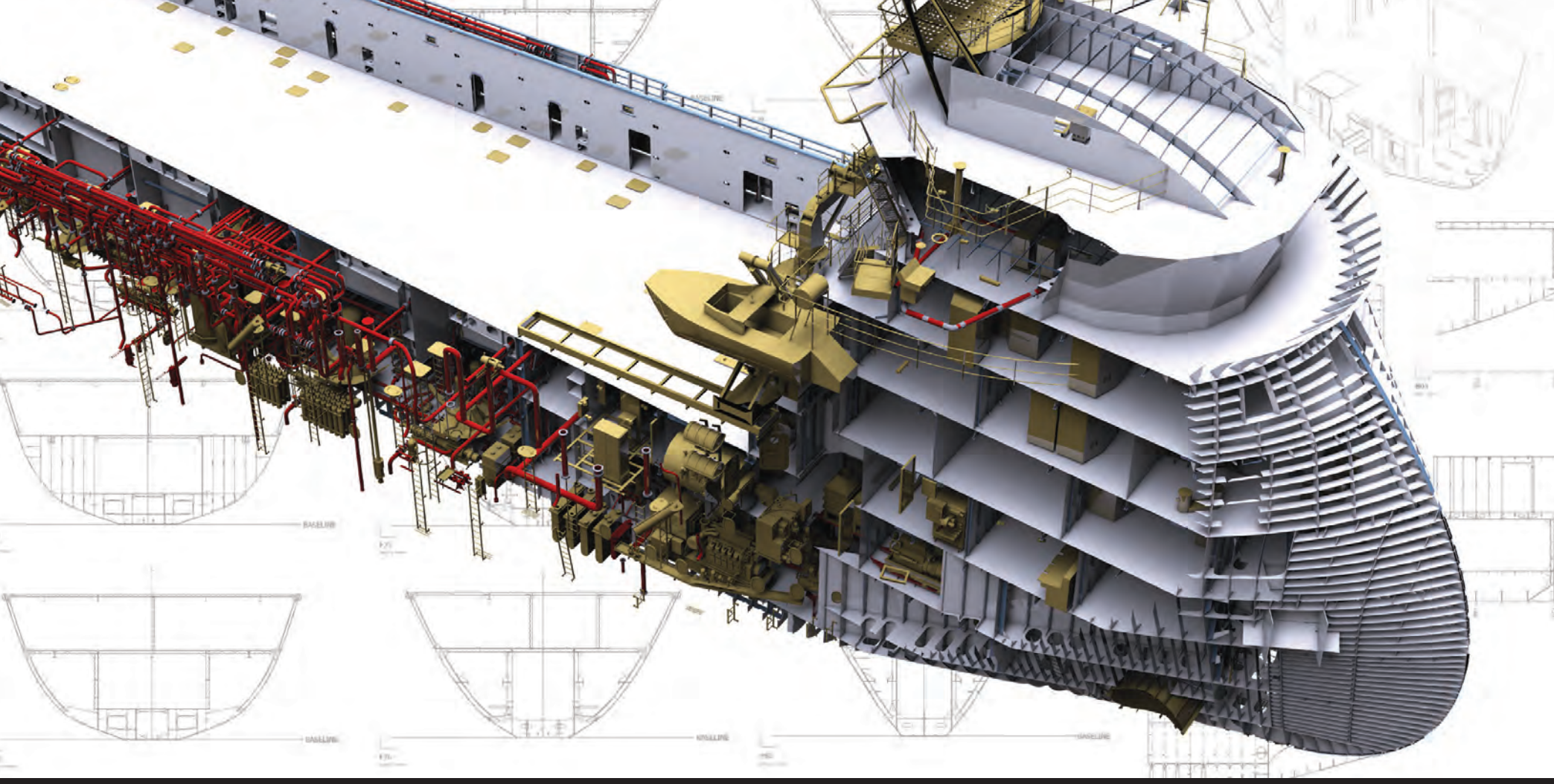
Japan Offshore Technology



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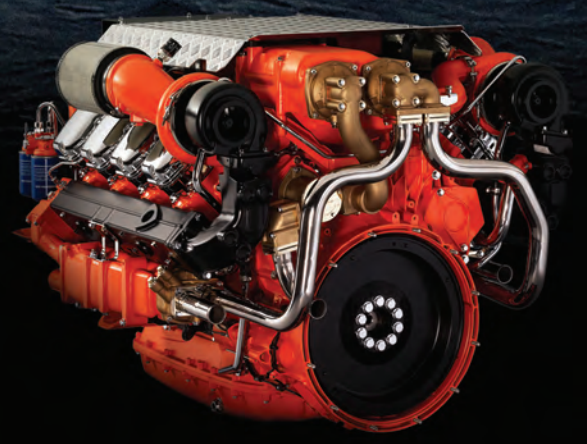

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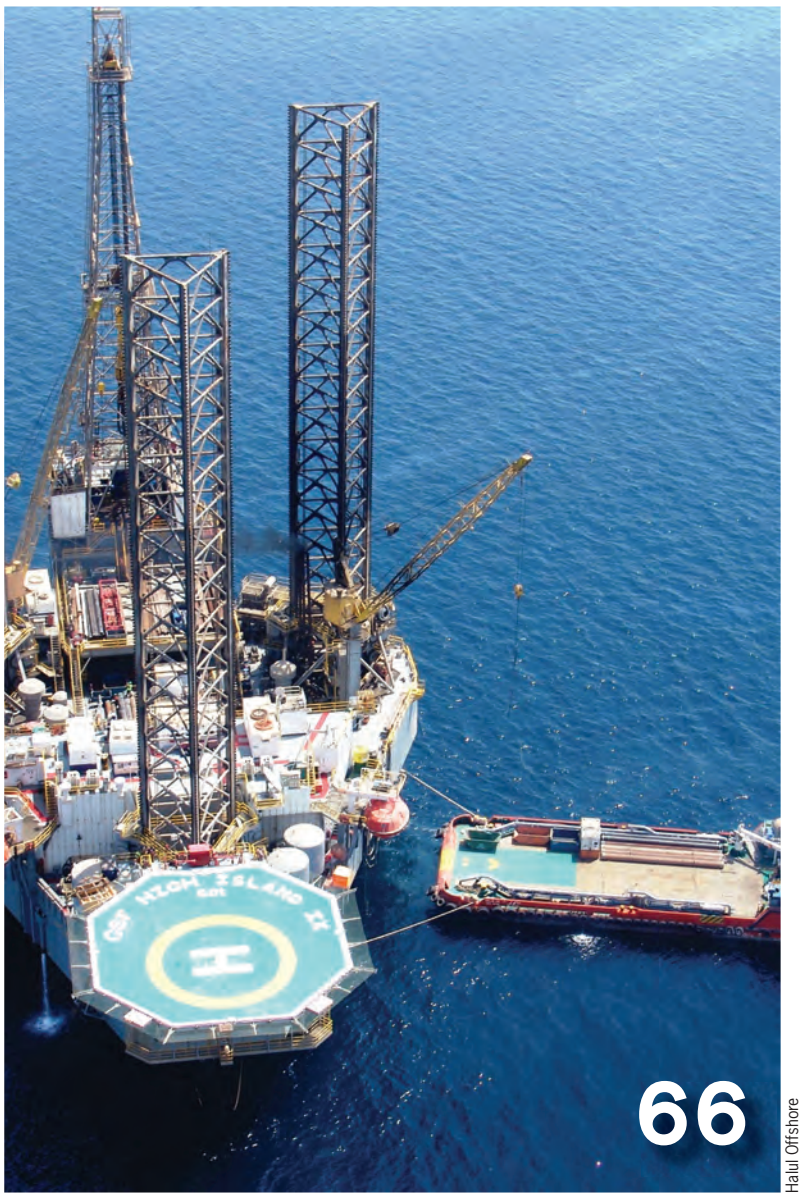

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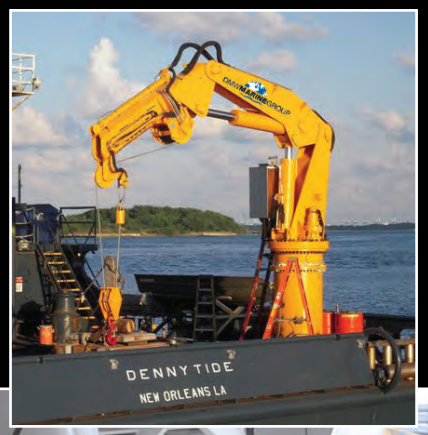

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Contents

THE COVER

Edda Fortis is certainly not 'your father's' offshore living accommodation. This month Captain Petter Sundet of Edda Fortis takes MR through the creation and operation of the new era in offshore living. Turn to page 34.

Cover Image: Edda Accommodation.

Photo: Tidewater, Inc.

44

What Now?

With energy prices depressed and oil majors pushing for major price concessions from suppliers, MR explores strategies to survive the downturn and emerge stronger when the market inevitably rebounds.

By Patricia Keefe

MarAd

Bordelon Marine

ABB

51

SPECIAL ADVERTISING SECTION

JAPAN OFFSHORE TECHNOLOGY

Explore the diversity and range of Japanese technology available to the Offshore industry, in this edition an at the Offshore Technology Conference in Houston, May 4-7, 2015.

MARITIME REPORTER AND ENGINEERING NEWS

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... time to hit "Reset" ...

GREG TRAUTHWEIN, EDITOR & ASSOCIATE PUBLISHER

Sometimes I surprise myself. As we assembled the features for this month's "Offshore Annual," I must admit that some of the stories were downright depressing, no pun intended. The price per barrel of oil is starting to have a deep impact on all matters offshore and some maritime. More quickly than the energy market rose, it has flamed out in a spectacular fashion, crashing from per barrel prices of about $115 a year ago to just more than $50 today. Before I write this page I always find it interesting to look back to the same edition one year ago, and in this particular case I expected to see the word "Boom" prominently mentioned time and again. To my surprise, the tone was a bit more subdued, warning of "strong headwinds" and "rapidly rising costs" in the offshore sector as cautionary notes.

April 2014 seems a virtual lifetime ago, and today the maritime and offshore industries digest, try to make sense of, and plan for an uncertain future premised on unnaturally low oil prices. It is times such as these that I lean back on an interview I had several years ago with Joe Pyne of Kirby Corp., who said "I've always been somewhat of a contrarian: when business gets really good I get nervous and when it gets really bad I get excited!"

While it might seem a bit ludicrous to be excited in the current energy market, it has been proven time and again that downturns create opportunities, and strong companies with rational strategies and a long-term views will generally withstand the storm and emerge stronger.

Patricia Keefe examines the offshore energy market for us this month starting on page 44, and one of the companies heavily quoted, Tidewater Inc., fits the previous description. I must admit that I was a little surprised to read Joseph Bennett of Tidewater's description of the price collapse as a "Left hook out of nowhere." But then again, companies like Tidewater have weathered their fair share of 'left hooks' and stood tall afterward.

This is not to say there will not be some pain in the coming months. The oil majors are quick to the punch as well and are reportedly asking their suppliers, large and small, near and far, for a 30 percent reduction in pricing ... as a starter. But as sure as the price went down, it will rise again ... it always does.

As Mark Charman, CEO of global recruitment firm Faststream told us "the winners will see (this) as an opportunity to pick up the people who they couldn't find easily during the up market. As sure as apples are apples, this marketplace will come back."

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Reaching for Relevance

Joseph Keefe is the lead commentator of MaritimeProfessional.com.

Recently U.S. Maritime Administrator Paul Jaenichen made the annual trudge to the Hill to present his case for an operating budget in the coming fiscal year. At the same time, it is important to note that the President's Fiscal year 2016 Budget for the Department of Transportation (DOT) proposes a total of $94.7 billion across all modes. Marad's portion of the FY 2016 Budget Request is just $406.8 million, or less than one half of one percent of that total. Notwithstanding those who would question if Marad should get ANY of those funds, it is also telling that the needs of an island nation and its waterfront infrastructure merit so little consideration.

Sure, infrastructure funding comes from a lot of sources, and Marad has little to do with any of it, but the paucity of money allocated to America's maritime cheerleaders shows exactly where this country views the importance of maritime commerce. Marad is also the only modal arm of the U.S. DOT that has virtually no regulatory teeth. They advocate for a lot of things and get tasked with things like making sure the lights stay on at the U.S. Merchant Marine Academy.

Marad by the Numbers

For FY 2016, Marad asked for $186 million for the Maritime Security Fleet (MSP) – you know; the collection of 60 foreign-built, flagged-in vessels that we can theoretically depend on in times of crisis?

Jaenichen says in his written statement that funding provided by a reimbursable agreement from DOD allows MARAD to continue to provide ready surge sealift support in FY 2016 in the areas of activating, operating, deactivating and special mission requirements for RRF vessels and maintaining MARAD's NDRF fleet sites.

The President's FY 2016 Budget Request includes $25 million as a component of Food Aid reforms proposed for P.L. 480 Title II food aid that would provide flexibility to deliver emergency food where appropriate such as in conflict situations and logistically difficult crises.

Marad's budget also asks for $96 million for USMMA. Of this, $71.3 million will support Academy operations and $24.7 million will fund major capital improvements and repairs to the Academy's physical campus. Anyone who has visited the Kings Point campus in the last couple of years knows they desperately need that money. Money, as it turns out, may actually be the least of the Merchant Marine Academy's problems.

Kings Point Questions

As I was penning this column this week, I was contacted by a Kings Point graduate who brought my attention to the following information (that is also posted on the Kings Point alumni web site: http://www.usmmaaf.com):

According to the Kings Point posting, the Merchant Marine Academy may lose its highly respected Academic Dean, Dr. Shashi Kumar, who holds a Ph.D. in Maritime Economics, is a Master Mariner and a Fulbright Senior Specialist and has stepped up to serve as interim Superintendent three separate times. As a recognized maritime policy expert, he writes the "U.S. Merchant Marine and World Maritime Review" published annually in the Naval Institute Proceedings magazine. A recent article in the Charleston, South Carolina, Business Journal reported that Dean Kumar is one of three finalists for the position of Provost at The Citadel military college. He was selected from a field of over 130 qualified candidates.

The Web site also lists other high level departures from USMMA, and further claims:

- Commandant will be leaving March 6, 2015 after beginning his job search at least a year ago.
- Athletic Director stepped down in March 2014 and only now is that position being filled.
- Waterfront Director vacated his position in February 2014. His position remains unfilled.
- The Sexual Assault and Response Coordinator (SARC) left last spring and was not replaced for six months resulting in a deficiency in a recent Inspector General Audit.
- Four vacancies in Admissions include the Assistant Director of Admissions, who left last summer, and the Diversity Recruiter position, vacated in July, 2014 as well as the Admissions Officer, who left in 2013. The class of 2019 will be the first plebe class in memory to have no foreign students because the Admissions Department is functioning at 50% staffing.
- Tactical Officer, Regimental Logistics Officer and Student Activities Director vacancies exist in the Commandant's Division.
- External Affairs Director and assistant in Administration have been vacant since 2013.
- There are currently seven vacancies in the academic departments, some of which have been vacant for six months or longer.

The departure of Dean Kumar would leave the Academy in an unusual position, as Kumar is the only mariner at the senior administrative level. Unlike the other Service Academies who have administrations comprised almost entirely of graduates who are experts in the mission of those Academies, USMMA has only Kumar. This means that the nation's only federal Merchant Marine Academy, whose mission is to educate and develop the next generation of maritime professionals, will be fully under the leadership and guidance of non-mariners.

The Kings Point alumni web site encourages qualified Kings Pointers to apply for these jobs. And, no wonder. With no commercial mariners (if the Dean leaves) left in senior management positions, one has to wonder what Marad really has in store for the academy. And, the messy demise of GMATS – the well regarded not-for-profit continuing education program that was axed by Marad (along with several superintendents along the way) – certainly doesn't bode well for what may come next. Stay tuned.

State Maritime Academies

Where the budget also gets interesting is the request for $34.6 million for the State Maritime Academies. The plea includes $5 million for what Jaenichen characterizes as National Security Multi-Mission Vessel (NSMV) planning and design to support the replacement of the 53-year-old training vessel EMPIRE STATE and $22 million to fund maintenance and repair costs for federally owned training ships on loan from MARAD to the academies. In a nutshell, Jaenichen is reviving a long talked about (but never funded) effort to have the fed-

Photo: MarAd

Women on the Water Conference, at USMMA: Maritime Administrator (center) with Rear Admiral Sue L. Dunlap, Deputy Superintendent, Rear Admiral James A. Helis, Superintendent and a group of USMMA midshipmen.

eral government eventually underwrite a built-for-purpose training ship – perhaps even a series fleet – for the state maritime academies. Naturally, the state maritime academies are thrilled at the prospect of such a process. ADM Richard Gurnon, President of the Massachusetts Maritime Academy, has vocally championed that approach for years.

Some stakeholders, however, question the direction of such an effort. On paper, it – the training ship – is a great idea, but the concept has always been dead on arrival in Washington. And, Jaenichen himself told this writer last week that the cost of such a vessel would probably come in somewhere between $100 and $200 million. And, in an atmosphere where we can't even get a desperately needed Coast Guard icebreaker built, what hope do we have for building merchant training vessel for a country who thinks that Marad deserves less than one-half of one percent of the DOT's operating budget. I'm just sayin' …

Beyond the funding, fundamental questions should also be asked about what form a new training platform should take. Maybe that's what the $5 million is for. It is no secret that the nation's merchant marine is a radically different animal today than it was fifty years ago. Back then, a reasonably robust blue water fleet was the centerpiece of the country's merchant marine. Today, as many as 39,500 of our +/- 40,000 hull merchant fleet can be classified as brown water, workboat and/or inland vessels. Hence, building a 600' training ship to educate mariners who, down the road, will likely be driving DP capable, azimuthing-propelled vessels in close proximity to land or on inland waters may or may not represent the best bang for the buck. That said, the academies deserve to be supported, Fort Schuyler needs a ship, and I applaud Jaenichen for showing the leadership to advocate for such an effort. The Title XI Maritime Guaranteed Loan Program also got some love on the Hill. Noting the current portfolio of $1.5 billion in Title XI outstanding loan guarantees and 38 individual loan guarantee contracts, representing 21 companies covering approximately 250 vessels, Jaenichen asked for $3.1 million for administration of the loan portfolio and to process new loan applications. Jaenichen says that the balance for new loan applicants is $42 million and that this could support approximately $454 million in shipyard projects. Fair enough. The FY 2016 Budget Request for the Ship Disposal Program was set at $5 million, amidst lingering questions as to how well the program is being carried out. At least one contractor is upset that they have missed out on scrapping business despite making the highest bid on one contract, something that saw the government in theory leave as much as $400,000 on the table when it awarded the contract to the next lowest bidder. Marad still hasn't fully answered for that decision, although Jaenichen promised the subcommittee members that he would respond, post-hearing.

Beyond the administration of the disposal contracts themselves, funds earned from this program are stipulated for various purposes, including the state maritime schools, who are supposed to see 25 percent of the approximate $75 million taken in over the course of the past ten years.

But, the six state academies have reportedly received less than half of that money. That has left some parents of cadets and academy administrators steaming mad.

Bottom Line

Without a doubt, Maritime Administrator Jaenichen stepped into a tough situation at Marad when he took the reins. Many of the issues that permeate the agency's problematic portfolio predate his arrival by many years, and the vast majority of these challenges won't be solved overnight.

Reportedly, when DOT set about naming a new maritime administrator, the number one qualification for the position was said to be the need for a "strong leader." Well, they got one.

Because of it, morale is said to be up at the agency and Jaenichen, a former U.S. naval officer, has rolled up his sleeves and become immersed in the business of the commercial waterfront.

All of that, however, isn't nearly enough.

Questions remain about Marad's ability to be a good steward of the funding entrusted to it. And the money is only one part of the problem. Until we as a nation start to take the waterfront and its infrastructure seriously, Marad's perceived relevance will continue to mirror its slice of the DOT funding pie. And, that ain't much.

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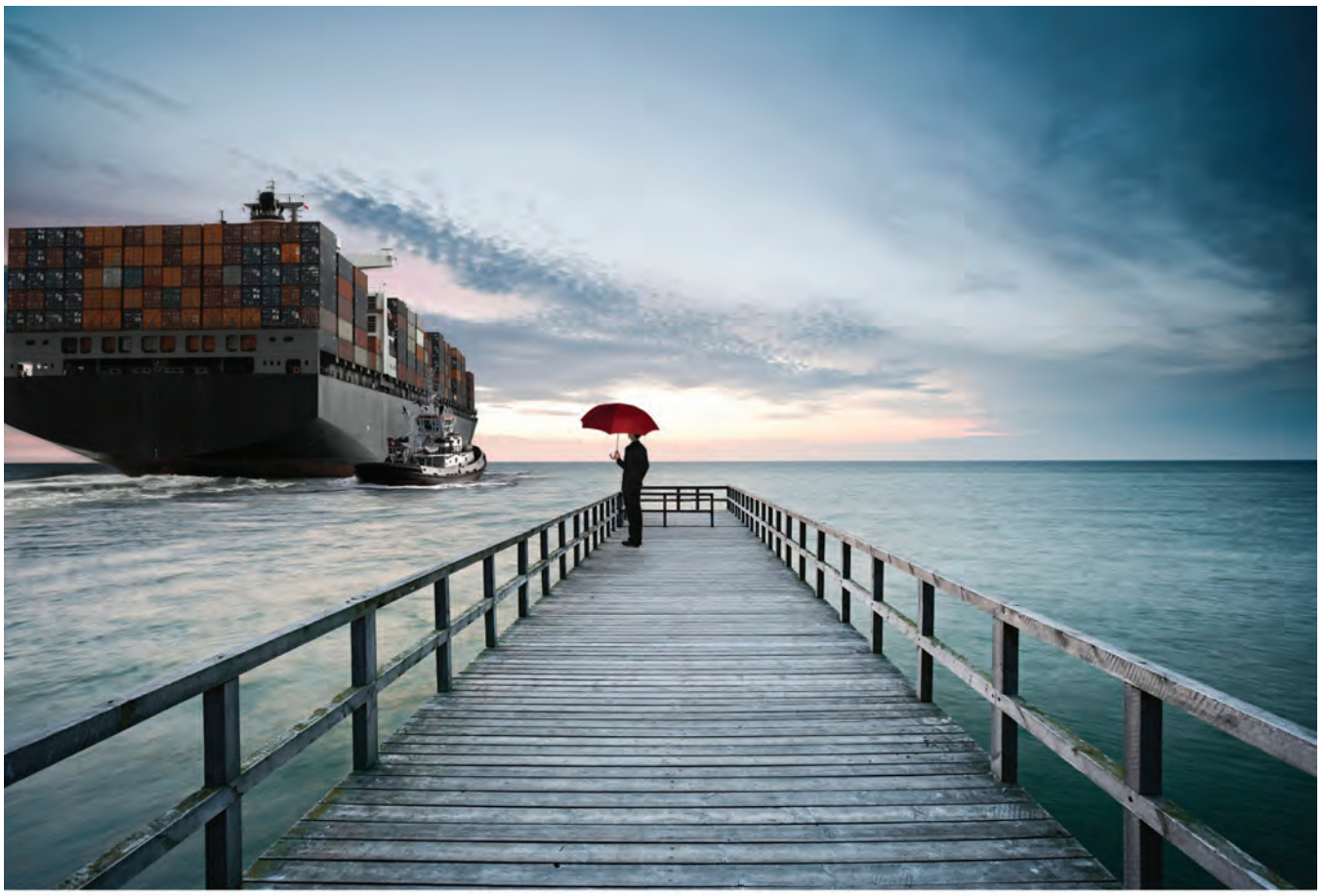

Photo by James Morgan, © P&O Cruises

Her Majesty The Queen officially named P&O Cruises new flagship Britannia.

P&O Cruises UK's Britannia, the biggest ship designed exclusively for Britain, was christened in official naming ceremony last month. Carnival Corporation & plc launched the ship in Southampton, England, to commemorate its entry into service for the P&O Cruises fleet. Christening the ship was Her Majesty The Queen, accompanied by His Royal Highness The Duke of Edinburgh. Britannia is the first of two new ships joining Carnival Corporation's fleet in 2015, joined later this year by AIDA's new flagship vessel, AIDAprima.

The 3,657-passenger Britannia will embark on her maiden voyage to the Mediterranean and during her maiden season will also sail to the Norwegian Fjords, Canary Islands and the Baltic Sea, as well as offering a range of short breaks and a special "round-Britain" cruise. The 143,000-ton ship will then transfer to the Caribbean for the winter season.

"These amazing new ships are part of our fleet enhancement strategy that will see 10 new ships join our fleet in the next three years," said Arnold Donald, President & CEO, Carnival Corporation.

Carnival to Add 9 Ships

Carnival Corporation entered into partnerships to add nine cruise ships to its fleet over a four-year period starting in 2019 through 2022; shipbuilders Fincantieri and Meyer Werft will each build next-generation cruise ships for Carnival Corporation through two separate, long-term partnerships. The agreement includes options for additional ship builds in the coming years, and are subject to several conditions. The new ships are expected to serve established cruise markets in North America and Europe, as well as newer markets, including China. Fincantieri will develop and build five ships at its shipyards in Monfalcone and Marghera, Italy. Meyer Werft will build its four ships at its shipyards in Papenburg, Germany, and Turku, Finland.

They said it ...

"While the dry cargo market was depressed in most of 2014, the year ended with sharply increasing rates in the tanker market, and our tanker department generated the best results since 2008. The strong tanker market has continued into 2015."

Klaus Nyborg, interim CEO at Dampskibsselskabet NORDEN A/S

"No one saw this [price collapse] coming. **It was like a left hook out of nowhere."**

Joseph Bennett, EVP and Chief Investor Relations Officer, Tidewater, Inc., on rapid decline in oil pricing from mid-2014 to today.

(See story page 44)

Halul Offshore

"We need to make sure the technology we adopt is reliable and that does not necessarily mean having the most sophisticated technology."

Vivek Seth, CEO, Halul Offshore Services

(See story page 66)

"People keep losing sight of the fact that about 90 percent of all goods are transported by sea – but only 4 percent of the emissions are related to vessels. However, ships must fulfill the strictest rules. I think this is completely incomprehensible."

Alfred Hartmann, ship owner and new President of the Association of German Shipowners (VDR).

(See story page 82)

Risk & Reputation in the age of Disruption

BY CAPTAIN
ANDREW KINSEY

Risks faced by today's global businesses represent a combination of traditional concerns and newer threats that reflect changing times. The 2015 Allianz Risk Barometer, a survey of more than 500 corporate insurance experts and risk managers from 47 countries, revealed that issues related to business interruption and supply chain risk, natural catastrophes, and fire and explosion continue to top annual rankings. However, cyber risks, which include cyber crime, IT failures, espionage and data breaches, along with political risks were the most significant movers.

Each of these risks, along with others, has direct relevance for the workboat industry and those for whom international transport is a critical aspect of operations. By understanding and addressing these risks, vessel operators can identify specific risk mitigation practices that can help them operate more safely and efficiently, thus reducing their losses.

Increasingly Congested Ports

One of the most significant threats to business disruption is port congestion, which has worsened noticeably in recent years. In fact, it's become such a widely recognized concern that the Federal Maritime Commission has made it the top priority for 2015.

Port congestion can arise from a number of factors, both natural and manmade. Labor strikes or slowdowns, which are most common during times of labor negotiations, can play havoc with shipping schedules. Disruptions normally take the form of sporadic work slowdowns, with no discernible pattern.

A full-on strike can cause massive disruption. For example, a threatened strike of 29 West Coast ports would affect an estimated 12.5 percent of the nation's gross domestic product according to the Pacific Maritime Association.

Natural events, such as heavy weather, can also create choked ports. While port congestion caused by inclement weather can be anticipated in certain locations at certain times of year, other occurrences are less predictable. Careful planning around weather can increase chances of staying on scheduling.

Another major cause of port congestion is the addition of ever-larger, mega-container ships that can triple the amount of cargo. The sheer volume of containers is starting to overwhelm major gateway ports, challenging their ability to unload import containers on a timely basis. To accommodate larger ships, some ports are improving their infrastructure and deepening their channels. A large contributor to this will be the Panama Canal expansion, which will double capacity by 2016 by creating a new lane of traffic for more and larger ships to transit.

Balancing Costs and Benefits of Connectivity

Certain concerns are more obvious to shippers than others. It's easy to see when the bunkers are low and fuel is needed. Likewise, the appearance of rust on the vessel means repainting is required. But tackling something as abstract as cyber security is not an issue most crews are accustomed to doing.

The Internet is now considered essential on many ocean going and coastwise vessels, offering important quality of life benefits to crew. The new generation of seafarers expects to be connected all the time, and the availability of the Internet is important in attracting new crew members and retaining qualified existing personnel.

However, connectivity also puts the vessel at risk for cyber attacks that can have significant implications, ranging from the loss of important data to catastrophic accidents. A shipboard computer network includes access to vital information — from crew payroll documents to the vessel's navigation, ballast and engineering systems. If engineering system were compromised, intruders could shut down the propulsion to allow boarding of the vessel or cause collision if done in a choke point. The hack of a navigation system could allow terrorists to hijack ships, resulting in a grounding collision or the shutting down of a port.

It's important that shipping companies be proactive in addressing cyber risk rather than reacting after an attack has occurred, when damage to the supply chain and a shipper's reputation has been exacted. Some of the steps that can be taken include designing a network that's resilient and safe, working with an IT service to ensure appropriate support and backup, training personnel to recognize risks and testing the system frequently.

The Internet is a feature on vessels that's here to stay. Unfortunately, so is the risk of cyber loss. It will always take a balancing act to make sure connectivity is available to those who need it but carefully locked away from those with sinister motives.

Other Risks

In addition to risks associated with congested ports and cyber security, there

One of the most significant threats to business disruption is port congestion, which has worsened noticeably in recent years. In fact, it's become such a widely recognized concern that the Federal Maritime Commission has made it the top priority for 2015.

are various other challenges that can disrupt supply chain operations for global businesses.

Political and social upheaval can directly and indirectly impact the supply chain. Bomb threats, introduction of biological agents, mining of ports, and attacks by suicide boats can affect a port with little notice. Domestic turmoil can also result in the banning of international shipping, such as what happened in Ukraine last year because of safety and security concerns. It can also create an environment that invites criminal activity, including the stealing of freight from warehouses. This is a less direct but still significant impact of social unrest.

Sudden and unexpected developments can occur that can leave a shipper with limited options. For example, last November it was revealed that OW Bunker, a large shipping fuel supplier, was victimized by a $125 million fraud perpetrated by employees of a subsidiary. That theft, along with a separate $150 million loss on bad risk management, caused the company to close its doors overnight, requiring shipping operators to determine how they were going to fuel their ships.

Over the years, natural catastrophes have caused severe disruptions in the supply chain. The tsunami that struck Japan in March 2011 created impacts on shipping that were both wide-ranging and long-lasting. The disaster caused direct damage to affected ports and also impacted the overall port infrastructure by triggering temporary closings of other Japanese ports.

The Human Element

Ultimately, ships and trade do not depend on vast machines – but on the people who run them. When considering the potential for disruption and loss on the seas, it's important to remember the crucial role that human behavior plays in the shipping industry. Well-trained officers and crews are the voyage's greatest assets, and without their high level of competency, industry losses would be greater. An investment in them is necessary both for ensuring safe and efficient transport and to develop and retain skilled manpower.

Leveraging Global Expertise

Efforts to effectively mitigate global risk require access to a team of knowledgeable global risk consultants on the front lines evaluating the supply chain in the most demanding environments, such as LNG module shipments out of China, heavy machinery exports from Germany or oversized high-value cargo entering or leaving the U.S. Industry experts, such as those from Allianz, can also conduct assessments of shipping processes and provide training to masters, chief engineers and chief mates to ensure that operations are carried out in a safe and effective manner.

Education and Preparedness

There are many risks involved in transporting cargo from point A to point B in a reliable and timely fashion. They range from traditional ones in plain view, such as congested ports, to newer, insidious threats arising from weaknesses in cyber security. By becoming educated about these risks, appropriate steps can be taken to mitigate damages or losses that may occur from untimely disruptions.

The Author

Captain Andrew Kinsey is the senior marine risk consultant with Allianz Risk Consultants, a worldwide organization offering risk management consulting and loss prevention reviews for hull, cargo and inland marine risks, covering exposures as varied as pleasure craft, yachts, ports, terminals and every imaginable vessel.

CLARIFICATION

In the interview with **Adm. Zukunft** for the March 2015 edition, it was stated that the Coast Guard was in the process of implementing a final rule on ballast water technology. In fact, the Coast Guard published its ballast water discharge standard regulation in March 2012. At that time, the Coast Guard anticipated that implementation of a U.S. type approval process would take at least three years. In July 2012, the Coast Guard assessed and accepted an independent laboratory to carry-out the type approval testing of ballast water management systems designed to meet the ballast water discharge standard. A second independent laboratory was accepted in 2013. In 2014, several manufacturers began testing their ballast water management systems at these independent laboratories. The Coast Guard anticipates receiving type approval applications from those manufacturers in 2015. Once a manufacturer completes the test evaluation of its ballast water management system with an accepted independent laboratory, the Coast Guard will review the results. If all requirements are met, Coast Guard type approval will be granted.

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NEW CONSTRUCTION • REPAIRS • CONVERSIONS

Underway on LNG

BY DENNIS BRYANT

On 17 January 1955, Commander Eugene P. Wilkinson, USN, the first Commanding Officer of USS Nautilus (SSN 571) signaled the memorable and historic message "Underway on nuclear power."

Underway on LNG has an opportunity to signal an equally significant change in the merchant marine.

On February 6, 2015, the newly built Harvey Gulf International Marine offshore supply vessel (OSV) Harvey Energy was bunkered for the first time by liquefied natural gas (LNG) delivered by tank truck in Pascagoula, Miss. After receiving classification from the American Bureau of Shipping (ABS) and a Certificate of Inspection from the US Coast Guard, Harvey Energy got underway for its homeport of Port Fourchon, Louisiana. This event marked the first time that a vessel in North American waters has been underway powered by LNG – but it won't be the last.

Harvey Energy was built by the Gulf Coast Shipyard in Gulfport, Mississippi, with careful monitoring by both ABS and the Coast Guard. The Coast Guard recently promulgated policy letters addressing: (1) operations and training of personnel on vessels using natural gas as fuel; and (2) vessels and waterfront facilities conducting LNG marine fuel transfer (bunkering) operations. The Coast Guard also has been working closely with the IMO in development of an International Code of Safety for Ships Using Gases or Other Low Flashpoint Fuels (IGF Code). ABS, along with various other classification societies, has developed rules for classifying LNG-powered vessels. Harvey Energy has been chartered to Shell for its deepwater operations in the Gulf of Mexico. Two sister ships are under construction and three more are planned. Harvey Gulf has built a bunkering facility in Port Fourchon for its LNG-powered OSVs.

The historically significant Harvey Energy.

While LNG-powered vessels are new to North America, such vessels have been operating in northern Europe (particularly in Norway) for several years.

TOTE and Sea Star Line

Two ships, destined to become the world's first LNG-powered container ships, are under construction at the NASSCO shipyard in San Diego for TOTE Shipholdings. When delivered in late 2015 and early 2016, these dual-fuel Marlin-class containerships will be operated by Sea Star Line. Homeported in Jacksonville, Florida, they will carry containers between Jacksonville and San Juan, Puerto Rico.

TOTE is also converting its two Orca-class trailerships to operate on LNG. These vessels will carry cargo (trucks, cars, trailer-borne material, military

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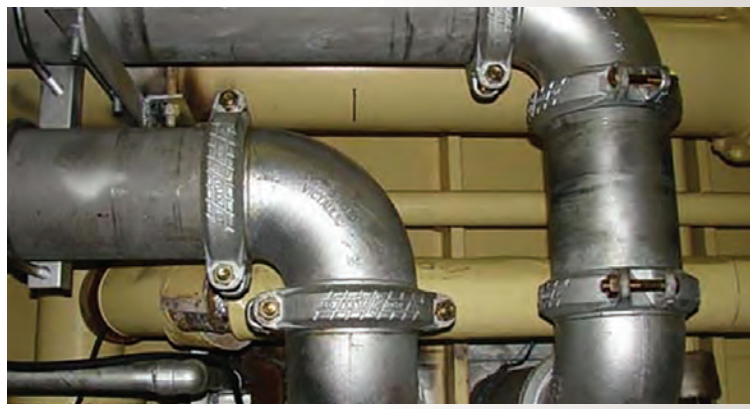

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equipment, and project cargo) between Tacoma, Washington and Anchorage, Alaska, as they do now. The process of conversion of North Star and Midnight Sun will begin in the fall of 2015. Initially, the two trailerships will be fueled from an LNG bunker barge, but a shore-based bunkering facility is planned for construction in the Port of Tacoma.

Crowley

Crowley Maritime Corporation has awarded to VT Halter Marine of Pascagoula, Mississippi a contract for construction of two Commitment-class Con-Ro vessels. These vessels, to be named El Coqui and Taino, will be powered by LNG and operate between Jacksonville and San Juan. They will carry containers (approximately 2,400 TEU) and up to 400 vehicles each in their roll-on/roll-off garages. Delivery is expected in the second and fourth quarters of 2017.

Crowley acquired Carib Energy in Puerto Rico and plans to deliver LNG to that island and others in the Caribbean Basin from Jacksonville using ISO tanks.

LNG-Ready Vessels and Conversions

Meanwhile, US shipyards are building LNG-ready vessels in increasing numbers. These vessels have been designed so that conversion from more traditional fuels (such as diesel) to LNG can be easily accomplished. Eleven LNG-ready product tankers and two LNG-ready containerships are under contract. Several shipping companies have announced that they are seriously considering conversion of existing vessels to LNG power. Horizon Lines obtained US Coast Guard approval for conversion of up to six of its containerships to LNG power. Subsequently, Horizon Lines announced plans to sell all of its vessels. It is unclear whether the new owners will pursue the conversions.

Ferries

Transition LNG propulsion is not limited to cargo vessels. The Societé des traversiers du Québec (STQ) has under construction at Davie Shipyard two LNG-fueled ferries for operation on the Saguenay River on the Tadoussac-Baie-Sainte-Catherine route. BC Ferries recently awarded contracts to Remontowa Shipbuilding in Gdansk, Poland contracts for construction of three LNG-fueled Intermediate-class ferries. BC Ferries also announced that it plans to convert two existing ferries to LNG propulsion. Washington State Ferries announced plans to convert some of its ferries to operate on LNG fuel. Staten Island Ferry announced plans to convert one of its ferries to LNG propulsion and to build two new LNG-fueled ferries.

Bunker Barges & Infrastructure

One of the issues that has been restraining the use of LNG as a marine fuel in North America is the chicken and egg: should ship owners build LNG-fueled vessels expecting (hoping) that the infrastructure will quickly follow or should the infrastructure side build out LNG bunkering capability expecting (hoping) that ship owners will follow. As it turned out, the chicken and egg are arriving simultaneously. As mentioned above, Harvey Gulf is building both LNG-fueled OSVs and its own LNG bunkering facility. WestPac Midstream and Clean Marine Energy are coordinating construction of an LNG bunkering barge at the Conrad Orange Shipyard in Orange, Texas. The bunker barge will initially be deployed to Tacoma to service the TOTE Orca-class vessels and then relocate to Jacksonville to service the Sea Star Line Marlin-class vessels and others. Meanwhile, LNG America and its partners are designing a hub-and-spoke LNG bunkering program for the Gulf coast to service LNG-fueled vessels and other high horsepower applications, as well as an LNG facility in Jacksonville with potential bunkering capability.

Oversight

As mentioned above, the US Coast Guard recently finalized major policy letters explaining its expectations regarding vessels operating on LNG fuel and the crew members who operate those vessels. Classification societies have de-

The historically significant TOTE Ship under construction at NASSCO late last year.

Photo: Greg Trauthwein

veloped rules for use in classifying LNG-fueled vessels. The IMO is close to issuing its code for LNG-fueled vessels (the IGF Code). Much of this work has been based on the successful use of LNG as a marine fuel in Norway and other northern European nations.

Drivers

There are two major drivers in this seemingly rapid conversion to LNG propulsion. First, air emission regulations for vessels operating in most waters of the United States and Canada have been significantly tightened. Allowable emissions of sulfur oxides (SOx), nitrogen oxides (NOx), and particulate matter (PM) have been reduced. Use of LNG rather than convention marine fuels such as diesel offer major reductions in these emissions, eliminating the need for use of such measures as selective catalytic reduction. Second, due in large part to increased use of horizontal drilling and fracking, the amount of natural gas available on the market in North America has skyrocketed. In a few short years, the United States has moved from being an importer to an exporter of LNG. This has lowered the cost of natural gas to the point that it is less expensive, per BTU, than diesel.

Conclusion

On 17 January 1955, Commander Eugene P. Wilkinson, USN, the first Commanding Officer of USS Nautilus (SSN 571) signaled the memorable and historic message "Underway on nuclear power." The event initialed a major change in the United States Navy and elsewhere. Underway on LNG has an opportunity to signal an equally significant change in the merchant marine on the United States and Canada.

The Author

Dennis L. Bryant is with Maritime Regulatory Consulting, and a regular contributor to Maritime Reporter & Engineering News as well as online at MaritimeProfessional.com.

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ReFRESCO-Operation

Unique Opportunities in CFD

BY HENK PRINS

Last year MARIN launched an innovative initiative to start a partnership with its clients for a maritime Computational Fluid Dynamics' (CFD) development, validation and application known as the "ReFRESCO-operation."

CFD plays an increasingly important role in the design of maritime and offshore structures. MARIN has always supported this with dedicated tool development, extensive validation and application. Recently, MARIN invested in a large computer cluster and this computing power, together with the CFD Code ReFRESCO, forms a new facility, "The Maritime Cluster."

Naval architects and offshore engineers increasingly use CFD calculations themselves or plan to do so in the near future. To stimulate cooperation and interaction in this field, MARIN now invites its clients to take part in the ReFRESCO-operation. In this partnership, MARIN wants to share its dedicated CFD Code ReFRESCO, which is extensively verified and validated for maritime applications. Furthermore, MARIN will open its computer clusters for ReFRESCO users, so that it can jointly work with customers on the reliable and robust application of CFD in the maritime field.

The ReFRESCO-operation means that the ReFRESCO Code will be provided to customers without limitations on the number of users or compute cores. The MARIN medium cluster of 1600 compute cores provides the possibility to scale up calculations without the need for large investments. An extensive team of CFD specialists at MARIN is available to support the customer's CFD team, to provide insight into the methodology and in the source code. To support the ReFRESCO-operation, MARIN is significantly extending its CFD development, validation and application team.

By participating in this unique cooperation MARIN and its customers can help in the further development, validation and application of CFD for maritime applications. ReFRESCO does not replace generic, commercial CFD codes, which also have their merits and can be used for a wide range of applications. However, these codes are often not validated for the maritime sector. ReFRESCO gives the possibility to apply CFD reliably for specific maritime applications in direct open interaction with the developers and other users. The ReFRESCO-operation partnership has already started but new participants are welcome to join.

www.marin.nl/refresco-operation

The Author

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Dispersants ...

Will we ever be able to use them again?

JONATHAN K. WALDRON

STEFANOS N. ROULAKIS

On January 22, 2015, the Environmental Protection Agency (EPA) published a Proposed Rule on dispersants. The Proposed Rule drastically changes the EPA's approach to dispersants and could imperil proven and effective means of responding to marine oil disasters. The Proposed Rule seems to be written from the perspective that dispersants are dangerous and should not be used and seeks to establish new toxicity and other standards. This approach may have the practical effect of prohibiting the use of dispersants when needed. Indeed, the Proposed Rule would create many impediments to decision-making in spill disaster scenarios, when time is of the essence. Moreover, the Proposed Rule could invalidate a responsible party's vessel response plan that requires planning capability for the use of dispersants in preauthorized areas. Absent an extension, comments are due on April 22, 2015. As discussed in more detail below, stakeholders should closely review the Proposed Rule and seriously consider making appropriate comments.

Background

Oil dispersants are substances that break up large quantities of oil into small droplets, and it has been consistently demonstrated over the years that they can be an effective response tool depending on the type of oil, weather conditions, and depth of the water. These small droplets are easier to disperse and ultimately will be subsumed by microbes in water bodies, thereby remediating the marine environment. Dispersants are usually applied to affected areas by aircraft, although vessels can also be used to apply dispersants. Dispersants have been used since the 1960s to respond to oil spills, but gained notoriety during the 2010 Deepwater Horizon incident due to the large amounts of dispersants that were used over a long period of time, where the use of dispersants was essential to spill remediation. However, despite the success of dispersants in remediating the spill, dispersants were believed by some parties to have created additional environmental issues, and the EPA has been working on revising its rule on this for some time.

Dispersants have become even more essential to a plan holder's response planning. In 2009, a rulemaking by the U.S. Coast Guard made dispersant capability a regulatory requirement for tank vessels. Further, in January 2014, the Coast Guard's Non-Tank Vessel Response Plan requirements came into force, which required some non-tank vessels to also plan for dispersant services in the case of spill incidents. Currently, dispersants feature prominently in many vessel response plans.

The Proposed Rule

The Proposed Rule aims to drastically change current practices in the use of dispersants. With some exceptions, most of these changes will have the effect of hampering response efforts by tying down decision making or banning the use of most if not all dispersants currently listed on the EPA Product List. The following sections describe particular changes in the Proposed Rule that are problematic and one proposed change that appears positive.

Preauthorization Plans

Currently, preauthorization plans allow the Federal On-Scene Coordinator ("FOSC") to approve the use of dispersants without seeking approval from other agencies or state officials. The Proposed Rule would mandate that preauthorization plans "must" limit quantities, duration, and use of dispersants, without knowing a particular disaster's parameters. These changes are troublesome because they limit the discretion of experts on the ground to respond to situational changes in disaster situations, which could exacerbate damage from spills.

In addition, the Proposed Rule would alter methods of approving and reviewing preauthorization plans. The Proposed Rule mandates that the withdrawal of approval by any entity can invalidate a plan, creating uncertainty in their validity. Additionally, the Coast Guard, the agency that arguably has the most experience and knowledge of dispersants, does not have a specific role in the approvals process, while several other agencies have prominent roles.

The Proposed Rule also adds arduous requirements in reviewing plans. The Proposed Rule would require the ("Regional Response Team") RRT and/or Area Committee to review and make revisions at least every five years; after a major discharge or a Spill of National Significance ("SONS"); to address revisions of the National Contingency Plan Product Schedule("Schedule"); to reflect new listings of threatened and/or endangered species; and to address any other change that may impact the conditions under which the use of chemical and biological agents is preauthorized. Additionally, the Coast Guard representative to the RRT is not given any particular authority, although approval is required by the EPA representative, Department of Commerce ("DOC"), Department of Interior ("DOI"), and the state RRT representative.

Responders would also have their authority limited by a proposal to mandate concurrence and consideration of alternatives in the use of agents not in a preauthorization plan. Currently, a FOSC can obtain concurrence "when practicable" from federal and local agencies before using a dispersant or other agent not listed in a preauthorization plan. The Proposed Rule removes the "when practicable" language, making such consultations mandatory and effectively limiting a FOSC's discretion in a disaster.

• Use of Burning Agents

One of the few bright spots of the Proposed Rule is a provision to grant the FOSC greater flexibility and discretion to use burning agents without seeking approval or having to consult with other agencies. In improving this flexibility, the EPA is recognizing that burning agents have "become an important response option that is used more frequently" and note the important role that burning agents played in the Deepwater Horizon. The EPA also notes the value of using burning agents in remote locations, such as responses in the Arctic.

• Storage and Use of Agents

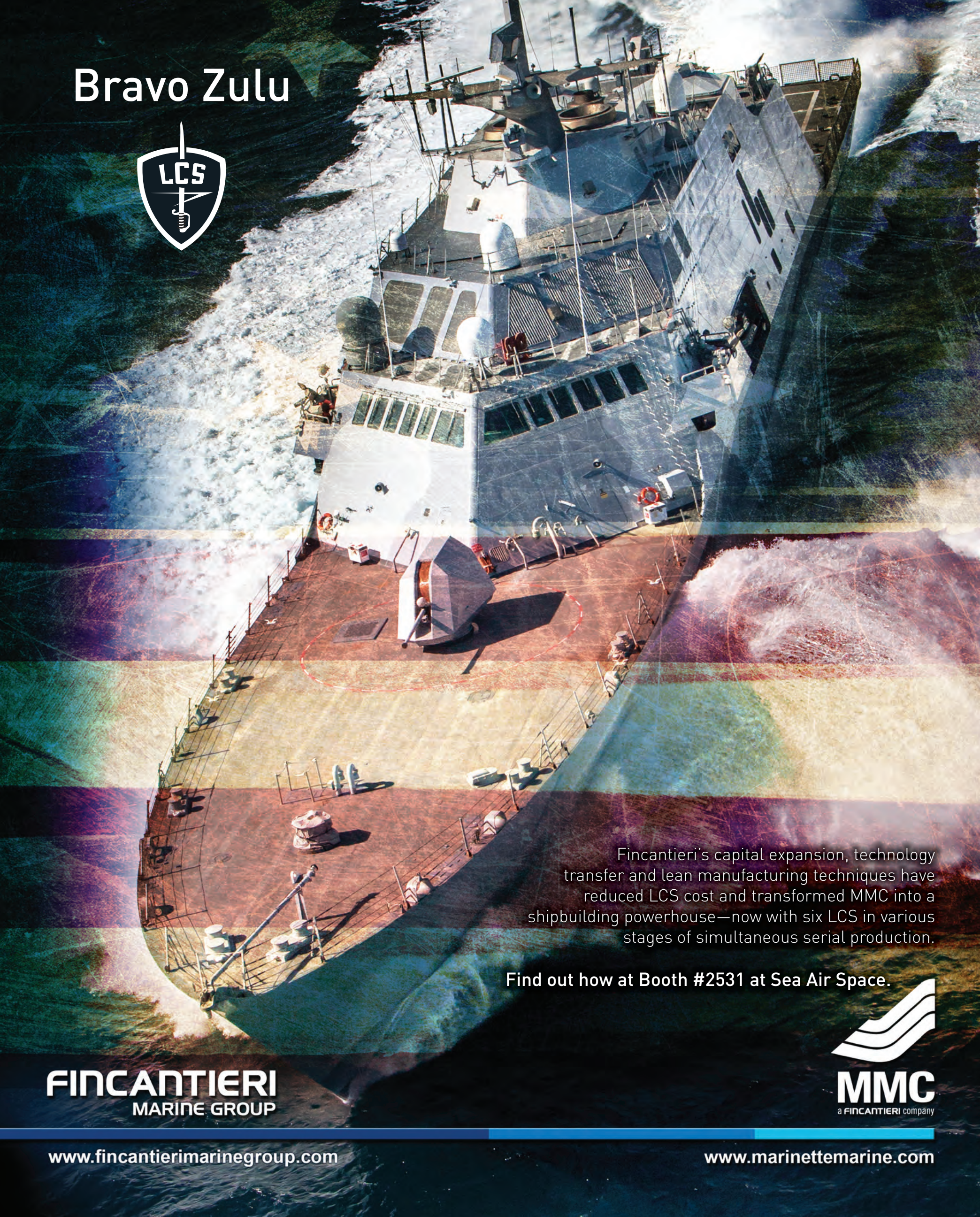
The Proposed Rule also has a confusing provision regarding the storage and use of agents. Currently, manufacturers provide information on storage and use. The Proposed Rule would allow the use of agents only when the Responsible Party ("RP") has certified that the agents have been stored pursuant to their recommended conditions. However, the Responsible Party ("RP") rarely, if ever, is responsible for storing agents, so it is unclear how this provision could work in practice.

• Monitoring the Use of Dispersants

This section adds regulatory requirements for monitoring certain prolonged surface and subsurface use of dispersants by the RP under the direction of the FOSC. The requirements for monitoring raises numerous questions as to who should be conducting monitoring and the extent of monitoring that should be required.

• Recovery of Agents from the Environment

The Proposed Rule would establish a requirement for a RP to ensure the removal action adequately "contains, collects, stores and disposes, of" agents intended to be recovered from the envi-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The EPA earlier this year published a Proposed Rule on dispersants. **The Proposed Rule drastically changes the EPA's approach to dispersants and could imperil proven and effective means of responding to marine oil disasters**. The Proposed Rule seems to be written from the perspective that dispersants are dangerous and should not be used and seeks to establish new toxicity and other standards. This approach may have the practical effect of prohibiting the use of dispersants when needed.

ronment. The Proposed Rule is not clear to which agents this would apply or proper procedures for recovery.

Additionally, the Proposed Rule would require the FOSC to provide information to the RRT regarding the chemical or biological agent used, including product name, the quantity and concentration of the agent used, the duration of use, the locations where the agent was used, any data collected, and an analysis of its efficacy and environmental effects. The report would have to be provided within 30 days. The Proposed Rule would also prohibit the use of "any other chemical agent, biological agent, or any substance that acts as a sinking agent when mixed with oil." This prohibition would be supplemental to the current ban on sinking agents themselves.

• Data and Information Requirements for Dispersants

The Proposed Rule would require more burdensome data and information requirements to list a dispersant. The current rule is based on an effectiveness test, whereby a manufacturer must maintain an effectiveness value of 45% or greater to be added to the Schedule. The effectiveness test is much more complex and stringent under the Proposed Rule. And, if the dispersant does not meet the new toxicity requirement, it will not be listed on the Schedule. This is a significant change because preliminary industry testing, as we understand it, raises serious questions that many, if not all, existing dispersants would fail to meet the proposed toxicity requirements.

Conclusion

While the Proposed Rule allows for a 24-month transition period, these changes would substantially hinder the future use of this proven response technology if the Proposed Rule implemented as written. Indeed, the entire proposal appears to promote a bias that dispersants are toxic without considering the big picture that dispersants ultimately help the environment. While using dispersants, like any response technique, is not without potential environmental consequences, they are some of the most effective tools available to fight large scale oil spills. The Proposed Rule would hinder the operational on-scene decision making needed by the FOSC, which will only serve to exacerbate disasters amidst bureaucratic wrangling. Limiting the use of dispersants as proposed by EPA is not a viable solution—neither for the maritime industry nor for the environment on which it depends. It is essential that members of the industry ensure that their voices are heard by submitting comments to EPA by the April 22, 2015 deadline if it is not extended.

The Authors

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Just Passing Through

Logistics and Warehouse Insurance: Understanding its Complexity

BY VIRGINIA CAMERON

In October 2013, a fire blazed through Brazil's Santos port, destroying six warehouses and the 180,000 tons of raw sugar inside Sugar Company Copersucar's terminal. The fire hit all of the sugar giant's warehouses at the port and left many exporters holding contracts for sugar with an empty bag.

Following the fire, Copersucar declared "force majeure" to third party exporters who had contracts to ship the sugar through the now-burned terminal. Force majeure is a legal term referring to unforeseen catastrophic events freeing companies of contractual liabilities because events outside its control prevent it from honoring obligations. Unfortunately, the fire was determined to be a result of poor maintenance practices at the terminal. All of the parties involved relied on their insurance policies to reimburse them for the loss. The question is did they have the right coverage.

Were the goods in long term storage? Were the goods being processed prior to export? Were the goods just passing through and in the due course of transit under an ocean Bill of Lading? Each situation might require a different insurance solution.

Gray Areas

Oftentimes the warehouse or terminal is an intermediary space with goods 'passing through' on the way to the final destination. The Santos Port sugar fire shows how blurry the lines of liability can be and raises a lot of questions. If the goods were stored at a terminal, are they protected under a property insurance policy? If they were in the Care, Custody and Control (CCC) of the Terminal, they were most likely excluded under a basic first party Property Policy. Likewise, most General Liability policies exclude liability for goods of others in your CCC. If the goods were being processed at the location, other exclusions might apply.

This liability for goods of others in their CCC, has resulted in the need for Warehouse Legal Liability (WLL) and Terminal Operators Legal Liability Coverage forms. These forms protect the Terminal or Warehouse Operators if they are held responsible for damage to goods while in their CCC. Warehouse owners and operators can be held liable if the goods being stored in their warehouse are destroyed, damaged or stolen. This coverage protects owners and operators related to a damage claim. WLL coverage offers protection against the costs of legal defense, damage awards and other expenses if transit of goods has ended the bill of lading and is now stored under separate contract or warehouse receipt.

As goods are often passing through warehouses, many assume that the goods are protected by the owner's cargo policy. Others assume if the terminal operator has coverage that is the only insurance needed. While in the due course of transit, the cargo owner can protect their investments with an Ocean Cargo policy. However, the cargo owners will still look for recourse against a terminal operator if their goods are damaged.

Coverage Gaps

Despite the gray coverage areas, potential gaps in insurance protection and risks onsite at marine warehouses and terminals, many marine operations fail to identify the correct insurance coverage necessary to protect them. These short stays at a facility could result in coverage gaps for terminal operators who do not have warehouse legal liability coverage.

Terminal Operators Legal Liability insurance covers goods in the due course of transit under the original bill of lading. Warehouse Legal Liability insurance covers goods which have been taken out of transit and are stored under a warehouse receipt. Many Terminal Operators coverage forms are unclear as to whether goods under a warehouse receipt are covered under the policy. It is important to be sure you have full coverage if the Terminal Operator issues Warehouse Receipts for good held in storage. Some policies require an endorsement to extend coverage, while in other cases, this is included.

Overlapping Coverage

Due to the nature of goods in transit, it is common for multiple insurance policies to insure the same goods throughout various stages of the export. It would be a mistake for a Terminal or Warehouse Operator to assume they do not insurance for goods in their CCC because there is a first party policy in place. Examples of these coverages might include:

- **Basic Ocean Cargo Policy:** Coverage purchased by the buyer or seller which provides coverage for the exported goods throughout the due course of transit until final destination.

- **Freight Forwarder Policies:** The Freight Forwarder is protected by a Freight Forwarders Legal Liability Policy while the goods are in transit or stored in warehouse while in the CCC of the Forwarder.

- **Consolidation/Deconsolidation:** Coverage while goods are at warehouse temporarily to be packed or unpacked into smaller/larger containers, this is often included in the Ocean Cargo Policy.

- **Warehouse and Processing Coverage:** Coverage while the goods are temporarily taken out of transit for the purpose of storage or processing.

Setting Limits

The Warehouse receipt and the Bill of Lading are two very important documents when determining warehousing and logistics liability. A warehouse receipt is a document that provides proof of ownership of commodities (e.g., bars of copper) that are stored in a warehouse, vault, or depository for safekeeping. A Bill of Lading, on the other hand, is a required document to move a freight shipment as long as the goods are in due course of transit. Both often include limits of liability clauses to define the maximum responsibility.

The general rule is that warehouse receipts need not be in any particular form. They must, however, contain the following information:

- Location of the warehouse and the place where the goods are stored;
- Date when the receipt was issued;
- Consecutive number of the receipts;
- Terms indicating whether the goods are to be delivered to the bearer of the receipt, to a particular individual, or to a particular individual on his or her order;
- Storage rate or handling charges; a statement describing the goods or the manner in which they are packed;
- Signature of the warehouseman or his or her agent
- Amount of advance payment made, if any; and any other terms that do not impair the warehouseman's duty.

Warehouse receipts include liability limitations with many variations. Some limit the liability to a multiple of the base monthly storage charge such as $300 times the monthly storage charge. Others might provide replacement cost or actual cash value of the goods. Other examples may provide an amount based on weight such as $5.00 per pound. It is not uncommon to see a combination of these options subject to whichever is less or whichever is more. To understand how much the Warehouse or Terminal Operator is legally liable for, it is important to read the contract. To make the options even more complicated, many of the clauses are complex, and if there are

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Proper risk management and storm plans are a critical in protecting customers goods while in your care, custody and control.

fields to complete such as an amount per pound, they are often left blank.

In situations where a warehouse receipt does not contain these provisions, the warehouse can be held liable in damages to anyone who sustains financial injury because of the omission. If the goods are not under a warehouse receipt the calculation of legal liability would be based on the Bill of Lading; however, if the goods have been taken out of the due course of transit, the Bill of Lading would no longer apply. In situations where a terminal operator has allowed goods to remain at the location for an extended amount of time without issuing a warehouse receipt, that terminal operator may find they are legally liable for the full replacement cost of the goods while in their care, custody or control.

Most people believe that Terminal Operators and Warehousekeepers cannot be legally liable for catastrophic events such as hurricanes or floods. However, the Terminal Operator has been found to be legally liable to protect the goods from an impending event or after the storm has passed. Courts have held that the Terminal Operator or Warehousekeeper must act prudently to protect the goods from damage by taking preventive measures before and after a storm. Proper risk management and storm plans are a critical in protecting customers goods while in your care, custody and control.

Complex Claims

Supply chain risks are complex. So, too, are the insurance claims that result from moving goods to various points around the world. While documentation like warehouse receipts and bills of lading can play an integral part in a terminal operators or warehouse's risk management efforts, there are a lot of other moving parts that can be called into question when a loss results.

For instance, while Warehouse Legal Liability covers a loss of stored goods at an insured location, what if damage occurs while unloading the truck? There are also situations where concealed damage is involved – that is, damage that is concealed at the time of delivery. Likewise, while terminal operator's liability would provide protection for goods still on the move, what if a warehouse receipt is issued for just a short delay? Or what if no warehouse receipt is issued, but the goods are no longer in the due course of transit?

Working with seasoned marine risk management, insurance and claims specialists is more important in managing terminal and warehouse risks than ever before. Seeking qualified help can help marine facilities fill in gaps in insurance coverage, proactively address property or operational exposures and manage the complexity that comes with moving and storing goods that are a vital part of supply chains.

The Author

Virginia Cameron is Senior Vice President of Inland and Ocean Marine in XL Group's North America Marine business where she oversees strategy, underwriting and training.

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Simulation & Ice Navigation Training

By Bob Parsons

In a anticipation of the growing need for deck officers and masters experienced in operating in ice covered waters and as evidenced by the relatively rapid increase in vessel traffic in areas of the Arctic Ocean due to the receding ice coverage, the Alaska's Institute of Technology (AVTEC) in Seward, Alaska has developed a comprehensive course of instruction in Ice Navigation. This two week course is directed toward masters and mates without or with minimal experience in ice covered waters. The course of instruction is a combination of classroom lectures, case studies and simulation exercises, operating various vessel models in a myriad of ice conditions. The AVTEC Ice Navigation course of instruction is U.S. Coast Guard and International Maritime Organization approved and graduates receive a "Certificate of Training", indicating the course meets the requirement of Section A-II/2 and Table A-II/2 and Section A-11/3, Table A-11/3 of the STCW Code, as amended 2010, and tasks from section 1.1.A.4 of NVIC 10-14 and 1.1.A.3 of NVIC 11-14.

A recent International Maritime Organization (IMO) announcement of an agreement for mandatory training requirements for deck officers operating in Arctic and Antarctic waters is designed to prepare mariners for the unique conditions found in Polar regions. The goal is to enhance safety of navigation and to ensure that the crew is prepared for special conditions. It is anticipated the requirements will be incorporated in the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) by the Maritime Safety Committee this June and will become effective in 2018, however, some States may place the requirements in force in 2017.

The Ice Navigation course is relative new with the first class presented in November 2014. The initial class included members working in the offshore oil and gas industry, a member of the Alaska Marine Pilot's Association and members of the Alaskan fisheries. Although the course of instruction is designed for entry level bridge watchstander personnel, this first class of experienced sailors, validated the goals of instruction and provided meaningful feedback for overall curriculum improvement and input on the simulation exercises. It is anticipated that the course will be presented several times a year, based on increasing demand as companies and individuals strive to meet the recently approved IMO and STCW Polar Code requirements. The course of instruction is applicable to ship operations in all Polar waters, including both Arctic and Antarctic Oceans and the unique operating conditions found globally. Early discussions of the Polar Code committees (referred to as the committee for Harmonization of Polar Ship Rules) centered just on the Arctic, however, with a number of accidents and increased traffic (especially from the cruise industry) operating in the Southern Ocean the Polar Code was amended to include Antarctica.

The AVTEC full mission simulation suite consists of an instructor master control suite and three separate independent bridges, each uniquely configured to represent the various bridge arrangements on different vessel classes and each outfitted with Radar/APRA, depth sounders, GPS, gyro compass and ECDIS displays, with control consoles that emulate the actual shipboard equipment installed on the bridge. The software was designed and manufactured by Kongsberg Maritime AS, Kongsberg, Norway. The Polaris bridge simulator software replicates actual conditions in the Bering Sea, Cook Inlet, Norton Sound and the Western Arctic Ocean. Using the bridge simulator, for example,

students can make an approach; to Nome for the off-loading of fuel, to the marine fuel terminals in Cook Inlet (with the inlet partially covered in ice and drifting with the tide), to a transit to the facilities in Norton Sound and to maneuver near an off-shore oil/gas platform surrounded with ice. All scenarios can be conducted in a wide variety of weather conditions such as high winds, strong currents and reduced visibility, in day and night operations.

The individual exercises can use various classes of vessels from icebreakers to off-shore supply vessels, tugs, or large tankers, some vessels with conventional propulsion or others with Azipods. The instructor can input various weather and environmental conditions and introduce new scenarios during the course of the exercise.

Flexibility is the key and holding the students interest throughout the learning experience is paramount.

Various ship-handling exercises are conducted to gain experience in working in ice covered waters, such as, passing another vessel in a field of ice, maneuvering alongside another vessel or pier where ice is present, or practicing ice avoidance in a relatively open ice pack. All situations a mariner may encounter when working a vessel in the ice and the exercises can be performed under various environmental conditions (low visibility from snow, high winds, in areas with ice ridges and/or rafting, etc.)

The simulation exercises are conducive to Bridge Team building, calling for coordination between the navigator, helmsman and conning officer. Proper bridge terminology and established procedures are employed to present the student with the most realistic experience.

The simulation has the ability to build some of the stress encountered on the bridge and leads to a very valuable learning opportunity.

According to Captain Terry Federer, Maritime Department Head, the stated goal of the Alaska Maritime Training Center is "to promote safe marine operations by effectively preparing captains and crew members for employment in the Alaskan maritime industry". In addition to the standard courses offered in engineering specialties, culinary, ship handing (such as Dynamic Positioning), bridge team training, bridge equipment certification (APRA, ECDIS, etc.); customized training is available to meet the specific needs of maritime companies and specific operating areas. With modern classrooms and up to date equipment the professional staff provides training that meets the current needs of the marine industry and individuals seeking certification for employment. More information is available at www.avtec.edu .

Having personally commanded icebreakers operating on the Great Lakes and in the Polar regions, I found that "driving" the simulator approaching the port of Nome or a drilling platform in the Chukchi Sea was extremely realistic and gives today's operators an advantage that didn't exist without actually operating in the ice just a few years ago. Masters and deck officers can perfect their individual skills in a no harm environment and be much better prepared for the real thing when called upon to act.

The Author

Robert Parsons, a retired Coast Guard captain and former commander of the icebreaker Polar Star, is a writer and consultant on Polar Marine issues.

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Edda & its Five Star Offshore Accommodations

Petter Sundet, Captain of Edda Fortis, discusses with Maritime Reporter & Engineering News the evolution of top-notch accommodation in the offshore environment.

By Greg Trauthwein, Editor

Please provide a brief bio. Specifically, how did you come to a career in the marine industry, and ascend to your current position?

I first went to sea when I was 16 years old, to see the world. The first years I sailed as a deck hand, then as an ordinary seaman and then became an Able Seaman which was as far as you could go without any formal education. During this time I worked on general cargo ships, oil tankers, and OBO carriers. I then decided that if I was to continue working at sea I would need to take a proper education and aim to get a masters license. So in 1986 I completed the Aalesund Nautical College in Aalesund, Norway, then I joined the Norwegian Navy for an obligatory service and served a total of 15 months in various areas. After completing the national service I joined Royal Caribbean Cruise Line in 1987 and worked on cruise liners for the next 20 years, the last eight years as Captain. In 2005 Royal Caribbean reflagged its Norwegian vessels, so I started to look for other opportunities. I came across Østensjø Rederi AS and Edda Accommodation with its unique concept which seemed to fit someone with my background. I joined the company in the fall of 2008, and the rest is, as they say, history.

For readers not familiar, please give a brief overview of the Edda business.

The Edda business is mainly the business of providing accommodation services for the oil & offshore industry, our specialty is serving an offshore installation by being

positioned close to such an installation with the help of dynamic positioning. The vessel can off course also be used as an accommodation unit for any sore side project where the vessel would simply stay moored alongside a pier.

In the move toward "Accommodation Vessels" for use in the offshore market: What has been the driver?

The driver for this trend was the increased need for flexible solutions in serving offshore installations with accommodation units, i.e. accommodation units that could mobilize and demobilize in a short time and that could move from one area of the world to a different area without the need for tugboats and with a speed similar to that of a regular vessel.

What is the EDDA solution in this regard, giving specs on both vessels working and under construction?

Our solution to this issue is to use a vessel where we focused on the possibility of using a mono hull type vessel with a telescopic gangway off the bow of the vessel and where the vessels position is controlled by dynamic positioning.

In building these vessels, what was the greatest challenge to design, construction and outfitting?

The greatest challenges to the design, outfitting, and construction of the vessel was to create a stable platform for the offshore gangway and the construction of the gangway in itself. For example the vessel is equipped with an advanced anti roll system consisting of U-shaped tanks with blowers to move the water from side to side, this has shown promising results in model tests and we have great expectations to the system. The rest of the vessel is built to known standards and class notations as follows: DNV, +1A1, SF, E0, DYNPOS AUTRO, CLEAN DESIGN, NAUT-OSV(A), ICE-1C, DK (+), Fire Fighter II, COMF-C(1), COMF-V(1), Passenger Ship. HELDK-SH, CRANE(N)

Recruitment & Retention in the maritime and offshore markets is a recurring theme in markets good and bad. Give some insight, from the EDDA perspective, as to how these specific vessels can offer a competitive advantage to those that employ them?

We believe that these vessels

Left: **Petter Sundet**, Captain, Edda Fortis; Above: **Restaurant** aboard Edda Fortis; Below: **Edda Fortis** under construction at Hyundai Heavy Industries.

are attractive for both potential clients and anyone working on them since they are a unique combination of a working vessel and a passenger ship, so especially for sailors this gives a challenge that is not often found in the maritime world, and also for potential clients because they get a working vessel that gives them the amenities of a passenger ship in terms of accommodation quality. Usually these kinds of projects has been solved by the use of accommodation barges that has quite basic quality on the accommodation, we on the other hand offer the quality of a nice hotel which we think is what is needed to get more efficiency out of the work force. Another of the great advantages with our vessels is that we can easily connect and disconnect the gangway from an offshore installation and this is especially of importance in areas where weather conditions may change rapidly such as the cyclone season in Australian waters and the hurricane season in the Gulf of Mexico.

In overview, what do you count as the biggest challenge to running an efficient, profitable operation today?

This should be answered by people with a higher level of intelligence and knowledge than me, however

The Edda Fleet

Edda Fjord

Length, o.a.	104m
Breadth	22m
Draft max.	8.2m
Propulsion	2 x Diesel electric CP propellers
Thrusters	2 x tunnel thrusters forward (1200kW each) + 1 x Azimuth thruster (1500kW). 2 x tunnel thrusters aft (1000kW each).
Max speed	16 knots
Berths	210
Built	2002
Shipyard	Flekkefjord Slipp og Maskinfabrikk, Flekkefjord Norway

Edda Fides

Length, o.a.	130m
Breadth	27m
Draft max.	7.2m
Propulsion	5 x Voith Schneider 32R5 EC/265-2 x 2500 kW
Thrusters	2 x Brunvoll tunnel thrusters x 1400 kW
Max speed	11 knots
Berths	600
Gangway	50m telescopic heave compensated offshore gangway
Built	2011
Shipyard	Astilleros HJ Barreras, Vigo Spain

Edda Fortis

Length, o.a.	154.9m
Breadth	32.2m
Draft max.	8.2m
Propulsion	6 x Schottel Azimuth thrusters (3 x 4050kW fwd., 3 x 4050kW aft).
Max speed	13 knots (design)
Berths	800
Gangway	57m telescopic heave compensated offshore gangway with adjustable pedestal
Built	2015
Shipyard	Hyundai Heavy Industries, Ulsan Korea

CASE STUDY: EDDA FIDES

Over eight months during 2012 – 2013, we operated the Edda Fides in the Bass Strait between south east Australia and Tasmania on the KTT (Kipper Tuna Turrum) project, the largest domestic gas development on the eastern seaboard of Australia at the time.

The charterer was McDermott Australia and the client was Esso Australia where we served as accommodation unit for up to 400 workers doing upgrade on the Marlin B platform. The project started in June 2012 and was successfully completed in February/March 2013. This picture is a typical operation situation, with Edda Fides connected with the gangway to the Marlin B platform.

it seems to me that one challenge that the shipping industry has always had is the over optimistic belief in the market at times when the brakes should/could have been put on. I believe history has shown numerous times that ship owners have ordered way too many ships and because of that having to put vessels in lay up as seen recently with the container companies and the offshore companies. At this time, several new accommodation vessels and units are under construction and will be entering the market in a time where we see a slow market and naturally the oil majors will push the daily rates towards the low end. Also it is important to control the spending, this is something for the economists to explain but I guess there should be a certain balance between what you potentially can earn and what expenses you can have.

We often write regarding emerging regulation and its impact on ship owners. Looking at the broad legislative landscape, what do you see that you think will have the biggest impact on your bottom line in the coming years? How are you preparing now to dull that impact?

When it comes to emerging regulations I would like to say that our company has great experience in dealing with different rules and regulations since we operate in very different environments and has had to adapt to different sets of regulations all the time, i.e. we have operated in the North Sea (British Sector), the Mediterranean, Bass Strait Australia, and the Gulf of Mexico all of which have very different national regulations, as well as working for different clients that very often also has different requirements. I believe this is the daily life of almost every shipping company today.

Looking at the market you serve, give a short "market update" on the conditions you see now.

The present market is slow due to falling oil prices as oil majors seems to cancel or postpone their planned projects which were based on high oil prices. As for us (Edda Accommodation) we are committed for both Edda Fjord and Edda Fides until approximately Q2 2016. The Edda Fortis remains open, however we can see a couple of projects that are suitable for our high end vessels and the impression is that charterers appreciate our accommodation service including the flexibility of the vessels, gangway solutions, highly skilled crew and focus on HSE & Q.

This may be repetitive from the previous, but how is the low price of oil impacting your company today?

One should think that a low oil price was good for anyone operating ships since we are high users of oil, however it may not be so for the offshore business since the oil price is important for the level of the activity in the search for oil and all activities connected to that. Since we operate in the oil service business we are off course subject to these conditions and less activity means less available projects and more competition for the few projects that materializes.

Looking at the markets you serve, by niche or by world region, where do you see opportunities for EDDA in the coming 12 months, and why?

I do not have hands on information on this, however it is my understanding that the most likely opportunities in the next 12 months are in the Gulf of Mexico, West Africa, and Australia

Mark Charman

Talking Offshore Employment with Faststream's Chief Executive

With the energy market swoon in full blossom, Maritime Reporter checked in with Mark Charman, chief executive of global recruiting leader Faststream, for his insights on the breadth and depth of the impact to the offshore employment market.

By Greg Trauthwein, Editor

Uncertainty.

If there is one word that summarizes current global energy market conditions, it is uncertainty. The sudden downturn in oil pricing – which started nine months ago and collectively caught much of the global market by surprise – is almost on par with the world's level of surprise when energy production rose rapidly with the advent of shale oil and gas technology.

The benchmark Brent crude price hovered around $54 per barrel in mid-March, down from highs above $115 in June 2014 but up from recent lows of $45 in January 2015. While industry watchers and Wall Street debate the length and severity of the current crisis, the impact is taking its toll on Main Street, as employment in the energy sector starts to crumble. But this most recent energy down cycle may not come with the signature talent drain seen in downturns from year's past reasons the head of one of the leading energy sector recruitment firms in the world.

The Big Picture

Faststream is a market leader in recruitment in the maritime and oil & gas sectors and CEO Mark Charman has much experience and perspective to give. "Where O&G meets shipping we call it the offshore marine sector, and a large proportion of our business comes from the offshore marketplace," said Charman. "For us, offshore comes from everything from floating production – FPSOs, FSOs and the like – through to the Offshore Support Vessels."

> "You've got to be able to look toward the future, and sometimes make some educated guesses as to what's around the corner. **This period right now is tough; it's tough for CEOs to make those calls. But as sure as apples are apples, this marketplace will come back;** companies will need those people, and they'll need that core workforce in place."

While the energy market is down and larger companies are enacting lay-off plans, Charman doesn't believe that the recruitment market will follow the same course as the price of the commodity itself.

"Marine and offshore is an aging workforce, particularly in the U.S., (where you have a significant portion of) a workforce that is close to retirement and ready to leave in the next few years," said Charman. "Some of those workers will use the current market conditions to say 'I've had enough of this' and hang up their boots. I think you'll see a lot of people leave earlier than originally planned, and this will put added pressure on the availability of talent."

For those with short memories, up until the recent oil price swoon there was a huge skill shortage in the marketplace, and operators were regularly poaching talent from other operators.

But Charman predicts in the new world of oil and gas that is taking shape, there will be clear winners and losers. "The winners will see it as an opportunity to pick up people who they couldn't find easily during the up market. Companies that have a long-term optimistic view of the market will use this as an opportunity to go out and find those hard-to-find individuals' who previously were being bear-hugged by their employers."

While Charman is an optimist, he also is a realist, realizing that the swift and dramatic oil downturn will cause organizations to genuinely cancel projects and let people go.

"But I think there are a lot of organizations out there that, even though they are letting people go on one hand, they are hiring on the other. This is the irony of this marketplace. I pay careful attention to vacancy numbers, as that is a really good metric of what's happening in the marketplace. We have seen no drop-off at all in vacancy numbers, and that is quite telling."

Prior to the recent slowdown, drilling companies were finding it nearly impossible to find drill crews, for example. "You're seeing a lot of new drillships coming into operation, still with a lot more to come … and those companies aren't letting go of their drilling crews because they know that they're going to need those guys for vessels coming into service. They have got to hang onto those good people."

The Year of Uncertainty

"Uncertainty is caused by all of the bad news out in the press regarding the uncertainty of oil and gas, the uncertainty of the projects. This makes a lot of nervous candidates, and nervous candidates tend to not change jobs in an uncertain market," said Charman. "It's the old mentality of seeking a safe port in a storm … there's a bit of a storm right now, and there are a lot of candidates who are hunkered down in the bunker waiting for the storm to pass. They won't change jobs during this period. This means the companies that are still growing will find it hard still to get the people that they need."

As the price of oil and gas is cyclical, so too is the supply and demand in the workforce. During tough times it is difficult to recruit new talent, a problem exacerbated by the aging workforce. Charman reasons that when the market rebounds there will be another big pendulum swing, going straight back into skill shortages and massive wage inflation.

While it is impossible to compare previous energy peaks and valleys, Charman said that this most recent slowdown is fundamentally different from the last one in 2008, when oil was driven down by macro economic forces: the global financial crisis and resulting multi-year economic malaise. Today the drivers are different. "We are almost in sort of a false bubble right now with the oil price as to why it is artificially low. At first companies go into a state of shock; they start to lay people off; they stop laying people off and take stock of the market; projects start again; and they start hiring again. Right now I think we are still in that phase where the industry is still in a bit of shock. I think in second half of this year we'll see a normalization of the marketplace where people will start to hire again after companies have adjusted to the new market to make money and be successful."

With decades of recruiting experience under his belt, Charman discusses the market with fluidity and ease, but he knows well the boardrooms are buzzing and difficult decisions are being made every day.

"You have to have a medium- to long-term view in regards to workforce planning," said Charman. "You've got to be able to look toward the future, and sometimes make some educated guesses as to what's around the corner. This period now is tough; it's tough for CEOs to make those calls. But as sure as apples are apples, this marketplace will come back; companies will need those people, and they'll need that core workforce in place."

Contract Professionals

Charman said that the use of contract professionals is used widely in many industries and world regions, a practice

not so prevalent in the U.S. or the offshore and maritime markets. He sees the current period of uncertainty driving more companies to consider contract professionals, as he reasons it offers a nice hedge in cyclical markets, both up and down, as well as niches where skill shortages are the norm.

"Job security going forward doesn't come from being employed, it comes from being employable," said Charman, apologizing if the statement seemed a touch cliché. "From a candidate's perspective, it's all about the skills and knowledge and what you can do with it. To leverage this, I don't think it's about being employed, its about being employable; keeping up with the latest technologies or the latest projects; having the latest know how; and being able to market yourself to organizations who need this more flexible approach to workforce planning."

Charman and Faststream are championing the concept of supplying a pool of contract professionals domestically and globally, as he reasons it makes available a nice pool of really good people with a specific skill set to do a specific bit of work. "I think that's an interesting element of how contract labor can help companies in the current marketplace."

The Road Ahead

Charman closely monitors a number of economic, employment, maritime and offshore specific data daily to keep in touch with the fluidity of the global marine and offshore markets, particularly eying the number of new vessels due for delivery. "There are a lot of new vessels coming into operation. Will they get laid up? I can't tell you at the moment," said Charman. "But we are certainly forecasting big demand in the offshore sector, with the respect to projects going into construction. There is a lot being built right now and will so for the next few years … after that, there is not so much in the pipeline."

By region, Charman remains bullish on Asia and the Middle East. "I was in Singapore last week, and it was like 'what crisis?' The Asia Pacific region is still booming. We've seen very little let up in Asia Pacific or the Middle East market; our predictions are that both Asia Pacific and the Middle East will grow for us this year."

In the U.K. North Sea he predicts a rebound in 2016 to 2017, but the U.S. Gulf of Mexico seems a bit foggier at the moment. This year seems OK, but beyond 2015 is far from clear. "It's almost a perfect storm at the moment; there is an oversupply of ships combined with a very low oil price and a lot of uncertainty around projects."

Through markets good and bad, Charman said that his business, the job of professional recruitment has not changed so drastically when it comes down to finding the best fit for employer and employee. "We've seen the advent of the internet, the advent of job boards, the advent of LinkedIN, and the advent of internal recruitment capability; but at the end of the day, recruitment is a full contact sport … it's all about networking and talking to people. There is no substitute for that. It sounds simplistic, but it comes down to knowing your space and talking to people."

A little certainty in an uncertain market.

Photo: iStock

Oil Majors Push Offshore Players for 30% CUTS

Smart players leverage low debt, adjust work schedules, seek spot gigs and new markets

By Patricia Keefe

30%

That's the minimum level of capital expenditure cuts facing owners and operators of offshore rigs, vessels and various support services, as they scramble to keep equipment working and their heads above water during one of the worst oil downturns in 30 years.

From a high of $108 per barrel in June of last year, prices plummeted roughly 60% as supply surpassed weakening demand, crashing in November to around $44 a barrel. The pricing collapse caught all sectors of the industry and financial markets by surprise, pulling down with it market valuations, quarterly earnings and day rates. OPEC, for example, earned about 14% less last year than in 2013, and experienced its lowest profits since 2010, according to the U.S Energy Information Administration (EIA). Oil company stocks have taken a beating, forcing a reassessment of spending and project plans. Rig counts have hit historic four-year lows, while long-term projects have undergone reevaluations, and in some cases, been put on hold.

The ballooning supply of oil, meanwhile continues to outstrip demand, hitting an 80-year high in the U.S., which, in late February, exclusive of the Strategic Petroleum Reserves, had 417 million barrels of oil in storage. U.S. production recently rose to a record 10.3 million barrels a day, and has consistently surpassed 9 million barrels a day since November - something that hasn't happened since the 1970s, according to the U.S. Energy Information Agency (EIA).

That prodigious production has had the effect of positioning the U.S as one of the top oil producers on the planet, and oil's new swing player. Along with unabated oil production elsewhere, notably in South America, the success of the U.S. shale fields has helped to drive supply levels into uncharted waters, and dangerously close to the available storage capacity for excess crude.

If production ends up exceeding storage capacity, it will force a sell off, and that in turn, could push prices lower. Adding to that downward pressure is the expectation that Iran; which is believed to be hoarding an enormous stockpile of its own – would open its floodgates if sanctions are lifted, allowing it to sell oil to the West.

OPEC, particularly the Saudis, have for decades played the arbiter of the oil market – cutting production whenever prices got too low. Not this time. The Saudis are no longer willing to cut production (and lose market share) unless everyone else – inside and out of OPEC – follows suit. Problem is, too many OPEC partners, i.e. Venezuela, Russia and Iran, desperately need the cash from oil sales. However, the Saudi gambit is expected to force a strong cutback in costly U.S. shale production, as smaller, over leveraged companies find it impossible to both get funding and to make money when oil hovers in the $40-$50+ range.

The impact is already reverberating throughout the shale industry, as rigs are cold stacked by the hundreds in record numbers, workers are laid off, existing wells are depleted and boomtowns start to panic. In six months or so, some industry watchers are predicting that a big enough drop in U.S. oil production will intersect with growing demand, pushing prices firmly back onto an upward track.

The Multi-Billion-Dollar Question

Until then, how low can oil go? That's the question being asked everywhere. West Texas Intermediate (WTI) has dropped as low as $43 this year, and more than a few pundits think crude will head a lot lower, possibly to $30 or thereabouts, with some even suggesting $20 or less on the extreme end, before it starts to inch its way back out of the worst crash since the mid-80s. (Brent crude has mostly bounced around in the mid to upper $50s.)

If the specter of $20 oil comes to pass, it will have serious repercussions in the offshore marine markets beyond the across the board belt tightening that has already spurred layoffs, as well as idled rigs and vessels.

What could push prices down further? Well, a cresting oversupply, as noted above; a longer than expected slowdown in U.S. shale, and/or continued lower than expected demand from India, China and other parts of Asia.

Still, certain as death and taxes is the fact that eventually oil prices will rise again. The problem for the offshore industry is that it won't be any time soon, nor possibly in the next year or two. Oil pundits and players seem to think $100 a barrel oil is five years or more down the road.

Shorter term, there is some talk of high $50s to low $60s by year-end and perhaps closer to $70-$75 a barrel by the end of 2016 or 2017.

But it doesn't sound like oil company CEOs are buying that, and these are the guys making the big money decisions. An ExxonMobil executive told CNBC

"The big international oil companies – the Exxons, Shells, BPS, and national oil companies like Petrobas – are all meeting with their vendors, whoever they are – Schlumberger and Halliburton – and they are asking for a reduction in cost and they aren't being bashful about it. The most common decrease they are asking for is 30% decrease in your costs asking for rate diminishment."

– Joseph Bennett, Executive Vice President and Chief Investor Relations Officer, Tidewater, Inc.

in mid-March that the company's stock was down 10%, and that he doesn't think oil will rebound significantly *for another two years*, in part because he thinks the world economy will continue to be weak through that period. In response, company CEO and Chairman Rex Tillerson said ExxonMobil will cut its 2015 capital expenditures by $4.5 billion. In late January, Royal Dutch Shell PLC said it would cut spending by $15 billion over the next three years, freeze dividends and pull back on its shale investments. Other oil companies have made similar announcements and cutbacks. Chevron CEO John Watson told CNBC, on March 27, that he expects oil prices to remain volatile and "choppy" for the rest of the year, and prices to remain depressed for several years.

"To see a 50% drop in prices [from last summer], that, I think, surprised a lot of us," Watson said. No one saw this coming, agrees Joseph M. Bennett, executive vice president and chief investor relations officer at Tidewater, Inc., which is said to have the world's largest fleet (261) of vessels serving the global offshore energy industry. "It was like a left hook out of nowhere. No one saw the crash of '08 coming either."

Regardless of what the well-capitalized oil majors and other companies believe, the plus for them is twofold. There is the potential to make some tasty acquisitions in the wake of anticipated consolidation and fire sales. The other is the opportunity to force a refocus on the basics. Oil companies have been complaining about creeping projects costs for years. The industry doldrums are the excuse they, and companies like Halliburton, which has laid off thousands, need to restructure long-term projects and cut the fat they've wanted to jettison anyway, say analysts like Jason Waldie, an Associate Director and energy analyst at Douglas-Westwood Pte. Ltd., in Singapore.

The End of Business as We Know It

The impact on the offshore industry has been to put an immediate end to business as usual.

"The big international oil companies – the Exxons, Shells, BPs, and national oil companies like Petrobas – are all meeting with their vendors, whoever they are – Schlumberger and Halliburton – and asking for rate diminishment," says Tidewater's Bennett. "They are asking for a reduction in costs, and they aren't being bashful about it. The most common decrease they are asking for is a 30% decrease in your costs. That's where the discussion begins.''

"There have been rig owners, because of their supply/demand ratio, that have provided greater than a 30% reduction in day rates. We have not done that sort of thing yet. We are continuing discussions, and as the market evolves through 2015, we'll see where that takes us,'' says Bennett.

According to the Offshore Marine Service Association (OMSA) and Douglas Westwood's Waldie, day rate cuts across the industry have been averaging 35%, alongside a significant contraction in capital expenditures for new projects. So even deeper water vessels and support players are feeling the pain, and the expectation is that things will get worse before they get better.

It's too early to tell whether the crash of 2014-2015 will rival that of 1985, but people are worried. "As far as the volume of layoffs and the number of companies unable to survive in the '80s, we have not reached that level of seriousness yet, but the concern is very real that we may be in the early stages of this downturn," says OMSA President Ben Billings.

The hardest hit regions have been the Gulf of Mexico, and the North Seas, where the latter has seen massive retrenchment as projects have been delayed and players like Maersk, SeaDrill and Transocean, among others, have announced cutbacks, layoffs and other measures.

"These have been historically much more spot-, than long-term work driven. In an up cycle, they are the first to benefit; in a down cycle they are the quickest to be impacted by lower, and the most severe, day rates," says Bennett, adding his company has very little exposure in those markets. "A year and a half ago, we felt like the Gulf could be a market with an overcapacity of vessels because of the number of Jones Act vessels being built. We have 12 deep water vessels, which we teamed up with long-term contracts at the peak of the market, as opposed to others electing to play the spot market," says Bennett. As a result, other players in the Gulf have been much more severely impacted by the downturn, he adds.

The hardest hit market sectors have been the shallow water players and the onshore shale industry in the U.S. and its supporting network of companies, which are responsible for the bulk of rigs taken offline, says Waldie.

The Best Offense is a Good Defense

The really bad news for many offshore companies wondering what to do now is that they may already be too late. The biggest lesson learned by companies who survived earlier market implosions won't help anyone treading water today who didn't know then what they are painfully learning now: never get carried away during the good times, and always plan ahead for the bad times.

The axiom "spend like there is no tomorrow," takes on a different meaning for companies like Tidewater, which believe in spending like there might not be a tomorrow. "This is a very capital-intensive business. It's very important to be very disciplined in the price you pay for individual assets. You are going to have to live with it for 20-25 years or more. In the upside years, you don't want to spend it all and incur more debt. It will get you in trouble," advises Bennett.

Exercising fiscal restraint as a matter of policy involves more than just not spending, or overspending on something you need. It means carefully considering the maintenance needs, and operating costs of new equipment and how that fits into a business' long-term strategy.

A clean balance sheet, coupled with an international focus and a long-term outlook, provides the strongest tools offshore companies can use to fend off financial disaster. Beyond that, the watch words for survival strategies are "discipline" and "adaptable."

Adaptable comes into play when looking for ways to keep both a vessel and crew in operation, include freezing wages, cutting benefits and or adapting working schedules to the available work. A 14 days on/14 days off rotation could be reworked to 10 days on/18 days off. "The worker is getting less hours, but they are still employed, and you are better prepared to respond quickly should the market pick up," says Bennett.

When layoffs are necessary, Tidewater says the onshore positions are the first to go. Out of its 9,000 employees, 8500 are mariners. "As long as a boat is working,

that is not where the reductions are coming from."

New Builds, New Trouble?

New builds coming into delivery are a potential hot potato for some companies, as most were ordered two or more years ago when oil prices, and the demand for equipment, were high. Billings says there have been more OSVs delivered in the last couple of years than he's seen in a long time. It's big money, and big debt for many owners. A new platform supply vessel, for example, can cost $15-$50 million to build, cost $4,000 to $18,000 per day to run, and cost oil companies $5,000 to $42,000 per day to rent. "There has been some publically expressed concern about the possibility for overbuilding the market, and that the oversupply might be an exacerbating factor in making the current [downturn] more difficult," he says.

According to Bennett, though, the offshore vessel industry has just about worked its way through a major new build cycle, disposing of much its older assets over the last 10-15 years. Prior to that, the last new build cycle was in the 70s. Excluding new builds, today the industry tends to have a mix of either 15-year-old vessels or 30-35-year-old vessels with a small number of 20-25-year-old boats.

Tidewater will take possession of 28 new ships over the next year and a half. "There could be better times to take delivery," Bennett admits, but he expects to find work for all of them, even if it means cold-stacking, selling or taking a lower rate for an older vessel. There have been reports of some companies delaying acceptance of new builds or moving them right into cold storage, but he doesn't see this being an issue. Speculative orders might have to take lower rates, but new builds feeding into long-term contracts should do okay. The rig industry, on the other hand, is not so far long in its updating cycle and that could send even more rigs off line as new ones enter the market.

Bennett sees relocating vessels to another part of the world as a viable option and something that helps his company's survival, whether for long-term contracts or what Billings calls "short-term opportunities in spot markets." But Walde is less optimistic. In many cases, he says, you can't just move a vessel to another locale. Different countries have different cabotage rules, and different regions have different geographical issues to contend with. A deep water vessel would have trouble, for example, navigating through the Middle East's shallow waters.

Other options with older assets include contracting them out at lower rates; selling them for a variety of uses, including as fishing, crabbing or cargo boats; cold stacking them; or selling them to salvage yards.

Right now, Tidewater has 16 boats cold-stacked, which involved little more than removing the crew, finding a place to drop anchor and taking the key. It's

“As far as the volume of layoffs and the number of companies unable to survive in the ‘80s, we have not reached that level of seriousness yet, but the concern is very real that we may be in the early stages of this downturn.”

– Ben Billings, President of the Offshore Marine Service Association

cheap, and, Bennett says, it’s something you don’t do for a month or less. You cold stack vessels you expect to be off market for a while, eliminating labor, operating and maintenance costs.

Bennett doesn’t see the point of having two vessels working part time.

“I’d rather have one boat working 80% of the time than two boats working 50% of the time.” It’s more efficient, and cuts down on duplication of effort, labor costs and maintenance issues. He’d cold stack the vessel nearest its mandatory inspection date in order to avoid having a 1- or 3-year contract interrupted by mandatory dry dock time.

Dodging Downtime

The Offshore Marine Service Association (OMSA) is focused on making sure regulations are “efficiently managed and administered in such a way that they do not wind up jeopardizing already thin margins or jobs already at risk,” explains Ben Billings, President, OMSA.

For example, a vessel might have difficulty acquiring an inspector. If, as a result, it is required to be tied up in dock for a longer period of time, and forced to forego additional revenues during an already tight time, “it would be an issue,” says Billings. “The availability of inspectors to reduce time at the dock is always a challenging issue for everyone involved be-

Tidewater, Inc.’s Dean Edward Taylor plows full steam ahead.

"The hardest hit market sectors have been the shallow water players and the onshore shale industry in the U.S. and its supporting network of companies, which are responsible for the bulk of rigs taken offline."

– Jason Waldie, an Associate Director and energy analyst at Douglas-Westwood Pte. Ltd., in Singapore.

cause of the thin workforce in the Coast Guard, and the high demand placed on it."

OMSA also looks for inspection and audit issues that might be duplicative or lead to delays. "Certainly right now, when vessels need to work as many days as they possibly can, while avoiding excess time at the dock, those issues take on added significance," says Billings.

The longer the oil crisis continues, however, the more the foremost issue for most companies will be sheer survival. For those companies saddled with debt who can do little more than curl up in a fetal position and hope their money outlasts the down market, their best hope will be acquisition or sale of their better assets. And there will be buyers, ranging from investors to big oil to fellow market competitors. Conversations are already taking place behind the scenes, say Bennett and Waldie, and the oil companies, meanwhile, have been public about their intent to look for deals and attractive fire sales.

"I'm not aware of anyone going under, but the stress levels are building day by day," notes Bennett. But perhaps not as much at Tidewater. "We invented the offshore supply vessel market back in the mid-50s, and here we are today, still, in a very difficult market. We're not happy with the market as it exists today, but we are pleased with the strategies we've employed that have put us in a good position to weather the storm."

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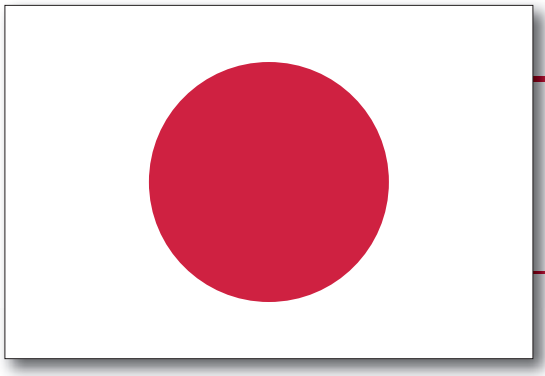

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JAPAN JSMEA
Japan Ship Machinery and Equipment Association

Greetings from JSMEA's Chairman

Greeting from the Chairman of Japan Ship Machinery and Equipment Association (JSMEA)

Our organization, the Japan Ship Machinery and Equipment Association (JSMEA), mainly consists of enterprises that primarily manufacture ship machinery and equipment installed aboard vessels. It currently boasts a membership of approximately 240 manufacturers, some of which supply products for offshore development facilities.

Recently, Japanese shipbuilding companies have been increasing the number of contracts from both compatriot and overseas customers for the production of facilities for offshore development projects. For its part, the JSMEA set up a dedicated in-house organization, called the Offshore Working Group, in 2013 to study products and services for and to exchange information on the offshore development business. We are now working with the government of Japan together with other parties.

The JSMEA has been present at the Offshore Technology Conference (OTC) since 2013 to promote its member companies' ship machinery and equipment.

Global energy demand is growing every year, though it is vulnerable to economic changes, as with the recent decline in crude oil prices.

We, Japanese ship machinery and equipment manufacturers, hope to not only supply safe and efficient products of high quality, but also to provide professional and thorough after-sales services so that each oil and gas drilling, production and transport project can be carried out safely and efficiently.

This year, the JSMEA will introduce many Japanese ship machinery and equipment products at its **booth (No. 11006) at the OTC**. I humbly request that you come to visit JSMEA member companies at our booth.

Signed
Motoyoshi Nakashima
Chairman

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High-End Offshore Service Vessel Ordered

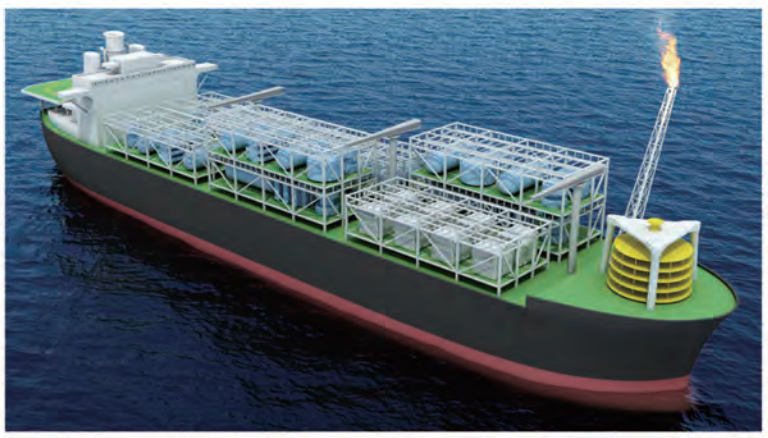
Kawasaki recently received a shipbuilding contract from Island Offshore Shipholding LP (Island Offshore) for one vessel to be built according to the Mobile Offshore Unit (MOU) regulations. Island Offshore, based in Norway, is a company offering a range of complex services to the offshore industry, including light well intervention, subsea installation and maintenance, anchor handling and logistics and supply. The vessel is a UT 777 designed by Rolls-Royce and Island Offshore in close cooperation.

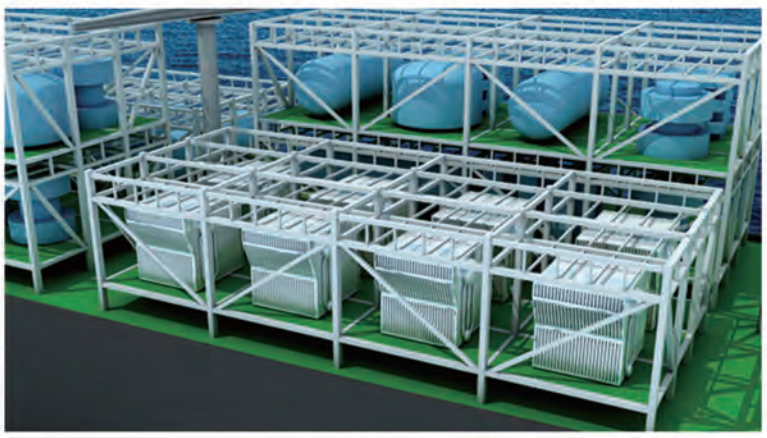
Kawasaki will build the vessel at its Kobe shipyard and carry out the necessary engineering work for construction together with Rolls-Royce. The vessel is scheduled for delivery in the first quarter of 2017. The topside handling equipment will be delivered by National Oilwell Varco. Emphasis has been placed on designing and outfitting the vessel for optimal subsea operations, and Island Offshore has experience from operating equivalent units over the last 10 years. The vessel will be equipped for tophole drilling and may also be adapted for light well intervention services.

It will feature an enclosed module handling tower to secure a safe and comfortable working environment when operating in harsh conditions, and the highest level of positioning capability, powered by the seven thrusters, which will secure more redundancy than similar offshore service vessels. It will also be of the highest comfort class and will be larger (approximately 169 m long, 28 m wide and 11.7 m deep) than similar vessels owned by Island Offshore. Kawasaki will actively pursue its shipbuilding operations in light of the expected rise in demand from the offshore industry, including various offshore service vessels and offshore structures.

For more information on Offshore Service Vessel, **please contact:** khi_brochure@khi.co.jp

Marine boiler for FPSO





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For more information on Marine boiler for FPSO, **please contact:** energy_power@khi.co.jp

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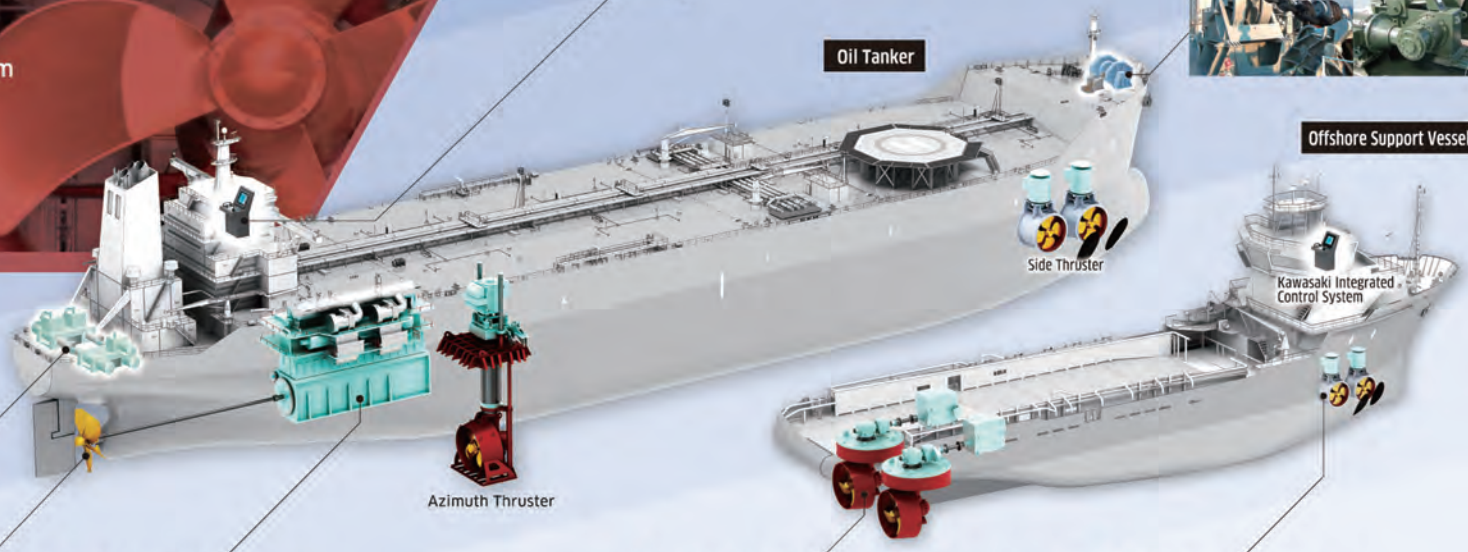

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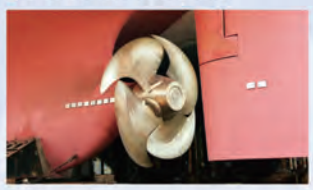

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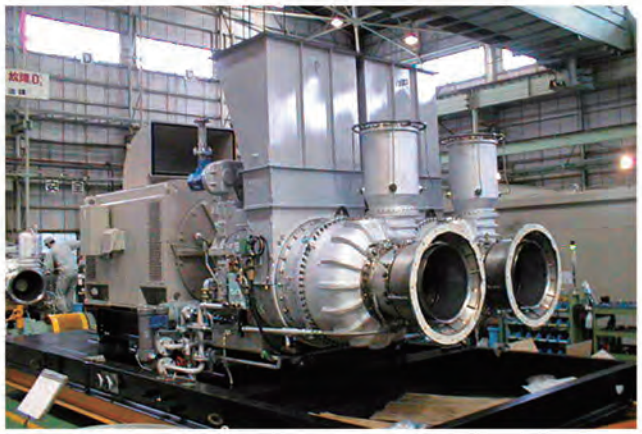

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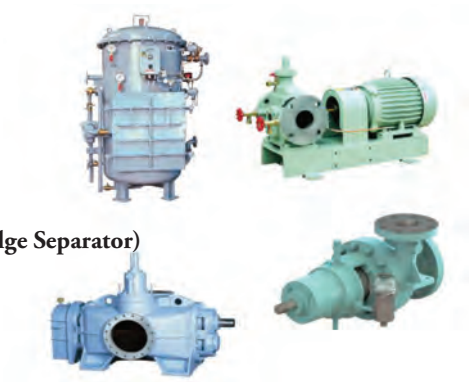

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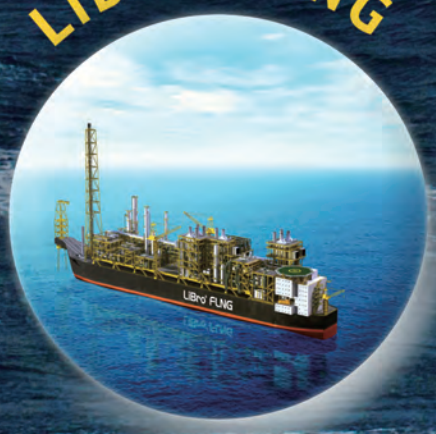

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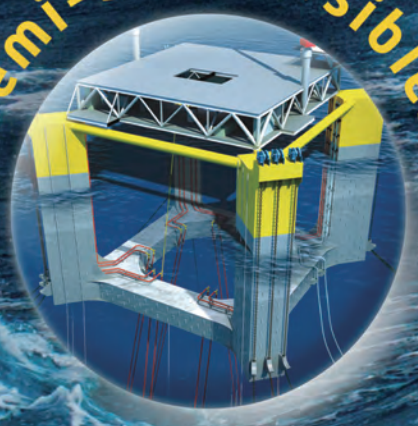

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Harkand Haldane DP3 Dive Support Vessel

A New Wave of DSV

By David Kerr, MD, Harkand

The Harkand Haldane is a DP3 dive support vessel currently being designed and built in Europe to reduce downtime in the North Sea's winter marginal weather months. Along with its well-equipped and logically planned layout, Harkand's clients looking for increased efficiency to maximize production during these challenging times may well have struck gold.

There is no doubt this is a demanding time for the oil and gas industry. With the slump in the oil price operating companies in the North Sea have two major considerations: to challenge the status quo across their aging subsea assets in order to maximize production; or to look towards investing in new developments in other regions.

Rejuvenating older fields through life extension can only be delivered through a robust subsea integrity management system. Managing expenditure on aging assets and subsea infrastructure also represents a key challenge to all industry players to ensure the life of North Sea oil and gas production is extended safely and economically.

Much of the global subsea fleet and resources are now dedicated to large scale, new development work on a worldwide basis. But there is a niche market in terms of inspecting, repairing and maintaining (IRM) older infrastructure and more recent subsea systems.

Harkand has a proven track record in IRM, with the staff, equipment and HSEQ accreditations giving it the resources and know-how to meet these challenges.

The company is expanding its DSV fleet in the North Sea to extend its range of subsea solutions which include high-quality vessels, survey, diving, ROV services along with inspection, project management and engineering.

Work is under way on the marine firm's new DP3 diving support vessel (DSV) Harkand Haldane. When it is delivered to the North Sea at the end of April 2016, it will become one of the most well-equipped inspection, repair, maintenance and light construction vessels available on the market.

Harkand Haldane will add a third DSV capability to the company's North Sea fleet; the business has a further seven vessels including dive support and multi-purpose vessels in its global tonnage which are currently deployed throughout the Gulf of Mexico, West

Harkand Haldane Main Particulars	
Shipbuilder	Vard
Length, o.a.	121m
Length, b.p.	110.8m
Beam	23m
DWT	5,500t
Draft, max.	7.3m
Delivery	Q2 2016
DP	DP3
Fuel consumpt., transit (14 kts)	13 t/day
DP3 Beaufort	15 t/day
DP5 Beaufort	21 t/day
Main generator	4 x 3,300 kW
Emergency generator	1 x 342 kW
Dive emergency generator	1 x 970 kW
Bow thruster	Rolls-Royce 2 x 1,500, tunnel
Bow azimuth	Rolls-Royce 2 x 1,200 kW, retractable
Stern thrusters	Rolls-Royce 2 x 3,250 kW, azipull
Accommodation	120
Main Deck Area	1050 sq.m.
Main Crane	NOV Hydralift 250t AHC
Classifiction	DNV
Flag	Marshall Islands

Africa and Europe. Sister ships the Harkand DaVinci and Harkand Atlantis have been servicing the North Sea region, delivering IRM campaigns and light construction projects for clients such as Apache North Sea and TAQA Bratani. Harkand has recently further added to their DSV customer base with an award from Maersk Oil North Sea.

The capability of the new build will see the DSV able to operate at the high-end of the IRM and light construction sector with the ability to handle the sea state environment in the North Sea during the challenging winter months, therefore incurring less downtime.

Ultimately, the Harkand Haldane will represent a modern front-end DSV with many years of practical experience built into it.

A Vessel with Staying Power

Where to build the new DSV was a major consideration for the Harkand management team and board of directors. The decision to work with VARD in Norway came down to its reputation for ensuring the highest quality work and ability to achieve delivery date deadlines. Harkand acknowledged the benefits of having a vessel that was built to a high standard and on time and was ready to go straight into operation as a reliable asset.

The North Sea is known for having some of the harshest weather and sea state conditions in the world. As such, the Harkand Haldane has been designed to a high specification to maintain operational performance in marginal weather conditions.

The hull is being built in VARD's facility in Tulcea, Romania, and will be towed to Norway for outfitting.

Fuel consumption will also be lower as a result of the bow design which produces less hydrodynamic drag and will see the Harkand Haldane experience a more comfortable transit. Operational diving parameters are typically 5.5m significant wave height, ie approximately 7m max with a suitably considered freeboard of 3.5m to maintain a dry deck which is obviously a safety benefit.

During the typical North Sea winter months, this will be a major factor in reducing downtime from the expected norm of older vessels, ensuring jobs are completed in a more cost effective way.

The main vessel specifications comprise of the main crane manufactured by NOV, a Rolls Royce propulsion system, Kongsberg DP system, main engines manufactured by Wärtsilä and the diving system on board manufactured and installed by Drass.

Cost effective IRM and light construction relies on having the best tools for the job. Harkand has a clear vision of how best to equip the vessel from their many years of experience.

The crane on the Harkand Haldane is a

Pictured clockwise starting top right:
The Bridge Structure
3D Model Rendering
The SAT diving chamber
Hull blocks being positioned

250t NOV Hydralift, capable of operating in 3,000m water depth. This makes for a multi-purpose vessel with both diving and deep water ROV capabilities.

Keeping the Divers Safe

The specifications ensure that the integration of systems on board the Harkand Haldane will not only deliver what clients require but also provide a safe working environment for the 120 personnel on board and, most importantly, the divers in the water.

The IRM market in the region calls for the majority of dive campaigns to be carried out by saturation divers.

The specification on this vessel will include IMCA compliant 18-man twin bell system rated at 300 msw including two three-man 6.5 cu. m. bells with bell handling able to launch in up to 5.5m Hs sea states.

In addition, it will feature two six-man DDC (D/L) and two three-man DDC (D/L) (2,300 mm dia) with separated entry locks c/w toilet and showers, two 18-man capacity self-propelling hyperbaric lifeboats (as standardized across all Harkand's fleet) and two TUP chambers (2,300 mm dia.) for dive bell mating.

The class built air diving system has one DDC (D/L) and two two-man LARS on starboard side, with the possibility to install two two-man additional LARS. The nitrox configured dive system allows for extended dive times as required.

The two luffing A-frame mechanisms are built to optimize divers' safe excursions accounting for thruster proximity and diver's umbilical lengths (IMCA D010 standards), giving the DSV the capacity to deploy dive baskets up to 7.3m from the ship's side.

The bell LARS and winch safe working load were also a top priority for the Harkand design team as were the winch fleet angle ensuring they meet class rules. Good communication on board is paramount for ensuring a safe and productive offshore crew to successfully complete any project. Harkand has been very conscious of this in the planning of the office space and proximity and interface of the various departments, dive control, project engineering, inspection, survey etc. This process has been implemented previously across all Harkand's North Sea DSVs and the positive feedback from captains and crews agree that an ergonomically designed office space makes for a more efficient and safe environment on board as a result.

Crewing Up, Ready for Action

When the Harkand Haldane is in the latter stages of build, the company will integrate its key people on board including its most experienced captains, offshore managers, mariners and chief engineers to ensure the DSV is prepared and ready to deliver on its maiden scope of work and beyond.

The pool of diving, ROV, survey and project personnel will also be selected to ensure upper quartile performance is achieved.

The focus has always been on meeting the needs of customers within the region. With one of the most well designed DSVs in the IRM and light construction market outfitted with the most appropriate equipment to meet the demands the North Sea, the Harkand Haldane is certainly set to make waves.

The Author

David Kerr is the managing director for Harkand in Europe. He has held several senior operational and commercial positions during his 35 years in the oil and gas industry.

Five Minutes with ...

Vivek Seth

CEO, Halul Offshore Services

Last month Maritime Reporter spent some time with Vivek Seth, CEO, of Qatar-based Halul Offshore Services Company, for his insights on the impact of low oil prices in the Middle East and beyond.

By Josh Keefe

What is your background?

I became part of the Milaha family when I joined Halul Offshore in February 2014 as CEO. I am a second generation Marine Engineer. After sailing as a C/E I took my first shore job as Technical superintendent in Hong Kong for more than two years. Subsequently, I got my Masters in Business Administration from UK. After that, I began my offshore career at Tidewater where I worked in commercial and general management roles for five years in four different countries. Later, I moved to SVITZER in the UAE, where I worked as a Regional Commercial Manager for three years before joining Smit Lamnalco as Regional Managing Director for the Middle East and Indian Subcontinent for five years.

Halul Offshoren is not yet a 'household name;' please provide an overview of your company

Halul is a subsidiary of Milaha, which is one of the most established and distinguished shareholding companies in Qatar. Founded in 1957, Milaha is the country's first shipping agent and was granted the first commercial license. It opened its first branch in Dubai 20 years later and has continued to reinforce its presence in Qatar, and expand to the UAE and Saudi Arabia. Halul was formed in 2000 with a focus on the Oil & Gas industry. Our fleet has grown substantially since then with a focus on IRM and subsea work too. We have expanded into Saudi Arabia and looking at other ways how we can grow the company beyond Qatar. Nevertheless, Qatar will always remain our strongest market.

So what are the specifics on the fleet you oversee today?

For our diving support vessels, we have the Al-Huwaila, built by ABG Shipyard Ltd., India in 2005; the Halul 41, which was built by ITAL THAI Marine Ltd in 2010; the KHATTAF, which was built by Smith Dock Limited, South Bank, and Cleveland, UK in 1986; and Shaddad which was built by ABG Shipyard, India in 2014.

For our anchor Handling Tugs and Platform Supply Vessels, the Halul 20 which was built by ABG Shipyard India in 2002; the Halul 21, 22 and 23 which were built by ABG Shipyard India in 2003; the Halul 24 which was built by Bharati Shipyard Ltd., India in 2006; the Halul 25 – built by Bharati Shipyard Ltd., India in 2007; the Halul 26 which was built by Q Ship Fabrication Yard, Qatar in 2007; the Halul 27 which was built by Q Ship Fabrication Yard, Qatar in 2008; the Halul 28 which was built by Hangtong shipyard, Guangzhou, China in 2007; the Halul 29 which was built by Hangtong shipyard, Guangzhou, China in 2008; the Halul 40 which was built by ITAL THAI Marine Ltd., Thailand in 2009; the Halul 60 which was built by Boustead Penang Shipyard in 2011; the Halul 61 which was built by Boustead Penang Shipyard in 2012 and the Halul 62 and 63 which was built by Grandweld, Dubai in 2013.

It is key to ensure the staff are adequately and regularly trained to perform their tasks as the human and financial cost of accidents could be severe. Also we need to make sure the technology we adopt is reliable **and that does not necessarily mean having the most sophisticated technology**.

For our safety standby vessels, we have the Halul 10, 11 and 12 which were built by Zhenjiang shipyard, Zhenjiang China in 2002, the Halul 14 which was built by Cheoy Lee Shipyards Ltd in 2003, the Halul 15, 16 and 18 which were built by Jiangsu Wuxi Shipyard, China (POET) in 2007 and the Halul 17 which was built by Jiangsu Wuxi Shipyard, China (POET) in 2008.

Finally, for our work boats and maintenance vessels we have the Halul 30 which was built by Bharati Shipyard Ltd., India in 2002; Halul 32 which was built by Damen Shipyard, Holland in 1982; the Halul 35 which was built by Maroli Shipyard, Singapore in 1984; the Halul 36 which was built by Herman Surken GmbH, Papenburg, Germany in 1984; the Halul 37 which was built by BHARATI Shipyard Ltd, India in 2004 and the Halul 38 which was built by ASIA SEALINK, MALAYSIA in 2010.

It sounds as though your newbuilds are spread to quite a few yards. Where do you build your new vessels and why?

The new building is done where we can get quality at competitive price – be it Far East, India or the Middle East.

Late last year you mentioned a fleet of 50 within 18 months … are you still on track to meet this target?

We hope to have around 50 vessels by mid 2016.

So how is the continued low pricing for oil impacting your business?

We are no exception – this is a challenge across the oil and gas segment from NOC/IOC to the smallest company supporting this segment. The times are going to be difficult and we see requests for dropping day rates. However, we need to be careful that we do not compromise safety or operational effectiveness. Cost management is going to be crucial.

Working in a wild cyclical market like offshore oil and gas, what do you count as the secret to success?

There are quite a few success stories in this industry. It is important to have a good mix of long term and short term contracts and simultaneously listen to your customers and evolve.

You've mentioned before that "the

Halul Offshore's goal is a fleet of 50 boats by mid-2016

gap between technology and human skills is widening exponentially." How can this gap be eliminated, or at least minimized, both for your company and the industry as a whole?

It is key to ensure the staff are adequately and regularly trained to perform their tasks as the human and financial cost of accidents could be severe. Also we need to make sure the technology we adopt is reliable and that does not necessarily mean having the most sophisticated technology.

What new technologies are you looking at implementing in your fleet? What major advances in tech have helped your business the most in recent years?

We are currently looking towards enhancing the energy efficiency of our ships and lowering fuel consumption. Bunkers are typically the biggest cost for a client. By improving efficiency of the vessels, we are trying to reduce the opex and also the environmental footprint. Additionally, technology is a great enabler for safe operations by looking at redundancy through DP2 capability. The latest technology paints for the hulls and the implementation Energy Management Systems within our fleet are also initiatives we are looking at.

What did you learn at the Annual Offshore Support Vessels Forum?

The challenges for our industry are likely to last in the short to medium term. Our attendance at the forum was a great opportunity to listen to our peers and discuss with them ways to make the best out of a bad market situation. It also offered us the chance to review the latest technologies in our field and promote the Halul and Milaha brand.

When you look at the world, where do you see opportunities for growth?

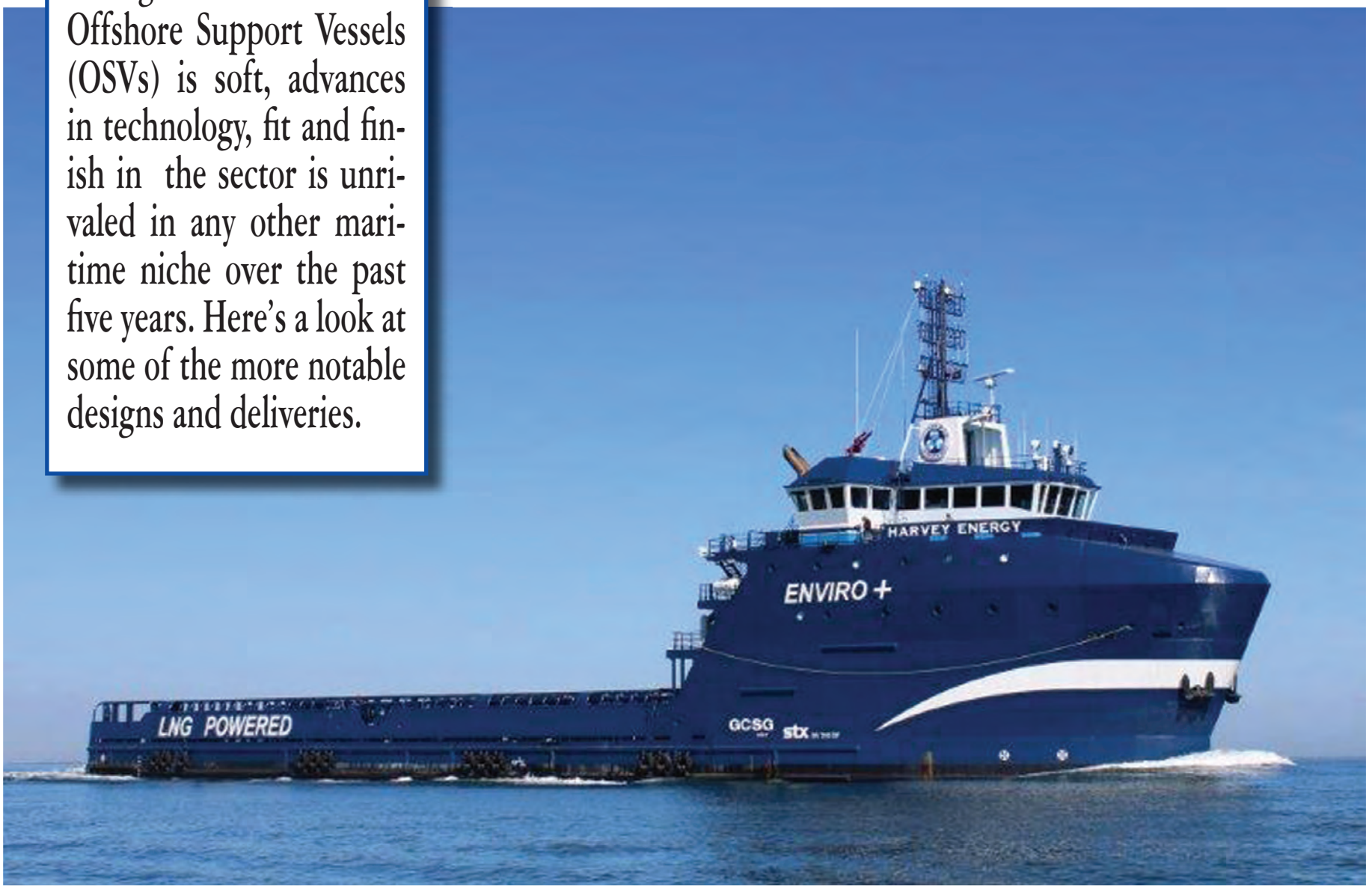
As of now all regions are holding back due to the oil price. Once there is stability in the oil price, we will get a better view of the growth opportunities. However, Africa remains an attractive market in the long run.

What will your company look like 5 years from now? 10 years?

Halul and Milaha will only be bigger, better and stronger with the best in class standards. While this is easier said than done, we believe that the reputation we have garnered through the years and our financial strength will allow us to achieve our growth plans in the coming years.

OSV Technology

Though the market for Offshore Support Vessels (OSVs) is soft, advances in technology, fit and finish in the sector is unrivaled in any other maritime niche over the past five years. Here's a look at some of the more notable designs and deliveries.



Harvey Energy

Few vessels have inspired as much attention or coverage as the **Harvey Energy**, the first OSV of its kind in North America, able to run on both Liquefied Natural Gas (LNG) and diesel. Harvey Energy, chartered to Shell for its deepwater operations in the Gulf of Mexico and owned by Harvey Gulf International marine, was built by the Gulf Coast Shipyard in Mississippi to meet requirements of the ABS "ENVIRO+, Green Passport" notation. Harvey Energy is a 310 x 64 x 24.5-ft. platform supply vessel powered by three Wärtsilä 6L34DF dual fuel gensets, providing 7.5 MW of power and fueled by Wärtsilä's LNGPac system. The 5,150 dwt vessel is capable of carrying 253,000 USG of fuel oil, 18,000 bbls of liquid mud, 1,600 bbls of methanol, 10,250 cu. ft. of dry cement and 78,000 USG of LNG fuel. The vessel is able to operate on LNG for seven days before refueling. To increase efficiency, Harvey Energy uses Shell's Gadinia 40 engine oil. It will run on 99% LNG fuel and will be able to operate for around seven days before refueling, loading fuel from Harvey Gulf's new LNG bunkering facility at its terminal at Port Fourchon, La.

From Port Fourchon, Harvey Energy will transit to Shell's platforms, such as the new Olympus production platform, delivering equipment and drilling fluids. Two additional LNG-fuelled vessels are expected to follow.

Harvey Gulf is the first of six LNG OSVs being built for Harvey Gulf. When operating on only LNG, this vessel meets the new Tier IV sulfur and nitrogen oxide emissions regulations—part of the North American Emission Control Area (ECA).

While the Harvey Gulf is widely lauded for its advanced propulsion technologies, not to be overlooked is the interior fit and finish on the boats, designed to help attract and retain the best crews possible in what can be a competitive environment with high turnover. While

the owner and vessel are not beholden to the new MLC2006 regulations which govern amenities and living conditions for crew, Harvey Gulf went the extra mile to ensure the comfort and safety of its crews, but also to ensure that the vessel is in compliance in any world region. "MLC2006 is relevant for vessels designed in accordance with IMO requirements. Harvey Gulf has always considered the welfare of its crews, regardless of the regulations," said Mike Carroll, Harvey Gulf's Senior VP of New Construction and Chief Naval Architect, in a recent interview with MR sister-publication MarineNews. "The regulations are always a minimum standard to be met; however we have always strived to exceed the minimum standards for vessel design. In our new build construction vessel program, these vessels are designed in accordance with IMO requirements including the Special Purpose Ships (SPS) Code and MLC2006. The design intent for these vessels is to be capable of servicing the offshore industry worldwide without limitation. For this reason, meeting and exceeding the latest regulations regarding Seafarer welfare was important not only as a function of potentially operating in countries which have adopted MLC2006 but also in response to Charterer's request for vessels meeting the latest IMO requirements."

The vessel is equipped with multiple conference rooms, cinema, offices, gymnasiums, lounges. Many of the crew cabins have their own day rooms. Working and hotel areas of the vessel are segregated from the crew and passenger quarters. Lighting throughout the vessel is LED which is less harsh on the eyes. The bridge has been arranged to be extremely ergonomic with unobstructed lines of sight.

Triangle: A New Name in OSV Building

While the current oil bust has curtailed some development, the recently ended long-term run up to $115 per barrel brought many new faces to the marketplace, including UAE-based shipbuilder Triangle Marine Services, which has recently laid the keels of two new 45-m Aluminum Fast Offshore Support Vessels which were ordered in November 2014 by UAE-based client Marine Core & Charter LLC. The new builds mark the company's first shipbuilding project and its entry into the offshore market. The 45-m Aluminum Fast Offshore Support Vessels by U.K. designers Camarc feature a hull designed to optimize the power required to reach speeds of up to 30 knots, combined with excellent sea keeping and a wide operational en-

Triangle's new offering.

velope. The design features a deck area of 140 sq. m. and fuel cargo capacity of 100 metric tons. A luxury area for 12 VIP guests is incorporated along with a seating capacity for 100. Only time will tell if Triangle's approach to the market will bear fruit.

MV Shelia Bordelon

While much attention has been heaped on the Harvey Gulf LNG initiative, there are a stable of advanced vessels coming to the market such as Bordelon Marine's MV Shelia Bordelon, which was christened at Bordelon Marine Shipbuilders in Houma, La., in late March. The Shelia Bordelon is significant for a number of reasons, in part due to its partnership with Susan G. Komen where Bordelon Marine will donate a portion of the profits from its ship to the New Orleans affiliate of Susan G. Komen for the Cure. A pink stripe will be featured on the vessel along with the Susan G. Komen New Orleans logo. MV Shelia Bordelon is the second vessel from the new Stingray series 260' Class DP2, designed and built at Bordelon Marine's brand new purpose built facility in Houma.

MV Shelia Bordelon is a Stingray series 260 Class Ultra-Light Intervention vessel, with an emphasis on the "Ultra-Light" and the economic benefit that can deliver at a time when oil prices are depressed and offshore operators are tightly monitoring every penny. MV Shelia Bordelon is DP-2 and measures 257 x 52x 18-ft., outfitted with a mezzanine deck capable of housing two work class ROV's with a clear deck of 143 x 44 ft. (6,280 sq. ft.) and a top speed of 14 knots. The Stingrays feature Cummins QSK 60-M Tier3 main propulsion engines along with Schottel 1215, 220 hp per Z-Drives and Schottel STT2, 1020 hp per bow thrusters. All systems are fully automated and controlled from the bridge. The Stingray series are SOLAS classed, FIFI 1 ACCU, EEP 175, and Tier3, and MV Shelia Bordelon also features a 50-ton NOV active heave-compensating crane with 3,000m of wire. The vessel can accommodate up to 60 persons and features an internal ROV office and control room.

MV Shelia Bordelon Main Particulars

Length, o.a.	257 ft.
Beam	52 ft.
Depth	18 ft.
Draft	15 ft.
Deadweight	3285 lt
Gross Tonnage	2122 lt
Certifications	ABS
Flag	USA
Official Number	1219327
Builder	Bordelon Marine
Year Built	2015
Owner/Operator	Bordelon Marine
IMO Number	9670640

Ulstein Delivers PSV Blue Queen

While the most recent bull run of oil prices brought many new faces to the field, Ulstein is a long-term proven commodity. Pictured here is the Platform Supply Vessel (PSV) Blue Queen, of Ulstein's PX121 design. It was delivered to Blue Ship Invest from Ulstein Verft on February 24, 2015. This vessel is the first of two for which Norway-based Golden Energy offshore is awarded the ship management contract.

(Photo Ulstein)

MV Shelia Bordelon

LEEVAC PSV for Tidewater

Leevac Shipyards Jennings, LLC launched hull 367, a platform supply vessel (PSV) designed by Leevac Design Services, LLC (300 DE-52 HAB PSV). Hull 367, the first of a two-vessel newbuild program for Tidewater Marine, is Leevac's first launch in 2015. The vessel measures 300 x 62 x 24 ft., has a diesel-electric plant, accommodations for 52 persons, and is ABS Classed A1 AMS, ACCU, OFFSHORE SUPPORT, DP-2, FiFi-1, HAB (WB), UWILD ENVIRO and GP will be certified for worldwide operations. The vessel is scheduled to be delivered during the third quarter of this year.

(Photo courtesy of LEEVAC Shipyards)

VT Halter Powers Ahead

Diverse newbuild, repair, government workload has VT Halter firing on all cylinders

When it comes to diversity in shipbuilding VT Halter has few that can match the depth and breadth of its order book. Last month we spoke with Bill Skinner, VT Halter's CEO and a 46-year veteran of the shipbuilding industry, for his take on the shipyard's progress.

By Greg Trauthwein, Editor

If you drive just south of I-10 in Pascagoula, Miss., within 10 minutes you find yourself on the doorstep of VT Halter Marine, arguably one of the more diverse and active shipyards in the U.S. The company, which is a subsidiary of Vision Technologies Systems, Inc. (VTS), operates three facilities in Jackson County, Miss., and today supports about 1,600 full time employees as well as about 1,600 vendors and subcontractors. Its recent and current order book is fat and diverse, and includes:

- Two LNG-fuelled ConRo carriers for Crowley Maritime, the first of their kind in the world
- A pair of 250,000 barrel ATBs and a pair of 6,000 hp ATB tugs for Bouchard Transportation, a long-tenured and important client for VT Halter.
- A Fast Missile Craft (FMC) for the U.S. Navy, undergoing sea trials
- An Oceanographic vessel, TAG66
- A car carrier for Pasha
- The last two in a series of 10 SuperMax 320-ft. PSVs for Hornbeck

In addition, VT Halter's repair facility (pictured above), which opened in 2014 and includes a 13,000 ton drydock, has been full with a diversity of work from NOAA to offshore to bulk carriers since it opened last year.

"The secret of VTHM's success is our ability to harness existing commercial and defense-related project 'know-how' and integrate it with emerging technologies," said Bill Skinner, CEO. "Our ability to do government and commercial work in one facility is one of the things that makes VT Halter a little different."

Anyone in the shipbuilding business knows how difficult of a task it is to build commercial and navy contracts under the same roof. While both are ships, the procurement, oversight and requirements for navy ships are a different magnitude of order, making the process to design, build and outfit a completely different ballgame. Skinner said the secret to success is really no secret at all. "We have a program management group that has been trained and the experience of working our navy programs, and they know the difference of requirements as opposed to our commercial customers. It's just a matter of

VT Halter Invests in its Facilities. The company has invested more than $120m over the last five years – including direct company investment and grants – that have helped to build the new repair yard (left).

properly structuring management to deal with the two separate entities."

A Lifetime in Shipbuilding

Bill Skinner is a walking encyclopedia of shipbuilding knowledge, having started his ship construction career at Alabama Drydock in 1969. While he will soon have 46 years experience under his belt, he remains humbled and committed to a management philosophy rooted in finding the right people and letting them do their jobs. "Our greatest asset is our people, and my style is to stay close to our personnel, listening to the thoughts of our long-tenured employees. I believe in surrounding yourself with good people and letting them do their jobs."

While he has worked under a number of corporate entities as shipyards have changed ownership hands, Skinner essentially has worked for two companies in his career, and in that time he has his fair share of challenges to building, running and maintaining an efficient and profitable shipbuilding business. He considers his primary challenge, though, as maintaining an adequate backlog to keep the yard and its workers gainfully employed.

"In our business, particularly on new construction, we need about five years of backlog, and building backlog is always a challenge," said Skinner. "You've seen recently the oil prices plummeting, and we've seen a lot of the owners now pulling back on capital expenditures."

To date, VT Halter has not received any cancellations because of the fast-falling oil prices, but Skinner said there has been a noticeable downturn in inquiries. And while a downturn in activity is never welcome news in a manufacturing entity, Skinner relies on VT Halter's solid reputation for garnering repeat business, such as Bouchard and Crowley, which have had near continuous newbuild programs with the yard for nearly 15 years each.

But Skinner has seen enough market fluctuations in his 46 years experience to know that when one door closes, another one opens.

"We stay close to our customers and listen to what they're saying, which gives us an indication of what will be coming down the pike," said Skinner. "Some of the customers in the oil field service industry are pulling back, but we think it will be short lived. At the same time we see there will be opportunities with the transportation of crude oil. Also, the bunkering and fueling of LNG ships will provide opportunities as well, and we're now positioning ourselves to support that market. There are a lack of (LNG) 'service stations,' and I think that's an area where you are going to see more activity."

With this historically strong backlog, VT Halter has been able to attract and maintain a fairly solid and steady work base, and in fact one of the bright spots in the oil market downturn has been a loosening of the labor market, in that

"The secret of VTHM's success is our ability to harness existing commercial and defense-related project 'know-how' and integrate it with emerging technologies. **Our ability to do government and commercial work in one facility is one of the things that makes VT Halter a little different."**

Bill Skinner, CEO, VT Halter Marine

the company is more easily able to spot and target high-value talent to add to its team.

Long-term Investments

While Skinner readily admits that it is his people which form the cornerstone of VT Halter's success, he knows too that modern equipment and facilities are equally important investments in the game to succeed in shipbuilding and repair. To that end, the company has invested more than $120 million over the last five years – including direct company investment and grants – that have helped to build the new repair yard and to outfit all facilities with more efficient tools, including:

- Development of the ship repair facility itself, including the new 13,000 ton floating drydock;
- Additional cranes, up to 500 tons;
- Transporters capable of moving large modules up to 450 tons; and
- A larger launch way, able to launch vessels up to 750 ft. long with a Panamax beam.

Courtesy of its VT Systems ownership, VT Halter has a sister company, ST Marine in Singapore, from which it can share technologies and technique. "There is a lot of synergies between VT Halter and ST Marine as it relates to ship repair and construction," said Skinner.

The Crowley LNG ConRo Ships

Recently, the keel for the first of two liquefied natural gas (LNG)-powered, combination container – Roll-On/Roll-Off (ConRo) ships for Crowley Maritime Corp.'s liner services group was laid at VT Halter Marine.

"From our point of view we are fortunate that Crowley gave us the opportunity to be one of the forerunners in LNG, which clearly will be a propulsion system of the future," said Skinner in neatly summarizing the importance of this historic, high-profile contract to his company and the industry. "It will provide a great knowledge base as well as employment for the local economy."

The Commitment Class ships will exclusively serve the U.S.-Puerto Rico trade lane, replacing the company's towed triple-deck barge fleet in the South Atlantic trade which served the trade since the early 1970s.

The new Jones Act ships will be named El Coquí (ko-kee) and Taíno (tahy-noh), and will be built at VT Halter's Pascagoula facility, with deliveries scheduled for mid and late 2017, respectively. The ship design is provided by Wärtsilä Ship Design in conjunction with Crowley subsidiary Jensen Maritime.

"One of the things that's taken a lot of challenges out of the project has been the teamwork with Wärtsilä Ship Design, with Crowley's Jensen Group, as well as our own engineering management," said Skinner. "We have also worked very close with MAN which will provide the complete propulsion package."

The new Commitment-Class ship has been designed to maximize the carriage of 53-ft., 102-in. wide containers. They will measure 219.5 x 32.3m with a deep draft of 10m, and an approximate deadweight capacity of 26,500 metric tons. Cargo capacity will be approximately 2,400 TEUs (20-foot equivalent-units), with additional space for nearly 400 vehicles in an enclosed Roll-on/Roll-off garage.

The main propulsion and auxiliary engines will be fueled with LNG from MAN, and the vessels will be classed by DNV-GL.

Recent Activity

VT Halter Marine recently launched ATB tug Kim M. Bouchard for Bouchard Transportation from its Moss Point Marine facility. Measuring 150 ft. long, the 10,000 hp twin screw ATB tug is classed by ABS as A1 Towing Vessel, Dual Mode ATB, USCG Subchapter M, is equipped with Intercon Coupler Systems, and will pair up with Barge B. No. 270. The barge measures 625 x 91 x 47 ft. and has a 250,000-barrel capacity. Used to transport liquid petroleum, the barge is ABS and USCG certified for Jones Act service. VT Halter began construction on this unit in January 2014 and plans delivery for June 2015, when the unit will enter into Bouchard's fleet

service in New York. A sister unit to the pair, M/V Donna J. Bouchard and B. No. 272, is also under construction at VT Halter's Pascagoula facility.

For Pasha Hawaii, ConRo vessel M/V Marjorie attained main engine light off while under final construction in Pascagoula, an event which signals that the ship's network of systems is complete and functional prior to delivery.

The addition of the Marjorie C to Pasha's Mainland/Hawaii trade lane represents a long-term investment of more than $200m to the future of serving Hawaii, the company noted. Pasha added that the company will soon offer weekly service with Marjorie C, sailing opposite the Jean Anne, to provide new capabilities for containers and a variety of fully covered RoRo cargo.

VT Halter Marine's Mississippi Facilities

• Pascagoula Operations

The Pascagoula Operations facility is located on Bayou Casotte near the Port of Pascagoula. It has available water depths of up to 42 ft. at pier side adjoining the main navigational water channel leading directly to the Gulf of Mexico. Average tides for the area are two ft. A protected slipway 800 x 200 ft. is available and water depth is maintained at a minimum depth of 16 ft. The main fabrication and assembly building has 200,000 sq. ft. under roof. The NC steel cutting line capacity is 27,000 tons/year and the panel line throughput is 18,772 tons per year. The facility includes a full range of outfitting services and two warehouses. A tiltbeam launchway is available for launching vessels up to 750 ft. in length. An additional 2,500 ft. of steel/concrete bulkhead space is also available for pierside service.

• Moss Point Marine (MPM) Operations

The MPM Operations facility is in a protected location along the east bank of the Pascagoula River just north of Interstate 10. Convenient water, highway and air transportation access is provided. The facility has three launch ways and the maximum vessel length that can be built under cover is 91 m. The facility has steel and aluminum fabrication shops, a carpenter shop, woodworking, electrical, electronics, pipe shop, mold loft and ample warehouse storage space available. The MPM Operations facility offers 1,150 linear feet of steel sheet pile bulkhead waterfront. Depth along the launch ways is over 25 ft. The entire waterfront is served by three crawler cranes of between 100 and 225 ton capacity, two 18-ton mobile utility cranes, and complete underground services.

• Halter Moss Point (HMP) Operations

Halter Moss Point Operations is in a protected location, with deep water access to the Gulf, containing large module fabrication and assembly platens, and two launch ways for up to 3,000 long tons vessel launches. The facility includes a full range of outfitting services, and two warehouses. The facility maintains a combined crane lift capacity of up to 300 tons. The cranes can be moved to support construction activities on the building ways or throughout the yard. Yard services, including fire protection, welding, electrical, and material handling, are provided adjacent to the building ways.

Tamsen Shipyard, Rostock: Minehunting vessels "Herten" and "Homburg" at Tamsen Shipyard.

The German Shipbuilding Industry

German shipbuilding has made a significant turnaround. The country's shipbuilding industry has seen increases in the number of employees, orders and deliveries compared to 2013, according to the German Shipbuilding and Ocean Industries Association (VSM).

By Peter Pospiech

The special ship building sector drove this growth, as 20 of the 34 delivered new builds could be classified as high-quality special vessels or naval units.

Although VSM announces its annual balance officially in May of each year, MR was able to obtain some early insights into the results. "The order incomes in 2014 have been remarkably better than in 2013 – in regard to value as well as tonnage. There are clear indications of an upward trend," said Dr. Reinhard Lüken, CEO of the German Shipbuilding and Ocean Industries Association (VSM). This is good news for an industry that saw deliveries drop to $2.7 billion in 2013. 2014 order volume rose to almost $10.8 billion from $9.9 billion in 2013.

"The situation at many yards is much better than in previous years," said Lüken. By November 2014 shipyards had achieved the full turnover of 2013. In that year, shipyards Sietas and Peenewerft were hit by insolvency. In 2014 this picture has been improved. Peenewerft is, as part of the Lürssen-Group, back in the market.

This shipbuilding rebound predictably produced a rise in employment in 2014, as German shipyards employed 17,854 workers, according to the statements from the union IG Metall. This is a six percent rise compared to 2013. The big shipyards are recruiting personnel for 2015 as order volume remains stable. Thirteen vessels of more than 700,000 gt were ordered during the first three quarters of 2014 at German shipyards. Of these orders, almost 90% of the value is in the cruise vessel and luxury yacht segments. But some special vessels for the offshore segment are in the order books as well, as shipyard Abeking & Rasmussen is now producing its successful SWATH-Design in series.

The cruise sector is a pillar of the country's shipyard capacity.

Last year, Neptun Werft delivered 11 river-cruise vessels, and an additional 11 new ships are scheduled for delivery in 2015. The yard in Warnemünde is scheduled to deliver sections and complete engine compartment modules for Papenburg, a backlog that will keep the yard busy until 2016. Business at Meyer Werft is currently booming, and to date it is scheduled to deliver eight ships through 2019. Last year the shipyard delivered "Quantum of the Seas"

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Submarine U35 (the bigger sub on the pier) of the German Navy during its build at the Kiel shipyard TKMS.

Nordic Yards delivered an innovative jack-up vessel to Denmark's DBB Jack-Up Service.

for Royal Caribbean International, a mammoth of a ship that is 348 m long and weighs in at 168,888 GT. The smallest sea-going vessels were delivered by the Fassmer Shipyard in Berne to the Waterway Police in Schleswig-Holstein.

Classical freight and container vessels have only been built in Flensburg and Leer in 2014. The FSG yard delivered the heavy-lift freighter "Rolldock Storm," and "Ferus Smit," and Leer completed six heavy-lift vessels late last year. The first of these vessels, the "Nordana Sky," was launched in February 2015.

Offshore

Nordic Yards and Flensburger Schiffbau-Gesellschaft (FSG) each boast innovative new offshore sector building projects. The shipyard in Mecklenburg-Vorpommern has recently delivered the offshore service vessel "Wind Server," while the FSG yard is building two well-intervention vessels with a 2016 scheduled delivery. Overall though, there has been a slight decrease for new orders in the offshore segment.

"Here, one can feel [...] the oil price, and many projects are affected," said Gerhard Carlsson, VSM marketing. Offshore projects are under construction currently in Kiel, Wismar, Warnemünde and Bremerhaven. Nordic Yards in Wismar is building two rescue and special ships for the Russian offshore business. FSG (Flensburger Schiffbau-Gesellschaft), is currently the second shipyard at the Baltic Sea, which manufactures special vessels for oil and gas extraction. Their order intake level is good for up to 2016.

Ship Repair & Conversion

The repair sector is a growing part of Germany's shipyards, a fact that was exemplified last year when Hamburg based shipyard Blohm + Voss announced a master agreement with global cruise leader Carnival. Blohm + Voss is, with this agreement, the only northern European shipyard contracted to Carnival Group for repair services. Besides docking in Hamburg, the contract includes voyage and port repairs which will be conducted by Blohm + Voss's "Flying Squad."

Overall, ship repair is a billion euro business for German shipyards, and the main focus for ship repair in 2015 lies quite clearly at the North-Sea ports. Hamburg, Bremerhaven and Emden have the capacity for maintenance repair and conversions.

It is a totally different picture on the Baltic Sea coast, where the sector has decreased continuously since 1995. Today there are significant capacities for the re-

The very first transformer platform, SylWin Alpha, delivered by Nordic Yards for offshore wind energy has been installed.

"The order incomes in 2014 have been remarkably better than in 2013 – in regard to value as well as tonnage. There are clear indications of an upward trend," said Dr. Reinhard Lüken, CEO of the German Shipbuilding and Ocean Industries Association (VSM).

pair of large vessels available only in Kiel and Wolgast. At the beginning of the 1990s, German sites between Flensburg and Stralsund featured almost a dozen floating docks.

Today there exists only one dock for ship repairs, belonging to the Kiel Lindenau-Werft. The second large floating dock at the German Baltic Sea coast is located at the Neptun-Werft in Rostock, but this is mainly used for equipping new builds.

The Naval Sector

While the home market, the German Navy, has been a traditional strong suit for German shipbuilders, recent reductions in the German Naval fleet has increased the importance of the export market.

By volume, navy business accounted for approximately 25% of shipyard turnover in 2014. The volume was well over $2 billion. Nobiskrug-Werft returned to naval projects in 2014 after more than 40 years, as the Rendsburg-based company delivered two multipurpose vessels for the United Arab Emirates. Peenewerft in Wolgast has entered the serial production of high-speed patrol boats for Saudi Arabia. The most important pillar of the naval export load are submarines produced in Kiel by ThyssenKrupp Marine System (TKMS). The order volume of the shipyard is secured beyond 2020, and currently four boats for Egypt, two for Israel and two for Singapore are being built. The conversion of two submarines for Colombia, as well as the delivery of material packages for Turkey and Italy, round out the capacity.

TKMS could also score a success in North Africa. Together with Abu Dhabi MAR Kiel (ADMK), TKMS built two Frigates for Algeria. The first Frigate was undocked in December 2014, and meanwhile four corvettes for Israel have been authorized by the German Federal Security Council.

"We stay behind the orders. The naval shipbuilding relates almost to a quarter of the total order volume for German shipyards," says Peter Seeger, representative of the labor union IG Metall in Kiel. "Our members would like to produce civil products much more. But as long as there are no other perspectives on the world market we stay also behind the export of weapons," said Seeger. The Kiel based shipyard HDW of the TKMS group has grown because of the submarine orders. In 2010 the number of employees was 2,200, whereas today it has increased 15% to 2,500. For 2015, it is planning to add more personnel for the construction of submarines.

Alfred Hartmann

The New Captain on the Bridge at VDR

"For Germany it is important to remain a strong industrial location – including our shipping industry."

Shipping owner Alfred Hartmann is the new President of the Association of German Shipowners (VDR). For the first time a mid-size company owner is at the helm of the VDR, and this 68 year-old wants to bring the German shipping industry back on course. He discussed his plan with MR.

A few years ago, you said during an interview that with some luck the shipping industry could overcome its current crisis and begin an upward trend. But the industry has not recovered. What went wrong?

The consequences of the financial crisis in 2008 have been heavy. In 2011 we could see some kind of upswing – but this, in turn, contributed to new vessel orders which once again created overcapacities. Due to the crisis, the ship prices drastically dropped. On the other hand, a lot of investor money was in circulation – and they were looking for investment opportunities. Not to mention the fact that all of a sudden other ship types were more in demand than those which had been ordered. At the same time, oil prices increased drastically. Our industry is still suffering because of this, particularly container and bulk shipping. We can see that some more vessels must be given away by force because also the banks are still under pressure. Banks have not received compensation for many of their financed ships. Very often even not even repayment of interest. Under these circumstances banks are asking themselves "how long can we stand this?" The current situation for many shipping owners

One of the first Hartmann gas-tankers driven by ethanol fuel.

is very dangerous.

Why is it that Germany must be an important shipping location?
Counter Question: Why do we need the German automobile industry? For Germany it is important to remain a strong industrial location – including our shipping industry. This industry features around 95,000 employees in Germany. Including the indirect workforce it's about 400,000.

Do you believe that politics can help the German maritime industry?
Oh yes, I have to make it clear to the politicians the challenges we face. The opinion partly exists in Berlin and Brussels that one can cover shipping with all possible and impossible statutory requirements. For example, consider the discussions about pollution emissions. People keep losing sight of the fact that about 90 percent of all goods are transported by sea – but only 4 percent of the emissions are related to vessels. However, ships must fulfill the strictest rules. I think this is completely incomprehensible. What I am interested in is that the population of German shipping companies can be safeguarded and again expanded. Another very important point for me is: how can we ensure education, training and employment in the future?

Political parameters are one side of the coin – but isn't it that also shipping companies have to change to survive?
Yes, for sure. More and more they have to be logistics providers with a wide-range of offered services. In the long run it is not enough just to charter out vessels. One must focus on the entire transport chain. Mergers may also help.

In some regions mergers of shipping companies have failed.
That is correct. But there will be few alternatives. Our clients from the industry have also changed. They require larger units in order to react with greater flexibility to their needs.

HEAVY LIFT TECH

US Hoists

US Hoist Partners With Boat Lift

U.S. Hoists Corporation of Calverton, New York has teamed up with Boat Lift SRL of La Morra, Italy to provide the marine industry with marine hoists and shuttle machines. As the North American representatives, US Hoists will provide parts and service domestically for all Boat Lift customers. Boat Lift's standard design includes 90-degree steering system with electronically synchronized winches; sliding lifting points and remote control equipped with display and remote assistance service. According to US Hoists, Boat Lift's designs and capabilities bring affordable and unique marine equipment to the North American marine industry.

www.ushoists.com

Boat Lift

US Hoists

Boat Lift

Motion Compensation Crane

Barge Master crane for Wagenborg's 'Walk to Work' vessel.

Bargemaster

Barge Master delivered its first Barge Master T40 (BM-T40) motion compensated knuckle boom crane. The BM-T40, installed on Wagenborg's 'Walk to Work' vessel the Kroonborg, compensates for sea induced vessel motions in roll, pitch and heave directions at the base of the crane, up to three meters significant wave height.

The BM-T40 is designed for offshore support vessels that are used to transfer small loads and personnel to (unmanned) offshore oil and gas platforms or wind turbines. The BM-T40 features a small footprint and is designed to compensate for sea induced motions of a knuckle boom crane with a lifting capacity of 15mt at a 10 meter radius or 5mt at a 20 meter radius up to 35m height. Typical loads include hoses, tools, spare parts, maintenance equipment, small wind turbines and solar panels weighing 1.5mt to 5mt The BM-T40 is also suited for ballasting or grouting operations.

Wagenborg will use the motion compensated crane to service and maintain NAM/Shell gas production platforms in the North Sea. The vessel can accommodate 20 crew members and 40 service technicians, chemicals can be stored and transferred, and thanks to the Barge Master T40 system materials can be transferred safely with wave heights of up to three meters. Through utilizing new technology, NAM is able to safely continue harvesting gas on the North Sea.

www.barge-master.com

Samson's AmSteel-Blue: 140 Lifts in Rough Seas

Seaway Heavy Lifting (SHL) used large-diameter synthetic rope slings fabricated from Samson's AmSteel-Blue for the installation of 140 turbine foundation monopiles on the Greater Gabbard project in the North Sea. Rough seas were anticipated, so SHL specified woven, round-sling systems for the job because of their light weight and easy handling.

Synthetic slings also mitigate potential damage to the monopiles during transfer from the supply barge to the deck of the installation vessel.

After detailed project discussions, SHL, Samson's technical sales team, and the fabricating distributor determined that slings made of high performance synthetic ropes were better for the job versus round slings. The configuration allowed for strengths up to 4,457mt, it allowed for simple inspection and repair in the field, as well as longer lengths and the use of removable jackets to protect from abrasion.

For the Greater Gabbard project, each monopile weighed between 519 and 676 metric tons. SHL ordered two lifting systems, each including two slings and a grommet, fabricated from Samson's 152 mm diameter AmSteel-Blue.

Upon delivery, these became the first large diameter synthetic heavy lift slings certified by Lloyd's for multiple uses in offshore installations.

All 140 monopiles were installed using the first set of lifting slings. Upon inspection, they showed no signs of wear. Lloyd's also proof-loaded the slings and recertified them for continued use. It was determined that he original set of slings and grommets can be used again; the second set remains in storage.

HEAVY LIFT TECH

MacGregor

MacGregor Hoists Cruise Ship's Observation Pod

Royal Caribbean's Quantum of the Seas will feature a crane and observation gondola to lift guests 91m above sea level, providing a panoramic views of the ship, sea and ports of call. Supplied by MacGregor, the system, called North Star, includes a 7.1-metric-ton gondola to accommodate 14 guests and one crew member, as well as a stabilizing system to ensure that it remains level with respect to the vessel's deck, and will also damp gondola movements. The crane's slewing system allows the gondola to swing out over the sides of the ship at sea. The system is designed for 100 percent redundancy with two separate power units, each large enough to drive the crane in reduced speed mode; it will also be provided with a diesel-driven emergency power pack. Additional safety features include automatic cut outs and safety valve overload protection on all crane motions.

www.macgregor.com

JonRie's Series 230 Assist Winch

The new JonRie Series 230 Ship Assist Winch is a new version of the existing line of Series 230 winches. The winch features JonRie's independent drive level wind, but a Logan clutch was also installed on the drive. When the winch is heaving or paying out hawser, the level wind drive is engaged and when the tug is working under heavy ship assist loads the level wind is unclutched. This feature will help reduce the counter loading on the level wind when the tug is working with a ship. The independent level wind will allow the spooler carriage to move faster than the drum to cross weave rope or adjusted to any speed required, the unit can be stopped and run in manual to any position on the drum.

Massive Rapp Marine Crane ordered by Otto Candies.

150-ton AHC Subsea Crane

Rapp Marine agreed on terms with Otto Candies LLC to deliver a 150 ton AHC crane for one of its vessels. While Rapp Marine has delivered approximately 450 cranes, this is the largest crane Rapp Marine has engineered and built to date. "We're excited for the new challenge presented to us by Otto Candies LLC," said Johann Sigurjonsson, CEO, Rapp Marine U.S.

The crane will be capable of lifting 150 tons at 17 meters, certified by Lloyd's Registry. With Active Heave Compensation and a winch capable of storing 3,100 meters of 77mm wire rope, the crane will be fully outfitted for subsea operation. The crane model was designed by Rapp Marine's engineer Helge Stakkeland out of Norway, a design to increase performance and reduce the weight of the crane. Rapp Marine plans on this crane being the first of many capable of lifting heavy loads for offshore vessels in the Gulf of Mexico and globally. Rapp Marine has maintained a relationship with Otto Candies LLC for many years, providing Electric Active Heave Compensated heavy lift winches as well as service support for several of Otto Candies' vessels.

The crane, capable of lifting **150 tons at 17m**, will be certified by Lloyd's Registry.

Liebherr Launches Giant Mobile Harbor Crane

The LHM 800 is the new mobile cargo handling solution with **a lifting capacity of 308 tons.**

Liebherr Maritime Cranes introduced its new flagship mobile harbor crane to the market, the LHM 800. This new giant is positioned as a mobile solution for ever growing vessel sizes and heavy industrial goods. The new LHM 800 represents a forward-looking extension at the head of Liebherr's mobile harbor crane range. "The LHM 800 is a breakthrough for the mobile harbor crane sector," boasts Matthias Mungenast, Sales Director for Liebherr mobile harbor cranes.

Like the complete Liebherr mobile harbor crane (LHM) range, the LHM 800 relies on the X-shaped undercarriage. The wheel sets have been slightly adapted to ensure optimum load distribution of this new crane, which weighs approximately 745 tons. Thanks to its rubber tyred undercarriage the crane is mobile and can be moved to where it is needed most. Customers may alternatively opt for a rail mounted portal, a fixed pedestal or a barge mounted solution.

The new crane provides a lifting capacity of 308 tons, exceeding the maximum capacity of the LHM 600 by 100 tons. In addition to single lifts, the new LHM 800 is also designed for tandem lifts. With Liebherr's tandem operation tool Sycratronic activated, synchronized movement is guaranteed and one crane driver can simultaneously operate both cranes for improved speed, capacity and safety. In tandem operation with a second LHM 800 the maximum lifting capacity is 616 tons.

In container handling configuration the fulcrum point is above 36 meters which eases the handling of bigger vessels. Thanks to its outreach of 64 meters, the LHM 800 is able to efficiently service large container vessels which are as wide as 22 container rows. Equipped with Pactronic hybrid drive the crane masters up to 2,300 tonnes per hour in bulk handling mode. It can also be fitted with SmartGrip, Liebherr's self-learning technology for optimized grab filling rates, which was introduced in 2014.

HEAVY LIFT TECH

J D Neuhas

Lifting a double pipeline assembly, forming part of a seawater lift-pump unit in operation on a southern North Sea rig, using a J D Neuhaus monorail air operated hoist type EH20.

J D Neuhaus Hoists

When the seawater pump on an offshore rig needed replacing, an air hoist supplied by J D Neuhaus, was on hand to provide safe lifting of the components. The maintenance, repair or replacement of the associated pumps and pipework in such locations is undertaken by Gerritsen On- & Offshore Services BV, with work recently carried out at a rig located in the southern North Sea. A four man team undertook the dismantling of one pump and pipework assembly out of the three similar installations in the pump area. To handle the lifting and temporary storage of the components involved, an approximate 20m lift from sea level to an upper storage area was required. To undertake this task an air operated hoist model EH20 as manufactured by the J D Neuhaus company was used. It offers a SWL capacity of 20 metric tons, providing intrinsically safe performance within such hazardous environments. It was provided with a chain drop lift capacity of 12m, and included a similar length umbilical for the hoist hand controller with the operator located at the lower deck.

The EH20 is part of the JDN monorail air hoist range designed for handling heavy loads while operating within confined spaces. A total of 11 models are available, with lift capacities ranging from 10 up to a full 100 metric tons.

www.jdngroup.com

Mammoet Installs Platfor

Two Photos on Top: The new Malampaya Phase 3 Depletion Compression Platform (DCP) next to the Malampaya Shallow Water Production Platform (SWP).

Photo Below: From left to right: The new Malampaya Phase 3 Depletion Compression Platform (DCP), the Malampaya Shallow Water Production Platform (SWP) and the Safe Astoria Accommodation Support Vessel (ASV).

Mammoet installed the Malampaya Phase 3 Depletion Compression Platform in the West Philippine Sea for Shell Philippines Exploration b.v. The Malampaya Depletion Compression Platform (DCP) is a new type of 'self-installing platform;' the platform floats into place over its end-location after which the legs are lowered onto the prepared seabed. It uses a pre-installed jacking system to enable the 80m legs to be jacked down and lift the platform from the water to its final position. This technology avoids the need for the large specialized vessels that are normally required for an offshore platform installation.

Mammoet was contracted for the offshore operation to lower the DCP legs and lift the platform to its final height. The DCP's end-location is next to the Malampaya Shallow Water Production Platform (SWP) to which it will be linked by a permanent bridge, also to be installed by Mammoet.

The Malampaya Project located off the coast of Northwest Palawan, the Philippines, is a Shell-operated initiative on behalf of its joint venture partners and the Philippine government. The gas-to-power project is aiming to sustain to supply 30% of the country's energy requirement.

Now in Phase 3, the new platform will help sustain the extraction of natural gas from the Palawan basin and process it in a shallow water production platform before transporting the gas along a 504-km underwater pipeline towards the onshore gas plant and eventually to its power plant customers.

Mammoet was involved in the DCP's construction, assisting with lifting and lowering the platform during the fabrication process. During the platform's

rm for Shell

Close-up: **Mammoet strand jacks and power packs installed on the platform legs**

construction, the strand jacks were also installed to prepare for the jack down of the DCP's legs and to raise the platform into place. To keep the platform level during the installation process, some of the strand jacks need to make upward movements, while others make downwards movements at the same time. In other words, different strand jacks must be active simultaneously in opposite directions to buffer the upwards and downwards movement of the DCP before the legs are positioned and the platform is raised out of the water.

To facilitate this precise calibration, part of the strand jack installation included special 'guying valves' and a new computer system to create a constant tension to deal with the movement of the platform on the water.

Boatbuilding in China

While much of the focus on coverage of the Chinese shipbuilding industry is on big shipbuilding, Maritime Reporter switches gears this month to explore activities in select boatbuilding sectors.

Damen Yichang Shipyard

The Damen boatbuilding name is ubiquitous around the world, and China is certainly no exeception. The Damen Yichang Shipyard in China started ops in 1999 as a JV between Damen Shipyards Group and Sinotrans CSC, focused on building cargo vessels from the Dutch company's portfolio. Recently Damen said it intends to broaden the market audience courtesy of an increased portfolio of vessels from the yard, with a continued focus cargo vessels up to 15,000 dwt, with the addition of dredgers, pontoons and barges, LNG/LPG tankers and offshore support vessels.

As with most Damen decisions, once the decision is taken the progress toward goal is rapid, and the yard is already building a number of specialized pontoons, while plans for dredgers are now being finalized. Additionally, finalization of plans for LPG tanker construction is expected imminently.

In step with its portfolio broadening will be an expansion of its market reach, as vessels from Damen Yichang Shipyard cargo traditionally have aimed for the Western European marketplace. "Already we are building pontoons for specialized projects in the Far East and Latin America, as well as for stock. The dredgers also have an international market," said Hans Voorneveld, Executive Director, Damen Shipyards Group. Current capacity at the yard is sufficient for Damen to simultaneously build 10 pontoons along with two dredgers, LNG/LPG tankers or offshore support vessels.

While Damen and Sinotrans are investing in the yard, Voorneveld said. "Everything is already in place, the yard is completely up and running. There's an experienced workforce of around 1,000 personnel."

Guangzhou Hangtong Shipbuilding

In recent years, a number of shipyards in southern China have grown, not only in size, but also in the sophistication of the vessels that they are building. At the Guangzhou Hangtong Shipbuilding this is illustrated by the 83.6 x 22-m construction and accommodation design that it is building. With one of these big boats already delivered to a contract in Mexico, it were, in mid-March, putting the finishing touches on a sister ship. Fitted with a four way mooring system, a hefty deck crane, a large clear after deck and a variety of other attributes, the vessel is well outfitted for marine construction work. The large exhaust stack for all engines, main and auxiliary, is mounted on the port side to allow for ease of crane work over the starboard side. This also allows space on the starboard side for a Zhejiang Hengxin Ship Equipment (HXN) rescue boat and davit. A pair of large HXN enclosed lifeboats are also mounted port and starboard.

The multi-decked superstructure is located well forward and provides accommodation in a variety of rooms for up to 200 people. A mess hall and galley suitable for this number is also located in the deckhouse.

The bridge is outfitted with all the latest in controls to provide operational status on the two Cummins QSK60-M

DongGuan Nanxiang Shipbuilding

Liang Zhong De, Deputy General Manager, Guang Zhou Shun Fung Engineering Ltd. with Cummins' Southern Manager Linda Zhang, in the starboard side engine room of the crane barge. The KTA19-D gen set is to the left and the KT38-m propulsion engine is to the right.

(Haig-Brown photos courtesy of Cummins Marine)

Guangzhou Hangtong Shipbuilding

main engines as well as the three Cummins KTA38-DM-powered electrical generators. In addition to the forward console, an aft set of controls allows for safe use of the cranes and other construction utilities while giving the operator a clear view of the after working deck.

The large engine room space is located midships in the 7.2-m deep hull. The three Cummins-powered 590 kW generator sets provide for the extensive electrical needs of the accommodation block as well as the deck cranes, bow thrusters and active stabalizers designed for the comfort of personnel. The twin Cummins QSK60-M main engines each produce 2200 hp at 1800 rpm and turn fixed-pitch propellers through Twin Disc MGX5600 gears with 5.76:1 reduction. One of the two main engines has a fire pump linked to the front of the engine with a power take-off.

Xin Yue Feng

From the four-story office tower, housing 100 technical engineers and administration staff, to the 65,000 sq. m. yard with extensive fabrication and machine shops and a huge dry dock, the Xin Yue Feng Shipyard (http://xinyuefeng.com/) has been building every more sophisticated vessels. Although the majority of the yards work is in steel, they maintain a set of skilled aluminum workers as well. In mid-March this group was building a small aluminum service vessel for a Singapore customer. Over in the yards assembly and launch dock, four big DP2 anchor handlers were in various stages from fabrication with the aid of an overhead gantry crane. Nearby another AHT was being finished at the fitting out dock.

Also in the water, and awaiting delivery by ship to Jeddah, Saudi Arabia, were two 15-m and one 12-m line handling or mooring boats. Each of these is powered by a pair of Cummins NT855 each delivering 261 kW at 1800 rpm. Back in the office block the walls are lined with photos of recently delivered vessels. Shipyard Chairman Mr. Luo Chaoneng points out the 39.8 x 10.5-m BADR 5, a 1200 hp handy-sized tug delivered this year to a Saudi Arabian customer.

Nearby sporting a hefty knuckle-boom is a picture of the 34 x 10-m anchor handling tugs Swissco Garnet. Delivered this past January, the AHT has a molded depth of 4.7 m. Classed by BV it received the notation [1 +HULL +MACH, tug, Special service Anchor Handling, Unrestricted Navigation]. Powered by a pair of Cummins KTA50-M2 mains producing a total of 3200 hp to give the boat a 40-ton bollard pull and 11-knot speed. The Swissco Garnet is a repeat order and sister ship to the Swissco Opal delivered in 2013.

Guangdong Bonny Fair Heavy Industry Ltd.

With an array of about 20 boats building in an assembly line-like manner, the Guangdong Bonny Fair Heavy Industry Shipyard (formerly known as Guangdong New China Shipyard) is a model of efficiency. Three ferries currently are fitting out alongside. Designed by the Australian firm Sea Transport Solutions, the 50 x 17.5-m catamarans are each powered by four 485 kW diesels with two in each hull.

Shortly to be delivered to owners in Batangas, Philippines, the three ferries, part of a 10-vessel order, are designated FastCat M7, M8 and M10. Capacities include 275 passengers, 16 crew and 130 meters of vehicle lanes. They all bear the common logo of a Cat and the proud designation: Fast Cat: FerrySafe, FerryFast, Ferry Convenient.

The yard builds its efficiency on a large area with overhead cranes for construction of modules. In another area, three railway lines with overhead cranes allow step by stem assembly of the modules. These rails continue onto at a floating dry dock that can be shifted from one line to the other as required. This highly efficient dry dock is 89.8 m long with a beam of 34 m and a 27-m clearance between the walls. The Guangdong Bonny Fair shipyard is designed not only for efficiency but also to support ever more sophisticated vessels.

Feijun Shipyard

On lower reaches and estuaries of China's great river the ubiquitous sand boats, with their low profile and long elephantine conveyors protruding from the bow transport untold amounts of dredged material to dry land. In the past year, the Feijun Shipyard, located in the Pearl River estuary, delivered 20 new vessels, the majority of which were sand boats.

As with so much in China's maritime world these boats have grown in size and complexity. Recently the shipyard's manager, Mo Qianfa, took a small group on a tour of one such boat as it neared completion. The boat, 88.2 x 19.5-m, has

Xin Yue Feng Shipyard's Chairman Luo Chaoneng with a pair of AHTs.

a hold capacity of 3400 cu. m. Looking aft from the bow, the holds, with the extensive piping for fresh water flushing after the salty sand has been removed, show their V-shaped bottom to allow the sand to slide to the bottom. There is one long hold space divided by partial bulkheads, running nearly the full length of the vessel, along the bottom of the hold there are 150 shutter doors controlled by hydraulic rams.

The off-load conveyor extends about 35 m out from the bow to allow the sand to be placed well up on the shore. Descending into the fo'c'sle the group saw the workings of the off load system. A heavy oil, 1000 kW auxiliary engine, turns a large drive wheel for the conveyer that discharges over the bow. It also turns a second drive to keep the huge belt that extends under the length of the hold just below the 150 shutter doors. This second endless belt is 76 x 1.4-meters wide and 14 mm thick.

Walking aft, under the holds and beside the conveyor, the group was able to climb to the deck level just ahead of the accommodation and wheelhouse that are mounted well aft over the engine room. The boat has a total of eight engines in addition to the one mounted forward to drive the conveyor belts. Two Cummins KTA38-M engines of 780 hp each provide propulsion power. There are also two locally built 150 kW, one 120 kW and one 50 kW gensets. Mounted half way up the side of the holt, two fresh water pumps for washing the salt out of the hold. One of these is a 500-hp Cummins KTA19-M while the other is a large locally built engine. While prices vary depending on how the boat is fitted out, Qianfa indicated that they range around $3 million.

DongGuan Nanxiang Shipbuilding

Chairman Zhu Fu Lin welcomes guests with fresh brewed local tea and explains the range of work at the DongGuan Nanxiang Shipyard. From a large fishing boat building for a Hong Kong customer to a variety of heavy lifting crane-vessels of various sizes for a range of customers.

Although not the largest, the 400-ton capacity 62.2 x 26.2-m crane barge that the yard had under construction in mid-March was a good representation. A pair of Cummins KT38-M mains, generating 780 KW each, powers the 4.8-m deep barge. The two main engines are located in separate port and starboard engine rooms. Each engine room also has a KTA19-D powered 350 KW generator. This electrical power is required to run the electric and hydraulic systems for the three-drum winch and pedestal-mounted crane. A smaller hotel generator is provided for that deckhouse and running lights. Accommodation is provided in the aft-mounted deckhouse for a crew of up to 20 in eight, two-person staterooms and two, two-person rooms. Designed and built in China for a domestic China customer, the crane barge is a reminder of the importance of the domestic market to Guangdong Province's shipyards.

Damen Yichang Shipyard

Damen

Marine Procurement Solutions (MPS)

Streamlined Procurement via the Cloud

By Eric Haun

Marine Procurement Solutions (MPS) has built an electronic platform that aims to enhance the purchasing cycle for the maritime industry. MPS provides software, consultancy services and other customized solutions through its Direct Connect e-procurement trading platform that is designed to unite buyers, vendors and other members of the supply chain via a cloud-based interface that allows users to electronically process requests for quotations, purchase orders, confirmations and documents associated with supply management transactions. And by removing manual data entry, purchasing cycle times are reduced, with the added benefit of increased order accuracy.

"MPS emphasizes the importance of logistics," said Joseph E. Royce, CEO. "Direct Connect links the freight forwarder to the shipowner while providing real-time track and trace details directly from the PO."

Direct Connect also offers options for real-time report/KPI customization, detailing purchasing patterns and key performance indicators to help users to track results. "Data flowing through the system can be easily captured and presented to the end user. Having quick access to this data empowers buyers and provides management with the necessary tools to increase productivity," Royce said.

At the core of this technology's effectiveness is cloud computing. "Few technologies have affected our industry as profoundly as cloud computing, which delivers computing as a service or utility," Royce said. "Part of cloud's appeal is clearly financial; it allows organizations to significantly shed their expensive IT infrastructure and shift computing costs to more manageable operational expenses. Small companies typically have more modest, in-house IT resources, which make it easier for them to look to less traditional IT methods such as cloud computing."

Royce explained that his company's cloud-based e-procurement platform fully leverages this model to offer ship owners and marine suppliers a full-featured solution at a fraction of the price, especially important for owners and operators working with tighter budgets.

"We see potential in the smaller operators who previously thought modernizing their supply chain process was out of reach financially," Royce said. "We offer many options, including access to a free non-integrated product, all the way to full outsourcing of the entire purchasing operation."

Royce cited "drastic results" seen by one of MPS' first customers that benefited from Direct Connect from day one, improving procurement efficiencies to the point that it was able to reallocate a staff member to another department; going from four people in purchasing to three. "After the integration of the Direct Connect e-Procurement platform, this customer has seen a substantial reduction in manual data entry. Purchasing cycle time has been reduced by more than 25%, with the added benefit of increased order accuracy. Electronic Procurement has streamlined their purchasing process allowing each buyer to manage their time more strategically," Royce said.

Joseph E. Joyce, CEO of MPS, aims to enhance the purchasing cycle via its cloud-based Direct Connect e-procurement trading platform.

Further enhancing its integrated marine procurement systems and electronic trading, MPS joined forces with Stolt Tankers in October 2014 to offer a product line that includes on board order system ReqLite, order processing and contract management tool Sea Manager as well as the Direct Connect e-Procurement trading platform. The agreement will see MPS act as exclusive marketing arm for the ReqLite and SeaManager software products, while Direct Connect will improve Stolt's market coverage and drive down its spot purchasing costs.

Royce said MPS is currently partnering with several software providers to add even more processing capabilities, including e-invoicing, on board light requisitioning and contract management systems, door-to-door freight forwarding as well as full maintenance and purchasing software. The company is also in the process of creating a system called Bunker Connect, a fully unified module within Direct Connect enabling users to immediately access web based software to plan, execute and report on fuel.

And though the maritime industry can be notoriously averse to the adaptation new ideas and technologies,

Royce asserts that companies that implement MPS' services stand to reap its rewards quickly. "Regarding technology, the maritime industry has always been resistant to change. This conservative approach has cost companies real money and has negatively impacted the bottom line," Royce said. "Once operators realize the immediate impact our systems have on productivity, overhead and cost savings, they will positively embrace the technology."

Surveillance Technology

At-Sea Risk Mitigation

Surveillance technology emerges as a risk mitigation tool for the Shipping and Marine industry.

Adherence to regulations, environmental concerns, and the economic and political landscape will all have significant impact on global shipping. After ending 2014 on a two-year low, Richard Greiner, a specialist advisor to the shipping and marine industry with Moore Stephens, recommends that shipping focus on 'the things it can change' in 2015. One area that remains in the industry's power to change for the better is risk management.

Mitigating risks to crew, vessels and cargo, as well as to the environment, was a key focus in 2014. The International Maritime Organization (IMO) adopted the safety provisions of the Polar Code and SOLAS amendments, and the 'connected ship' concept – a call to action for operators to utilize technology to improve all aspects of shipping safety – rose to prominence. Both were clear beacons directing the industry towards safer, more secure operations.

How can shipping operators build on this momentum and "change the things" they can in terms of risk management? There are many answers to this question and without doubt, surveillance technology can and will have a role to play.

Benefits of a Holistic Approach to Data

The shipping industry's adoption of technology has been – relative to other industries – slow and steady. For example, while tech such as Automatic Radar Plotting Aid (ARPA) was first introduced in 1969, mandatory use of Electronic Chart Display and Information Systems (ECDIS) only came into force in 2011.

One result of such gradual tech take-up is that specific systems, and operators' perceptions of how they are best utilized, have developed in isolation, leading to a situation where each individual component of on-board operations is monitored, controlled and analyzed independently. However, shifting this mindset, and adopting an integrated, holistic approach to systems and the data they generate, has much greater potential in terms of both operational efficiency and risk management.

By consolidating both visual and numerical data from multiple ship systems, including radar, cameras, ECDIS and the Automatic Identification System (AIS), using a single surveillance command and control platform, operational teams are afforded heightened levels of situational awareness. Data perceived in isolation is just data but data perceived and analyzed in a broader context is intelligent insight.

Navigating Harsh Environments

One of the most obvious areas of risk management that an integrated approach to ship systems offers real gains is navigation in harsh environments. The sea can be a dangerous place to work. Many of today's key shipping routes see vessels operating in extreme conditions, often with near zero visibility and little in the way of nearby support should things go wrong.

Camera capabilities for this sector have improved dramatically in recent years. Specially designed to withstand salt corrosion, operate at extreme temperatures (high or low), counter the impact of vessel motion and capture high definition imaging night or day, in the face of fog, storm conditions or solar glare, today's marine ready cameras ensure visual data is "always on".

Combing this visual data into an integrated surveillance command and control platform can assist with safer navigational practices at sea. A solution that unifies on-board systems – radar, visual (including night/thermal), audio and positioning data – provides a complete situational overview that enables safer routes to be plotted and potential hazards to be detected much more efficiently and effectively than ever before.

Cold: A Hot Topic

One of the most relevant and topical applications of these capabilities relates to ice-class vessel navigation – in particular vessels using Arctic routes. Figures from the IMO suggest that traffic using Northern Sea routes has increased tenfold in recent history. A 30-fold increase for shipping in the Arctic is predicted by 2020 with the Arctic Institute highlighting that by this time, 15% of China's trade value could pass through the Arctic. As insurer Allianz outlined in a recent focus on this very topic, increases of this level coupled with the fact that such routes are so remote (making GPS unreliable and rapid emergency support nearly impossible), brings increased attention and interest in navigational support for heightened crew and ship safety in such conditions.

Using the latest camera technology and integrating the footage captured with other 'mission critical' ship systems, could play an important role in addressing these concerns. Pairing radar with thermal, color or mono imaging, enables ice-hazard detection, at distance, and even enables real-time analysis of surface ice temperatures and thickness in order to plot safe passage through routes that require ice-breakage.

Safe Cargo, Safe Ship, Safe Crew

External threats posed by harsh sea conditions or geographical location are not the only risks that shipping and marine operators face. In many cases, risk is inherently linked to the vessel type and cargo carried. Here too, intelligent surveillance integration can both prevent

By consolidating both visual and numerical data from multiple ship systems, including radar, cameras, ECDIS and the Automatic Identification System (AIS), **using a single surveillance command and control platform, operational teams are afforded heightened levels of situational awareness.**

and protect against threat to crew health and vessel integrity. By integrating vital emergency and security systems, a dedicated operator can monitor potentially hazardous areas and be immediately alerted to a range of different threat scenarios – from breaches in access control to fluctuations in temperature, humidity, gas levels or water ingress, all accompanied by real time visual data to verify actual risk.

In many cases, the ability to monitor vessel status in this way removes the need for personnel to physically inspect hazardous areas – thus reducing risk – but also enables more consistent and efficient responses should threats be detected. In a scenario where gas levels rise beyond set parameters for example, the system can be programmed to alert dedicated safety personnel, trigger area evacuation procedures and lock down affected vessel areas – all accompanied with live visual feed which can also then be used to guide response teams in further investigation.

The Future

Everything discussed here is possible now using technologies that are already available to market. In this respect one of the biggest challenges is simply raising awareness of the opportunities available to shipping and marine operators. Much more is possible.

While the systems and approaches discussed enable unprecedented levels of on-board situational awareness for threat prevention, detection and response, the next stage in this equation – onshore data sharing and control support – is hampered by overreliance on VSAT capabilities. However, as Wi-Fi capabilities at sea improve, this next level of risk detection and management will firmly move from theoretical application to commonplace practice. Until then, however, the challenge is to increase awareness of the practical risk management benefits of adopting a connected approach to ship systems and surveillance.

The Author

Dimitris Nikoleris is the Business Development Manager for global integrated surveillance solutions specialist Synectics.

Ballast Water Technology Installation &

Innovative Drive Contols

Specifying for ballast water treatment systems can be a difficult process. Ian Hamilton, sales manager for marine electrical wiring control and instrumentation specialists CMR Group, offers guidance.

Ballast water, which is used to maintain balance and stability when a ship is empty of cargo, has been identified as a key factor responsible for bringing invasive species of microorganisms into non-indigenous environments, causing a major threat to marine ecosystems.

All ships in international voyages are required to manage their ballast water and sediments in accordance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), which the IMO adopted in February 2004. This requires a reduction in the concentration of aquatic organisms in ballast water to below certain levels (D-2 Standard) before discharge in order to prevent trans-boundary movement of harmful aquatic organisms and pathogens that unmanaged ballast water discharge may cause.

But when it comes to specifying ballast water treatment systems to manage this process there are different considerations facing new build vessels and existing ships. Yards need to identify the options for installing ballast water treatment systems in original specifications – both within the construction program or through retrofitting. This, as advised by Lloyd's Register, may involve providing system drawings to show how a selection of different treatment options could be fitted, ensuring that sufficient space has been allocated for retrofitting treatment systems if they are not included in the initial build. Service connections should also be fitted to ballast systems in preparation for retrofitting of the selected treatment equipment.

When it comes to existing vessels, operators will need to be aware of all modifications necessary to fit systems. It will be necessary to obtain schematic arrangements and equipment drawings from the system supplier in order for the technical department to develop a work plan. This may alternatively be provided by the supplier but the ship operator will still need to provide the vessel's ballast water system drawings, functional requirements and details of compartmental spaces where the equipment is to be fitted.

System Selection

Selecting a treatment system should involve a number of key steps to ensure success. The first is to consider initial aspects such as vessel type and characteristics, ballast capacity and flow rate requirements before moving onto technical and operational considerations. These include the time required for treatment to be effective, ballast and treatment pumping rates, characteristics of ballast system, health and safety, in-service operational requirements, explosion proof equipment (particularly apposite for oil tankers), power requirements and onboard systems, controls and alarms and space constraints.

Following these steps, treatment options need to be considered. For example, will the requirement be for filtration or treatment or a combination of both? What chemical options are required? Will mechanical means such as cavitation (the formation of vapor cavities in a liquid) be required and what about UV radiation and ultrasonic?

Of course, careful thought needs to be given to choosing a supplier and reviewing specifications before moving ahead to the final stage of purchase and installation. And here, experience in the sector counts – the benefit of opting for a supplier that understands the legislation, has established marine experience and expertise with a worldwide reach and has the capacity to ramp up volumes very quickly as the legislation kicks-in cannot be overstated if project systems are to be designed and delivered on-time (and supported on a global basis).

Ship operators will need to provide a tender specification for the potential ballast water treatment and control suppliers detailing technical requirements covering pump flow rates and diagrams of the pipework with connection details, pumping capacities and valve sections clearly shown. Compartment details, available power supply and routing for control cabling and certification requirements also needed to be included.

Furthermore, in addition to price it will be important to factor in installation and commissioning costs in the tender alongside training requirements, forecasted operating costs, maintenance and support, delivery times for supply and fitment and any special yard facilities or ship modifications for equipment installation. Ballast water systems should also include an integrated visual alarm for the purposes of cleaning, calibration and, if necessary, repair and maintenance – and these events should be recorded by any control equipment integrated with, or

certainly located close to, the ship's ballast water systems.

Control Technology

Cumulative investments of over $30 billion are expected to be made into ballast water treatment systems over the current decade, according to a Frost & Sullivan study. This will involve thousands of maritime vessels requiring a system to be installed between now and 2020, driving massive requirements for orders. However, all these systems will need control and monitoring systems to ensure proper performance and prevent time consuming and costly damage to components.

To meet this need, ballast water and feed water control panels and systems are available from companies like the CMR Group that has the knowledge and experience to provide bespoke solutions engineered specifically to the design requirements and parameters of ship builders, owners and operators. CMR can add value by bringing its panel building experience and expertise to bear for BWTS manufacturers, with the capacity to globally source products and components for compliance with Marine Classification societies. This enables the firm to design and develop high quality, cost effective solutions for supply into local marine markets – these are steel constructed Local Operating Panel-based solutions which provide protection from dust and water ingress (to a minimum of IP54) and incorporate industry standard PLC-based control systems, HMI user interfaces and are suitable for a Supply Voltage range 380 – 690V, 3-Phase, 50/60Hz. Following manufacture, all panels are subject to rigorous inspection, including high-voltage flash testing to ensure the panels meet customer requirements and Class Rules.

The Author

Ian Hamilton is the sales manager for marine electrical wiring control and instrumentation specialists CMR UK. He is a specialist in creating and delivering new business diversification strategies and has a wealth of experience in engineering businesses with previous positions held including managing director and sales director. His role within CMR is to identify and acquire new business opportunities. This includes leading the global ballast water treatment systems' team.

Sludge Management System


Scienco/FAST

Scienco/FAST has introduced a new way to deal with sludge with its standard MarineFAST Marine Sanitation Device, which meets MEPC.159(55) or providing secondary treatment, incorporating about one month of internal sludge storage or three months with larger systems. For vessels requiring a longer period, the MarineFAST BMS provides an aerobic sludge digester with long term internal storage to extend the sludge storage.

Operation is completely automatic and hands-free, and the sludge is enclosed in tanks and piping – no need for personnel to come into contact with sewage or sewage sludge. According to the manufacturer, MarineFAST BMS reduces sludge volume by 65% compared with other systems. No strainers, filters, membranes or centrifuges are required. Vents are used to weather through the FAST unit; no separate vent piping required. The system does not affect the dimensions, weights or operation of the FAST unit.

The MarineFAST BMS system uses an aerobic process with no corrosion or odor from septic sewage or sewage sludge. Tanks are designed to ABS deep tank standards, protection against corrosion is exceptional and all machinery, piping and controls meet USCG requirements for inspected vessels. When settled, the activated sludge exhibits about 4% concentration in water.

www.sciencofast.com

New Water Maker


ACO

ACO Marine launched a new water recovery system that is designed to give vessel owners greater capacity to reuse the treated effluent from wastewater treatment plants.

The ACO Water Maker WM3 converts treated wastewater into pure distilled technical water for such applications as general surface cleaning, laundry, showering, toilet flushing, engine cooling, etc. According to ACO Marine, the unit has extremely low energy consumption and reduces a ship's need to take on fresh water in port or to make its own water through reverse osmosis or flash evaporation – both high energy consumers. It is suitable for use onboard all vessel types and can be easily retrofitted to ACO Marine's Maripur and Clarimar wastewater treatment solutions in addition to third party systems, the manufacturer said. A typical unit has a footprint not dissimilar to the size of a small domestic refrigerator, with water-making capacities ranging from 6,000 to 24,000 liters per day.

The water maker reduces the kilowatt power per liter of water produced compared with conventional methods and can cut wastewater dumping significantly. The unit also fulfils the function for vessels requiring freshwater generation redundancy. The ACO WM3 uses a hybrid technology of asymmetric selective membrane separation (THASMS) to treat any type of input water and remove all forms of biological, bacteriological, mineral, gas or toxic contamination. The unit can also take this one step further and add vital minerals to produce mineral balanced drinking water.

www.acomarine.com

GEA UV Ballast Water Treatment

Earlier this year GEA won the first contract for equipping cruise liners with its UV ballast water treatment system, BallastMaster marineX, powered by Trojan Marinex. The contract is to equip two new vessels with one BallastMaster marineX each, as well as an option for equipping a third. The IMO-certified system, with a throughput capacity of 500 cu. m./hr., features two-phase operation with mechanical pre-filtration and subsequent disinfection of the ballast water by UV treatment. The scope of delivery also includes 10 separators for fuel and lube oil treatment of the type OSE with CFR (Certified Flow Rate) and two ViscoBooster units for fuel conditioning. With the cruise shipping business, GEA developed a new area of operation for UV ballast water treatment systems in September 2014 at the SMM, only three months after the launch of the BallastMaster marine system, powered by Trojan Marinex. "The cruise industry has been booming without interruption for many years with the result of full order books at the shipyards. More than 30 new maritime cruise liners are expected to undock by the end of 2018. This is an extremely interesting new market for our new product line of UV ballast water treatment which we have now extended to include the BallastMaster marine, and we intend to continue to consistently process this market," said Michael Fibbe, Key Account Manager Cruise of the business line marine & energy.


GEA

Ecochlor BWTS


Ecochlor

Ballast water treatment technology developer Ecochlor Inc. presented a project case study at CMA Shipping 2015, a case study which covered the retrofit of Ecochlor's ballast water treatment system (BWTS) aboard the 2007-built RoRo car carrier vessel M/V Green Bay following an order from International Shipholding Corporation (ISH) in 2013.

ISH ordered Ecochlor systems for seven of its ships, including vehicle carriers and bulk carriers, to be installed between 2014 and 2016. Installation and commissioning aboard U.S.-flagged M/V Green Bay, the first ISH vessel to receive the BWTS (a 500 cu. m./hr. system), was completed in 2014 by a ride on crew while the vessel remained in operation. Ecochlor's scalable BWT systems use chlorine dioxide (CIO2) to treat ballast water. Ecochlor is the sole patent holder for this technology. Chlorine dioxide, not to be confused with chlorine, has been used for more than 60 years across a wide range of applications, including the treatment of drinking water, vegetables, etc. It is especially useful for ballast water treatment in that it is immediately effective on all organisms and bio-film, it does not form byproducts, and is not affected by organics, salinity or temperature. Ecochlor said it has begun United States Coast Guard testing in March 2015. The Ecochlor BWTS has previously received International Maritime Organization (IMO) Type Approval and USCG Alternative Management System (AMS) Acceptance.

Omega

New Connectivity Controllers from OMEGA

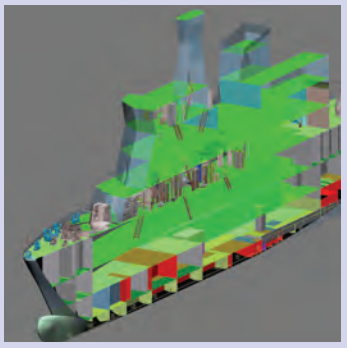
OMEGA's new CDTX-111/CDTX-112 series of conductivity controllers are panel instruments for online monitoring of industrial process conductivity. Features of the CE compliant product include linearized data, automatic temperature compensation, no error due to cable length changes and maintenance-free cells, the manufacturer said. OMEGA said the new product is an ideal auxiliary instrument for various types of conductivity sensitive processes, suitable for automotive, chemical and water industries for measurement and control of conductivity in water, electronics, chemical and manufacturing processes.

www.omega.com


ExxonMobil

ExxonMobil Premium AFME 200

To help shipowners meet strict new emission mandates, ExxonMobil expanded its range of fuels for use within Emission Control Areas (ECA) with the introduction of ExxonMobil Premium Advanced Fuel Marine ECA 200 (AFME 200). The fuel joins ExxonMobil Premium HDME 50 as part of a new category of marine fuel that has emerged as a result of the 2015 ECA sulfur limit of 0.10 percent. These low sulfur fuels help engineers safely and efficiently operate their main and auxiliary engines and boilers. Compatibility tests indicated that ExxonMobil Premium AFME 200 is fully compatible with ExxonMobil Premium HDME 50 and MGO.


Sener

SENER Debuts Latest FORAN Release

At Sinaval-Eurofishing in Bilbao, Spain, Sener will present enhancements in the shipbuilding CAD/CAM system FORAN, in all disciplines (forms, naval architecture and general arrangement, hull structure, machinery and outfitting, electrical design and drafting).

The naval architecture modules have been renovated in a single tool called FBASIC that incorporates new capabilities and and interface working in conjunction with the general arrangement solution, to improve the tasks during the early design stage: forms generation, compartment generation and naval architecture calculations, Sener said.

Mercy Ships

Hospital Ship Up to Speed with AMOS

SpecTec will work with Mercy Ships to migrate its current system Business Suite to AMOS Enterprise Management Suite (EMS). Mercy Ships' Africa Mercy, the world's largest hospital ship, will receive a new update of the latest version of AMOS EMS, installing the Quality Management module. This will be followed with the migration of its existing modules from the current system. At the end of the project, the Africa Mercy will be fully integrated with new and existing modules.

"Mercy Ships has used AMOS for many years, the ability of the software to adapt to our changing maintenance needs has been excellent," said Ciaran Holden, Engineering Superintendent of Mercy Ships.


Excelerate

BV Upgrades RAM Software

To help offshore operators and contractors get more out of their assets and develop projects more cost-effectively, Bureau Veritas has supercharged its reliability, availability and maintenance (RAM) software suite Optimize."Low and falling energy prices focus attention onto the reliability, availability and maintenance (RAM) of both existing assets and plant and ongoing developments," said Matthieu de Tugny, Senior Vice-President and head of offshore, Bureau Veritas. "A powerful RAM software tool like Optimize saves time and money for asset owners and contractors by identifying bottlenecks in process and supply lines, by modeling potential failures and their consequences, and with our new Optimize V3, by underpinning clear operational and strategic decision-making by allowing managers to see what will happen in different scenarios."

Optimise V3 has a clear and simple user interface for model building and results analysis, according to the developer. Production buffering, boosting and profile modification modes are available. Operational behavior (ramp-up, restarts, line-pack drawdown rates) can be captured via a conditional logic system. Through life value changes, including equipment phase-in and phase-out, are easy to model.

www.bureauveritas.com

Excelerate Energy's 173,400 cu. m., 800 million cu. ft. per day FSRU, Experience, was delivered to Petrobras' Guanabara Bay facility in Brazil in May of 2014. Bureau Veritas' Optimize RAM software was used to assess the regasification installation performance and ensure the send out target requirement set by the project was met.

ABB

ABB Azipod

ABB has released details on its latest generation Azipod thruster, a unit which ranges in power from 1.6 megawatts to 7 megawatts (MW) and is intended to serve a growing electric propulsion market. (According to Clarkson's Research, the number of vessels with electric propulsion has been growing at a pace of 12% per year over the last decade).

According to ABB, the a significant development is the fact that Azipod D will allow for a wider range of vessel types to use the innovative propulsion system. The gearless Azipod already has a multitude of references, including cruise ships, icebreakers, ice-going cargo vessels and offshore accommodation ships. The Azipod D is targeting these sectors and more, with segments such as offshore drilling, construction and support vessels and ferries on tap.

The manufacturer predictably touts a long list of advantages for the system, including competitive investment cost, ease of maintenance and increased flexibilities for designers and shipbuilder, with the ability to accommodate a wide range of hull shapes and propeller sizes, as well as simplicity of installation of the propulsion units. According to ABB, the Azipod D requires up to 25 percent less installed power, partly due to the fact that the new hybrid cooling increases the performance of the electric motor by up to 45 percent.

www.abb.com

AkzoNobel

Tank Coating for Navig8 Chem Carriers

Shipowner Navig8 is progressing the application of Interline9001, a advanced cargo tank coating from AkzoNobel's International marine product range, on a series of 18 chemical tankers currently under construction at Hyundai Mipo Dockyard, South Korea. According to the coating's manufacturer, Navig8 selected its Interline9001 to deliver operational benefits for the 37,000 dwt vessels, providing increased vessel capacity and maximum operational flexibility required to meet increased market demand for large volume contract of affreightment. In addition, Navig8 has selected Interline9001 for a further four 49,000 dwt vessels under construction at STX shipyard, also in South Korea. Interline9001 is a Bimodal Epoxy coating for the cargo tanks of chemical tankers. With enhanced cargo resistance, near zero absorption for many cargoes and fewer cycling restrictions, Interline9001 simplifies the carriage of a wide range of liquid cargoes.

www.akzonobel.com

Klüber

VGP-compliant Frease from Klüber Lubrication

Klüberbio AG 39-602 is an environmentally acceptable adhesive lubricant for open gears and steel cables. Based on ester oil and selected additives, the grease complies with the requirements for environmentally acceptable lubricants (EALs) as defined in Appendix A of the U.S. Environmental Protection Agency's 2013 Vessel General Permit (VGP). Klüberbio AG 39-602 contains greater than 60 percent of renewable raw materials, resulting in reduced environmental impact in the event of discharge into water. With its good adhesion to surfaces and water resistance, Klüberbio AG 39-602 leads to long relubrication intervals. The product's anti-corrosion and anti-wear additives also ensure longer component life and reduced wear. Klüberbio AG 39-602 meets the biodegradability, minimally toxic and non-bioaccumulative standards established by the 2013 VGP.

www.klueber.com

Barkeeper

Barkeeper: Centrifugal Separation Module

The Barkeeper is a patent pending centrifugal separator designed to process weighted drilling fluids at the highest possible rates and with maximum efficiency. The Barkeeper recovers as much as 100% of the barite in weighted drilling fluids. The barite is returned to the active mud system, while decanting centrifuges can be used to discard the low gravity drill solids. A dual gradient, deep water drilling system based on dilution of riser mud requires economically separating the riser mud into a low density dilution fluid and a higher density drilling fluid. The Barkeeper can be used in combination with 250 GPM/ 925 LPM modules to achieve economical separation of the mud into low density and high density streams with superior rheological properties compared to centrifuges.

www.FluidSystems.com

SeaHow

SeaHow Skimmer System

New SeaHow skimmer systems – designed to collect both light and heavy oils efficiently – can be implemented in almost any work boat, starting with vessels only six meters long. SeaHow operates one of northern Europe's largest fleets of oil spill response vessels, and its hands-on experience of more than 30 years was central to the three years in developing its own line of SeaHow skimmers.

SeaHow skimmers are suitable for vessels from 6m long to the largest vessels used in off-shore OSR. Skimmers are designed to be easy to deploy and operate, making it possible to turn virtually any work boat or larger vessel into an OSR vessel in case of an accident. "Most of the funds available for OSR equipment acquisition is today used for purchasing vessels, leaving little money for the OSR equipment itself," says Jari Partanen, CEO of SeaHow. "By using SeaHow skimmers you can use your existing vessel fleet and direct the investment funding to the OSR equipment itself."

E: hannu.hoviniemi@seahow.net

Roxtec

Graham O'Hare, MD, Roxtec

Roxtec Seals

Roxtec provided its waterproof sealing solution to what is called the largest and most powerful tidal turbine in the world. Roxtec UK managing director Graham O'Hare said the deal with Scotrenewables Tidal Power Limited involved Roxtec supplying the new SR2000 2MW floating turbine which is 65m long, 3m diameter and weighs 550 tons.

"The turbine was built in Orkney and at the Harland and Wolff shipyard in Belfast, and Roxtec provided support at both locations throughout the project," O'Hare said. "We have sealed a high volume of multiple electrical control and instrumentation cables of various sizes on the turbine through every bulkhead between sections. We could offer the highest standards of certified waterproof bulkhead seals. The cabling in the turbine is extensive and runs its entire length through 10 compartments inside the floating hull, and also cable sealing within the generator nacelles, and over an exposed section linked to topside power, control and communication equipment.

O'Hare said during the planning phase Scotrenewables designers were able to use Roxtec's Transit Designer computer software. "Our software enabled their team to produce detailed drawings, quickly and simply, of cable and pipe locations which makes the installation process faster," O'Hare said.

www.roxtec.com


Hapag-Lloyd
Ganz


BMS
Socha


ClassNK
Ueda


W&O
Loomis


W&O
Nestel


USCG
Horvath

Maersk Line Names Danet CFO

Pierre Danet, current vice president and regional CFO of Hewlett Packard, Printing and Personal Systems in EMEA, joined Maersk Line on April 7 as chief financial officer (CFO) and be part of the management board of Maersk Line, the company announced. Maersk Line's current chief strategy, finance and transformation officer, Jakob Stausholm, will continue in the role of chief strategy and transformation officer.

As of April 7, Maersk Line's management board will consist of:

- **Søren Skou**, CEO
- **Michael Chivers**, chief human resources officer
- **Vincent Clerc**, chief trade and marketing officer
- **Pierre Danet**, CFO
- **Steven Schueler**, chief commercial officer (CCO)
- **Jakob Stausholm**, chief strategy and transformation officer
- **Søren Toft**, COO

Hapag-Lloyd CFO Ganz Steps Down

Peter Ganz stepped down from his position as company CFO effective April 1, 2015, also leaving the company on the same day, it was announced during the meeting of Hapag-Lloyd's Supervisory Board. The change on the Executive Board comes following an agreement between shareholders stipulating that CSAV, as the new largest shareholder in Hapag-Lloyd, has the right to nominate an individual of its choice to assume the position of CFO.

"We owe Peter Ganz a great debt of gratitude – in a situation that has not been easy for him – not only for seeing the merger of Hapag-Lloyd and CSAV through to the closing, but also for being willing to complete the annual financial statements," said **Michael Behrendt**, Chairman of the Supervisory Board of Hapag-Lloyd AG. "During his six-year tenure as CFO, Peter Ganz made a decisive contribution to securing and strengthening Hapag-Lloyd's future viability and competitiveness. Particularly during the financial and shipping crisis of 2009, Peter Ganz initially played a crucial role in the restructuring and refinancing of Hapag-Lloyd. Thereafter, he laid the groundwork for gaining access to capital markets and ensuring that Hapag-Lloyd had the financing it needed for growth. Furthermore, with great personal dedication, he contributed significantly to the successful merger of Hapag-Lloyd and CSAV."

As his successor, the Supervisory Board selected **Nicolas Burr**. The 39-year-old native of Chile was the CFO of CSAV from 2012 to 2015, based in Santiago de Chile. He had previously held management positions at a number of companies in Santiago, Buenos Aires and Wilmington (USA). After studying engineering, he earned an MBA at MIT in Cambridge (USA).

Socha Named VP at Baker Marine

Baker Marine Solutions (BMS) appointed **Robert Socha** as Vice President Business Development for its domestic United States and international operations. Socha joins BMS following 16 years with Bollinger Shipyards as executive vice president marketing and sales, and an earlier 18 year career with Tidewater, Inc. in sales for their North America and International operations in West Africa, Middle East and India.

ClassNK: World's Largest Class Society

ClassNK's official registration figures, in addition to Clarkson's data, reveal that the classification society is once again the world's largest. The latest figures show that more than 366 million deadweight tons are now registered with the classification society, some 21% of the world's entire classed fleet, more than any other classification society in the world according to Clarkson's. Despite a global decline in new orders, the number of newbuildings joining ClassNK continues to grow, with the society welcoming newbuildings totaling over 16 million gross tons to its register in 2014, or more than 25% of all newly built tonnage last year.

Speaking on the occasion, ClassNK chairman and president, Noboru Ueda said, "At ClassNK, we believe that nationality is not relevant to our customers. Shipowners and operators around the world select their classification society on the basis of the services delivered. These figures represent not only the growth of our organization, but also the trust we have gained from the maritime industry through consistently providing quality services."

Kondracki Joins TOTE Leadership

TOTE Services has promoted Michael J. (Mick) Kondracki to director of labor relations and risk management effective March 16, 2015. Kondracki will oversee risk management, human resources and promote the continued business relations with the Seafarers International Union (SIU) and the American Maritime Officers (AMO). Kondracki joins the TOTE Services executive team with more than 26 years in the maritime industry in numerous executive roles.

He earned a BS in marine engineering from the U.S. Merchant Marine Academy, an MBA from the University of New Orleans, a Masters Certificate in Project Management from George Washington University and a Diploma from the U.S. Naval War College, Staff & Command.

W&O Realigns Leadership Team

W&O, a global supplier to the marine and upstream oil and gas markets for pipe, valves and fittings, valve automation and engineered solutions, promoted two long-time employees to Vice President. Fred Loomis will serve as Vice President of Technical Sales, and Todd Nestel will serve as Vice President of Engineered Solutions. Loomis and Nestel will work closely with W&O's leadership team to address ongoing and evolving customer needs, such as ballast water treatment, fugitive emissions compliance and LNG fueling options. Beyond providing the engineered solutions products, Loomis and Nestel will aid in continuing the growth of W&O's engineered solutions services, in which W&O experts are involved from the very outset in planning customized, technical solutions to design, newbuild and retrofit projects, the company noted.

SSI Expands Staff to Meet Demand

SSI has hired two new staff members, Thomas Stokes Jr. and Jason Rose, to keep up with the growing demand for ShipConstructor training as well as Autodesk related product advice, the company announced. Stokes Jr. (TJ), is SSI's new software trainer. Rose, SSI's newest sales account executive, previously promoted Dassault's product line.

GNS Announces Senior Appointments

Maritime navigation services group Global Navigation Solutions (GNS) announced the appointments of Phil Stothard as Chief Information Officer and Kieron Abernethy as Chief Revenue Officer. Stothard joins GNS from banking and payment solutions provider ACI. Phil has over 25 years' experience in IT development, leading teams and delivering global solutions for organizations such as HSBC and Accenture. Phil has particular expertise in data and information systems and has a track record of delivering value to internal and external clients with the solutions he has designed and delivered.

Abernethy's previous roles include, UK Managing Director of NCR Ltd; Chief Operating Officer for Moneybox plc which floated in 2004 and Sales Director of ReD which was sold to ACI in 2014. Kieron has led operational and strategic sales teams in the U.K. and internationally.

Coast Guard Academy Cadet to Receive Fulbright Scholarship

Stephen Horvath, a first class cadet

at the U.S. Coast Guard Academy, was recently granted a two-year Fulbright Scholarship to study renewable energy technologies in Finland during the 2015-2016 academic year and the 2016-2017 academic year. Horvath, 21, will pursue a master's degree at the Lappeenranta University of Technology in Lappeenranta, Finland. The mechanical engineering major plans to conduct a research project on methods for energy storage. Horvath's research project will examine the conversion technologies used to store energy created from wind turbines and solar cells. Subsequently, the technology available to store the energy as a gas will be evaluated for efficiency and cost. Based on the analysis, Horvath will make recommendations to improve the process of creating synthetic gas on an industrial scale.

AMSEC Promotes Cope

AMSEC LLC, a subsidiary of Huntington Ingalls Industries (HII), has promoted Cathy Cope to director of contracts, pricing, procurement and material management. In her new role, Cope is responsible for the management of AMSEC's contracts and procurement across all business areas. As such, she is responsible for contracts, pricing and estimating, purchasing, subcontracts administration, material management, and small business management/reporting.

Huffman Joins Blank Rome

Blank Rome LLP announced that Jay T. Huffman has joined the Firm as an associate in the Maritime, International Trade, and Public Contracts group. He is based in the Firm's Houston office. Huffman joins Blank Rome from

(Continued on p. 104)

SHIPPINGInsight 2015 Set for October 13-14

The annual technical symposium, exhibition and networking event for maritime industry professionals in North America, SHIPPINGInsight 2015 Fleet Optimization Conference & Exhibition, will take place Oct. 13-14, 2015, in Stamford, Conn.

"Now entering its fourth year, SHIPPINGInsight is the one event on the maritime calendar you can't afford to miss," said conference co-director Frank Soccoli. "It's your opportunity to learn from experts and network with your peers. Most important it brings together ship managers and technology partners in panel sessions, interactive roundtables and informal networking, to address solutions to the challenges of operating ships more efficiently."

"Finally an event focused on providing shipowners/managers the latest information on actual experience, products and services to optimize fleet performance and compliance while reducing OPEX," said Erny Otterspoor, Vice President and Technical Director, TBS-Roymar Ship Management.

"The SHIPPINGInsight Fleet Optimization Conference and Marine LNG Symposium is well on its way to becoming one of those key industry forums that are a must to attend. It's great to have a platform that is both educational and provides significant quality networking opportunities. We are looking forward to next year's event," said Edward A. Waryas, Vice President, Business Development, Lloyd's Register North America, Inc.

shippinginsight.com

BAE Expands Ship Repair Capabilities

As part of the San Diego Ship Repair expansion, BAE Systems will purchase a new, additional dry dock, shown here as a rendering of where it would be positioned at the shipyard. It will be the company's largest dry dock in the United States, measuring 950-feet long and 205-feet wide, with a design lifting capacity of 55,000 tons.

BAE Systems will significantly expand dry-docking capabilities at its San Diego shipyard, enhancing the ship repair, maintenance, and modernization services the company provides to the U.S. Navy, other government agencies, and commercial customers. The investment by BAE Systems, which will include the purchase of a new dry dock and a range of infrastructure improvements at the yard, will total approximately $100 million.

The company made the announcement during a ribbon-cutting ceremony dedicating a new pier at the shipyard along the San Diego waterfront. Scheduled attendees included U.S. Representatives Susan Davis, Duncan Hunter, and Scott Peters.

"Our primary strategy and mission in San Diego is to support the U.S. Navy and its rebalance to the Pacific," said Erwin Bieber, president of BAE Systems' Platforms & Services sector. "The new pier and dry dock will complement and expand the shipyard's existing capacity in this homeport and provide greater capabilities to our customers. Our continuing investment in the region further demonstrates our commitment to San Diego and recognizes the important role it plays in our strategy."

The new pier and dry dock will support current and future Navy surface ship repair, maintenance, and modernization, and will accommodate cruisers, destroyers, amphibious assault ships, mine countermeasures ships, and both variants of the Littoral Combat Ship. The expanded facilities may also service other ships and vessels under contract, including those for Military Sealift Command, the U.S. Coast Guard, and the U.S. Maritime Administration.

The new Pier 4, at 415-feet long and 64-feet wide, replaces a 52-year-old pier and includes new services such as fresh water, electrical, sewage, and storm water containment.

When operational in early 2017, it will employ several environmental design features, including LED lighting, electric cranes, air-cooled emergency generators, a zero discharge closed-loop salt water system, and storm water recovery systems.

Planned facilities in San Diego.

(Photo: BAE Systems)

Royston, Rayzor, Vickery & Williams, L.L.P. He concentrates his practice in maritime and energy-related litigation matters, including state and federal cases involving MARPOL violations, collisions, cargo contamination, Jones Act, OCSLA, and LHWCA defense. He also has experience handling serious marine incident investigations, and matters involving oil and gas law and commercial transactions.

Additionally, Huffman will serve as a member of Blank Rome's Maritime Emergency Response Team (MERT) to respond to pollution-related incidents and vessel casualties at a moment's notice, and manage the potential civil and criminal consequences involved.

LOC Realigns Florida Office

London Offshore Group Ltd (LOC) opened an office in Houston in 1985, signaling the start of three decades of involvement in U.S. marine warranty surveying and maritime consulting. An office in Miami was established in 2002, thriving as it served a wide range of clients, in conjunction with the Houston office. Recently LOC relocated the Florida office from to Fort Lauderdale to further align with the U.S. marine market.

"We are pleased to be in closer proximity to our clients. Fort Lauderdale is a major shipping hub, with Port Everglades serving as a terminal for extensive shipping," said Paul Voisin, Master Mariner, Associate Director and the Manager of LOC's Fort Lauderdale office. "Being closer to the port aligns us more strategically with our customers and their needs. Our office supports shipping activity along the US East Coast, South America and the Caribbean."

The new office details are:

London Offshore Consultants Inc
1550 S.E. 17th Street,
Suite 200.
Fort Lauderdale, Florida 33316

USCG Authorizes KR for BWM Tests

Korean Register (KR) - an IACS member classification society – has been accepted by the United States Coast Guard (USCG) as an Independent Laboratory (IL) to undertake tests, inspections and evaluations for ballast water management systems.

Commenting on the approval, Dr. B. S. Park, Chairman and CEO of KR said, "We are honored and delighted to be the first Asian classification society to be selected by the USCG as an internationally renowned facility qualified to deliver high quality testing and evaluation for ballast water management systems to the world's maritime community. This achievement is a further example of KR's growing status on the international stage and an endorsement of our technical abilities. We are committed to the development of all relevant technologies and will continue to contribute to the implementation of U.S. Coast Guard regulations."

Beier Radio Celebrates 70th Anniversary

Beier Radio, Inc. marks 70-years of providing engineering, sales and service for marine electronics around the globe. During its 70 years in business, Beier Radio has grown from being one of the first marine electronics distributors in the southern United States to a leader in integrated vessel control, navigation and communications systems as well as mariner training.

"Beier Radio has always been committed to delivering products and services that meet the current demands of the marine industry and also anticipate the future needs of our customers in the challenging marine environment," said owner Karl Beier.

"From our expansion into engineering and manufacturing with Sentinel Controls to the opening of the Marine Training Institute, Beier Radio continues to grow and strengthen. We thank our loyal customers around the world who have allowed us to serve them over these successful 70 years in business, and look forward to working with our current and future customers for many years to come."

Beier Radio was founded by Frank L. Beier in 1945 and began providing systems integration of mechanical, hydraulic and pneumatic systems with controls in 1975.

In 1980, the company began selling Dynamic Positioning (DP) systems, representing all of the major DP manufacturers, and in 1999, Beier Radio began working with Navis Engineering to develop its own IVCS2000 Integrated Vessel Control System. Beier Radio opened its first DP Training Center certified by the Nautical Institute in London 2007.

In 2012, Beier Radio purchased the engineering and manufacturing company Sentinel Controls and just two years later, opened a new mariner training facility – The Marine Training Institute – in Houma, Louisiana, to provide DP and ECDIS training. The company also opened a new manufacturing, engineering and service facility in Houma in 2014, and moved into new management and administrative offices in Mandeville, Louisiana.

Having supplied DP systems for hundreds of vessels over the past 70 years, Beier Radio is a leader in providing turnkey vessel control and navigation solutions. Products include Vessel Monitoring and Management Systems, Steering Systems, DP Systems, Shaft Tachs, Navigation Light Panels and more. In addition, the company sells a full line of marine communication and navigation products. Beier provides international support for all of its products.

www.beierradio.com

Frank L. Beier, circa 1938

(Photo: Beier Radio)

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

ANCHORS & CHAINS

Anchor Marine & Supply, INC., 6545 Lindbergh Houston, Texas 77087 , tel:(713) 644-1183, fax:(713) 644-1185, david@anchormarinehouston.com

DCL Mooring and Rigging, 4400 North Galvez Street, New Orleans, LA , USA , tel:504 941-4116, fax:504 947-8557, codys@dcl-usa.com contact: Cody Schnuriger, www.dcl-usa.com

ANTI-CONDENSATION COATINGS

Mascoat Products, 4310 Campbell Rd., Houston, TX , USA , tel:(713) 465-0304, fax:(713) 465-0302, wconner@mascoat.com

ATTORNEYS

Blank Rome LLP - Admiralty & Maritime Law, 600 New Hampshire Avenue, NW, Washington, DC , USA , tel:(202)772-5927, fax:(202) 772-5858, Grasso@BlankRome.com contact: Jeanne M. Grasso, www.BlankRomeMaritime.com

AUTOMATIC IDENTIFICATION SYSTEM

Saab TransponderTech AB, SE-589 41 Linkoping , tel:46 13 180000, fax:46 13 182377, Info.transpondertech@saabgroup.com

COATINGS/ CORROSION CONTROL/ PAINT

Hempel A/S, Lundtoftegårdsvej 91 2800 Kgs. Lyngby , tel:45 4593 3800, fax:45 4588 5518, marine@hempel.com , www.hempel.com

Tri-State Coating and Machine Co. Inc., 5610 McComas Road, PO Box 296, Salt Rock, WV V4W 3S8, USA , tel:1-800-477-4460, fax:304-736-7773, brichmond@tscminc.com contact: Beverly Richmond, www.tscminc.com

COMMUNICATIONS

David Clark Company (Wireless Headset Communication Systems), 360 Franklin Street, Worcester, MA 77060, USA , tel:(800) 298-6235 , www.davidclarkcompany.com/marine

CORDAGE

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

FILTERS/FILTER SYSTEMS

UT 99 AG Oil Mist Separators, Schaubenstrasse 5 CH-8450 Andelfingen , Switzerland , tel:+41 52 397 11 99, fax:+41 52 397 11 90, info@ut99.ch , www.ut99.ch/en

INSURANCE SERVICES

WQIS (Marine Pollution Insurance Policies), 60 Broad Street, 33rd Floor, New York, NY , USA , tel:1-800-736-5750, fax:(212) 292-8716 , www.wqis.com

WQIS (Water Quality Insurance Syndicate), 60 Broad Street 33rd Floor, New York, NY 18974, USA , tel:1-800-736-5750, fax:212-292-8716

LIFESAVING EQUIPMENT

CM HAMMAR AB, CM Hammar AB August Barks Gata 15 421 32 Västra, Frölunda, Sweden , tel:+46 31 70965 50, fax:+46 31 497023, info@cmhammar.com , www.cmhammar.com

MARINE AND PROTECTIVE COATINGS

Sherwin Williams, 101 W. Prospect Avenue, Cleveland, OH, 44115 , USA , tel:800.524.5979, klarmstrong@sherwin.com , sherwin-williams.com/protective

MARINE TRANSPORTATION

Central Boat Rentals, Inc., P.O. Box 2545, Morgan City, LA , USA , tel:985-384-8200, fax:985-384-8455, earl@centralboat.com or gary@centralboat.com

MECHANICALLY ATTACHED FITTINGS (MAFS)

Viega, 100 N. Broadway 6th Floor, Wichita, KS , USA , tel:904-315-3899, fax:888-782-6188, paul.switzer@viega.us contact: Paul Switzer, www.viega.us

MILITARY PATROL CRAFT MANUFACTURERS

Brunswick Commercial & Government Products, 420 Megan Z Avenue, Edgwater, FL 80204, USA , tel:(386) 423-2900, kelsey.nemeth@whaler.com , www.brunswickcgp.com

MOORING PRODUCTS AND SYSTEMS

DCL Mooring and Rigging, 4400 North Galvez Street, New Orleans, LA , tel:504 944-3366, fax:504 947 8557, codys@dci-usa.com

DCL Mooring and Rigging, 4400 North Galvez Street, New Orleans, LA , tel:504 944-3366, fax:504 947 8557, codys@dci-usa.com

NAVAL ARCHITECTS, MARINE ENGINEERS

Aveva Solutions Ltd, High Cross, Madingley Rd, Cambridge CB3 0HB, UK , tel:Tel +44 1223 556655 , www.aveva.com

Bristol Harbor Group, Inc., 99 Poppasquash Road Unit H, Bristol, RI 85714, USA , tel:(401) 253-4318, design@bristolharborgroup.com

Brunswick Commercial & Government Products, 420 Megan Z Avenue, Edgwater, FL 80204, USA , tel:(386) 423-2900, kelsey.nemeth@whaler.com

NAVAL ARCHITECTS, MARINE ENGINEERS & SURVEYORS

The Shearer Group, Inc., 3101 NASA Parkway Suite I, Seabrook, TX , USA , tel:(281) 532-2080, info@shearer-group.com , www.shearer-group.com

NITROGEN GENERATORS

Air Product AS, Vige Havnevei 78, 4633 Kristiansand, Norway, P.O.Box 4103 Kongsgaard, 4689 Kristiansand, Norway , tel:+47 38 03 99 00, norway@airproducts.com , www.airproducts.no

PRESS FITTINGS

Viega, 100 N. Broadway 6th Floor, Wichita, KS , USA , tel:904-315-3899, fax:888-782-6188, paul.switzer@viega.us contact: Paul Switzer, www.viega.us

SEA AND AIR FREIGHT

Amerijet International, Inc., 3401-A NW 72nd Ave., Miami, FL 07001-0030, USA , tel:844-859-2016, sales@amerijet.com , www.amerijet.com

SHIPBUILDING-REPAIRS, MAINTENANCE, DRYDOCKING

Chesapeake Shipbuilding, Corp., 710 Fitzwater Street, Salisbury, MD , USA , tel:(203) 453-6800, fax:(203) 453-1877, cbrobertson@americancruiselines.com contact: Charles Robertson, www.chesapeakeshipbuilding.com

SHIPPING CARGO

Amerijet International, Inc., 3401-A NW 72nd Ave., Miami, FL 07001-0030, USA , tel:844-859-2016, sales@amerijet.com

SHIPYARDS

Bayonne Drydock & Repair Corp., Military Ocean Terminal Dock Yard, PO Box 240, Bayonne, NJ 07002 , USA , tel:201-823-9295, fax:201-823-9298, ksullivan@bayonnedrydock.com

SOUND DAMPING INSULATION COATINGS

Mascoat Products, 4310 Campbell Rd., Houston, TX , USA , tel:(713) 465-0304, fax:(713) 465-0302, wconner@mascoat.com

STEEL, PIPE, ALUMINUM & ALLOY SURPLUS - PURCHASING

Texas Iron & Metal, 865 Lockwood Drive, Houston, TX 36652, USA , tel:713-672-7595, fax:713-672-0653, maxr@texasironandmetal.com contact: Max Reichenthal, www.texasironandmetal.com

STEEL, PIPE, ALUMINUM & ALLOYS

Texas Iron & Metal, 865 Lockwood Drive, Houston, TX 36652, USA , tel:713-672-7595, fax:713-672-0653, maxr@texasironandmetal.com contact: Max Reichenthal, www.texasironandmetal.com

VACUUM TOILET SYSTEM

Jets Vacuum AS, Myravegen 1 6060 Hareid , tel:47 700 39 100, fax:47 700 39 101, post@jets.no , www.jetsgroup.com

WATER JET SYSTEMS

Marine Jet Power Inc., 6740 Commerce Court Drive Blacklick, OH 43004-9200, USA, Columbus , tel:(614) 759-9000 , www.marinejetpower.com

WELDING AND CUTTING EQUIPMENT

American Torch Tip, 6212 29th Street East Bradenton, FL 34203

Miller Electric Mfg. Company, 1635 W. Spencer Street, Appleton, WI , USA , tel:(920) 734-9821, info@millerwelds.com , www.millerwelds.com

WINCH MANUFACTURER

Patterson Company, 870 Riversea Road, Pittsburgh, PA , USA , tel:(412) 322-2012, fax:(412) 322-2785, russ.mayhew@pattersonmfg.com contact: Russ Mayhew, www.pattersonmfg.com

The State of Alaska Department of Transportation & Public Facilities (DOT&PF), Alaska Marine Highway System (AMHS), Marine Engineering Section is recruiting for experienced applicants to fill Port Engineering Positions.

Job Description: Responsible for coordination of repair and maintenance functions, will review and approve recommendations for short and long term work, procurement of materials and services for vessels. Coordinates inspection of machinery and vessel condition, performs as the Project Manager and acts as the owner's representative for annual overhaul projects, conducts investigation of machinery, maintaining records of engineering budget for each assigned vessel, and will interface with CG, ABS, & DNV.

Minimum Qualifications:
Have possession of a United States Coast Guard Engineer License, have Port Engineering experience in the maritime industry.
For additional information on this employment opportunity, please contact one of the following individuals:

Gregory Jennings, Senior Port Engineer
Email: **gregory.jennings@alaska.gov**
Office: **907.228.7295** • Cell: **907.570.1943**

The State of Alaska Department of Transportation & Public Facilities (DOT&PF), Alaska Marine Highway System (AMHS), Marine Engineering Section is recruiting for experienced applicants to fill Marine Engineering Assistant III Positions.

Position Description: Perform journey-level engineering duties by applying accepted engineering practices in the design, construction and maintenance of marine vessels and marine-related projects. Key Responsibilities include participation in the preparation of design and construction documents and estimates, project plans, specifications, estimates and schedules, perform duties as the on-site representative during construction, coordinate personnel assigned to the on-site project field office, perform inspections, maintain project records, and other duties as assigned.

For additional information on this employment opportunity, visit the State of Alaska Online Recruitment System, Workplace Alaska, which can be found at: **http://doa.alaska.gov/dop/workplace/** Search for **Engineering Assistant III** located under all job seekers, located in Ketchikan AK; or all job seekers, within Transportation and Public Facilities.

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Tenured/Tenure-track positions in Management
Job Location: USA, Jersey City, NJ

New Jersey City University NJCU School of Business Department of Management

Tenured/Tenure-track positions in Management – all ranks

The Department of Management invites applications for full-time tenured or tenure-track faculty appointment (at assistant, associate or full professor) commencing September 1, 2015.
All areas of management will be considered. Can-

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- Minimum of Bachelors of Science degree in Civil, Chemical or Mechanical Engineering.
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- Demonstrated capacity to organize, plan, direct, supervise, and control all technical and management programs, which include multi disciplinary tasks and requirements, and perform fiscal and administrative functions.
- Experience in POL Systems
- Professional Engineering License
- API 510/570/653 certification

Project Engineer:
- Minimum of Bachelors of Science degree in Civil, Chemical or Mechanical Engineering.
- Minimum seven (7) years experience in POL facilities engineering, including design, inspection, testing and construction.
- Experience in POL Systems
- Current knowledge of POL Specifications in accordance with the Unified Facilities Guide Specifications (UFGS).
- API 510/570/653 certification
- Professional Engineering License

Project Manager:
- Minimum five (5) years experience in the POL Facility industry, five (5) years experience in managing POL construction projects.
- Demonstrated ability to collect and organize project documentation and correspondence
- Knowledge of POL systems sufficient to communicate and understand technical issues
- Current Knowledge of POL Specifications
- Knowledge of Quality Control and Quality Assurance methods
- API 510/570/653 certification

Site Manager:

Quality Control Manager (QCM):

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didates with an interest and expertise in supply chain management; maritime port management; operations; production management; and all areas of global business management are preferred.

Applicants should have an earned doctorate in Management or related field, or provide evidence it will be fully completed within one year of the 2015-2016 academic year. Applicants should have a strong commitment to excellence in teaching and research. The successful applicant will be required to teach both basic and upper level undergraduate and graduate courses, develop new programs and course offerings, and maintain scholarly engagement in their respective field. In extraordinary cases, as determined by the University, a terminal degree may not be required.

For full consideration, applicants should send a letter of application, a current curriculum vitae, a statement of teaching philosophy, research background, and the names, addresses, telephone numbers, and e-mail addresses of three references

via our online application. For specific application requirements, please refer to

NJCU website at: http://www.njcu.edu/hr/employment/

Electronic submissions via our website are welcome

Review of applications will begin immediately. Applications received by April 1, 2015 are guaranteed full consideration.

The Department of Management
New Jersey City University - School of Business
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Jersey City NJ 07305-1597
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