

APRIL 2013

# MARITIME REPORTER AND ENGINEERING NEWS

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## Tapping Opportunities Offshore

**Floating Production Systems**  
Projected 40% Increase in Coming 5 Years

**The Noise Code**  
Keeping Ship & Crew Safe & Sound

**Legal Beat**  
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## Shaping Up

As the population “expands” (the average weight of the offshore workforce is up 19% since the 1980s) a recent project was launched to size-up Offshore Workers, and determine how a bigger workforce is impacting all aspects of the workplace.

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(Image courtesy ASRY)



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# The Glass Half Full

I tend to be a glass half full kind of guy, as even in the worst of times there tends to lie opportunity. I would not be remiss in saying there are more than a handful in the shipping community that could label conditions today “the worst of times” – simply put, as the global economy struggles to regain solid footing some companies find themselves in economic peril. But as history tells, the business world is filled with peaks and valleys, and generally it is the long-term, quality players that not only survive the downturns, but generally emerge even stronger.

In attending a fair share of conferences and technical symposia throughout the year for the better part of 20 years (including the always top notch CMA Shipping exhibition in Stamford last month) a common lament from the ship owning community is the perception that “regulation” is killing the business. While it is true that there is a seeming endless onslaught of new rules which dictate the manner in which ships are outfitted and operated – ultimately tapping the bottom line – I contend that new regulations are not killing the business, they are simply changing the business, albeit sometimes radically.

“Chapter 11” in a headline is usually not a good sign of a success story, but I encourage you to read Thomas Belknap’s article “Does Chapter 11 Work for Foreign Shipping Companies,” as it documents the trend of foreign companies seeking U.S. bankruptcy protection. Starting on page 18 he discusses some of the ins and outs, ups and downs of the practice.

While shipowners may lament emerging rules and regulations, companies such as Wilhelmsen Ship Service (WSS) embrace them, as new rules create new opportunity. But the path for WSS and companies in its space is hardly the straight and narrow, particularly as WSS continues on its quest to build and maintain a truly global, mobile and efficient safety services network, a mission which received a huge boost last month when WSS earned ABS global approval for its safety services and also opened its fifth global training center in Houston. While WSS is built to help its clients fulfill an increasing array of complex technical rules and equipment, WSS itself invests mightily to build and maintain an equally efficient and effective safety services company across the world’s time zones and across the world’s cultures ... no small feat. I was privy to a cadre of WSS executives

in an exclusive opportunity in Houston last month, which you can read about starting on page 48.

As this is our Offshore Annual in conjunction with the Offshore Technology Conference in Houston, I would be remiss to not turn the conversation to the offshore industry, for this reason and also because offshore is *THE* driver of much maritime business these days.

It is no secret in fact, that the offshore energy business has been a major driver of the world economic recovery and to date, around the world, the task to discover and recover oil and gas in deeper, more hostile and challenging environments is growing by leaps and bounds. To put things in perspective I am happy to share with you an exclusive report authored by **Jim McCaul** of IMA. For those of you not familiar with McCaul’s work in this sector, he is an offshore Floating Production System guru of sorts, producing his insightful Floating Production System Report for more than 15 years. You can read the full story starting on page 32, or for those in need of the full-style 226-page report, you can Email McCaul at [imaassoc@msn.com](mailto:imaassoc@msn.com) for full details. But there are several key takeaways to share here:

- **40%**: IMA forecasts the Floating Production System Sector will grow 40% between 2013 and 2017, a projected need of 124 to 190 additional production floaters in this time-frame.

- **77**: The number of production floaters on order, which is an all-time high.

- **55**: Brazil is the largest location in terms of floating production systems in operation with 55, including 35 FPSOs, 18 production semis and two FSRUs.

This high-profile, high-value sector of the industry is a decided ‘silver lining’ for many builders and suppliers alike, and a strong cause for optimism going forward.

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# MR DIGITAL

When you leave the page and head to the screen, Maritime Reporter offers the most digital and online news offerings. Here are select stories from last month on [MaritimeProfessional.com](http://MaritimeProfessional.com)

## Indian Shipbuilding Set to recover lost glory?

Posted on [MaritimeProfessional.com](http://MaritimeProfessional.com) by Joseph Fonseca

# 1.3%

India's current share of the global shipbuilding orderbook

India's tryst with American history can be traced back to the role Indian shipbuilding played in the creation of the U.S. National Anthem "*The Star-Spangled Banner*." The lyrics came from "Defence of Fort McHenry," a poem written in 1814 by Francis Scott Key when aboard the *Minden*, a vessel that was built in India. This vessel, *Minden*, was built of teak by Jamshedji Bomanji Wadia and launched in 1810 from the Duncan Docks in Bombay (now Mumbai), India. Because of this exquisite shipbuilding facility at that time, Bombay became a strategic port for the British colonial undertakings in Asia and *Minden* providing the first and only British ship of the line built out of the limits of the Mother Country until then. The Royal Navy came to admire the skill of its architects, for the superiority of its timber, and for the excellence of its docks,

giving Bombay a distinguished place among naval arsenals.

**The name Lothal stands out as the oldest Indian known dock in the world that existed during the Bronze Age (from 3300 to 1200 BC).** The Iron Age (1500 to 500 BC) saw Rig Veda ships commanding a lot of respect among the contemporary seafaring nations. In 326 BC, during the Nanda Period, Alexander the Great acquired his large boats that were built in Punjab by a tribe. The dominance of shipbuilding activity continued through the ages that in 20 B.C. during the Pandya Dynasty Indian shipbuilders came to be known for their rich knowledge and expertise of metallurgy. The bolts used in ship building were of Muntz alloy (60% Copper and 40% Zinc) and the workmen were skillful in working with other copper alloys such as brass and bronze. Among the

various manufacturing industries, the Indian government considers shipbuilding industry to have the highest investment and employment multiplier effect says Cdr. S Navaneetha Krishnan of the Indian Navy. In his well referred book "Prosperous Nation Building through Shipbuilding," published recently he brings out the resilience and potentiality of the present state of the industry."

Representing a mere 1.3% of the global shipbuilding share, India's present strength include about 10 government owned shipyards and around 50 in the private sector. According to the World Economic Forum's Global competitiveness Index (GCI) few years ago, India continued to score well in indicator related to innovation and sophistication of firm operation as well as in the adoption of technologies from abroad. However, as a result of the down turn the efforts to

reduce the high budget deficit remained a big challenge. Considering shipbuilding to be the biggest force multiplier for the economy, the Prime Minister Dr Manmohan Singh has indentified shipbuilding sector to be the vehicle for creating employment and wealth for the country. In the recent national budget the government of India after several years made a beginning - giving a minor sop to the shipbuilding industry by exempting ship builders from payment of excise duty which is of around 5%.

Cdr Krishnan said that the Maritime Agenda 2010-2020, the government proposes giving a boost to shipbuilding in order to achieve a global market share of 5% by 2020, and to generate 2.5 million jobs in shipbuilding industry alone and to develop a strong Research and Development facilities and design capabilities for commercial ship building.

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## Port Automation Advances in California

**While** the rest of the world laughs in derision, the truth is that terminal operators in California are becoming more efficient and bringing in automation.

SSA Marine is at the forefront of this and has been inching along for five years, principally at Long Beach. When the company first announced its plans, the dockworkers' union, the ILWU, was strident in its opposition and seemed to have stifled the initiative. So, SSA opted for quiet diplomacy, which seems to have worked. Knud Stubkjaer, CEO and Chief Strategic Officer, gave an update at the Pulse of the Ports meeting at Long Beach on automation and the economics perspective of the operators. As he noted, market volumes have not increased although shipping rates are competitive. As a result shipyards have lowered their asking prices for new vessels, that has in turn affected capacity. Lines have been reducing costs by going for bigger ships and, to get maximum usage, are combining their resources through slot swaps, alliances and vessel sharing agreements. SSA itself is pushing IT through its subsidiary, Tideworks, but Knud Stubkjaer says terminal operators have to work together to get rid of what he calls "idle time" in the intermodal and distribution system. The company is concentrating on two locations to increase automation. Trucks enter through covered (enclosed) optical character recognition (OCR) gates that are averaging 98 percent accuracy on their readings, even for vehicles traveling at 30 miles an hour.

**Lasers are used for ship-to-shore movements, allowing the crane driver to get an exact assessment of the cargo bay just by hovering over it. Then the driver just has to punch a button to get things going.**

Posted on [MaritimeProfessional.com](http://MaritimeProfessional.com) by Martin Rushmere



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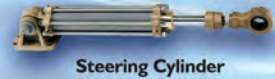
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		VesselsValue.com												
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2013		↓ -1.9%	↑ +1.3%	↔ +0.0%	↔ +0.0%	↑ +8.5%	↓ -1.0%	↑ +2.8%	↑ +5.6%	↓ -1.0%	↑ +0.3%	↑ +0.3%	↑ +2.8%	↑ +1.5%
		310k	160k	110k	75k	50k	180k	80k	60k	30k	7,000	4,250	1,400	750
2008		↓ -5.1%	↓ -0.3%	↓ -2.9%	↓ -2.8%	↑ +0.8%	↓ -1.0%	↑ +4.1%	↑ +0.5%	↑ +1.9%	↓ -3.1%	↓ -2.7%	↓ -1.5%	↑ +2.1%
		310k	160k	110k	75k	50k	180k	80k	55k	30k	7,000	4,250	1,400	750
2003		↓ -4.8%	↓ -0.4%	↑ +0.6%	↑ +0.7%	↔ +0.0%	↓ -1.4%	↑ +2.2%	↓ -2.2%	↑ +3.5%	↓ -1.6%	↓ -1.3%	↓ -1.3%	↔ +0.0%
		305k	155k	105k	70k	45k	175k	75k	50k	30k	6,500	4,000	1,400	750
1998		↓ -1.8%	↑ +1.4%	↑ +7.4%	↑ +8.0%	↑ +2.9%	↓ -1.4%	↓ -2.1%	↓ -3.1%	↑ +5.1%	↑ +2.9%	↑ +2.4%	↔ +0.0%	↓ -2.9%
		300k	150k	105k	65k	45k	170k	75k	48k	30k	6,500	4,000	1,400	750
1993		↑ +2.9%	↑ +2.8%	↑ +2.5%	↑ +3.4%	↑ +6.8%	↑ +4.4%	↓ -4.8%	↓ -3.0%	↑ +3.7%	↑ +6.3%	↑ +6.9%	↑ +3.3%	↓ -5.6%
		290k	145k	100k	65k	40k	150k	70k	45k	30k	4,500	3,750	1,400	750
1988		↑ +3.8%	↑ +2.9%	↑ +2.5%	↑ +3.4%	↑ +2.4%	↑ +4.5%	↑ +3.8%	↓ -2.3%	↑ +2.8%	N/A	↑ +5.3%	↑ +3.2%	↔ +0.0%
		260k	140k	100k	65k	40k	140k	65k	42k	30k	-	3,750	1,400	750



**Lisnave Refits  
 100th AET Tanker**

Portugal's LISNAVE recently received the 100th tanker refit project from AET, the 107,123 dwt Eagle Turin. The first tanker refit project from AET – the 102,352 dwt Eagle Auriga – was received by Lisnave in March 1998. At that time the attending superintendent from AET was Mr. Aw Chin Meng who, on average, has been once a year since 1998. A total of 38 different superintendents have attended ships in Lisnave during the 15 year period, but Mr. Aw has been the most regular.

"It has been a privilege to serve AET over the past 15 years with 100 refit projects now completed," said Frederico J. Spranger, CEO, Lisnave.

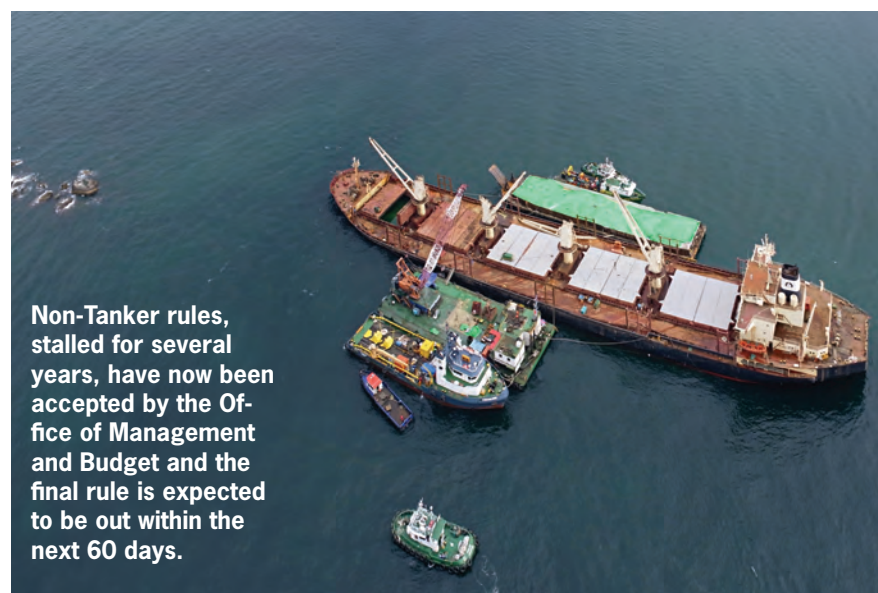
A total of 38 individual vessels make up the 100 contracts - two vessels have dry-docked five times; 11 vessels (4); 7 vessels (3) and this will be the second time for the Eagle Turin. The single largest refit contract involved the 107,123 dwt Eagle Tampa during 2004, which underwent some 800 tons of steel renewal to her hull.

"This milestone event symbolizes the long and stable partnership between AET and Lisnave," said Raymond McNamara, Director, Fleet Management at AET. "Since 2000, the two parties have been in a Fleet Agreement that gives us mutual priority."

AET operates a fleet, including owned and long-term chartered vessels. The break down is VLCCs (13), Suezmax (4), DP Shuttle Tankers (2), Aframax (55), Panamax (1) and Clean Petroleum Product Tankers (5). The ship management of this fleet is carried out in AET's offices in Houston and Singapore.

**Salvage Response under OPA 90**

# Non-Tankers are Next



**Non-Tanker rules, stalled for several years, have now been accepted by the Office of Management and Budget and the final rule is expected to be out within the next 60 days.**

Maritime casualties have always been tackled by a relatively small, egotistical, passionate and intrepid group of mariners called "salvors." Salvage as history knows it, however, may be taking a sharp turn as a result of the new game rules being injected by the Oil Pollution Act of 1990 (OPA 90).

Back in 2008 the USCG issued the tanker final rule for salvage and marine firefighting (SMFF) under the Oil Pollution Act of 1990. This rule primarily requires tank ships and barges, carrying oils as defined in the 33 CFR 155 as cargo, to pre-contract qualified salvors able to respond to a marine casualty in U.S. waters without delay.

On the sidelines, the Non-Tanker community, defined by the USCG as any vessel over 400 gross tons, has been, since 2004, quietly awaiting their turn to follow the tankers with the SMFF requirements. The Non-Tanker rules, stalled in Washington, D.C. circles for several years, have now been accepted by the Office of Management and Budget and the final rule is expected to be out within the next 60 days.

**More than 16,000 ships currently operating in and out of U.S. waters will be required to update their Vessel Response Plans (VRP) by contracting with a qualified salvor.**

As experienced during the Tanker process, most vessel owners should carry out in-depth vetting and evaluation of potential salvors to include review of contract terms, equipment inspection to determine whether it is owned or rented, presence in the U.S., existing clients, personnel qualifications and experience with USCG, among other criteria.

"OPA 90 regulations place strict liability on the shipowner himself and as such it is critical for them to diligently evaluate to select the best contractor, and not just go by third party recommendations or fancy websites," said Mauricio Garrido, president, T&T Salvage. USCG regulations concentrate on the need for a credible salvage and marine firefighting response capability throughout U.S. waters. Whether the crisis is caused by human error, act of nature, or terrorist attack, the ability to deploy the proper equipment and per-



**Mauricio Garrido,  
 President, T&T Salvage**

sonnel to a casualty is paramount not only to environmental protection and homeland security but also to mitigate potential liability exposure.

Salvage under OPA 90 is merely setting forth to plan for a casualty. Realistically, the manner in which salvage is executed will not change under the new rules; however, the manner in which shipowners and underwriters must plan for salvage has changed dramatically.

With a large inventory of prepositioned owned salvage and firefighting equipment, Garrido said that T&T Salvage continues to meet compliance in all USCG Captain of the Port Zones, including Puerto Rico, Alaska, and Guam, and stands ready to support Non-Tankers to not only comply with the new rules but also to capably respond in the case of an actual emergency. According to Garrido, T&T Salvage has proven results, as it has been selected by major operators such as BP, Chevron, Conoco-Phillips, Kirby, SeaRiver, Mitsui OSK, Aramco and Maersk, to name a few, holding more than 60% of the total tank vessel market share.



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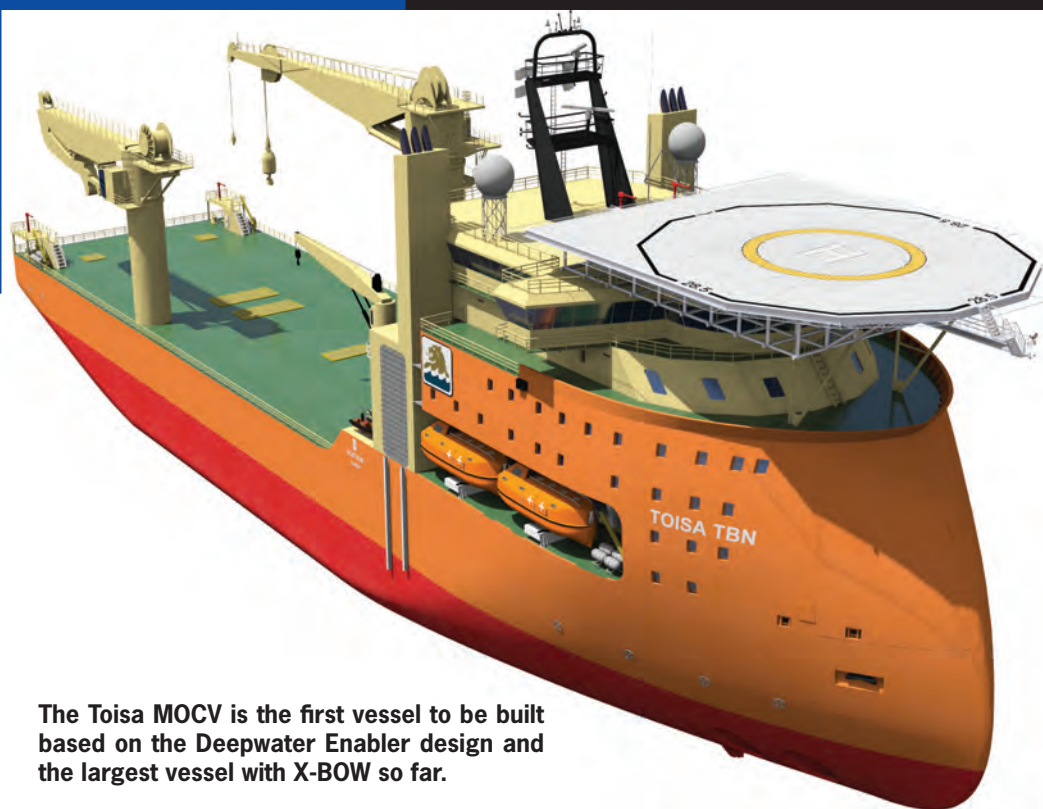
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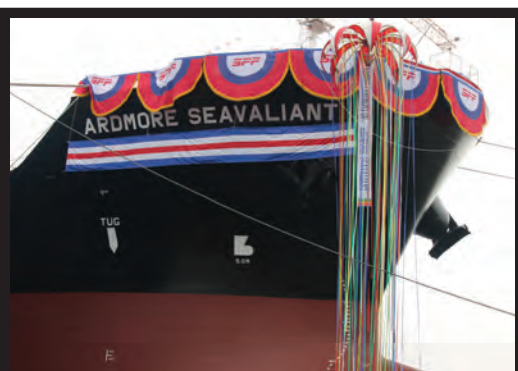


The Toisa MOCV is the first vessel to be built based on the Deepwater Enabler design and the largest vessel with X-BOW so far.

## Hyundai Builds Ulstein Design for Toisa

Toisa Ltd. signed a contract with Hyundai Heavy Industries (HHI) for the construction of a Multipurpose Offshore Construction Vessel (MOCV) designed by Ulstein. The vessel is the first with X-BOW hull line design to be built in Korea, and is a customized version of Ulstein's Deepwater Enabler design. The DP3 vessel is designed for worldwide operations in the oil and gas sector, ultra deepwater installation and construction, flexible lay, pipelay, cable lay and topside construction support. It features heavy lift capabilities with Active Heave Compensation, two moonpools, up to 50 t/sq. m. deck strength and the X-BOW hull line design from Ulstein. These features include an offshore crane rated at 900 tons SWL with a depth capability of 3,500m and a second, knuckleboom crane of 200 tons SWL with depth capability of 2,000 m.

In addition, the vessel can accommodate a 550t flex lay tower over the main moon pool and two 2,500 tons capacity carousel spaces below deck. From the enclosed hangar two large work class ROVs can be deployed to port and starboard side or through a central moon pool. Main propulsion is provided by three stern azimuthing thrusters, powered by a diesel electric plant of six main generators. All machinery, power and control systems are physically separated throughout the vessel in full compliance with the requirements for IMO Equipment Class 3 DP.



## Ardmore Shipping Accepts Pair of Tankers

Ardmore Shipping named the two newest vessels to join its fleet, the Ardmore Seavalliant and the Ardmore Seaventure. The naming ceremonies for the two newbuild vessels took place at SPP Shipbuilding in South Korea prior to the Ardmore Seavalliant being delivered to Cargill on a 12-month time charter arrangement. Ardmore Seavalliant and Ardmore Seaventure are 49,999 dwt IMO 3 product and chemical tankers, built by SPP Shipbuilding. The vessels incorporate a number of advanced specifications to deliver higher standards of fuel efficiency and operational performance, technologies which are anticipated to reap fuel savings of 10 to 15%. They include in various versions a larger, more efficient propeller, Mewis Duct and Propeller Boss Cap Fin devices for improved propeller and hull form efficiency, MAN B&W ME-B and ME-C electronic engines, high performance hull coating from International Paint, and SkySails' Performance Monitor voyage optimization system. The ships have also been verified by ABS in accordance with the voluntary energy-efficiency requirements of the IMO's Energy Efficiency Design Index (EEDI) for new ships.

## MHI, Imabari to Establish JV

### For Designing and Marketing LNG Carriers

Effective April 1, 2013, Mitsubishi Heavy Industries, Ltd. (MHI) and Imabari Shipbuilding Co., Ltd., will jointly establish MI LNG Company, Limited, a company to handle the design and marketing of LNG carriers. Through establishment of the JV, the two companies aim to proactively prepare a structure capable of responding to large-scale LNG carrier construction projects, which are expected to increase in tandem with expanding global demand for LNG. MHI will own 51% of equity and Imabari Shipbuilding will hold the remaining

49%. Upon receiving an order for an LNG carrier, the JV will prepare the specifications, and then order ship construction either to MHI's Nagasaki Shipyard & Machinery Works or to Imabari Shipbuilding. With two shipyards at its disposal, the JV will have a collective shipbuilding capacity of more than eight LNG carriers per year, ulti-

mately putting it in a position to vie against Korean and other large shipbuilders. Besides the conventional Moss type with spherical LNG tanks and the membrane type, the JV can also offer the "Sayaendo," a new-generation

LNG carrier developed by MHI as a high value-added vessel evolved from Moss-type carriers but achieving enhancements in energy savings and operability. MHI is a pioneer in Japan's LNG carrier industry, having engaged in their development and construction since the 1970's. To date, the company has delivered 42 ships. The relationship between the shipbuilding pair has continued to evolve and grow closer, as last year MHI agreed with Imabari Shipbuilding to collaborate in container carrier technology and also to license manufacture and marketing rights of deck machinery. In October, the two companies jointly received an order for two PCTCs from NYK Line.

#### Snapshot of the JV

Name: MI LNG Company, Limited  
Business: Design & marketing of LNG carriers  
HQ: 4-5-1, Shimbashi, Minato-ku, Tokyo  
President: Haruhiko Omi  
Capital: 50 million yen  
Operation launch: April 8, 2013

**Sayaendo has a peapod-shaped continuous cover over spherical LNG tanks that is integrated with the ship's hull. This is designed to enable a more efficient overall ship structure and reductions in ship weight and size. MHI has now completed the new vessel's development and received orders for five units.**



# Capital Shipmanagement: First Boxship Newbuilds

LR classed Alexandros and Aristotelis are the first of five new 5,000 TEU super-efficient new ships, all to be delivered from HHI Gunsan by June 2013, that sees Capital expand its operations into the container sector. Capital Shipmanagement marked the delivery of its new containerships, Alexandros (on charter as Hyundai Prestige) and Aristotelis (on charter as Hyundai Premium) delivered at HHI Gunsan, respectively.

“These are demanding times for all of us,” said Evangelos Marinakis, CEO of Capital. “We are doing our utmost to serve as best as possible the needs of our clients for the years to come. With fuel prices high and with our increasing environmental responsibilities, we are investing in high performance, truly eco, environmentally-friendly new tonnage.”

Marinakis added, “When contracting for this new series of 5,000-teu container ships, we paid special attention to obtaining a design with engines which offer high efficiency throughout the entire load range in order to achieve speed flexibility with the best fuel consumption and a reduced carbon footprint. It’s great to see this new design in the water and safely delivered to our charterers Hyundai Merchant Marine.”

The ships are equipped with AMP (Alternative Marine Power System), often known as a ‘cold ironing’ system facility, where shore can provide electrical sup-

ply while in port with maximum power of 3.2 MW. This is a system where a container vessel can, while in port, shut down its generators and plug into the shore power. The ships are also fitted with an ‘X’ – twisted full spade rudder.

The benefits of using such a rudder is that a twist in the upper and lower part of the rudder blade prevents cavitation and associated erosion problems developing as a consequence of rotational flow aft of the propeller.



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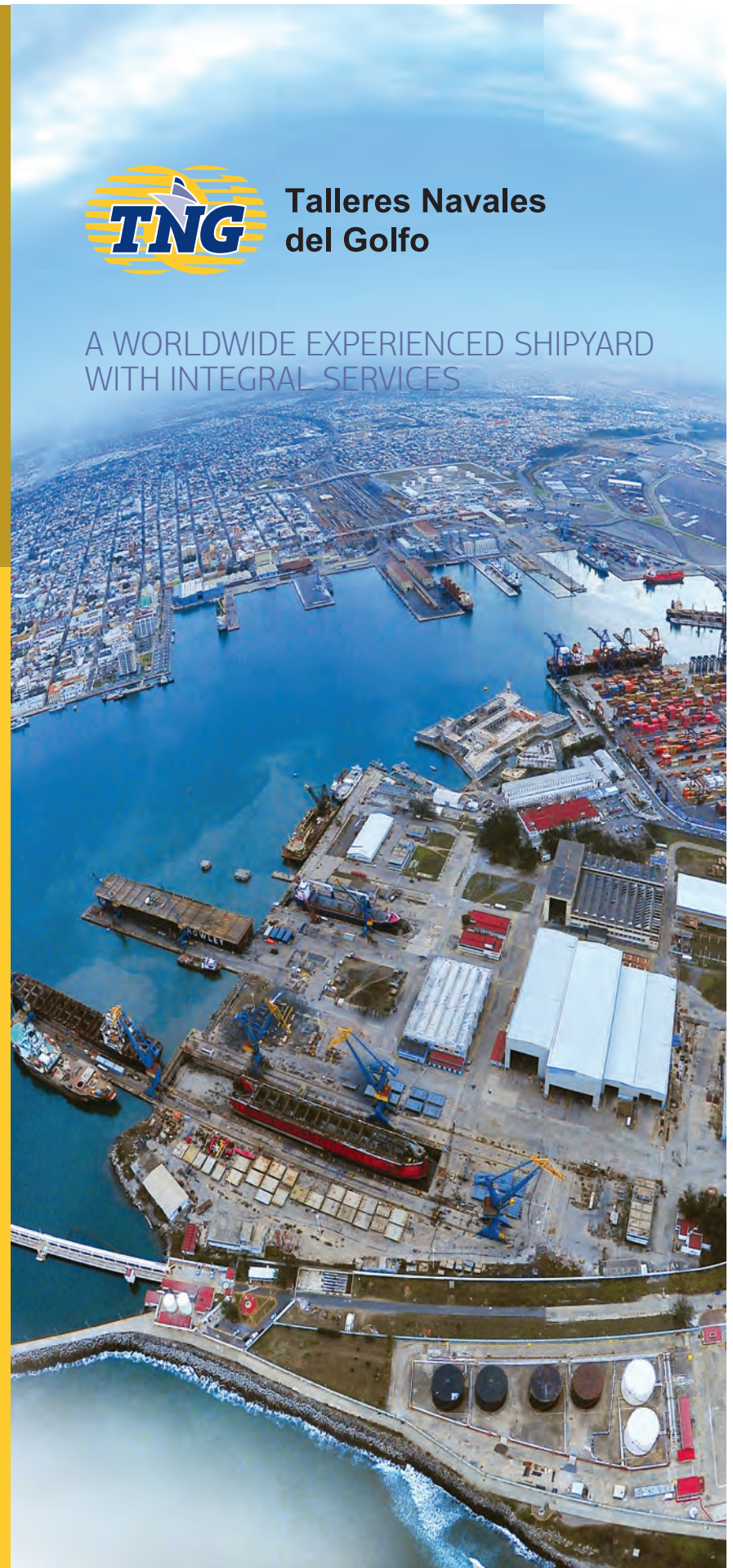
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## 297,000-dwt Iron Ore Carrier Ore Salvador Completed

Mitsui O.S.K. Lines, Ltd. announced the completion of the 297,000-ton iron ore carrier Ore Salvador at Japan Marine United Corporation’s Ariake Shipyard. MOL will operate the ship under a long-term contract, transporting ore from Vale S.A. of Brazil. Among those on hand for the naming and delivery ceremonies were Vale International Director Gurinder Singh, who named the vessel, Japan Marine United Corporation President Shinjiro Mishima and MOL President Koichi Muto. MOL operates seven very large ore carriers (VLOCs) in the 300,000 DWT class.

### Ore Salvador Main Specifications

Deadweight tons (Capacity) ..... 297,076 tons  
 Length ..... 327m  
 Breadth ..... 55m  
 Draft ..... 21.4m  
 Registry ..... Liberia



# Bourbon Liberty 151

*First of 15 in the innovative Bourbon Liberty 150 Series to operate for Maersk Oil in Qatar*

One year after taking delivery of its last Bourbon 200 vessel and first Bourbon Liberty 300 vessel, Bourbon has extended its range of services with the Bourbon Liberty 151, the first vessel in a series of 15 PSVs. The first Bourbon Liberty 150 series vessel will operate for Maersk Oil in Qatar. Bourbon has been investing in a range of next generation built-in-series vessels since 2008. By the end of 2014, the group will be able to provide a series of 111 standardized Bourbon Liberty vessels

devoted to offshore activities. Including the Bourbon Liberty 151, Bourbon now has 85 Bourbon Liberty vessels operating worldwide. The entire series of 54 Bourbon Liberty 200 AHTS vessels, the entire series of 22 Bourbon Liberty 100 PSVs, eight Bourbon Liberty 300 AHTS vessels (20 on order) and the first Bourbon Liberty 150 PSV (15 on order).

“Bourbon Liberty vessels operate in inter-tropical areas such as Asia, Mediterranean, the Middle East, Brazil, Mexico and West Africa,” said

Rodolphe Bouchet, Bourbon Vice President Business Management, Marine Services. Bourbon Liberty 150 vessels are an extension of Bourbon Liberty 100 vessels suited for drilling operations and provide clients with additional facilities such as larger deck space (up to 400 sq. m.) and a larger cargo capacity for liquid mud and bulk. Bourbon asserts the Bourbon Liberty series provides oil and gas clients (majors, contractors, natural oil companies, etc.) with high standards of quality and performance.

EPD supplied the integrated EOS (Engine Operating Station) House which houses the electrical propulsion systems, fire fighting systems and main switchboards for power distribution and control for these DP-II/FiFi-I ABS classed vessels. EPD also provided all the motor control centers (MCC's) for control/operation of vessels onboard equipment and material handling systems. The new series is designed to feature:

- exceptional maneuverability and station keeping with five thrusters and class two Dynamic Positioning System;
- greater reliability due to equipment redundancy (multiple thrusters and three main generators) with the support of Bourbon's maintenance network
- large and flexible cargo capacity

## Bourbon Liberty 151

### Main Particulars

Length, o.a.....	61.8 m
Breadth.....	14 m
Depth, molded.....	5.8 m
Draft, max. ....	4.9 m
DWT.....	1700 mt
Speed, service.....	12 knots
Main generator.....	3x CUMMINS K50-DM, Tier 2 EA rated 1210ekW @ 1800 rpm
Emergency generator.....	240ekW@1800
Engine Operating Stations (EOS).....	EPD
Propulsion aft.....	2 azimuth STEERPROP SP 10D, 1 fixed STEERPROP SP10, rated 843kW@ 1040rpm L drive each
Bow Thruster.....	2 x560kW FP, variable speed
Accommodation.....	24
Dynamic Positioning System.....	Class 2
Free Cargo Deck Area.....	400 sq. m.
Deck Cargo.....	630 mt
Fuel oil.....	579 cu. m.
Drill/Ballast Water.....	587 cu. m.
Fresh Water.....	354 cu. m.
Liquid mud.....	674 cu. m.
Bulk cement.....	180 cu. m.
Cargo Discharge Pumps	
Fuel Oil.....	150 cu. m./hr. at 70 mic
Liquid mud.....	2x150 cu. m./hr. at 70 mic
Fresh water.....	150 cu. m./hr. at 70 mic
Ballast/Drill water.....	150 cu. m./hr. at 70 mic
Bulk Cement 4 tanks, Compressor 50 mt/hr. at 60 m Class.....	ABS+A1, Offshore Support Vessel, Circle E +AMS+ACCU+DPS-2, Fir Fighting Vessel Class 1

(30% more cargo capacity than traditional vessels);

- versatility for deep sea and shallow water operations; and
- low fuel consumption due to diesel-electric propulsion

[www.bourbon-online.com](http://www.bourbon-online.com)



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# The NOISE Code

By Dennis Bryant

**A ship in compliance with the Noise Code will generate less noise and minimize deleterious impacts both on the seafarers on board and on the sea life in the vicinity**

**M**aritime Safety Committee adopted the Code on Noise Levels on board Ships, Resolution MSC.337(91), commonly referred to as the Noise Code. The Noise Code is being made mandatory by means of Resolution MSC.338(91), which amends the SOLAS Convention to add new Regulation II-1/A-1/Reg. 3-12 – Protection against noise. In accordance with this new regulation, the Noise Code will apply to ships of 1,600 gross tonnage and above: (1) for which the building contract is placed on or after 1 July 2014; (2) in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 January 2015; or (3) the delivery of which is on or after 1 July 2018. On existing ships, measures should be taken to reduce machinery noise in machinery spaces to acceptable levels as determined by the flag Administration. Certain vessels, such as high speed craft, pipe-laying barges, dredges, and mobile offshore drilling units, are exempted from the mandates of the Code.

The 2012 Noise Code effectively replaces the voluntary 1981 Noise Code [Res. A.468(XII)], which becomes the standard by which existing ships are to be judged. In the event, though, of repairs, alterations, and modifications of a major character and outfitting related thereto of existing ships, the areas in which changes have been made should meet the requirements of the 2012 Noise Code insofar as the flag Administration deems reasonable and practicable. Consideration must also be given to Resolution A.343(IX), Recommendation on Methods of Measuring Noise Levels at Listening Posts. This 1975 resolution relates to interference by shipborne noise with the proper reception of external audible navigation signals.

The purpose of the 2012 Noise Code



is to limit noise levels and to reduce seafarers' exposure to noise in order to: (1) provide for safe working conditions; (2) protect the seafarer from noise-induced hearing loss; and (3) provide the seafarer with an acceptable degree of comfort in rest, recreation, and other spaces. To achieve these goals, requirements and recommendations are made for: (a) measurement of noise levels and exposure; (b) protecting the seafarer under conditions where it is not feasible to sufficiently limit the noise level; (c) limits on acceptable noise levels for all spaces to which seafarers normally

have access; and (d) verification of acoustic insulation between accommodation spaces.

The Noise Code requires that the noise level be measured throughout the ship during sea trials at all points where the work of the ship is carried out and that a Noise Survey Report be prepared and retained on board. Noise level measurements should also be taken when the ship is in port, particularly to measure noise from the ship's cargo handling equipment. The report must be accessible for the crew. Additionally, noise issues are to be included in the ship's Safety

Management System (SMS) and the seafarers must receive training on the company's noise policy, hearing protection, and exposure limits. Oddly, the Noise Code has no provision for issuance of a certificate issued by a third party to evidence compliance to the flag Administration or a port state control boarding officer.

The Noise Code provides a table of noise level limits, measured in dB(A), for work spaces, navigation spaces, and accommodation spaces. One set of limits is for small vessels (1,600 up to 10,000 GT) and a second set of limits is applicable to larger vessels. Actually the two sets are the same except with regard to most accommodation spaces, where the smaller vessels are accorded slightly more leeway.

In spaces with sound pressure levels exceeding 85 dB(A), suitable hearing protection, as defined in the Code, should be used. Alternatively, time limits for exposure to the excessive noise levels should be established. No crew member should be exposed unprotected to peak values exceeding 135 dB(C). A hearing conservation program may be provided for seafarers working in excessive noise spaces in order to train them in the hazards of noise and use of hearing protection and to monitor hearing acuity.

Consideration should be given to the acoustic insulation between accommodation spaces in order to make rest and recreation possible even when activities are going on in adjacent spaces (e.g., music, talking, cargo handling, machinery operation). The Code provides a set of sound insulation indices for bulkheads between various spaces, such as between two cabins and between a cabin and a messroom.

When the noise level in a particular space is greater than 85 dB(A), entrances to the space must carry a warning notice comprised of a standardized warning symbol and supplementary information in the working

language of the crew. If only a minor portion of the space has excessive noise, then the warning sign is to be posted at eye level visible from each direction of access to that portion.

Perhaps of greatest value, the Noise Code includes in an appendix suggested methods for attenuating noise. The need for noise control should be taken into account at the design stage when deciding which of different designs of engines and machinery are to be installed, the method of installation and the siting of machinery in relation to other spaces, and the acoustic insulation and siting of accommodation spaces. Every ship and the available options are different, but the basic concept is that with a carefully planned design shipboard noise can be minimized and the need for such prophylactics as ear protectors can be reduced.

Isolation of the sources of noise is a generally favored method for its attenuation. Where practicable, engines or machinery that produce noise in excess of acceptable levels should be installed in compartments that do not require continuous attendance. Accommodation spaces should be located as far away, both horizontally and vertically, as possible from sources of noise such as propellers and propulsion machinery. Suitable partitions, bulkheads, decks, and insulation should be used to prevent the spread of sound. Exhaust systems should be arranged so that the inflow and outflow orifices are remote from places frequented by seafarers. Mufflers, silencers, noise-cancelling equipment, and attenuators should be fitted as needed. The control room for engineering spaces should include sound-reducing measures to the maximum extent practicable. Manufacturers should be asked to supply information on the sound produced by their machinery and recommended methods of installation to minimize noise levels. Machines should be supported on carefully selected resilient mountings. Use of noise-cancelling equipment should be considered if other methods fail to reduce noise to acceptable levels.

The Noise Code will serve an important ancillary purpose. There has been much research indicating that ships generate excessive noise that has a significant dilatory effect on sea life. Marine mammals, in particular, rely on echo-location and vocalizations. Other animals detect prey and predators by sound. Ship noise (and

other human-generated noise in the sea) interferes with these vital functions. The National Oceanic and Atmospheric Administration (NOAA) is examining the issue of ocean noise and whether and how it might be regulated under provisions of the Marine

Mammal Protection Act. In 2008, the IMO established a work program of the Marine Environment Protection Committee (MEPC) on "Noise from commercial shipping and its adverse impact on marine life". That program is ongoing, but it examining

issues such as noise from propellers and machinery. A ship in compliance with the Noise Code will generate less noise and minimize deleterious impacts both on the seafarers on board and on the sea life in the vicinity – a win-win situation.

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# Does **Chapter 11** Work for Foreign Shipping Companies?

In the past two or three years, we have seen a wave of shipping companies file Chapter 11 bankruptcy cases in the United States. This latest wave started hitting the street in about 2011 and has included such names as General Maritime, Omega Navigation, Marco Polo, TBS International, B&H, and OSG. The timing is no mystery to anyone who has been following our industry, and I do not think it is too controversial to suggest that what we are seeing now are the continuing effects of the precipitous collapse of freight markets starting in 2008 which, in turn, caused a significant and probably long-term drop in ship values.

After 2008, owners were finding themselves with huge mortgage payments on significantly devalued vessels generating substantially reduced revenue streams, and even those owners who had been fortunate enough to lock in high value long-term charters were finding themselves under immense pressure, either because their charterers were demanding significant concessions or were defaulting altogether. Lenders, reluctant to mark down losses and become owners of large fleets of foreclosed vessels, have done what they could to work with vessel owners to get through this difficult period. But the banks themselves have come increasingly under pressure, and forbearance can only go so far.

Most of the recent maritime filings have involved foreign shipping companies, some with arguably only tenuous contacts with the United States. Why have they come?

## 1. Automatic Stay

Perhaps the most obvious advantage is the automatic stay provided for in Section 362 of the bankruptcy code. This is an automatic injunction which comes into immediate effect upon the filing of a Chapter 11 petition. It bars any party from taking steps to pursue or enforce claims against the debtor or property of the estate outside the bankruptcy proceedings. It has worldwide effect, and the consequences for violating it can be severe.

Does this mean that every claim ev-



erywhere in the world will be immediately stopped and drawn into the bankruptcy action? No. The power of the bankruptcy court to enforce its orders extends only so far as its jurisdiction over parties and property. But importantly – particularly in this latest crisis – nearly every international shipping bank has at least some presence in the United States, which means that they would run a high risk in ignoring a U.S. bankruptcy court's orders.

## 2. Critical Vendors

Somewhat the flip side of the auto-

matic stay is the ability of the debtor to make an application in the very early stage of the case for leave to allow it to pay its "critical vendors" even for prepetition obligations. The purpose, of course, is to ensure that the company can continue its day to day operations while it attempts to restructure. With a shipping company, this is likely to include paying agents' fees and costs, managers' fees, bunkers, supplies, maintenance and repair costs, port costs, and so forth. Clearly, if the company cannot ensure that those kinds of suppliers will continue to do business with it after the bankruptcy filing, then

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After 2008, owners were finding themselves with **huge mortgage payments on significantly devalued vessels** generating substantially reduced revenue streams, and even those owners who had been fortunate enough to lock in high value long-term charters were finding themselves under immense pressure.

there will be no chance of saving the company as an ongoing concern. The combination of the automatic stay and the ability to pay critical vendors is essential to “stabilizing the patient,” so to speak. In the shipping company context, for instance, one can easily imagine the great reluctance of cargo interests to ship cargo aboard a vessel where they perceive a very high risk that the vessel will be arrested at every port of call by mortgage lenders or suppliers of necessities. They will take their business elsewhere and leave the debtor to die on the vine.

### 3. Debtor in Possession

One distinguishing aspect of Chapter 11 is that in most instances the debtor actually retains control of the company after the action is commenced. It is referred to in this circumstance as the “debtor in possession.” This is in contrast to most foreign insolvency proceedings, where a trustee is appointed to manage the affairs of the company until it is wound up.

From the debtor’s perspective this approach has obvious appeal because it allows for the possibility that it may yet emerge from Chapter 11 in control of a functioning, reorganized company. But why on earth would the other parties to a bankruptcy want the debtor to retain control of the company – after all, isn’t the debtor the one who drove the company into bankruptcy in the first place?

Obviously, if there are signs of fraud or incompetence, then appropriate applications can be made to appoint a trustee or to otherwise protect the estate. But, in many instances the estate as a whole will benefit from the debtor’s continued participation in the running of the company. They are, after all, the ones with the contacts, the market experience, the institutional knowledge, and the technical expertise to run the company. If a trustee has to start from scratch, the company would be at an immediate disadvantage in all these respects.

### 4. DIP Financing

Chapter 11 affords special protec-

tions to lenders who provide post-petition financing to the company to allow it to continue operations during the reorganization process. This is referred to as debtor-in-possession – or DIP – financing. Such lenders, who are often the same parties who have provided pre-petition financing to the company, are given high priority for repayment as an inducement to advance funds to the company. In many instances, this may be the only source of short-term financing available to the company, and thus it can be critical to providing sufficient cash flow while the company works to restructure its obligations.

### 5. Rejection of Executory Contracts

One incredibly powerful tool of Chapter 11 is the right of the debtor to reject executory contracts. Charterparties are a good example of “executory” contracts – i.e., contracts in which each side continues to perform in an ongoing manner. Following commencement of Chapter 11 proceedings, the debtor has the option to “assume” or “reject” executory contracts. Where the contract is favorable to the debtor, the debtor can ordinarily be expected to assume the contract. This is effectively a post-petition commitment to perform under the charter by its existing terms. But where, on the other hand, the contract is not favorable to the debtor – e.g., where it is above-market from the debtor’s perspective – it may reject the contract. If it does so, then any further obligations arising thereunder become immediately accelerated and are treated as a pre-petition claim.

OSG has used this power to great effect over the past few months. It had chartered in a great number of vessels, some at rates that had become favorable because of market swings, but quite a few others at rates that were decidedly not favorable. It has been able to use the rejection powers under Chapter 11 to weed out the unfavorable charters. And perhaps just as importantly, it has been able to use the threat of rejection to persuade vessel

owners to renegotiate rates that might have been on the borderline.

### 6. Preference Payments

The bankruptcy court has significant power to “reverse” preference payments, which are payments made outside the ordinary course of business within the 90 days prior to the bankruptcy filing (and within one year for payments to insiders). This can be extremely valuable to the estate where large sum settlements or other payments were made shortly before the decision was made to file for bankruptcy.

### Why Not Chapter 11?

We have talked about some of the powerful tools that Chapter 11 provides to a debtor, but what about its disadvantages? There are several, and these must be carefully weighed before a company can make the decision to start Chapter 11 proceedings.

#### Expense

There is no way around it, Chapter 11 is expensive. Take first the legal fees the debtor must incur simply to prepare for and file a Chapter 11 petition. There are a significant number of disclosures and motions that must be made on the first day – or, at least, in the very early stages of the case – and the litigation only expands from there. Every creditor, with its own interests at stake, is a potential monkey wrench that must be addressed – seemingly all at once.

On top of that, a unique feature of Chapter 11 is that the unsecured creditors are entitled to form their own committee and to have separate legal representation, with the fees paid out of the estate. The purpose of this is to give a potentially large body of small individual claimants an opportunity to present a collective voice in the proceedings. It is a valuable tool for the unsecured creditors, but it is a potentially significant additional expense for the estate. And of course, the ultimate goal of the proceedings is to develop a workable reorganization plan that all parties can stomach, and

invariably this means the involvement of any number of financial advisors, all of whom likewise must be paid out of the estate.

#### Invasive

Chapter 11 is an invasive process. Although the debtor typically remains in possession of the company, Chapter 11 is very much an “open book” exam as creditors and advisors pore over the company records looking for value and opportunities to turn the company around. For a company accustomed to keeping its financial information close to the vest, Chapter 11 can be a shocking experience, and full disclosure is very much the quid pro quo for the opportunity to reorganize.

#### Loss of Trust in the Marketplace

Chapter 11 inevitably carries with it a stigma, and it is always a concern that the simple fact of filing will cause the company to lose customers and clients. That is certainly a risk, and in many cases it is an early imperative for the debtor to convince the marketplace that a Chapter 11 filing is not the end of the world. As mentioned earlier, important stabilizing tools are the automatic stay and critical vendor motions which, when used together, can help stop the world from spinning out of control while the debtor catches its breath, but equally important are the simple non-legal steps of talking to the market place and persuading potential counterparties that the company has a viable path to reorganization. And this discussion does not end when the reorganization plan is confirmed.

A company emerging from Chapter 11 will still have serious perception issues that it will have to be prepared to persuasively address after it comes out of bankruptcy.

#### Loss of Control

There is always the risk that the debtor will lose control of the company in Chapter 11 proceedings. This can happen in various ways, such as the appointment of a trustee if the creditors can persuade the court that this is appropriate; the acquisition of

a controlling interest in the company by creditors or white knight investors; or the conversion of a Chapter 11 action to a Chapter 7 liquidation if it turns out that no viable reorganization plan can be approved.

## What About The Creditors

### Secured Creditors

If the secured lenders otherwise had a clear path to foreclose upon and resell the vessels at somewhere near their market value, then they are not going to be very happy about being in U.S. Chapter 11 proceedings. But Chapter 11 is not necessarily all bad news for the banks.

A bank competing with other creditors to foreclose on a fleet of vessels is not likely to realize anywhere close to the full market value of the fleet in foreclosure sales. And while foreclosure actions are pending, the owner is unlikely to be committing additional funds to maintain the vessels or to keep them in class or, for instance, current with their oil major vettings.

### Unsecured Creditors

There's probably no good place to be when you are an unsecured creditor of a company that cannot meet its financial obligations. Efforts to arrest vessels or seize property are easily defeated by secured claimants with liens that typically exceed the value of the asset, and finding unencumbered assets quickly becomes an impossible task.

In Chapter 11, at least, the unsecured creditors have their own collective voice and representation through the creditors' committee, and ultimately they must sign off on any reorganization plan. In practice, however, the unsecured creditors committee's leverage often comes more from being in a position to throw its modest weight in favor of the debtors' or the secured lenders' position on collateral issues, rather than being able to directly force a deal that is favorable to its constituents. In a reorganization, the unsecured creditors will often play for (or be stuck with) an equity stake in the debtor, but where the case is converted to a liquidation, they remain last in line at the trough.

## Conclusions

No one would say that Chapter 11 is perfect, and like any other tool in the toolbox, its full utility is only realized

when it is used properly and at the right time. Ultimately, a Chapter 11 case is most likely to succeed where all the significant players involved perceive that there is something worth saving in the debtor. If all parties are generally on board with the process,

then they can expend the significant portion of their time and energy working towards a solution. Indeed, the cases that have had the most success – at least as measured by the time between petition and confirmation of a plan – are cases where all parties

come to the bankruptcy court with a plan already largely in place. This kind of “pre-packaged” bankruptcy can be a powerful tool to help set a fundamentally worthy company back on track after an unfortunate misstep or turn in the market.



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# Understanding the Ups and Downs of Insurance

**Rich DeSimone** is President of XL Group's North America Marine business. XL Group plc's (NYSE: XL) insurance companies offer property, casualty, professional and specialty insurance products globally.

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**B**usiness is cyclical, and nowhere is there more evidence of its cyclical nature than in the insurance market, characterized by ups and downs in insurance premiums, coverages and profitability.

By most accounts, the current insurance market has been one of the most competitive in recent memory. With intense price-cutting and expanding coverages, these conditions are typical of a "soft" market which is very much a buyers' market. The obvious benefits of a 'soft' market to the buyer are lower insurance premiums, broader coverage, easier underwriting criteria, larger policy limits and more insurance carriers looking to gain their business.

The reality, however, is that insurance companies cannot sustain themselves in market conditions like these for any period of time without significant financial consequences. When natural catastrophes like Superstorm Sandy or events like Deepwater Horizon or the Costa Concordia occur, the value of insurance becomes very apparent. Many companies would be faced with financial ruin were it not for their ability to collect a good part of their financial losses from various insurance coverages. Paying losses is what insurance companies do and to be able to pay expected losses along with catastrophic losses, companies need to have a capital base or surplus set aside so they can respond when the worst happens. Collecting inadequate premiums and incurring higher than expected losses will eventually deplete the balance sheets of even the strongest companies. Insurers eventually need to replenish their capital and build a cushion to position themselves



to be able to respond to claims, be they attritional or catastrophic.

## Large Losses

One of the worst years ever for the insurance industry was 2011. According to the Insurance Information Institute in New York, in 2011, catastrophes worldwide caused an estimated \$350 billion in economic losses, shattering the previous record of \$230 billion set in 2005, the year of Hurricanes Katrina, Wilma and Rita. High catastrophe losses, along with high underwriting losses in key non-catastrophe exposed lines such as workers compensation, helped push the industry's combined ratio to 108.2—its highest level since 2001. Generally speaking, insurers gauge their underwriting success and stability on their combined ratio which is simply losses and expenses divided by premiums. If the combined ratio is under 100% a company is said to have an underwriting profit. High combined ratios are a sign of poor financial health and when an insurance company consistently runs a high combined ratio they will eventually become financially impaired and might not have the money to pay its claims leaving policyholders left holding the bag.

As part of the underwriting process, projected losses on individual accounts are developed by underwriters when evaluating a new account or renewing an existing one. This process is imprecise at best and highlights the fact that insurance companies sell a product, the cost of which they do not know at the time of sale. This creates one of the greatest challenges for any insurance company: to set the proper level of loss reserves. Incurred and reported losses must be reserved at realistic levels reflecting the true potential payouts plus expenses associated with adjusting claims. In addition, for those lines of business with so called long tail exposures like certain classes of liability insurance, setting a reserve for future losses that will occur as a result of writing these policies takes the considerable skills of highly experienced actuaries. Most insurance company failures have been the result of inadequate loss reserving.

Underwriting is only half the equation for insurance companies. Investment returns are another factor affecting where the insurance market is in its cycle. Insurance companies collect premium for taking risks which in turn, is invested to generate cash for investment at a lower cost than

other sources of capital. In the past, when interest rates were higher, the insurance industry relied on investment income from not only premiums but from loss reserves and surplus to generate additional income. Today, with record low interest rates returns on their investments cannot make up the shortfall if underwriting income falters. To alleviate dependence of investment returns, in a weakened investment economy, insurers must take a more disciplined approach to their underwriting. This could mean passing on business that an insurer may have written in a soft market. Or, it could mean adjusting rates to more adequately reflect the risk it is assuming.

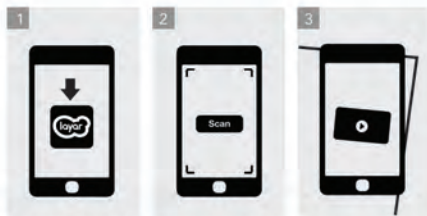
## Insuring Insurers

One of the functions of insurance is to spread risk and reinsurance is insurance that insurers purchase to improve their spread of risk and to otherwise protect their business. Buying reinsurance is an expense just like the purchase of insurance and when an insurer suffers a multi-million loss, a portion of the loss is likely covered by reinsurance. As a result of recent loss events, reinsurers have paid out significant amounts of money and re-





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One of the worst years ever for the insurance industry was 2011. According to the Insurance Information Institute in New York, **in 2011 catastrophes worldwide caused an estimated \$350 billion in economic losses**, shattering the previous record of \$230 billion set in 2005, the year of Hurricanes Katrina, Wilma and Rita.

insurance rates are now rising. Like marine, property or casualty underwriters, reinsurance underwriters also take a closer look or restrict what risks they will reinsure. In part, a rise in reinsurance rates is often a precursor to insurance rate increases and stricter underwriting discipline.

So, losses occur. Investment results are low. And insurers' reinsurance rates creep up. These are the first signs that the insurance market might be heading the other way into a so called "hardening" market. Under these conditions, insurers reevaluate the risks they underwrite, the rates they will charge and the coverages they will provide. They look to tightened insurance coverage terms and conditions, including available capacity. As marine insurance is considered to be the oldest form of insurance, the market has seen and survived its share of market cycles.

While most early marine insurance came from Lloyd's of London, a few American marine insurers formed during the War of 1812. When the fighting ended, price wars broke out

between American and British insurers.

By the Civil War, many American marine insurers were out of business but those who survived were stronger and some are still in business today.

### Surviving Cycles

The history of marine insurance is filled with stories of companies who survived and others who didn't. And in today's dynamic business environment, the challenges are greater than ever. Survival in today's insurance market depends on many factors but disciplined underwriting and investing are paramount. Those companies who are disciplined and have the best talent and expertise in the lines of business in which they choose to be active participants will persevere and thrive. While market conditions impact transactional business, many buyers know that the best deal is not always the cheapest one. Having established broker and insurance carrier relationships often outweighs excessive premium savings. Working relationships become particularly

important as market conditions begin to turn and buyers, especially those businesses with complex risks such as the marine industry, may have more difficulty buying insurance with the terms and conditions they want. Long term relationships and working with experienced underwriters and brokers might not always be the least expensive approach to the purchase of insurance but working with insurance professionals who have the knowledge and understanding of an insured's business and can provide additional services in the form of risk control and professional claims expertise will more often than not get a buyer of insurance the "best" deal.

More disciplined underwriting requires insurers will be asking more questions to understand the risk they will be taking on when issuing or renewing a policy. Therefore, in this business climate, insurance buyers are wise to prepare ahead when renewing their insurance. Companies need to plan in advance and get the renewal specifications together early. Insurers are examining their risk retentions

and rates as they review renewals and some companies may be willing to accept more risk retention, or in other words, higher deductibles, to get better overall rates. And, in a weakened economy, underwriters will look carefully to see how a business' exposures might be changing as a result of the economy. At times, it is a test of will-power. In a 'hard' market, insurers do not want business at any cost, but at the right cost. And, adhering to strict disciplined underwriting is a matter of survival to service their customers now and years from now.

Buying insurance is an important financial decision for any company. And in most cases, businesses want their insurance companies to be with them for the long haul. Insurance companies sell their promise to serve and offer financial support to their clients in the event of a loss. It's an agreement to pay a claim. In order to do that, they need quality underwriting results that produce a profit to contribute to the financial strength that allows an insurance carrier to remain true to its claims-paying promise.

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# Reduce the Headaches

## The Need for an Upgraded Transportation Management System

By Stefan Haenisch & Gerald Hoppe, SAP



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In 2009, the United States alone shipped more than 2.2 billion pounds of goods such as coal, crude materials like wood, sand and gravel, and primary manufactured goods (United States Census Bureau). Undoubtedly, this required complex logistical planning for companies shipping their goods and left many transportation managers with headaches. Therefore, it should come as no surprise that there is an uptick in interest to invest in upgraded transportation management systems that help companies manage shipping both domestically and internationally. In fact, a recent survey by EyeForTransport showed transportation management systems to be the top category for future IT investments at 53%—ahead of CRM, WMS and other software applications.

But what are the reasons that more advanced transportation management systems are piquing the interest of companies around the world? Commercial transportation faces unprecedented complexity. For shippers and logistics service providers (LSPs), ever-increasing customer demands for efficiency require more transportation accuracy, speed, and flexibility than ever before. So to help keep customers happy around the world by ensuring that the correct goods are shipped and received on time, transportation man-

agers are leveraging systems that enable an end-to-end order management process, including features such as complete shipment visibility of track and trace pickup and delivery. Without optimized transportation capabilities, shipping companies face rising freight costs due to inefficiencies and ultimately alienating their customers. There has never been a more important time than now for an enhanced transportation management system in this ever-growing global economy.

One of the keys in international transportation management is providing the company with complete visibility of the upstream and downstream processes involved in the shipping process. As if the process of international shipping is not complicated enough, many companies are using multiple platforms to manage their platforms which can cause confusion as data moves from one system to the next. The centralization of transportation management processes is a key step to improving a company's efficiency across the board. This consolidation increases the functionality of the system as transportation managers now have visibility across the entire operation. Another key return from this consolidation is the greater ease companies will experience when trying to connect more closely with external partners and service providers. With operations limited to one system, companies can focus more heavily on maximizing efficiency as oppose to putting together a puzzle of many different pieces.

In today's ever-increasing global economy, goods are being shipped to different continents, countries and cities, which is fantastic news for consumers. But for transportation managers, this creates two problems. First, international shipping regulations will change from country to country, which highlights the importance of companies being completely organized from end to end when the shipment goes out. Ensuring that a shipment is compliant with international regulations can be the difference between an on-time and on-budget shipment and a delayed, cost-bloated one that upsets both cus-

tomers and partners. Second, as goods make their way around the world, money must exchange hands to enable this to happen. With hundreds of global currencies, it is mandatory for companies to have up-to-the-minute updates on exchange and tariff rates as the ability to calculate freight costs precisely. Transportation management systems can now cohesively integrate with financials software to help companies do just this to assess freight auditing, carrier payment, customer invoicing, and cost distribution. This level of integration enables more accurate costing and more timely settlements, reducing freight costs and improving service levels. Additionally, being able to tie freight costs back to financial accounts, cost centers, and orders allows you to determine the full cost of an order and to undertake profitability calculations.

As if ensuring that goods are received on-time, on-budget, and compliant with regulations were not enough, transportation companies are now expected to operate sustainably and reduce their impact on the global environment. Recent studies suggest that commercial shipping uses almost two billion barrels of oil each year, resulting in 800 million tons of carbon dioxide. That is equivalent to about 4% of the world's man-made emissions. As a result, shipping companies are facing increasing pressure to reduce their environmental footprint. For the same reasons that a more powerful transportation management system can keep customers and partners happy is precisely how it also reduces environmental effects. Companies can plan and consolidate loads that determine the most efficient combination of modes, routes, and resources. By doing so, they optimize freight shipments and capacity utilization while considering applicable limitations, constraints and costs. This provides a company to balance the needs of their bottom line, while keeping their shipping operations green-friendly.

International shipping is certainly no small undertaking. Transportation managers are beginning to realize just

# 53%

of companies say "transportation management systems" is the top category for future IT investment.

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Recent studies suggest that **commercial shipping uses almost two billion barrels of oil each year, resulting in 800 million tons of carbon dioxide. That is equivalent to about 4% of the world's man-made emissions.**

how complex this process has become as the economy continues to span the globe, bringing in new currencies, regulations and destinations for goods. As supply chains grow longer, the likelihood increases for loss of visibility, inflated logistics costs, and missed customer service commitments.

The need for transparency and visibility across the entire process has never been more important. Only a comprehensive management method supporting the complete order lifecycle provides the capability to plan, consolidate, and optimize all shipments – inbound and outbound, domestic and international – while considering real-world constraints and costs. Tight integration with financial software and analytics enable companies to help keep costs down on shipping while making sure that they do not sacrifice customer service. Ultimately, as companies continue to improve their overall operations when considering costs

and constraints, they will also be able to reduce their carbon footprint by minimizing unnecessary travel.

In the survey mentioned at the beginning, 53% of respondents said that transportation management systems were the top category for future IT investments. Companies no longer have a reason to not upgrade their current systems. Solution providers have made it possible to have fully-operational systems up and running in a matter of weeks, while ensuring flexibility so that as the transportation company grows, the system can continue to handle what is asked of it. Transportation management systems help companies balance efficiency and effectiveness to achieve better-than-average delivery performance with lower-than-average spending on transportation. International shipping can be made easier and examining how effective your current system is can be the first step to simplifying this process.

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**of the total of man-made emissions comes from commercial shipping, stressing the need for improved transportation management systems.**

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**Alain Houard** is Vice President, Marine & Offshore Industry at Dassault Systèmes where he leads the company's strategy for sectors including Navy Vessels, Commercial Ships, Offshore, Yachts & Workboats, Marine Suppliers, and Marine & Offshore Specialists.

# Keeping Marine Projects Afloat

**Plan, Manage, Track, Connect, Any Time, Anywhere**

**By Alain Houard**

**T**oday's marine and offshore industry faces increasing challenges: the need to work faster on more complex marine products with an extended supply chain in a very competitive environment; to deliver on-time information to customers on the project's status at any time; and to reduce program management costs as well as design and production time. In order to keep a competitive advantage, shipyard executives are pressuring both their suppliers and their own organizations to integrate and consolidate existing business practices and technology for information management to optimize program management activities and foster collaboration.

Marine and offshore organizations are increasingly taking advantage of business platforms to plan and manage complex projects with an interactive 360 degree program management approach, ensuring on time and on budget delivery. These organizations can now tackle head-on the industry's biggest challenges.

## Supply Chain Collaboration

With up to 80% of all vessel and platform components provided by the supply chain, shipyards are more and more playing the role of integrators. A lack of coordination along the supply chain can cause costly delays. Effective collaboration with suppliers is, therefore, key to the success of any marine and offshore project. This includes careful orchestration of the request for quotation (RFx) process as well as efficient access to data for successful project execution.

To do this successfully, the entire RFx process lifecycle needs to take place in a single collaborative en-

vironment. Suppliers will then have secure access to up-to-date product information for efficient collaboration in real time, enabling companies to make the most of their supplier network. Additionally, the sharing of real-time data will result in fewer changes. As every stakeholder will be working off a single version of the truth, there will be no more mistakes coming from users accessing different versions of the documents.

## Contract Management & Cost Containment

Building a naval or cargo vessel is a massive undertaking. Many of these vessels are built to order, with tailored features and capabilities that make each ship a one-of-a-kind endeavor. With programs totaling in the millions of dollars, contracts have become essential to any ship owner- shipyard relationship.

At the same time, military shipbuild-

ing contracts are changing. Gone are the days when shipbuilding companies could easily increase the price of a particular ship if costs went up due to a request for a last minute change. The United States and other countries have now moved to a "fixed contract" approach, where the price is defined once and for all. The U.S. Navy, for instance, will indicate precisely what they need and the shipyard will agree to a set amount in advance of starting the work. Keeping track of the cost of the ship, until it is finally delivered, becomes a critical activity.

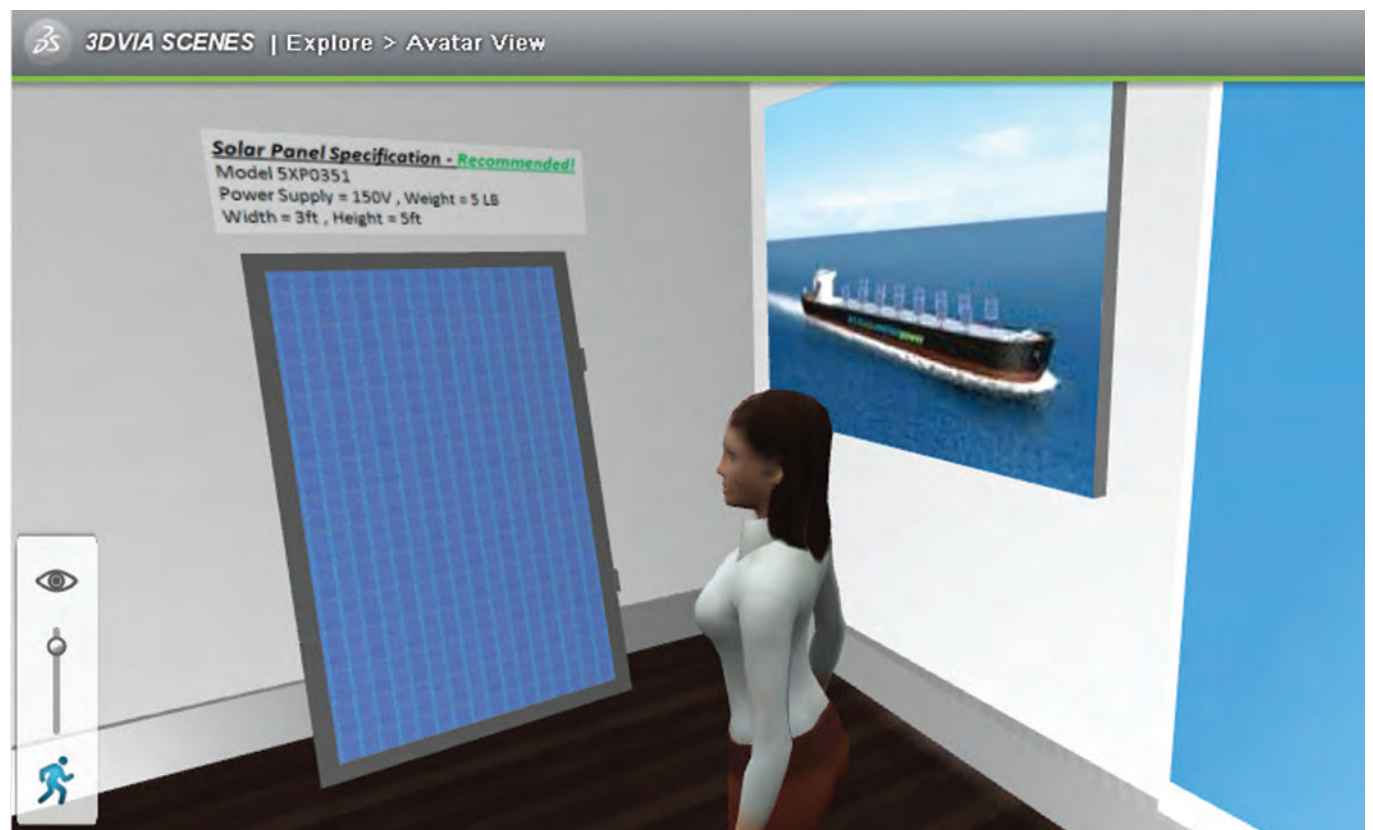
Using a common, collaborative platform, organizations can manage and track contracts and requirements throughout the project lifecycle. This prevents any surprises, such as the late addition of specific CO2 emission requirements, which would create a problem that would be costly for the shipbuilder. This also allows organizations to maintain traceability and

have an efficient means to ensure that all contract and requirements items are accessible to appropriate team members.

Also, if the customer requests any changes, such as the addition of a new cabin or bigger windows, the impact these will have on the entire project in terms of design and schedule can quickly and easily be seen. This allows both parties to immediately understand the impact of any change on the cost and delivery date of the ship, enabling them to make more informed decisions. In addition, organizations can use the collaborative environment to monitor a vessel's compliance to international and national marine classification rules.

## Improved Visualization

A substantial amount of documentation can be produced for a marine and offshore project. This can include specifications, project schedules,



**The On Time To Sea Industry Solution Experience based on Dassault Systèmes' 3DEXPERIENCE platform is a marine-centric digital environment that supports the interactive 360 degree program management approach required for marine and offshore companies to engage in collaborative planning, monitor project status and performance, and ensure secured traceability.**

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safety and quality documentation as well as detailed plans of the vessel or platform. With 3D visualization tools, decision makers can make more informed decisions by looking at the product in 3D, versus looking at a spreadsheet.

This also provides the ability to see

potential problems and make adjustments before it is too late.

#### Intellectual Property (IP) Protection

Intellectual property (IP) protection is of the utmost importance for projects that involve collaboration

between several companies and suppliers. By defining access for each user based on role or discipline, managers can ensure that there is no unauthorized access to information.

A collaborative environment can also help generate, efficiently manage and track all of an organization's

electronic documents for maximum traceability. Organizations can use it to protect their documents with advanced security mechanisms that identify and keep sensitive materials safe from unauthorized access.

#### On Time Production

In the marine and offshore industry, producing on time is a compelling necessity. In fact, being late by one day can cost upwards of \$5M. Let's look, for example, at the refurbishment of India's aircraft carrier INS Vikramaditya, which had been purchased from Russia. It has been delayed by numerous cost overruns and project mishandling. The installation of the nuclear engines was supposed to be done with Chinese insulation plates. However, the material was deficient, causing a delay. Russia is now suing China for \$800 million for this error, which was due to an incorrect requirement management approach.

Originally set to be completed in 2008, the refurbishment is now scheduled to be completed in October 2013, assuming there are no additional delays or problems. The cost has skyrocketed, costing billions more than originally expected.

Strict process and resource planning throughout a project is required to avoid situations like this, given the sheer size and cost of a vessel or offshore platform. All stakeholders need to know where the project is

**In the marine and offshore industry, producing on time is a compelling necessity. In fact, being late by one day can cost upwards of \$5M.**



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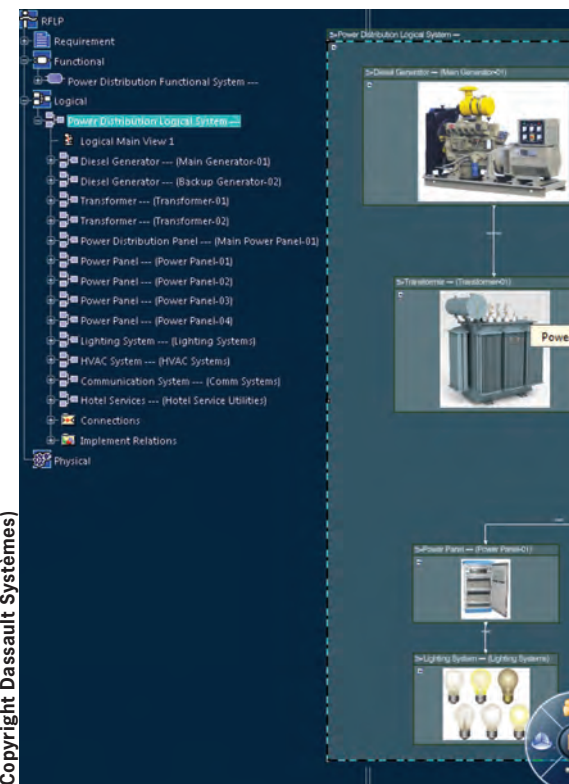


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against where it should be at any given point. Workflow must be managed with every actor knowing when to intervene and what action is expected.

A collaborative environment also provides organizations with the tools for role-based project management, according to a project's schedule. Tasks can be tied to requirement items, ensuring traceability. It provides the tools to effectively plan and manage activities with an organization's supply chain network and ensure that the project is on schedule and within budget.

Thanks to real-time dashboard and metrics, all stakeholders can easily access up-to-date information and status. Organizations can make informed decisions and take corrective action, if necessary, in a timely manner for smooth project execution.

#### Opening New Horizons in Global Maritime Trade

Technology is an important trump card in a climate of economic uncertainty where investments are continually scrutinized and control of projects and costs is key to remaining competitive. Streamlining the flow of information for efficient project management ensures marine and offshore manufacturers' ability to meet their number one priority: to deliver on-time and on-budget. By taking advantage of a marine-centric collaborative, intelligent environment to monitor all activities across the extended enterprise, which includes their suppliers,

shipyards are empowered to improve time to market and product quality while controlling margins. Since all stakeholders have secure access to up-to-date project data in real time from anywhere, common challenges that typically resulted in cost overruns and significant delays can be minimized.

The On Time To Sea Industry Solution Experience based on Dassault Systèmes' 3DEXPERIENCE platform is a marine-centric digital environment that supports the interactive 360 degree program management approach required for marine and offshore companies to engage in col-

laborative planning, monitor project status and performance, and ensure secured traceability.

As the industry adopts this technology, the potential for the successful completion and launch of today's complex vessels and platforms is boundless.

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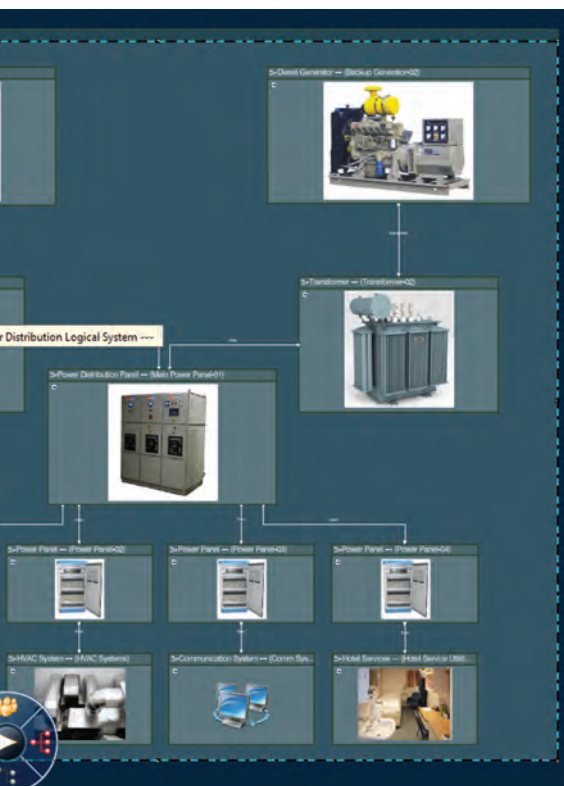


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# Floating Production Systems

**Forecast to grow 40% in 5 Years** by Jim McCaul, International Maritime Associates, Inc.

IMA has just completed an in-depth analysis of the floating production sector. The study profiles the deep-water industry, examines the dynamics driving the sector and forecasts orders for floating production systems between 2013 and 2017. Highlighted below are some key findings in the study.

### Growing Inventory of Floating Production Systems

There are now 264 floating production systems in operation. The number of

units is 25% greater than five years ago, almost 85% higher than 10 years back and triple the number of units 15 years ago. Most of the growth has been in the number of Floating Production, Storage and Offloading Vessels (FPSOs). This figure has increased by 114 units over the past 15 years.

FPSOs now account for 63% of the existing systems. The balance is comprised of production semis, tension leg platforms, production spars, production barges and floating regasification/storage

units. In addition to floating production systems, another 102 floating storage/offloading units (FSOs) are in service.

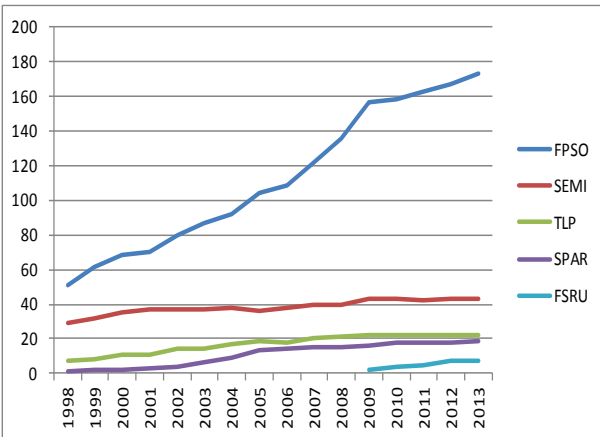
Brazil is the largest location in terms of number of floating production systems now operating. There are now 55 FPSOs in service offshore Brazil. The figure includes 35 FPSOs, 18 production semis and 2 FSRUs. West Africa is second largest with 48 FPU in service, followed by the Gulf of Mexico (47 units), Northern Europe (39 units) and Southeast Asia (27 units).

### Backlog of Production Floater Orders

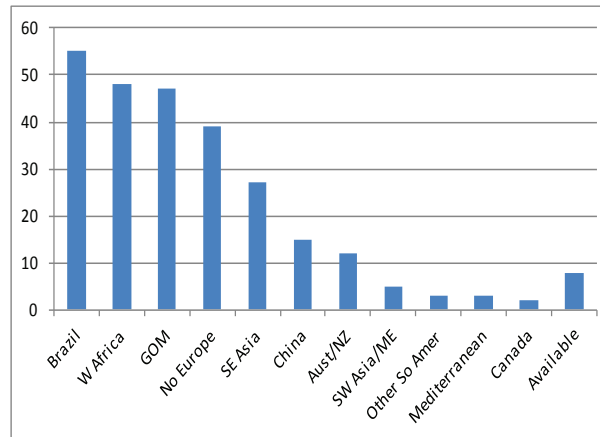
The number of production floaters on order is at an all-time high. The current order backlog consists of 77 production floaters – 44 FPSOs, seven production semis, five TLPs, five spars, four FLNGs and 12 FSRUs. Delivery of the equipment will grow the production floater inventory by 29%.

In the backlog are 46 units utilizing purpose-built hulls and 31 units based on converted tanker hulls. Of the production floaters being built, 46 are owned

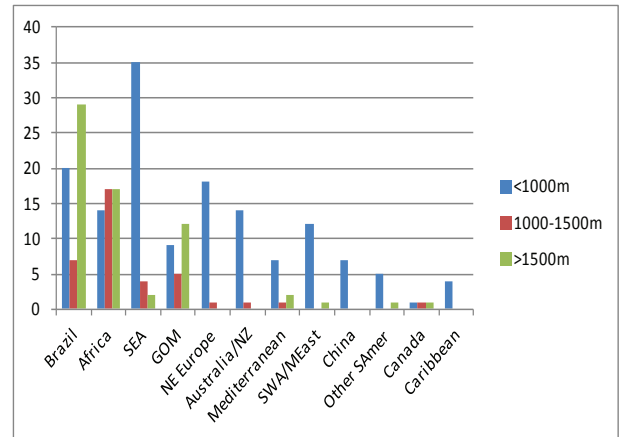
**FPU Growth**



**Location of Production Floaters**



**Planned Floater Projects**



**3D Model of FPU**

by field operators, 31 are being supplied by leasing contractors. Brazil continues to dominate orders for production floaters – 26 units are being built for use offshore Brazil, 34% of the order backlog.

#### Planned Projects

The number of planned floater projects continues to grow. 248 projects potentially requiring a floating production or storage system are now in the planning stage. A year ago, 216 projects were being planned. Five years ago, the figure was 134 projects.

Brazil is the principal location for new floating production projects. The huge pre-salt oil reserves offshore Brazil have been generating deepwater finds at a rapid pace. Africa is in second place in terms of planned floater projects, followed by Southeast Asia, Gulf of Mexico and Northern Europe.

The growth in number of planned projects reflects the huge increase in deepwater drill equipment over the past decade. More than 150 drillships or deepwater semis have been ordered since 2003, removing a bottleneck that constrained exploration and development in deepwater. The result has been a dramatic increase in floater projects in the planning pipeline.

#### Five Year Forecast

Our analysis indicates a requirement

for 124 to 190 additional production floaters between 2013 and 2017. The most likely figure is 160 orders – which would be 40% greater than the number of orders over the past five years.

FPSOs are expected to account for around 70% of future production floater orders. The remaining 30% will be production semis, spars, TLPs, FLNGs and FSRUs. Around 60% of FPSO orders will be placed by leasing contractors, 40% by field operators. Modification and redeployment of existing FPSOs will satisfy around 20% of future FPSO requirements.

Capital expenditure to procure this equipment is projected to be in the range of \$90 to \$130 billion over the next five years

#### Terms Used:

**FPSO** – Floating Production, Storage and Offloading Vessel

**FSO** – Floating Storage and Offloading Vessel (no production plant)

**FSRU** – Floating LNG Storage and Regasification Unit

**FLNG** – Floating LNG Liquefaction Plant

**Semi** – Production Semisubmersible

**TLP** – Tension Leg Platform

**SPAR** – Production Spar (cylindrical shape)

**FPS** – Floating Production System (all types)

## Order the IMA Floating Production Study

The new IMA study Floating Production Systems: assessment of the outlook for FPSOs, Semis, TLPs, Spars, FLNGs, FSRUs and FSOs provides details for

- 264 production floaters and 102 storage floaters currently in service and key characteristics of each unit
- 250 production floaters and 103 storage floaters delivered or redeployed since 1996 identifying the builder/conversion yard of each unit
- 77 production floaters, 10 storage floaters and 2 MOPUs currently on order, key features of each unit and the delivery status
- 248 floating production projects in the visible planning cycle, type unit likely to be utilized on the project and the status of project development
- 124 to 190 production floaters forecast to be ordered over the next five years.
- 25 to 35 storage/offloading floaters forecast to be ordered over the next five years

An outline of the report and purchase details is available on the IMA website at [www.imastudies.com](http://www.imastudies.com). Further information can be obtained by contacting Jim McCaul by Email: [imaassoc@msn.com](mailto:imaassoc@msn.com) or Tel: +1-202-333-8501.

**Hyundai Heavy Industries (HHI) received a letter of award for a \$1.3B order for a floating production unit (FPU) and a \$700m order for a tension leg platform (TLP) from Total E&P Congo on March 26. Hyundai Heavy will carry out engineering, procurement, supply, construction, and commissioning for the two offshore facilities to be deployed in Moho Nord field, 80 km off Republic of the Congo's coast. The 14,600-tonne vertically moored floating TLP will be used to extract oil and natural gas, and transport those to the floating production unit. The 62,000-tonne FPU, measuring 250 m in length, 44 m in width, and 18 m in depth, will process the received oil and gas, and send the products to onshore plants via subsea pipelines. The FPU has a production capacity of 100,000 barrels of oil and 2.5 million cubic metres of natural gas per day.**

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# Making Flare Gas Useful

**Wärtsilä has developed the GasReformer, a product which converts associated gas, which is often flared, into usable fuel for its dual-fuel engines. Henrik Segercrantz reports.**

**W**hen producing oil, associated gas is also released from the deposits. In many places this gas is commonly burnt off in gas flares, a waste of energy and a pollutant of the atmosphere. In addition to useful methane, this gas consists of heavier hydrocarbons including ethane, propane and butane. The composition of the gas typically also vary during the production phase of the oil field. This gas cannot directly be used as fuel in the cylinder of an engine, as it causes knocking or uncontrolled ignition. To make the gas a useful product, the Methane Number of the gas has to be raised through elimination of harmful gas components.

In December 2012 Wärtsilä delivered its first GasReformer, a new product the company is claiming can help convert associated gas into usable fuel for dual fuel engines. The size of a container, the unit will be used to convert the associated gas on a fixed drilling and production platform, specifically one which is projected to operate in South China Sea. A Chinese operator together with New-

field Exploration of the U.S. will operate the platform under a production sharing contract. The platform is currently under construction at the COOEC shipyard in Qingdao, China, and there it will be fitted with eight-cylinder Wärtsilä 34 inline engines, two of them as dual-fuel (DF) versions, to generate electricity for the platform.

**“One main potential of the GasReformer is in offshore applications, in oil fields where the associated gas composition vary much or where the methane number is below 60,” says Mr Peik Jansson, Product manager of the GasReformer at Wärtsilä Ship Power.** He explained that when the number is above this, the gas can be used but the engine has typically to be de-rated down to 75% to 80% to lower cylinder compression. This also results in lower efficiency of the process. The methane number indicates how much compression the gas can take before knocking. “With the GasReformer, we convert, through a catalytic process, the heavier hydrocarbons in the gas into methane, carbon oxide and hydrogen. This raises

the methane number to approximately 100, and the gas can be used as fuel in fully rated Wärtsilä dual-fuel engines.”

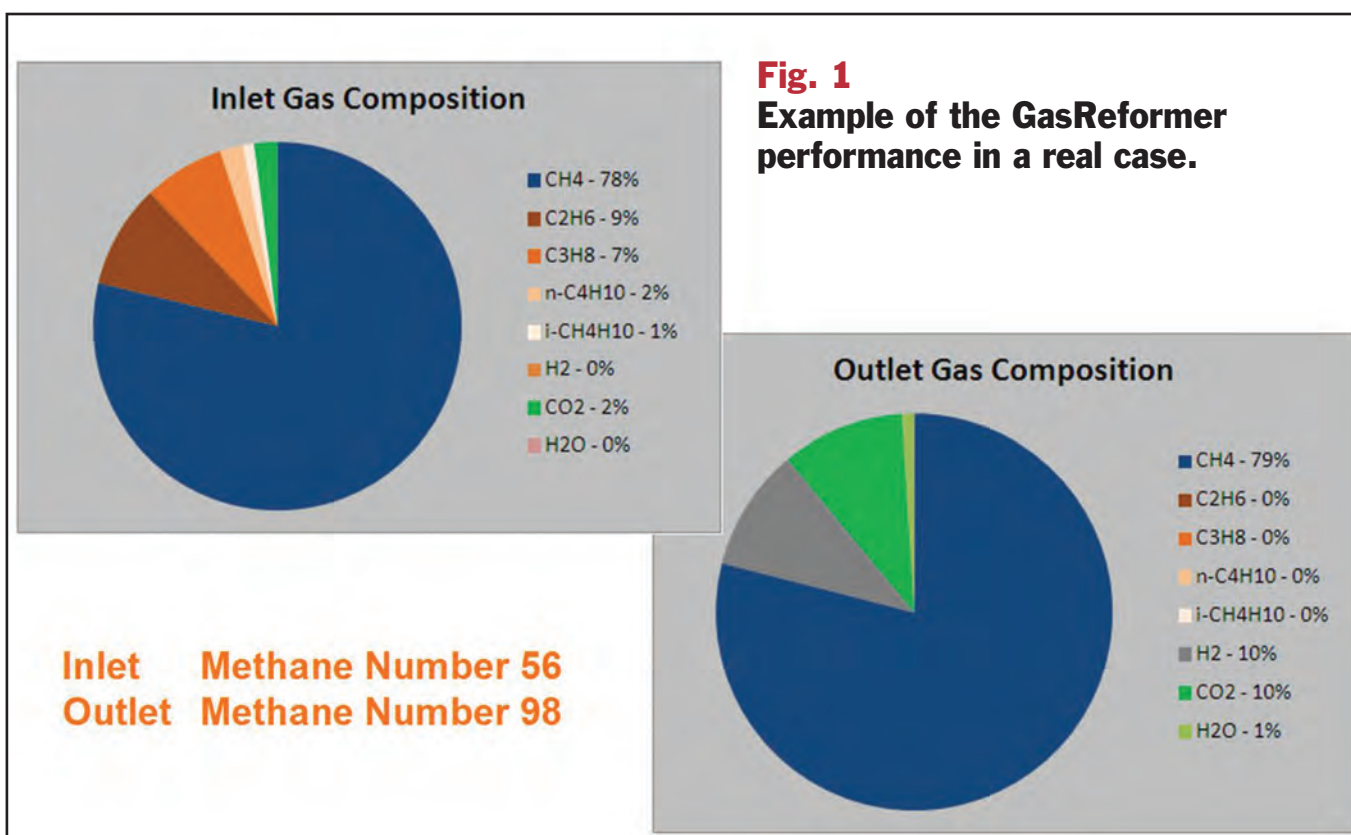
When the methane number is below 60, it is cost-efficient to invest in a GasReformer. With increasing environmental regulations flaring is prohibited and the associated gas has to be disposed of by other means. “Why not use it as fuel for power production,” Jansson asks, and notes that associated gas can, as such, be used as fuel for gas or steam turbines. “A Wärtsilä GasReformer fueling a Wärtsilä power plant provides high efficiency and above all, full flexibility in power output.” With an 8 MW Wärtsilä GasReformer combined with a dual-fuel engine, utilizing associated gas, the operator can reduce the need for bunkered fuel oil by about 20 tons per day.

#### How does it work?

The process of the GasReformer is based on steam reforming, but is here done somewhat differently. “The goal is to produce as much methane in the process as possible. This application is entirely new,” Jansson said. All heavier

hydrocarbons, and also the methane, are cracked to an intermediate product which is hydrogen and carbon monoxide. Into the catalyst is fed the gas and steam. Through a reaction in the catalyst process, which is a function of temperature, pressure, and the amount of steam injected, gas is achieved which consists of 80% or more methane, less than 11% hydrogen and some 10% or less carbon dioxide. “In the process, almost regardless of the composition of the input gas, this is the resulting composition,” he notes. The catalyst is a pressure vessel with pellets of reduced nickel.

In the process, the associated gas passes through a de-sulphurization reactor and is injected into the Reformer. The output gas is then fed into the engine. The engine controls the gas flow automatically and steam produced by the exhaust gas boiler of the engine is fed into the process based on need. The reactions of the process are very fast. “There are other technologies which filtrate the heavier hydrocarbons from the gas, but you then have to get rid of these separately,” Jansson said.



Jansson shows a real-case example (Fig. 1, previous page) where the inlet gas composition has the methane number 56 as it includes heavier hydrocarbons although as much as 78% methane. After the GasReformer, the composition is 79% methane, 10% hydrogen, 10% carbon dioxide but there are no heavier hydrocarbons. The methane number has increased to 98.

Wärtsilä started developing the GasReformer seven years ago. A prototype of the Gas Reformer was built, as a proof of concept.

“It could, for example, turn 100% propane into methane,” Jansson said. The product was then industrialized, which included the entire process of adding safety systems, etc., and the classification and approvals. In December 2012 the first GasReformer unit was delivered, after successful factory acceptance tests at Wärtsilä’s factory in Finland. The GasReformer is classified to the Off-shore regulations by Det Norske Veritas. The platform will receive four 8-cylinder Wärtsilä 34 in-line diesel-generators, two of which will run on crude oil and two DF dual-fuel engines running on both crude oil and on gas as fuel. Flaring was not allowed by the authorities. “We have a difficult gas, a difficult crude oil, but Wärtsilä could provide the solution.”

The pellets in the reactor of the GasReformer have to be renewed every three to four years. This is done through replacing the entire reactor pressure vessel with a unit served ashore. Wärtsilä handles this process as part of the contract with the client. The GasReformer has two desulphurizer reactors, with one as backup. The lifetime of one unit, using

zinc-oxide as adsorbent, is approximately one year of continuous operation. The units are replaced when needed.

The first produced GasReformer is a 8MW unit.

It needs a total of 1,775kg steam per hour. Of this amount 375kg fresh water is consumed per hour, in the reformed gas. 1,400kg is recycled into the process.

The amount of fresh water needed in the process is a function of the methane number of the inlet gas.

In addition some cooling water is needed, hydrogen for start-ups and blow-downs or flushing, when needed, plus some electricity for operation, start-ups and when in stand-by (Fig. 2, next page).

With the GasReformer in the product portfolio Wärtsilä is capable of providing an extensive system for handling associated gas for the oil industry. It can supply the entire power production technology and through the acquisition of Hamworthy, also inert gas systems, and systems for flare gas recovery and flare gas ignition.

Artists impression of the GasReformer



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**Potential also for VOC recovery and in shale gas operations**

VOC, or Volatile Organic Compounds, recovered in the process of crude oil handling provides another potential use of the GasReformer. In crude oil pumping and handling, the crude oil is heated to improve its viscosity. When heating, the lighter hydrocarbon fractions of the crude evaporate. These volatile organic compounds (VOCs) are traditionally vented into the atmosphere. "Now, VOCs can also be utilized by combining a VOC Recovery System with Wärtsilä GasReformer and dual-fuel engines," Jansson said. Through Hamworthy, Wärtsilä also provides VOC Recovery Systems. **Jansson presented some calculations to Maritime Reporter where a Floating Storage Unit could receive all of the fuel needed for powering the cargo pumps from VOC gas, by installing a system onboard combining these two technologies.**

"There are many potential application for the GasReformer also in land-based applications. So far we have concentrated on the offshore oil industry," Jansson said.

"A wider use of Liquefied Petroleum Gas, which is propane or butane, as fuel is now also possible. Another potential sector could be in shale gas recovery, where a power plant is easily set up using the GasReformer."

The GasReformer is not suitable to be used for bio-gases nor gases with high amounts of sulfur, above 40ppm. Nor does it suit for processing gases with high amount of inert gases, nitrogen or carbon dioxide nor for gases including so called olefins. Wärtsilä's GasReformer is a completely new product, now ready for the market. The size of a GasReformer for an engine shaft power of 8MW is designed to be 5.3m long, 3m wide and 3.3m high. The weight of the unit is approximately 17 tons.

**Fig. 2: Consumables of an 8MW GasReformer Unit**

Steam usage	8 MW Unit		1 MW	
Total steam amount	1 775	kg/h	222	kg/MWh
Fresh water feed	375	kg/h	47	kg/MWh
Recycled	1 400	kg/h	175	kg/MWh
<b>Cooling water , LT</b>				
Inlet temp.	38	°C		
Outlet temp.	69	°C		
Flow	30 000	kg/h	3 750	kg/MWh
Heat Value	1 250	kW	156	kW
<b>Nitrogen consumption</b>				
Start-up	6	Nm <sup>3</sup>		
Blow-Down / Flushing	27	Nm <sup>3</sup>		
<b>Electricity</b>				
Nominal operation	100	kW		
Start-up	55	KW		
Stand by	20	kW		

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## Mitsui, Mitsui O.S.K. Lines and Marubeni in Ultra-Deepwater FPSO Project

MODEC, Inc., Mitsui & Co., Ltd., Mitsui O.S.K. Lines, Ltd. and Marubeni Corporation have agreed that Mitsui, MOL and Marubeni will invest in a long-term charter business operated by MODEC for the purpose of providing a floating production, storage and offloading system for use in the Iracema Norte area of a pre-salt oil field off the coast of Brazil. The Project is subsequent to the long-term charter business for the purpose of providing an FPSO for the use in the Iracema Sul area in which the Companies invested through Cernambi Sul MV24 B.V. For this Project, Mitsui, MOL and Marubeni will invest in Cernambi Norte MV26 B.V. (MV26), a Dutch company established by MODEC. MV26 signed a long-term chartering agreement with Tupi B.V., a Dutch company owned by Petrobras Netherlands B.V. (65%), BG Overseas Holding Ltd. (25%) and Galp Sinopec Brazil Services B.V. (10%). The FPSO will be chartered to Tupi B.V. for 20 years under this chartering agreement signed in February 2013. Construction of the FPSO will involve the conversion of a VLCC, which will be renamed FPSO Cidade de ITAGUAÍ MV26 upon its completion. It will be deployed to the Iracema Norte area of the BM-S-11 block off the coast of Brazil in the fourth quarter of 2015. The area is part of a deepwater oil field located approximately 300 km south of Rio de Janeiro, Brazil. The oil is contained in the pre-salt layer approximately 5,000 m beneath the seabed.

MODEC and Mitsui have already provided three FPSOs for pre-salt oil fields, and this will be their fourth pre-salt related FPSO chartering project. It is the third project of its type for MOL and the second for Marubeni.

## SeaZip Awards StarIPS Contract to MirTac

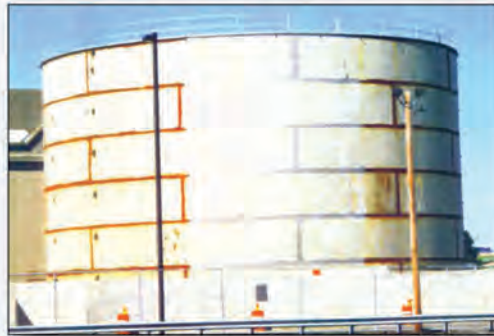
SeaZip Offshore Service selected MirTac and StarIPS to support fleet management for its newbuild offshore service vessels. The contract includes StarIPS software and related implementation services such as database set-up, procedures implementation and related training and consultancy. The software will include maintenance, purchasing, vessel administration, QHSE management and document control. In the near future the newly-constructed 'Twin Axe' catamaran ships will be deployed in the completion stage of a large-scale wind farm on the North Sea, 90 km north-west of the island of Borkum. They distin-

guish themselves due to their speed and maximum seaworthiness which, combined with economical fuel consumption and a high degree of stability, enables them to sail in rough weather conditions too. While primarily built for the

purpose of transporting personnel, the ships can also transport small quantities of freight. SeaZip Offshore Service is anticipating the trend of devising wind farms at locations far from the coast and at ever-greater depths.



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# ASRY Offshore

**Bahrain ship repair yard diversifies its operations to expand**

## Chris Potter

has been in the ship repair business for more than 50 years. Earlier this year *Maritime Reporter & Engineering News* had the privilege to sit with Potter, the long-tenured Chief Executive of Arab Shipbuilding & Repair Yard Co. (ASRY) in his Bahrain boardroom, where he shared insights on not only the direction and diversification of his shipyard, but the historical development and future direction of the maritime industry.

*By Greg Trauthwein, Editor*

**The world economy has been tough on the maritime industry. What's your outlook for 2013 and beyond?**

■ 2012 has been a tough year. Certainly, when we spoke to you in 2011, we were saying the same thing. There is an overcapacity in the region with the new yards that have opened up, and this is of course creating a lot of pressure competitively. However, in 2012 we have been able to keep the docks full ... in fact, almost 100% full capacity. Although we've been able to keep the place full, what we've seen with the new competition in the region we have not been able to increase our prices at all. This level of competitiveness has made it a very challenging year commercially.

**So what is the focus in the short term?**

■ The main thing we've concentrated on is trying to get as much volume as we can and at the same time, continue to build our reputation with owners, maintain our owners and sustain the situation. In 2013, to be quite honest with you, I don't see a great deal of change as far as the commercial ship repair side is concerned.

The competition remains and we are still going to have to continue giving discounted prices to get the work, however, I feel that we can maintain fairly full occupancy. The Middle East is the lowest cost to repair ships outside of China.

**Obviously geography plays an important role in your business. How's the**

**region look right now?**

■ In the area that we work in, the Gulf area, there are three main competitors, then there is Singapore and also there is China. Within the region here, traditionally our competition has always been Dubai, and what we have seen is two new yards come on the scene. These yards are tending to quote very aggressively; and it's quite obvious that their early operations are being subsidized, which puts a lot of pressure on us to remain competitive. This I don't see changing for the next year, maybe even into 2014. What's keeping us going: the fact that we are established, with an established clientele and established workforce.

**Looking in the rearview mirror, what do you see?**

■ I think the expansion of our facilities in the last three or four years is giving us much more flexibility in operations. The years of 2007 and 2008 were years of excess that I don't think we will see back. 2008 was a great year; 2009 business dropped off very badly. What we've seen since then is a gradual increase in the volume over the last three years, and I would expect to see further growth in the volume this year.

However, because we are offering discounted prices, we have to make an awful lot more effort and expend many more man hours, to achieve the same level of sales, which means we have to become much more efficient and cut costs as much as we can.





“What we’re finding at the moment is there are very few big value repairs out there; it’s a lot of small stuff. **Owners simply are not spending more than they have to.** Four or five years ago, we might have seen owners maybe spending \$1.5m, whereas today they are spending maybe \$500,000 to do the bare minimum.”

What we're finding at the moment is there are very few big value repairs out there; it's a lot of small stuff. Owners simply are not spending more than they have to. Four or five years ago, we might have seen owners maybe spending \$1.5 m, whereas today they are spending maybe \$500,000 to do the bare minimum.

**What are some of the efficiencies you've enacted?**

One of the main things we are benefiting from at the moment is the development and expansion of the facilities. We were very much restricted on where we could put vessels as far as berthing space; but now we've increased that by 1,400 m with additional craneage, and we are starting to utilize a lot of the land we have at our disposal. We are relocating areas of the yard to open areas, allowing us to free up space and give us more freedom and flexibility of operations, making us less concentrated, less condensed.

**That's looking at facilities. What have you done on the business side?**

We've had to diversify away from commercial ship repair during this period. If we had continued with all of our eggs in one basket, as was the case up to about five years ago, then I don't think that the company would have had a fantastic future. Diversifying into related work where we can make use of our resources and skills that we've got has really helped to sustain the company. We have developed the offshore market. What we are seeing there is continuous growth each year, and we've seen the competition on the offshore in the last few years. I think the formula that we've set for ourselves in the beginning is working well for us now, but it is still a very tight market. We've gone into the energy division building power barges. (In December 2012) we finished a 125 MW power barge that we've jointly developed with U.K.-based Centrax. We've built one on spec and are in the process of building two more on spec. We're expecting or-

ders to come through very soon, and we see this as opening another very good revenue stream.

**Is the diversification centered solely on construction and repair activities?**

As a result of all of this diversification, we have introduced a consultancy division (which as of March 2013 will have its own new building on the shipyard site) mainly to support the ship repair, offshore and barge construction operations. In addition, we are starting to see how we can provide a service to owners particularly to allow them to meet all of the emerging IMO regulations. For example, Ballast Water Management Systems, gas emissions, and conversion to LNG as fuel. There are a number of companies that have even approached us about helping them to improve their yards or facilities. Of course, we'll be very selective, but this is how we're trying to develop the consultancy business. Previously, we had to outsource a lot of our engineering and design work.

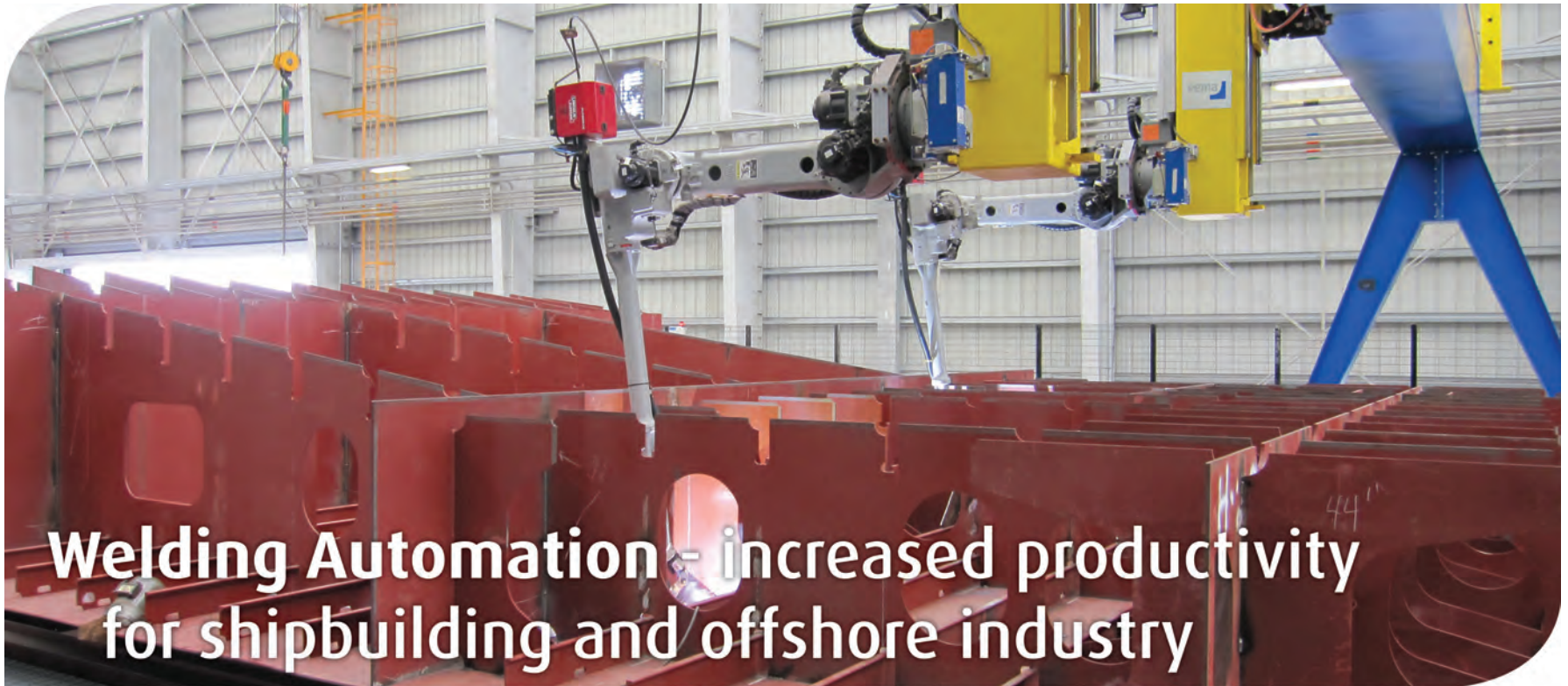
**You've had a long career, a broad perspective. How is the industry most different today from when you started?**

My career has always been in ship repair and it spans 50 years. I started off working in 1962, and it was a completely different industry then. What we've seen in all of this time is changes in the means of transportation. In those days, there were no VLCCs, there were no containerships; there were no containers. All freight and cargo was carried on cargo vessels in their holds. There seemed to be many more vessels, and many more shipping companies. Many of these we have seen absorbed into bigger companies or they have simply ceased to exist. Also in those days, particularly in the U.K., there was a thriving shipbuilding industry, as well as a thriving ship repair industry. This all collapsed with competition from the Far East in the 1950s and 60s. Of course, also, it was nowhere nearly as regulated in those days. What I've seen over this 50 years is a transition from a very poorly regulated industry to a very

**"During 2012, the offshore business contributed 50% of revenue, and it has grown steadily over the last four years, from 10% to 25% to 40% to 50% last year (2012). The \$180m investment was totally necessary. If we had stuck solely with commercial ship repair we wouldn't be sitting here as comfortably as we are now, that's for sure."**

**Chris Potter, CEO, ASRY**





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## OFFSHORE

highly regulated industry, both from a ship operations point of view as well as a ship repair point of view.

In addition, the technology no longer fascinates me as much as it used to. It has become much more clinical, much more automated, much more efficient.

You don't get the same engineering and technical problems that you used to. Engines are highly efficient, and will run for many more hours without problems. They are not like the older engines that had to be more regularly maintained. The technical side doesn't have the same

fascination for me that it used to. (I guess what it boils down to is) the scope of the repair is greatly reduced on ships. The nature of the repairs that need to be done is almost predictable on ships. Technology (the advance of large tankers and containerhips) has changed the

number of vessels and the type of repairs. To be quite honest with you, there's not a lot of what you could compare 50 years ago to today. It's all changed completely.

### How have regulations changed your business?

■ We've had to adopt the regulations the industry is demanding, and to a large extent, it has been driven by shipowners. Shipowners have had to comply (with a wide variety of rules), and when they come to the yard, they expect to see similar standards. That's not a bad thing at the end of the day.

### Geographically, from where do you get your business?

■ Business is traditionally 50/50 Arab/International, today leaning more toward Arab market, which are carrying their own cargo. Arab owners seem to have more money to spend at the moment.

### And you have a good relationship with U.S. companies.

■ Bahrain has the free trade agreement with the States, and there seems to still be a lot of U.S. flag vessels in and out of the Gulf, mainly with support of Iraq, and many owners are taking advantage to repair outside of the U.S. We have seen a slow increase in military work, too.

### Whether it is Ballast Water Management Systems or Emission Technologies, where do you see the near term drivers for your business?

■ Commercial ship repair will improve. It has to. Over the next two or three years, owners are going to be faced



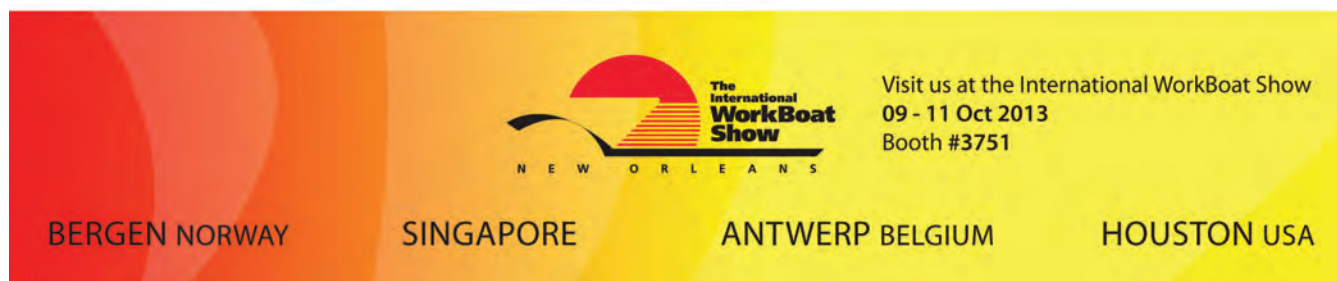
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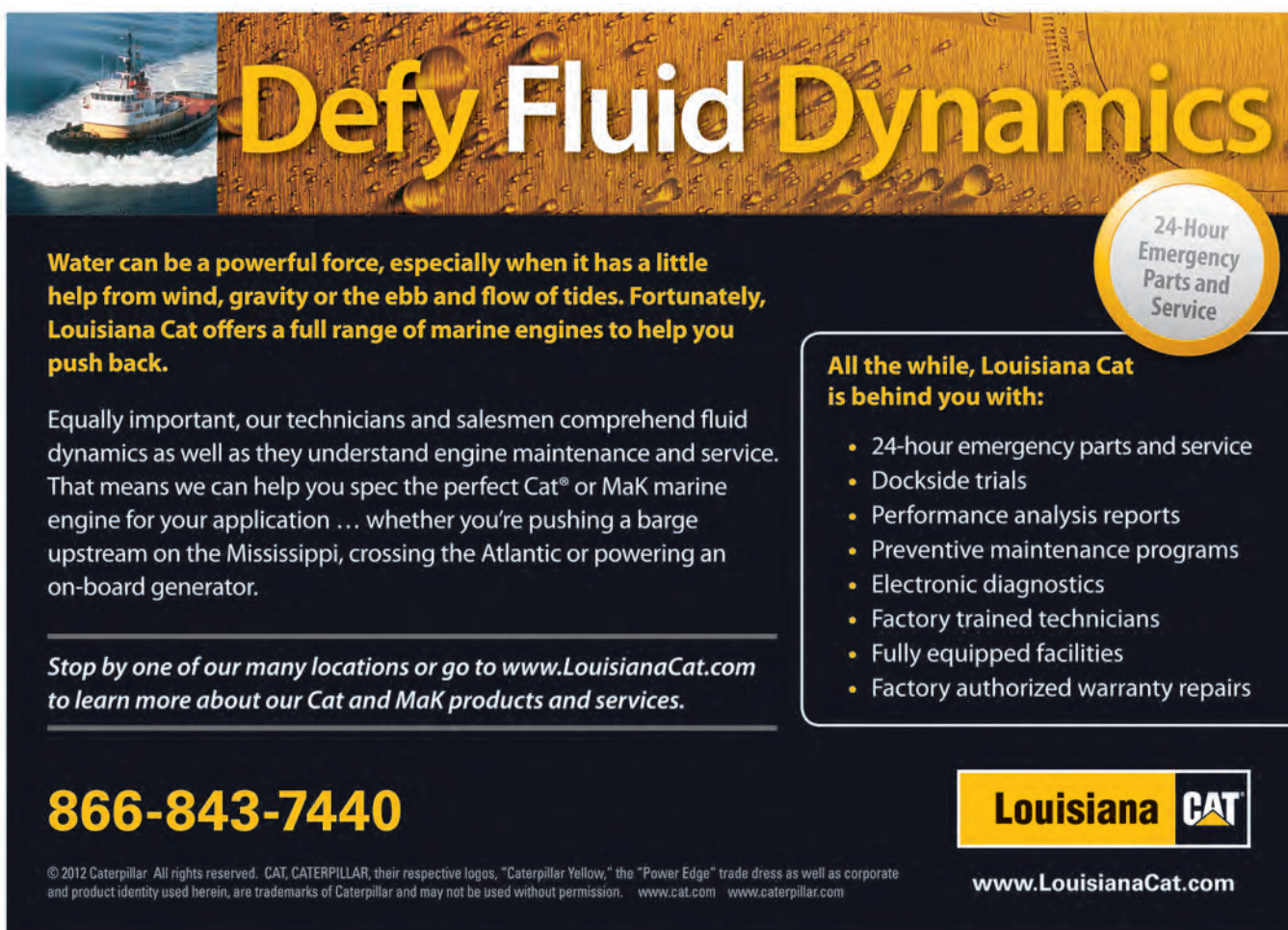
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with seriously looking at the BWMS requirements, looking at the gas emission requirements, and of course, it is expensive. Many owners are putting off getting into these expensive conversions. At the end of the day, I see quite a bit of work coming from both the scrubber installations and the BWMS installations. I think LNG will be the fuel of the future. I think what we'll see a lot in the next five to 10 years as many vessels go for LNG propulsion.

**With shipowners delaying the installation of BWMS, for example, and the future high demand for such conversion work, what is ASRY doing today to prepare to capture its share from this flood of business?**

■ We're talking to the owners today to find out what they're thinking, what their ideas are on gas emission and BWMS. At the same time, we're talking with manufacturers of equipment to get into some sort of arrangements with them where we can promote and market their equipment, and at the same time, they can promote our services so jointly, we can approach owners and present a package.

**And what are shipowners thinking, from your experience?**

■ They're trying not to think at the moment ... they know it's going to come, and they're just hoping the day will get put off as long as possible. Some of the owners are taking it seriously, but some of the owners are not taking an approach on it at all. Through our new consultancy, we are trying to address this with our customers. It is encouraging with some customers, as they've asked for studies, some designs, and we've had a couple of commissions in the last few

months to provide studies and information.

**How have your investments paid off?**

■ The best example is the offshore business. During 2012, the offshore

business contributed 50% of revenue, and it has grown steadily over the last four years, from 10% to 25% to 40% to 50% last year (2012). The \$180m investment was totally necessary. If we had stuck solely with commercial ship repair we wouldn't be sitting here as comfort-

ably as we are now, that's for sure. We expect the (power) barges, when they get into gear, will make a huge contribution as well. Our core business is still commercial ship repair, but the facilities, the resources, the skills: we are able to use them in different areas.

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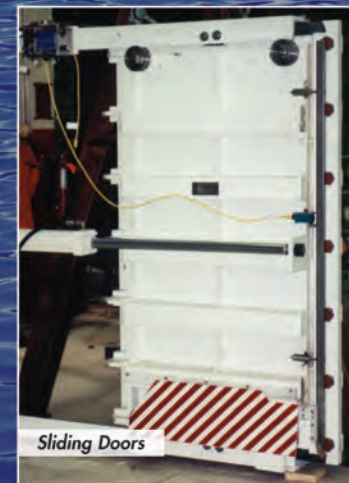
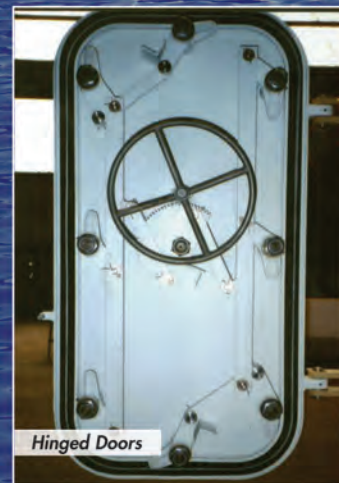


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# Underwater Robotic Championship

## Indianapolis to Host 2013 National SeaPerch Challenge

In a few weeks, SeaPerch, a national educational outreach program using underwater robotics, sponsored by the Office of Naval Research (ONR), will hold its 2013 National SeaPerch Challenge. Hosted by the Indiana State Regions this annual competition will take place on the campus of Indiana University Purdue University Indianapolis (IUPUI) on Saturday, May 18, 2013, at the University's Natatorium housing the Olympic pool. There the top 100 winning teams from regional competitions held across the nation will gather to assess how their SeaPerch underwater robots will fare in competition among their peers through a series of underwater challenges and a juried poster presentation to determine the 2013 middle school and high school National Champions. This is the third year for the National SeaPerch Challenge, and the first year for Nationals to be held in Indianapolis.

SeaPerch is an innovative K-12 underwater robotics program that trains teachers and group leaders to inspire their student teams to build their own SeaPerch Remotely Operated Vehicles (ROV's) following a curriculum consistent with national standards supporting Science, Technology, Engineering and Mathematics (STEM) subjects with a marine engineering-based theme. The program promotes hands-on learning of engineering concepts, problem solving, teamwork, design skills and introduces students to potential and exciting careers in naval architecture, marine, ocean and naval engineering. Now in its sixth year SeaPerch is administered by the Association for Unmanned Vehicle Systems International Foundation (AUVSIF). "With guidance from AUVSIF and with ONR's commitment to SeaPerch, which introduces K-12 students to STEM through underwater robotics, the program has grown exponentially, reaching over 70,000 students to date," said Susan Nelson, Executive Director of SeaPerch. More than 6,000 trained teachers and mentors are also committed to support



student learning through this stimulating and fun hands-on activity by following an established academic curriculum to discover the excitement of STEM as a potential future career path. The program reaches a diverse population, so participants in the Challenge will be students across the country, from inner city

Baltimore to rural Mississippi to Native American reservations in Minnesota to the islands of Hawaii, who have been introduced to STEM through SeaPerch.

Building on the success of last year, on Friday evening, May 17, the opening event will be the Welcome Party for the teams from that evening in the Natato-



rium with light refreshments available. This will be a great opportunity for all to meet and mingle. Team leaders should also plan for their teams to bring their SeaPerch ROV as we will be open for check-in and compliance checks in order to reduce congestion the next morning.

Competition day, Saturday, May 18, will begin at the Natatorium with the required check-in's followed by an opening ceremony, photographers and videographers recording the events, local media in attendance, and again this year, live streaming of the day's activities for the benefit of classmates, friends and parents back home across the country. A juried poster competition is planned for both middle and high school teams to introduce their graphic displays and deliver oral presentations about their design philosophy, construction challenges and answer questions posed by the judges. The pool's technical competition events will consist both of an Obstacle Course and an entirely new Deep Water Transfer challenge. Specifications for these underwater events are posted on the SeaPerch website, [www.seaperch.org](http://www.seaperch.org), so teams may build their own for practice prior to the national competition. Nearly 100 judges and volunteers are expected to cover the poster and the pool competitions and help in various capacities during the day's activities. Team Entry Rules as well as Competition Event Rules, specifications and rubrics are posted separately on the SeaPerch website.

On Saturday evening a gala Awards Banquet will be held at the J W Marriott, the official team hotel, for approximately 800 attendees where the presentation of the awards will take place. Trophies will be awarded for the first three places in each event for middle, high and open class as well as the awarding of the Technical Director's choice for design innovation. Featured speakers are invited to observe the competition during the day and to address the students that evening at the banquet about the importance of STEM to their future careers. Corpo-

rate sponsors, state and city representatives, ONR, U.S. Navy and U.S. Coast Guard personnel who are attending the banquet, will also be invited to judge the various competitions and to interact with the students during the day's activities. In addition to the 100 teams of students and their leaders, classmates, parents, friends, volunteers, judges, VIP's, speakers and committee members will make up the projected total attendance of 800 in Indianapolis.

The next day, Sunday, May 19, teams will have an opportunity to explore on their own the many and varied educational opportunities available within the city limits of Indianapolis. Our hosts, Indiana State Regions, will provide ideas for the day's activities including visits to parks, historic sites and museums all within easy walking distance of the hotel.

All students will receive National SeaPerch Challenge t-shirts and SeaPerch medals for their participation in the National Challenge as well as an event bag filled with items provided by the SeaPerch program, corporate sponsors, our Indiana hosts and AUVSIF. Additionally, Certificates of Participation and Appreciation are posted on the SeaPerch website both for student participants and for teachers and advisors to download following the National Challenge.

New this year, The National SeaPerch Challenge will collaborate with NTMA's 2013 National Robotics League (NRL) Championships, also to be held on the IUPUI campus on May 17-19, 2013, the third year in a row its National Championship will be held in Indianapolis. The NRL is a student-designed robot combat competition intended to introduce a new generation of Americans to the advanced skills and sophisticated technology that mark manufacturing today. The collaboration is more of an exchange, which will allow for interaction among the participants during the overlapping two days of national championships.

"The SeaPerch Program and the NTMA are excited about this opportunity to provide an exchange forum for these simultaneous events allowing the student participants of both to visit each other's championships, interact with their peers and learn about different robotics platforms as they observe each other's skills in the heat of battle," added Nelson.

National SeaPerch Challenge sponsorship opportunities are still available for individual, local and corporate funding, details of which are posted on the SeaPerch website, [www.seaperch.org](http://www.seaperch.org).

Also, volunteers and judges are always needed. Should you be interested in participating as a volunteer or judge on May 18, please click on the following link: <http://www.regonline.com/builder/site/Default.aspx?EventID=1149740>.

For questions and/or more information about the National SeaPerch Challenge, go to the SeaPerch website, or contact Phil Kimball, Program Director, at 201-310-2607 or [pkimball@seaperch.org](mailto:pkimball@seaperch.org). Please also visit the AUVSIF web-

site at [www.AUVSIF.org](http://www.AUVSIF.org) to learn more about the Association for Unmanned Vehicle Systems International Foundation, which promotes the development of aerial, land-based and subsea robotic systems.

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MARINE SAFETY

# 3D Body Scanning

## Project Launched to Size-Up Offshore Workers

**R**esearch to measure offshore workers' body size with 3D scanners to inform the future design of safety equipment, survival clothing and space requirements on offshore installations has been launched in Aberdeen.

The research, which will generate an ongoing capability for measuring the size and shape of the offshore workforce, is reported to be the first of its kind in more than 25 years and is being led by researchers at Robert Gordon University's Institute of Health and Welfare Research (IHWR) in collaboration with Oil and Gas U.K.. The project's aim is to design and implement a systematic assessment of 3D measurements on a sample of approximately 600 offshore workers. The data will then be used to inform all aspects of offshore ergonomics and health

and safety, from emergency helicopter evacuation and survival suit design to space availability in corridors and work environments. Project leaders Dr. Arthur Stewart, Reader, and deputy director of RGU's Center for Obesity Research and Epidemiology (CORE), and Dr. Graham Furnace, Medical Advisor for Oil & Gas U.K. conceived the project in 2011.

It includes senior figures from Oil and Gas U.K. – Robert Paterson, Health, Safety and Employment Issues Director and Bob Lauder, Health and Safety Policy Manager – as well as data modeling experts Professor Patrik Holt and Dr. Eyad Elyan from RGU's Institute for Innovation, Design and Sustainability Research (IDEAS). “The last body size survey of offshore workers was undertaken in the mid 1980s and since then the average weight of the workforce has

risen by 19%,” said Dr. Stewart. “As a consequence the size and shape of the offshore workforce has increased to an unknown level.”

“Understanding this change in size and space requirements for the offshore workforce is important as their current workplace is designed for personnel as they were a quarter of a century ago. Knowing the actual size of the workforce, together with size increments imposed by different types of clothing, will enable space-related risk to be managed and future design for space provision optimized.”

KTP Associate Robert Ledingham has been appointed to work on the study and will test and calibrate new portable 3D scanning technology at the University's Center for Obesity Research and Epidemiology where the first group of volun-

teers will be scanned before using it to gather more data at Falck Nutec's offshore training facility in Dyce.

Initial research conducted by the team at RGU has shown that a 90kg man wearing a standard helicopter passenger survival suit increases body volume by 44 liters over that of close fitting clothing. Graham Furnace added, “It is already known that the majority of the U.K. population is overweight, and offshore workers are no different in this respect. The question of ‘big people’ is a major area of medical concern within the industry because of the health risks associated with being overweight, but as the initial scans of the study already confirm, the issues relating to the size and shape of offshore workers also have important safety and equipment design implications.”

**“The last body size survey of offshore workers was undertaken in the mid 1980s and since then the average weight of the workforce has risen by 19%”**

**Research Associate Robert Ledingham has been appointed to work on the size and shape study.**







## GPA-Designs PSVs for Jackson Offshore

Guido Perla & Associates, Inc. (GPA) won a contract to deliver the Design, Regulatory Design and Production Engineering for two GPA 675J PSVs for Jackson Offshore Operators. The vessels will be built at BAE Systems in Jacksonville, Florida, under a contract that includes the option for two additional vessels. GPA worked closely with Jackson Offshore Operators to meet all operational requirements, giving the ships the features and functions that operators and crew members appreciate during operation and maintenance. The result is a customized vessel with optimized cargo capacity, improved fuel consumption, ease of maintenance, redundancy, excellent maneuverability, superb seakeeping and highest safety and comfort standards for the 34 crew members the vessel can accommodate. For the GPA 675J PSV, GPA is using their new series of hull forms designed to provide a more efficient hull compared to previous designs. A new bow design has been developed that encompasses GPA's special shaped bulb and forward sections that allows for better sea keeping on any sea direction. Many new bow designs offered recently are designed to favor head sea operations, but GPA's design provides a more balanced bow that will enhance operation in head sea, but also on any other sea directions. This gives a more overall performance to the hull by balancing the stern with the bow of the vessel. The first vessel with these new hulls has been tested in Brazil with the GPA 688SC PSV (PSV 4500). Eight of these vessels are under construction in Brazil. The GPA 675J PSV also incorporates notable features that GPA has utilized throughout the years on numerous offshore vessels, such as the location of the engine room on the main deck. The layout increases cargo capacity below deck and entails remarkable crew comfort improvements, achieved by adding an extra deck of attenuation between the accommodations and the bow thrusters and cargo machinery, two of the prime contributors of noise and vibration aboard these types of vessels. GPA pioneered this engine room arrangement several years ago on the ten-vessel GPA 654 PSV series operating in the Gulf of Mexico. "When we began to consider our fleet growth strategy we immediately targeted GPA to develop a PSV design to meet the current and long-term needs of the deepwater offshore drilling and production market," stated Lee Jackson, President and CEO of Jackson Offshore Operators. "The design has been well received as indicated by the long term contracts we have secured on the two new GPA 675J PSVs we are building with BAE."

GPA's independence allows Jackson Offshore Operators to be flexible in their equipment selection and combine vendors that are most suitable for this customized design. The main equipment on the 76-meter (252 ft) GPA 675J PSV includes an integrated Rolls-Royce ship systems package inclusive of low-voltage active front end diesel-electric system and a complete propulsion package with Azipull propulsion thrusters. The scope of supply also includes power and propulsion systems integration - including an advanced Acon automation system, an Icon Dynamic Positioning (DP-2) system and a fully integrated electrical detailed engineering package. The GPA 675J PSV will bear the class notation ABS, +A1, Circle E Offshore Support Vessel (Supply-HNLS), +AMS, DPS-2, FiFi-1, ACCU, SOLAS, USCG Subchapter I& L, Full Ocean, USCG EEP150 Notation, MARPOL Annex I, II, IV and V and increases the number of GPA-designed offshore vessels operating in the Gulf of Mexico to 22.

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# WSS' Global Quest

**With the earning of ABS global approval for its safety services and the opening of a Houston Training facility, Wilhelmsen Ships Services (WSS) passed two critical milestones in a quest to build and operate an efficient, technically superior maritime and offshore services juggernaut.**

**By Greg Trauthwein, Editor**

**M**ore than a decade ago Wilhelmsen Ships Service planted the seeds for what today is growing one of the world's premier providers of services to the maritime and offshore markets globally. The company celebrated two significant milestones in its quest, with the opening of its state-of-the-art training facility in Houston and the earning of ABS global approval for its safety services – a two-year journey that makes it one of only two companies in the world with this approval (Radio Holland was the first) – and the only service provider within the safety sector. Demand for technical talent is common across the maritime and offshore sectors, with companies of all size and locale vying for a finite pool of top technicians. Simultaneous with the trend to carry smaller crews is the trend toward larger, more technically complex ships, a situation that has created a vacuum of technical specialists at shipping companies at sea and ashore and created a ripe environment for service companies to step in. “It was very clear back in 2000 that the services business would grow significantly,” said Andrew Sheriff, WSS Business Director Safety, during an interview in the new Houston training facility. “So we need to get into the service business, and that’s what we’re doing. But getting into the service business means that you have to train your people.”



## Target 2016

The year 2016 is figuratively circled in bold red across the WSS brand, as it is this target date driving the company to up its ante in the training of new technicians to coincide with what is widely believed to be a strong rebound in shipping. Essentially WSS thinks it necessary to be proactive in increasing the general skill base of its technicians to ensure the fuzzy if not noble goal that it provides the industry's most highly skilled technicians. Simply bolstering the technical talent through a hiring spree was seen as a challenging if not improbable mission, so WSS decided the natural way forward was to develop its own apprentice program further and to promote from this level upwards to fulfill future requirements.

The Houston training facility is the fifth training center worldwide for the company, joining facilities in Shanghai, Singapore, Antwerp and Fujairah. The new WSS Service Technician training program is focused on creating professional technical levels of expertise for WSS technicians in marine safety systems, products and service management systems.

In pure numbers, the company anticipates putting 50 people per year, 10 per world region, through the training system in the build-up to 2016, according to Sheriff. “We’ll lose 30% through people determining that this simply is not for them,” said Sheriff. “They will want something that is land-based and is ‘8to 4’ ... this certainly is not an ‘8 to 4’ business; it’s a 24-hour business.”

## WSS Today

“I think we all have our fingers crossed now that you’re starting to see some good green shoots coming through in the shipping industry, and based on those green shoots we believe the business will grow. Even Europe is positive for the moment for us,” said Sheriff.

Today, WSS Safety Services boasts more than 40 years of fire and safety experience, conducts 21,000

safety services annually via its network of 98 service offices globally.

The Middle East is one of the areas of strength, and the company's training facility in Fujairah is a model facility. “Fujairah is a very big port for us from a business perspective,” Sheriff said, “as we have about 45 engineers working out of there purely for safety service.”

The tanker business is the obvious driver in the Middle East, and while WSS has a traditional strength operating out of the United Arab Emirates, Sheriff said as the shipping business is mobile, so too is WSS.

“We are starting to see that certain other countries within the Gulf are building up nicely, such as Qatar. Qatar Gas is a big customer with about 60 ships, and they want the service work in their home port; so we’ve opened a service station there. The market moves, and we must be agile, particularly with personnel.”

Outside of the Middle East Sheriff said that the focus during the previous five years has been on the ‘BRIC’ countries – Brazil, Russia, India, China – and WSS has moved methodically to add stations and personnel in these regions.

Brazil in particular is a growing force in both maritime and offshore circles, and Sheriff counts Henrique Schlaepfer, WSS’ Area Director, South America, as a source of strength on the continent.

“If you go into a market like Brazil with an ex-pat, it can be very slow (growth),” said Sheriff. Alternately, finding and keeping a quality local such as Schlaepfer – someone who knows how things work and how to get them done – can be instrumental in driving business further faster.

“Brazil today is adapting to the new reality of globalization,” Schlaepfer said. “We want to do business.

To enter Brazil and open a business in Brazil, the real challenge is bureaucracy as it is still very cumbersome.”

Another challenge in the country is the overall quality

## Henrique Schlaepfer, Area Director, South America

**Brazil is adapting to the new reality of globalization. We want to do business.** Despite a tough global economy, in economic crisis the two things that people do not stop buying are food and energy, and Brazil has both. So today we have a lot of shipping lines that are now aiming toward our ports for trade.

**“This approval and the introduction of our new safety service training center in Houston is key in growing our internal safety service technician training program. The ABS certificate means that we are now in a very strong position to offer the market a wide range of certified, global safety solutions.”**

**Andrew Sheriff, WSS Business Director Safety**



of its workforce, as he estimates in excess of 20 million have just recently elevated to the middle class. They are in need of training to build and maintain a uniform high technical level, and this is where the WSS commitment to training comes in. The company invests not only to ensure a high level of technical competence, it invests too, in sponsored English lessons for all employees for example, to ensure that technicians are able to communicate effectively and efficiently with crews arriving from around the world.

**Liferaft Exchange Program**

Despite a reputation as conservative, the shipping industry is always changing, sometimes radically, often times driven by regulation. Sitting with Sheriff and Schlaepfer afforded a cumulative 44 years of shipping industry experience to tap, and both men concurred that

one of the most drastic changes in the shipping industry today, particularly in regards to its effect on the service business, is the ever-shortened time that a ship spends in port.

To put it simply, ships are in port for much less time, said Sheriff.

Schlaepfer agreed, saying today a (container) ship arrives at eight in the morning and departs at four in the afternoon; tankers still take longer, depending on size up to two days. “This is a very short time if you have to service the vessel, whether it is servicing the liferafts or commissioning the fire system,” Schlaepfer said.

“That is why things like the Liferaft Rental Exchange (LRE) has suddenly become a success, where it probably would not have been 15 years ago,” Sheriff said.

The Liferaft Rental Exchange is a program pioneered by WSS, and essentially allows its customers to rent

Unitor Liferafts on an annual basis, promising no delays or surprises. As a vessel’s short stay in port allows little time for the annual liferaft service, ship operators often don’t have time to send life-saving appliances back to suppliers’ service centers and wait for them to be inspected and repaired before setting sail.

With the Liferaft Rental Exchange, at the end of the year shipowners simply exchange them for equivalent approved liferafts at a mutually convenient port, the highlight being a fixed annual price and quick turnaround, among others. Today WSS maintains 42 LRE stations supporting more than 1,000 ports.



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# Dredging India

**For enhancing the draft in ports or undertaking major dredging projects, India still relies on foreign dredging giants, a situation not likely to change unless the government comes out with a policy encouraging investment in the dredging industry.**

**By Joseph R. Fonseca, Mumbai**

**E**uropean dredging giants continue to make a clean sweep of all major Indian dredging projects, a market condition largely attributed to the lack of an environment conducive to encouraging Indian companies into large scale dredging. In short, there are no parallel “protectionist policies” in place like those that exists in several maritime countries.

Big players in the India dredging market, including Dutch and Belgian dredging companies, particularly VanOord,

Royal Boskalis, Jan De Nul and Dredging International, have ruled the Indian dredging market; and if the present trend continues, they could very well remain in charge of the situation for some time to come.

With the increased focus on port infrastructure development, escalating size of vessels calling at the Indian ports and increased attention being paid to coastal shipping and inland water transportation, the dredging boom underway is unprecedented. There are 13 Major Ports

(which come under the federal government) and approximately 187 non-major Ports (under the various state governments). Many of these are set on enhancing throughput capacity by taking the dredging route. The 13 federal ports are working at 85% capacity, where 70% is considered to be ideal. Mumbai’s Jawaharlal Nehru Port (JNPT), the largest container port in India, is working at nearly 100% capacity. The total handling capacity of all the ports is 689.83 million tons on March 31, 2012.

The draft at Indian ports, in channels as well as alongside berths has historically been very low and not commensurate with global developments. Comparing the top 20 container ports of the world where the draft exceeds 15 meters, the situation in India is pathetic, to be forthright. Barring some newer ports that have achieved draft of over 14 meters, the minimum draft at most other ports is less than 10 meters. Even JNPT has a draft of only 11 meters at high tide.

The government’s Maritime Agenda

## **Cutter Suction Dredger, Cyrus II of Royal Boskalis.**



2010-2020 envisages enhancing the draft in all major ports to at least 14 meters and some significant ones to 17 meters. Dredging projects worth more than \$4 billion have already been planned for execution by 2020. However, the growing demand has not been complemented by equivalent increases in the Indian dredger fleet. The capacity of the few dredging players in the country is already engaged in ongoing contracts.

Some ports are undertaking dredging projects to maintain adequate draft. Key ongoing dredging projects include the deepening and widening of the Mumbai harbor channel and the JNPT channel Phase One (\$ 314.2 million), capital dredging at Ennore Port (Phase Two) (\$34 million) deepening of the inner harbor entrance channel and turning circle (Phase Two) (\$46.4million) and capital dredging for the Mumbai Port Trust offshore container terminal (\$56 mil-

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lion). Further projects worth over \$78 million are on the anvil at the ports of Pipavav, Cuddalore, Chennai, Ennore, Visakhapatnam and Mumbai.

#### Poor Dredging Capacity

“Though there is tremendous potential amongst Indian players, they are unable to invest in dredging equipment in a big way,” said Pavan Sood, Director of IMS Dredging and Infrastructure Pvt Ltd. “Besides, governmental support for the dredging industry is lacking, hence the country’s capacity has remained dismal.”

The dominant local player, the state-owned Dredging Corporation of India (DCI), owns 10 trailer suction hopper dredgers (TSHDs), three cutter suction dredgers (CSDs) and one backhoe dredger. Besides, other key private players put together have about 37 TSHDs and 48 CSD, clearly indicating the urgent need to augment dredging capacity.

Seven TSHDs of DCI are more than 20 years old, and two CSDs are more than 35 years old. The state government organization – the Gujarat Maritime Board – owns four grab dredgers and four CSDs. The Maharashtra Maritime Board, the Kerala government and some private ports also own dredgers, but of minimal capacity.

However, foreign dredging companies have come a long way to mark their footprint in the Indian market with their explicit dredging technology and know-how. They have an active presence in the high volume segment involving capital dredging. They have successfully won contracts directly or through Indian subsidiaries and are capable of meeting deeper draught requirement.

According to the 2007 guidelines of the dredging policy, all Indian companies operating Indian flag vessels including DCI have a right of first refusal if their competitive bid is within 10%

of the lowest bid, pointed out Devdatta Bose, Group Vertical Head – Ports and Transportation, TATA Consulting Engineers Ltd., who are presently consultants to JNPT in their on-going dredging project for enhancing the draught to 17 meters. He states that the Ministry of Shipping (MOS) reserves the right to assign any dredging contract at any major port to DCI on nomination. In 2010, the MOS prepared a draft dredging policy which is yet to be approved. The ministry has also released a draft model tender document for use in dredging contracts, which needs refinement.

“The Eleventh Five Year Plan (2007-2012), the target for capital dredging and maintenance dredging was set at 675.3 cubic million (cu. m.) and 430 cu. m. respectively,” Bose said. “However, the achievement for capital and maintenance dredging was only 40.29% and 67.82% respectively. The shortfall in capital dredging in the case of major and non-

major ports was 68% and 53% respectively. This was due to several factors such as delay or failure in implementing port projects, financial and environmental constraints and poor response from bidders.”

#### Funding

Currently, major ports finance capital and maintenance dredging from their internal resources. Given the absence or scarcity of reserve funds, ports are trying to resort to alternative funding through the bond market, loans from national and international agencies, GBS, etc. Internationally, port channels are considered national assets, and dredging projects are funded by local municipalities or government and not by ports.

“All ports in the country should be dredged to a minimum of 14m while the hub ports must be dredged to 17m depth,” said L. Radhakrishnan, Chairman of JNPT. “Because of the inabil-

### Trailer suction hopper dredger of Royal Boskalis.



## Trailer Suction dredger of DCI.

ity of our ports to handle larger and huge ships, the country has to lose out \$320m annually to foreign ports. With more than \$2B required to achieve 17 m draft in the major hub ports alone, we need to think about how to fund this huge requirement.”

A public-private partnership model in dredging where the concession agreement will obligate the concessionaire to create and maintain the required depth for a predetermined period is being envisaged. The concessionaire will develop the project as per the conceptual layout and parameters proposed by the port and incur capital expenditure on capital dredging and recurring expenditure on maintenance dredging.

“Prior to 2012, there was no distinction for dredgers, imported on lease or other than lease,” Bose said. “A flat rate of 9.52% on the depreciated cost of a dredger with applicable duty drawback was imposed. After the 2012 budget, a clear reduction in the gross rate of customs duty of 6.18% and the upfront duty payable have been linked to the duration of stay of the dredger in India – 6.18% of the total lease value (which would be determined by the lease period and market conditions) and 1/120th of 6.18% of the depreciated cost of a dredger per month if imported on other than lease basis.”

“There is no one who can invest in a big way in dredging, whereas the Dutch players have already invested over a period of time,” Mr. Sood contended. He maintained that the dredging boom has been drawing many Indian players into the market. But most of them with the exception of DCI have generally stayed clear of most major dredging projects. They are unable to operate in most of these offshore works which are notoriously vulnerable to wave, wind and tidal forces. On the other hand the giant players having the expertise and heavy assets are better placed to evaluate the risk, able to budget for the incidence of the risks beforehand

on a project basis and are able to manage the ground conditions below the seabed prudently.

“Indian companies have to put up with several hurdles,” said Hemant Meka Rao Director of Meka Group. “For one, the banks don’t give loans easily. Only if the dredging company has a contract in hand do the banks agree to provide loans because this assures a source of income for paying back the loan amount. Again only if the company has the proper dredger for the job to be contracted do they agree to provide the finance - that is for capital dredging it won’t help to have a trailer suction dredger meant for maintenance dredging.”

Most Indian companies are not geared to offer the entire range of dredging services. With a mere two or three dredgers they are left to depend more on chartering for meeting any exigencies - which need not necessarily be a reliable option. With many companies having come on to the scene, it is becoming a common feature to see several bidders turning up to bid for small contracts with the number often exceeding ten.

A dangerous trend has taken shape mostly amongst major ports that are now adding to the risks with the terms of agreement which put contractors at a disadvantage. Devdatta Bose pointed out, “Contractors are expected to somehow budget for the incidence of these risks before-hand on a project basis. At times, the employers are better placed to evaluate this risk, and yet they pass these risks on to the contractors.”

Going forward, there is a need for adequate technical studies and investigations prior to tendering professional projects management consultants, proper structuring or the contract as per FIDIC guidelines, policy innovation in financing capital dredging projects and skilled manpower. Indian dredging companies also need to augment their fleet to meet the growing dredging requirements.



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# Markey's Mark on Deck Machinery

**105 years young, Markey Machinery has a strong history in the workboat and oceanographic market, and according to Blaine Dempke the orderbook is full and the future is bright.**

Blaine Dempke, President, Markey Machinery, is somewhat like the company he leads: long-term and steady, as the 30+ year veteran explained. "I began my career at Markey Machinery in 1978 as an entry level drafter and worked my way up through engineering," Dempke said. "In 1996 I was made president, and my compatriot on the shop floor, Robert LeCoque, was made vice president. In my day, engineering was done on a yellow notepad, and I grew up on a drafting board making drawings in pencil."

While the times and market demands have certainly changed, Markey remains a fixture in the Seattle area, powered by its prowess in supplying tough products for a demanding global industry, best summed up by the late W.C. "Bill" Markey, President of Markey Machinery for over 40 years (1948 to 1988), when he coined a simple phrase for the company's design philosophy, "Built Hell For Stout."

There have been many steps in the evolution of the workboat market in the company's 105-year history, but none as dramatic or pronounced as the changes that took place in the grounding of the

ExxonValdez.

"In the years that followed (the grounding), there was a focus immediately to require tankers to be escorted by tugboats, and it's almost hard to fathom now a time when they were not," said Dempke. "So if a tanker were to lose propulsion or steering, it was free to go aground. A couple of years after that we were working with Crowley to develop what was at that time state-of-the-art escort tugs; as much as 10,000 hp, a total of five of them. Since that incident, you don't see any oil terminal, any LNG terminal that doesn't have escort tugs."

In this increased sense of responsibility for the environment; we're working with the premier towing companies in the U.S. and Canada – Moran, Crowley, Foss Maritime, Harley Marine Services, G&H Towing, Signet Maritime, Groupe Océan, Harbor Docking... the list goes on – they are being contracted by the oil majors to escort their tankers and keep them out of the court room. That in turn has led to a lot of technological innovations on our winches for that particular niche market."

While Markey has a long and distin-

guished list of workboat industry leaders as references, a recent interesting job was the preparing a new TES-40-75HP electric towing winch for installation on Harley Marine Services new Z-drive ship assist tractor tug M/V Robert Franco.

The first item of two suites of deck machinery specified by Harley for both the M/V Robert Franco and its' sister M/V Ahbra Franco, the TES-40-75HP towing winch also fills out Markey's electric towing winch line which now covers wire sizes between 1.25 to 2.5 in. The TES-40-75HP is designed as a rugged single-drum electric towing winch with fairlead and warping head, designed specifically for use on ASD-tugs where aft deck space is at a premium. Its AC Variable Frequency electric drive satisfies a wide range of performance requirements.

The tow winch is part of a two-winch suite of equipment that also includes a Markey Model DEPCF-52-75HP Class II Hawser Winch. Together, the two winches will share a single VFD drive panel and dynamic braking resistors, while having discrete wheelhouse con-



**As the new year begins, Markey Machinery is preparing a new TES-40-75HP electric towing winch for shipment that will be installed on Harley Marine Services new Z-drive ship assist tractor tug "M/V ROBERT FRANCO."**

trols for each winch. This reduces the impact of "below-deck" equipment on available space, as well as system cost while supporting full functionality of either winch.

## Technological Changes

"In the high performance sector of escort work, the tugboats are getting larger and larger," Dempke said. "It used to be that someone would put two 50-ton pull boats on an escort, but now they are putting one (or two) 100-ton pull boats on an escort."

Markey is involved in a project with Groupe Océan based in Quebec, which is building a pair of high performance escort boats for escorting tankers up and down the St. Lawrence Seaway, which Dempke said at 100 metric tons pull will be the largest bollard pull tugs in Canada.

While the demands have changed mightily in recent years, there are two things owners want to maintain: size and weight.

"The trend today of for the optimization of high performance escort winches," Dempke said. "People want them to do more and more, but they can't weigh anymore and they can't be any larger."

Markey uses advanced engineering techniques to optimize existing designs and create super efficient new ones. "Through FEA Modeling and efforts in engineering department, we work hard to optimize these designs," said Dempke. "One of these winches can weigh 60 tons; that's a lot of weight to throw on the front end of a tugboat. It all comes down to engineering and FEA software. But this market is small. Manufacturers such as ourselves do not have a lot of opportunity to develop a product. We come up with a winch design, and we might build only two of them; and the next customer comes along and wants something slightly different. We don't have the benefits of mass production to fine tune things."

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# Liebherr Presents its Maritime Crane Simulators

Liebherr launched a range of maritime crane simulators which are based on original software and hardware, designed to increase port safety and productivity by providing a cost-effective and highly efficient crane operator training solution. The range of simulated cranes includes ship to shore, rubber tyre gantry, mobile harbor and offshore cranes.

A major benefit of simulator training is the ability to simulate harsh environmental conditions when required. This allows both experienced operators and trainees to gain valuable experience operating under challenging conditions in a safe environment. The resulting increase in operator skills allows for safe and productive crane operation under similar conditions in the real world, boosting port productivity. For example, even though it may be a calm and sunny day, the trainee can practice cargo handling in harsh weather conditions such as snow-fall, heavy winds, torrential rain and high waves.



The LiSIM environmental and physics engine allows for high levels of detail and realism. In addition, the emission and fuel-free LiSIM training solution is in line with an eco-friendly port operation.

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The installation of original Liebherr drive systems, software and hardware is designed to provide a realistic training experience. The drive systems reproduce all crane movements exactly both in space and in real-time. Trainees benefit from the ergonomically designed driver's cabin and control panel. The motion platform ensures that the driver in a Liebherr simulator cabin experiences realistic movement which mimics precisely the response and feel of a crane mounted driver's cabin and seat. Full high definition flat screen monitors and high quality surround sound speakers reproduce the views and sounds typically experienced in the cabin.

Liebherr simulators are available in three configurations. The classroom so-


lution is integrated into existing training centers with the display, seat and controls mounted on a base and a sturdy display frame. The space-saving cabin solution ensures that the driver becomes familiar with controlling the crane in a

real life environment. The containerized solution houses the simulator in a 40 ft. container and features a training room, utility room and cabin simulator. Each of the three models is equipped with multifunctional instructor stations. Each re-

alistic LiSIM scenario is set in a typical maritime environment where numerous parameters can be modified according to training requirements, including daytime or nighttime operation, weather conditions, kind of cargo and vessel size.



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# Nor Crane Powers Ahead

**At less than 10 years old, Nor Crane is a relatively new name in deck machinery. While short on years, it is long on experience, with an impressive order book, too.**

**By Greg Trauthwein**

Nor Crane is not unlike a number of other Norwegian technology companies in that it has a history strongly rooted in the country's offshore and fishing fleets, espouses the mandate of quality over costs, and is truly global in its scope and reach.

Nor Crane was established in 2004 by Finn M. Nilsen, Managing Director, as an engineering company from pulling and lifting technology for the marine and offshore support industry. While the company history is short, the industry experience is long, as the company was formed by experienced engineers with more than 30 years experience with the winch and crane industry and broad network of steel contracting.

*Maritime Reporter* recently met with Nilsen at his new Dubai Maritime City location, which he moved to from Jaddaf in 2012, but just recently has received full amenities, such as power and water.

At the time of the visit in early January 2013 Nilsen and company were putting the final touches on its portion of the contract whereby four China-built Platform Supply Vessels (PSV) were being converted to modern Diving Support Vessels (DSV) for Saudi Arabia-based Zamil Offshore, vessels that will be on charter to Saudi Aramco.

On the first vessel, Zamil 401, Nor Crane delivered only the cranes. On the ensuing three vessels, Zamil 402, 403 and 404, it supplied the cranes as well as a four-point mooring system. Grandwelds, the steel and aluminum shipbuilding

company that also recently moved into its modern Dubai Maritime City location, conducted the installation of the deck machinery.

The cranes on all four vessels are exactly the same: three tons at 21 m and eight tons at 14 m, used for onboard lifting and for heavy lifting, such as support of the diving bell over the side of the vessel.

"When we got this job from Zamil Offshore, we were given six weeks to deliver," Nilsen said. "We managed to get winches back from other projects. These are relatively big for the size of the vessel, and they were electric so we converted them to hydraulic drive, which was done simply to accommodate the tight time frame. Normally you have six months delivery time on equipment such as this." Nor Crane is an engineering firm, so it builds all of its winches in China, and the company offers a full line, including anchor-handling winches up to 300 tons pull.

While the turnaround was short, Zamil Offshore holds a special place in the history of Nor Crane, as not only was it the company's first customers, it was a customer before Nilsen had a chance to incorporate his company in 2004.

"Zamil was my first customer in 2004, and we sold them three complete anchor handling sets; 150-ton anchor handling winches," Nilsen said, "which was more or less four months before I had a chance to register the company."

Zamil remains one of Nor Crane's steadiest and best clients to this day. In

**Finn M. Nilsen Managing Director, Nor Crane**, said the company will set up shop inside Zamil's new shipyard in Saudi Arabia, which is scheduled to open for business this summer.

fact, as Zamil's Shipbuilding group works towards opening its new shipyard, Nor Crane has been invited to open up a workshop on the premises of the new shipyard to better facilitate its services in the region.

"We have a special relationship with Zamil, and we are in the process to establish a company in Dammam," Nilsen said. Zamil is building a new shipyard – a \$250m investment – in the new shipyard in Dammam – which will feature the biggest ship lift (a Rolls-Royce 9,000 ton Synchronlift) in the Middle East.

"We were asked by them if we are interested to do fabrication with them, and we said, 'yes,' and that would be first for the Saudi market," said Nilsen. "That means we will fabricate all steelwork for winches and cranes in Saudi, for Saudi market."

While Zamil Offshore is an important client, it certainly is not the only. In fact by volume India is Nor Crane's main market, and currently it has \$10m in orders at the ABG shipyard for 130 bollard pull anchor handlers, four complete ship sets of 300-ton anchor handling winches. Nor Crane also recently received an order from Mubarak for all of the mooring equipment (eight-point mooring systems) for a series of new barges, and it also recently delivered to Schlumberger in Indonesia two 25-ton cranes for some swamp barges, fully classed, fully explosion proof as they are working in a gas area.

Nor Crane is a specialist engineering company, focusing on cranes in the 10-15 tons range, as well as the manufacture of smaller offshore cranes. It's a small

company, with a 2012 turnover of \$20m according to Nilsen, but a competitive company, and one that was shaped mightily by the global economic crisis of 2008. "Before 2008 we had an order book of \$140m; now we have an orderbook of \$10m," Nilsen said. "The market has been really tough; and when things get tough, the competition gets much tougher. But we are very competitive."

Today the company numbers 35 worldwide, a size that suites Nilsen for the moment, but may have to change as it mulls new opportunities in far-away places, such as cracking into the insular Brazilian market. But Nilsen tries his best to keep it focused and simple. "The company is still relatively young, and when you're running around trying to take some business from the big guys, you need some references. Our references are to use components in our systems that are recognizable, readily available." The premise is simple in that having readily available components when they're needed, where they're needed, is central to long-term success in the mobile, global maritime and offshore markets.

"When I started the company in 2004, I wanted to grow it big," Nilsen said. "After 2008, I changed the company a lot. I went into the market relatively cheap, and it has taken me many years to bring the prices back

to where they should be. And now I appreciate perhaps a smaller volume of orders at higher margins, versus a higher volume of orders at smaller margins."

With a new workshop in Dubai Maritime City, manufacturing capabilities in the UAE and China and test beds in Singapore, Dubai and China, Nor Crane seems well situated to further expand its influence across the region and the world, one ship set at a time.

While Zamil Offshore is an important client, it certainly is not the only. **In fact by volume India is Nor Crane's main market,** and currently it has \$10m in orders at the ABG shipyard for 130 bollard pull anchor handlers, four complete ship sets of 300-ton anchor handling winches.



(Photo: Greg Trauthwein)



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# Keeping Maritime & Offshore Cranes Ship Shape

**ALATAS Americas is a global company with strong roots in maritime and fast growing branches in the offshore sector. MR visited Robin Thomas, VP, for his take on emerging trends in both sectors.**

**ALATAS is a global company with roots in the maritime sector, but there has been a decided move toward offshore oil and gas business. Why?**

Historically, our business has been predominantly fueled by the maritime industry, over the last five years we have increased our customer base in the offshore market. **Nowadays in the U.S. our customer base is more than 80% offshore customers**, mainly consisting of drilling contractors and offshore support companies, globally offshore custom accounts for approximately 50% of our business. In the last few years there have been numerous legislation changes in the offshore industry with regards to crane design and manufacturing standards as well as crane maintenance requirements, which has resulted in a greater need for expert crane service.

**How do maritime and offshore clients differ?**

Offshore cranes are, generally, significantly more complex than shipboard cranes. Offshore operation requires dynamic lifting requirements in severe sea and weather conditions. Furthermore, offshore cranes are operated in a considerably more remote environment, therefore immediate assistance or alternative crane support is not available. As a result of this isolation and lack of contingency, cranes must be maintained to a much higher standard and with substantially more spare parts available in case of breakdown and for preventive maintenance. A fundamental difference though, I would suggest, is economical; in most cases a drilling rig reliant on its cranes loses considerably more per day than a merchant vessel if it's crane is down, therefore offshore crane owners are willing to invest more in preventative maintenance than your average ship manager.

**What is your outlook for the offshore O&G business in the coming 24 months? What indicators do you monitor?**

I have a very positive outlook for the coming years. Despite our global service network, we are still relatively



**"In most cases a drilling rig reliant on its cranes loses considerably more per day than a merchant vessel if it's crane is down, therefore offshore crane owners are willing to invest more in preventative maintenance than your average ship manager."**

**Robin Thomas, VP, ALATAS Americas**

small, therefore our growth potential is very good, particularly in the North, Central and South American markets. The more cranes sold the more cranes we can expect to service once the warranty period is breached. Every press release I see for a multi-crane contract is simply a future opportunity. Recently many smaller crane manufacturers have boasted multimillion dollar crane sales (many for the Brazilian market), so likely our service support network will be utilized

more and more as the OEM concentrates on sales and commissioning, rather than long term upkeep.

**ALATAS is a small company working on equipment from major manufacturers. Why would a company choose to have ALATAS service its cranes rather than the OEM?**

First and foremost, service. At ALATAS we concentrate all our efforts

on keeping existing cranes in operation; this is our core business, and as such, we achieve a higher standard. We are now in a market saturated with complicated electric over hydraulic crane technologies, and the entire industry experiences a lack of suitably qualified and competent technicians. Our strategically placed global service networks offer field service as well as hydraulic component repair, and we have recently launched our crane design company in Austria. All of this combined with our core-service orientated philosophy gives us a better capacity for supporting our customers.

**Is there any work that ALATAS cannot do on these large cranes?**

We aim to employ OEM factory trained technicians wherever possible, as this enhances our group knowledge base and give us expertise on all manner of crane systems. We are capable of working on any mechanical, hydraulic and electric system. Our only restriction is for reprogramming of software produced by the OEM for control systems. Such systems are safety relevant and 'locked' giving only the OEM can access.

**How has ALATAS invested to keep itself relevant to the needs of your maritime and offshore clients?**

To run a successful business in any industry you must constantly adapt, and we have developed our company to offer increasingly complete crane solutions. In the last three years we have established full hydraulic workshops in the U.S., Singapore and Hong Kong for pump, motor and gearbox repairs and testing. In the U.S. we have established an Offshore Hose Management Service, providing with full labor and DNV Containerized equipment for producing, testing and installing hydraulic hose offshore. We have set up training facilities in several locations worldwide, as well as establishing a Crane Design office in Austria, enabling us to offer comprehensive Class certified crane upgrades. Our next priority will be establishing a service center in Brazil, as this huge market has an urgent need for qualified crane service support, and we have an existing customer base with a confirmed interest.



Styrk Bekkenes,  
MD, Noreq

### Noreq to Deliver Cranes for German Offshore Wind Farm

Noreq won a contract for the delivery of WTPCs (Wind Turbine Platform Cranes) for use on the Borkum Riffgrund 1 offshore wind farm. The customer for this project is DONG Energy. Two private investors, KIRK-BI – the parent company of the LEGO Group – and William Demant Invest, are also involved as owners. DONG Energy will build the Borkum Riffgrund 1 wind farm in the German sector of the North Sea. The farm will be one of Germany’s largest wind farms, with a capacity of 320 MW, located approximately 55 km off the northwest coast of Germany. Noreq has delivered more than 1,000 WTPCs to different wind farms so far.

“The cranes are designed in their entirety by our Danish office. Being chosen for yet another of DONG Energy’s offshore wind farms is confirmation of our quality and our ability to stay in front, both commercially and technologically. Our WTPCs are chosen because of their operational reliability and their ability to withstand the harsh conditions they are used in. Clean energy is an important area for our crane department, and this order is an important recognition of our staff and products,” said Styrk Bekkenes, managing director of Noreq.

### JonRie Marine Winches

JonRie Marine Winches introduces its new Series “220” Double Drum Escort / Assist Winch currently be installed on the twin ship sets for Caribbean Tug-Z and the new Twin ASDs for Seabulk Towing.

JonRie delivered its first three ship sets last year to Caribbean Tug-Z and Seabulk Towing. The fourth ship set to be delivered this spring to Seabulk Towing with a fifth ship set being a larger version to be installed on the new Marine Towing of Tampa ASD this summer. All five ship sets feature JonRie’s Constant Ten-



sion (Active Heave Compensation)/Constant Scope systems. All five tugs feature independent drives for each drum and JonRie’s standard foot pedal for hands free operation. Also featured on each drum are JonRie’s Tension read out system. The bow winches also share their Hydraulic Power Unit (HPU) with aft capstans and towing winches.

The winches were originally designed for Submarine Docking but now are being used to handle barges and as a redundant line on all ship assists and escort work the tugs will be involved in. This type of redundant line tethered to the ship is standard on the Panama Canal. All ADSs should be in service by the start of 2014.

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## ABB: \$160m to Provide Electrical Systems for Drill Ships

ABB won orders worth \$160m from Jurong Shipyard Pte Ltd. for the design, supply, supervision of installation, testing and commissioning of the main electrical systems for seven next generation drill ships that will operate in the deep water oil and gas fields off the coast of Brazil. The ships will be used to drill wells in the offshore pre-salt fields off the southeast coast of Brazil. ABB's integrated electrical package will provide a reliable power supply to subsystems onboard ships and help the operators maximize their energy efficiency. The seven vessels are the first in a series of high-efficiency



drill ships designed for ultra-deep water operations and built by Estaleiro Jurong Aracruz at their shipyard on the central eastern coast of Espirito Santo, Brazil. It is a wholly-owned shipyard of the Jurong Shipyard based in Singapore.

ABB's scope of supply includes complete electrical systems including generators, distribution switchboards, transformers, drives and motors to power the ships' thrusters and drilling systems. All ABB solutions meet or exceed IEC (International Electrotechnical Commission) and the customer's standards for safety and are in full compliance with strict IMO (International Maritime Organization) regulations to ensure uninterrupted drilling operations. Equipment deliveries to the shipyard are scheduled for 2013, with the first vessel to be delivered to the shipowner in the second quarter of 2015.

## Kongsberg Offshore Vessel Simulator for Bibby

Bibby Ship Management India contracted Kongsberg Maritime to deliver a Kongsberg Offshore Vessel Simulator (KOV) including an upgrade of the customer's existing Kongsberg Dynamic Positioning (DP) simulator in Mumbai. The scope of supply for the delivery includes a Kongsberg Offshore Vessel Simulator with visual scene, featuring Anchor Handling vessel, Shuttle Tanker and Drilling Rig models, enabling advanced

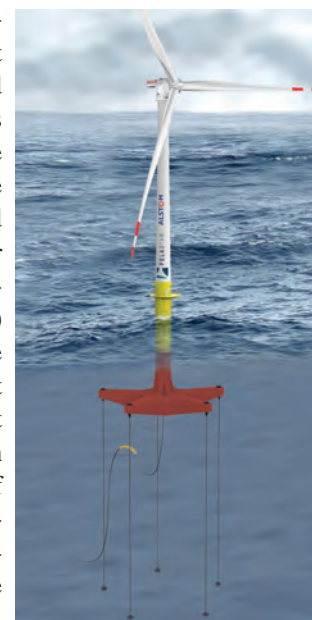


offshore operations exercises and courses covering: Manual Handling OSV, Anchor Handling, Offshore Loading, Position Reference, Drilling Rig Operation, Power Management, Ship Manoeuvring, Advanced ECDIS, Bridge Team Management, Bridge Resource Management and Pilotage.

The existing Kongsberg DP simulator will also be upgraded to a DP2 simulator fulfilling DNV/NI class A requirement as part of the project. The DP simulator will be integrated with the KOV, providing the possibility to run DP2 courses with sea time reduction in addition to complete offshore vessel training.

## Glosten Associates to Design FPS Demonstrator

The Glosten Associates, Inc. won a contract from the U.K.-based Energy Technologies Institute (ETI) for the engineering phase of the floating offshore wind turbine demonstrator using the PelaStar tension leg platform (TLP) foundation system. The \$6m, 12-month contract will complete the Front End Engineering Design (FEED) in advance of construction and deployment of a six MW demonstration unit off the south coast of the U.K. as early as 2015.



The fast-growing team includes:

- Alstom Renovables España S.L. (Barcelona, Spain) to provide their cutting-edge Haliade 150-6MW offshore wind turbine;
- Harland and Wolff (Belfast, Ireland) to build the PelaStar foundation;
- Dockwise (Breda, The Netherlands) to provide the offshore logistics;
- Cefas (Suffolk, U.K.) leading the environmental review;
- NREL (Golden CO) providing expertise in system modeling, instrumentation and test planning;
- Det Norske Veritas (DNV) (Hovik, Norway) for project certification; and
- MARIN (Wageningen, The Netherlands) for comprehensive scale model testing

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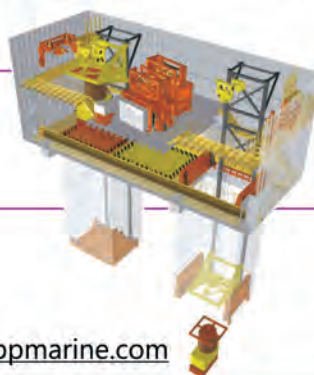
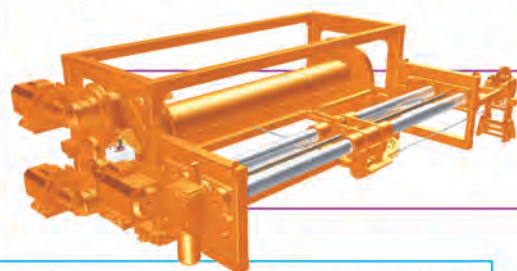
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## Meet the IHC Packhorse OSV

IHC Merwede extended its product range with a new series of IHC Packhorse offshore support vessels at an official launch event in Singapore, organized by IHC Asia Pacific, a subsidiary of IHC Merwede. The range of vessels consists of the IHC Packhorse which has been positioned as a platform support vessel (PSV) and the IHC Packhorse-Maxi, which is a variant on the basic hull form, providing a 59-person accommodation

unit and a range of options designed for subsea support on ORM work, light construction and cable laying projects. IHC Merwede offers the portable equipment for the IHC Packhorse-Maxi, either as an in-house supply package or as specified by customers, depending on their preference. The new IHC Packhorse range will initially be built through the cooperation agreement established between IHC Merwede and Jaya Holdings.



## Topaz Kuwait Oil Company Deal for 10 Fast Crew/Pilot Boats

Topaz Marine Engineering was commissioned by the Kuwait Oil Company (KOC) to design, build and deliver 10 22-m Fast Steel Crew/Pilot Boats, a contract value in the region of \$50m. The Crew/Pilot boat will be designed to accommodate 30 crew, with passengers all seated on the main deck. They will provide 24-hour crew transfer service to the vessels anchored in Kuwait waters and will be equipped with oil spill recovery capabilities and latest advanced navigation and communication systems. The boat will be built at Topaz's Nico Craft Shipyard in Abu Dhabi where the construction will start in the beginning of 2013. The 10 units are scheduled for delivery in Kuwait within 2014.

**"This contract is another achievement for Topaz Group and confirms our leadership as fast crew/supply boats supply in MENA region," said Thomas Bower, Managing Director of Topaz Marine Engineering.**

From its main shipyard at Mussafah Industrial Area in Abu Dhabi, Topaz has built a reputation for on-time delivery of high-quality offshore vessels. The company has developed into one of the leading shipbuilders in the GCC region with a portfolio of both steel and aluminium vessels and is dedicated in providing international standards in the shipbuilding construction which brought the attention of global clients. Topaz Marine Engineering has had an excellent year. It has delivered two Catamaran Wind Farm boats to U.K., has completed two 67m Anchor Handling Supply (AHTS) 80 tons BP vessels for deployment in the Caspian Sea and West Africa. In addition, Topaz was awarded a contract from GAC Group to provide completion services for two crew/cargo vessels which will be delivered within the next weeks and a new 40 passengers ferry is currently under construction.

Topaz Marine Engineering provides shipbuilding, marine repair and underwater support services to the offshore supply vessel and engineering markets in the Middle East, North Africa, and Caspian Sea. The Company has over 35 years of experience and is part of the Topaz Group - a wholly-owned subsidiary of Renaissance Services, an Omani public company listed on the Muscat Securities Market.



(Photo: Greg Trauthwein)

Topaz's Nico Craft Shipyard in Abu Dhabi

# CIMAC Set for Shanghai

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The International Council on Combustion Engines (CIMAC) in collaboration with the Chinese Society for International Combustion Engines (CSICE) will host the 27th World Congress on Combustion Engine Technology. The congress is slated for May 13-16, 2013 at the Shanghai Exhibition Center located in the heart of downtown Shanghai.

Devoted to the global fields of marine, power generation and locomotive engine research and development covering state-of-the-art technologies, the congress will feature 194 papers to be published during 48 presentation sessions, 125 papers to be presented in three poster sessions, an exhibition, technical sessions, networking opportunities and a gala dinner party.

Collecting a deep pool of international



expertise, the event will bring together manufacturers of diesel engines and gas turbines, users such as shipowners, operators and suppliers, oil companies, classification societies and scientists. Included among the event's presenters are field experts, scholars, technicians and engineers from the worldwide combustion

engine industry. They will discuss and present industry insights, trends, concerns, products and technologies. Below are just a few of the event's presentations:

- **Tier III Technology** Development and its Influence on Ship Installation and

Operation, by Wartsila, Finland

- **Contribution of Turbocharging Solutions** towards Improved Fuel Efficiency of Two-Stroke Low Speed Engines, by ABB Turbo Systems, Switzerland

• **Field Trial Findings** on Slow Steaming Cylinder Selection, by BP Fuels & Lubricants Technology, U.K.

• **The MAN ME-GI Engine:** From Initial System Considerations to Implementation and Performance Optimization, by MAN Diesel & Turbo, Denmark

• **Exhaust Emission Control** of Mitsubishi UE Diesel Engine, by Mitsubishi Heavy Industries, Japan

• **Structural Vibration** Challenges of Marine Diesel and Gas Engines, by Rolls-Royce Bergen Engines AS, Norway.

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# Sustainable Ocean Summit '13

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The Sustainable Ocean Summit 2013 (SOS 2013), organized by the World Ocean Council (WOC), is an international ocean business community gathering dedicated to industry leadership and collaboration in developing solutions to ocean sustainability challenges.

The theme of SOS 2013 is "Oceans 2050—The Ocean Business Community and Sustainable Seas." The SOS is designed for the diverse range of ocean industries: shipping, oil and gas, fisheries, aquaculture, tourism, offshore renewable energy, ports, dredging, mining, cables and pipelines, marine science, engineering and technology, the maritime legal, financial and insurance communities and others. If space permits, SOS is also open to ocean stakeholders from the government, inter-governmental, academic and environment communities.

SOS 2013 will address priorities for cross-sectoral industry leadership and collaboration in ocean sustainability over the coming years, including ocean policy, regulations and governance; marine spatial planning; the role of industries in ocean and climate observations; biofouling, biosecurity and invasive species; responsible use of the Arctic; sound and marine life; marine debris; marine mammal interactions; the role of finance, insurance and legal sectors in ocean sustainability.

- Jeffrey Grybowski, CEO, Deepwater Wind (offshore renewable energy)
- Gary Isaksen, Manager, Global Ocean Science and Policy, ExxonMobil (oil and gas)
- Robert Orr, CEO, Cuna del Mar (aquaculture)

Preceding the SOS 2013, the unique workshop on "Oceans 2050—Drivers, Trends and Scenarios," held on April 22, will provide input to the Ocean Executive Forum.

[www.oceancouncil.org](http://www.oceancouncil.org)

## Sustainable Ocean Summit 2013 Session Topics

- Smart Ocean/Smart Industries: Scaling Up Industry Observations of Ocean, Weather and Climate
- Ocean Policy and Ocean Industries in International Waters
- Marine Spatial Planning
- Sound and the Marine Environment
- BioFouling and Invasive Species
- Responsible Cargo Management and Port Waste Reception
- The Arctic: Challenges and Opportunities for Responsible Industries
- Marine Ecosystem Services and Blue Carbon
- Climate Change and Sea Level Rise: Port and Coastal Infrastructure Adaptation
- Financing Innovation and Technology for Ocean Sustainability
- PRE-SOS WORKSHOP: Oceans 2050: Drivers, Trends and Scenarios for Ocean Industries and Sustainable Seas

A panel of senior executives from oil and gas, shipping, fisheries, aquaculture, offshore renewable energy and science and technology will start the SOS 2013 with the Ocean Executive Forum on industry leadership and collaboration. The multi-industry panel will consider private sector challenges and opportunities for Corporate Ocean Responsibility while at the same time responding to the growing need for ocean energy, food, transport and information.

## Sustainable Ocean Summit 2013 Panelists

- Steve Carmel, Senior Vice President, Maersk Line Ltd (shipping)

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# Dead in the Water

## Electrical System Failure at Sea

The world watched as the Carnival Triumph sat still, dead in the water in the Gulf of Mexico after a main space fire caused a total loss of electrical power. For the 3,143 passengers and 1,000-plus crewmembers, there was no heat or air conditioning, toilets or sanitation, lights or ventilation. Fortunately, despite the seriousness of the fire, which was caused by a leaking fuel line, nobody was hurt. We waited and watched for several days for tugs to arrive on the scene and begin the slow process of pulling the 893-foot ship to port to let her passengers disembark and commence repairs.

Problems on cruise ships have high visibility. Today many ponder the discomfort of those on board and debate a “cruise passenger bill of rights.” Engineering problems can affect all ships, so maritime professionals

should ponder how a main space fire could eliminate all capability to generate power and the consequences if that should occur. No single point of failure should cause a ship to lose all power.

According to marine electrical engineer Moni Islam, there are several factors to be addressed to reduce the likelihood of power failures, not just on cruise ships but all types of vessels and offshore platforms. He is particularly concerned with ships that feature integrated electric propulsion.

“We need to redefine failure mode and effects analysis (FMEA) to better understand the weak links in the electrical system,” says Islam. “It’s important to monitor and maintain a baseline electrical system configuration so that any deviation is quickly identified and attended in a timely manner by a knowledgeable operator.”

Systems employ “black boxes,” that can monitor or control electrical propulsion processes without any human intervention. But, Islam says, operators are not trained recognize when the black box has found a problem, or to be able to do anything about it. “We need to train shipboard engineers better, or make the system smart enough to self-repair the problem.”

This will require an evaluation of the skill-level and amount of training necessary to safely operate integrated electric power systems at sea, i.e., what capability is needed at sea and what can remain on shore, he says.

Black outs are a problem, and ships that go dark, especially with passengers, draw public attention and scrutiny. To prevent worst-case bolted electric fault-related cascading failures, Islam says new ships should be designed with more and larger emergency generators to carry the vital loads if there is a main propulsion failure. Retrofitting existing ships with larger generators, or installing additional generating capacity during refit, should be considered. Islam also recommends mandating uninterrupted power supply systems (UPS) to kick in to provide no-break power between the initiation of a blackout and availability of emergency power.

“We must redefine vital and redundant auxiliaries and their performance requirements,” Islam says. “We also need to employ smart reconfiguration control system for vital auxiliaries.”

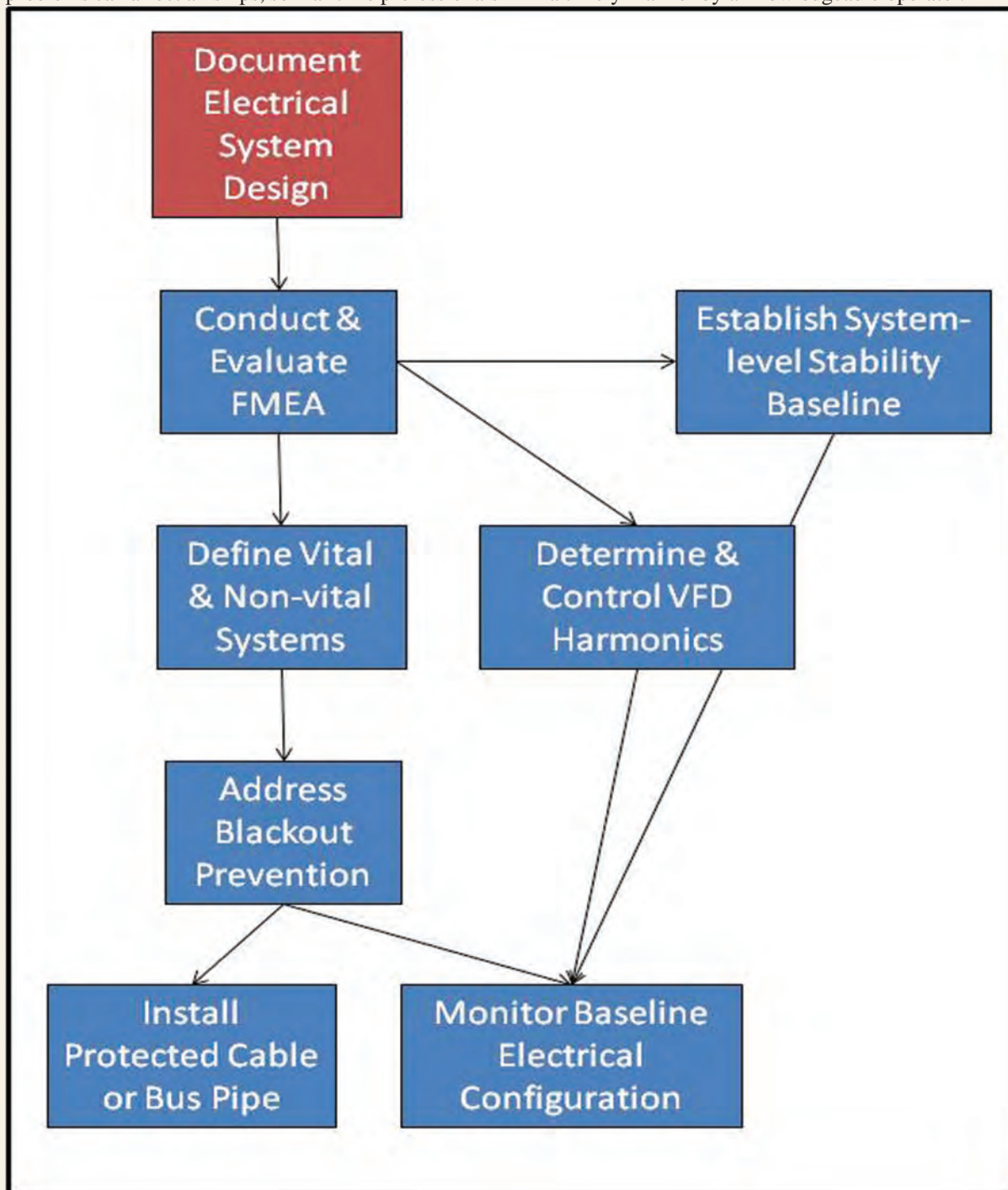
Islam says research is needed to determine the best method to manage medium voltage (MV) system grounding and monitor system-level electrical ground capacitance.

One way to prevent total ship power outages resulting from major fires is to install fire-rated power cables and insulated bus pipe installations for critical applications, he says.

Islam points to fires resulting from variable frequency drive (VFD) units. “We need to better understand and manage the harmful effect of VFD harmonics.”

Systems by system, the operating characteristics are well understood. However, there is insufficient information to determine if the integration of these electrical systems is a root cause of the problems being experienced. Islam’s suggestions are aimed at designers, operators, maintainers and regulators. “All of these ideas require investigation,” Islam says. “We need additional research and development efforts to identify affordable, acceptable, practical solutions that take the greatest advantage of installed hardware and software, and of shipboard personnel who are trained appropriately.”

*Islam is chairing a committee of industry, government and academic representatives to update IEEE Std 45, the standard for designing and reliably operating and maintaining electrical installations aboard ships. The updated standard should supply solutions to these operational problems. He can be reached by phone at 504-333-5004 or by e-mail at [moni.islam@ieee.org](mailto:moni.islam@ieee.org) or [mmislam183@gmail.com](mailto:mmislam183@gmail.com).*



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# GE Power Conversion's for Cruise Ships

GE's Power Conversion business announced that the latest addition to the MSC Cruises' fleet, MSC Preziosa, has completed sea trials. The ship is one of the newest cruise ships that is part of a growing global electrification trend that replaces mechanical equipment with electrical power generation and propulsion technology. Over the last year, passenger vessels have experienced a growth rate of 3.3% with 20.9 million passengers in 2012. The growth forecast for the next five years is projected to be 3% with six new ships being built per year for the next three years.

As operational costs rise and new environmental legislation is implemented, so too grows the demand for technical solutions that address both. A still emerging trend is the steady increase in the number of cruise ships utilizing pod propulsion technology. In addition, the need to reduce emissions and fuel consumption is driving ship owners and operators to specify propulsion systems that can deliver significant savings. With GE's power solutions and propulsion systems, shipowners are offered some strong advantages such as more space, less weight, improved hull efficiency, lower vibration and noise as well as reduced service costs and down time.

MSC Cruises is evidence of the global efficiency trend, having built four new ships

with STX Europe in the past four years with the most recent, MSC Preziosa; which will have an 'A' Shipping Efficiency ranking, the same as its sister ship, MSC Divina. STX Europe selected GE Power Conversion for the design, manufacturing and commissioning of the propulsion system, five generators and six thrusters for MSC Preziosa.

Built from the STX yard in Saint-Nazaire, France, MSC Preziosa is the latest ship in MSC's Fantasia class and the 12th in the MSC fleet. The vessel has successfully completed a series of sea trials including propulsion and maneuverability (speed ranges, full speed, crash stop, power plant and propulsion interactions, full/partial propulsion configurations) as well as noise and vibration measurements.

In addition, GE Power Conversion has developed transformer-less systems and variable frequency networks. Transformer-less system are induction motors with PWM converters that are lighter and take up less space to deliver power with high efficiency. Due to the variable frequency network, the propulsion chain can be driven by diesel motors that can deliver significant fuel savings. Propulsion is delivered through fully rotating pods for increased hydrodynamics and better maneuverability.

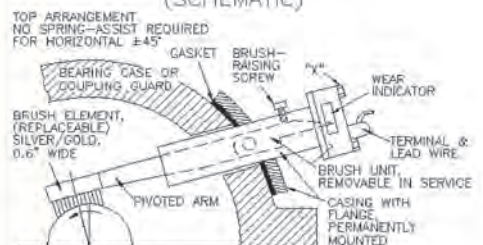


Photo credit: Bernard BIGER STX France

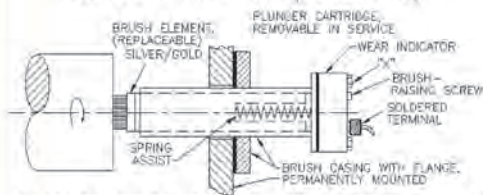
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## Jotun's SeaLion

# "World's First" Resilient Antifouling

Jotun announced the launch of SeaLion Resilient, a high performance marine coating based on epoxy-polysiloxane technology.

Following research and testing, Jotun introduced what it is calling the industry's first anti-fouling coating that includes epoxy-polysiloxane, a compound of resins and hardeners that provides highly resilient hull protection. When combined with Jotun's proven Fouling Release Coatings (FRC) technology, the epoxy-polysiloxane in SeaLion Resilient is designed to prevent settling of organisms on the hull and produces a glossy, smooth surface.

The properties of SeaLion Resilient, according to the manufacturer, significantly reduces the risk of mechanical damage and maintain hull condition throughout the service period. By simplifying maintenance and reducing need for repair, SeaLion Resilient can contribute to a reduction in off-hire time and docking and labor costs, while keeping paint consumption to a minimum.

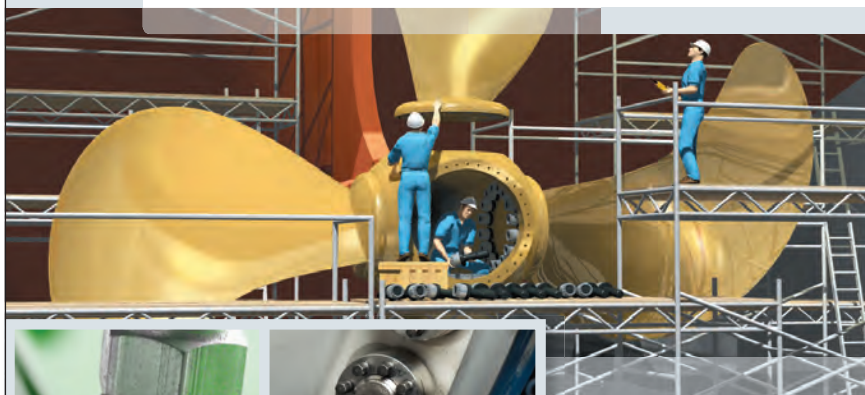
In addition to the strong coating features reducing mechanical damage, SeaLion Resilient resists fouling and provides a smooth surface that decreases drag and hence effecting carbon emissions by savings in fuel consumption.

Requiring only two coats, Sea Lion Resilient is designed to be easy to apply and cuts time spent in dock, resulting in significant savings related to maintenance and repair. SeaLion Resilient is a biocide-free coating and has low VOC emissions, making it a sustainable coating solution. The product was formally launched at the Miami Cruise Shipping Exhibition.

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The results are increases in fuel economy, fuel quality as well as reductions in emissions and equipment maintenance. Fleets of large tuna seiners (F/V Cape May, Tri Marine South Pacific fleet, pictured) as well as many independent commercial fishermen benefit from using the FFC worldwide.

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The Sea Switch Two sensor detects high, high-high, or low level in any liquid with an alarm output given by a dry contact or current loop change 6-18 mA.

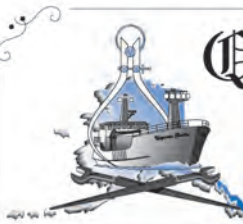
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### BallastMaster ultraV

GEA Westfalia Separator offers the BallastMaster ultraV to meet ballast water management needs. The system enables necessary cleaning processes to be carried out without introduction of chemicals and is based solely on mechanical filtration and irradiation with UVC light. The UVC lamps self-clean by means of ultrasonics and the filter is cleaned simply by suction, so the entire system works without chemicals. Consequently, no environmentally damaging by-products are produced that would require subsequent disposal. The fundamental principle behind UVC irradiation is that undesired microbes are rendered inactive. The manufacturer claims that the ease of use and the operation of BallastMaster ultraV without using hazardous materials makes it appealing for owners. The system can be flexibly adapted to meet different size requirements, it is also suitable for use in every shipping class. The modular structure of the BallastMaster ultraV it is not only suitable for fitting into new ships, but also for retrofitting.

[www.westfalia-separator.com](http://www.westfalia-separator.com)

### Speed Boat Entrapment Device

At the Home Office Security Exhibition, survival and protective equipment specialists, BCB International unveiled a device which enables security teams to intercept, entrap and disable fast vessels used in narcotics trafficking, piracy or terrorist acts without using deadly force. BCB International Ltd. developed the Buccaneer Lightweight Interceptor (BUC LWI) – a system which uses compressed air and interchangeable barrels to project floating entanglement lines and other vessel disabling projectiles.

[www.bcbinternational.com](http://www.bcbinternational.com)



## Siemens Wins Order for Two Marine PSVs

Siemens won a multimillion dollar contract by Leevac Shipyards, LLC to equip two new Aries Marine platform supply vessels (PSV) with its diesel electric propulsion solution. The two 270 ft. PSVs will be outfitted with Siemens Blue multi-drive, low-voltage system, which will be designed to improve reliability due to fail-safe features that help the vessel owner lower maintenance costs as well as increase efficiency and operational ease for the vessel and crew. Siemens will provide the main generators, main propulsion and thruster motors, switchboards, power management system and its IAS400 automation system for alarm, monitoring and control functions, in addition to a unique, fully integrated Siemens electrical FiFi 1 system. Designed by LEEVAC Design Services for Aries and certified by ABS, each PSV will be 270 x 56 ft., capable of speeds of more than 14 knots and designed to carry a variety of cargo in below-deck tanks, including large quantities of fuel, water, drilling fluids, cement or mud as well as casing, drill pipes and tubing in open-decks. The vessels are slated for delivery in September and December 2014 respectively.

## AVEVA: Integrated Steelwork and 3D Plant Design



Image: AVEVA's new business paper – 'Bolting it all together'

AVEVA released 'Bolting it all together,' the latest in its series of business papers which discusses how integrating structural steelwork and plant layout design can reduce project cost, risk and delivery time. The paper explores the considerable business advantage that EPCs and shipbuilders working on plant/offshore projects can gain by using a specialized steelwork application that can be used

efficiently within a plant design solution to support close, collaborative working through an entire design and construction project.

"Steelwork often accounts for a disproportionate level of project risk, rework and overruns in cost and delivery," said Bruce Douglas, Senior Vice-President, EDS Strategy & Marketing, AVEVA.

"It is common industry practice to subcontract steel detailing and fabrication to specialized companies, with most plant design solutions not extending to the steelwork design/fabricate/construct workflow. Communication links are therefore stretched in a process that demands close collaboration, resulting in general project inefficiency that can lead

to costly rework and program overruns." The business paper demonstrates the need for EPCs and Shipbuilders to consider solutions that enable the development of steelwork design concurrently with the rest of the layout, in a common 3D model. Efficient parallel development enables the overall design to meet essential requirements such as ease of

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construction, accessibility, space constraints and operational safety.

The business paper follows AVEVA's acquisition in May 2012 of bocad, the structural steel detailing software.

AVEVA Bocad Steel is a software solution for structural design and fabrication, serving EPC, Shipbuilders and steelwork fabrication companies with

specialized solutions for both onshore and offshore construction.

Together with AVEVA PDMS and AVEVA Outfitting AVEVA's 3D design software, it provides a collaborative working environment for the entire plant and ship design and construction project.

[www.aveva.com/boltingtogether](http://www.aveva.com/boltingtogether)

## Flir MU-Series

Flir Systems introduced the MU-Series, a thermal night vision system, a multi-sensor payload that comes standard with a cooled midwave infrared, high-resolution 640 x 512 thermal camera; reportedly the first time this technology has ever been available to private and commercial boat owners—and a high-



resolution color camera. Other payload options include a low-light black and white camera to help with low-light situational awareness and a wide field of view uncooled longwave infrared, high-resolution 640 x 480 thermal camera to maximize MU-Series' spectral range. MU-Series' midwave infrared camera cuts through particulates in the atmosphere to provide crisp thermal video, even at long range and in foul weather. Precision gyro-stabilization and electronic stabilization ensure a steady image no matter how high the swells. Featuring network-ready interfaces for easy integration, Ethernet-enabled digital video, radar slew-to-cue and Video Tracker, MU-Series is designed to help captains of large yachts, commercial blue water ships and professional first responders navigate safely.

[www.FLIR.com/MU-Series](http://www.FLIR.com/MU-Series)

## Rolls-Royce Propulsion for "Ferry of the Future"

Rolls-Royce plc signed a contract for the delivery of its Azipull propulsion and control system for the 'ferry of the future,' a new vessel which will operate on battery power alone. The vessel is being built at the Fjellstrand yard in Norway and once in service will be operated by Norwegian transport company Norled between Lavik and Oppedal.

In 2010, the Norwegian Ministry of Transport announced a tender to develop a new ferry that was 15 - 20% more energy efficient than existing vessels. The Rolls-Royce Azipull propulsion system, which uses pulling propellers as opposed to conventional azimuth thrusters will help the battery powered, aluminum catamaran meet these standards. The ferry will have a capacity of 120 cars and 360 passengers and will operate at a speed of about 10 knots, taking 20 minutes to cross between Lavik and Oppedal. The ferry will charge its lithium-ion batteries while loading or unloading cars, and overnight when moored along the quay.



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## Headhunter Completes AET Tankers Install

Headhunter, Inc., completed the installation of the company's Tidalwave HMX sewage treatment plant on the first of two specially outfitted Aframax tankers owned by AET Tanker Holdings of Kuala Lumpur, Malaysia. AET is a global leader in petroleum shipping with a fleet of more than 80 vessels. The two Aframax tankers have been chartered for 20 years to Marine Well Containment Company of Houston, Texas. The Tidalwave HMX systems are USCG-certified and BV-approved to IMO MEPC 159(55) standards.



They can process up to 50,000 gal. (187 cu. m.) per day and use flocculants, chemical oxidation, hydro-maceration and patented crossflow separation techniques to destroy influent biomass. The six-stage process provides treatment of black and gray water and a sterile effluent for disposal.

[www.headhunterinc.com](http://www.headhunterinc.com)

## ClassNK: AIP for Minimal Ballast Water VLCC Design

ClassNK granted AIP (Approval in Principle) to the MIBS (Minimal Ballast Water Ship) VLCC design developed by Namura Shipbuilding Co., Ltd. in cooperation with the Shipbuilding Research Centre of Japan.

Although the IMO's Ballast Water Management Convention has yet to enter into force, installation of ballast water treatment systems are already presenting owners with both financial and technical challenges. Namura's new MIBS VLCC design, addresses the challenges via the use of a revolutionary new hull form, which greatly reduces the amount of ballast water necessary for safe operations. The MIBS design reduces the weight of ballast water required in normal ballast conditions by around 65%, paving the way for the use of smaller ballast water treatment systems and reducing fuel consumption.

This new MIBS design builds on a previous Non-Ballast Water Ship (NOBS)

design project promoted by the Japan Ship Technology Research Association as part of a Japanese national project under the initiative of Ministry of Land, Infrastructure and Transport and supported by Japan Railway Construction, Transport and Technology Agency and The Nippon Foundation, and further de-

veloped by Mitsubishi Heavy Industries, IHI Marine United (now Japan Marine United), Shipbuilding Research Center of Japan and ClassNK. While the NOBS project succeeded in creating tanker designs which could operate without the need for ballast water, the extremely wide hull shape limited its commercial

applications. The MIBS design however, incorporates features from the NOBS design with a flatter bottom and standard breadth hull. This allows for a dramatic reduction in the amount of ballast water needed, while maintaining the dimensions of a standard VLCC.

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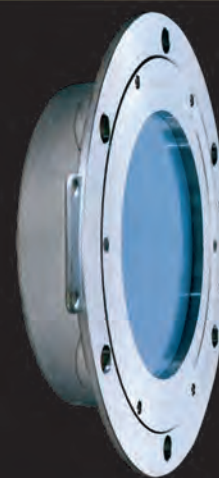
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Somerville to retire from ABS.



Meltz: 1961-2013



Markey: 1932-2013



Rising



Keenan

### Somerville Announces Retirement from ABS

Robert D. Somerville, long serving Chairman of leading classification society ABS, announced his retirement effective April 30, 2013. Under a carefully planned, two-year-long, leadership transition strategy, current President and Chief Executive Officer Christopher J. Wiernicki has been selected to assume the Chairmanship of ABS subject to final election by the Board of Directors at their next meeting on April 22, 2013.

“It is imperative that an organization of the size and complexity of ABS has a well-defined succession plan in place for all its senior executives and particularly so for the roles of Chairman, Chief Executive Officer, President and Chief Operating Officer,” said Somerville in announcing his decision to step down after 43 years of service with the society. “Over the last two years we have been implementing just such a strategy to ensure that our employees, our clients and all those who look to ABS will continue to receive a seamless and consistent development and delivery of the growing portfolio of safety-related services which we provide.”

April 30 will mark the end of an unbroken 20 years with Somerville as either President or Chairman of the society, the longest ever such period of leadership in the organization’s 151 years of existence.

Starting as a field surveyor in 1970, Somerville rose rapidly through the management structure of ABS until his election as President and Chief Operating Officer in 1993.

He followed Frank J. Iarossi as Chairman and Chief Executive Officer in 2004. In 2011 he passed the Chief Executive Officer responsibilities to Wiernicki, remaining as Executive Chairman until his retirement.

A staunch defender of classification and a strong proponent of ever higher safety standards for the shipping and offshore industries, Somerville leaves a lasting legacy not only at ABS but also through his participation at the International Association of Classification Societies (IACS).

### Obituary: Louis S. Meltz

1961 - 2013

On April 2, 2013, American Maritime Safety, Inc. (AMS) President Louis Meltz passed away, after a several-month battle with cancer. His passing was a sudden shock to friends and colleagues. Louis loved the U.S. maritime industry and the people in it. His highest praise was to describe a man or woman as loyal. And there were many whom he described in this fashion. Undoubtedly they were inspired by Louis’ own dedicated friendship. In keeping with this faith, a funeral service was scheduled for the morning of Thursday, April 4, 2013 at the Yorktown Funeral Home at 945 East Main Street, Shrub Oak, New York. AMS will hold a memorial service for Louis Meltz in conjunction with this year’s annual meeting.

After consultation with the family, those who want to express their condolences are encouraged to write a paragraph or two recounting their relationship with Louis, to be compiled by AMS into a Maritime Memory Book.

Louis is survived by three high school and middle school children.

### Obituary:

#### Michael Jean Markey

October 31, 1932 - March 2, 2013

Michael Jean Markey died peacefully at Swedish Hospital on March 2, 2013. Mike was born in Seattle, Wash., in 1932. He graduated from West Seattle High School in June 1950, and he received a Bachelor’s Degree in Engineering from Stanford University in June 1954.

In 1958, Mike joined his father, William C. Markey, at the family firm, Markey Machinery Company, Inc. in Seattle. MMCo was founded in 1907 by Mike’s grandfather, Charles H. Markey. Mike was with the company until his retirement in 1996. For many years, Mike was an enthusiastic member of the Jaguar Drivers & Restorers Club of Northwest America. He loved hiking and backpacking in the Cascade and Olympic Mountains. Mike is survived by his wife, Norma Markey; his daughter, Jocelyn Markey; his first wife, Mel McConnell; his stepdaughter, Debra Dana; his step-

son, Mark Dana; and Mark’s daughters, Rachel and Jennifer.

(Source: *The Seattle Times* 3/10/2013)

### Keenan Joins TITAN Salvage as Director of Operations

Patrick Keenan has joined the TITAN Salvage team as director of operations, bringing more than 20 years of worldwide, hands-on experience in naval architecture, marine engineering, salvage and marine pollution abatement. In his new position, Keenan will report to Managing Director Rich Habib and will be based in the company’s Pompano Beach, Fla., headquarters. TITAN is a Crowley Maritime Corp. subsidiary. Prior to joining TITAN, Keenan, who is a bilingual English-Spanish speaker, spent four years as the supervisor of salvage and diving, and director of ocean engineering for the U.S. Navy in Washington, D.C.

### Walz & Krenzer Appoints Rising, Themel

Walz & Krenzer’s Board of Directors appointed Mr. Benjamin Rising as their new President and Mr. Tom Themel as their Vice President as of March 1, 2013. Steven Shepstone, WK’s President for the past 16 years, will retain his position on the Board of Directors and will be associated with Walz & Krenzer & Mapeco Products in an engineering capacity for several more years.

### Sætre New MD Ulstein Verft

Kristian Sætre was appointed managing director of Ulstein Verft starting June 1, 2013. Sætre has 30 years’ experience in the maritime industry, working at Scana for more than 20 years, most recently as managing director for Scana Propulsion AS. Sætre is a chartered engineer from NTNU (Norwegian University of Science and Technology).

### MPT’s Beavers Appointed

Maritime Professional Training said that Amy Beavers received a federal appointment from Secretary Napolitano to serve on the Merchant Marine Personnel Advisory Committee (MERPAC). The committee advises the Secretary of

the Department of Homeland Security (DHS), via the Commandant and U.S. Coast Guard, on matters relating to the training, qualification, licensing, certification and fitness of seamen in the merchant marine. The appointment takes effect February 15, 2013, and committee members serve for three years and may be reappointed for consecutive terms. Amy is currently the Vice President of Regulatory Compliance at MPT.

### Annand Takes the Helm at Seaward Services

Seaward Services, Inc., an HMS Global Maritime (HMSGM) Corporation, said that William H. Annand has taken the helm as the company’s new President. As President of Seaward Services, Annand will head up the HMS Government Services Division of HMSGM. He will oversee and manage all contracts that involve the federal government, including the Department of Defense. Annand’s first big move was to relocate the Seaward corporate offices from Fort Lauderdale, Florida to New Albany, Indiana.

### WQIS Bolsters Executive, Support Staff

The Water Quality Insurance Syndicate welcomed new Senior Vice President, John Ryszetyk to the team. A graduate of Kings Point, The United States Merchant Marine Academy, Ryszetyk holds a USCG 3rd Mate Unlimited Tonnage License and is a former U.S. Naval Officer. This will be Ryszetyk’s second term at WQIS, having previously served as an Underwriter from 1999 to 2003. Along with Ryszetyk, two more team members are also joining the WQIS ranks: Angela Konetzni and James Q. Stevens. Konetzni, previously an Assistant Claims Manager at WQIS, has returned after a short hiatus and will be working as a consultant in the claims department. Stevens is the former head of marine insurance for Scottsdale Insurance Company and is bringing his 40+ years of experience to WQIS.

### Vitmar Yachts Takes Space in DMC

Dubai Maritime City signed a Yacht Manufacturing Workshop Lease Agree-



Sætre



DDW Chairman Khamis Juma Buamim with Sheikh Tariq Al Khalifa, President of Vitmar.



Araki



Lamor Minimax Skimmer



(L-R) Graham Skinner, Trainee Rig Manager at KCA DEUTAG Drilling was presented with the Young Professional Award and Malcolm Webb, Chief Executive of Oil & Gas UK with the Significant Achievement Award

ment with Vitmar Yachts, a custom made luxury motor yachts manufacturer, for property within its' Marine District. The agreement was signed by Khamis Juma Buamim, Chairman of Drydocks World and Sheikh Tariq Al Khalifa, President of Vitmar. Vitmar Yachts is a new brand founded by Sheikh Tariq Al Khalifa, President and Antonio Amatuzzo, CEO with the cooperation of well-known Italian designers and craft makers, and the yachts will be assembled at their workshop in Dubai Maritime City. Vitmar Yachts will produce yachts ranging from 35 to 72 meters in length.

#### KPI Bridge Oil Appoints Araki

KPI Bridge Oil appointed Araki Takano-bu as Senior Bunker Trader. Araki also has a degree from Meiji University in Political Science. Araki Takano-bu is Japanese and also speaks fluent Korean and is currently living in Singapore.

#### DNV, Statoil Cooperate in Arctic

DNV and Statoil introduced the Arctic Competence Escalator (ACE) program aimed at enhancing both organizations' knowledge about Arctic challenges. "Due to Arctic-specific risks such as remoteness, darkness, ice and low temperatures, it is utterly important to take a stepwise approach in which we learn and improve from the experience gained," said Knut Ørbeck-Nilssen, COO DNV Norway, Finland and Russia. "We will implement the ACE Program as a joint effort because we have similar ambitions and backgrounds. We have a long history of successful technology collaboration. Although this is an internal program, we aim to share our developments with the industry."

"Statoil already has many years of experience of Arctic offshore operations, for example in the Barents Sea and at Newfoundland in Canada," said Morten Karlsen, head of Statoil's Arctic Technology Research Program. "But the Arctic is a highly diverse part of the world and operating in the more challenging areas, with longer distances, lower temperatures and ice-covered waters, may require enhanced knowledge and solutions. I hope the ACE program will be an important driver in obtaining these."

#### ABB Wins \$26m Order

ABB won a \$26m order to supply electrical power and propulsion systems for two next generation 'Ramform' vessels, capable of three-dimensional (3D) seismic data acquisition for deep sea resource exploration. The ships will be built by Mitsubishi Heavy Industries, and delivered in 2015 to Norway's Petroleum Geo-Services ASA (PGS). The 'Ramform Titan-class' vessels are the newest generation in the Ramform series, featuring advanced 3D seismic data acquisition/analysis capability. At 104 m long, the ships will have an exceptionally wide breadth of 70 m and will feature diesel electric main propulsion for quiet operation. ABB will supply an advanced complete power and diesel electric system package, consisting of medium voltage switchboards including power management systems, generators, transformers, frequency converters and motors. The systems will provide reliable and fuel efficient propulsion for the ships.

[www.abb.com](http://www.abb.com)

#### Lamor Appoints Unique System

Unique System FZE was appointed as an authorized distributor of Lamor for the Middle East region for its entire range of Oil Spill Response Kits. Lamor (Larsen Marine Oil Recovery) Corporation offers solutions for optimal oil spill response and recovery. They provide expertise coupled with solutions that protect the environment and our ecosystems. The company develops, manufactures and supplies best available technology (BAT) oil spill recovery equipment and services. Included in its portfolio of solutions, Lamor offers contingency planning, risk assessments, equipment maintenance and service coupled with training.

#### Imtech Marine Appointed Reseller for Inmarsat Global Xpress

Inmarsat signed an agreement with Imtech Marine, appointing the full-service provider and systems integrator as a Value Added Reseller (VAR) for Global Xpress serving the worldwide maritime market. This follows on from a Memorandum of Understanding signed by the

two companies in 2012. Imtech Marine is a full service provider with an extensive global connectivity portfolio, which it combines with systems and services to offer ship owners a complete solution.

"We are delighted that Imtech Marine is one of the first companies to be playing a role in this pioneering maritime communications development and bringing this unique solution to customers," said Eric van den Adel, Managing Director of Imtech Marine. "As the ship becomes more like a fully integrated office, Global Xpress – with its superfast broadband capabilities - will be a vital tool.." Global Xpress will offer global superfast mobile broadband with download speeds of up to 50Mbps through a 60-100cm antenna. The Ka-band network will be designed deliver the fastest speeds through more compact terminals at a lower cost than existing VSAT services.. It will offer the global coverage with back-up from FleetBroadband.

#### Safariland Group Acquires Mustang Survival

The Safariland Group, a manufacturer of protective products and equipment primarily for law enforcement and the military, acquired Mustang Survival and its related entities, Mustang Survival Inc. and Mustang Survival Mfg., Inc. Mustang Survival is a leader in lifesaving equipment for recreational, military, law enforcement and industrial users in the marine and aviation environments.

#### Viking River Cruises Sets World Record: 10 Ships in One Day

Viking River Cruises ([www.vikingrivercruises.com](http://www.vikingrivercruises.com)) set a world record with the christening of 10 new Viking Longships. Reported to be the first-of-its-kind simultaneous christening ceremony in Amsterdam debuted the ships: Viking Aegir, Viking Atla, Viking Bragi, Viking Embla, Viking Forseti, Viking Jarl, Viking Rinda, Viking Skadi, Viking Tor and Viking Var – and was certified by a Guinness World Records adjudicator as 'The Most Ships Inaugurated in One Day by One Company' – eight\* – breaking the previous record of two ships. A first in modern history, four of the christenings took place in front of a crowd of

### Offshore Achievement Awards Presented

Offshore industry's high achievers were recognized at the 2013 Offshore Achievement Awards, with Malcolm Webb, chief executive of Oil & Gas U.K., picking up the Significant Achievement accolade. The 27th awards ceremony, which saw a record attendance of 530 guests, took place at the Aberdeen Exhibition & Conference Center and was hosted by Scottish comedian Kevin Bridges. The industry's top talent was celebrated in categories which included Great Large and Great Small Company, Safety Innovations and Emerging Technology. The awards, which were supported by main sponsor TAQA Bratani for a second consecutive year, were successfully re-launched in 2011 by the Society of Petroleum Engineers (SPE) Aberdeen section.

#### The 2013 Offshore Achievement Award winners by category are:

Significant Achievement  
Malcolm Webb, Chief Executive,  
Oil & Gas U.K.

Great Large Company Award  
Axis Well Technology

Great Small Company Award  
ROVOP

Young Professional Award  
Graham Skinner,  
KCA DEUTAG Drilling Ltd

Working Together Award  
Maersk Oil/ Technip

Export Achievement Award  
Online Electronics Limited

Safety Innovations Award  
Houlder

Innovator Award  
Red Spider Technology – JOINT WINNER  
Stork Technical Services – JOINT WINNER  
Tendeka – HIGHLY COMMENDED

Emerging Technology Award  
Web Rigging Services

approximately 700 in Amsterdam, and the remaining six were conducted live via satellite from the Neptun Shipyard in Germany.

*\* Two of the 10 Viking Longships ships to be inaugurated on March 20 entered service in the summer of 2012 without an official christening ceremony.*

#### Brazilian Navy Selects Paramarine

Paramarine marine design software, developed by QinetiQ GRC, has been selected by the Brazilian Navy for use

in the design of a specialist offshore support vessel on behalf of Petrobras. The eventual fleet of boats will be used to service Petrobras's extensive offshore oil fields. The Brazilian Navy has the largest navy in Latin America, with more 100 vessels, including an aircraft carrier, with many more in construction including nuclear submarines.

#### DSME Selects Intergraph

Daewoo Shipbuilding & Marine Engineering Company Limited (DSME)

has selected Intergraph SmartPlant Enterprise solutions for operations and maintenance data handover of the INPEX Ichthys LNG Project in Australia. INPEX, operator of the Ichthys LNG Project, had chosen Korea-based DSME to construct a giant floating production, storage and offloading (FPSO) vessel, which is worth approximately \$2 billion. INPEX specified the use of SmartPlant Enterprise solutions across all engineering disciplines for this project. DSME will implement Intergraph technology

enterprise-wide, including SmartPlant Foundation, SmartPlant Instrumentation, SmartPlant Electrical, SmartPlant P&ID, SmartPlant Reference Data and Standard Database, for the engineering, procurement, manufacturing and construction of the FPSO.

#### MECO Builds Second Shipboard Desalination System

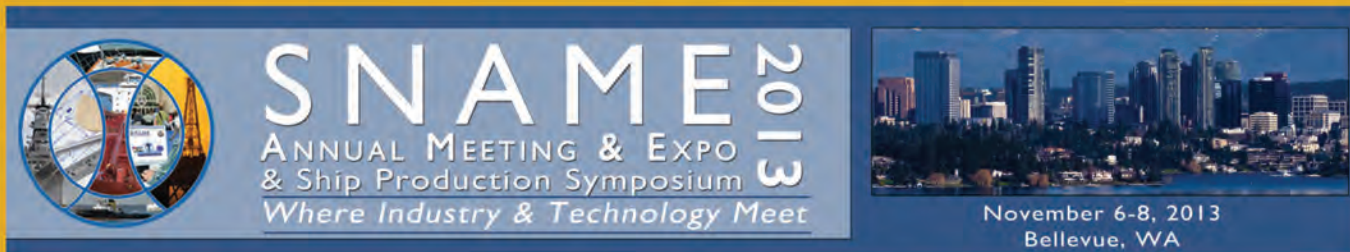
The Office of Naval Research (ONR) selected MECO to build a new prototype desalination system, the second time that ONR has turned to MECO. ONR awarded MECO the construction of a 100,000 gpd system to be demonstrated on an LHA Amphibious Assault Ship. The new system, a 4,000 gpd unit, joins the 100,000 gpd as part of multiphase ONR Future Naval Capability program aimed at introducing new desalination capabilities to the Navy fleet. The MECO plant is designed to minimize sailor intervention for operation and maintenance while improving reliability and life cycle costs for the Navy. The prototype will be demonstrated at the U.S. Navy Seawater Desalination Test Facility in Port Hueneme, California, later this year.

#### Korean Register Goes Mobile

The Korean Register of Shipping launched a new app called SMART Fleet, which is available on Android and iOS platforms that delivers up-to-the-minute information on vessels, fleets, surveys, audits, port state control and more. Two levels of information are available. The ordinary user can view basic information while companies that own or operate KR classed ships are given visibility over the full range of data. Other useful functions incorporated in SMART-Fleet include a push notification system used to receive urgent messages concerning PSC detentions and technical updates as well as a surveyor locator which uses location based services technology to identify the KR survey office nearest to the phone user.

#### Mantsbrite Wins Contract

Mantsbrite, a distributor of electronic marine navigation and communication products, won the contract to fit out the next Tidal Transit offshore wind farm personnel transfer vessel Tia Elizabeth. All the navigation and communication equipment for the first two vessels in the Tidal Transit fleet - Ginny Louise and Eden Rose - was supplied and installed by Mantsbrite, and the specification for 'Tia Elizabeth' remains unchanged with the exception of the addition of a state-of-the-art seabed monitoring system and the use of new ultra sonic wind sensors.



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## CAPSTANS

Superior-Lidgerwood-Mundy, Corp., 302 Grand Ave., Superior, WI 75024, USA, tel:(715) 394-2383, [stenerelli@lidgerwood.com](mailto:stenerelli@lidgerwood.com) contact: Sean Tenerelli, [www.lidgerwood.com](http://www.lidgerwood.com)

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Hempel A/S, Lundtoftevej 150 DK-2800 Kgs, Lyngby, tel:45 4593 3800, fax:45 4588 5518, [marine@hempel.com](mailto:marine@hempel.com)

## COMPACTORS

Compactors Inc., PO Box 3173, Hilton Head Island, SC, tel:843 686-5503, [Mike@compactorsinc.com](mailto:Mike@compactorsinc.com)

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Prime Mover Controls, 3600 Gilmore Way, Burnaby BC

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DMW Marine Group, 1123 St Matthews Rd Chester Springs PA 19425

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Superior-Lidgerwood-Mundy, Corp., 302 Grand Ave., Superior, WI B0W 2L0, USA, tel:(715) 394-2383,

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Hydrex US, 604 Druid Rd E; Clearwater, FL, USA, tel:727-443-3900 (24/7), fax:727-443-3990, [info@hydrex.us](mailto:info@hydrex.us) contact: Dave Lamon, [www.hydrex.us](http://www.hydrex.us)

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Wartsila, Ranta 2, Helsinki, tel:011 358 10 709 0000, fax:011 358 10 709 5700 contact: John Stenbergin, [www.wartsila.com](http://www.wartsila.com)

## FANS

Schaefer Ventilation, 1 Industrial Blvd. Suite 101, Sauk Rapids, MN

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Yankee Wire Cloth Products, 221 W. Main Street, West Lafayette, OH, tel:866-265-0502, fax:(740) 545-6016, [yk@yankeewire.com](mailto:yk@yankeewire.com) contact: Bill Timmons, [www.yankeewire.com](http://www.yankeewire.com)

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