

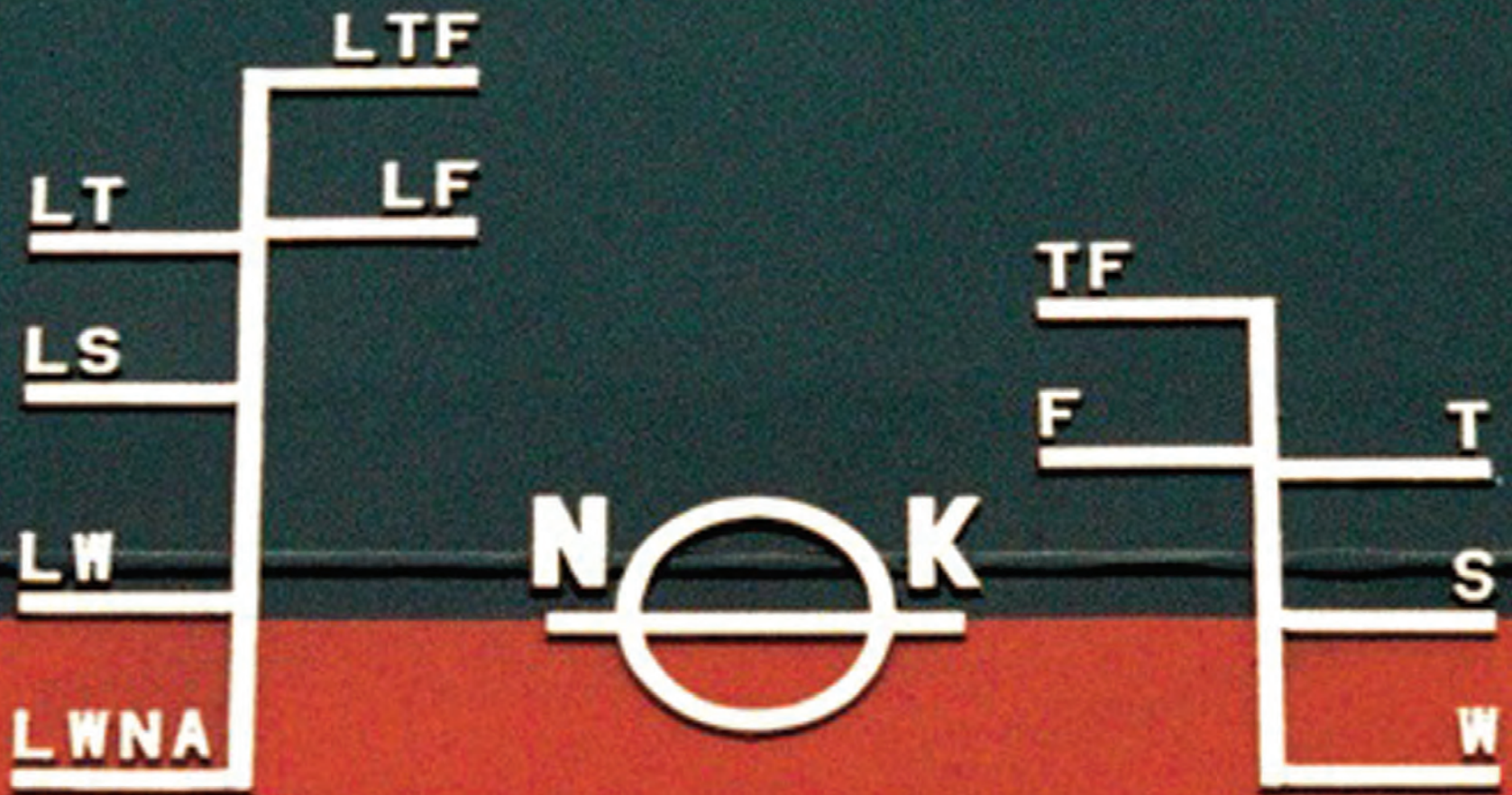
MARCH 2013

MARITIME REPORTER AND ENGINEERING NEWS

MARINELINK.COM

**ClassNK Chairman & President
Noboru Ueda discusses opportunities**

In America



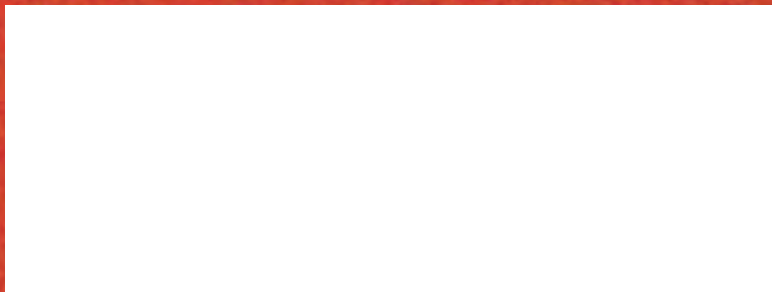
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(Image courtesy ClassNK)



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Sequestration: How will you fare?

March 1, 2013 came and went, and the dreaded U.S. government ‘sequestration’ – the plan to bring the national deficit in check via \$85B in spending cuts, cutting government spending up to 10% nearly across the board – was enacted. While the maritime sector is small in the big picture, the industry was a political football of sorts when the Navy announced earlier in the month that it would leave the aircraft carrier USS Harry Truman in port in Virginia rather than deploying it and its crew for a planned eight month tour patrolling the waters of the Persian Gulf.

On one side of the fence critics claimed the carrier was being used by the Administration for political reasons, while sacrificing national security. The other side claimed that the hundreds of millions saved by keeping the ship in port was not only an economic reality, it was a fiscal necessity.

While the debate rages on where and how the U.S. Navy should cut back, given conflicting messages from politicians, industry leaders and economists alike, it is a fair statement to say that no one really knows with any degree of certainty how lopping off of \$85B in spending will ultimately affect the U.S. economy as a whole. While harsh, sequestration is not without precedence, and at press time, negotiations continued in Washington to reverse or otherwise soften the cuts.

Regardless of the side of the fence you sit, the stark reality is that since the draw down from the U.S. Navy build up of the 1980s, there has been a protracted and indisputable loss of shipbuilding skill in the U.S. industry, both commercial and military. These cuts will only conspire to further extend the streak.

While shipbuilding is today increasingly the province of automation and heavy machinery, there remains, and always will, a substantial portion of accrued shipbuilder ‘know how’ and experience that goes into every vessel, commercial and military.

And once this experience is lost – particularly in times of economic turmoil when shipyards are forced to reduce headcount to survive and workers


are forced to find alternate occupation to keep their families afloat – it can take more than a generation to rebuild.

While much of the political focus of late has been on what is leaving America, it is worthy to note via this month’s cover focus a high profile organization that is expanding in America, Japan’s ClassNK. Led by Chairman and President Noboru Ueda, ClassNK is certainly no stranger to the U.S. market, having served here for more than 50 years. But earlier this year, the world’s largest classification society announced that it was granted expanded authorization from the USCG, enabling it to carry out a full range of surveys for the SOLAS, MARPOL and AFS conventions, as well as ISM Audits on behalf of the United States flag administration.

To best explain what this expansion means for both the classification society and the U.S. market, both blue and brown water, *Maritime Reporter & Engineering News* last month reached out to Mr. Ueda for his insights on the class society’s current course and future direction.

Finally, this month I am pleased to welcome a new face to our ever expanding columnist roster in Patrick Murphy of Clyde & Co. On a recent trip to the UAE, I was privy to a presentation by Murphy on the evolution and ever-tightening of Iranian sanctions by the international community. His presentation, as is his column starting on page 20, revolves around the basic question of “What is an Iranian person?”, particularly as it relates to the sanctions. While you may feel that this topic doesn’t pertain to you or your company, I highly suggest a thorough read of his article starting on page 20, as the information could help to save you much anguish and money.

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Chiarello

TOTE CEO to Make Keynote Address at SHIPPINGInsight 2013

Building on the success of the first SHIPPINGInsight Fleet Optimization Conference in October 2012, the co-producers have announced plans for a second conference this year, with a full slate of presentations addressing technologies, techniques and best practices for improving efficiency in ship operations.



The 2013 conference, which will take place at the Sheraton Hotel in Stamford, Conn., October 22-24, will focus largely on fuel and environmental issues, but will also address all aspects of designing, building and operating efficient ships.

“The big news in the U.S. maritime industry this year is the recent order placed by TOTE to build two revolutionary new LNG-powered containerships and convert two existing ships to LNG propulsion at

NASSCO,” Frank Soccoli, co-producer said. “We are happy to confirm that Anthony Chiarello, president and CEO of TOTE, has agreed to be the keynote speaker on the opening day of the conference. We will also have panel discussions focusing on the technical and infrastructure issues regarding the use of LNG as an alternative fuel.”

Soccoli added, “We have already signed up senior executives from leading U.S. shipping companies to serve as panel moderators and lead the discussions. They include Heidmar, NYK Line, Nordic Tankers, Roymar, Gemini Tankers and Royal Caribbean. Others are pending. We will also have expert speakers from major classification societies, U.S. Coast Guard, industry consultants and major suppliers. The speakers will focus on practical solutions and present results in the form of case studies.”

The scheduled agenda includes sessions on Meeting the Environmental Challenge, Designing for Efficiency, Fuel and Propulsion Management, System Performance Monitoring and Maintenance, Leveraging Technology for Efficiency, Managing Organizational Change, Voyage Optimization, and Ship Performance. Sponsorships and tabletop exhibits are available for companies to raise their profile at the conference.

The SHIPPINGInsight conferences are owned and produced by Rhodes Communications, Inc., an international PR and marketing company, and Soccoli Associates LLC, a maritime consultancy. Maritime Reporter and Maritime Professional are the exclusive media sponsors for the event.

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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

'Floating Toilet' Carnival Liner Raises the Lid on a Growing Problem

How big is big enough for a cruise ship, and is putting 4,000 people out to sea really worth the risk?

Nowhere in the glossy marketing brochures and sun-soaked ads promoting Carnival Cruise Lines is the Carnival Triumph described as a "floating toilet."

Yet as the stricken ship is towed into the port of Mobile, Alabama, that is what it has become, and that is the focus of media headlines. The only thing worse for the Carnival Cruise Lines public relations staff would be if a ship belonging to one of its companies sank off Italy with 32 dead. Yes, sure enough, the Costa Concordia that ran aground and capsized in January last year was operated by a subsidiary of Carnival Cruise Lines. The PR people must dream about handling traditional problems like food poisoning or long Customs delays rather than trying to function under the brutal scrutiny of the world's media.

For reporters, the passenger accounts of life on the Carnival Triumph while

under tow are harrowing and an absolute delight. No flushing toilets, using basins and showers as restrooms, or even having to go in a plastic bag. Sewage in the companionways, "liquids" seeping from walls. Wonderful stuff. Dockworkers must have been able to smell the ship long before it tied up alongside.

All facetiousness aside, at least no one died in this latest cruise ship disaster. But what the incident does is illustrate, yet again, the danger of placing so many people on a ship and sending it out to sea. After the Concordia sank, we raised the same point: No matter how well drilled the crew is, how impossibly free of panic the passengers are and how functional and accessible the lifeboats are, if a ship is going down fast it will be a monumental task to safely evacuate more than 4,000 passengers.

It would be interesting to find out whether the risk models for the large liners have a certain number of "acceptable losses" in the event of a sinking at sea.

Fortunately no one died this time around, but the ship was in a perilous position following a fire that knocked out the engine. Talk about nightmare scenarios. With no power the Carnival Triumph was at the mercy of the Gulf of Mexico swells, unable to deploy its stabilizers. Passengers have described it as listing alarmingly from time to time. Had the weather turned, the headlines would not be focusing on the toilets.

The size of ships is certain to increase in line with demand. Hong Kong's new cruise terminal opens this year, and several other ports in Asia will have ex-

panded cruise terminals, all geared to capturing rapidly growing China interest in passenger ship travel. This insatiable appetite will drive the cruise market for years, and cruise lines will keep looking at building bigger and bigger vessels. The question is how big is big enough?

Just like the growing size of container ships and bulk carriers, it is all about reducing unit cost and increasing yields. The difference is that when a passenger ship runs into disaster, the unit cost is measured in human lives.

Posted by Greg Knowler on MaritimeProfessional.com

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Damen New Deepwater AHTS Design

Damen Shipyards Group introduces its newly designed Damen AHTS 200, a versatile deepwater Anchor Handling Tug Supplier able to operate in water depths in excess of 3,000 m. The AHTS 200 is the latest addition to the ongoing Damen Offshore Series.

Following the company's ambitions to increase its market share in the offshore industry, Damen heavily invests in designing state of the art vessels for several offshore sub-markets, noticeably the offshore support, offshore wind, (seismic) research and transport & installation industries. Backed by ample R&D and engineering capacity, its own construction yards, specialized partner yards and a rapid expanding service organisation, Damen feels confident that the chosen approach will be successful. The typical Damen design philosophy, featuring values like safety, functionality, standardization, modularization, ease of maintenance and overall quality, can also be found in the Damen AHTS 200. An extensive research analysis was executed on hull optimization, sea keeping qualities, noise and vibration reduction, fuel oil consumption reduction, changing rules and regulations and client-needs and lessons-learned from other Damen designs. The Damen AHTS 200 includes a new and innovative winch arrangement which is quite decisive for the overall dimensions and layout of the vessel. For the development of this extensive winch package Damen teamed-up with Huisman Equipment (The Netherlands), which specializes in heavy lift and deepwater cranes, winches and drilling equipment. The electrically driven winches resulting from this cooperation may be considered an innovative approach, as the market is traditionally dominated by low-pressure hydraulics. The electrical-drive winches provide a clean, green, economical, functional and safe solution for the anticipated operations. The vessel is suited to generate 200-250 t Bollard Pull and is fitted with engines in a father-son layout featuring twin-in single-out gearboxes driving CP propellers in a nozzle. High performance flap-type rudders fitted to rotary vane steering gears facilitate a high degree of maneuverability supported by ample side thrust capacity, including tunnel thrusters as well as retractable thrusters in fore and aft ship.

Posted by Peter Pospiech on MaritimePropulsion.com

Analysts: Incompetent Management is

Sinking Cosco

Two years of billion dollar losses and no profitability in sight have rattled Cosco investors and may threaten the charismatic chairman's position.

In the mid-2000s, Cosco Holdings chairman Wei Jiafu was one of China's rock stars. Now irate investors want him held accountable for the mess into which China's largest shipping line has steamed headlong. In a damning article, China's respected publication Caixin Online reported that analysts believe Cosco's management to be more incompetent than the carrier cared to admit. Management has stumbled along making strategic miscalculations, bungled investments with hedging tools, long-term leases signed at the wrong time, blind expansion, the Caixin report said. Even the swiftest glance at the balance sheet will reveal a gaping hole where profitability used to be. Cosco lost almost \$1.7 billion dollars in 2011 and last year lost almost as much. Another red year will see Cosco forced to suspend trading on the Shanghai Exchange until it makes a profit, and if the carrier returns four years of losses in a row it will be delisted. **That is an almost unthinkable position for the pride of China's shipping fleet to be in.** Back in happier times, Capt Wei would swoop into conferences and take to the stage surrounded by the adoring media. (An interesting exercise would be to tally the Lifetime Achievement, Personality of the Year or Newsmaker awards he racked up while on top of the heap.)

An analyst quoted in Caixin's riveting report blames the dry bulk division of the group for much of the problem, which made up the bulk of the 2010 losses. A third of its 337 dry bulk fleet was leased, which placed an immense drag on profitability. The analysts noted that competing shipping lines with large bulk fleets posted better results. Its fellow state-owned line, China Shipping, fared better because it was big in domestic shipping. But the fleet expansion strategy was where the real damage was done. Cosco Holdings expanded blindly and did not have a long-term strategy, said yet another analyst, this one "familiar with Cosco Holdings track record", whatever that means. Contributing to the huge operating losses were the forward freight agreements, a financial derivative that has caused much pain in the shipping world. The analyst said Wei should be held accountable for that, a sentiment apparently shared by some investors. But Beijing also appears to have grown weary with the sustained losses incurred by Cosco Holdings. An internal bank document Caixin found showed that state-owned banks were told to reduce their credit line to the carrier.

Wei has reportedly appealed for a bailout from Beijing but has so far been ignored. His fall from grace now seems assured.

Posted by Greg Knowler on MaritimeProfessional.com

It's 'Hunky Dory' On Manning & Training Front

Encouraging updates from the manning and training sector in India present a healthy picture of the industry. It appears that the future is set to get brighter as was revealed in a panel discussion held under the aegis of the Company of Master Mariners of India. Participants included:

- Capt S. M. Halbe, Managing Director of Gulf Energy Maritime Services, and
- Capt Birendra K Jha, General Manager of Mitsui O.S.K. Lines Maritime (India)
- Capt K. N. Deboo, Principal of Anglo Eastern Maritime Training Center, and
- Capt C. L. Dubey, Principal of Mumbai Maritime Training Institute.

The discussions yielded some revealing facts. It was established that just finding competent people in the seafaring profession was not as vital as selecting the right people. It was underscored that training goes hand-in-hand with the selection process. There is no dearth of opportunities, and there is growth seen in manning. But the market is bad especially in the tankers segment which is seeing many vessels getting scrapped. Ship owners are looking at cost cutting. But the discussions boiled down to the main issue about whether Indian seafarers would ultimately suffer the same fate as the European seafarers who were found to be expensive to employ?

The claims generally made in regards to retention and attrition by most manning companies appears to be exaggerated, as there is a tendency to present a rosy picture to shipowners. One reason being that oil majors go by the past 10-year record and they prefer a retention rate of over 90%. As a result, shipowners are forced to retain seafarers.

Posted by Joseph Fonseca on MaritimeProfessional.com

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Monthly Change
**Secondhand
 Vessel Values**
 by Year & Size

VesselsValue.com provides data driven ship valuations for tankers, bulkers and containerships. These graphs show how vessel value depends on age for the major types. Vessels are assumed to have typical size and specification for age and high built quality at a top tier shipyard.

		VesselsValue.com												
27 February 2013		VV Mini Matrix - Monthly Change												
		Tankers					Bulkers				Containers			
Built		Vicc	Suez	Afra	LR1	MR	Cape	Pmax	Supra	Handy	Post Pmax	Pmax	Handy	Fmax
2013		↓ -1.7%	↓ -2.0%	↑ +1.0%	↑ +5.8%	↑ +2.1%	↓ -0.3%	↑ +1.2%	↓ -0.9%	↑ +0.0%	↑ +3.1%	↓ -3.9%	↓ -18.1%	↓ -17.1%
		310k	160k	110k	75k	50k	180k	80k	60k	30k	7,000	4,250	1,400	750
2008		↓ -2.0%	↓ -5.6%	↑ +0.0%	↑ +5.0%	↓ -0.4%	↓ -0.9%	↓ -2.0%	↑ +0.5%	↑ +0.0%	↑ +1.4%	↓ -5.4%	↓ -18.4%	↓ -28.0%
		310k	160k	110k	75k	50k	180k	80k	55k	30k	7,000	4,250	1,400	750
2003		↓ -1.9%	↓ -7.0%	↓ -1.2%	↑ +2.1%	↓ -1.2%	↓ -1.8%	↓ -2.1%	↓ -0.7%	↓ -1.7%	↓ -4.2%	↓ -9.4%	↓ -16.7%	↓ -30.6%
		305k	155k	105k	70k	45k	175k	75k	50k	30k	6,500	4,000	1,400	750
1998		↓ -2.2%	↓ -8.7%	↓ -3.1%	↓ -1.3%	↑ +1.0%	↓ -2.9%	↓ -2.0%	↓ -4.9%	↓ -6.0%	↓ -9.0%	↓ -14.7%	↓ -15.1%	↓ -17.1%
		300k	150k	105k	65k	45k	170k	75k	48k	30k	6,500	4,000	1,400	750
1993		↓ -2.8%	↓ -1.9%	↓ -2.4%	↓ -3.3%	↑ +7.1%	↓ -5.2%	↑ +0.0%	↓ -5.6%	↓ -8.5%	↓ -4.8%	↓ -5.3%	↓ -6.3%	↑ +5.9%
		290k	145k	100k	65k	40k	150k	70k	45k	30k	4,500	3,750	1,400	750
1988		↓ -3.0%	↓ -2.8%	↓ -2.4%	↓ -3.3%	↓ -2.3%	↓ -5.4%	↓ -3.7%	↓ -6.4%	↓ -14.3%	N/A	↓ -3.8%	↓ -3.1%	↓ -5.6%
		260k	140k	100k	65k	40k	140k	65k	42k	30k	-	3,750	1,400	750

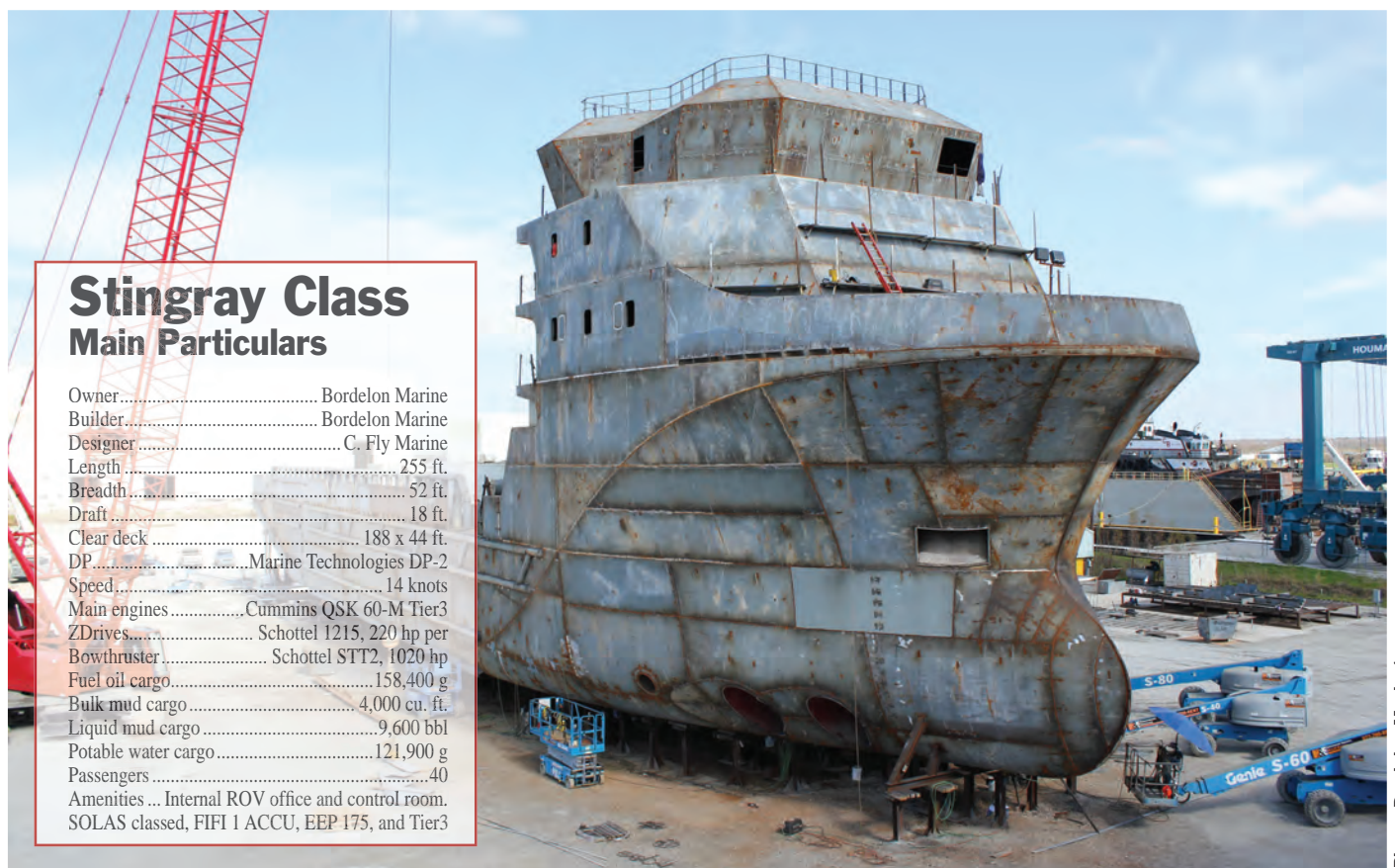
Almaritec Makes Discovery

Boat builder Almaritec launched the latest of its wind-farm support vessels (WFSV) recently for long time client North Sea Logistics. The 19m Wave Captain class boat is powered by 2 x 880 bhp Doosan engines and reaches more than 25 knots. She has demonstrated exceptional sea keeping characteristics and superb handling when approaching and pushing up on the wind turbines. Finished with the innovative 'Intersleek' paint system designed to provide fuel and environmental benefits, this state-of-the-art wind farm support vessel (WFSV) design has full suspension seating for 12 and includes a large galley and mess area as well as four day berths on the lower deck.

The 11th boat built by Almaritec for North Sea Logistics, Discovery is also hull number 150 for the Blyth based company. Managing Director Chris Millman commented, "We're delighted to hand over 'NSL Discovery' which is the latest of our builds intended to work in the growing offshore wind industry."



Bordelon Debuts "Stingray"



Stingray Class Main Particulars

Owner.....	Bordelon Marine
Builder.....	Bordelon Marine
Designer.....	C. Fly Marine
Length.....	255 ft.
Breadth.....	52 ft.
Draft.....	18 ft.
Clear deck.....	188 x 44 ft.
DP.....	Marine Technologies DP-2
Speed.....	14 knots
Main engines.....	Cummins QSK 60-M Tier3
ZDrives.....	Schottel 1215, 220 hp per
Bowthruster.....	Schottel STT2, 1020 hp
Fuel oil cargo.....	158,400 g
Bulk mud cargo.....	4,000 cu. ft.
Liquid mud cargo.....	9,600 bbl
Potable water cargo.....	121,900 g
Passengers.....	40
Amenities... Internal ROV office and control room. SOLAS classed, FIFI 1 ACCU, EEP 175, and Tier3	

Bordelon Marine introduces its first of three new Stingray class series 260-ft. DP2 PSV and MPSV – M/V Connor Bordelon – which was expected for completion at press time.

"We are very excited to introduce the new Stingray DP-2 PSV and MPSV series," said Wes Bordelon, President and CEO. "The Stingray is a prototype design that incorporates a number of cutting edge features and capabilities, only commonly found in much larger new generation vessels. The concept here is to give our clients a more affordable MPSV or light IMR/ROV support vessel option."

The Stingray class was designed to be an ROV support vessel or a light IMR vessel, according to Bordelon. "It's most

ideal function it would be a life of field deepwater production boat that has an ROV onboard and can conduct subsea intervention."

By design (C. Fly Marine, Covington, La.) the Stingray class is a small deadweight boat – about a 3,400 deadweight – which is small for that sector of the offshore market.

The 255 x 52x 18-ft. Stingray is more of a specialized support boat, with an innovative, thinner hull design to optimize speed and fuel consumption. While performance is the bottom line, according to Bordelon the comfort and amenities of crew and passengers remained a priority. The boat is near comfort class, featuring well-appointed staterooms with features

that cater to the passenger, the client and the mariner.

"We gave a lot of thought and consideration to the comfort of the Mariners, when we designed this vessel. These boats are the home away from home for our guys, and you can't expect them to be safe, smart, and productive unless they are well rested and comfortable with their surroundings. Each stateroom has a private head, individual climate controls, and TV, internet and phone connections," said Bordelon

The Stingray – built by Bordelon at its new shipyard in Houma, La. – is a specialized support boat, with an innovative, thinner hull design to optimize speed and fuel consumption.

(Photo: Bordelon Marine)

Aframax Tanker to Gulf Energy Maritime

Gulf Energy Maritime (GEM) continues to expand its fleet with the delivery of Gulf Valour, its second Aframax vessel. After two months since the delivery of Gulf Vision, its first Aframax vessel, GEM received Gulf Valour, which was also built by Samsung Heavy Industries. Standard Chartered arranged a Korean Export Credit Agency (ECA) to back the vessel's financing.

The delivery of GEM's second Aframax vessel reflects GEM's leadership of responding to the market's requirement as the industry gradually improves from the impact of the global financial crisis.

"Prior to the delivery of Gulf Vision, we have been cautious but optimistic on the tanker market. As such, we have constantly maintained our product development and offering as we aim to be a step ahead once the market stabilizes and recovers," said Ahmed Al Falahi, CEO of GEM. "It is indeed another milestone



C.H. Park, Chief Technology Officer of Samsung Heavy Industries; Ahmed Al Falahi, CEO of GEM; Captain Robert Ferguson, GEM's Head of MSEQ; and Ovijit Roy, GEM's Head of Fleet.

for GEM to receive Gulf Valour as we remain steadfast with our commitment of excellence across oceans and responsiveness to the needs of our customers and the market."

Other VIPs and dignitaries present at the ship delivery event were Captain Robert Ferguson, GEM's Head of MSEQ; Ovijit Roy, GEM's Head of Fleet; and Krunal Bhatt, Director Origination and Client Coverage of Standard Chartered Bank.

Gulf Valour, like Gulf Vision, is equipped with state-of-the-art equipment that meets all international environment safety requirements with a capacity of 114,700 DWT, capable of carrying both clean petroleum products and dirty products. Gulf Valour joins GEM's existing fleet which is currently composed of one Aframax, nine modern Panamax tankers, six MR tankers and three Handysize tankers.

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WOODWARD



Leevac Wins Deal to Build

PSV Pair for Aries Marine

Leevac Shipyards Jennings LLC, Jennings, La., signed contracts with Aries Marine, Inc of Lafayette, La., to build two Leevac Design Services (LDS) 270 DE PSV, a 270 x 56 x 21.5 ft. diesel electric Platform Supply Vessels (PSV). The LDS 270 DE PSV will have a deadweight capacity of 4000 LTsw and will carry more than 13,000 barrels of liquid mud. Each will be powered by four 3516C Caterpillar generators rated at 1825 kW each. The propulsion drives and thrusters are being provided by Schottel. Marine Interior Systems was selected for the joiner work and Marine Technologies will be providing the DP-2 system. Aries chose Siemens as the vendor for the Integrated Electrical System. The Siemens Blue Drive product will be used to control the power management, vessel control, machinery, alarms, power and propulsion systems. This will be the second vessel in which Leevac will be installing the Siemens Blue Drive system. "This LDS 270 is a very exciting vessel design which our customers will greatly value. The team at Leevac was quick and responsive. In less than 24 months, we will bring to the offshore market two extremely fuel-efficient, versatile, modern workboats. They will fit perfectly within our existing fleet and bring our total vessel count to 28-in.," said Court Ramsay, President of Aries Marine Corp. Construction for this LEEVAC design will begin immediately, with delivery for the first and second vessels slated for October 2014 and February 2015, respectively.

First of 6 ConRo's Delivered

Bahri (The National Shipping Company of Saudi Arabia) received its first newbuild Roll-on/Roll-off Container (RoCon) vessel from Hyundai MIPO on February 5, 2013, in South Korea. This is the first of six vessels that Bahri contracted Hyundai MIPO to build in order to replace the existing vessels and expand in general cargo segment.

Bahri is a shipping conglomerate specialized in the transportation of oil & gas, chemicals, general cargo and dry bulk. It also services the rapidly growing petroleum, chemical and infrastructure sectors of the Kingdom. **These new vessels are built at Hyundai's MIPO Dockyard in Korea for a price of \$70m each.**

"This is an important milestone in Bahri's history and is directly in line with our comprehensive expansion strategy in the shipping sector," said Bahri CEO, Engr. Saleh Al-Jasser. "The arrival of these new world-class vessels confirms Bahri's commitment to operational excellence and its capability to provide its service with high efficiency and strengthen its position as a leading service provider in the logistics & shipping industry."

The new RoCon vessels are specialized in carrying general and project cargo and several other types of RoRo cargo. These vessels are equipped with loading bridge with a capacity of 250 tons and heavy lift cranes with a capacity of 240 tons enabling them to load different type of goods. With deadweight of 26,000 tons each, these vessels are unique in their smaller size compared to the current fleet and have more cargo lifting capabilities with lower fuel consumption. It is estimated that these lighter weight new vessels will consume 45% less fuel thereby decreasing the fuel cost. Bahri's remaining five vessels are under construction and have planned delivery every three months until March 2014.

OW Bunker: Second Ship for GOM Bunker Ops

OW Bunker launched its second supply vessel in North America, the double-hulled Wappen von Hamburg, which will operate offshore in the Gulf of Mexico will be deployed from March 2013. Wappen von Hamburg is a 8,182 dwt vessel which has been taken on a long-term time charter. The vessel and its operators are highly experienced in offshore bunker supply. It is equipped with dedicated tanks to

provide complete segregation of low sulfur fuel oil (LSFO), heavy fuel oil (HFO), and marine gas oil (MGO). And it is truly versatile in terms of being able to supply all vessel classes, including bulkers, tankers, gas carriers as well as offshore service and supply vessels. Wappen von Hamburg will join Elisalex Schulte, operating in international waters off both the Texas and Louisiana coastlines.



WAPPEN von HAMBURG provides bunker buyers from all types of vessels in the offshore Gulf of Mexico market with a versatile fuel supply service.

Bangladeshi Shipbuilder Delivers for Denmark

Isefjord is touted by its builder as one of the most advanced ships built by a Bangladeshi shipbuilder to date. The ship is a RoRo passenger ship built by Western Marine Shipyard Ltd., a yard which has delivered eight 5,200 DWT ice class MPC ships to Germany recently and also has experience in building passenger ships, such as the passenger RoRo ships for inland use as well as a pair of passenger carriers to the Karachi Port Trust. But this is the first time Bangladesh has exported a passenger ship to the European market. Isefjord, built for Danish owner Hundested Rorvig Faergesart, will be used to carry 147 passengers and 28 vehicle units in the Danish



coastal area. The ship was delivered to her owner through a ceremony on February 6, 2013.

Isefjord is a hi-tech and fully automated ferry built under class. The vessel is fully automated, and can operate from both end having dual operating system in its bridge. Isefjord is capable of rotating 360 degree from a fixed point. Systems of the ship could also reportedly be monitored & controlled from cellular phones and laptops.

New Design for Heavy Lifter

Maritime engineering specialist HeavyLift@Sea presented the prototype draft for a heavy goods transporter. The company, headquartered in Hamburg's Hafencity and founded last year by Lars Rolner and Hendrik Gröne, is focused in the heavy goods shipping sector. With its heavy lifter HLV1600, which as a so-called multipurpose vessel can transport extremely large size part loads and bulk goods with equal ease, the engineering company is presenting its second basic design following its draft of a jack-up service vessel. Its large loading area with a capacity of 28,000 cu. m., which can be split by an intermediate deck, is designed to offer optimum conditions for transporting voluminous part load goods such as delicate windmill blades for offshore wind

plants below deck. If needed, the ship can also transport its load with open hatches. The heavy lifter is planned to have two cranes, the lifting capacity of which can be selected to suit the customer's needs. A total of 1,600 tons is possible, which means experience with the transshipment of heavy goods is required as far as operation of the ship is concerned. With its diesel engine, the ship can reach a speed of 16 knots. It is designed with a length of 169.7m, a width of 28m and payload capacity of 22,000 tons. With closed hatches, it can have a max. draft of 9m, with open hatches a maximum of 7.5m. The working deck covers an area of 3,800 sq. m. and a crew of 30 can be accommodated on the vessel.

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MLC 2006 and the U.S.

By Dennis Bryant

The Maritime Labor Convention 2006, sponsored by the International Labor Organization (ILO) and better known as MLC 2006, will enter into force on August 20, 2013. It has been ratified by 35 nations as of the date of the preparation of this article, including Australia, Canada, Denmark, Greece, Panama, Singapore and Spain. The United States has not ratified MLC 2006, and it is unclear whether it ever will – not so much as of objection to its various provisions, but more due to sheer inertia.

MLC 2006 consolidates most of the existing ILO maritime labor conventions into one coordinated document. It establishes minimum standards for such things as conditions of employment, hours of work and rest, accommodations, recreational facilities, food and catering, health protection, medical care, welfare, and social security protection.

With limited exceptions, MLC 2006 will apply to commercial vessels of a Member State, and each Member State may enforce the requirements to the Convention with regard to covered commercial vessels of other Members States that operate within its waters. Member States are obligated to implement the Convention “in such a way as to ensure that the ships that fly the flag of any State that has not ratified this Convention do not receive more favorable treatment than the ships that fly the flag of any State that has ratified it.” As a result, US-flag vessels will be subject to port state control inspections for MLC 2006 compliance when calling in the port of a State that is party to the Convention.

In an effort to minimize difficulties that might be experienced by US-flag vessels calling in ports of States that are party to MLC 2006, the US



Coast Guard proposes to establish a voluntary inspection program for such vessels so that they may document compliance with the Convention requirements. This will be accomplished by means of the Coast Guard authorizing Recognized Classification Societies (RCSs) to conduct MLC compliance examinations and to issue Statements of Voluntary Compliance (SOVC-MLC) on behalf of the US Coast Guard. The Coast Guard does not intend to conduct such MLC compliance examinations for vessels that are classed and can obtain this examination from their respective RCS. Given the current workload of the Coast Guard and its manning level, it is unlikely that the agency will conduct MLC compliance examinations for any US-flag vessels, referring them instead to RCSs.

Foreign port state control authorities are not obligated to accept an SOVC-MLC as proof of MLC 2006 compliance. Realistically, though, such Statements of Voluntary Compliance are in common usage, by the

United States and other flag states, for a number of international conventions. Thus, it is probable that port state control inspections in the ports of MLC 2006 Member States of vessels that possess a valid SOVC-MLC will be conducted as if the vessel were registered with a Member State and possessed the required MLC documents.

A commercial vessel of 500 gross tons (ITC) and above engaging on an international voyage and calling in a port of a State party to MLC 2006 is required to be in compliance with the Convention and to have on board certification that the vessel has undergone examination by its flag state authority or a RCS and found by that authority or RCS to be in compliance with applicable provisions of the Convention. A covered commercial vessel under 500 gross tons (ITC) engaging on an international voyage and calling in a port of a State party to MLC 2006 is required to be in compliance with the Convention, but is not required to have on board any particular certifi-

cation of such compliance. Certification for these smaller vessels is recommended, though, as it will reduce the likelihood that the vessel will be subjected to a detailed port state control compliance examination.

The US Coast Guard considers waters of the Great Lakes and the Strait of Juan de Fuca to be inland waters. US-flag vessels operating exclusively on inland waters are exempt from MLC 2006. Likewise, US-flag vessels are exempt from MLC 2006 if their only foreign port calls are in the ports of nations that are not party to MLC 2006. The United States is working with the Government of Canada (which is party to MLC 2006) to develop a Memorandum of Understanding (MOU) that would allow for mutual recognition of each country's national laws and regulations as providing substantial compliance with the requirements of MLC 2006. If such an MOU is consummated, it would allow vessels of less than 500 gross tons (ITC) operating between ports in Canada and the United States

to not undergo port state control inspections for compliance with MLC 2006. Such vessels would not be required to prepare and maintain a declaration of compliance and would not be issued SOVC-MLCs.

For those US-flag vessels not exempted from the requirements of MLC 2006, certain documentation will be required to demonstrate compliance. The SOVC-MLC has been discussed above. Standard A5.1.3.4 of MLC 2006 also requires covered ships to carry and maintain a Declaration of Maritime Labor Compliance (DMLC) stating the national requirements implementing the Convention for the working and living conditions of seafarers and the measures adopted by the shipowner to ensure compliance with the requirements for the ship concerned. Federal law and regulation currently addresses most, but not all, of provisions of MLC 2006 relating to working and living conditions on ships. For those few MLC 2006 provisions not addressed by federal rules (specifically Regulation 4.3 on health and safety and accident prevention and Regulation 5.1.5 regarding on-board complaint procedure), the US Coast Guard policy is to recognize the applicable standards as published in MLC 2006.

The RCS will issue, on behalf of the US Coast Guard, Part I of a Statement of Voluntary Compliance – Declaration of Maritime Labour Compliance (SOVC-DMLC Part I) for qualifying vessels. This document references current US laws and regulations for the relevant mandatory areas of compliance in MLC 2006. That is the easy task.

The more difficult task is with regard to SOVC-DMLC Part II. In accordance with Standard A5.1.3.4., Part II must indicate the measures adopted by the ship owner or operator to ensure compliance with the laws and regulations addressed in Part I. The measures adopted will likely be different for each owner or operator, but must be clearly explained for each portion of Part II. Once prepared by the owner or operator, the RCS will review the measures and, following a successful examination of the ship, will endorse Part II of the SOVC-DMLC.

Once the various SOVCs have been issued or endorsed, they must be posted on the ship in a conspicuous place accessible by the seafarers. The certificates are valid for a period not exceeding five years or until there

has been a material change in circumstances.

The US Coast Guard issued a draft Navigation and Vessel Inspection Circular (NVIC) providing guidance on implementation of MLC 2006 by US-flag vessels. It also provides sam-

ples of the various MLC certificates. Completion of the work necessary to meet these new requirements may not be easy for some vessel owners and operators as not all management procedures are fully documented at some companies. In addition, the owners

and operators must schedule examinations by their RCS in order to obtain the required certificates. Thus, it behooves all concerned to start now in order to meet the pending deadline.



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Stephen Hall,
Cathodic Protection Engineering & Design Manager, Stork Technical Services.

Cathodic Protection

Remotely Designed Solution Restores Hull Integrity

Vessels that operate across the globe in waters of varying levels of salinity and temperature are susceptible to corrosion damage. For example, localized pitting can occur on steel or aluminium hull plates and result in the complete penetration of the hull below the waterline. This can render a vessel unseaworthy, meaning it could require drydocking for unscheduled and costly maintenance.

Cathodic protection (CP) is a proven, cost-effective and efficient corrosion mitigation solution and is central to almost every hull design. With accurate datasets it is possible to predict the most likely future state of a hull's integrity, which assists with effectively planning preventative action if required. However, a number of factors impact on the effectiveness of a CP system, such as structural components, surface area and existing coatings, and as these variables can change over time, it is possible for premature corrosion to occur.

A recent example of this is when Stork Technical Services (Stork) was approached by a major subsea services provider to investigate the premature depletion of sacrificial anodes located on the hull of one of its survey vessels. A remedial design and installation plan was required within the week the vessel was dry docked for ongoing maintenance.

Developing a CP System

A CP system comprises an anti-corrosion coating and either sacrificial anodes, most commonly used subsea, or impressed current anodes with a power unit to drive them. The aim of a CP system is to polarize a structure as quickly as possible and maintain the optimum protection for the design life.

To develop an effective CP sys-



An example of a corroded prop and stern prior to a CP system installation.

tem for a hull, information and data on factors such as the sea chests and operating environment has to be analyzed and related to certified industry design standards and previous project experience.

The condition of the surface area and type of existing coatings must also be determined to calculate the required mass of the anodes, the electrical current output by the total anodes present and from each individual anode. Using this information and recommended current density values, it is then possible to develop an effective CP system based on the mass and electrical current demands.

Monitoring a Vessel's CP System

Once designed and installed, planned inspections to gather datasets are required to determine if the system has achieved its initial goal of continuously protecting the hull. For

sacrificial CP systems used below the waterline, an ROV is equipped with a multi-electrode system to measure potentials and current densities around the hull. Both the potential and current density readings taken are used in detailed analysis of the data. Anode output currents can be calculated from the readings obtained by using an appropriate mathematical model such as a modified Dwight's equation or McCoy's formulae. As the ROV survey system uses a traceable calibration source, a historic trend analysis can also be evaluated accurately and used to make meaningful predictions. All of the gathered data, along with the original design details, allow for an accurate assessment of a hull's corrosion risk and aids in planning preventative maintenance.

For vessels without ROV capabilities, an electrochemical potential survey around the hull can be carried out

using a 'dip-cell' method. This uses a standard silver/silver-chloride reference electrode which is placed close to the hull in various locations at varying depths and measured with a high input impedance voltmeter. While this method is effective it can only be used to identify CP potentials.

Monitoring the effectiveness of an ICCP system is more complex. As well as monitoring the anodes it is also essential to test the power units, stationary reference cells and other components that comprise the ICCP system to ensure it is working effectively.

Case Study: Remedial Design for Premature Hull Corrosion

Stork was contracted to review sacrificial anodes on a vessel that had suffered corrosion damage. Analysis of the data sourced regarding the previous CP system, identified the pre-

mature anode depletion was caused by an insufficient anode mass which increased the current demand required per anode. Stork was required to design a new CP system, and given the short operating window, the company took the decision to design a system remotely from Aberdeen, UK that could be assembled and installed locally using only the anodes that were readily available at the yard in West Africa.

The vessel's original CP design consisted of a sacrificial anode system in conjunction with a coating system instead of an ICCP system. To design the new system the vessel was analyzed in various categories, including the hull, rudder, nozzle, sea chests and thrusters, as each component presented a different design challenge. The possible electrical discontinuity between components meant that the CP systems on areas that were not electrically connected had to operate independently.

After considering a range of options, a conservative current density was used to allow for a more rapid breakdown in coating than normal. This decision was also influenced by the fact the vessel normally operates in warmer tropical water which can result in a higher corrosion rate.

The conservative current density employed in the design ensured that the previous high depletion rate would not occur within the system's intended design life.

CP system's based on a predominantly zinc alloy, which was designed to last for three years, and a predominantly aluminium alloy, designed to last for five years, were developed to allow the subsea services provider to draw a comparison on the most effective design based on what was available on site. The aluminium based system provides a greater current be drawn for a longer period of time per unit mass than zinc.

As well selecting the most effective materials for a CP system, the placement of the anodes is equally important to ensure that the entirety of the vessel's hull and associated components are sufficiently protected. Detailed docking plans were also developed to enable the on-site engineers to correctly position the anodes onto the ships hull for optimum efficiency.

The vessel has now been re-fitted and has returned to operational capacity. Regular dip cell potentials will be taken around the hull to monitor the effectiveness of the system and ensure

it is operating as planned.

Conclusion

With significant global demand for services such as survey, IRM and diving, vessels that are dry docked for corrosion related issues can result in

significant loss of revenue for subsea service providers. CP systems are a cost-effective corrosion mitigation solution, however, they must be designed and installed correctly to operate for the expected design life. Failure to do this can result in pre-

ature corrosion and a remedial design being required. Stork developed a CP solution remotely and within a tight operating window for a survey vessel that helped prevent any further unnecessary downtime due to a corrosion related issue.



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Kirk Rider,
Ocean Marine Director, Risk
Control, Travelers

Risk Management

Running a Tight Ship

The old expression about getting one's sea legs speaks to how different life can be in the ocean marine environment. Those who spend most of their time on land often need to adjust to the rhythms that are second nature to old sea hands.

Similarly, any company that operates both on land and water needs to adjust its risk management strategies to account for exposures in both arenas. That can range from something as simple as making sure land-based workers have the right protective equipment when they move to the waterfront, to something as complex as coordinating insurance coverage to minimize the possibility of gaps or unexpected liabilities.

By working with a knowledgeable insurance agent or broker who has experience in ocean marine exposures, companies can identify the insurance products they need and develop strong risk control practices to help keep their employees safe and their claims record clean.

Expecting the Unexpected

A marine business, whether it is a vessel operator, ship repairer or construction contractor, may have significant assets that are land-based. The company's headquarters may have employees who work at desks, or drive cars to pick up supplies, or travel to conferences to develop new business leads. Other employees may divide their time between land, waterfront and vessels. As they move back and forth, their exposure to risk and the potential liabilities for their employer can change dramatically. Companies that carry only standard property and casualty insurance may find they are facing gaps in coverage when their business operations move into the maritime world.

For example, most companies expect their state-regulated workers compensation insurance to cover employees who are injured on the job. However, if the employee is on a vessel, he or she may instead fall under the federal Jones Act, which governs the remedies for sailors who are in-

jured. And if the employee is working dockside when an accident occurs, he or she may be subject to a different federal act, the Longshore and Harbor Workers Compensation Act, which addresses injuries on navigable waters and adjoining areas. As a result, a company with only traditional workers compensation coverage may find itself exposed to unexpected liability as their employees take on different roles. Another issue is liability for what insurers call "care, custody and control" – for example, when someone has taken charge of a third party's property that subsequently becomes damaged. A traditional general liability policy may exclude coverage for care, custody and control situations, which may in turn cause a contractor to arrange for special coverage to manage those types of risks. However, the additional coverage may apply only to land-based scenarios, leaving the contractor unexpectedly exposed when a job takes him to a ship or a dock. Because of different standards, regulations and laws, it is critical that

businesses straddling the line between land and ocean marine environments have coverage that is well-coordinated for their full range of exposures. Insurance agents who are experienced in ocean marine risks and understand ocean marine products are in the best position to identify potential gaps in coverage.

Making Safety a Priority

Having the right insurance in place is important, but just as critical is creating a culture of safety that carries through with employees whether they are working on land or water. The commitment to safe practices has to begin at the top with strong policies about safety training, equipment maintenance, proper procedures and well-delineated accountability. However, employees at every level, from managers and supervisors to front-line employees, have a role to play in managing risk.

- **A culture of safety and emphasis on training.**

Taking job-site safety seriously makes sense for any business. In addition to the human costs, accidents and injuries disrupt work, delay projects and divert resources. When a company has workers that shift between land and water as they perform their tasks, it is even more critical to focus on proper training and adequate safety precautions. Companies that have vigilant safety policies and cultures clearly benefit and tend to attract top-notch employees.

- **Provide and enforce the proper use of Personal Safety Equipment**

A welder who is perfectly comfortable putting his skill to work on land may need to be reminded of special safety precautions if his project is on a barge. A flotation vest is not necessary for a welder at a workshop, but it may make the difference between drowning and surviving if the welder is knocked overboard wearing heavy boots and thick protective clothing. Along with personal responsibility, site managers must be vigilant and consistent in enforcing the use of



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safety equipment along with ensuring it is in good condition.

- **Be sure your operation is accounting for the unique characteristics of the marine environment**

For example, crane operators can encounter problems with docks or unstable soil that cannot support the weight of the crane while working ashore. Likewise, when working from a floating platform, ensuring that crane operators understand the additional effects of a floating platform upon the crane's limitation is critical.

Another example is when workers who are experienced in pouring concrete on land are faced with different conditions and safety factors when the project is a bridge footing. They may find themselves coping with unfamiliar soil conditions and working inside a cofferdam that is holding water at bay. In all of these situations and many more, the site supervisor plays a pivotal role in addressing safety. He is in a position to make the critical decisions each day about when it is safe to proceed; what equipment and safety measures need to be deployed; and which members of the team should take on each task. When a supervisor's commitment to safety is clear to every team member, workers can focus on being more productive because they have confidence they are working in a safe environment.

The Buck Stops Here

The attitude toward safety at the home office and the vigilance of the site supervisor are both important, but in the end, safety is also the personal responsibility of every worker. Employees must not only follow proper procedures, but also be alert to danger as it develops. When a business has created a culture that emphasizes safety, employees know they can speak up about unsafe conditions without fear of retaliation. They can feel comfortable about making suggestions for improving processes, and are much more likely to learn from each other's mistakes and near-misses.

Creating a culture that encourages and celebrates safe practices is not a one-and-done task. As companies seek to complete jobs and minimize overhead, safety can drop to the bottom of the priority list. To keep safe practices on everyone's radar, companies can work with their agents and brokers to tap into the expertise that their insurance company offers through risk management services.

Because insurance companies are in a position to know about both the safety procedures and accidents at a wide variety of businesses, their risk management specialists understand from a practical perspective what works well and what falls short of effectiveness. By analyzing a company's current safety strengths and

weaknesses, risk management specialists can identify key best practices that can make a difference, helping a company safeguard employees and minimize costly accidents.

Making safety a priority and having the right insurance coverage when something goes wrong should be standard operating procedures for every

business. When it comes to companies that move between land and water, however, it is important to understand how exposures and potential liabilities change. By working with experienced agents, brokers and insurance companies, a maritime business can gain the ability to run a tight ship when it comes to risk management.

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What is an “Iranian Person?”

And Why Knowing the Answer is Critical to Your Business

Patrick Murphy is a Senior Associate, Clyde & Co., based in the Dubai office, specializing in International Trade Disputes and Sanctions. He regularly advises on the application of sanctions to domestic and international traders and businesses in the Middle East, and works regularly with Clyde & Co.'s US offices on the implication of US sanctions against Iran for clients in the region.

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If you don't know the legal definition, your business could be at serious risk as the shipping industry feels force of EU sanctions against Iran



On December 23, 2012, the restrictive measures against Iran contained in Council Regulation (EU) No 1263/2012 came into force. The measures supplement those already contained in Regulation 267/2012 of March 23, 2012. While extending the restrictive measures in areas already legislated for, such as over the transfer of funds and financial services, it introduces new prohibitions which affect the shipping industry in a number of important ways. In particular, ship builders and repairers, classification societies and surveyors and charterer/operators will be affected by prohibitions against dealing with Iranian persons.

Ship Builders & Ship Repairers

The amended regulation now prohibits the direct or indirect sale, supply, transfer or export to any Iranian person, entity or body or for use in Iran of “key naval equipment or technology” for use in ship building, maintenance or refit or used in the construction of oil tankers. The equipment/technology is listed in detail in a new annex to the regulation by reference to the harmonized system code, but

includes: marine propulsion engines; outboard motors; steam turbines and parts of steam turbines for marine propulsion; ship's or boat's propellers; and direction finding compasses and other navigational instruments for use in the maritime industry.

As with previous iterations of the EU sanctions against Iran, the direct or indirect provision of technical assistance, brokering services, financing or financial assistance in relation to those goods or related to the provision, manufacture or maintenance of those goods to an Iranian person, entity or body, or for use in Iran, is also prohibited.

There are limited exceptions in respect of providing such goods to someone who is not an Iranian person, entity or body where a vessel has been forced into an Iranian port or territorial waters by reason of force majeure. There are also exceptions in respect of the provision of these goods and services until February 15, 2013 in respect of contracts concluded before December 22, 2012.

However, the effect upon the shipbuilding/repair industry could be significant. Suppliers of such goods and services who are subject to the regula-

tion will now have to conduct extensive due diligence on their customers to ensure that they are not being provided to an Iranian person, entity or body. The definition of an Iranian person, entity or body is sufficiently broad that this could be a real concern. It includes not just the state of Iran or a corporate entity registered in Iran, but also any legal person inside or outside Iran which is controlled directly or indirectly by another Iranian person. That could mean that an entity in a jurisdiction without any apparent connection to Iran, but which is controlled indirectly (perhaps through a series of offshore holding companies) by an individual or company in Iran is itself an Iranian person. The provision of any of the prohibited naval equipment/technology to that company by a person subject to the regulation would be a breach of the regulation.

EU based ship builders/repairers will need to insert detailed warranties/indemnities in their terms to ensure that any of the goods they provide are not sold or supplied on to Iranian persons by intermediaries.

Ship repairers in jurisdictions that have a close trading relationship with Iranian shipping interests will be af-

ected by these expanded sanctions, even if they are not themselves subject to the regulation. The supply of the goods in question to high risk jurisdictions, such as the UAE, are only likely to be made by EU based suppliers if the sort of warranties/indemnities referred to above are included in the relevant contractual terms. That may have a practical effect upon the ability of the shipyards to supply these goods/services even if they are not themselves subject to the regulation. It will, at the very least, cause them to be more reliant on other markets for the provision of these goods. Furthermore, any EU national employees of shipyards that provide such goods/technology or technical assistance in relation to the same will be prohibited from doing so where dealing with Iranian persons (even if the yard itself is not).

Ship Classification and Inspection/Testing

There are further restrictions imposed in the amended regulation on: the provision of ship classification services; the supervision/participation in the design/construction and repair of ships; the inspection, testing and certification of marine equipment;

The effect upon the shipbuilding/repair industry could be significant. Suppliers of such goods and services who are subject to the regulation will now have to conduct extensive due diligence on their customers to ensure that they are not being provided to an Iranian person, entity or body.

and the carrying out of surveys, audits and visits for the issuance of certain marine certificates (e.g. SOLAS certificates). The prohibitions apply when the services are provided to a vessel flying the flag of Iran or owned, chartered or operated (directly or indirectly) by an Iranian person, entity or body. The prohibition is expressed to only apply to cargo vessels and oil tankers. Full details of the prohibited services are found at article 37a of the regulation. The prohibitions apply from January 15, 2013.

The providers of any of these services will need to ensure not only that they are not providing them to a vessel which is flagged in Iran, but also that the vessel in question is not chartered or indirectly controlled by an Iranian person. Given the wide definition of “Iranian person” per above, this is again a difficult prohibition to comply with. For example, classification societies subject to the regulation would have to ensure not only that they do not class a vessel flying the flag of Iran (relatively easy to comply with) but also that they do not class vessels chartered to or managed by any person satisfying the broad definition of an Iranian person, or that vessels that are already in class are not subsequently chartered to Iranian persons. That is much more difficult for classification societies to monitor and their compliance with the regulation requires vigilance to be exercised by the owners and sub charterers of the vessel. The classification societies will have the comfort of Article 42 (2) of the regulation which provides that there is no liability of any kind on a person that did not know and had no reasonable cause to suspect that their actions would infringe the prohibitions. However, they may well also seek to include warranties in their terms and conditions that the vessel will not be sub-chartered or operated by Iranian persons. In a worse case scenario, if they ever became aware that a vessel was chartered to Iranian persons they may be forced to withdraw class. To an extent, that mirrors the approach taken by the International Group P&I Clubs in withdrawing cover to vessels carrying Iranian origin petroleum products. Owners and operators (even if they are not subject to the regulation themselves) may then in turn seek to ensure that they include terms in their charters that prohibit the sub-charter of the vessel to Iranian persons to avoid the risk that class is withdrawn from the vessel.

Provision of Tankers for the Transport or Storage of Oil/Petrochemical Products

The amended regulation also includes for the first time a prohibition against the making available of vessels designed for the transport or storage of oil/petrochemical products

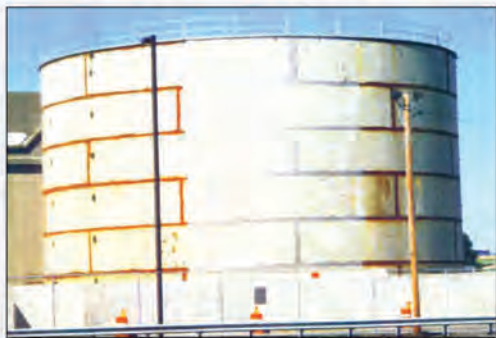
to an Iranian person, entity or body. The phrase “making available” is sufficiently broad that it would probably encompass the sale or charter of a tanker to an Iranian person as well as the brokering of a fixture of a tanker and perhaps the financing of the pur-

chase of a tanker by an Iranian person.

However, there is a further prohibition against making available a tanker to any person - not just an Iranian person - unless the provider has taken “appropriate action to prevent the ves-

(Continued on page 23)

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Ice Crushing

Propeller Dynamics



Modelled ice ridge seen from below.



When a captain of an ice-going vessel stands on the bridge looking at the enchanting world around him he wants to hear the comforting sound of ice smoothly being crushed by the heavily loaded propeller he is controlling. But the question is if the industry is ready – can our captain really enjoy his trip in ice covered waters – or is there still work to be done? Ops in the Arctic regions are intensifying as a result of more transportation through the northern route and due to increasing offshore, research and recreational activities. All these activities increase the need for more fundamental knowledge about ice loads on propulsors so better guidelines can be provided for the safe operation of ships in Arctic regions. The ice loads associated with operations in ice are fairly well documented for the Baltic Sea but for the new operational areas, such as the Polar regions, there are still many unknown factors. During the last three years the CRS working group PROPOLAR has been attempting to gain better insight into the practical operation of ice go-

ing vessels and it is investigating the fundamentals of propeller-ice interaction. The aim of the working group was to provide operational guidelines for propulsion systems and to improve the technical design guidance, specifically for azimuthing propulsors but also for propellers in general.

Podded Propulsors

Ice induced loads have been described in literature and they have been investigated in model and full scale tests but a clear definition and understanding of the most important physical phenomena are still lacking. The parameters that are most important for the dimensioning and operating of azimuthing propulsors in ice need to be better understood. At this moment, only a limited number of publications are available which relate to ice loads on an azimuthing propulsor, particularly when it comes to the pod housing.

In a bid to develop an analytical model to determine the ice loads on podded propulsors, analytical models based on the latest rules described in IACS were used. Formulations

for PODs were derived by using the scarce full-scale data available. The selected methods were coupled with the use of more detailed measurements. Naturally, it would be preferable to do these measurements at full scale but due to limitations and constraints, this is rarely achievable but model tests represent an attractive alternative. However, measuring ice impacts at model scale faces some specific challenges. To determine the ice loads on a propeller, a model test setup was designed capable of measuring the highly dynamic forces and torque in all directions. This setup has been extensively calibrated and tested in controlled conditions. Finally, the setup was used for actual ice impact measurements in cooperation with AARC of Helsinki. The AARC hi-tech ice tank was used to measure propeller-ice impacts including synchronised, high-speed video recordings, which gave a unique insight into the propeller ice contact and the corresponding loads.

Captain Interviews

In parallel, interviews with captains

of ice going vessels were done to map the major risks and challenges that are perceived and experienced by the individual operators. This helped gain insight from those with direct experience of ice operations in Russia, Finland, Sweden, the USA and the UK.

Typical topics of interest concerned the main risk elements such as voyage planning and preparation, which ship type and Ice Class is required but also the development of operational procedures for manoeuvres when operating in ice. Navigation in ice requires up-to-date information about the ice conditions, such as ice thickness and ice coverage. Modern ice-cover prediction systems, combined with satellite recordings, meteorological and oceanographic prediction models, enable optimal route planning in ice-covered regions.

The work of the PROPOLAR group is almost finished. The lessons learnt are implemented in daily routines and used to enhance research in the field of the scalability of ice failure mechanisms, as well as for the understanding of the fundamental physics of ice loads on propellers.

(Continued from page 21)

sel from being used to carry or store oil or petrochemical products that originate in Iran or have been exported from Iran." Such a broad prohibition means that it is theoretically possible for an owner to breach the regulation - even if the vessel never loads Iranian origin petroleum products - simply by failing to take "appropriate action" to prevent the carriage/storage of Iranian origin petroleum products when chartering the vessel.

There is no guidance in the regulation, or indeed from HM Treasury, as to what steps would be appropriate to avoid such a breach. Presumably at the very minimum any tanker charterparty would require the permitted cargo clause to expressly exclude oil/petrochemical products of Iranian origin or that have been exported from Iran. Ideally, the charter party would include an express prohibition on the sub-charter of the vessel on anything other than back to back terms in respect of the permitted cargos. Owners (and disponent owners in a chain of charters) would then have to exercise due diligence as far as possible to ascertain the origin of the cargo being loaded on the vessel and to refuse to comply with illegitimate orders from the charterers/sub-charterers.

Clarification on the Stemming of Bunkers of Iranian Origin

There is some good news, however, for the shipping community. The prohibition introduced in March 2012 against the transport (or the insurance of the transport) of petroleum products of Iranian origin arguably prevented the stemming of bunkers of Iranian origin by vessels entered with an International Group P&I Club.

There were concerns that P&I cover may be invalidated if a vessel stemmed bunkers of Iranian origin. Given the reasonably high probability of bunkers stemmed in Singapore or Fujairah containing fuel oil of Iranian origin, that was a significant concern for the community.

The International Group managed to obtain some non-binding clarification from HM Treasury that it was probably not the intention of the regulation to prevent the stemming of bunkers containing Iranian origin petroleum products, but without any amendment to the regulation, that guidance remained non-binding. Fortunately, the amendments to the regulation deal with this issue. The regulation has been amended to provide expressly that the prohibition against the trans-

port of Iranian petroleum products does not apply to bunkers intended for the propulsion of a vessel's engines where those bunkers are produced and supplied in a third country other than Iran. There are also exceptions allowing the purchase of bunkers in Iran or Iranian territorial waters where a

vessel has been forced into port under force majeure.

The recent amendments significantly ramp up the pressure on Iran by targeting the shipping industry in much the same way as the oil and gas industry and the insurance industry have previously been targeted.

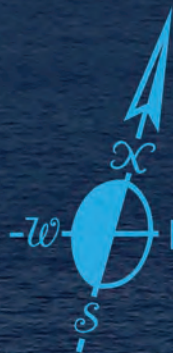
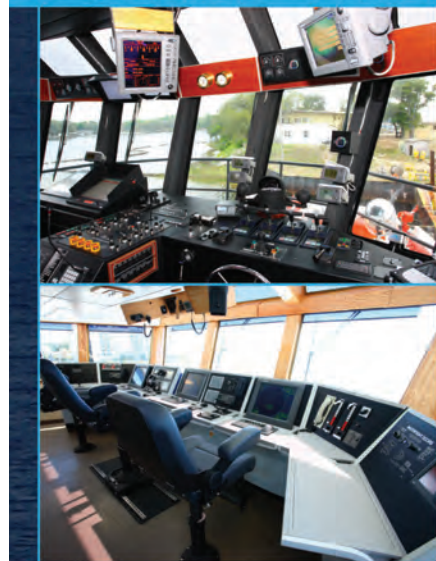
Ship repairers, classification societies and owners/operators of vessels will all need to consider their current trading contracts to ensure that they do not inadvertently either breach the regulation themselves or cause events to take place that result in the withdrawal of class.

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(Photo Credit: Flensburger)

Keel Laying of the Oceanex Connaigra, Flensburg, Germany – February 11, 2013.

Oceanex Is Building Innovation

Into Largest Canadian Flag Con/Ro Ship

By Andrew Safer

Seated at his desk with a view of St. John's harbour, Oceanex Executive Chairman Captain Sid Hynes is highlighting the innovation in the Oceanex Connaigra, Oceanex Inc.'s 210-m custom-designed container/roll on roll off (Con/Ro) ice class 1A ship that is presently coming to life in the Flensburger Schiffbau-Gesellschaft mbH & Co. (FSG) shipyard in Flensburg, Germany. According to FSG, it will be "one of the longest, most innovative, environmentally friendly, and flexible Con/Ro ferries in the world."

Following four years of study and

research, the design stage was completed. First steel was cut in October 2012, and the keel was laid on February 11, 2013. The Oceanex Connaigra will become the largest Canadian flag Con/Ro ship with its carrying capacity of 19,500 deadweight tonnes and service speed of 20 knots. It is expected to go through first-year ice in the Gulf of St. Lawrence at close to full speed. Based in St. John's, Newfoundland, Oceanex provides intermodal transportation services throughout eastern Canada and carries approximately half of all freight to Newfoundland. The fleet currently consists of Ocean-

ex Avalon (1,004 TEU LoLo), Oceanex Sanderling (1,125 TEU RoRo), and Cabot (644 TEU RoRo). The Oceanex Sanderling and the Cabot can transport trailer traffic and automobiles utilizing their RoRo decks.

To address the MARPOL Annex VI emissions regulation that will be going into effect in 2015 and to ensure the Oceanex Connaigra will be environmentally friendly, a dry scrubber air emission cleaning system designed by Couple (Germany) will be installed. The decision was made after viewing a prototype dry system in Germany. According to FSG, this

is the first shipboard dry exhaust gas cleaning system in the world. The Oceanex team decided to go this route after researching all available systems including wet scrubber systems. "We couldn't find a system that had been in operation for a year where everybody was singing its praises," said Capt. Hynes. The dry scrubber system uses pelletized hydrated lime which reacts with the sulfur, causing the sulfur to attach to the lime resulting in close to zero sulfur emissions. This technology has been applied in shore-based power stations, said Thomas Ritte, FSG's Vice President,

Sales. Because the lime is heated to such a high temperature, the oily residues and soot that are normally present in exhaust gases are burned off in the scrubber. The lime will be carried in specially designed container tanks to the ship where it will be loaded into onboard silos. From the silos, the lime is transferred to mix the exhaust gases utilizing a pneumatic control system. The amount of lime used is dependent on the fuel sulfur content. The spent lime can be used as fertilizer or in the manufacture of gypsum board. Capt. Hynes reports that DNV has classified the Oceanex Connaigra as a “clean ship”. What makes the dry scrubber system technically and economically most advantageous, said Ritte, is the power that is required mainly runs small conveyor belts and a blower, compared to pumps required by wet systems which impact the electrical balance and demand larger generators.

He adds that there are no pollutants left behind—only gypsum—compared to the sulfur-water mixture that has to then be pumped ashore. He sees this system as attractive for new builds, particularly those that will operate short-sea shipping, as the space requirement for the storage of granulate would reduce payload capacity on long voyages. To compete directly with the 53-ft. tractor trailers used in road traffic, the ship will carry all types of containers, including 20-, 40-, 48- and 53-ft. and open tops and flat decks which are 13 ft. longer, wider and 9.5 ft. high. The open top accommodates varying cargo configurations and enables efficiencies when handling unusual-shaped loads, such as pallets of lumber. The 9’ 6” high containers will be stacked four to six high on the Oceanex Connaigra. However, these specially designed units can be stacked up to 11 high as is currently being done on the Oceanex Avalon. The Oceanex Connaigra is designed such that, with respect to weather deck strength and stability, the vessel can carry up to 11,000 metric tonnes. “There won’t be navigational visibility issues,” said Capt. Hynes, “because the accommodations are forward,” adding that container ships typically carry 5,500 tons, and the average RoRo carries 2,000 to 3,000 tons. Whereas containers on conventional ships must be lashed on all voyages, due to the ship’s active and passive stabilization systems, lashing will be reduced and will only be required during periods of extreme

weather conditions. The Oceanex Connaigra is fitted with three flume tanks which are located above the weather deck aft. During periods of rough seas and high winds they will work in combination with two gyro-controlled fins to reduce ship motions.


The fins are retractable, wide and extend out 20 ft. when operational. “We hope to have the most stable platform that is reasonably possible, which will enable us to reduce lashing costs over the life of the ship,” Capt. Hynes said. “It costs a lot of money and ship time

to lash and unlash every trip. We see having stabilizers and flume tanks as a way to reduce the lifecycle costs on the ship.” FSG’s Ritte said this is the first instance of both flume tanks and stabilizers he has seen on a Con-Ro ship.

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Captain Sid Hynes

In recognition of Captain Sid Hynes' longstanding contribution to the development of the offshore industry in Newfoundland and Labrador, Noia (Newfoundland Oil and Gas Industries Association) presented him with its Outstanding Contribution Award in February 2012. In the same month, Oceanex was named one of Canada's 50 Best Managed Companies by Deloitte, CIBC, National Post, and Queen's School of Business. Capt. Hynes began his 35+ year career in the marine industry by serving as an assistant steward and, over time, by serving in senior levels onboard offshore vessels supporting early drilling operations off the coast of Labrador. He became the first Canadian Diving Support Vessel Master, served as a captain in the offshore industry for all the major oil companies, and founded Canship Limited in 1986. After a joint venture was formed with the JJ Uglund Group of Norway, he became Chairman of Canship Uglund Limited which was founded to operate three shuttle tankers

on the Grand Banks and currently operates the largest Canadian-based vessels carrying deadweight tonnage. He negotiated the only known 25-year-term labor union agreement, which covers the Hibernia shuttle tanker operations, which is currently in its eighteenth year.

In 2000, the Government of Canada appointed Capt. Hynes to manage Marine Atlantic, the largest Crown corporation in Atlantic Canada. In 2007, he led a consortium that acquired Oceanex and, in 2009, directed the formation of Oceanex Offshore which formed a joint venture with Stena Drilling PTE Limited of Aberdeen, resulting in the formation of Stena Drilling (Canada) Corp. This company provides Canadian operations personnel in support of Stena Drilling's worldwide operations.

Capt. Hynes serves as Chair of the Industry Advisory Committee of Memorial University's Fisheries and Marine Institute and is a member of the Canadian Coast Guard Marine Advisory Committee.

"It costs a lot of money and ship time to lash and unlash every trip. We see having stabilizers and flume tanks as a way to reduce the lifecycle costs on the ship."



To maximize maneuverability in port in high winds and to avoid the use—and expense—of tugs, the Oceanex team specified 8,000 horsepower spread over four thrusters to provide mechanical redundancy and reliability. "We want to be able to maneuver the ship in 30 to 35 knot winds," said Capt. Hynes who is also thinking of the confined space at the Bickerdike Terminal where Oceanex ships dock in Montreal. "We want to ensure we have control over the situation at all times." He credits FSG for their excellent detailed engineering work, assistance with the maneuverability studies regarding hydrostatics and stability modeling, and various other analyzes.

To further promote reliability, the Oceanex team specified two engines and one propeller on a single screw. "If you have a twin-screw ship and you lose an engine in a serious event, you're out of service for an extended period of time," said Capt. Hynes. He figures if one engine goes, the ship can continue on the other engine at a service speed of up to 16 knots.

There are speed limits in the St. Lawrence River, he says, adding that with a single screw, they can meet these speed limits on one engine thus saving wear and tear without giving up any rudder control. With a twin-screw ship, one engine down would cause the loss of significant maneuverability in the stern and tug support

would be required during dockings. In addition, the open water speed would likely be close to 10 to 11 knots. Reliability is paramount at Oceanex which boasts on-time performance at greater than 99%.

Stern and side ramps accommodate the RoRo traffic onboard shore gantry cranes in Montreal and Halifax, whereas the Liebherr cranes in St. John's are utilized to handle container traffic. An overhead clearance of 7.5 m inside the 12-m-wide stern door allows for the transportation of heavy loads (for example, a 300-ton load of transformers). Hoistable car decks allow for quick conversion to either automobiles or tractor trailers for optimal carrying capacity, and there is

room beneath the main deck for either three car decks or one car deck and one trailer deck. The design provides for a wide variety of different cargoes—containers, cars, trucks, trailers, and project cargo, says Ritte, who adds, "Its flexibility is quite unique."

As for the cost—in excess of \$100 million—Capt. Hynes says, "We're not looking for a cheap ship. We want the right ship. We choose to pay now in hopes we don't have to pay later. Over the long haul, we will save money." Designed to support the company's growth over the next 35 years, delivery of the Oceanex Connaigra is scheduled for October.

Oceanex Connaigra Main Particulars

Main Engines

Type..... 2 x MAN 7L 48/60 CR
 Speed..... 500 rpm
 Output..... 8,400 kW
 SFC..... 176 g/kWh @ 90% MCR

Main Gearbox

Type..... SIEMENS - FLENDER
 Input 2 x 8,400 KW @ 500 RPM
 Output..... 1 x 16,800 KW @ 98 RPM
 Ratio 5.1 : 1
 PTP..... 2 x 3,150 KW @ 1,800 RPM

Diesel Generators

Type..... 2 X MAN 8L 21/31
 Speed..... 900 rpm
 Output..... 1,760 kW

Emergency Generator

Type..... MAN 12V D2842
 Speed..... 1,800 rpm
 Output..... 620 kW

Shaft Alternators

Type..... AEM SAM SE 630 M4
 Speed..... 1,800 rpm
 Output 3, 150 kW

Main Propeller

Type..... MAN ALPHA CPP
 Blades..... 4 x Ni-Al-Br
 Diameter..... 6.7m

Side Thrusters

Type..... 4 x Wärtsilä (2 x bow & 2 x stern)
 Blades..... 4 x Ni-Al-Br
 Diameter..... 2.0M
 Output..... 1,400 kW @ 1,200 rpm

Rudder

Type..... TWISTFLOW FULL SPADE,
 WITH COSTA BULB
 Angle..... 55 degrees
 Operation..... 2 x DOUBLE ACTING
 HYDRAULIC CYLINDERS

Active Stabilizers

Type..... BLOHM & VOSS
 Size..... 10.2 sq. m.

Windlass & Winches

Type..... HATLAPA COMBINED
 AUTO SELF TENSIONING
 Capacity 200M MOORING LINE
 Tension..... 160 KN
 Speed..... 5/15/30 M/MIN

Stern Ramp

Capacity 250 T (depending on vehicle configuration)
 Length 15.7m + 3m FLAP
 Width..... 12.m
 Headroom..... 6.2m

Side Ramp

Capacity 54T
 Length 8.3m + 2.0m FLAP
 Width..... 6m
 Headroom..... 6.2m

Weatherdeck Ramp

Capacity 54T
 Length 34m
 Width..... 3.5m
 Headroom..... 5m
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ClassNK

Noboru Ueda & ClassNK Push Ahead in the United States

There has been a decided uptick in activities from Japan's ClassNK in the last 18 months, as it continues to drive its world-leading tonnage numbers ever higher. Led by Chairman and President Noboru Ueda, ClassNK has been making moves to extend its influence globally, including a big push for growth in the U.S. Maritime Reporter & Engineering News was able to visit with Mr. Ueda to discuss the society's strategy going forward.

By Greg Trauthwein, Editor

We have watched with great interest the activities of ClassNK over the past year, as it has expanded its reach into the U.S. further and continued to pass world record milestone after milestone in terms of tonnage under class. In your words, what has been the impetus for this growth in the previous 12 months?


■ In 2012, nearly 1000 vessels and more than 25 million gross tons joined the ClassNK register. Even with scrapping at an all-time high, the NK register grew by a net total of more than 16 million gross tons in 2012, a new record. Last year was without a doubt an incredible success for our society. I think that underlying that growth has been a few factors. One, we are 100% dedicated to the maritime industry. 66% of our staff are maritime surveyors, and 70% of our staff are either naval architects or mechanical engineers. At the same time, all of our R&D budget, which amounted to nearly \$60m in 2012, goes entirely to maritime related research, with the vast amount to joint research with companies from throughout the industry.

Two, ClassNK is not a business; we are a non-profit service organization dedicated to supporting the maritime industry. We don't view ourselves as being a certification business, but rather an organization dedicated to supporting the maritime industry. Our clients trust us be-

cause they know we are independent and motivated by safety, not making profits. These factors, combined with our commitment to service and technical excellence, are I think the main reasons for our success over the years, and I believe they will continue to be the source of our success in the years to come.

ClassNK is truly a global classification society with deep roots in the traditional, bluewater markets. But how does that expertise and experience translate to business opportunities in the domestic, U.S. inland trades and how will you reach those customers?

■ ClassNK has been active in the U.S. since opening our New York office in 1962. Over the past 50 years, we've built incredibly strong relationships with many American shipowners, especially in the dry bulk sector, some of which span generations. Today, we are not only the world's largest class society, we also classify some 35% of the world's bulk carriers, and so ships classed with NK already carry a large part of America's grain and coal exports. As you likely know, some 60% of America's grain and 20% of its coal are already transported on river barges, so we are familiar with the industry, and with the expansion of the Panama Canal we expect that America's brown water industry will have an even brighter future ahead of it.



“The brown water industry is incredibly important, not just to American shipping, but to the entire global maritime industry, and we expect it to become even more important in the future. In line with that importance, we are seeing an increased emphasis on professionalization, as well as reducing the human causes of accidents.”

As transporting cargo by barge is also incredibly environmentally efficient, producing just 1/15 of the emissions of rail freight, and 1/60th of commercial trucks. Brown water shipping is an industry that we whole-heartedly support.

Earlier this month, ClassNK received expanded authorization(s) from the U.S. Coast Guard. With the new inland subM rules looming on the horizon, what will be your approach to penetrating that market?

■ We actually started discussing the new regulations proposed by the USCG with some brown water owners as early as 2009, and at their request, we began looking at how we could best support the brown water industry as the rules enter effect. While we are just now in the process of expanding our operations

to deal with this demand, we realize that one very key area is going to be price. We think that safety management, like many other kinds of certification, can ultimately help reduce costs for owners and operators, but implementation does present a cost to owners. However, we hope that by offering our services in the brown water sector, we can help reduce those costs for everyone in the industry.

In a sense, ClassNK is very much like Toyota in that we have a very lean operation that is focused on providing high quality service. For example all of our surveyors are not only trained to conduct ship surveyors but also ISM, ISPS, and MLC audits. We also train all of our surveyors from around the world extensively in Japan for several months when they are hired and several times over the course of their career to ensure they can carry out their work efficiently and with

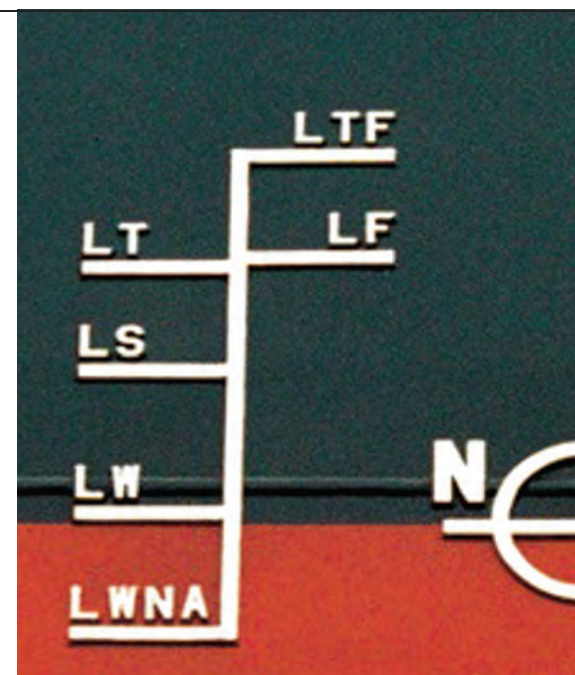
the highest quality possible. Our goal is to provide world-class quality at a reasonable price.

Equally, just by participating in the market, we can offer owners a greater range of choices, and via competition keep prices down for the entire industry. If our presence can help reduce the burden of compliance on the industry, than we consider that a success.

As you know, on the U.S. shallow draft market, the Subchapter M rules are coming and while most stakeholders have a fair idea of what the final rules will entail, no one can know for sure right now. How do you tailor a solution package in advance of that? Can anyone?

■ As I mentioned, the brown water industry is incredibly important, not

just to American shipping, but to the entire global maritime industry, and we expect it to become even more important in the future. In line with that importance, we are seeing an increased emphasis on professionalization, as well as reducing the human causes of accidents. This is already something we have addressed on the blue water side of the industry with the implementation of the International Safety Management (ISM) code. At ClassNK we not only contributed to the development of the ISM, we are also the world leader in ISM registration and audits. Each year we audit more than 5000 blue water vessels to the ISM Code, far more than any other class society, and we have an unmatched experience with safety management systems. It's that experience and understanding that we hope to offer to owners and operators on America's rivers.



ClassNK's physical footprint in the Americas is growing but will need to ramp up to meet new business requirements – additional USCG authorizations and subchapter M. How will you do that and to whom can you look for help?

■ Since first starting to discuss the new brown water regulations with tug and barge owners in 2009, we've steadily increased our resources in the U.S. and with the authorization we have received from the USCG, we can now begin to fully expand our operations to better serve the industry. We are already examining sites for new offices to better cover the Mississippi and other rivers, and hope to make some announcements regarding our expanded operations within the next month.

How has the recent global economic problems specifically impacted the business of ClassNK, and if you could,

please put in perspective the scale and scope of this downturn versus downturns in previous years.

■ I have been in the maritime industry for more than 40 years now, and so I have seen downturns like this one before. One thing that makes this downturn particularly difficult is that even as the market has faltered, fuel prices have increased, and new regulations are putting even greater pressures on owners and operators.

While this poses its own difficulties, it has also inspired us an organization. Following the crash in 2008, we realized that high costs and low revenues, combined with the burden of new regulation would place a major toll on the industry, and Joint R&D for Industry program was started in 2009 as a response. Under this program we provide research funding and support to maritime organizations in order to develop new technologies and processes to improve efficiency and re-

duce costs at all stages of a ship's life. The program has been so successful that it now accounts for more than half our R&D budget. If we can bridge the gap through technology and reduce costs for shipowners, yards and operators, we can help re-ignite growth in the industry, and that we that is an important goal.

As you reflect on the role of CLASS in general (not ClassNK specifically), there has been quite a transformation in the last decade, punctuated by the recent announcement of the merger of two major class societies. In your opinion, what do you consider to be the most positive changes in class in regards to the way in which it interacts with the industry?

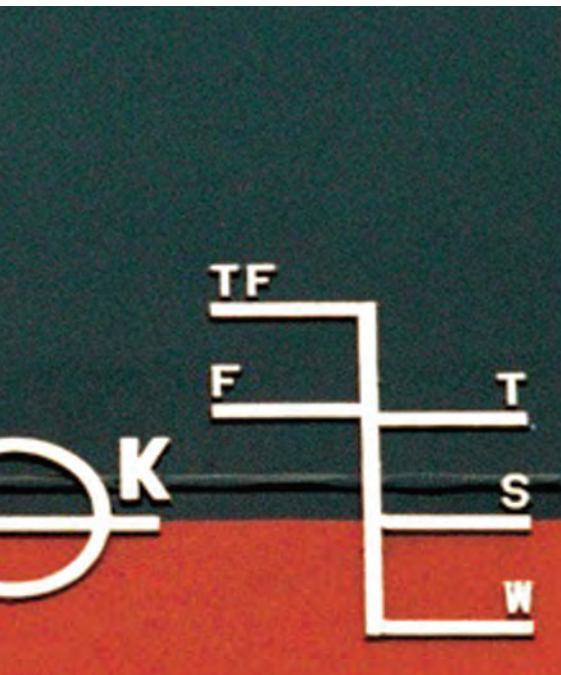
■ I think the most important change has been the success of classification societies these past few years, with some classification societies expanding far beyond just maritime. Bureau Veri-

tas for example has become a massive global organization, and maritime is one of its smaller business sectors. With the merger of DNV and GL, we are seeing the birth of another such organization. Their success and growth outside traditional ship classification is truly impressive.

For us at ClassNK, we are solely focused on the maritime industry, but we have also had enjoyed this success, becoming the first classification society in history to have more than 200 gross tons our register last year. Of course, the real beneficiary is the maritime industry. We are seeing an incredible number of new treaties and new regulations enter force, and it is classification societies that are developing the tools and technologies necessary to address these changes. We have grown to become organizations that can effectively answer the many technical challenges faced by the industry, and that is an incredible achievement.

We noted with interest of the world first "Ballast Water Management System in a Box" solution from MOL and Mitsubishi, which was classed by ClassNK. As you well know, shipowners in general feel overburdened with new rules and regulations regarding the manner in which they outfit their ship. From where you sit, as environmental regulation (and the related costs of doing business) continue to evolve, what effect(s) do you see it having on the marine industry as a whole?

■ As I mentioned above, while there are costs associated with new regulations, they can also provide owners with numerous benefits. This is especially true with regards to regulations



related to improved efficiency, which given the high cost of fuel, can have major benefits for owners and operators. In fact, one reason we have been so aggressively promoting and research new green technology is because it allows owners to reduce fuel costs and comply with environmental regulations at the same time.

Even with environmental regulation

however, we work very hard to keep costs for shipowners to a minimal. Our PrimeShip-GREEN/EEOI service, is a free web-based software tool for helping owners calculate and track their vessels efficiency and performance that is used by more than 1,500 ships.

Nevertheless, compliance with some new regulations such as the Ballast Water Management Convention do present

significant costs to owners. In the case of the containerized Ballast Water Management System project,, which was carried out as part of the Joint R&D for Industry program, this technology helps reduce the time and engineering costs related to BWMS retrofits. Another key technology we have been looking at is the use of 3-D laser scanners to help speed the retrofit process. This is a technology

that we helped introduce to the maritime industry via a pilot project with several Japanese stakeholders that is now becoming commonplace throughout the industry. In order to even further reduce the costs related to this technology, we are now also developing new software to more quickly and easily convert the data from 3-D scanners into CAD data usable by most maritime design software.

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USCG

ADM Bob Papp's Coast Guard tenure continues to be one of low profile victories, calm leadership and an emphasis on doing what is right for the Coast Guard.

By Joseph Keefe

U.S. Coast Guard Commandant Adm. Bob Papp delivered the 2013 State of the Coast Guard (SOCG) Address at the National Defense University at Fort Lesley J. McNair in Washington, D.C. on February 27. When Adm. Papp assumed command of the Coast Guard in May of 2010, he had the unenviable task of following perhaps the most charismatic leader the Coast Guard has ever had. The high profile Thad Allen, dubbed by the mainstream media as “the rock star” Commandant, also more earned his reputation by firm leadership over the course of more than one highly visible crisis after another.

Papp, like Tom Collins who had to follow another popular commandant (Jim Loy), has had to carve out his own niche in different ways. And, whereas Collins had his own cross to bear as he navigated the inauspicious beginning of the Deepwater recapitalization plan with a Coast Guard that was at that time ill-prepared to undertake that task, Papp has been faced with tackling some of the ambitious projects started by his predecessors, but never finished. That work

continues today. Those looking to Papp for fireworks and flash as he goes about his daily business will be sorely disappointed. On the other hand, if it is quiet, firm and consistent leadership that today's Coast Guard is thirsting for, then Papp has been the RX that is slowly, but surely righting a dangerously overloaded ship, while stowing all of the important gear in the right places.

Papp's latest SOCG speech was filled with nautical metaphors, but also much in the way of substance. And, reflecting the use of another federal property to deliver that message in these austere times, he also addressed the key challenges ahead for the nation's fifth, uniformed, armed service.

As the Coast Guard finally nears its departure from the tired old headquarters at the end of 2nd Street and prepares to move into its state-of-the-art, brand new digs, there are still many challenges ahead. As he promised more than two years ago, Papp has concentrated on finishing what others have started, and during his speech, he pointed to the field level reorganization efforts started by ADM Tom Collins many years ago. Papp

said, “This year we completed the field level reorganization to Sectors. The wisdom of those efforts was demonstrated during this storm (Sandy) by watching all elements of Response and Prevention and Logistics work together during our operations.” Other unfinished tasks include the continued recapitalization of the Coast guard's aging assets, the upper leadership reorganization started by Allen but never authorized by Congress and the critical need to address the growing requirement for Coast Guard presence in the Arctic.

Also, Papp outlined just a few of the many heroic and successful rescue operations undertaken by the Coast Guard during the busy previous 12 months. That said, he then cautioned his audience that good prevention is preferable to even the best response. Unspoken in all of that might just be the ongoing regulatory changes just around the corner for the industry that Papp regulates. These include the finalization of ballast water technology approvals and enforcement, the coming subchapter “M” rules for previously uninspected inland vessels and the Maritime Labor Convention (2006), which provides comprehensive rights and protection at work for the world's more than 1.2 million seafarers. Arguably, all of these are aimed at prevention, as opposed to response. Right up Papp's alley, so it would seem.

Sequestration predictably came up during Papp's remarks. And although the Commandant expressed optimism that the Coast Guard would be able to continue meeting its missions because of the service's greatest asset, its people, he also provided a small window into what could come as the shadow of sequestration looms over the entire federal budget. He said, in part, “... I am concerned that shrinking budgets have impacted our ability to hold courses, pay for travel to training and provide the necessary extra boat and aircraft hours. We must continually seek smarter, more innovative and more economical ways to provide these experiences. Our people deserve it and our service to the public demands it.” But, like his predecessor, ADM Thad Allen, who once said, “We're done doing more with less,” Papp took it a step further by declaring, “... we may be asked to do less with less.”

Papp concluded his remarks, as any career cutterman should, with a few more nautical metaphors. He said, with veiled reference to his efforts to complete the unfinished work left by previous leadership, “Our job – our mission – is to set a course for the Service. We must put our efforts into moving forward, prudently navigating towards the horizon.” Arguably, he and his subordinates are already doing just that, within the constraints of a multi-missioned, inadequately funded mandate that seems to grow with each passing day.

Three for the Money (Your money, that is)

The U.S. Coast Guard is currently bandying about three different regulatory issues, in various drafts and forms. These include the certification of ballast water treatment technologies, the final wording of the so-called “subchapter M” rules for inland vessels and now a draft NVIC circular regarding the MLC 2006 Code (which is covered in detail by Dennis Bryant this month, please see page 14). Chances are at least two out of three will cost you (a lot of) money.

Ballast Water Treatment Technology

Ballast Water Treatment and Technology in a nutshell: the IMO has enough countries but not the required percentage of the world's fleet for ultimate ratification of their rule. The USCG rules are final and in place, the discharge standards are essentially identical to IMO. The process for USCG certification of BWMS is in place but no one has yet gone through it.

When the Coast Guard's final rule on ballast water management became effective this past June, this momentous event perhaps signaled the end of one arduous journey for regulators, but the beginning of another for shipowners. The U.S. rule establishes discharge standards for living organisms which ballast water management systems (BWMS) must be able to satisfy. This so-called phase one standard closely conforms to the IMO's version, bringing the dream of global standardization one step closer. Despite delays by various governments, the IMO standard is widely expected to enter into force within the next two years.

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It is also not hard to understand why so few operators have, to date, installed BWMS on their vessels. The depressed state of global shipping markets over the past few years certainly has played a role. Not everyone has the reported average price of \$1 million per ship needed to install the systems, and those who do, are reluctant to do so until they absolutely have to. Also lurking just around the corner is the separate, but equally important U.S. Environmental Protection Agency's ongoing Vessel General Permit process, which also covers ballast water discharges. Adding to that uncertainty is the myriad of individual U.S. state mandates still in play and the specter of a stricter U.S. Coast Guard (phase II) standard. The U.S. Coast Guard's certification of BWMS can take the form of an Alternate Management System (AMS), which gives a five year temporary window for flag approved systems, or permanent type approval. USCG Type approval will require (a.) that biological laboratory testing has been done AND (b.) shipboard tests as well. Applications for approvals will take about 60 days to get a verdict. If you've passed the testing, then type approval is possible. If not, technologies will need to go the AMS route. And it is important to note that once a ballast water management system has been approved by the Coast Guard and made available for certain classes, types or a specific vessel, then vessels will no longer be able to install AMS in lieu of type approved system(s). The five-year period is designed to provide the BWMS manufacturer time to obtain USCG approval. Any vessel using an AMS must still comply with the terms and conditions of the U.S. EPA Vessel General Permit (VGP). The proposed 2013 VGP already contains discharge limits similar to the IMO D-2 standard.

The 600-pound gorilla in the room, however, is the reality that if you wait too long to decide on a system and have it installed, you could be paying double the price because manufacturing capacities can't possibly keep up with the demand of as many as 50,000 vessels all needing the systems at once. You might not be able to get the system at all.

Subchapter M Rules

Pending USCG Subchapter "M" (SubM) regulations will eventually require towing operators to implement safety standards and use safety management systems, or alternatively, allow for an annual Coast Guard inspection regime. The new rules are expected to allow towing vessel organizations to customize their approach to meeting the requirements, while providing oversight

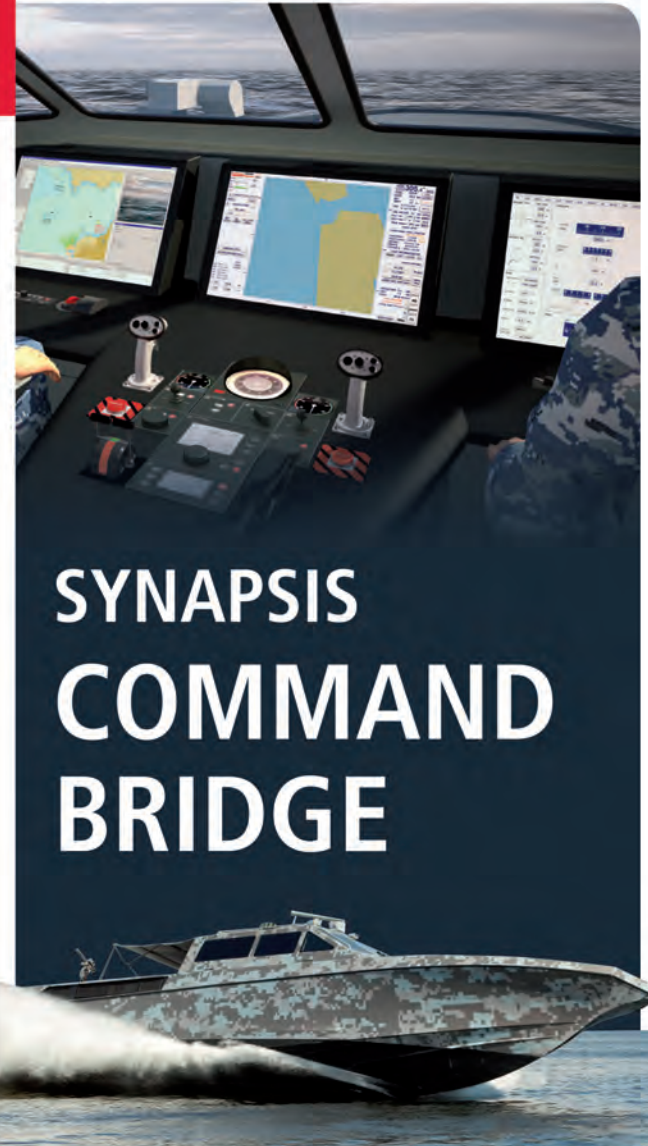
using audits, inspections, and reviews of safety data. As many as 5,000 vessels and their operators will eventually feel the impact of the so-called subchapter M rules. Today, almost 1,800 domestic towing vessels do not participate in any formal industry safety schemes.

With the final language not yet de-


termined, the ultimate cost of this far-reaching mandate is unknown. But the numbers are staggering, especially for barge companies currently operating without an existing Safety Management System (SMS) – could reach as much as \$350,000. And that number doesn't even include the cost of needed equipment

upgrades. Let's hope the Coast Guard is up to the task of facilitating competent, timely and most importantly, fair implementation of all of these new regulations. Any one of these three mandates constitutes a serious challenge for any regulatory body; all three at once will be daunting.

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Via Adaptive Learning Experience Cost-effective

Vessel Specific Training

It is difficult and expensive to do vessel-specific training well. This is probably why, unlike certification training, it is under specified, and in many cases poorly implemented - often via job shadowing. But there is a technology which is an excellent tool for vessel-specific training, and every vessel operator should be aware of it. It is called adaptive learning. This article describes adaptive learning and examines one vessel operator's deployment of it in order to facilitate vessel-specific training across its fleet of 35 vessels.

By Murray Goldberg, with contributions from Jeff Joyce



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Certification training is well defined and regulated by the STCW and the various flag state regulations. Course lists are specified, course curricula are provided and even model courses are available to guide trainers.

However, there is another training component which is arguably just as important, yet it goes largely unregulated and is only minimally specified: vessel-specific training. Broadly speaking, vessel-specific training covers the unique combination of vessel characteristics, layout, equipment, and operating procedures and routines found on a vessel.

It has always been the case that crews needed to be deeply familiar with their vessels in order to operate them safely. But in recent years this need has become much more critical and urgent in light of the continuously increasing sophistication and complexity of modern vessel-based systems. Simply knowing how to operate these sophisticated systems is not sufficient. A deeper understanding is required in order to facilitate intelligent problem solving when the systems are not behaving as expected or, worse yet, when interactions between multiple sophisticated on-board systems produce unpredictable behaviours and outcomes. Crews must be armed with the knowledge necessary to make an informed analysis and arrive at a logical decision. It is the responsibility of each vessel operator to ensure this is so. However, this is much more easily said than done.

The Problem

For vessel operators, delivering standardized, comprehensive training of each vessel's complex systems and procedures across their fleet can be a daunting task. To illustrate, let's look at an example.

Consider a vessel operator which manages 50 vessels. These vessels are never uniform. There may be five different types of propulsion systems over the 50 vessels. Bridge equipment is not uniform. Fire fighting systems differ sometimes in their type and manufacturer, and differ always in their layout and implementation. Life rafts differ, marine evacuation systems differ, ship handling differs, and even the route that the vessel is currently operating on can require different reactions to an otherwise similar situation. The fact that each vessel differs from the others in some fundamental way means that the routines and procedures on board can never truly be the same. To further complicate matters, equip-

ment, routines and training practice are all always in flux. So even if a training manual could be written for each vessel, it would be out of date in short order. So how can a vessel operator efficiently create, maintain and continuously improve a standardized, vessel-specific training program when the knowledge requirements vary so much from one vessel to another and changes and updates are an almost continuous necessity?

The answer is that many operators don't do vessel-specific training particularly well. Instead, they resort to highly imperfect techniques such as job shadowing, sometimes combined with small amounts of classroom-based training. Fortunately, the technique of adaptive learning can provide a solution.

What is Adaptive Learning?

Adaptive learning is a computer-aided training technique designed to tailor each training instance to the needs of the individual trainee.

Although this may sound complex, it can be surprisingly simple and highly effective. In general, adaptive systems "learn" about each trainee and then adapt the learning content and interaction to fit him or her.

How can this be applied to vessel-specific training? The best way to illustrate is to look at how British Columbia Ferry Systems Inc. (BC Ferries) uses adaptive learning to provide vessel- and route-specific training across its 35 vessels serving 47 ports on 25 routes.

Adaptive Learning at BC Ferries

BC Ferries is leveraging adaptive learning across all operational lines of business (Deck, Terminals, Catering, and Engineering).

Taking a deckhand as a specific example at BC Ferries, the actual knowledge required will vary tremendously depending on the vessel and route combination within which the deckhand will be working. Specifically, there are several different types of knowledge required:

- **Core knowledge:** This is also referred to as "Fleet-generic knowledge" and is the same for all deckhands at BC Ferries. This includes company vision/mission/values, deckhand core competencies, safety, security and environmental policies and information.

- **Vessel-specific knowledge:** This is the required knowledge pertaining to the vessel that the deckhand will be operating on. It includes equipment on that vessel, procedures unique to that vessel, and so on. It consists of hundreds of

pieces of knowledge, the combination of which will be unique to that vessel.

- **Route-specific knowledge:** This is the required knowledge pertaining to the route the deckhand will be operating on.

- **Vessel-Route knowledge:** This is knowledge required which is unique to the specific combination of vessel and route that the deckhand will be operating on. For example, operating procedures for the vehicle ramps at the various terminals will often differ based on which vessel is at the terminal.

Obviously for BC Ferries, as for any vessel operator, the creation and maintenance of custom training programs

for every possible combination of job position, vessel and route would not be possible as it would number in the many thousands. Even if we took routes out of the equation, the number of distinct training programs required for every combination of job position and vessel would number in the hundreds, rendering their creation and continuous improvement not financially viable.

Instead, BC Ferries uses technology to provide the necessary training resources efficiently through adaptive learning. The trainee experience is now as follows. When an employee begins his or her training, BC Ferries' learning management system (made by the company I work for) asks the employee to specify three pieces of information:

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- What position they are training for,
- What vessel they will be operating on, and
- What route they will be operating on

With the answers to the questions above, the LMS assembles the required knowledge on demand and generates a customized, up-to-date, seamless, and cohesive learning package for that employee, in that position, on that vessel, while operating on that route. The effect is as though someone created, by hand, a learning program specifically targeted for that employee. These learning materials (available online or on paper) are now used to support comprehensive vessel-specific training for that employee at BC Ferries.

The same is true for assessments. When a test is about to be administered, the LMS asks for the position, vessel and route being trained. The examination is then created on demand to address the competencies and knowledge specific to that combination.

The Advantages of Adaptive Learning

For the Learner

The advantages of adaptive learning are reasonably self-evident for the learner. He or she is provided with a learning program which is specifically targeted at the knowledge needed. It is cohesive and seamless and does not require the trainee to judge whether this or that bit of information applies to their position while on their vessel and route. It all applies. More importantly, adaptive learning makes this kind of deep vessel-specific (and route-specific, in this case) training possible where otherwise it would be a practical impossibility.

For the Training Organization (this is important ...)

The advantages to the training organization are possibly even greater. Aside from the greatest benefit of improved training, adaptive learning creates efficiencies in learning content creation and maintenance - the same ones that make vessel-specific training possible. To understand them, a small bit of background is required.

When creating learning materials for an LMS which supports adaptive learning, one "learning module" is created for every "thing" that needs to be trained. For example, if in a fleet of 50 vessels there are three different ECDIS systems, then three modules are created for ECDIS training - one for each different ECDIS system. If four different RADAR units are dispersed across the fleet, then four modules are created for RADAR - one for each unit. This is replicated for the various equipment

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and procedures which need to be taught. When these modules are entered into the LMS database, they are tagged with the positions, vessels or routes (or any combination of the above) to which they apply. Now, as described above, when a learner specifies their position, vessel and route, the LMS software gathers all the relevant learning modules and, using a “framework”, assembles them into a customized training document which can be delivered to the trainee.

Now perhaps the advantages to the training organization become more clear. First, in a fleet of 50 vessels, it is not necessary to write a separate, complete training program for each vessel. Instead, each procedure or piece of equipment to be trained is documented only once in one small module, and then that module is tagged to indicate which vessels, positions, etc. it applies to. There is no redundant work required.

More importantly, maintenance of the courses is now very manageable. If a vessel has its ECDIS machine swapped out for another, all that is required is the changing of one tag in the LMS database to indicate which ECDIS machine now applies to that vessel. From that point on, training for that vessel will encompass the correct ECDIS machine. Likewise, if the training for one procedure or one class of ECDIS machine is updated to reflect some new information or an improved training approach, only that one learning module needs to be updated, no matter how many vessels or positions that one module is relevant to. From that point on, all trainees in positions or on vessels to which that learning module applies will immediately have the improved training experience. It is in this way that deep vessel-specific training is made possible and practical by an LMS which supports adaptive learning.

The BC Ferries Perspective

Adaptive learning has been an important tool in the implementation of BC Ferries new approach to training called

the “Standardized Education and Assessment program”. According to Jeff Joyce, Director of Fleet Operations at BC Ferries:

“The Standardized Education and Assessment (SEA) program is a fundamental safety enabler from both the training and employee engagement perspectives.

Being able to easily tailor programs for each learner ensures relevant, precise and targeted teaching is taking place. This, coupled with equally surgical examination questions and processes ensures that the learner, upon successful completion of the multi-modal clearance process, is fully capable of safely carrying out his or her duties and thereby provides real value to the greater team. Viewed from a different perspective, the Master looking at his or her teams on the bridge and at the mooring stations can be confident that all deckhands who have gone through this program have had equal opportunity to learn all requisite knowledge. The larger team also collectively knows that the SEA graduates have proven to themselves and their shipmates that they have the knowledge (and equally important, the confidence) to proactively participate in all evolutions, be they routine or unforeseen.

The corollary benefit of BC Ferries SEA program, which so ably leverages adaptive learning, is that the maintenance and upkeep of the program is actually completed by the vessel subject matter experts (SMEs), thereby sustaining the engagement of these employees on the deck plates - the SMEs are enabled to keep the material relevant and then reap the rewards of their efforts by working side-by-side with their shipmates who have completed SEA training. This process of quality training material being delivered and maintained by SMEs results in confident, capable graduates. These new teammates frequently become engaged trainers themselves once they’ve honed their knowledge and skills with experience...resulting not only in an almost self-sustaining cycle of training

success, but more fundamentally, safer operations and enhanced customer service.”

Conclusion

The advantages of adaptive learning to maritime industry training cannot be overstated. Properly applied, it makes vessel-specific training not only pos-

sible, but also highly practical and sustainable where previously it was neither. Given the importance of vessel-specific training in this era of ever increasing complexity of vessel systems and procedures, this technique is one which is critically important now and will only increase in utility and applicability as time marches on.

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Murray Goldberg is CEO of Marine Learning Systems (www.MarineLS.com). An eLearning researcher and developer, his software has been used by 14 million people worldwide.

Email: Murray@MarineLS.com



Jeff Joyce is responsible for Fleet Operations and the SEA Program at BC Ferries. He is keenly interested in developing sustainable learning practices in the marine industry.

Email: Jeff.Joyce@bcferries.com

Texas A&M Trains on Latest Technology



Texas A&M students, Holly Ball and Nicholas Mogensen train with Rose Point Navigation ECS software on the bridge of the academy ship, General Rudder.

Maritime academy cadets at Texas A&M University at Galveston are training on Rose Point ECS + Inland software, allowing the academy to prepare students to use the latest technology and with the end goal to improve maritime safety as the cadets graduate to shipboard jobs.

“Rose Point ECS combines all the elements of electronic navigation, such as GPS, AIS targets and Radar into a single screen, making it easy for students to get a good grasp of situational awareness,” said Captain Jim Coonrod, academy instructor and recently retired Galveston – Texas City pilot. The Rose Point ECS voyage recording feature, often used in the field to take the guesswork out of casualty investigations, is a training tool at the academy as well. Using actual recorded voyages, Captain Coonrod said, “I can point out to my students the very real dangers facing each ship as they proceed in and out of the channel. While I could make up a scenario that might try to illustrate some of these things, a real recorded voyage carries impact that a simulation would not.”

Students can now work with up-to-date NOAA vector and raster charts for all U.S. waters as well as Army Corps of Engineers (USACE) inland river charts. Texas A&M cadets will train with the benefit of advanced AIS filtering and data integration features such as weather, tides and current, satellite and USACE overlays.



Mass Maritime's Manned Model Shiphandling Program

Nothing Beats Reality

As advances in computing power have made marine training via simulator more mainstream, the majority would contend that the most effective training is on the water, at the helm. While training on real-world vessels can be tough due to time and safety constraints, Massachusetts Maritime Academy maintains its unique solutions: the Manned Model Shiphandling Program on the Great Herring Pond.

The Manned Model Shiphandling Program at the Massachusetts Maritime Academy is unique in that it is only one of a handful in the world to offer mariner’s hands-on training courtesy of professionally built, scale models of real-world ships. But it is solely unique in one very important way.

“Ours is the only USCG Approved Manned Models course in the world,” said Captain Michael R. Burns, Jr., Director, Massachusetts Maritime Center for Maritime & Professional Training. “Students seeking to upgrade their license to a senior level can perform many of the practical assessments they need for an upper level license while attending this course.”

The Manned Model Shiphandling Program uses its fleet of four ‘ships’, including three single screw vessels and the new twin-screw tanker Boston. While the manned model program does have some limitations: namely the window of operation in the Northeast United States is middle of April through late October, and of course Mother Nature. “One of the biggest advantages is also one of the biggest drawbacks,” said Burns. “We are completely dependent on the weather. The models cannot operate in wind over

20 knots, lighting and heavy rain.”

He explained that wind affects models at a 2x scale up to 20kts, and 4x at more than 20kts, meaning that an actual 10 knot wind affects the models as a 20

Above
Latest addition to the Mass Maritime fleet, the twin-screw tanker Boston.

Below
View from the helm of Massachusetts.



knot wind affects an actual ship. When the wind increases to over 20 knots it affects the models the same way an 80 knot wind affects a ship. But it is also those very factors that make the program a vital instructive tool. According to Burns, in the last eight years only two course have been cancelled due to weather. But it is the weather itself which makes the training that much more valuable versus simulated reality. “A student seated in an actual waterborne model can feel the vessel beneath them as well as all ambient weather conditions,” Burns said. “Students must cope with whatever weather conditions are present that day, just as they would on an actual ship.”

In addition to a closer ‘real-feel’, Mass Maritime Manned Model Shiphandling Program offers something perhaps just as valuable in the mariner’s ‘time is money’ reality. “Time is compressed when using scale models, and in our case, by a factor of 4:1,” Burns said. “For example, docking evolution that would require an hour on an actual ship takes about 15 minutes on our models. Because of this phenomenon, students can accomplish many more evolutions per day than in a simulator.”

According to Burns, a growing number of our students are coming from the

The Patriot State

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 Propulsion Diesel
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Displacement15,250 Long Tons
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Displacement196,000 Long Tons
 Length 906 Ft
 Beam 173 Ft.
 Draft 55 Ft.
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 Propulsion Steam
 Propeller(s) Single, Fixed
 Bow Thruster2,000 HP, Bow & Stern

Twin Screw Tanker Boston

Scale25:1
 Displ 54,800 T
 LOA616'
 Beam106'
 Draft 36-39'
 SHP18,000
 Twin Screw, Twin Rudder
 Bow and Stern Thrusters

offshore industry where they may not have the opportunity to do much ship-handling, especially on vessels such as drill ships. "Our program provides these students with an opportunity to practice techniques that they may not otherwise get to perform in the regular jobs. They can also obtain many of the assessments that they require for license upgrade in our five-day class that they would otherwise need to spend 10 days in a simulator for."

While Mass Maritime certainly counts its unique Manned Model Shiphandling Program as a feather in its maritime education cap, it is fully cognizant and supportive of the need for simulation technologies to produce a well trained mariner. When conditions keep its vessels in 'port', training is switched to MMA's new Transas 360 degree Full Mission Ship Simulator and Tug and Tow Simulators that are available as back up for days that we are unable to use the models due to weather.

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Resolve Maritime Academy Joins Transas Get-Net

Resolve Maritime Academy joined the Transas Global ECDIS Training Network, known as Get-Net, a move Resolve sees as a significant step in the Academy's progression and growth. The academy which just opened last year and recently expanded its Fort Lauderdale, Fla., training facilities, adding a second ECDIS classroom with Transas -simulation software and Transas ECDIS to meet the high demand for Generic and Type-Specific ECDIS training. The training partnership with Transas allows it to comply with all Flag State, Port State Control and Classification Society requirements and to better serve its global client base, in time for the new ECDIS training requirement deadlines.

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The class will culminate with critical Bridge Resource Management (BRM) training on full mission ship simulators at the Maritime Simulation Institute. The BRM training will prepare NOAA Corps Officers to effectively stand their first navigation watches at sea and to respond appropriately to shipboard emer-

gencies.

“At the Maritime Simulation Institute, we train mariners to mitigate risk and navigate safely and successfully by gaining realistic, practical experience on our high fidelity ship simulators,” said Mar-



garet Kaigh Doyle, the Institute’s vice president of development. “The mariners we teach are thoroughly assessed on our simulators under a wide range of operating scenarios and environmental conditions—and as a result, they are pre-

pared when they face similar situations on the water. We are proud to offer our services to NOAA and to the important work they do.”

The professional maritime instruction will be held at both the NOAA Corps Officer Training Center located at the U.S. Coast Guard Academy in New London, Connecticut, and at the Maritime Simulation Institute’s headquarters in Middletown, Rhode Island.

The experiential simulations used by the Institute are custom tailored to meet each client’s specific training needs. The NOAA Corps Officers will not only develop their shiphandling skills; they will also be challenged in simulator-training sessions by instances of equipment failure, extreme environments, unusual navigation circumstances and other potential emergency situations.

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www.sunymaritime.edu

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tegral part of Texas A&M University at Galveston. The Corps of Cadets at Texas Maritime Academy consists of two different groups of students: The Merchant Marine Licensing program and the The NROTC College Program.

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DDW

Looking Forward to a Better Future

During the past two years Drydocks World (DDW) has suffered from the restraints of a financial problem following the purchase of one shipyard in Singapore and one on the Indonesian island of Batam (both former Pan United shipyards) and two more on Batam (both former Leroy shipyards).

This debt has now been restructured and the management of those yards has been taken over by China's Paxocean, thus leaving DDW in a much better state and looking forward to a better future.

The main yard of DDW is Drydocks World – Dubai (DDW-D), which competes in the shiprepair, conversion and newbuilding industries and, despite the introduction of two additional shipyards in the Middle East, remains the largest and most successful of the Middle East facilities.

During 2013 there will be some changes to the look of DDW-D's yard. It is intended that the newbuilding area will

be extended with a specially-designed newbuilding quay alongside the yard, where currently the floating dock is located. The floating dock will be moved to a site in Dubai Maritime City (DMC) and operate alongside another floating dock, which was formerly the Platinum Yachts floating dock located in Jebel Ali. At the end of the newbuilding quay there will be a number of lay-by berths available for jack-up rigs.

On the conversion side of DDW-D's activities, there are currently two major projects coming to fruition. The first is the FLNG Toscana, formerly the LNG tanker Golar Frost, which is now completed as far as the shipyard is concerned. She is currently undergoing owner's commissioning tests prior leaving the Middle East for Italy and installation at a terminal offshore Livorno, Italy. The unit will be owned by OLT Offshore and operated by Saipem. She will eventually leave Dubai during the first quarter of 2013.

This is one of the most sophisticated conversion projects carried out by the shipyard. The scope of work for the shipyard included:

- Detailed Engineering: – complete turret construction methodology worked out by the Yard's engineers so there was no damage to the Inconel cladding of the turret bearings. In addition the 2,000 tonnes re-gasification module T-16 was an engineering challenge to lift and install on-board.

- Procurement: – with restrictions to sourcing the material required for the various grades of piping, mainly Cunifer and Cryo and the stringent MED and 3.2 certification requirements - an on-going challenge.

- Construction: - the project included routine complex work as part of the scope related to topsides such as the fabrication and installation of the 600 tonnes, 25 m high external turret and turret mooring system, installation of the four prototype loading arms weighing

75 tonnes each, and lifting, installing and tie-ins for the 2,100 tonnes re-gasification T-16 and the 400 tonnes T-20 wobble index modules, installation and tie-ins for the two 10,000 kW STGs and installation of the unique articulated-type vent tower are other significant firsts. In all 97,272 inch-diameter of piping, including exotic material for cryogenic piping and over 320 kms of cable pulling was completed for the project. Extensive piping fabrication work including stainless steel piping for the handling of LNG cargo at -163 degreeC, and insulating with PUF type material was carried out. Major vessel and topside work carried out included chain table replacement for the turret mooring system, side-by-side berthing mooring system installation, modification of cargo pump tower internal structure and installation of retractable cargo pumps, installation of the pipe rack module, product sea water systems piping with diameters up to 132 cm. Total steel tonnage fabricated and installed

for vessel conversion was 4,400 tonnes and was compliant with the highest quality standards in the maritime industry.

- Pre-commissioning and assistance to final commissioning: - Final commissioning of the newly-installed HVAC system was completed by the yard and sub-contractors. In addition the yard has provided support to the client for other commissioning work such as the cool-down of cryogenic piping, boiler flash-up, performance trial run of power generators, harbour acceptance test of aft thruster and leak test of the natural gas piping.

All of this work was completed consuming 9.57 million man hours with only three LTIs. It is expected that a total of 9.59 million man hours will be consumed by the time of project completion.

The second project involves two 120,000 dwt tankers, the Eagle Texas and the Eagle Louisiana, owned by Singapore's AET Shipmanagement and being converted by DDW-D to become Modular Capture Vessels (MCVs) for use in emergency oil spills in the Gulf of Mexico.

Both vessels were newbuildings from Japan's Tsuneishi Shipyard. Following



the Deepwater Horizon disaster, it was decided by Marine Well Containment Co (MWCC), which is a collaboration of some 10 oil majors, that this concept would be available in times of such emergencies. The MCV would be able, in cases such as the Deepwater Horizon, to capture the oil from the seabed area

thus preventing the kind of environmental disaster seen two years ago.

Some of the modules for this concept will be placed on-board in Dubai with more awaiting the ships' arrival in the Gulf of Mexico. Both tankers will operate as normal lightening vessels in the Gulf of Mexico with the modules being

made available to load on-board immediately when an oil spill disaster is apparent. These are the first ships to be used in this type of concept, and DDW-D are expecting that more will follow, not just for the Gulf of Mexico, but for others areas worldwide. DDW-D has carried out some 27 conversion projects over recent



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Drydocks World, after the naming ceremony held by OLT LNG Offshore Toscana last month, said that the FSRU Toscana conversion project at the Dubai based shipyard is going to be finalized. The Floating Storage and Re-gasification Unit is intended for a 20 year design life 12nm off the shores of north-west Italy, in the waters of the Tyrrhenian Sea close to Livorno. The Liquefied Natural Gas (LNG) carrier Golar Frost, a 2004 Korean built 288.6 x 48 m vessel with a design draft of 11m and lightweight of 34,000 tons and storage capacity of 135,000 cu. m of LNG, came to Dubai in June 2009 for conversion for contractor Saipem and client OLT Offshore LNG Toscana SpA.

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years including all such projects for Italy's Saipem and Norway's Fred Olsen.

DDW has also been involved in the initial stages of the refit of the famous Cunard liner Queen Elizabeth 2 (QE2). It has been tied up in Port Rashid, Dubai for the past number of years (since November 2008) while her fate has been decided. She is now in DDW-D for undertaking classification checks prior to her renovation as a luxury floating hotel. No shipyard has yet been named to carry out the renovation work.

She was built by John Brown & Co. (Clydebank) and delivered in 1969 as a 70,327 tons passenger liner for the transatlantic trade, before becoming a worldwide cruise vessel. She carried 2.5m passengers, sailed nearly 6m miles and completed 806 trans-Atlantic crossings during 39 years of service for Cunard. She also saw active service as a troop carrier during the 1982 Falklands War. She was originally built at a steam-powered vessel, changing to diesel-electric power (using nine MAN diesels) during 1986/7 at Germany's Lloyd Werft, Bremerhaven. A service speed of 32 knots was achieved after the re-engining operation, which cost some £100m.

QE2 Dubai has created a large consortium to convert the QE2 into a five-star hotel with 500 rooms managed by a prestigious international hotel as an operator. The Oceanic Group, a group of deeply-experienced advisers to cruise operators and managers in Asia, will take the lead in managing this project while DDW-D will carry out extensive technical and operational checks prior to her move into Asia..

The vision for the QE2 is for her to become a landmark cultural and tourist attraction—a beacon of luxury, glamour, quality and tradition - in the heart of a leading Asian city that shares her rich maritime heritage and is prepared to give this very special ship the prominent waterfront home she so richly deserves. The consortium will lavish many millions of dollars on this magnificent ship to restore her to the splendour of her glory days as an icon of the very best the world has to offer.

A number of Asian cities have expressed interest in securing this historic attraction. An international tourist city in the Far East is to be her first destination. Plans for the upgrading of the QE2 also include a shopping mall with the finest world leading brands, a QE2 Café offering meals similar to those served during cruises, three Michelin-starred restaurants, convention and meeting facilities. There will also be an on-board maritime museum displaying QE2 memorabilia

and her rich history, along with a collection of treasures of Dubai.

On the newbuilding side of DDW-D's activities, there are three projects currently underway. The yard is building the Prelude FLNG turret for installation into a FLNG currently being constructed by South Korea's Samsung Heavy Industries (SHI). This is a joint venture be-

tween Shell, SBM (Offshore) and Technip, and will be the first such project ever carried out. The turret will be delivered to South Korea in three phases starting in July 2014.

The second newbuilding is Aibel's semi-submersible High Voltage Direct Current (HVDC) platform building Dolwin Beta for ABB to be used to convert

turbine electricity to direct current in the North Sea wind farm industry. The unit is due for delivery in early 2014.


The third newbuilding project is a 400,000 bbls sub-sea storage tank for Premier Oil (UK). The structure will be located on the Solan Field in the UK sector of the North Sea and operated by Chrysaor.

More features and improvements

Thanks to all of our customers who continue to support GHS. Recent updates include:

- Crane Module support for multiple cranes;
- Enhanced Condition Graphics synchronization;
- Multi-Body now supports interaction points separated by lifting lines;
- Improved OUTFLOW command for MARPOL Regulations;

For a complete list, check the Beta Versions Log at www.ghsport.com/support.



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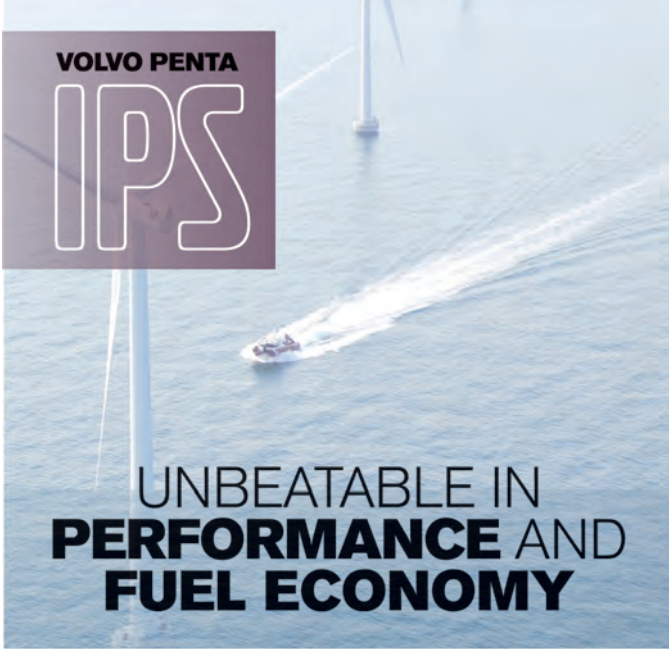
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Marine Coatings & Corrosion Control

Keeping hulls and equipment ship shape, coatings play critical role in vessel efficiency, economy

The advance of modern marine coatings and related technologies is not unlike other technical sectors of the maritime industry, primarily driven by emerging regulation from the international, national and regional level, usually in regard to environmental concern.

But in recent years, an increased focus on the reduction of marine emissions in tandem with the capability to more directly correlate clean, well-maintained hulls with reduced fuel consumption and lower emissions has driven the industry further faster, as coatings manufacturers globally strive for new formulations designed to apply easier, wear longer and ultimately become an indispensable tool in the vessel owner's arsenal to run cleaner, more efficient vessels.

The Coatings

Late last year **Hempel** launched Hemparea 55973, a fast-drying anticorrosive coating suitable for C3 corrosive environments with a cure time of just one hour. Its quick dry time, along with a single-coat combination of primer and topcoat, increases line-speeds for heavy

machinery by at least 50% in comparison to standard two and three coat systems, the manufacturer claims, helping to complete the coating process in a timelier, more cost-efficient manner.

New to the market are **International Paint's** two latest antifouling coatings, Intercept 8000 LPP and Intersleek 1100SR. Intercept 8000 LPP, is a biocidal linear polishing polymer antifouling featuring patented Lubyon technology that is designed to deliver predictable long term performance for in-service periods up to 90 months, International reports, and Intersleek 1100SR, is a biocide free fouling control coating featuring slime release technology that combats micro fouling on ships hulls, maintaining performance throughout the docking cycle

Lubyon polymer technology (found in Intercept 8000) aims to give the coating a 'superhydrophilic' surface. International explains, when the coating is immersed, the seawater has a lubricating effect, resulting in less friction, thus reducing drag and increasing vessel efficiency to give average fuel consumption and associated

emissions savings of 5% annually compared to typical controlled depletion polymer antifoulings.

Intersleek 1100SR, reported to be the shipping industry's first biocide free, fluoropolymer technology that tackles the 'slime challenge.' According to a recent formula produced by Michael P. Schultz, Professor, Department of Naval Architecture & Ocean Engineering, US Naval Academy, at today's bunker prices, the effects of slime potentially costs the shipping industry 44 million extra tons of bunker fuel, \$28.6 billion in additional fuel costs and an extra 134 million tons of CO2 emissions every year. Designed for all commercial vessels, even when slow or ultra slow steaming, Intersleek 1100SR slime release technology is designed to deliver macro and micro fouling control with static resistance even in warm waters.


Sigma Ecofleet 690 is designed to provide high performance antifouling for short sea and coastal shipping, the newest addition to the Sigma Ecofleet range which provides predictable antifouling protection at variable operating speeds in aggressive fouling environments. Developed specifically for the dry dock, maintenance and repair market, Sigma Ecofleet 690 has been formulated using PPG's unique patented binder technology ensuring consistent performance levels and fouling control for in-service periods of up to 60 months.

Fully compliant with the IMO AFS Convention, the product is suitable for a wide range of vessel types and contains an ultra-high volume solids content of 70% - thus reducing potential VOC emissions. Sigma Ecofleet 690 has been formulated to be easy to apply, increasing productivity and reducing overall maintenance costs.

Funded by the U.S. Office of Naval Research and the Materials Research Science and Engineering Center, **Duke University** engineers have produced a hull coating that dislodges bacteria with the application of an electrical current, thus avoiding the use of bacteria-killing paints which can contain heavy metals or other toxic chemicals that might harm fish or other sea life. The material works by physically moving at the microscopic level, knocking away bacteria. "We have developed a material that 'wrinkles,' or changes its surface in response to a stimulus, such as stretching or pressure or electricity," said Duke engineer Xuanhe Zhao, assistant professor in Duke's Pratt School of Engineering. "This deformation can effectively detach biofilms and other organisms that have accumulated on the surface."

Micanti, a Holland-based maritime technology company, introduced an environmentally friendly antifouling option called Thorn-D. A nontoxic adhesive foil used in place of environmentally contaminating chemical coatings, Thorn-D has a textured surface that prevents marine growth from attaching to the hull. "The basic thought behind Thorn-D is that a combination of prickliness and swaying of Thorn-D fibers makes the surface unattractive for organisms," said Micanti founder, Dr. Rick Breur, in a recent press release. "The technology provides a physical barrier in the shape of

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www.nace.org



specific short fibers for organisms such as mussels, barnacles and algae to settle.”

Also declaring reduced application costs, **Sherwin-Williams** launched Macropoxy 80, a high-build HAPs-free epoxy formulated for application over marginally prepared steel substrates and damp surfaces, lessening the need for costly surface preparations. The coating combats corrosion from both immersion and atmospheric exposures and can be applied at temperatures as low as 0°F. Because of its surface tolerance, Macropoxy 80 can be applied in adverse conditions, and steel substrates need only to be cleaned of loose paint or rust per SSPC SP2-3 Hand and Power Tool Cleaning before application. Its high solids formulation (80%) reduces the likelihood of the solvent entrapment that can lead to premature coating failure. In addition to being HAPs-free, Macropoxy 80 is low-VOC (<250 g/L).

GuardLine LTC (Low Temperature Cure), a new cargo tank coating from **Advanced Polymer Coatings**, is an ambient-cure coating (in the range of 77°F) used on chemical, product and barge tankers to transport a range of liquid cargos. GuardLine LTC only requires a low temperature cure, generating cost savings by eliminating the extra step of a high temperature forced hot air heat cure, which is crucial for the high chemical resistance of the MarineLine 784 system used for chemical tankers and their more hazardous cargos.

APC also claims its LTC coating offers greater versatility and chemical resistance and requires less cleaning because it is virtually absorbent-free, giving ship operators the opportunity to carry a wider range of cargos without worrying about the previous cargo residue contaminating the next one.

Advanced Polymer Coatings
www.ad-polymer.com

Hempel
www.hempel.com

International Paints
www.international-marine.com

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Software Solutions Debuts & Upgrades

A Proliferation of innovative software solutions continues to make maritime operations more safe & efficient

ABS Nautical Systems continually enhances its **NS5 Enterprise** software suite of products to meet ever-changing industry demands. Currently in development for release in 2013 are a mobility platform, a new warehouse and inventory management module, as well as a new Hull Inspection 3D module. The mobility platform supports portable devices including scanners, tablet PCs and smartphones. Features will include alert view notifications and mobile calendaring. Any customer with mobility support within the organization's infrastructure can take advantage of this upcoming technology. The new warehouse and inventory management module will support standard inventory and reconciliation tracking. Features include a unified view of warehouses, vendors and freight forwarders, enabling users to track materials contracts, RFQ management, reporting and contract import/export. This module will also be supported by the upcoming mobility platform. The Hull Inspection 3D module includes 3D visualization with condition tracking, integration with the NS5 Hull Inspection web module, along with an integrated FEA interface.

ESRG has expanded OstiaEdge's capabilities to include monitoring and analytics for torque/power meters and ballast systems, adding to OstiaEdge's total ship monitoring and analytics package that enables ship owners and managers to use the existing onboard data to make better decisions and decrease downtime, optimize equipment performance and reduce energy



ABS Nautical Systems will release in 2013 a new mobility platform for its NS5 Enterprise.

ESRG enhances OstiaEdge

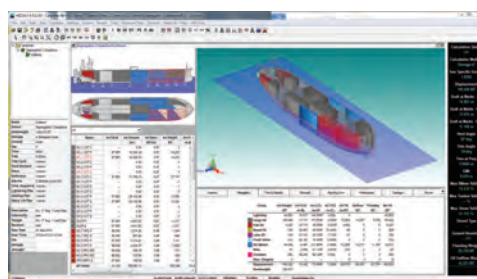


ESRG enhances OstiaEdge

costs. OstiaEdge combines torque and power analytics with engine and fuel flow analytics to provide operators with a holistic view of a ship's fuel efficiency and equipment performance. Ballast system analytics enable operators to ensure compliance with ever-increasing environmental regulations. Torque meters

and ballast systems add to a comprehensive library of systems that OstiaEdge monitors and analyzes, including: diesel engines, generators, compressors, gas turbines, water purification, refrigeration, HVAC and others.

Herbert-ABS Software Solutions, recently launched HEC-SALV Version 8, Salvage and Emergency Response Software, which is designed to allow for rapid evaluation of damaged conditions for all ship types including an analysis of intact conditions, free-floating damage cases, oil outflow prediction and various types of groundings. The upgraded version features enhanced core calculations, a refined, more user-friendly interface,



HECSALV V8 is Salvage and Emergency Response Software

new 3D rendered graphics based on Hoops 3D, a variety of new modeling capabilities and is 100% compatible with CargoMax 2.x and LMP 2.x. HEC-SALV is designed to allow users to quickly collect and process the

available data, define the extreme bounds of the problem and evaluate multiple scenarios for remedial action. As more information is available, the user can quickly and automatically update the entire analysis from beginning assumptions to latter stage pump allocations. Additionally, HEC-SALV Offshore, a newly added component, includes all of the features embedded in the standard HEC-SALV 8.

AVEVA launched of the AVEVA Marine Business Value Calculator (BVC), an interactive application that illustrates the project cost savings, up to 30% across all disciplines, by adopting AVEVA's Integrated Engineering & Design solution, AVEVA Marine. Based on data

from authoritative industry sources and feedback from customers, the BVC is designed to enable users to project potential design and engineering cost savings as well as production man-hours and material savings when using the advanced discipline-specific modules from the AVEVA Marine portfolio as compared with Tribon. Existing AVEVA Marine customers will be able to see how they too can achieve further savings by using a broader selection of the marine portfolio.

By selecting the vessel type and size, the BVC employs a number of predefined criteria based on typical marine industry standards, including splits between materials and labor, design and production and hull and outfitting for different classes of vessel. Adjusting these input parameters to match a company's existing cost structure on its typical types of project means that the BVC can provide a realistic projection of overall cost saving that that company



AVEVA Marine Business Value Calculator

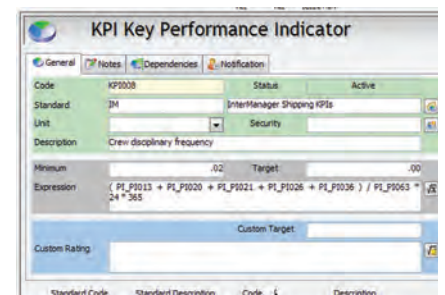
could achieve.

The Asset Management Software AMOS2 Enterprise Management Suite owned and distributed by SpecTec Group, implements the KPI Module (Key Performance Indicators), in order to offer users the

possibility to define, measure and report the company's operational performance data against the Shipping Key Performance Indicators. The Shipping KPI Project is an industry-wide initiative which proposes a global shipping industry standard for defining, measuring and reporting information on operational performance. AMOS2 EMS 6.4.00 includes these new standards, but also allows users to define any other KPI requested or necessary. The module consists in a hierarchy of Performance Indicators (PI's) which establishes the key performance indicators (KPI's) used to calculate Shipping Performance Indicators (SPI's).

Star Information Systems (SIS) introduces a new software module within the Star IPS suite handling advanced logistics. Star Warehouse and Shipment is a purpose made logistics module for handling multiple warehouses and shipments. The main features are:

Warehouses: The system facilitates for storing goods at a warehouse and makes this inventory viewable and "requestable" for a vessel, a group of vessels, or all vessels.



Spectec KPI Module has an open and flexible structure which allows us to capture and analyse data from virtually any source within the AMOS Data.

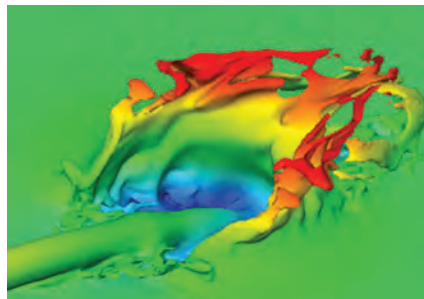
Packaging: It is possible to split e.g. one purchase order into different shipments so that some urgent spares are sent via air and the rest of the PO will be sent through normal sea freight.

Shipment: When the final box or container is ready for shipment the operator can create and print all required documents such as packing slips, dangerous goods labels and pro forma/customs invoices. SIS is also launching a new version of the office purchasing system – Star FSM 2.0. Star FSM has been built using the latest in IT technology and now also handles purchasing contracts and automation of purchasing processes.

Dynaflow, Inc. announces new developments in its 3DYNAFS CFD software suite. Enhanced general CFD capabilities are now available with specialization in interfacial flows, bubble dynamics, cavitation, two-phase flows, surface waves, ship hydrodynamics and fluid/structure interaction. Five major modules are available: a Boundary Element Method (BEM) module, a Viscous flow (VIS) module, a Discrete Singularity Method (DSM) module, a Fluid Structure Interaction (FSI) module and a Compressible flow (COMP) module.

Veson Nautical unveils its LNG module for IMOS (Integrated Maritime Operations System). A complete solution for LNG voyage management, the module is designed to enable operators to manage the chartering, operations, financials, and freight risk specific to the LNG sector. Its features include:

- Capture of Fuel Oil Equivalent (FOE) LNG consumption in contracts, operations, and voyage financials
- Consumption calculations based on configurable FOE speed/consumption tables with support for multiple consumption modes: LNG (natural and forced boil off), Dual Fuel, and IFO
- Automated transfer of LNG data via electronic vessel reports to shore-based IMOS system
- LNG vessel performance benchmarked against vessel/TCI/TCO consumption curves

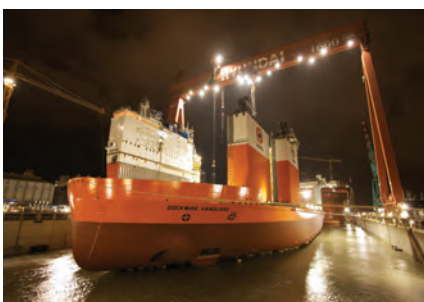


3DYNAFS: A CFD Software Package

Amarcon, a member of the ABB group, received an OCTOPUS-Onboard order for the new build Dockwise Vanguard, a large heavy lift vessel which was launched in November 2012 and is currently undergoing her sea

trials. The Dockwise Vanguard will be equipped with OCTOPUS-Onboard for motion monitoring, response prediction and heavy-weather decision support during heavy cargo transportations. The vessel will also be equipped with a three sensor motion measurement set-up. This way multiple critical locations of the vessel, for instance the cargo, can be measured and displayed on the bridge of the vessel. The OCTOPUS product line is part of ABB's Vessel Information and Control (VICO) systems suite which incorporates a full range of automation and advisory solutions specifically for marine applications, based on ABB's field-proven process automation technologies.

Eco Marine Power (EMP) will use the KEI 3240 Data Logger supplied by KEI System Ltd (KEI) of Osaka, Japan, to verify fuel savings and measure the performance of its Aquarius MRE System – a wind and solar power solution for sustainable shipping. The KEI 3240 Data Logger is a flexible and robust marine computer based system that can collect and log various performance data for a vessel including engine power output. Hundreds of ships have already been fitted with the KEI 3240 Data Logger and the system has proven its reliability over many years. The KEI 3240 Data Logger can be installed on a variety of ships such as tug boats, cargo vessels and bulk carriers. It can also be retrofitted to ships already in operation or installed for example as part



OCTOPUS-Onboard was chosen for the world's largest heavy cargo ship Dockwise Vanguard.



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of a hybrid marine propulsion upgrade. The use of the KEI 3240 Data Logger will provide a ship's crew with real time information regarding how much fuel

consumption is being reduced through the use of Aquarius MRE System. This and other data can also be recorded and analyzed later.



New system prediction of Contra-Rotating Propellers with HydroComp NavCa

HydroComp, Inc. has deployed a new CRP system analysis module into HydroComp NavCad, software for the prediction and analysis of vessel speed and power performance. Published comparisons of the efficiency between standard fixed-pitch propellers (FPP) and CRP propellers typically

indicate that CRPs are between 3% and 10% more efficient. It is often presumed that the efficiency gains of a CRP are due solely to recovery of energy lost in the rotational flow of a single propeller. While recovery of rotational energy is partly responsible for the efficiency gains with a CRP, much of the gain actually occurs due to improved inflow and the reduction in propeller blade loading (with its corresponding change in RPM and blade area ratio).

HydroComp evaluated an extensive catalog of published studies that made direct comparison between FPP and CRP propellers. From the results of this evaluation, a new CRP performance prediction method was developed around a "system-level" model using only the representative definition of one propeller in the set to determine the overall system performance. The intent of the new CRP method is to reasonably predict the overall performance of a CRP "system."

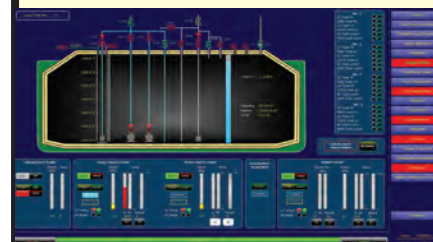
L-3 DPA Liquid Cargo Handling Simulator

L-3 D.P. Associates (L-3 DPA) delivered upgrades of its Liquid Cargo Handling Simulator (LCHS) software to four maritime training academies and training centers. These LCHS upgrades, which include a new software platform and graphics engine, have been installed on existing LCHS training systems at Massachusetts Maritime Academy, Buzzards Bay, Mass.; Teekay Shipping Training Center and Italian Maritime Academy Philippines, both in Manila, Philippines; and Wärtsilä Land & Sea Academy, Subic Bay, Philippines.

"The enhanced graphics that have been integrated on L-3's LCHS systems increase training scenario realism and improve the transfer of knowledge for junior and senior personnel responsible for handling bulk liquids and gases," said Dennis Corrigan, president of L-3 DPA. "These software upgrades equip our customers with models to simulate any liquid cargo handling system and underscore our ongoing commitment to provide maritime academies and training centers with highly effective, state-of-the-art training solutions."

L-3 DPA's LCHS trains crewmembers on the use of modern control consoles and interfaces used in the day-to-day handling of bulk liquids and gases while at sea in modern vessels or at shore terminals. This PC-based system, which supports both individual and networked training, includes an instructor station connected to multiple student stations. Depending on the training objective, the LCHS systems can be configured as separate ships, multiple ships or grouped together as a single control room. Intelligent monitoring and feedback software supports student self-training, and serves as a sophisticated competence measurement and assessment system.

www.l-3training.com



L-3 D.P. Associates Delivers Liquid Cargo Handling Simulation Software Upgrades

Ralph Senner

Karl Senner Inc.



Karl Senner LLC is a ubiquitous figure in the Gulf of Mexico workboat and offshore industry, supplying signature propulsion brands and service for decades. Industry insiders may have noted some changes of late, specifically the slight corporate identity slide from an "Inc." to an "LLC", and the ascension of Ralph Senner to the lead position. MR visited with Ralph Senner for insight on the outlook ahead for the company.

You have been at the helm at Karl Senner, Inc. since May of 2012. What will remain the same for you and your customers?

Let's face it, there are always many unknowns out in the open ocean, and through the inland waterway. We want our customers to know they have the equipment and support to handle the most demanding situations. From the very founding of the company, my father believed in conservatively sized equipment to reinforce a high operational profile for any vessel. At a minimum, everyone can expect the same level of reliability from our products along with the high level of loyalty we have for our customers. We are planning to increase our already stellar level of readiness and reliability. This commitment to our customers will require a strong focus on collaborative team building between us and our customer. We will continue our commitment to our core values: always upholding a high level of safety, honesty, and dependability.

tion, we can spend less time focusing on minor processes and repetitive motions, and focus more time and energy on our customer, and the work at hand.

You stock as much as \$16m in spare parts for your customers and have been working aggressively on shortening your turnaround time for repairs. You maintain that "service is what separates us from the rest." Please elaborate.

A large parts inventory is crucial for us to support our customers at the level of their demand. In order for operators to minimize downtime, fast service turnaround is critical; whether for general maintenance, or emergency response. We aim to be prepared for all scenarios. We are the only "OEM" authorized representative for our product lines. This gives us direct manufacturer support at any point. In addition, this manufacturer-vendor relationship allows our service group to service and rebuild units to 'as-new' factory specifications and tolerances. We also receive, direct from the manufacturers, updated recommendations for service, repairs, and upgrades. All of the work we perform on our equipment is backed directly by our manufacturers.

You've hired a new CFO and you are upgrading your internal software and management reporting, among other things. Tell us how these changes will improve service and how you do things every day.

Our new CFO, Steve Valdes has been a great addition to our team; he has given us a new focus on cost savings without jeopardizing or sacrificing the quality of our work. Steve is tasked with keeping a rein on the costs of expansion and helping all of us to be more cost efficient. By upgrading to more effective invoicing and bill payment software, we are able to more efficiently communicate thereby streamlining operations. With this improved flow of communica-

One of the biggest headaches for the industry is the lack of skilled labor – on board the ships, in the shipyards and in workshops like yours. Tell us about your plans for a new and expanded on-site training facility.

In line with the rest of the industry, the lack of skilled labor can be a challenge. We have addressed this issue by beginning the development of our own internal training facility and training programs. With the implementation

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of this new facility, we aim to steepen the learning curve and broaden the skill set in a shorter amount of time. Leading this effort is one of our most valued, long-term employees, David Hauser. With more than 35 years of technical experience, David has extensive understanding of all Karl Senner LLC products, as well as their interaction in the dynamic system of the driveline. The training program will include comprehensive and practical courses specializing in all Karl Senner, LLC products. The courses will range from general safety and standard overhauls to complex troubleshooting of the entire driveline. The curriculum will be primarily targeted at Karl Senner LLC- service technicians, but additional courses will also be available for operators. We hope that owner/operators take the opportunity to send members of the crew to attend abridged courses focused on the specific equipment that they will be operating. Graduates of the courses should leave with a good understanding of equipment fundamentals and the ability to service the exterior of the units, as well as a comprehensive foundation for troubleshooting the entire driveline.

You are also developing curriculum for your training center, both in terms of skills, but also safety. Tell us about Steve Fisk, why you chose him and what he is developing in-house.

■ Safety has always been an important area of focus at KS, but in order to fulfill customer requirements for today's demanding reporting and auditing needs, we have decided to proactively formalize our program, and take it to the next level of hazard mitigation, situational awareness, and process and project documentation. We have brought aboard Steve Fisk (Manager Safety, PP&E) as another great new addition to our team. Steve comes to us from DuPont, where he most recently managed high hazard process safety and product stewardship for the Chlorinated Elastomers product lines. Steve brings 18 years of industrial Safety Protocol/Procedure knowledge to our office and to the field. We anticipate a push from customers to perform safety audits on their vendors, and aim to be prepared before these requirements are in effect. We are implementing a continual improvement mechanism that will ultimately provide a safer environment for our customers, our team and those working around us.

The Safety curriculum will be composed of core principles and task specific directives. Employees will be exposed to several different training delivery

styles in order to increase retention and encourage ownership of safe work practices. Written policies, graphical presentations, hands on training and practice, and documented testing and skill demonstrations will all be used to give employees the tools and knowledge needed to perform their tasks in a safe and secure manner. The KS training center is currently under construction and we hope to have the center fully operational by the end of the second quarter of this year.

Are there other plans to modernize and expand facilities and equipment?

■ Alongside the training facility we are building a tool center where we can better manage the use and condition of tools in the field. Job-specific tools and instruments will be kitted and kept in top condition and regularly inspected, so they are ready for use. Upon completion of the training facility and tool center, we have already planned to upgrade our Parts and Service Department offices. Sometime in the first half of 2013, we plan to install a new test bench for gearboxes, Z-drives and CPPs to check functionality, and affirm overhauled equipment is ready for duty. And our long-term renovation plan focusses on a new on-site Service Center using higher hook-heights and larger cranes allowing

us to work on even larger equipment and reduce risks.

Talk about the importance of having test equipment local, on site.

■ The new test bench will primarily be used for KS 'serviced' equipment, as all new equipment has already been tested at their respective factories. The test bench will allow us to start-up and run serviced equipment at our facility to monitor operating conditions, loads and potentially R&D experiments. This will further assure our customers that the equipment as delivered is free of faults and ready for immediate reliable service.

You said the business of propulsion was evolving from a fixed pitch approach to that of a DP / Z-drive mentality. How has that changed your business?

■ We have been seeing the gradual rise in DP demand every day; more and more contractors are requiring DP capability. From our perspective, CPP and/or Z-drive applications are the best solutions for maneuverability in DP mode. However, we have also been successful in delivering Reintjes Reverse Gearboxes for fixed pitch applications, together with BERG Thruster Units for DP 1- a system that has been working flawlessly.

Steerprop

Steerprop CRP (Counter Rotating Propellers) units in particular are 10-15% more efficient than conventional drives of the same rating. The CRP is a proven, high-efficiency drive system that yields a substantial reduction in NOX emissions. And, with improved maneuverability and higher blade area ratios, these units dramatically reduce noise and vibrations by nearly eliminating cavitation.

Berg

Berg – CPPs have come a long way since the conventional push-pull rods. Berg's revolutionary design for the CPP units features full feathering with full astern. The circulating hub-oil system assures clean oil is always where it's needed most. The ability to drain water in case of a seal breach is another advantage of situational awareness. In addition to the CPPs, Berg also offers a quite robust bow thruster, designed for continuous maximum duty through 30,000 hours, with TBOs exceeding 30,000 hours.

Reintjes

Reintjes gearboxes, with their high-reliability/high-efficiency design, along with many available options for PTOs/PTIs, make them a very versatile component of any power distribution system.





Reliability and Performance, Combined.

- Designed and engineered for durability and long service life
- 5-blade swept-back propellers maximize thrust with reduced horse power input
- Hydraulic units available with compact and efficient hydraulic systems supporting multiple functions
- Also available in AC versions (at right)
- Knowledgeable staff with the industry expertise to put together the best system for your individual needs



AC Version

Imtra is your source for the latest in bow and stern thruster technology, along with a wide range of products for the commercial market. We offer NorSap Seats and Bridge Consoles, rugged Exalto and Decca wiper systems, LED Lighting and Sola-Cure Blinds. Contact Imtra for more information. Call 508-995-7000 or visit www.imtra.com today.





L: Johnston



R: McAllister



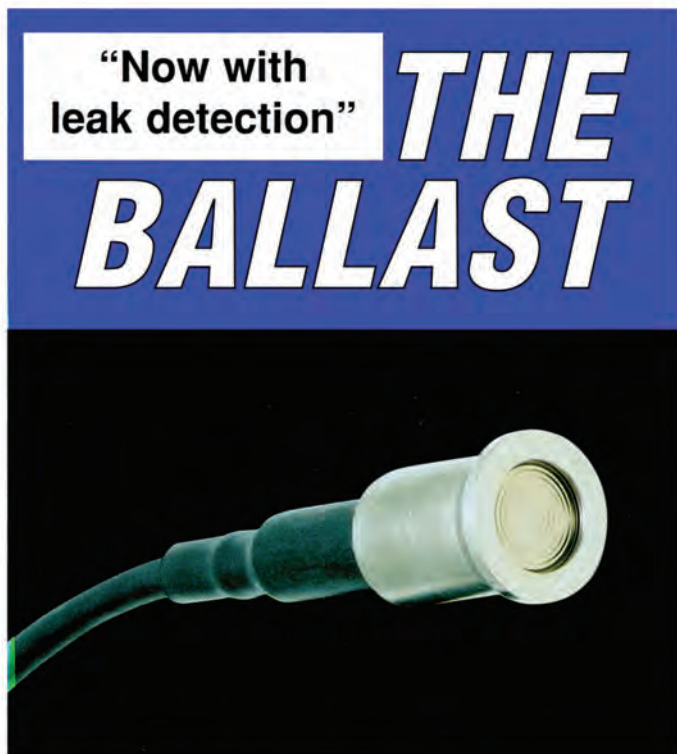
Kraemer



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Marciano



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liquid levels**

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- Weighs less than 2 oz.
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Obituary: Arthur Everett Lyman

Arthur Everett Lyman passed away on Sunday, February 3, 2013, in Leominster, MA. Lyman was born in Vulcan, Alberta on February 27, 1921. Lyman graduated from the United States Merchant Marine Academy (Kings Point) in 1943. During WWII he served as an engineer on numerous merchant ships that provided supplies to both the European and Pacific theatres. Post-war he continued to sail, and he obtained his chief engineer's license before beginning his long career as a salesman in the marine industry. He lived in Ardsley, NY, for 45 years until he retired from Unitor Corp. in 1998, and moved to Leominster, MA.

Arntzen Resigns, Johnston Takes Over at OSG

Morten Arntzen resigned as President and CEO and as a director of Overseas Shipholding Group. OSG appointed Captain Robert Johnston as President and CEO. Captain Johnston was previously the Senior Vice President and Head of U.S. Flag Strategic Business Unit.

Buckley McAllister Takes the Helm

McAllister Towing announced that Buckley McAllister was promoted to the position of President. Captain Brian A. McAllister, President of the company since 1984, will remain as Chairman. Buckley McAllister joined McAllister Towing in 1998 and has served as the company's Vice President and General Counsel since that time. Prior to joining McAllister Towing, Buckley was an Associate at Hill, Betts and Nash LLP. Buckley is a member of the fifth generation of the McAllister family that has owned and operated McAllister Towing since 1864. Captain Brian A. McAllister has been working at McAllister Towing since 1959. Along with other members of the 4th generation, Brian purchased McAllister Towing from the third generation in 1974. He became sole owner in 1998.

Kraemer Named CEO Klüber Lubrication North America L.P.

Klüber Lubrication appointed Ralf Kraemer as CEO, a role assumed from Dieter A. Becker who returns to Klüber's global headquarters in Munich, Germany, after leading the North American operations for nearly three years. Kraemer holds a degree in industrial engineering and management from the Karlsruhe Institute of Technology and an MBA from the Isenberg School of Management from the University of Massachusetts Amherst.

Streeter Retires, Kneen New President, CEO

GulfMark Offshore, Inc. said that Bruce Streeter

has retired from the company as an officer and director after leading the company as president and CEO for 23 years, since its inception. In that span the company grew from 11 ships to its current fleet of 70. Quintin Kneen, the CFO, assumes the additional role of President and CEO. David Rosenwasser was named as the Senior Executive Vice President and COO.

Carroll Joins Harvey Gulf; Orders Two New OSVs

Harvey Gulf International Marine, LLC said that Mike Carroll will be joining the organization in March in the position of Senior Vice President of New Construction and Special Projects based in Houston. Carroll has more than 15 years of experience in the field of Naval Architecture and ship construction and will be responsible for overseeing Harvey Gulf's new construction programs. Harvey Gulf also announced that it has secured plans to build two U.S. Flag, Jones-act compliant offshore construction vessels. The vessels will be 328 ft. (100m) and 360 ft. (110m) in length overall. Both vessels will be diesel electric and equipped with 250T AHC knuckle-boom sub-sea cranes, work-class ROVs and in excess of 100 persons on board suitable for both domestic and international deepwater operations.

Jessup Joins Rapp Hydema US - Rapp Hydra Pro

The U.S. divisions of Norway's Rapp Marine Group added Mark Jessup to assume responsibilities in Marketing and Sales Support for both Rapp Hydema US and Rapp Hydra Pro.

Dometic Announces Global Reorganization

Formerly President of Dometic Marine, Frank Marciano has been appointed President of Dometic Americas for all divisions after Dometic Group announced a global reorganization and restructuring. Dometic Group will consolidate its market focus to three large geographical regions: EMEA (Europe, Middle East and Africa), Asia Pacific (including Australia and China) and the Americas (North and South America). In the Americas, the Marine division headquarters will continue to operate from Pompano Beach. Doug Curtis, former Vice President of Marine Division Marketing, will take on a larger role as Vice President Americas Marketing, coordinating all marketing activities for the Marine, RV, Commercial and Passenger Vehicles, Aftermarket, Retail Merchandising, and Lodging divisions.

Duncan Joins McDermott as VP, GM of Subsea

McDermott International said that Tony Duncan will join the company as Vice President and Gen-



Curtis



Tang



Law



L: Eccles



R: Tangora

eral Manager, Subsea on April 1, 2013. Duncan has a broad offshore oil and gas industry background, including holding senior and executive management roles for the last 15 years, after progressing through engineering, project and operations management positions.

Tang Promoted at IHC Asia Pacific

IHC Asia Pacific, the regional headquarters of IHC Merwede in Singapore, announced the appointment of Francis Tang as Product Director for the Product Market Combination team responsible for global sales and marketing of service and support vessels. The announcement of Tang's appointment coincided with the launch of both of IHC Packhorse vessels. They will be built in Asia through the cooperation agreement with Singapore-based specialist offshore shipbuilder Jaya Holdings.

Stork Technical Services appoints Law

Stork Technical Services appointed Steven Law to the role of HSSEQ Director – UK & Africa. Law starts immediately and will be based in Aberdeen, UK, which is the operational hub for the company's upstream oil & gas business. He will be responsible for the day-to-day running of Stork's UK & Africa HSSEQ function.

2012 ASNE Award Winners

ASNE announced annual award winners, with presentation at ASNE Day in Crystal City, Va.

- **2012 Gold Medal Award (Engineering)** - **RADM Thomas J. Eccles, USN**

The Gold Medal is given to an individual who has

made a significant naval engineering contribution in a particular area during the past five years.

- **2012 Harold E. Saunders Award (Lifetime Achievement)** - **Mr. Michael F. Tangora**

The Harold E. Saunders Award honors an individual whose reputation in naval engineering spans a long career of notable achievement and influence.

- **2012 Clifford G. Geiger Award (Naval Logistics)** - **CDR Jonathan Baker, USCG**

Awarded to naval logistics professionals who, over a period of years, have exemplified the ideals portrayed by Mr. Clifford G. Geiger through exceptional leadership and influence within the naval logistics community, determined efforts to strengthen the synergy between engineering and logistics, and dedication to enhancing the capability and stature of the naval logistics profession through increased emphasis on education and professional development for naval logisticians.

- **2012 Rosenblatt Young Naval Engineer Award** - **Dr. Leigh McCue-Weil**

Established in memory of Mandell and Lester Rosenblatt, it is presented to a person under 35 years of age who has demonstrated remarkable, early professional achievement in one or more areas of naval engineering.

- **2012 Frank G. Law Award (Service to ASNE)** - **RADM Jeffrey Brooks, USN (Ret.)**

The Frank G. Law Award is given to an individual whose longtime dedication and service to the Society is deemed worthy of special recognition.

- **2012 Claud A. Jones Award (Fleet Engineering)** - **Mr. Scott Ramalho**

Given to a fleet or field engineer who has made significant contributions to improving operational

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The Bubbler is an electro-pneumatic level transmitter that allows remote level measurement using a 4-20mA analog output. The lack of air pressure poses no operational problems, due to an automatic one-way valve which closes as soon as the pressure drops below 1 bar, this prevents back flow in the bubbling line towards the transmitter. Over pressure is also protected against by an automatic one-way valve.

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Call for Entries:

Safe Affordable Ferry Competition Open to Students Worldwide

Registrations are now being accepted for the Worldwide Ferry Safety Association (WFSA)'s annual student competition for the design of safe affordable ferries to serve developing nations. Ferries are to be designed according to specifications of a particular developing and emerging market nation, this year: Bangladesh. The 2013 competition calls for an innovative concept for a ferry prepared to basic design detail. The terms of reference are for a ferry able to transport 500 passengers along Bangladesh's inland river system, between Dhaka, the capital (and a major commercial center) and Barisal, a region 250 km to the south. The ferry must be safe to operate in the conditions of the waterway and weather, and meet required passenger capacity guidelines. Additionally, the ferry must be affordable to construct, acquire, operate, maintain, and repair. Upon registration, full specifications will be provided. Student teams are encouraged to collaborate among disciplines and across national boundaries. The top prize is \$5,000 with additional prizes of \$3,000 and \$1,000, with winners invited to an award ceremony. Those interested in registering should contact the WFSA, though email at ferrysafety@gmail.com to receive further information and a registration identification number. **The registration period closes April 1, 2013. Submissions are due electronically by June 1, 2013.**



L: Baker



R: McCue-Weil



Brooks



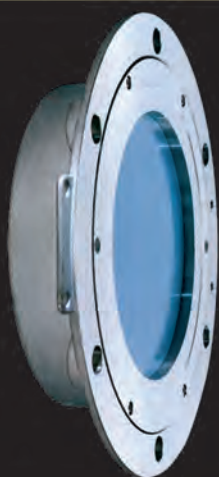
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engineering or material readiness of our maritime forces during the past three years.

- 2012 Solberg Award (Research) - Dr. David Singer

Awarded to an individual who has made a significant contribution to naval engineering through personal research during the past three years.

- 2012 Frank C. Jones Award (Intermediate/Depot Maintenance & Alterations) - Mr. Guy V. Holsten

Presented for major achievements in Maintenance and Alteration.

- 2011 "Jimmie" Hamilton Award Recipients - Christy Goff, Charles McNamara, Joseph M. Bradley, Christopher S. Trost, William J. Dalton, and RDML (Sel) Michael Jabaley, USN.

Presented to the best paper to appear in the Naval Engineers Journal.

New Name in Subsea Unveiled

A new subsea oil and gas group, Harkand, chaired by oil and gas industry veteran Tom Ehret, was launched, a venture with an ambitious plan grow to a turnover of \$1b in the next five years. Following investment by Oaktree Capital Management in Iremis, Integrated Subsea Services (ISS) and their sister company Andrews Survey last year, the three names have merged to form one group focused on the fast-growing subsea inspection,

repair and maintenance (IRM) market. Harkand aims to become a leading global name in subsea IRM. The group will combine survey, inspection, repair and maintenance services with the Iremis fleet of multi-purpose diving support vessels, ROV and Air Diving support vessels and ISS' fleet of 23 remotely operated vehicles (ROVs) and teams of ROV operators, surveyors and divers.

The group's name, Harkand, comes from mediaeval Arabic literature where it is the name of one of the seven seas.

MHI Selects New President

Mitsubishi Heavy Industries, Ltd. (MHI) said that Shunichi Miyanaga has been named the company's new President as of April 1, 2013. Hideaki Omiya, MHI's current President, will become Chairman of the company succeeding Kazuo Tsukuda, who will become Senior Corporate Advisor.

Damen Shipyards Group Acquires Shipdock

Damen Shipyards Group is the new owner of Dutch ship repair yard Shipdock, a well-known shipyard group with roots dating back to 1877, which operates facilities in Amsterdam and Harlingen. The yard will continue its ship repair and conversion services, with Shipdock Harlingen servicing ships up to 120 m and Shipdock Amsterdam servicing vessels up to 250 m. Furthermore,

SHIPPINGInsight Fleet Optimization Conference Scheduled for October 22-24 in Stamford

The organizers of the SHIPPINGInsight Conferences have announced that the 2013 Fleet Optimization Conference will take place Oct. 22-24 in Stamford, Conn.

In its second year following a successful inaugural launch, SHIPPINGInsight 2013 returns to the Sheraton Stamford Hotel with a number of important changes: more engaging panel sessions moderated by shipowners, more case studies, tabletop exhibits, and networking opportunities.

"We listened to our delegates' feedback and are confident that this year's conference will be better than the last in terms of content and return on investment," said Frank Soccoli, co-producer, SHIPPINGInsight. "The challenges faced by the shipping industry are always at the forefront of our conferences and how we, as an industry, can help each other find solutions through engaging ourselves not just in conversations, but actions."

The preliminary schedule includes panel sessions on Meeting the Environmental Challenge, Designing for Efficiency, Fuel and Propulsion Management, System Monitoring and Maintenance Management, Voyage Optimization, and Ship Performance Optimization. Also planned is an open forum of shipowners on Managing Organizational Change.

"These are trying times for shipping fleets, pressed by overtonnage, tight credit, rising fuel prices, low freight rates and increasing costs of regulatory compliance," said conference co-producer Jim Rhodes. "The purpose of this conference is to discuss solutions and best practices for optimizing efficiency of operating ships under these extremely difficult conditions."

Sponsorship opportunities are now available. Contact Frank Soccoli at fsoccoli@shippinginsight.com



Holsten



Moute



Kerr



Damen
Acquires
Shipdock

its personnel and management will remain in place

Imtech Upgrades Global Ku-band VSAT Network

Imtech Marine has upgraded and extended the coverage of its Global VSAT Network. In addition to its already extensive network, Imtech Marine can now offer VSAT coverage in the South Atlantic Ocean, between South America and Africa. Imtech Marine offers a reliable, cost effective and always-on broadband communication solution that uses the proven iDirect Evolution platform. At the same time as expanding the network, Imtech Marine, together with its partner ITC Global, upgraded to the latest iDirect Evolution software version 3.1. This new software offers improved IP throughput and efficiency on their Ku-band VSAT Network as well as improved beam switching for maritime terminals, which is now both easier and faster.

Furuno Type Specific ECDIS Training

Furuno has established training facilities in India and the Philippines through cooperation with the newly established Moloobhoy Training Centre in Mumbai and COMPASS Training Centre in the Philippines. The two training centers have started to provide the two-day Furuno type specific ECDIS training course under the NavSkills umbrella having their instructors trained in Denmark and under the subsequent on-site training syllabus provided by Furuno INS Training Centre in Denmark.

Astrium Extends Agreement with Intelsat

Astrium Services and Intelsat signed a multi-year renewal agreement for C-band capacity to be used by Astrium Services' maritime customers in the Mediterranean, Atlantic Ocean, North Sea and Gulf of Mexico.

McDermott Wins Contract in Indonesia

McDermott International's Indonesian subsidiary won a contract by PC Muriah Ltd., an affiliate of PETRONAS Carigali Sdn. Bhd., to develop offshore surface facilities and an infield flowline for the Kepodang Field, located approximately 180 km northeast of Semarang, Central Java, in water depths of up to 70 m. The project will be included in McDermott's fourth quarter 2012 backlog.

HII Opens Houston Office

Huntington Ingalls Industries is opening an office in Houston, Texas, for business development efforts to pursue opportunities in the energy infrastructure market for its Avondale subsidiary. Chris Kastner, HII's corporate vice president and general manager, corporate development, who is leading this effort for Avondale, said, "We are in active discussions with respected companies in the oil and gas infra-

structure market. We've satisfied ourselves that the engineering and construction elements of these projects are very comparable to shipbuilding, and we are working very hard, both internally and with prospective customers, evaluating and competing for new opportunities. These upcoming large projects should be made in America by American craftsmen and craftswomen."

Drew Completes Acquisition of Alexander/Ryan

Drew Marine completed the acquisition of Alexander/Ryan Marine and Safety Inc., and it will join the organization under the name Alexander/Ryan Marine & Safety division of Drew Marine. The division brings 82 new employees to Drew Marine.

Ship Repair Foundation Invests

The Virginia Ship Repair Foundation invests more than \$120,000 per year and expends more than 1,500 volunteer hours from 230+ ship repair companies to develop future workers and contribute to community projects. Leveraging this community work with other shipyard regions is a goal that will strengthen the industry as a whole. Each year they host dozens of Career Industry sessions for Middle and High Schools in 10 cities, as well as send guest welders and experts into the classrooms at technical schools. In addition, 18 middle schools participated in their 7th annual Lego Ship Design Competition, where students use CAD software to create blueprints of ships using Lego parts. These efforts bring students into the world of ship repair and build relationships between our professionals and teachers, parents and guidance counselors.

The Foundation also funds the development of new training and online courses to create consistency among shipyard and sub-contractor workers in knowledge and processes. A large project being launched at the end of 2013.

MAN B&W Engines Achieve EEDI Compliancy

Chinese shipowner Centrans (Tianjing) Ocean Shipping has received EEDI compliance certificates for two 180,000 dwt newbuildings, an achievement it reports as being a first in the Capesize segment globally. The bulk carriers are each powered by a single MAN B&W 6S70MC-C8.2 low-speed engines built by Dalian Marine Diesel, and the vessels were built at QingDao Beihai Shipyard in Eastern China. The newbuildings reportedly saved more than three tons of fuel per day compared to the standard design the company had previously used in designing its Capesizers. The resultant EEDI value was calculated as being 5.38% lower than the reference value required by the IMO in its EEDI legislation due to come into force next year.

THE SEA SWITCH TWO



Smart Electronic Level Switch with No Moving Parts

The Sea Switch Two was designed and patented for all tank applications. The Sea Switch Two offers a reliable solution for liquid level detection and control for cargo, ballast, and storage tanks, without any moving parts.

The Sea Switch Two uses a fully static system that is based on the propagation of an acoustic wave into a metallic rod. A piezo-electric sensing element produces a wave along the rod. As the liquid reaches the sensing element the oscillation stops and the alarm is activated.

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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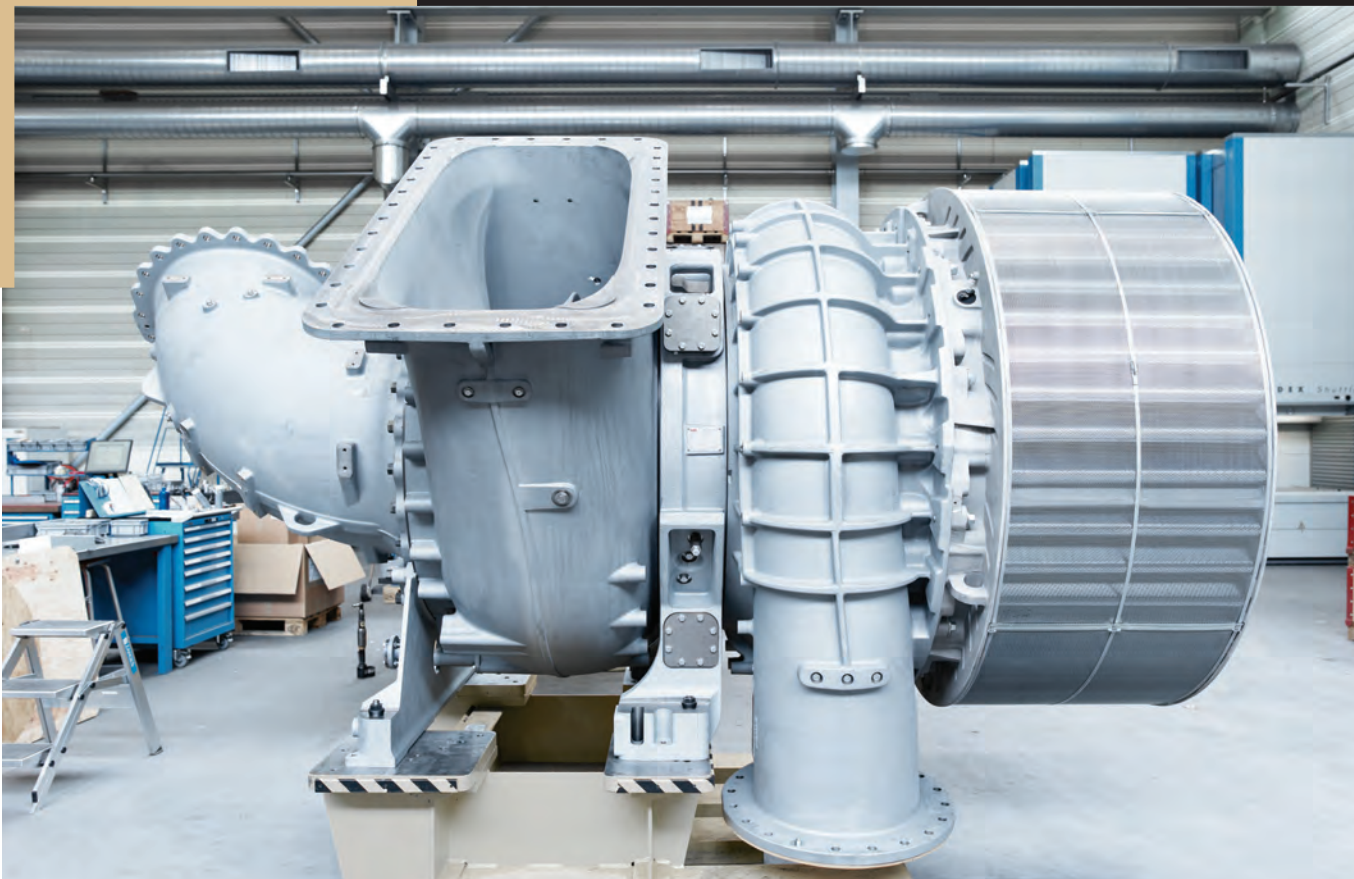


ABB Turbocharging's A200-L

ABB Turbocharging announced that its new A200-L generation of single-stage turbochargers for low-speed two-stroke engines represent a quantum leap in the technological development of turbochargers. The A200-L's compressor stage has been optimized to enable significantly more additional volume

flow. In comparison to previous models, the A200-L has up to 30% additional volume flow, which to date is fully the equivalent to one size smaller in a series of turbochargers.

"Our latest technical findings from development are very promising," said David Ruch, who has been heading up

the technological development of the A200-L, "This model represents a real departure from the past model because it's allowing us to ensure greater volume flow without making the concessions on efficiency that we used to have to make."

Michael Lok, General Manager Low Speed Segment, said, "We are even look-

ing at a model that potentially makes no compromises on the three key variables – that is, efficiency, pressure ratio, and volume flow – used to measure performance in a turbocharger. No one's ever been able to do that, at least as far as I know. That's a puzzle that engineers have had to wrestle with for as long as there have been turbochargers. If we're able to achieve that with the A200-L, we will have made a hugely important contribution to the turbocharging industry as a whole."

Benefits of the A200-L's additional volume flow are manifold. First, the A200-L's compacter frame makes it possible to use a smaller turbocharger on a wide range of two-stroke engines. For customers, that translates into lower weight and more space, which in turn have a positive impact on the bottom line in the form of lower service costs, a lower first cost and a lower total cost of ownership. And since less material is used to make the A200-L, the impact to the environment is also reduced.

"The savings in service costs alone amount to at least 25% in many models, and in some cases even more," says Arie Smits, Senior General Manager Global Turbocharging Projects.

The company has already sold its first commissions and is currently in production. The first turbochargers will be tested on engines at the beginning of May, prospectively.

www.abb.com/turbocharging



• April 1-4, 2013

• The Ritz-Carlton, Amelia Island

Making Strong Connections

Work Boats Exchange brings fleets from all over North America together with leading commercial marine suppliers for a series of one-on-one highly focused meetings to solve technical challenges and learn about new products.

April 1-4, 2013
Ritz Carlton, Amelia Island, FL

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www.WorkBoatsExchange.com

"Very interesting format that works extremely well for us."
- Coastal Marine Equipment, Inc.

"An outstanding opportunity for in house one-on-one meetings with suppliers." - Florida Marine Transporters

SAM Electronics: Control Systems for Marco Polo

SAM Electronics provided a combined NACOS Platinum integrated navigation command system and MCS Platinum automated monitoring and control assembly for the world's largest container vessel, CMA CGM Marco Polo. It was equipped with a NACOS Platinum navigation control system comprising X and S-band radars linked to three multifunction Multipilot workstations and an Ecdispilot for centralized control of all main radar, Ecdis and conning operations in addition to those for automatic steering, track control and voyage planning. Supplementary sensors for the integrated bridge configuration include AIS, VDR, GPS, doppler log and echosounder nav aids as well as SAM Electronics' new Bridge Navigational Watch Alarm System (BNWAS). The NACOS assembly is complemented by an integrated MCS Platinum monitoring and control system governing all main ship operating components, including 4,500 I/Os on a redundant LAN network.



Intellian: Three Fleet Broadband Solutions

Intellian introduced three new solutions for the Inmarsat FleetBroadband (FB) networks with new features. The FB150, the FB250 and the FB500 comprise a robust and feature-rich product line. All three terminals of the new Intellian FB product line include a broad range of IP and networking related value-added features such as IP routing, Firewall capability and vessel fleet tracking. All three new products complement Intellian's GX hardware and are XpressLink systems capable.

Weighing 4.4kg (9 lbs) and 44cm (17.3 inches) high, both the Intellian FB150 and FB250 are compact FleetBroadband maritime terminals. The FB150 has 150kbps data rates and the FB250 has 284kbps data rates, so both provide simultaneous access to data services, voice and text messaging. Meanwhile the FB500 weighs 15.5kg (34.1 lbs) and is 71.8cm (28.3 inches) high, with 432kbps data rates. These three Intellian FB products are each competitively priced at \$7,300 for the FB150; \$11,000 for the FB250; and \$17,000 for the FB500 – all prices are in US dollars.

www.intelliantech.com

Drying Innovation Onboard the HGO Innovation

Pronomar recently won an order to equip the heavy-lift jack-up vessel HGO Innovation, owned by HGO InfraSea Solutions, with its drying systems. The Pronomar-Top Trock drying systems, made from stainless steel, help to ensure the crew on board can go after their daily strenuous work in properly dried and maintained survival suits, jackets, trousers, overalls etc. The drying systems dries from the inside out and at all neuralgic zones, such as arm pits, shoulders and back.

www.pronomar.com



Rolls-Royce: New OSV Command & Control

Rolls-Royce announced that an offshore vessel currently under construction for Simon Møkster Shipping will be the first in the world to feature the new Rolls-Royce Unified Bridge solution. The innovation from Rolls-Royce is designed to simplify and unify the range of control levers, console panels and displays for the various onboard systems. It is designed to provide the operators with enhanced ergonomics and simplified operation enhancing operator and crew safety, while improving task efficiency. The layout can be tailored to meet the complex needs of any vessel. The Unified Bridge sets a new standard for the high-tech working environment in the command centre of these advanced ships.

Rolls-Royce has delivered advanced bridge solutions since 1998, and at the same time invested in human-centered research on vessel operations. The futuristic looking but very real Unified Bridge is based on the consolidated experiences of both crews and researchers. The first commercial installation of the Rolls-Royce Unified Bridge solution will be on an offshore platform supply vessel (PSV) for Norwegian ship-owner Simon Møkster Shipping. This advanced UT 776 WP wave piercing platform supply vessel (PSV) is currently being built in Spain by the yard Astilleros Gondan. The vessel design, main systems and equipment are provided by Rolls-Royce. On completion in 2014 she will go on charter with Statoil for operation in the North Sea and the High North.



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SpotterRF Radar

SpotterRF was one of 15 industry partners selected to participate in a Department of Defense (DOD) demonstration seeking cutting edge technologies with high potential of improving the warfighter's mission effectiveness and survivability. The Stiletto Maritime Demonstration Program conducted its first capability demonstration, Jan. 14-27, 2013 for the Navy Expeditionary Combat Command (NECC) off the coast of Virginia Beach, Va.

This capability demonstration allowed SpotterRF to receive immediate feedback on the radar system as NECC Sailors observed the new technology in a realistic military maritime environment.

During the course of the demonstration several scenarios were run in which vessels ranging from a jet ski to an 11m RHIB traveled different paths into and around the Harbor. The Spotter M600C was set up remotely on a tripod at the mouth of the Harbor and communicated back to the Stiletto vessel one mile away

via Silvias Radio. There, participants could view detections in real time on a map displaying the location, distance and speed of the target.


"The M600C was very effective at detecting all vessels coming in and out of the harbor," said Brock Josephson, SpotterRF's team lead for the demonstration. "The system even detected and tracked a drifting jet ski."

An individual transported the entire system with M600C Radar, tripod, radio and batteries in a single backpack.

Set-up and later recovery were accomplished in a matter of minutes.

<http://spotterrf.com/rbk.html>






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GE Marine: Licensing Agreement with Echogen Power

GE Marine signed an agreement with Echogen Power Systems, Akron, Ohio, to be the exclusive provider of Echogen's heat-to-power system for use on commercial and military marine vessels worldwide. Echogen's product enhances GE Marine's mechanical, hybrid and all-electric propulsion system solutions. Echogen's system captures the exhaust heat energy that typically vents to atmosphere from gas turbines and/or diesel engines and converts it to useful power. While this concept is not new, Echogen's technology uses supercritical CO₂ (sCO₂) as its working fluid, which allows for a more compact, lighter and economical configuration than traditional steam systems. Echogen's technology operates over a broad range of exhaust temperatures to efficiently extract a significant amount of energy from various applications and convert it into electrical or mechanical power. The working fluid can be expanded to create cooling or a combination of power and cooling. In the first quarter of 2013, Echogen will be testing a 7 MW sCO₂ engine system. Plans also call for the development of a 2 MW product and 0.4-MW product that will be available in 2016.

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

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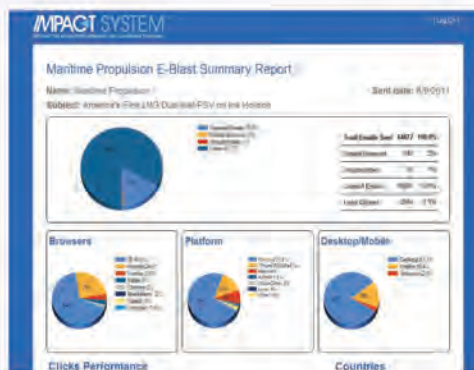
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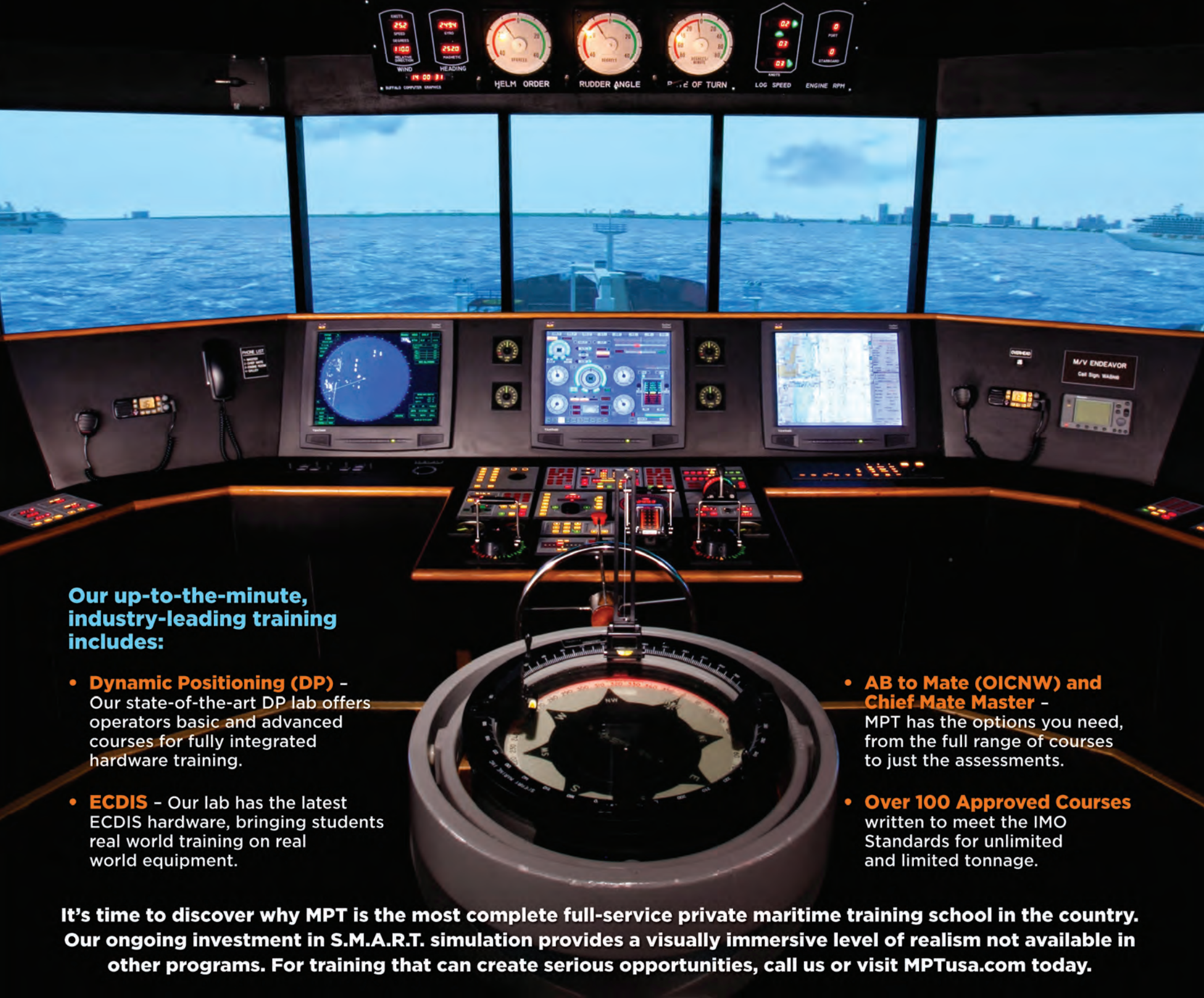
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