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JULY 2012

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contents

(Photo: Hempel)

Covered Up

Driven by new rules and regulation, marine coating companies have been driven to develop new products that are increasingly environmentally benign and at the same time more rugged and cost-efficient for the shipowner.

Five leading marine coating executives weigh in on the burning questions of the day, starting on page 30.

ON THE COVER

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As ships, boats and rigs increasingly become an extension of the land-based office — using high speed, high volume comms and sophisticated software solutions, they increasingly become a target for cyber crime. Are your vessels prepared? ***Are you sure?***

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It was last month in Athens, Greece at Posidonia 2012 which provided the impetus for this month's Marine Coatings & Corrosion roundtable. For those of you who did not, could not or would not attend Posidonia, I'm pleased to report that despite Greece's well-publicized financial troubles, the 2012 event seemed to go off without a hitch. And despite the plethora of bad financial news emanating from both the country and the deep draft maritime sector, based on the quantity and quality of the legendary Posidonia after-hour parties, one would be hard-pressed to say the sector was suffering at all.

Housed in the new Metropolitan Exhibition Center near the Athens airport, Posidonia brought out maritime companies from around the world. During the week I had the opportunity with a wide variety of companies, including several of the largest marine coatings companies. As an overview statement and as a side, I've been covering this market for now nearly two decades, but it was in Athens in June 2012 that I've fully come to realize that coating manufacturer's are arguably the most competitive group around. Most of the really good stories, per usual, came with the caveat "I'll tell you this, but you can't print it," but overall the conversations helped to set the shape and tone for a five-person "roundtable" which covers many of the burning questions of the day, from the effects of Ballast Water Treatment Systems technology and Greenhouse Gas Emission controls on marine coatings, to VOC limits and PSPC for Cargo Oil Tanks; to emerging work through the IMO on a Polar Code and the ban of biocidal antifouling paint in polar regions. Insightful responses to five topical questions begins on page 30.

For regular readers of our pages, the cover might seem a bit out of character, but given the proliferation of software solutions across the maritime sector, and the ever widening use of high capacity, high speed comms from ship-to-shore, the matter of Maritime Cyber Security is fast climbing the maritime security "to do" list. CDR Emil A. Muccin, USMS and an assistant professor in Nautical Science/Marine Transportation at the United States Merchant Marine Academy contributes an authoritative look at the new definition of "Survival at Sea," highlighting some dangers and precautions when creating and maintaining your shore-to-ship connections.

The Arctic

The overriding theme for this edition, which is hard to fully embrace topically due to the heat wave that has been sweeping the U.S. this summer, is the Arctic. It seems today you cannot throw a stick without hitting someone who is conducting or considering business opportunities above the Arctic Circle. But as we have written here many times before — (and I'm sure many more times to come) — establishing safe and efficient marine operations in the Arctic are fraught with as many questions as answers; as many challenges as solutions. While much attention rightfully is paid to the energy riches to be discovered, **Dennis Bryant** writes this month (starting on page 12) regarding **Arctic Shield 2012**, which is the U.S. Coast Guard's largest assemblage ever – from July through October – as the USCG seeks first-hand experience on everything from security maneuvers to oil spill response and remediation. Two pages after Bryant's article is an insightful piece from a Blank Rome trio which discusses the opportunities and challenges in step with the **Arctic Sea Ice Retreat**, highlighted by the current status and likely direction of the Law of the Sea Treaty, which remains unsigned by the U.S. and has proven to be a divisive lightning rod of an issue in U.S. maritime circles.

The cornerstone of this month's coverage, however, is a report from the Pacific Northwest, where MR roving reporter Raina Clark pays a visit to the Vigor Industrial executive team for a comprehensive report on how Vigor has been a central player and leader in the reinvigoration of the region's maritime business. It has pivotal role in one of the year's most compelling stories, Shell Oil's hunt for oil and gas on the U.S. Outer Continental Shelf in the waters of the Chukchi and Beaufort Seas off of northern Alaska. While Vigor's Arctic endeavors are compelling — including the its acquisition and major investment in Alaska Ship & Drydock — its big picture effect on the industry and the economy is best encapsulated in a quote from its **CEO, Frank Foti**, who has a broad background in construction and industy:

"Industrial jobs matter. It is so critical that our economy is balanced. There has to be something in the region besides working at Starbucks or in an office building."

Gregory R. Trauthwein, Editor & Associate Publisher
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Emerald Ace

World's First Hybrid Car Carrier

Mitsui O.S.K. Lines (MOL) announced the completion of the hybrid car carrier Emerald Ace at the Mitsubishi Heavy Industries, Ltd. (MHI) Kobe shipyard, an innovative ship which is designed to generate zero emissions while berthed.

Emerald Ace was built as world's first newly built hybrid car carrier, and is equipped with a hybrid electric power supply system that combines a 160kW solar generation system – a system jointly developed by MHI, Energy Company of Panasonic Group, and MOL – with lithium-ion batteries that can store some 2.2MWh of electricity. Conventional power generation systems use diesel-powered generators to supply onboard electricity while berthed. On the Emerald Ace, electricity is generated by the solar power generation system while the vessel is under way and stored in the lithium-ion batteries. The diesel-powered generator is completely shut down when the ship is in berth, and the batteries provide all the electricity it needs, resulting in zero emissions at the pier. The vessel's hybrid system represents a significant step forward in realizing ISHIN-I, the concept for the next-generation car carrier that MOL announced in September 2009. MOL continues to take a proactive stance in technological development with the aim of reducing the environmental burden of its vessels and operations.

MHI Receives Order for LNG Carrier

Mitsubishi Heavy Industries, Ltd. (MHI) signed an agreement with Mitsui O.S.K. Lines to build Sayaendo, a series new-generation liquefied natural gas (LNG) carrier. The ship offers improved fuel consumption and maintainability through various features including enhanced ship structure efficiency. The ship will be used mainly for transportation of LNG for the Kansai Electric Power Co. The LNG carrier measures 288m in length overall, and is 48.94m wide with a 11.5m draft. The 138,000 gt (75,000 dwt) ship is capable of carrying up to 153,000 cu. m. of LNG (cargo tank total volume: 155,000 cu. m.) using four Moss-type tanks. Sayaendo features a peapod-shaped continuous cover for the Moss spherical tanks integrated with the ship's hull, in lieu of a conventional hemispherical cover. This configuration enables greater structural efficiency together with size and weight reductions, maintaining the ship's overall strength. The continuous cover over the tanks also improves aerodynamics by substantially reducing wind pressure, which serves as drag on ship propulsion. For its main power plant, the Sayaendo adopts MHI's "Ultra Steam Turbine Plant" (UST), a new turbine plant which achieves higher thermal efficiency through effective use of thermal energy by reheating steam. The new unit, in combination with downsizing, weight reduction and hull line improvement, enables the Sayaendo to achieve a substantial 25% reduction in fuel consumption compared to conventional ships. In conventional carriers, pipes, wires and catwalks atop the tanks have been supported by complex structures. By covering the tanks with an integrated cover and making those supporting structures unnecessary, the new design improves maintainability. CO2 emissions are also reduced as a result of lower fuel consumption.

Length	288m
Breath	48.9 m
Draft	11.5m
LNG tank	Stretched Moss-type independent spherical type
Cargo tank capacity	155,300 cu. m.
Capacity	about 75,000 MT
Main engine	Reheat steam turbine system
Speed	19.5 knots
Shipyard	Mitsubishi Heavy Industries
Ship management	Mitsui O.S.K. Lines
Launch year	2017
Ship name	TBD



(Photo: Protector)

Targa 30

Protector's New Model = Power & Performance

By Greg Trauthwein

Last month I hopped aboard the new Protector Targa 30 for a test ride down the Hudson River, up the East River and around Manhattan, The Protector Targa 30 is the latest addition to the Protector line, a slight extension from the Targa 28, and the speed, ride, maneuverability and overall performance was -- in choppy, conjested waters -- in a word, spectacular

"Our normal model was the Targa 28," said Andrew Carleton, Northeast Sales Manager, Protector Boats. "We lengthened the hull 18 inches; we redesigned the transom and the engine wells on this boat, so we added 180 pounds of buoyancy in the stern and the engine wells are a little bit deeper."

He explained that the Targa 28, when originally designed, was outfitted with twin 115 hp engines, which gradually evolved to 150s, then 200s and 225s.

"In the end, we were rigging the 28s with twin 250 hp four strokes. Everybody wanted the most power that they could get, so we made the decision to build a boat that could handle the bigger power," said Carleton. "You are hanging a lot of weight off the back of the boat, so we increased the buoyancy."

The Rigid Inflatable Boat (RIB), as tested, is built with a fiberglass hull as a consumer craft and included twin 300-hp Verado's, delivering a top speed of well over 60 knots. The ride on the choppy Hudson amongst a smorgasbord of commercial and pleasure boat traffic of every variety around New York City was fast, stable and comfortable.

Including the base price ($250k) and options (the engine upgrade to 300 hp from 250 hp, teak decking, automatic anchor system, fresh water package, an upgraded electronics package with a 15" display, commercial grade tubes and Stidd seats), the boat as tested retails at $295k.

While the boat tested was targeted for consumer sales, Carleton explained the commercial connection. "All of our boats are commercial. Every single one of them, with the exception of our little 20-ft. Protector Jet, was originally designed for commercial application."

30 Targo with Twin 300 Verado's

Length, o.a.	30.6 ft.
Length, w.l.	26 ft.
Beam, Infalted	9.5 ft.
Beam, Deflated	8.25 ft.
Draft Motors Up	26 in.
Draft Motors Dn	25 in.
Dry Weight w/ motors	6,200 lbs.
Loaded Weight	7,200 lbs
Fuel	130 gal.
Time to plane	< 4 seconds
Speed to plane	16.5 mph
Prop	4-blade Revolution 21
Dead Rise fwd	60 degrees
Dead Rise aft	23 degrees
Recommended hp	400-600
Top Speed	68 MPH
Cruise Speed	31 MPH
Range at Cruise	270 miles
Max Occupancy	12

The Protector Targa 30 as tested is priced at about $295,000, with teak decking, Stidd seats, commercial-grade tubes, an electronics package upgrade, and an engine upgrade from a pair of 250 hp to 300 hp units.

(Photos: greg Trauthwein)

Engineered for Speed, Handling and Seaworthiness

Designed for resilient comfort in any sea state, the Targa 30 offers increased rough water performance and more offshore capability for added flexibility. As with other vessel in the RIB class, one of the keys to a soft, stable ride is hull design and the tubing system. Carleton explains how the pedigree of the Targa class resulted in the ride of today's boat.

"A lot of people think that the tubes are for bumping off of things," he said. "From the commercial side when they originally designed the boat, they (the tubes) were useful when coming alongside and boarding another vessel," said Carleton. "The boat was originally designed as a search and rescue vessel for the New Zealand Coast Guard, to perform operations off of the rough and rocky waters off of New Zealand. So they wanted a rough-water vessels. They contracted Rayglass to build them a few boats. Rayglass is a reputable builder; and they essentially took one of their hard-sided fishing boats, took the sides off and added the tubes. What they got was the benefits of the stability of the tubes. They also act like big shock absorbers for when you're coming off of big waves."

The Targa 30 today offers a 35-mph cruising speed, 63-mph top speed and a 265-mile range. It has a maximum capacity for 12 passengers and features a spacious, fully enclosed cabin design with expanded deck space and an extended interior cabin.

With an increased slope dash, the boat provides more helm space for better ergonomics of switches and larger navigation displays, higher steering wheel placement for enhanced ease of operation and added space for larger helm seats. The new Targa also features an extended pilothouse, larger anchor locker to accommodate an underbow auto anchoring system, larger transom engine wells and longer hull length that allows for a 180-pound increase in buoyancy for enhanced performance of heavier outboards.

The Protector Targa 30 can be outfitted with twin outboard engines, or a single inboard gas or diesel option. The vessel weighs approximately 7,200-pounds, has a 9.5-ft. beam when inflated (8.25-ft. beam when deflated) and an overall length of 30.5 ft.

The boat has a deadrise of 60-degrees in the bow and 23-degrees in the aft, and draws two-feet of water. All Protector vessels feature a solid hand-laid fiberglass hull, shock-mitigating seven chambered hypalon tubes, and ,.ma 5-year structural hull warranty.

www.protectorboats.com
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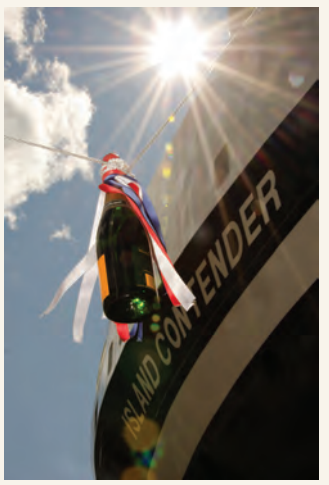
LPD 23
Completes USN Trials

Huntington Ingalls Industries completed another successful sea trial as the amphibious transport dock Anchorage (LPD 23) returned from a three-day testing voyage in the Gulf of Mexico. The company's seventh ship in the LPD 17 class returned following rigorous testing of most of the ship's systems.

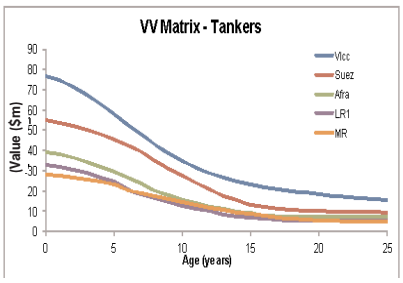
During the five-day acceptance trial evolution on land and at sea, the U.S. Navy's Board of Inspection and Survey (INSURV) observed more than 220 test events demonstrated on the ship by Ingalls' test and trials team. The team thoroughly tested ship systems such as anchor handling, flight operations, steering, navigation, ballasting and de-ballasting the well deck, and compartment air balancing.

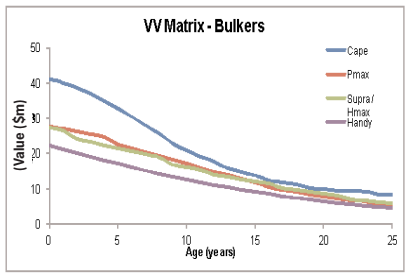
Island Offshore's Gas-Powered OSV

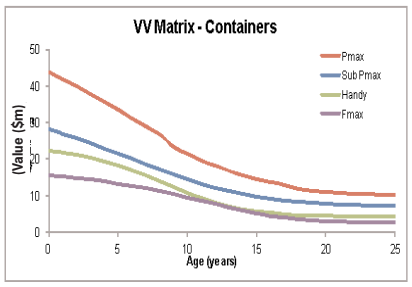


Rolls-Royce said that Island Offshore has taken delivery of Island Crusader, the first gas powered Rolls-Royce offshore vessel. This new UT 776 CDG platform supply vessel, is the first of two ordered by Island Offshore. “A very important area for Island Offshore is reduction in fuel consumption,” said Håvard Ulstein, Managing Director of Island Offshore. “With the UT 776 CD, the favorable hull lines contribute to a very low consumption rate over a wide range of operating drafts. We believe that the most significant contribution to reducing emissions is to reduce fuel consumption for a given amount of work done. Going for LNG fuel is a logical step in reducing emissions even further. ”This is the first offshore vessel to feature lean burn gas engines as main engines. As a result Nitrogen Oxide (NOx) emissions will be reduced by about 90 percent while Sulfur Oxide (SOx) emissions and particulates will be negligible. CO2 emissions will also be significantly reduced. The vessel is also equipped with two diesel engines for periods when it needs to operate away from gas supply.

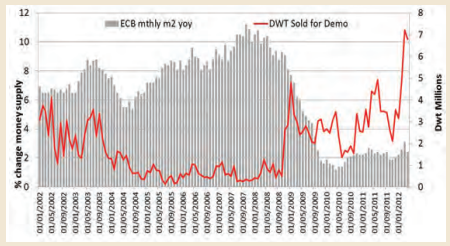
VesselsValue.com
VesselsValue.com provides data driven ship valuations for tankers, bulkers and containerships. These graphs show how vessel value depends on age for the major types. Vessels are assumed to have typical size and specification for age and high built quality at a top tier shipyard.







Ship Recycling Prices Plunge 25%



Demolition Prices for older tonnage have fallen by a quarter in 2012 to date, and according to Mark Williams of Braemar Seascope, owners are encouraged to dispose of recycling candidates sooner rather than later.

This was the message from Williams when addressing the 7th Annual Ship Recycling Conference in London on June 19. Williams also told delegates that deflating international steel prices were likely to translate into lower offers for recycling tonnage in the coming quarters.

Simultaneously, there is a rapid reduction in the value of the Indian, Pakistani and Bangladeshi currencies against the US dollar, causing difficulties for cash buyers and end users struggling to pass on cost increases to their own customers, despite long-term strong recycled steel demand growth prospects in the sub-Continent.

Forex risk for recyclers has been compounded by intermittent limited availability of credit.

Williams also presented the hypothesis that spikes in scrapping are driven not only by low freight rates, or high scrapping prices, but by credit crunches. "Credit crunches coincided with peaks in recycling in 1986 (the year the Biffex bottomed out at 550 points and banks had stopped supporting technically bankrupt owners following the savings and loan crisis), 1998 (the Asian financial crisis which led to an Asia-wide credit crunch and high scrapping despite relatively low values per LDT) and 2008/09 (the global financial crisis)" which is depicted on the chart above.

Stricken Tanker Finds Refuge in Bahrain

ASRY Assesses Fire Damage


(Photo: ASRY)

Fire-damaged chemical tanker Stolt Valor arrives at Bahrain yard, with neighboring countries declining refuge.

The General Organization of Sea Ports (GOP) said that the Liberian vessel — MV Stolt Valor — was granted permission to take refuge in Bahrain's waters. The operation to move the tanker to the Arab Shipbuilding and Repair Yard (ASRY) began on June 26, where the ASRY team began preparing it for its onward journey.

Prior to the commencement of the tow operation, the GOP submitted a plan of action for approval by representatives from Bahrain's Environmental Affairs and the Bahrain Coast Guard, after which the matter was presented to the National Committee for the Combating of Disasters and other concerned parties for their approvals. The decision to provide refuge for the ship followed a period of intense preparation for the potential transit of the vessel into and through Bahrain's territorial waters.

The vessel, a Liberian chemical tanker, caught fire in the early hours of March 15, 2012, north of Bahrain. The GOP has conducted a full risk assessment of the situation, and is in continuous contact with all concerned parties, including the Bahrain Coast Guard and the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PMEW), the vessel's Flag State regulator - Bureau of Maritime Affairs - Liberia, in order to ensure that the vessel is towed to Bahrain as per the approved plan.

"Most importantly we are committed to protecting the safety, security and the environment of Arabian waters, to which Stolt Valor posed a risk," said ASRY Chief Executive Chris Potter. "Therefore, as the most experienced shipyard in the region, we see it as our duty to bring our 35 years of experience to bear on this challenging repair, where other yards were not willing.' Safety and security of ASRY personnel remains the yard's highest priority, and ASRY's renowned high standards will be met while undertaking all exploratory investigations.


(Photo: ASRY)

A key factor in approving the vessel for transit to ASRY was the compliance of the vessel's owner with a number of stringent requirements, including: performing offshore lighterage of all heavy fuel oil, diesel, lube oil and all cargo remaining on board; gas freeing for the entire vessel including all tanks; structural assessment report for the intended tow-voyage to the repair yard; confirmation from ASRY for receiving vessel directly to the dry dock; approval to use an inward route to ASRY outside the main channel; and full liability for any unforeseen eventualities.

"We are happy to provide refuge for the Stolt Valor vessel in Bahrain, especially since the ship owner has fully complied with our requirements," said Director General of the GOP Hassan Ali Al Majed. " As the maritime regulator, GOP is committed to complying with the rules and regulations as laid down by the IMO, and we feel it is our duty to provide what assistance we can. The scale of the Stolt Valor operation is unique to the region due to its complexity, however we are confident in the technical expertise of our teams who are all committed towards resolving the situation quickly."

MHI to Develop "UEC-LSGi" Low-speed, 2-stroke, Dual-fuel Marine Diesel

Mitsubishi Heavy Industries, Ltd. (MHI) has begun developing "UEC-LSGi," low-speed, dual-fuel, marine diesel engines capable of using not only conventional heavy oil but also natural gas as fuel.

The new engine will be added to the lineup of the Mitsubishi UEC Engine Series, the company's 2-stroke, low-speed marine diesel engine brand. **It is scheduled to be launched onto the market in 2015**.

For the new engine, MHI will engage in the development of new components requisite for dual-fuel use, including a new direct fuel injection system, a gas-fuel supply system and control system, targeting to complete preliminary testing by a single cylinder testing machine within fiscal year 2013 (by the end of March 2014).

The company will then conduct verification tests for full-scale engines with dual-fuel use capability and bring an 11,000 – 18,000 kW class power output UEC-LSGi engine with a cylinder bore of 600mm onto the market.

A variety of market factors drove MHI to invest in this technology. The price of heavy oil used as fuel for low-speed, 2-stroke marine diesel is expected to rise in the future.

In contrast, the price of natural gas fluctuates in a relatively narrow range, and the supply of shale gas, a non-conventional type gas, has stabilized due to the advances and sophistication of production technology.

Under these conditions, the interest and expectation of concerned parties in the development of natural-gas firing low-speed, 2-stroke marine diesel engines has been increasing.

In addition, IMO is progressively strengthening regulations on sulfur content in fuel oil aiming to reduce SOx (sulfur oxides) contained in gas emitted from ships.

Ultimately, the sulfur content in the fuel used for marine ships will be required to be less than 0.5% in 2020, considerably lower than the current figure of under 3.5%.

For the engine, MHI will use the diffusional combustion method, in which high-pressure gas, about 300 bar, is injected in the air compressed by the cylinder stroke and ignited by the pilot flame by a very small amount of fuel oil.

The method excels in responsiveness for changes in gas fuel composition and sudden changes in engine load.

Leveraging this feature, MHI will develop the engine with high combustion stability.

The UEC-LSGi will also be designed to be capable to operate with heavy fuel only to the 100% engine load, which enables it to meet various operational needs. For NOx (nitrogen oxide), natural gas is slightly advantageous compared with conventionally used heavy oil.

MHI will apply its EGR (exhaust gas recirculation) technology, currently in development, and others for the new engine to comply with IMO rules.

Arctic Shield 2012

The United States Coast Guard is assembling its largest ever effort in the Arctic

While it seems that half the world is monitoring the oil and gas exploration activities of Royal Dutch Shell (Shell Oil) on the United States outer continental shelf (OCS) in waters of the Chukchi and Beaufort Seas off the north coast of Alaska, another historic event is occurring in those same waters: Arctic Shield 2012. The US Coast Guard is assembling its largest ever effort in the Arctic during the period July through October 2012.

The Coast Guard has been gradually expanding its presence in the Arctic over the past four years. What started out as mostly an aviation mission has expanded to encompass the full panoply of Coast Guard missions. This expansion gained broad attention this past winter when the USCG icebreaker HEALY escorted the Russian ice-strengthened tanker RENDA on a voyage through the ice-choked Bering Sea to bring emergency fuel to Nome. This summer, though, the Coast Guard is making a full-court press. The National Security Cutter BERTHOLF, the Medium Endurance Cutter ALEX HALEY, and the buoy tenders HICKORY and SYCAMORE will be operating in waters of the Chukchi and Beaufort Seas, testing their ability to perform national security, maritime safety, law enforcement, marine pollution prevention, and other Coast Guard missions in Arctic waters. They will be joined by four helicopters, a mobile communications facility, and various shore-based assets. In a first-ever Arctic waters test, the Coast Guard, the US Northern Command, the Navy Supervisor of Salvage and Diving, and other agencies will deploy Spilled Oil Recovery System (SORS) equipment from one of the buoy tenders.

In addition to providing the Coast Guard with improved Arctic domain awareness and the opportunity to respond to emerging mission demands, Arctic Shield 2012 will provide additional operational experience in the Arctic, including operation of assets, deployment of personnel, and the conduct of exercises.

In a first-ever Arctic waters test, the Coast Guard, the US Northern Command, the Navy Supervisor of Salvage and Diving, and other agencies will deploy Spilled Oil Recovery System (SORS) equipment from one of the buoy tenders.

Outreach

A major emphasis of Arctic Shield 2012 will involve expansion of the Coast Guard's ongoing outreach program with its Alaskan Native partners. The outreach program dates from shortly after the US purchase of Alaska from Imperial Russia in 1867. The Revenue Cutter Service vessel LINCOLN carried the first federal officials from the West Coast to the newly acquired Alaska Territory. Thereafter, cutters made regular patrols through Alaskan waters, bringing doctors and teachers and enforcing federal laws, including fur seal protection.

Since February 2012, Coast Guard and other federal, state, and local agencies have been conducting over 50 humanitarian outreach events in 27 different Alaskan Arctic communities.

This operation is the nation's largest humanitarian outreach effort, other than those directly related to disaster response. Included in the outreach effort are medical, dental, and veterinary assistance programs focused in the three hub communities of Nome, Kotzebue, and Barrow. Outreach efforts also include water safety, ice safety, boating safety, commercial fishing vessel safety, and search and rescue training in remote fishing villages. The Coast Guard will also be working directly with Alaskan Natives during Arctic Shield 2012, benefiting from their intimate knowledge of the Arctic environment.

Geography and infrastructure

The operation is particularly complicated because of the geography. Everything is staged out of Kodiak, in southwest Alaska, where the Coast Guard has a large base and air station.

The nearest deepwater port is in Dutch Harbor, at the eastern end of the Aleutian Chain. Some resupply can be done through Nome, but it lacks an adequate dock where the large cutters can moor. Kotzebue, Barrow, Prudhoe Bay, and other locations along the Alaskan Arctic coast lack any port facilities and have minimal infrastructure for mission support. In other words, you must largely bring with you whatever you might need.

In addition to the vast distances involved in Arctic operations, there is a dearth of traditional resources. The waters are not well charted. There are no permanent aids to maritime navigation, such as lighthouses and buoys (the Marine Exchange of Alaska, though, has recently established a chain of automatic information system [AIS] transceivers along the Alaskan Arctic coast). There are few airports or runways. Search and rescue (SAR) assets and marine pollution response capabilities are minimal. Even land transport capability in the Arctic region is meager.

While the Shell Oil activities may have highlighted activities in waters of the US Arctic, things have been gradually building up for some years now. In 1969, the supertanker MANHATTAN was escorted by US Coast Guard and Canadian Coast Guard icebreakers through the Northwest Passage from the Atlantic Ocean to Prudhoe Bay following the discovery of oil reserves on the Alaskan North Slope. Over the years since that pioneering voyage, more resource extraction activities have occurred. Commercial fishing is slowly increasing. Ice-strengthened cruise ships have commenced voyages through Arctic waters, though not always without incident. In 2010, the cruise ship CLIPPER ADVENTURER was aground for three weeks in waters of the Northwest Passage after it struck an uncharted rock. Fortunately for all concerned, including the 110 passengers, the weather was favorable and there were no injuries. Things

could easily have turned out differently.

International Interest in the Arctic

While all planned activity during Arctic Shield 2012 will be well within United States waters, the interests of neighboring Canada are not being ignored. A representative of the Government of Canada has been invited to ride one of the USCG cutters has an observer.

Partly in anticipation of possible oil and gas deposits in deep waters of the Arctic Ocean, various nations are conducting scientific missions in those waters. The principal players are the so-called Arctic nations: Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden, and the United States. Lately though, other nations have demonstrated an interest in the Arctic. China has dispatched its polar icebreaker XUE LONG (Snow Dragon) to the Arctic four times (1999, 2003, 2008, and 2010). During its 2010 Arctic voyage, the XUE LONG reached its northern-most point, 88.22°N at 177.20°W. From there, its helicopter flew scientists to the North Pole for some research work. The icebreaker is due to depart in July 2012 for a four-month voyage to the Arctic for a planned trip through the Bering Strait and across the Arctic Ocean to the Atlantic. During this voyage, the icebreaker will probably call at China's Yellow River Station in Ny-Ålesund, Svalbard.

Balancing Environmental Advocacy and Marine Safety

The Coast Guard assets would be in position to monitor the offshore oil and gas exploratory drilling for compliance with applicable federal laws and regulations. There is also the possibility, hopefully remote, that environmental advocates may seek to interfere with those federally-permitted activities. While it is not the mission of the Coast Guard to impede legitimate civil protests, the Coast Guard will take appropriate action in the event of unlawful civil protests or in the event that any protests create unsafe conditions. In February 2012, at Port Taranaki, New Zealand, a small group of environmental advocates, including Lucy Lawless, star of the recent television series "Xena: Warrior Princess," boarded the drillship that Shell Oil intends to utilize in its operations in the Chukchi Sea this summer. Subsequently, Shell Oil obtained injunctions to prevent the boarding of its vessels during this summer's federally-permitted activities. At least one environmental advocacy group has publicly stated that it intends to use one of its vessels to shadow the Shell Oil ships en route to and operating in Arctic waters. The Coast Guard proposes to establish safety zones around the drilling operations so as to maintain a safe separation between those operations and any demonstrators or other vessels or persons in the vicinity.

Summary

Arctic Shield 2012 represents not the culmination of 145 years of Coast Guard operations in Alaska, but the commencement of a new chapter of Coast Guard operations in the Arctic. As long term weather patterns change and the Arctic becomes the scene of broader human activities and challenges, the Coast Guard is demonstrating that it is ready to undertake its new and expanded missions in Arctic waters. The challenges are many and not to be taken lightly, but the importance, and inevitability, of greater Coast Guard presence in the Arctic cannot be denied.

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Arctic Sea Ice Retreats

Presenting Opportunities and Challenges for the United States

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The melting polar icecap is presenting both opportunities and challenges for the United States and other Arctic nations, as well as other nations with interests in the region. Arctic ice cover has declined consistently over the past few decades. Increased accessibility, dubbed an "emerging maritime frontier" by U.S. Coast Guard Commandant Admiral Robert J. Papp, Jr., presents a host of opportunities for oil and gas development, fishing, tourism, and transportation. It also creates myriad challenges related to Arctic governance, marine safety, indigenous populations, scientific research, and environmental stewardship. This article reviews the state of play regarding claims to the Arctic and the U.S. Coast Guard's efforts to develop a strategy to meet its increasing responsibilities in the Arctic.

Arctic Conflicts

The Arctic Ocean is perhaps the last unexplored region in the world. The U.S. Geologic Survey has estimated that the Arctic holds one-fifth of the world's undiscovered, recoverable oil and gas. In 2009 the Energy Department calculated that the Russian side of the Arctic is richer in natural gas, while the North American side is richer in oil.

All five countries bordering the Arctic Ocean, Russia, Norway, Denmark, Canada, and the United States, are asserting ownership over regions of the Arctic. Russia claimed a vast portion of the Arctic reaching the geographic North Pole, stating that the entire area is part of the Siberian landmass. Russia expects the Arctic to become its primary resource base by 2020 and has made commitments to securing and protecting its Arctic interests. Norway asserted right to two yet unclaimed portions of the Barents Sea and Norwegian Sea. Canada and Denmark have made unofficial claims and are conducting research to support their assertions. With areas of overlapping claims or general disapproval by the international community, many of the Arctic claims thus far are in conflict and remain unresolved.

The increasing viability of the Northwest Passage as a shipping route has also created a substantial amount of conflict. The Northwest Passage is a potential trade route that weaves through the Canadian Arctic Archipelago reducing voyage time significantly. Canada claims the Northwest Passage as its internal waters, which allows Canada to regulate every aspect of the area, including transits. The international community has interpreted it as an international strait over which Canada would have little control.

The United States has significant interests in the outcome of Arctic issues. International recognition of U.S. sovereignty over portions of the Arctic would provide opportunity for U.S. businesses, particularly the oil and gas development industry, meet national security needs, and allow the United States to ensure adequate environmental protections. The United States has also argued strongly that the Northwest Passage is an international strait.

Relation between the Law of the Sea Treaty and Events in the Arctic

To date, there is no international agreement to which the U.S. is a party that clearly allocates the resources and sea lanes of the Arctic. In the past, some have proffered a separate Arctic Convention. But, recently, the relationship between the Arctic and the Law of the Sea treaty has come to the forefront. The U.S. is the last industrialized nation and the only member of the U.S. Security Council who has not ratified this treaty. To do so now requires a two-thirds vote of the U.S. Senate. Most recently, Senator John Kerry, Chair of the Senate Foreign Relations Committee, backed by the Obama Administration, is trying to develop the necessary support to accede to the treaty.

At a recent Senate Foreign Relations Committee hearing, the Obama Administration brought out a troika of big guns to support ratification of the Law of the Sea Treaty. Testifying for the Administration were Secretary of State Hillary Clinton, Secretary of Defense Leon Panetta, and General Martin Dempsey, Chairman of the Joint Chiefs of Staff. It is the first time a sitting Secretary of Defense has testified in person in support of ratification. The three witnesses gave compelling testimony why the U.S. should accede to the treaty.

- Mineral Rights in an Extended Continental Shelf

Secretary Clinton explained that by acceding to the treaty, "[t]he United States is further advantaged by provisions in the treaty that allow the continental shelf –and oil and gas rights—to extend beyond 200 miles in certain areas. Off the north shore of Alaska, our continental shelf could extend 600 miles into the Arctic." Under the treaty, a nation is allowed to prove that its continental shelf extends by virtue of geography beyond the 200-mile Exclusive Economic Zone. However, the U.S. does not have a seat or representative at the Commission on the Limits of the Continental Shelf, established under the treaty, at which claims from nations to extended sovereignty can be proposed, debated, and proven. Russia, for example, has already claimed a large extended continental shelf as far as the North Pole based on the Lomonosov Ridge, an extension of the Siberian continental shelf. But, the U.S. has no official means of contesting this.

- Rights to Navigation

Secretary Panetta echoed Secretary Clinton's remarks as to the economic benefits that would be derived by joining the treaty testifying that "[a]ccession would also secure our navigation and over-flight rights throughout the Arctic, and strengthen our arguments for freedom of navigation through the Northwest Passage and Northern Sea Route." Ensuring the U.S. has access to mineral resources believed to be in the Arctic should be combined with securing and maintaining our navigational freedoms through and under the sea.

Finally, Joint Chiefs Chairman Dempsey noted that the treaty would provide a "consistent and effective legal framework" for opposing expanded and "illegitimate" maritime claims by other nations, which he noted has become "particularly problematic in the Pacific and the Arctic, two regions whose importance to our security and our economic prosperity will only increase over the next several decades." Supporting the rule of law was a major theme echoed by the Administration witnesses.

- Opposition to the Treaty Continues

The witnesses were not able to persuade the opponents of the treaty to their point of view. Senator Inhofe (R-OK), for example, expressed the concerns of the minority that joining the treaty would lead to both a loss of sovereignty and to a loss of revenue from sharing revenues that derive from development in the extended continental shelf.

To date, there is no international agreement to which the U.S. is a party that clearly allocates the resources and sea lanes of the Arctic. In the past, some have proffered a separate Arctic Convention. **But the relationship between the Arctic and the Law of the Sea treaty has come to the forefront.** The U.S. is the last industrialized nation and the only member of the U.S. Security Council who has not ratified this treaty.

Secretary Clinton acknowledged that revenues might be shared with less developed countries from the extended outer continental shelf, but only after many years of production. The Heritage Foundation continues to oppose the treaty on the grounds that it could expose U.S. industry to "baseless international lawsuits," although, on the day of the Kerry hearing, the U.S. Chamber of Commerce took out a full page advertisement in the Wall Street Journal urging U.S. ratification.

Senator Kerry committed to giving the opponents more hearings to present their points of view and agreed not to bring the treaty to the Senate Floor for a vote until after the Presidential election. In the meantime, he has scheduled hearings to take testimony from current and former Defense Department officials. Former Secretary Rumsfeld is one of the witnesses who will oppose ratification.

U.S. Coast Guard Arctic Initiatives

The U.S. Coast Guard, recognizing its responsibilities in the Arctic are increasing as more and more navigable water becomes available, has begun an Arctic Maritime Campaign to evaluate its required mission activities and to determine the resources it needs to successfully conduct those activities, including icebreaking, search and rescue, and environmental response capabilities. As evidence, recently the Coast Guard Academy hosted a conference entitled "Leadership for the Arctic." Unfortunately, there is currently little Coast Guard infrastructure to support Arctic operations, ashore or at sea. The Coast Guard has stated that it requires at least four heavy and two medium icebreakers to fulfill its missions in the Arctic.

It currently has only one operational icebreaker, the Coast Guard Cutter HEALY, a medium sized icebreaker designed for conducting scientific research. Two additional heavy-duty icebreakers, the POLAR STAR and POLAR SEA, have been out of service since 2010.

The POLAR STAR is undergoing extensive repairs preparing for reactivation in 2013. Plans to decommission the POLAR SEA in June were put on hold to allow Congress more time to establish a firm plan to strengthen the United States' icebreaker fleet. In the meantime, the Coast Guard is establishing a presence in northern Alaska in view of the many emerging Arctic activities.

Conclusion

The debate over the Arctic with its potential for extended transport, and underlying wealth of resources beneath the ocean has just begun.

Because the U.S. cannot unilaterally claim the deep seabed or extended continental shelf beyond national waters, the Administration has concluded that only an international agreement can provide the security that the U.S. needs to operate in the Arctic.

Detractors of an international agreement disagree and have successfully blocked ratification efforts to date. As Arctic activities increase, so will the intrigue on the final resolution of the legal and political issues.

Catastrophic Failures

Of VFD and HF systems for Electric Propulsion Systems are Alarming Situation

Standard requirement: Systems need better self-monitoring and protection

Commercial and military users of electric propulsion systems have experienced failures of the variable frequency drive (VFD) and harmonic filter (HF) systems because the system design, including the VFD, did not have adequate self-monitoring and protection.

On a ship, a variable-frequency drive (VFD) can be used to control the speed and direction of rotational motors, such as pumps, propellers and azipod systems.

In some cases, these failures have resulted in catastrophic equipment failures causing arcing, fire and explosions of capacitors.

In September of 2010, the Cunard Carnival cruise ship RMS Queen Mary 2 (QM2) was underway in the Mediterranean when an explosion occurred in the aft main switchboard room resulting from the failure of one of 12 capacitors in a harmonic filter, causing a power outage on the ship and all four electric-drive Rolls-Royce Mermaid podded-propulsion motors to shut down. QM2 has four Wärtsilä 16V46CR marine diesels and two GE LM-2500+ gas turbines for main propulsion.

The U. K. Marine Accident Investigation Branch (MAIB), a branch within the Department for Transport that "examines and investigates all types of marine accidents to or on board UK vessels worldwide, and other vessels in UK territorial waters…. to determine its circumstances and causes, with the aim of improving the safety of life at sea and the avoidance of accidents in the future," investigated the QM2 incident.

According to the MAIB investigation report of the QM2 incident— which MAIB classified as a "less serious marine casualty"—emergency power came online immediately and the engineers were able to isolate the after switchboard. "The emergency generator started automatically and provided essential supplies to the vessel, and it was quickly established that the explosion had taken place in the aft harmonic filter (HF) room, situated within the aft main switchboard. The aft main switchboard was isolated, main generators were restarted and the ship was able to resume passage."

The MAIB report determined that "the explosion was triggered by deterioration in the capacitors in the aft HF. Internal arcing between the capacitor plates developed, which vaporiZed the dielectric medium causing the internal pressure to increase, until it caused the capacitor casing to rupture. Dielectric fluid vapor sprayed out, igniting and creating the likely conditions for an arc-flash to occur between the 11000 volt bus bars that fed power to the aft HF."

"A current imbalance detection system, which was the only means to warn against capacitor deterioration, was found to be inoperable, and it was evident that it had not worked for several years," the report said.

Equipment deterioration and insufficient monitoring led to an explosion, arcing and fire aboard a 140,000-ton, 1,130-ft. ship, which normally carries 2,620 passengers and 1,253 crew members. Although equipment failure due to manufacturing defects is possible, the initial degradation of the capacitor was likely caused by being "subjected to voltages in excess of their design rating or being exposed to frequent voltage transients due to increased number of switching cycles."

The problem, which concerns oil filled capacitors and other types of capacitors that don't use flammable insulation, is that the mitigation for failure effects of failed capacitors has not been adequate.

Some mitigation strategies include:

- Using non-oil filled capacitors
- Improving the capacitor health monitoring systems
- Employ protection systems in the capacitor banks on detection of a capacitor failure
- If using oil filled capacitors, employing arc fault detection protection and fixed fire extinguishing
- Minimize the use of capacitors through inverter design.

Of further concern was that the protections that were in place—an alarm notification—was overlooked in the confusion created when so many alarms occur almost constantly.

The P1200 propulsion alarm system (PMS) is part of the ship's integrated automation system (IAS). There was a possible warning of a problem when there was a PMS alarm about 36 minutes before the explosion. Because the IAS has so many alarms—about one every minute—watchstanders can become immune to them.

Granted, electric drive propulsion systems represent a small percentage of the total number of ships over 300 tons.

Of all operational vessels over 100 gross tons, MAIB indicated that just 1.85% of them have high voltage electric propulsion systems, although they are becoming more commonplace.

The MAIB report said that 4.10% of vessels being constructed are electrically propelled. "Variable speed motors are becoming commonplace in new ships with electrically-driven propulsion, cargo pumps or other applications, benefiting from this technology."

Norwegian classification society DNV reported that it has 319 vessels registered which have high voltage electric propulsion, the majority of them using capacitor-based harmonic filters.

There are several classes of warships with electric drive, and some of the newest, most sophisticated ships have integrated propulsion systems, such as the British Type 45 air warfare destroyer and the DDG 1000 guided missile destroyer for the U.S. Navy.

Aware of the cause of the QM2 fire and the findings by MAIB, the Naval Sea Systems Command (NAVSEA) in Washington issued a letter (9830, Ser 05D/219) on May 4, 2012, with the following actions and recommendations:

Action

a. Remote monitoring of electric networks to achieve advance warning of capacitor deterioration (ex: current imbalance, transient voltage spikes, resonances, excessive harmonic distortion levels and temperature monitoring).

b. Fixed fire extinguishing systems appropriate for fire hazards and electrical voltage in the space be supplied for any space with oil filled capacitors because of the potential for a fire.

c. Warning placards for spaces containing medium and high voltage equipment stating that the space should not be entered while equipment is energized.

d. Fail safe protection systems where failure of the equipment or machinery may lead to serious damage or injury to personnel.

e. Arc Flash analysis and mitigation early in the design process and arc flash hazard level labeling.

Recommendations

a. The Military Sealift Command (MSC) review their in-service ships, and the U.S. Coast Guard (USCG) review their in-service ships and new designs, for the purpose of assessing the risk of fire due to failure of oil filled capacitors. The mitigation measures of [above] should be given consideration, in advance of any future rule changes.

b. MSC and USCG collaborate with NAVSEA to pursue rule changes to SVR, IEEE and IEC.

c. USCG pursue appropriate changes to SOLAS rules under IMO.

Furthermore, the IEEE standards-development committees are working on solutions to these failures. IEEE Std 1662TM-2008 states: "In the case of a catastrophic fault, power electronics equipment shall protect its surrounding environment and personnel. If the equipment shuts down due to an internal catastrophic fault, the equipment controller shall inhibit a remote or an automatic startup. The automatic shutdown of the equipment shall de-energize its output and shall coordinate isolation from the system."

Mohammed Islam chairs the Central Coordinating Committee for Developing

IEEE-45 Standards, as well as chairing IEEE Std P45.1, "Recommended Practice for Electrical Installations on Shipboard – Detailed Design." Islam believes that ship design efforts need to increase the system-level integration design activities or require stricter self-monitoring and control for purchased VFD equipment.

"This situation demands urgent undertaking by the authorities having jurisdiction," he said.

Islam recommends the following corrective actions:

a. Authorities with jurisdiction establish a committee to:

1) Develop a process for on-site investigative action and reporting for all ships with VFD equipment.

2) Develop a process for the VFD suppliers to establish their duties and responsibilities to provide safe equipment to the maritime industry.

3) Develop a process for the ship design agents to define their responsibilities for design and integration of VFD equipment.

b. Review the findings of the committee and develop guidelines for the ship designers, VFD suppliers, and all related equipment suppliers.

c. Circulate an announcement urgently to the commercial and military ship operators to do the following:

1) Advise operators of the findings.

2) Advise operators of necessary immediate corrective action.

3) Develop rules and recommendations for designing stable VFD systems.

4) Develop rules and recommendations for maintenance of VFD systems to allow systems to operate for their intended life and for the safety of operators.

Captain Ned Lundquist retired from the U.S. Navy in 2000 and continues to be involved with maritime and naval affairs. He is a frequent contributor to Maritime Reporter and Marine Technology Reporter.
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Design Requirements

Power electronics equipment should be designed for continuous operation at 110% (as defined in IEEE Std 1566TM-2005) within the maximum ambient and cooling water or air temperature (if water or air cooled) without reduction of the equipment's rated performance criteria.

Power electronics equipment should be provided with a minimum overload rating of 150% for 1 min.

Power electronics equipment should be used in preference to electromechanical equipment to supply electric power having characteristics that differ from those of the power furnished by the ship service distribution.

From a power electronics perspective, it is preferable that high resistance grounding (HRG) be used on the source side of all new marine applications on isolated and otherwise ungrounded three-wire, three-phase distribution systems with voltages over 1000 V and aggregated power above 1.5 MW

Power electronics equipment should be selected for the highest operating efficiency that is commensurate with reliability, duty cycle, and requirements of minimum size and weight. Power electronics equipment should have a minimum efficiency of 95% (5% total losses) at rated load condition.

Control systems should be designed such that they do not create negative damping on other systems or equipment. The load input impedances of the power electronic equipment should include effects of filters, switched portions of converters, and resistive portions of the load over the appropriate frequency range. The minimum Nyquist stability margin shall be a 3 dB gain margin and a 30° phase margin at all load levels. The stability margin should not reduce power system efficiency more than 1%.

Protection requirements

Power electronics equipment with controllable converters should be equipped with the capability to manage fault current for system protection and for avoiding shutdowns due to intermittent faults. The converter fault-current-limiting feature should reduce the fault current to the specified limiting level in every instance when the fault happens. The equipment shall automatically shut down before the interface current exceeds a catastrophic level.

In the case of a catastrophic fault, power electronics equipment shall protect its surrounding environment and personnel. If the equipment shuts down due to an internal catastrophic fault, the equipment controller shall inhibit a remote or an automatic startup. The automatic shutdown of the equipment shall de-energize its output and shall coordinate isolation from the system.

Reliability and maintainability requirements

Unless otherwise specified, power electronics equipment should incorporate the following Reliability and maintainability (R&M) provisions:

The PE equipment and all its components should be designed and manufactured for a minimum service life of 20 years. This should include availability of spare parts and appropriately trained field service personnel. PE equipment should be designed to achieve a mean time between failure (MTBF) of not less than 25 000 h using NAVSEA TE000-AB-GTP-010-1991 for design and derating guidelines.

PE equipment should be designed to achieve a mean time to repair (MTTR) of 1 h or less for any line replaceable unit (LRU). The maximum time to repair should not exceed 3 h at the 95% confidence level. Repair times should include the time required for detection, isolation, disassembly, LRU replacement, reassembly, alignment, verification of repair, setup, and return to operation.

Islam invites interested individuals seeking additional information or to willing to contribute to the efforts to mitigate this issue to contact him at moni.islam@ieee.org or 504-333-5004

Dr. Yuri Khersonsky is a life senior member of IEEE and was chair of the committee that developed IEEE Std. 1662™-2008, *"Guide for the design and application of Power Electronics in Electrical Power Systems on Ships."* According to Khersonsky, the standard states that systems should have a sufficient operational safety margins and protections.

Roles & Limits

Exploring the expectations and the realities of professional indemnity insurance

What expectations do people have of professional indemnity insurance and, in reality, are they going to be met? In a typical ITIC claim, a Panama Canal agent booked the ship for a southbound instead of a northbound passage. In practice, it simply ticked the wrong box on the form. When the mistake was discovered there were no slots available in the correct direction. The result was a three-day delay. The owners claimed for the delay, together with a transit cancellation fee (for the wrongly booked southbound transit).

The cost of a three-day delay in the current shipping markets is eye-wateringly high and beyond the means of many smaller ship agency companies. Being there to meet such claims is the role of professional indemnity insurance.

Keeping Expectations in Perspective

The first observation on the role of professional indemnity insurance is that the professional's clients should be able to expect that, if the professional makes a mistake, there is a reasonable sum available in compensation. Meeting this expectation underpins confidence in the professional's market place. That is one of the roles of professional indemnity insurance. The expectation should not, however, be unrealistic. The insurer can only provide the cover that is affordable and corresponds with the risk underwritten.

The most obvious limit is that on the amount of cover. No professional should trade without an appropriate level of cover. The available compensation is not, however, unlimited. Professional intermediaries cannot be expected to have limits of cover beyond what is reasonably affordable out of the fees or commissions they receive. There have been well-publicized cases of shipbrokers facing multi-million-dollar claims. However, if the job only pays $5,000, it is not going to fund the insurance required to meet potential $100m claims.

Small Mistakes = Big Consequences

Shipbroking is a profession where relatively small mistakes can have enormous consequences. For example, a London tanker broker verbally informed a New York broker that the tanks of the ship had been "washed but not fresh water rinsed". The New York broker passed on this message as "fresh water washed". The salt in the tanks contaminated a cargo of vegoil to the tune of $900,000 – a large bill for a small miswording.

Ship managers have addressed the potential size of claims by the use of limitation of liability clauses. The industry standard BIMCO Shipman 09 contract limits the manager's liability to ten times the annual management fee. That can still be significant, but it is the sort of level for which coverage is available at a reasonable price. It will be interesting to see if the well-reported multi-million-dollar claims against shipbrokers lead to the adoption of the use of terms and conditions.

Exceptions to the Rule

There are of course occasions when covering claimants' legal entitlement will not meet their desires. The following is a claim reported by ITIC:

Sale and purchase brokers representing the sellers of a vessel received a list of questions from the buyers' broker, including whether or not the ship's underwater parts were painted with SPC colours.

The sellers' brokers failed to see the significance of this question and, after checking with the sellers, informed the buyers' broker that the hull had been painted some two or three years earlier.

The paint used at that time was a standard anti-fouling product, whereas SPC is an abbreviation for Self-Polishing Copolymer – a specialist kind of anti-fouling paint. After the ship had been delivered, the buyers attempted to recover the costs of coating the hull with SPC paint, which involved drydocking, sandblasting, loss of hire and so forth from the sellers. This claim was, of course, passed to the broker.

The broker had obviously failed to perform the services with the skill and care that one would expect from a specialist sale and purchase broker, and was liable to indemnify the sellers against their actual liability to the buyers. The broker's liability was not, however, to pay for the costs of coating the vessel with SPC paint but to pay the difference in market value between the vessel with and without this coating. This figure was relatively modest.

There is often a large gap between legal liabilities and the aspirations of claimants. Claimant may well feel that they didn't get what they bargained for and should be reimbursed. This is often the case with claims against yacht surveyors. The surveyor will explain that his £200 pre-purchase survey will cover what he can see. The claimant will want a yacht without defects. Surveyors do not guarantee the vessel. The aspirations will always be different.

Professional indemnity insurance cannot provide credit risk insurance for the professional's clients. The role of a professional indemnity insurer is to cover errors by the assured. An area where the professional indemnity insurer finds that it is being moved away from simply insuring mistakes by the insured is the tendency of governmental bodies to impose statutory liabilities on ship agents in circumstances where the true liability should lie with the ship owners. The governmental bodies have, of course, drawn the obvious conclusion that it is too much trouble to pursue ship owners around the world, so tend to concentrate on their local representatives.

Some examples of statutory liabilities faced by ship agents are:

- Cargo claims [e.g., Kuwait, Colombia, Pakistan, Philippines]
- Freight tax [e.g., Malaysia, India]
- Immigration fines and costs of repatriating stowaways [most countries, including the UK, USA and Canada]
- Wreck removal/dock damage [Australia, Uruguay, Venezuela]

In all these cases the professional indemnity insurer will seek to recover from the party responsible, but clearly the agent needs protection from such liabilities.

Professional indemnity insurance should protect insureds even if they are not the ones to make a mistake. Liner agency agreements are frequently long and detailed documents. Issued by the principal, they often contain a requirement that the agent will maintain professional indemnity insurance (which is nice). The contracts often contain onerous clauses (which is not so nice). Although we see a lot of unfair clauses, this one surprised us:

Remedy of default:

"The principal may be entitled to be remitted the sum equivalent to two times the financial loss incurred as liquidated damages not penalty if the principal may choose it."

Professional indemnity insurance will not cover the claimant's decision to claim twice the loss! There are many less dramatic examples of how contractual terms can attempt to extend intermediaries' liabilities. In the normal course of events, professional indemnity insurance covers intermediaries acting within the usual parameters of their activities. If principals attempt to extend the intermediary's liability by contractual terms they will not, without further agreement, extend the intermediary's insurance cover.

The final observation is therefore that, just because you put it in the contract, it doesn't mean it will be insured. The most frequent claims against ship agents involve cargo. Errors will happen. One such example is illustrated from the phone call received from one of ITIC's assureds:

Q: Why did you set the reefer container to –25 degrees?

A: We always carry frozen fish at that temperature.

Q: But this cargo was pharmaceuticals

A: ... That is why we called you.

That type of error is the purpose of an insurance policy. There are however de-

There is often a large gap between legal liabilities and the aspirations of claimants. Claimant may well feel that they didn't get what they bargained for and should be reimbursed. This is often the case with claims against yacht surveyors. The surveyor will explain that his £200 pre-purchase survey will cover what he can see. The claimant will want a yacht without defects. Surveyors do not guarantee the vessel. The aspirations will always be different.

liberate commercial decisions that must fall outside the ambit of a professional indemnity policy. These largely relate to the release of cargo without bills of lading. The story normally goes something like this.

The consignee is a good customer. He or she explains that the bills of lading have yet to arrive (but are in the post) but they need the cargo immediately (for the Christmas market).

The agent allows the consignee to have the goods but the promised bill of lading never arrives – the real reason the consignee hasn't got the bills is because the goods haven't been paid for. The consignee goes into liquidation leaving the shipping line and the agent facing a claim.

There are a number of similar situations when the agent takes a deliberate risk for commercial reasons. These include misdating bills and mis-describing cargo. Sometimes the risk is known but not properly assessed.

Insurance: One Part of a Larger Solution

Professional indemnity insurance covers errors not commercial decisions. Insurance is never going to be the whole answer. The result of an error can be the loss of the client, whether or not compensation is paid. For many intermediaries that is a far worse outcome than an entry on their claims record.

Where professional liability insurance does have a role it is that the professional's clients should be able to expect that if the professional makes a mistake there is a reasonable sum available to compensate their losses. Professional indemnity insurance should protect the insureds even if they are not the ones at fault.

Insurance can cover an intermediary's legal liability but not everything the claimant feels it should have received from the transaction that has gone wrong.

Professional indemnity insurance cannot provide credit risk insurance for the professional's clients. Just because you put it in the contract, doesn't mean it will be insured. Professional indemnity insurance covers errors, not commercial decisions.

ITIC SPECIALIST PROFESSIONAL INDEMNITY INSURANCE

Charlotte Kirk is Director at International Transport Intermediaries Club Ltd (ITIC). ITIC is managed by ITIM Co Ltd, a subsidiary of Thomas Miller & Co Ltd.

July 27 - On This Day in History

1866 -
The first transatlantic telegraph cable is successfully completed

Photo: National Maritime Museum

1929 -
Geneva Convention agreement is signed by 53 nations

Charles Édouard Armand-Dumaresq

1992 -
Greg Trauthwein joins **Maritime Reporter** as Managing Editor

This month

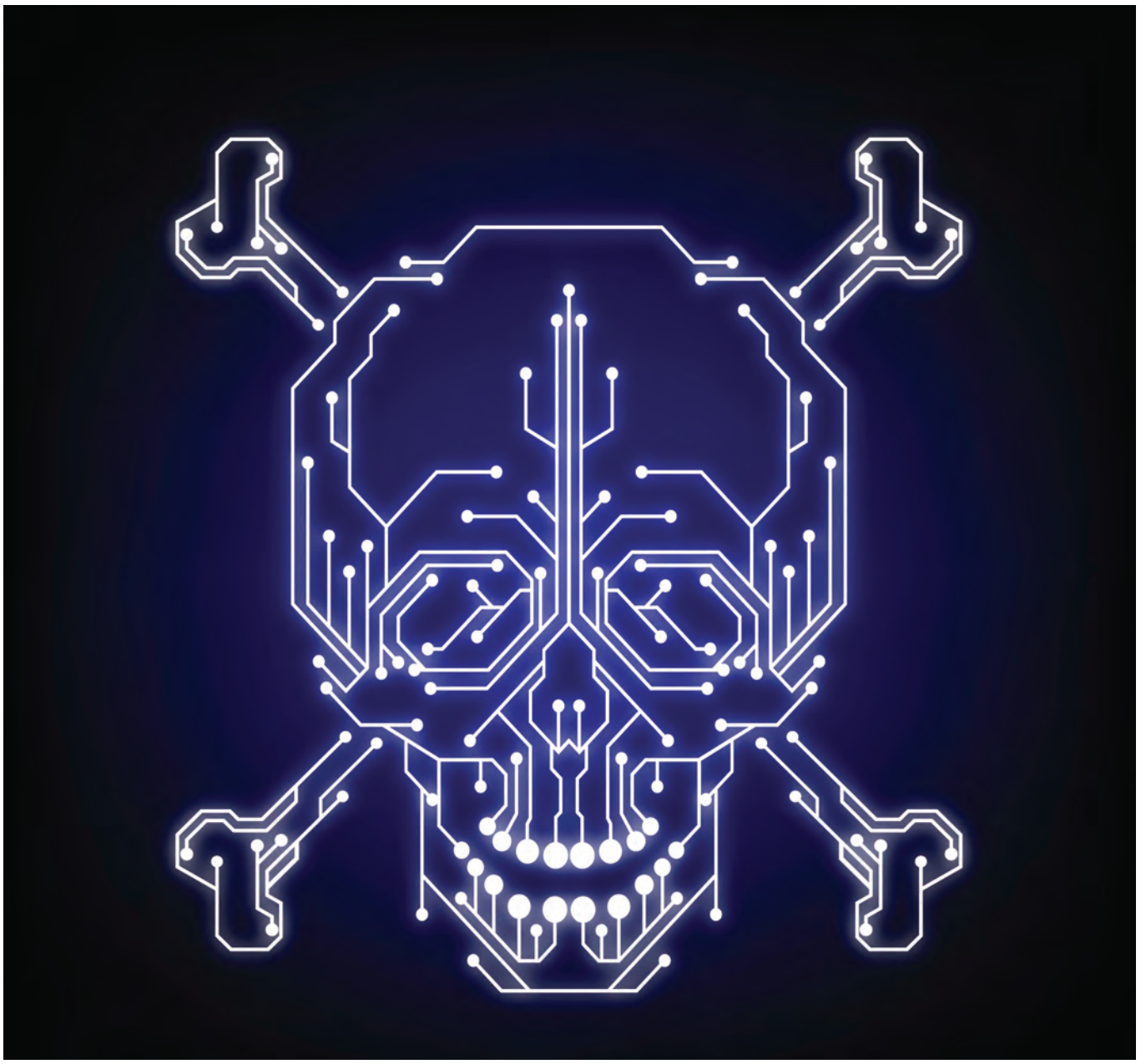
the staff of New Wave Media asks our readers to join us in recognizing Greg's 20 year commitment to excellence in maritime publishing.

Greg's leadership, dedication and tireless efforts have been reflected in the insight and commentary he has brought to the industry through the pages of our publications.

As our Associate Publisher and Editor, Greg manages the maritime industry's largest network of print and electronic media, reaching the world's highest combined maritime circulation - more than 100,000 industry professionals.

Maritime Cyber Security

Survival at Sea — Today and in the Future — Starts with Cyber Security



Most people do not realize that a majority of activities in the maritime field rely on sophisticated electronic and communication systems, and that puts them in **an extremely vulnerable position and exposes them to hacking similar to nuclear plants and other areas of national infrastructures.**

What do we think of when we hear "Survival at Sea"? It usually brings up visions of a ship in a perilous situation confronting some extraordinary circumstances that might be life or death. We are now faced with an even more harrowing scenario- broaching of maritime information including specific details that might encompass company proprietary data as well as details of vessel schedules and particulars. Many of you have heard of recent cyber-attacks including Stuxnet that deliberately disrupted critical automation systems and the just released Flame computer virus disguised as a Microsoft-built program that has caused problems for Iran's computer networks. These cyber-attacks speak to the need for safe and secure information systems aboard maritime vessels and the requirements for a robust cyber defense system. Counter terrorism experts indicate that future attacks are inevitable and that the US may be in harm's way of collateral damage if this is picked up by unfriendly adversaries.

Most people do not realize that a majority of activities in the maritime field rely on sophisticated electronic and communication systems, and that puts them in an extremely vulnerable position and exposes them to hacking similar to nuclear plants and other areas of national infrastructures.

A recent 2011 European Union (EU) Report on Maritime Cyber Security indicates that maritime cyber security awareness is currently low to non-existent. This report covers many of the challenges facing mariners in the 21st century and highlights trends as well as examines current initiatives while offering recommendations to address these risks. In the global world of 2012 this report proposes maritime cyber security as an important and timely next move in the global arena of Information and Communication Technology (ICT) infrastructure protection efforts.

Based on the high complexity of ICT aboard maritime vessels it is paramount to adequately support and maintain a proper maritime cyber defense system. One of the basic concepts should be a design methodology that incorporates security in all major maritime ICT components.

Current maritime security principally deals with physical security and it now needs to be expanded to encompass cyber security and defense.

Much of the cruise industry currently has IT department onboard vessels and the new changes in the 2010 STCW Manila Amendments have even introduced an Electro Technical Officer (ETO) designation with approved training and Certificate of Competency (COC). On board cruise and passenger vessels an ETO is immensely important

as they have huge electrical requirements and unmanned technology handling them. An ETO can be seen as a higher version of an electrical officer. Some areas that an ETO is responsible for include radio communications, electronic navigation equipment, telephone and satellite communications and engine room electrical equipment.

The 2010 STCW Manila Amendments have now been in force since January 1st, 2012 and although there is no specific requirement for the carrying of an ETO, IMO has created the position with core competencies and minimum mandatory requirements.

It is plausible to believe that future STCW Amendments will make this a mandatory position on certain type and size vessels. Prudent vessel owners and operators would be wise to fully embrace this position and commence integrating it into their crew complement.

It is interesting to note that over 50% of international trade takes place via maritime shipping and within the European Union (EU) over 40% is via maritime commerce.

With these staggering numbers it should become readily apparent that the ICT infrastructure and backbone needs to be made more secure and tamper proof. Measures that can be deployed include developing a holistic approach to cyber based risk management, building a framework for cyber incident response, enhancing information sharing to improve incident response capabilities and improving cyber security across all infrastructures.

Much of this can be framed around proper training for all crew members as well as implementing the ETO position and ensuring and performing systems audits on all equipment and systems to verify they have the latest security and software updates.

At sea some simple items that can be done to be more cyber secure and vigilant include whenever updating ECDIS charts to verify the source, request encrypted data and digital electronic signatures. These are simple steps that can help alleviate someone maliciously sending you incorrect navigational data that could easily put your ship in jeopardy or peril for example by moving one buoy out of position in a channel.

Would it be beneficial for the maritime community to get together and form a maritime cyber security team that could establish strategy, policy and guidelines that would be beneficial in securing and protecting the maritime sector? In today's world now is the time to make this preventive move and on an individual basis all shipping companies should be self-evaluating their operations and infrastructure to ensure they are fully compliant with the latest security and protection systems to avoid future threats.

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SLOW STEAMING

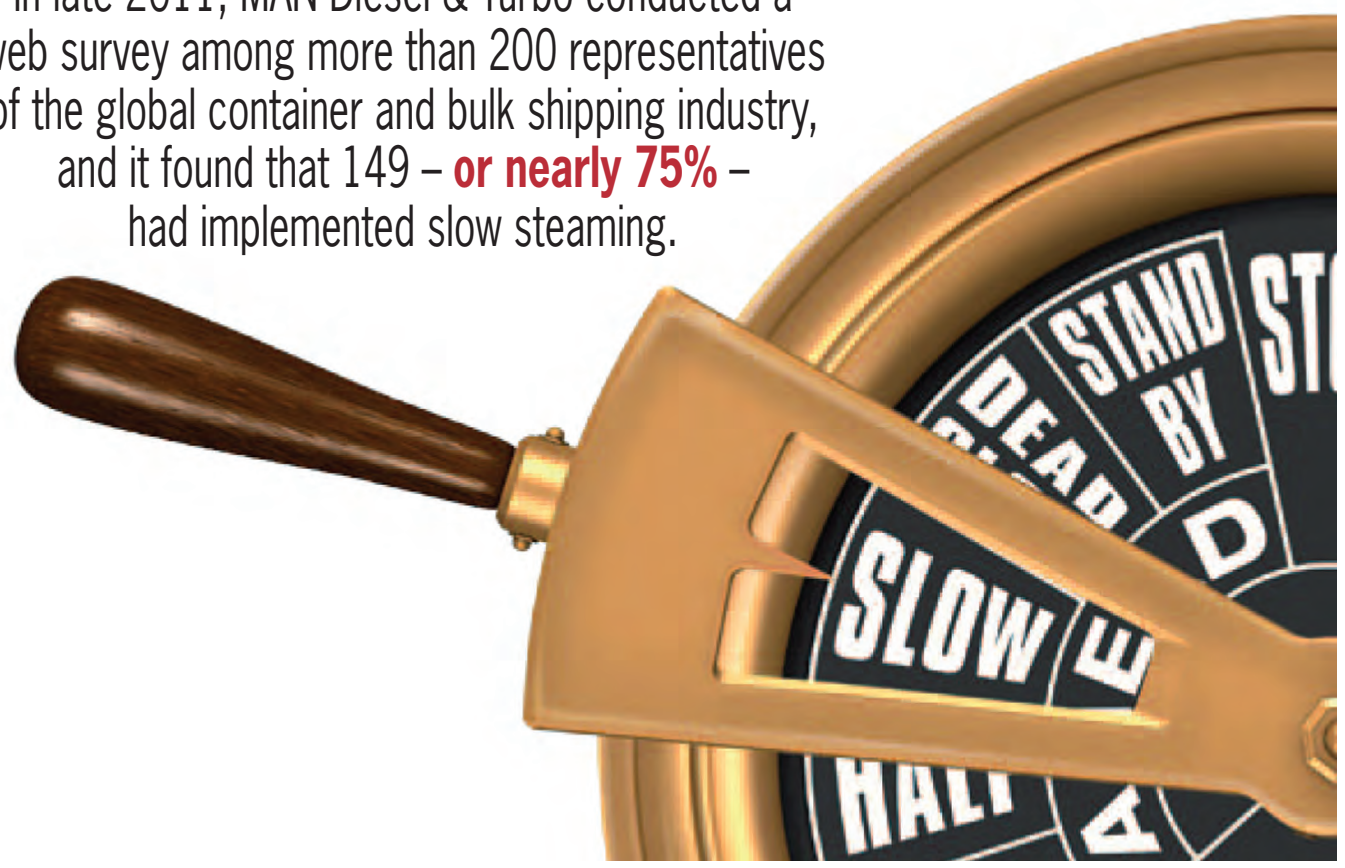
Slow steaming certainly garners its fair share of press, but in reality, how prevalent is it?

Much has been heard, said and read regarding the advent of Slow Steaming in the global maritime industry. But in reality, how prevalent is the practice? MAN PrimeServ set out recently to find some answers.

Being a market leader with the lion's share of big ship main propulsion installations has its benefits, particularly when seeking answers on operational trends from the world's leading vessel owners and operators. The engines in the world fleet today were built to run constantly at full load, which is typically not the optimal operational pattern today (or for that matter, projected to be the ideal pattern for several years if not longer).

As the issue of Slow Steaming has entered and remained in the maritime industry discussion and practice in the last four years, MAN Diesel & Turbo embarked on an industry survey of more than 200 representatives of the global and bulk shipping industry late last year to identify its frequency, and more importantly to identify the technical trends and needs going forward.

In late 2011, MAN Diesel & Turbo conducted a web survey among more than 200 representatives of the global container and bulk shipping industry, and it found that 149 – **or nearly 75%** – had implemented slow steaming.



The Study

In late 2011, MAN Diesel & Turbo conducted a web survey among more than 200 representatives of the global container and bulk shipping industry, and it found that 149 – or nearly 75% – had implemented slow steaming. According to the company, it wanted to investigate the approach of container lines, bulk and tanker operators to slow steaming, the retrofit, derating and upgrade measures taken to maximize the return on slow steaming. In broad overview, the study found:

1. 38 respondents had already implemented one or more engine retrofit solutions such as slide fuel valves, turbocharger cut-out, engine derating or propeller upgrade.

2. 111 who had either not implemented any of the above, but had implemented other solutions such as hull cleaning.

In overview, the study found that the overwhelming reason for adopting slow steaming was the promise of fuel savings (cited by 94.7% of those adopting the method), and it found that while the engine retrofit crowd was the minority, it was they that had a firmer grasp of the issues and potential savings that slow steaming delivers. The survey revealed that engine retrofit, de-rating and propeller upgrade measures delivered fuel savings either as expected or higher than expected. While fuel savings was the primary driver, the survey found that better utilization of existing fleet capacity also played a significant role in the decision to adopt slow steaming.

While slow steaming in practice varied widely across the containership, bulk and tanker fleets (for example, in the containership sector 15.4% said they employed slow steaming across more than 50% of their fleet, while the bulk and tanker sector saw more than 26% of respondents employing slow steaming in more than 50% of their fleet.

Most typically, the survey found, operators in the container sector reported engine loads between 30 to 50% more than 56% of the time, and Bulk & Tanker operators stayed in the 30 to 50% range more than 82.2% of the time, indicating that super slow steaming is not a priority. In total, the majority of respondents utilized a mix of slow and normal speeds, with only 21.5% reporting that they slow steamed "All of the Time," while the majority, 60.4%, reported slow steaming "Some of the time." (and, FYI, 6% responded "Never").

While much talk in the industry today revolves around the reduction of emissions from ships, it clearly was a secondary concern to fuel consumption and costs, though a reduction in fuel consumption is automatically equated with a drop in emission of CO2.

Technical Solutions

While the value of investing in one technical solution or another is highly dependent on the shipowner, the type of vessel, the size of the fleet and the routes traversed, among other factors, the MAN survey found that three-quarters of respondents found that they had achieved fuel savings as expected by implementing slide fuel valve and/or turbocharger cut-out solutions. Only 16.2% achieved lower than expected savings

The gains were more pronounced when it comes to engine derating and/or propeller upgrades, with 87.5% reporting expected fuel savings and none reporting "less than expected."

When considering any solution, or slow steaming itself, it is important to consider that the overall effect of slow steaming on maritime operations – a practice which can add four or five days to a typical Asia to Europe journey, has had significantly impacted shipping rates, too. In fact, of the respondents that have adopted slow steaming, 21.6% said that the practice has impacted shipping rates "significantly"; while another 34.2% said it had impacted rates "to some extent," and 21.6% said "none at all."

Excerpted in part from the "Slow Steaming Practices in Global Shipping Industry," a report issued by MAN PrimServ based on an industry survey of late '11.

Cyltech 80 AW

Castrol Extends Cylinder Oil Range to Address Issues Surrounding Slow Steaming, Sulfur Content

Last month Castrol Marine staged a presentation of an extension of its cylinder oil range, an extension designed to address emerging problems linked to the recent trend toward slow steaming and decreased sulfur content.

In 2008, when the world economy effectively tanked, global commerce came to a standstill and fuel prices started to rise, ship owners reverted to slow steaming – slowing ships down from their design speed – to save on fuel and to keep commercial traffic humming at optimum capacity.

In conjunction, the world has progressively tightened the vise on emissions, and in particular the sulfur content in marine fuel has been on the decrease, as mandated by global and state regulation. Nearly four years later, it seems that slow steaming is here to stay, at least for the coming three to five years, and emerging now are engine maintenance issues from the practice.

Castrol Marine, a leader in the marine lubricant field, has extended its cylinder oil range to address concerns about engine damage and performance as slow steaming and fuel sulfur content restrictions bite. "Slow steaming is changing the marketplace, and we believe that we need a product to address that need," said Paul Lowther, Global Marketing Offer Manager, Marine Lubricants, Castrol Marine. "This is a solution to a very recent problem. Three years ago slow steaming did not exist. We've been working very closely with MAN and Wärtsilä in the development of this product."

"It has been shown that slow steaming, in some cases a 5 knot reduction in speed can lead up to a 50% reduction in fuel costs," said Lowther. "With bunker prices rising , and certainly in the next three to five years we feel that slow steaming is here to stay. Some of the effects of slow steaming are really only coming into light now; one of those is corrosive wear of liner surfaces in the piston rings. This has consequences on two levels: one is you have to replace the cylinder, which could cost between $40,000 to $65,000 (times an average of 12 cylinders per vessel, it can add up quickly.) In the best case scenario it means reconditioning the cylinder, which has its own costs and down times."

The Product

Castrol Marine launched Cyltech 80 AW, an 80 BN (base number) cylinder oil. The Cyltech range was developed for optimum engine protection in two-stroke crosshead engines and specifically to match engine performance with the demands of varying sulfur fuels and the impact of slow steaming. "Problems can occur if you get a mismatch between the Base Number of a lubricant and the fuel sulfur content," said Paul Harrold, Technology Manager, Marine & Energy Lubricants, Castrol Marine. "Under certain high load conditions, a mismatch between low fuel sulfur levels and cylinder oil BN may lead to excessive deposits on piston crowns and rings."

Castrol says this premium product is the logical next step in assuring ship owners that the right lubricant is available to meet vessel needs in all operating conditions. The Cyltech brand now spans the 40 - 80 BN range. "Our customers face ever tightening regulations on the environment, but also new operational challenges brought about by slow steaming," says Luigi Tedesco, Castrol Marine Chief Executive. "Cyltech 80 AW offers a proactive response to new industry realities." As a result of research, field trials and engine inspections, Castrol believes that each vessel should use a single cylinder lubricant based on that vessel's predominant operating conditions. Where 40 BN cylinder oils may suit vessels permanently operating in Emissions Control Areas, the supplier has concluded that those of 70 - 80 BN are better suited to vessels regularly slow steaming and on international trade, even those involved in frequent ECA transits.

"Any imbalance between cylinder oil feed rate, BN and power compromises engine efficiency," said Harrold. "Slow steaming may bring lower lubricant feed rates and, when higher sulfur fuels are used, a higher lubricant BN protects the engine against potential damage. It also limits the amount of burnt cylinder oil in exhaust gases, thereby cutting emissions." Both slow steaming and sulfur content have direct consequences for fuel efficiency, maintenance costs, lubricant consumption and environmental responsibility, said Harrold.

Cyltech 80 AW is available now via Castrol's main regional distribution hubs.

Castrol Marine presented an extension of its cylinder oil range at Posidonia 2012. The extension is designed to address emerging problems linked to slow steaming.

"Slow steaming may bring lower lubricant feed rates and, when higher sulfur fuels are used, a higher lubricant BN protects the engine against potential damage," said Paul Harrold, Technology Manager, Marine & Energy Lubricants, Castrol Marine.

"It has been shown that slow steaming, in some cases a 5 knot reduction in speed can lead up to a 50% reduction in fuel costs," said Paul Lowther, Global Marketing Offer Manager, Marine Lubricants, Castrol Marine.

"It is critical for owners that the right cylinder oil is readily available for use to protect performance and vessel safety, particularly in prevailing commercial conditions at a time when they face tighter environmental regulation than ever before," said Jonathan Hutchinson, Castrol Marine Global Marketing Manager. Cyltech 80 AW is approved by both MAN Diesel and Wärtsilä. According to Castrol, it is the only product approved by Wärtsilä for use at minimum feed rates for fuels up to 3.5% sulfur.

"By selecting the right cylinder oil for the right operating conditions, slow steaming customers can use less fuel confident in the knowledge they are not risking damage to their engine, and that is why we now recommend Cyltech 80 AW for many customers," said Harrold.

Which BN is Right for You?

As Castrol extends its range of cylinder lubricant, it recommends:

- **40BN** The cylinder lubricant for predominant low sulfur (ECA) operation
- **50BN** Recommended when not slow steaming under fuel sulfur levels <2.5%
- **70BN** The cylinder lubricant for normal international trade on high sulfur fuels and ECA transit
- **80BN** The cylinder lubricant for demanding operation on high sulfur fuel and slow steaming/super slow steaming.

Arctic Bound *(with Vigor)*

Vigor Industrial is a Rising Star in Shipbuilding in the Pacific Northwest & Alaska Arctic

By Raina Clark

"There is a resurgence of the marine industry in the Pacific Northwest we haven't seen for 20 to 30 years now," said Vince Piscitello, Vice President of Business Development for Vigor Industrial LLC. "The oil and gas industry is really new to our area," he said, although he expects to see it grow significantly with Shell's exploration of the Chukchi and Beaufort Seas off Alaska's northern coast. State run ferry operations in Washington and Alaska are at a point where they must renew fleets built in the 50s and 60s. What's more, Piscitello said, Pacific Northwest fisheries have been well managed and the fishing business is doing well. He anticipates continued demand for newbuilds, re-builds and conversions of vessels capable of dealing with tough northern waters. "Our challenge is going to be capacity and workforce."

To meet the challenge, Vigor has been aggressively building its capital assets and investing in workforce development. The shipbuilder and industrial fabricator sees itself as well placed to take advantage of opportunities arising in construction and repair of Arctic fleets, Pacific Northwest ferries and commercial vessels.

Building Capacity

Vigor Industrial CEO, Frank Foti, began in the maritime industry when he purchased Cascade General, a ship repair contractor based on the old Port of Portland, Ore. in 1995. Prior to that Foti was a business owner and general manager of a construction company. "My roots are in running industrial companies with industrial workers," Foti said.

In 1998 Foti also purchased Washington Marine Repair of Port Angeles, Wash. and in 2000 the Vigor Industrial name officially began. Vigor acquired a few more vessel building and repair assets after that, including U.S. Barge of Oregon and Marine Industries Northwest of Washington State.

In 2011, Vigor Industrial made its largest purchase to date when it bought Todd Pacific Shipyards on Harbor Island in Seattle, Wash. The $130m purchase more than doubled Vigor's workforce and included Todd Pacific's Everett and Bremerton yards. Vigor attained backing from Endeavour Capital LLC whose sister fund, Endeavour SEAM, became a mezzanine lender in Vigor's acquisition of Todd Shipyard Corporation. Vigor raised $75m in private equity from Endeavour Capital which acquired a minority interest in the company to fund continued growth through acquisitions and additional investments.

"Our business on average hasn't declined in the last four to five years," Foti

The drill rig Kulluk and the drill ship Noble Discover leaving Vigor's Seattle shipyard on their way for Shell's exploratory operations in the Alaska Arctic.

(Photo courtesy Vigor Industrial)

"Industrial jobs matter. It is so critical that our economy is balanced. There has to be something in the region besides working at Starbucks or in an office building."
Frank Foti, CEO, Vigor Industrial

said. In fact, "it's grown slightly. The reason for making acquisitions was to have a level of critical mass. Having additional facilities gives us the opportunities to have opposing chunks," he said, referring to the diverse types of projects Vigor can undertake to alleviate the boom and bust cycles of shipbuilding.

Beyond shipbuilding and repair, Vigor subsidiary US Fab takes on other industrial work such as alternative energy projects including wind, wave and tidal projects. Piscitello described these markets as "nascent, but they will include tending and support and we're ideally situated to help that industry grow."

Shipbuilding's traditional boom and bust cycles also "make it really hard for any industry to maintain a trained and loyal workforce," Piscitello said. To help deal with this Vigor provides space at its Portland yard for the Swan Island Training Center, a joint venture with Portland Community College to train welders. In addition, said Foti, "We have really good wages and benefits for our workforce."

In keeping with Vigor's focus on people, Foti's Seattle office has no images of ships on the walls, but rows and rows of photos of Vigor trades people at work in the yards. "Industrial jobs do matter" said Foti. "It is so critical that our economy is balanced. There has to be something in the region besides working at Starbucks or in an office building."

Vigor's most recent acquisition was Alaska Ship & Drydock in the spring of 2012, increasing the company's shipbuilding capacity and access to vessels working off Alaska. The yard's new 70,000 square foot assembly hall is designed to build ships up to 500-ft and features an adjacent five-story production center. Inside the production center raw materials are assembled into components such as pipe spools, electrical panels and various types of equipment which are then pushed onto gangways reaching the ship. This system was designed to increase efficiency by minimizing material flow.

Vigor's headquarters remain in Portland, Ore. on the Willamette River, site of the original Cascade General and the old Port of Portland. The company's annual revenue is just over $400m and it employs about 2,200 people. Vigor is comprised of nine subsidiaries, offering everything from shipbuilding to blasting and coating to precision machining. The company now operates seven facilities located in Portland, Ore.; Ketchikan, Alaska; and Seattle, Tacoma, Everett, Bremerton, and Port Angeles in Wash-

Alaska Ship & Drydock's new assembly hall and adjacent five-story production center. **"Alaska is set to start building ferries in the next two years," said Foti.**

(Photo courtesy Vigor Industrial)

ington State. All told, Vigor has 112-acres of yard space, 700,000 square feet of covered shop area and 10 drydocks.

"We have loads of capacity," Piscitello said, pointing out that among Vigor's 50 cranes, the Portland facility's 600T gantry crane is one of the largest on the West Coast.

In addition to Vigor's government shipbuilding and repair work the company continues to expand into new commercial markets. "We have an ever growing presence in the commercial shipbuilding market working with customers like Alaska Longline Company in Ketchikan and Georgia Pacific and Harley Marine in Portland," said Grant Fosheim of Vigor Industrial's marketing department. Vigor also plans to release a design for the next generation of the Coast Guard's offshore patrol cutters later this summer.

"Frank is very entrepreneurial," said Piscitello, "it's unlike what you see in the rest of the marine industry. I would expect to see Vigor Industrial double in size in the next five years."

Ice-classing Experts Ready for the Arctic

Not only are Vigor's facilities geographically accessible to Alaska Arctic waters, Piscitello said, Vigor is an ice-classing expert. Its subsidiaries have been supporting Arctic and near Arctic fleets for the past century from fishing vessels to Coast Guard icebreakers. Shell's exploratory operations off the north coast of Alaska have presented a new opportunity for Vigor to use its expertise. Vigor has serviced both of the two rigs at the heart of Shell's project and nearly half of the 21 support vessels involved.

"Shell has been an unbelievably good partner to work with," said Piscitello, "from the engineers to division presidents."

Recently Vigor completed work on the Kulluk, a 266-ft by 230-ft ice-classed semi-submersible drill rig, and the Noble Discoverer, a 512-ft ice-classed drill ship. Both vessels left Vigor's Seattle facility bound for the Arctic's Beaufort and Chukchi Seas in late June. The work included extensive environmental and safety upgrades. The Kulluk now operates with zero discharge and the Discoverer complies with the strictest air standards in the world. Vigor installed six EPODS on the Discoverer, one on each engine, which are essentially large catalytic converters removing harmful emissions. "We deployed 500 people to work on the Discover project alone," said Fosheim. "We were able to perform six months of work in ten weeks."

Other vessels Vigor serviced for Shell's Arctic exploratory project include the Klamath, which Vigor converted from a tanker barge to an ice-classed oil spill response vessel, and the Arctic Challenger which Vigor is converting from a deck barge to a containment system vessel. In the Portland yard, Vigor serviced the Fennica and Nordica, two ice-classed offshore support vessels owned by Arctia Offshore which will be joining Shell's flotilla.

"Ten to 15 percent of revenues over the past year have been derived from Arctic work," said Piscitello. There was a big push to prepare for work in the Arctic this year and last, he explained, so that percentage may drop in the next year. However, "looking into the future we expect significant growth in this area."

Vigor is also a large part of the effort to maintain U.S. icebreaking capabilities in the Arctic. When Vigor purchased Todd Pacific Shipyards it took over the yard's contract to service the Coast Guard's only operational icebreaker, USCGC Healy, as well as the repair and modernization of one of the Coast Guard's two inoperable heavy icebreakers, the Polar Star. A $56m overhaul of the Polar Star is now underway at the Seattle facility in order to return it to service in 2013.

The agency's other heavy icebreaker, the Polar Sea, has been out of service since an engine failure in 2010. Vigor Industrial gave testimony to Congress at the end of 2011, saying that the Polar Sea could be restored to fully functioning status for a decade or more for about one percent of the cost of a new ice-breaker. Vigor estimated that it would take two years and $11m to replace the Polar Sea's power plant and bring it back to operational status. This is compared to an estimated ten years and $800m to $1b required to build a new heavy icebreaker.

Plans to scrap the Polar Sea were very narrowly avoided late last June when the Coast Guard agreed not to begin dismantling the ship for at least the rest of the year while other funding is sought.

West Coast Ferries

With the acquisition of Todd Pacific Shipyards and Alaska Ship & Drydock (ASD), Vigor inherited a number of proj-

An aerial view of Vigor's Portland, Ore. shipyard, home of Vigor Industrial headquarters.

(Photo courtesy Vigor Industrial)

ects, but Foti said, “There are also new opportunities. The exploration of the Chukchi and Beaufort seas is very good for our business and ferries have also been a significant opportunity for Vigor.”

Todd Pacific was already working on the 64-car ferry contract with Washington State Ferries (WSF) when it was purchased by Vigor Industrial. In fall 2011 Vigor delivered the final 64-car ferry three months ahead of schedule and $7m under budget. Vigor’s newbuild and fabrication subsidiary, US Fab, is now at work in the Seattle facility on another contract with WSF, the first of up to four 144-car ferries. Washington State legislature recently funded a second 144-car ferry with construction scheduled to begin in December. The construction cost for both vessels is $225m and it’s estimated that the contracts will produce more than 500 family-wage jobs at shipyards in the region. WSF’s contract with US Fab is for up to four 144-car ferries, contingent on funding.

In April 2012 ASD signed a contract to partner with the State of Alaska on a design for the new Alaska class ferry, a project for which the state has appropriated $120m. The contract designates the shipyard as the construction manager and general contractor for the design phase of the project. It doesn’t guarantee that the shipyard will build the ferry, however ASD will be able to make a guaranteed maximum price proposal for the construction contract as the design nears completion.

According to Foti, “Alaska is set to start building ferries in the next two years.”

(Photo courtesy Vigor Industrial)

An aerial view of Vigor’s Seattle shipyard, formerly Todd Pacific Shipyards, on Harbor Island in Seattle, Wash.

Arctic Oil & Gas Exploration

Hope for the Best; Prepare for the Worst

A justifiable amount of attention has been paid to the Arctic as it relates to shipping and energy production, as the time, fuel and emissions saved in navigating through the Arctic and the natural resources to be discovered within are historic and game changing in scope. While much of the press has been dedicated to the potential, perhaps a bit more needs to be devoted to the challenges within. While it is fact that the polar ice cap is thinning and receding, the fact remains that for the better part of the year the Arctic environment poses incredible immediate and lifecycle challenge to man and machine alike. A particular challenge, and a growing concern given the progression of Shell's proposed exploration activities in the Arctic this summer, is the capability of the marine industry to respond in the face of an oil spill.

Oil & Ice Don't Mix

When it comes to marine and subsea activities in the Arctic, the stakes become much higher. The risk of oil spills in this region is ever-increasing due to increased marine traffic associated with community growth, the growth of the ecotourism industry, the recent lengthening of the ice-free period, and the growth of industries such as mining and offshore oil and gas. Indeed, as the world's onshore oil and gas reserves increasingly deplete on land, the world turns to offshore sources, more and more to frontier areas such as the Arctic where technology allows oil companies to discover and recover resources in ever more remote and deep portions of the planet.

Setting up shop and producing oil and gas in hostile environments is one thing; preparing for and enacting an oil spill response plan in the event of disaster is entirely another. "There's concern that an oil spill will occur in the Arctic, and the question is 'do we have the countermeasures in place to protect the environment and its resources," said Dr. Kenneth Lee – a Research Scientist and Executive Director of COOGER, the Center for Offshore Oil, Gas and Energy Research for Fisheries Oceans Canada. "When you're talking about battling an oil spill in the Arctic the big challenge is working in the Arctic environment itself. Besides the weather, you have the major problem of logistics, as you're not able to get people or resources to a certain spot as quickly, and where do you deposit the waste from clean-up operations?"

In addition, there is the problem of how oil interacts with ice, which is significantly different than how it interacts with water. "What do you do when you have broken or solid ice; what would you do if you have a subsea blowout during the winter seasons?," asked Dr. Lee, "Unfortunately, most of the current equipment for physical recovery of oil has been designed and tested for use in ice-free waters. There are a lot of environmental challenges: extreme cold temperatures, limited daylight hours, and also the fate, behavior and biological effects of oil in a cold water harsh environment."

Bringing the issue front and center to the public is Shell's requested approval to drill two exploratory wells in the Beaufort Sea and three exploratory wells in the Chukchi Sea this summer. Earlier this year, Bureau of Safety and Environmental Enforcement (BSEE) approved Shell's oil spill response plans for both the Beaufort and Chukchi Seas, but Shell has to obtain approval from BSEE for well-specific drilling permits prior to commencing operations. To win approval from the BSEE it was mandated that Shell have in position ready to deploy a capping stack in the event of a blowout, similar to the solution devised and employed to end the BP blowout and oil spill in the Gulf of Mexico.

"BSEE engineers and inspectors will conduct careful and thorough reviews to ensure our standards for safety and preparedness are met before any drilling is approved," said Director Jim Watson upon visiting and inspecting the two drilling rigs that Shell has proposed using for exploration, Kulluk and Noble Discoverer earlier this year. "If Shell meets the standards, BSEE professionals will ensure that any drilling activities comply with the most rigorous safety and oversight program ever deployed."

Purpose Built, Ready to Respond

In early January 2012, a keel laying ceremony held at the Arctech Shipyard in

In early January 2012, a keel laying ceremony held at the Arctech Shipyard in Helsinki marked the start of the construction of an ultramodern multi-functional icebreaking supply vessel.

"If Shell meets the standards, BSEE professionals will ensure that any drilling activities comply with the most rigorous safety and oversight program ever deployed."

BSEE Director Jim Watson

Helsinki marked the start of the construction of an ultramodern multi-functional icebreaking supply vessel. The ship is specially designed to service the oil drilling platform located on the north-eastern part of the Sakhalin Island shelf, near Russia's Pacific coast.

The underlying shipbuilding contracts were signed by Sovcomflot (SCF Group), Russia's largest shipping company, and Arctech which is a joint venture between Russia's United Shipbuilding Corporation (USC) and STX Finland. As a result of this cooperation, the American oil and gas corporation Exxon Mobil is due to have two ideal, year-round, supply vessels for its Sakhalin-1 oil drilling project, operated by its Russian subsidiary Exxon Neftegas Limited.

The international character of the project is evident from its brief history, which started at the end of 2009, when Sovcomflot took part in Exxon Mobil's tender for the construction and long-term use of two icebreaking supply vessels for its installations near Sakhalin. The vessels are supposed to service the underwater oil drills in Arkutun-Dagi, a major new phase of the Sakhalin-1 project.

The multifunctional icebreaking supply vessels NB 506 and NB 507 will be delivered for the Sakhalin-1 Arkutun-Dagi oil and gas field where they will be used in year round operation. Both vessels will be similar in design, measuring 99.9 m in length and 21.7 m in breadth and they will have accommodation spaces for 50 crew members and special persons and 195 evacuees.

The vessels will represent the next generation of multifunctional icebreaking supply vessels and they are designed for the extreme environmental conditions of the Sakhalin area. They will be operating in thick drifting ice in temperatures as cold as -35˚ C. The vessels will be capable for ice management and escorting purposes and they will be equipped to carry various types of cargo and to perform operations related to oil spill recovery, fire-fighting, ocean towing as well as stand-by and rescue. The icebreaking capability will be extremely high; the vessels will be able to operate independently in 1.7m thick level ice, and penetrate consolidated 20 m deep ice ridges.

The vessels will have a specially designed stern to navigate in ice and a diesel-electric machinery, with twin azimuthing podded type rudder propeller units for propulsion. The power generation station will consist of four main diesel generator sets with a total power of 18 MW. The rudder propellers will ensure reliable reversing capability and excellent maneuverability even in the most difficult ice conditions. For maneuvering and position keeping, two bow tunnel thrusters are provided.

Despite a Russian company being the winner in the tender process, not all works are being completed by Russian subcontractors. The main work went to a joint venture of USC and STX Finland. Most of the work will be completed in Helsinki, but the list of the project's subcontractors includes e.g. Russia's Vyborg Shipyard, which produced most of the blocks for both ships.

Both Russian and Finnish people and companies know their way in and around ice, and the partnership should grow stronger in the coming years as exploration activities escalate in the entire region. While Russia claims its fair share of undiscovered oil in the region, the real prize – when prices rise and make it economically viable – is the natural gas. "The Arctic is already rich in Russian gas," said Dr. Donald Gautier, U.S. Geological Survey, speaking at a conference entitled "Leadership for the Arctic" earlier this year. To date, about 400 oil and gas fields have been found north of the Arctic Circle, almost all of those onshore in west Siberia, Russia and North Slope of Alaska, with about 40 billion barrels of oil and about 1200 million cu. ft. of natural gas discovered.

Outfitting the multifunctional icebreaking supply vessels for potential oil spill response duties was cornerstone to the project, and for this task Finland's Lamor was tapped. Lamor's scope of supply comprises arctic brush skimmers, 15m sweeping systems, heavy duty oil booms, GT A 115 cargo oil pumps and a 10m boom towing boat. "The OSR equipment is designed for work in Arctic conditions that feature the latest Lamor technologies and innovations for heating capabilities for skimmers and oil transfer hoses. We will also supply all the electric hydraulic power units. The OSR equipment is fitted inside the hull, ready to be deployed in harsh Arctic weather conditions," says Lamor's COO, Rune Högström.

Marine Coatings

a roundtable discussion

Arguably, no other sector in the maritime market has been as under pressure in the past five years as the coatings sector — as manufacturers are tasked to keep current with all & emerging regulations and slammed with the double whammy of a global economic malaise and rising commodity prices. Shipowners have many questions, and Maritime Reporter sought anwsers from industry leaders, including:

Jim Brown, International Paint • Delmar J. Doyle, NACE • Jose Luna Hempel • Boud Van Rompay, Hydrex • Sijmen Visser, PPG

From where you sit, what are the hot-button legislative topics that are driving your company's product development efforts for the coming few years?

Delmar J. Doyle PE Senior Director of Global Operations and Head of NACE Intl. IMO participation

The two biggest issues we see is Ballast Water Treatment Systems (BWTS) and Green House Gases (GHG) emission controls. NACE International is involved in both of these issues relative to the impact of these technologies on the Protective Coating Systems. The BWTS convention, when approved, will require that all new, and existing, ships have a BWTS. Some of these systems will have a very negative impact on the life of the protective coatings. NACE International has developed a standard on how to determine the relative impact of these BWTS on the protective coatings. As a Non-Government Organization (NGO) within the International Maritime Organization (IMO) we have submitted an Information paper and this standard for consideration by IMO to help the Ship Owner, ship builder, class, coatings companies, BWTS suppliers and Administrations determine the impact of the BWTS on the Protective Coatings.

One of the big considerations in meeting GHG requirements is the Hull resistance. NACE International is has two committees looking at 1) a pictorial standard and 2) a consistent method for determining hull roughness.

Jose Luna, Regional Marketing Manager, Americas, Hempel

First of all we see several markets where the VOC limits are being regulated more, which has made us focus more on high solids products. Not only is the paint consumption being lowered we're also contributing to lower VOC emissions and less waste (cans). All antifoulings in our new assortment are high solids products. Secondly we're of course focusing on products that save fuel because this is so important both for the environment and for the bottom line of the shipping companies. This is not as such being regulated, but still very important for environmental considerations.

Sijmen Visser – Global Marketing Manager, Marine M&R, Marketing Services & EMEA, PPG

In the marine business it does not really matter where you sit as long as you are close to your customers, ship owners and shipyards. Next to that, you need to anticipate market trends, including legislation, in order to offer your customers the best solutions at any given time. The main market concerns today are shipyard orderbooks in new building and, in operations, the freight rates and surging fuel prices squeezing the operational earnings of our customers. Meanwhile, legislative pressures are affecting investment on ships and fleets to keep up (e.g. Emission Control Areas – low-sulfur grade fuels or scrubbers, and Ballast Water Treatment systems). Of course, not all of this is related to coatings, but we are trying to take our share of the responsibility by supporting our customers in this situation. We do this through offering a portfolio of coating solutions tailored to exacting customer needs, ranging from fit-for-purpose products to systems specifically developed to lower the total cost of operation and also reduce the environmental footprint.

Boud Van Rompay, CEO, Hydrex

The trend away from copper- and other biocide-based antifouling paint is key. These will inevitably be outlawed in the wake of the TBT ban, even if the move is slower than it should be. Already copper and a number of biocides are banned for certain applications in certain areas. More legislation is on the way.

Toxic AF paints need frequent underwater cleaning, mostly after 24 months in service or less. As they are not designed to withstand frequent, abrasive cleaning, there is a massive distribution of toxic materials in the environment. The amounts can be estimated to be between 2 to 10 tons per cleaning for the bigger ships. This method, generally applied, cannot be sustained.

(MV Neptune Okeanis in November 2010 after application of Sigmaglide 990 coating.

"The main market concerns today are shipyard orderbooks in new building and, in operations, the freight rates and surging fuel prices squeezing the operational earnings of our customers."

Sijmen Visser, PPG

At the same time, the IMO has issued guidelines for biofouling control to minimize the spread of aquatic invasive species. Australia and New Zealand are revising the ANZECC code which regulates the use of antifouling systems and in-water cleaning in those countries. California has legislation on the way regarding biofouling with a view to preventing bioinvasions via hull fouling into the State. Others are following.

The IMO is working on a Polar Code and is under pressure, quite correctly, to ban the use of biocidal antifouling paint in the polar regions.

We already have a mature non-toxic hull protection and biofouling control system which is certified for use on ice-going vessels and has been in successful commercial use for a number of years. We feel it is the best non-toxic approach to fouling control on ships and boats. We continue to streamline the application and in-water maintenance of this coating system.

Another factor which is not necessarily a legislative matter but is a hot topic with class, is extending the drydock interval. The greatest obstacle to a 10-year drydock interval or even a 7.5-year interval is biofouling control. Because Ecospeed is maintained in the water for the life of the vessel after initial application and requires only minimal touch-ups of mechanical damage when the vessel does go to drydock, we predict a 10 or even 12 year interval as being well within the capabilities of our underwater hull protection and fouling control system.

Specifically, what is your company's offering/response in regards to the emerging rules under the PSPC (Performance Standard for Protective Coatings) for Cargo Oil Tanks (COT), which goes into effect at the start of 2013?

Jim Brown, Marketing Development Manager, International Paint

PSPC is an area in which we've been very active. All of the International Paint principal anticorrosive primers and shop primers have passed the demanding IMO PSPC COT laboratory tests in accordance with the IMO regulations. These regulations are designed to ensure the longevity of cargo oil tanks and stipulate that applied coatings must remain in 'good' condition for a minimum of 15 years, as defined by the International Association of Classification Societies. For a cargo oil tank coating to comply, it must be tested by Class Society approved testing facilities and have a Class Society Type Approval Certificate (TAC). The award of a TAC means the product has demonstrated the expected in service performance, the quality of the supplied material is assured and the product supply location has met regulatory requirements.

While the IP products passing laboratory tests include key products from the Interbond, Intergard and Interplate product ranges, our premium product offer for corrosion protection in crude oil tanks is Intershield 300, a unique, abrasion resistant aluminium pure epoxy coating. Earlier this year, Intershield 300 demonstrated its durability after 15 years in the cargo oil tanks of the 'Samco Raven'. The 301,653 dwt crude oil tanker, underwent her third special survey at Yiu Lian Dockyard in China. The ships superintendent said that after 15 years, the coating was in very good condition with the tanktops in excellent condition with very few areas of breakdown.

Intershield 300 was also the first anticorrosive coating to be awarded type approval for seawater ballast tanks and in 2010 performance was proven in service over 15 years at the third special survey of the 73,222 dwt panamax bulk carrier 'Eleranta', when a Lloyd's Register surveyor confirmed the double bottom tanks of the vessel to be in "good condition." The bulk carrier, built at Samsung in 1995, had Intershield 300 applied to her ballast tanks when it was built.

Visser, PPG

Our company is closely following the development and introduction of new rules. Our standard epoxy coating systems for the Cargo Oil Tanks of Crude Oil Tankers have been tested at a third-party laboratory according to the new IMO PSPC COT test standards. Our coating systems have passed the stringent test criteria and are now offered to major Classification Societies for IMO PSPC type approval. Importantly, we can also offer advice and training, as and when required, to our customers on the content of these rules and their implications.

Luna, Hempel

Hempel is ready for the IMO PSPC for cargo oil tanks. The epoxy cargo oil tank coating HEMPADUR 15600, epoxy coatings HEMPADUR QUATTRO 17634 & HEMPADUR UNIQ 47741 and HEMPEL'S SHOP-PRIMER ZS 15890 have in February succeeded in passing the laboratory test criteria in accordance with the new IMO resolution MSC.288(87) Performance Standard for Protective Coatings (PSPC) for cargo oil tanks of crude oil tankers. Also almost our whole range of epoxy, phenolic epoxy and solvent-free phenolic epoxy tank coating products has undergone external testing and in June it was confirmed that HEMPADUR 15400, HEMPADUR 15500, HEMPADUR 85671, HEMPADUR 35760 and HEMPADUR 35900 all have succeeded in passing the laboratory test criteria in accordance with the new IMO resolution MSC.288(87) Performance Standard for Protective Coatings (PSPC) for cargo oil tanks of crude oil tankers.

Recently, several marine coatings companies have directly linked the use of coatings to quantifiable fuel saving on ships. Some even offering "guarantees." Specifically, can you/do you make such performance claims, and if so, could you please elaborate on the systems you tout and studies to support.

Doyle, NACE

NACE International believes that it is beneficial for the marine industry to reduce and monitor the hull resistance. The development of new hull coating systems over the last ten + years can be an important step forward in helping the industry meet GHG emission reduction requirements.

Van Rompay, Hydrex

Yes we definitely do make such claims. In fact, it's possible that we began this trend with the publication of our series of Hydrex White Papers on ship hull performance, all publicly available free at **www.shiphullperformance.org**. It is important to stress right up front that Ecospeed is a coating system which must be standardly applied and implemented in order to get the results we claim for it. Sloppy application and failure to maintain the hull will, not unexpectedly, fail to get the expected results. Ecospeed is a system which combines a tough,

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Delmar J. Doyle, NACE

"Intershield 300 demonstrated its durability after 15 years in the cargo oil tanks of the Samco Raven (pictured). The 301,653 dwt crude oil tanker, underwent her third special survey at Yiu Lian Dockyard in China. The ships superintendent said that after 15 years, the coating was in very good condition with the tanktops in excellent condition with very few areas of breakdown."

Jim Brown, International Paint

mechanically very strong coating with routine in-water cleaning. Properly applied and maintained, the coating will not degrade over time, does not need any major repair for the entire life of the vessel and in fact becomes smoother with properly done in-water cleaning. When it is applied correctly and used properly, with cleaning carried out often enough, it will offer fuel savings of 10-20% compared to conventional systems, over the life of the ship. The actual figures will depend on the sailing pattern of the ship. A major cruise line which uses Ecospeed on all of its cruise ships, including two very recent newbuilds, have publicly stated that the system has given them a 10% savings compared to their previous biocidal antifouling system.

Luna, Hempel

Hempel offers a fuel consumption guarantee on our Hempasil X3 fouling release solution, that comes in a package which consist of the coating, a fuel performance monitoring system and a fuel consumption guarantee. The fuel saving potential of Hempasil X3 has been fully documented by different studies made by external companies and ranges as high as 10 – 15%. When it comes to antifoulings Hempel do not offer a fuel saving guarantees as such, but we offer an antifouling performance contract. The potential fuel savings of Hempel's high solid AF assortment varies from 1,5 to 4,5%.

Visser, PPG

Vessel fuel performance is influenced by many factors (>20) including hull coatings. The challenge today is the ability to accurately measure each factor and we believe that this also requires specific experience and knowledge. Therefore, we have started a co-operation with GreenSteam, a company that specializes in hull performance measurements. Meanwhile, our customers also look into various ways of measuring hull performance and, together, we evaluate the results. The outcome varies depending on the ship's operational conditions, but the feedback provided to us gives reason to feel confident we are on the right track. Fortunately, in order to illustrate these types of results, we are allowed to publish some feedback, as per the m/v Pacific Dream and m/v Neptune Lines case studies.

Brown, International Paint

There's no doubt that fouling control coatings provide significant fuel and emissions benefits to the global shipping fleet. Quantifying that benefit however has traditionally been viewed as complex and the methodologies open to challenge. At International, we've always been very clear on the fuel and emission savings which can be achieved through the use of our products and on the methodology we use to predict potential savings. Predictions are based on our own analysis, independent analysis and on customer testimony.

Our Intersmooth SPC copper acrylate and silyl acrylate antifoulings can deliver 4% potential annual fuel savings when comparing with CDP or rosin based antifoulings over a 60 month in service period. This prediction is based on the 'Townsin' methodology combined with over 5,000 vessel drydockings and inspections for fouling rating combined with average hull roughness measurements from over 50 vessel outdockings.

As verified by the report 'Energy and GHG Emissions Savings Analysis of Fluoropolymer Foul Release Hull Coating', by Professor James Corbett's Energy & Environmental Research Associates, our latest generation of Intersleek fluoropolymer foul release coatings can offer

"The IMO is working on a Polar Code and is under pressure, quite correctly, to ban the use of biocidal antifouling paint in the polar regions."

Boud Van Rompay, Hydrex

"We are putting a great effort into developing products that will save ship owners even more fuel. We see that this is as the most common request among our customers."

Jose Luna, Hempel

average fuel and emissions savings of up to 9%. Cunard, from its own detailed studies on the propulsion efficiency of Queen Mary 2, confirmed that since the application of the Intersleek 900 system to the ships vertical sides, vessel efficiency had improved by over 10%.

We recognize the importance of providing owners with as much information on the performance of our products as we can. That's why in October 2011 we announced the formation of a partnership with BMT Argoss, the ship performance specialists. By using our world class fouling control coatings in conjunction with the BMT SmartServices system, an advanced onboard, real-time performance monitoring and reporting system which acquires and records data automatically from ship sensors, owners and operators can benefit from independent monitoring and reporting on vessel in service performance.

Coatings companies would seem to be in the cross hairs, with rising oil prices (and the resulting impact on your material costs) and a stagnate economy that has seen shipowners delay maintenance. How has your company fared in the previous four years, and going forward, prepared to compete in this highly competitive environment?

Brown, International Paint

There's no doubt recent market conditions have been testing. Looking at the previous four years, shipping went through an unprecedented boom up to 2008 where vessel owners were making good returns and a record number of new ships were ordered. Since it can take several years for a ship to be delivered from the point when the original contract is signed, the newbuilding market continued to grow, despite the global economic recession. This meant it was mainly good news in 2010 with our volume levels positive and the year finishing ahead of 2009. Significant levels of raw material price inflation however caused margins to fall below 2009 levels.

As expected, 2011 proved to be a challenging year due to negative headwinds in both supply and demand. On the supply side, the coatings industry suffered from continued and significant raw material cost pressures and an unprecedented rise in commodity prices from oil to copper. In fact the Reuters-Jefferies CRB index, which is a benchmark index covering a basket of commodities, rose by more than 36% in mid 2011.

Doyle, NACE

Since IMO established detailed coating requirement initially for Ballast Water Tanks, and then Cargo Oil Tanks, the requirements for effective Protective Coating Systems has increased. The requirement that Coating System must be inspected by a Certified Coating Inspectors is critical.

The shipbuilders, Class and Administrations now need to know more about protective coatings. We believe that an educated buyer is ultimately good for the Coatings Industry and the Marine Industry.

With coating and corrosion repair estimated to cost over 25% of the marine industries maintenance budget we believe this is very good for the industry.

Visser, PPG

In the total picture of ship operational costs or new building, the coating costs represent in general 2–3%, whereas the cost of bunker fuel represents 80% of the operational costs. However, if our coatings are to be applied; we aim to make a positive impact on the ship's total operational cost, as illustrated in the two examples below:

1. According to specialists in the market, hull coatings could contribute up to 3% of savings on bunker fuel costs. Owners are more and more recognizing this and therefore we see an increase in the sales of our premium antifouling products.
2. Ship crews are getting smaller while ships are getting bigger. We offer unique coatings as well as Internet solutions that improve efficiency for the onboard coating maintenance of ships and fleets.

How is your company investing today, and specifically, what types of innovation can shipowners expect from you in the coming 12 to 24 months.

Visser, PPG

Coating innovation is a continuous process. New product introduction is a controlled and step-by-step routine for us in order to evaluate each stage, thereby making sure that the product does in practice what it was designed for in the labs. As you can appreciate, the timelines for innovations going into commercial use can vary from years to decades. The innovations ship owners can expect from us will be focused on products and services that support reducing the total operational cost of ships. Next to new product introductions, we believe owners also would also like to see the promised performance of existing products actually delivered. Ship asset protection is a long-term commitment and therefore reliability of product and supplier is an important asset (Examples: 7 years' service with the SIGMAGLIDE coating, 12 years' service with the SIGMA PHENGUARD coating).

Van Rompay, Hydrex

Our coating is stable, fully workable and does not need to change. It works perfectly just as it is. We are continuing to evolve our line of in-water cleaning equipment. We also offer propeller cleaning and have developed a system of more frequent but much lighter propeller maintenance, cleaning with brushes instead of polishing with grinding wheels, which is much kinder to the environment and more fuel-efficient. We will continue to develop this.

Luna, Hempel

We are putting effort into developing products that will save ship owners even more fuel. We see that this is as the most common request among our customers. Hempel has extensive experience with developing antifoulings and fouling release, and we've been successful with both technologies and are now seeing the benefits – real vessels entering into dock after full service periods in very good conditions. That's why we can say that our products have Proven Performance – they have been tried and tested on real vessels for many years. We are continuing our product development building on our experience and have some really interesting new products coming up that could set new industry standards and define the future of fuel saving potential.

Brazil: Logistics Challenges

How Petrobras and other operators are coping with the challenges posed by the need to quickly, safely and efficiently distribute oil and gas from remote offshore deepwater.

By Claudio Paschoa, Brazil

(Image: DTA Engineering)

While the Brazil pre-salt frontier seems destined for success, transporting the light pre-salt oil and its associated gas to refineries, and then to end user, involves solving major downstream logistics challenges. Once the pre-salt O&G finishes its upstream path to the production rigs and FPSOs, operators have two options: burn all the gas that they cannot safely store; or send both oil and gas through pipelines to coastal refineries. For most pre-salt plays in Brazil, this involves long distances, as most are located 300km from the coast, a feat made trickier when it is taken into consideration that these transport flowlines and pipelines have to be set underwater in depths ranging from 1,500 to 3,000m.

Majors such as Petrobras and Shell are now experimenting with offshore production options, options that involve subsea separation and production on the seabed. Deepwater subsea processing may significantly lower both Capex and Opex costs of pre-salt production projects by moving some of the fluid processing traditionally handled on surface rigs and FPSOs, to the seabed, allowing flowlines to the topside production assets to work more efficiently, and processing on the rigs or FPSOs to be simpler, safer and more efficient.

Fundamentally, the ideal situation would be to have all the capabilities of an FPSO down at the seabed, relinquishing the use of surface processing, with support vessels and ROV's conducting maintenance and interventions. However the industry is still analyzing this step, taking into consideration the safety and environmental risks with a remote, deep processing plant.

Since most pre-salt deepwater reservoirs are located far from the coast and are mostly composed of light oil that does no need much refining, Petrobras is planning to have tankers load up directly from FPSOs in order to curtail the need to transport the oil to refineries ashore. Most of the oil that will be loaded offshore will be for export, further decreasing the operational costs of tanker operators.

FPSOs

FPSOs contain processing equipment and storage for produced hydrocarbons. The basic design of most FPSOs involves a ship-shaped vessel, with processing equipment aboard the vessel's deck and the O&G storage below in the ship's double hull. After processing, an FPSO stores oil and/or gas before offloading periodically to shuttle tankers by way of a loading hose or transmitting the light oil via flowlines to connect to subsea pipelines. The processing equipment onboard an FPSO is similar to what would be found atop a production platform. Usually built in modules, FPSO production equipment can consist of water separation, gas treatment, oil processing, water injection and gas compression.

Another option in development involves building a massive ship capable of processing huge volumes of natural gas into its liquified state. In order to process gas into its liquefied state, thus making it possible to transfer the liquefied gas onto LNG tankers, Petrobras and partners are developing a Floating Gas Processing Platform. LNG carriers will dock with the processing plant to be loaded with liquefied natural gas, chilled to minus 162 degrees Celsius. Shell is building a 488-m-long floating gas processing platform in a Korean shipyard, to be moored 200 km off the Western Australian coast. Petrobra's project is to be positioned along prime pre-salt gas acreage and will be receiving gas from multiple deepwater wells.

Subsea Pipeline Infrastructure

In terms of how to distribute the gas produced, Petrobras is expanding its subsea pipeline infrastructure. A new pipeline is already being laid to connect some pre-salt plays to the planned pre-salt port officially known as "Terminais Ponta Negra" (TPN) in the city of Maricá and from there to a state-of-the-art new inland refinery that is being built nearby (Comperj), in the city of Itaborai, both north of Rio de Janeiro. Although this will increase the efficiency of downstream distribution, the price paid by the environment may be harsh as the location chosen for the new port will entail the destruction of one of the only pristine headlands left in Rio de Janeiro. Ponta Negra is a pristine location where whales and dolphins breed, fish abound and surfers ride huge waves in the winter. Despite local protests, the construction of the pre-salt port is probably going to go ahead as the location is strategically positioned between the Lula pre-salt field and the new Comperj petrochemical complex.

Downstream Case Study

Petrobras Transportation & Distribution

Transportation

The largest shipbuilder of Latin America and the main logistics and fuel transportation company of Brazil, Petrobras Transporte S.A. or Transpetro as it is widely known works with transportation and storage activities of oil and natural gas. The company, a subsidiary of Petrobras, was established on June 12, 1998. Transpetro is responsible for a network of invisible roads formed by more than 14 thousand km of O&G pipelines, which interconnect all Brazilian regions and supply the most remote parts of the Country. The pipeline network is connected to terminals and the company's oil tanker fleet, uniting production, refining and distribution areas of Petrobras and acting in the import and export of O&G.

Distribution

Petrobras' derivatives distribution activity is carried out by its Petrobras Distribuidora subsidiary, while cooking gas (LPG) by associated company Liquigás.

Petrobras Distribuidora, has a 6 thousand-strong workforce and leads the market, holding a 38.4% share of it. To implement the strategies and objectives in the Strategic Plan, Petrobras Distribuidora will invest the equivalent of $2.02 billion over the period 2010 to 2014, which will increase BR's market share to 40% in 2014.

Petrobras is investing $4 billion in 2012 to improve its refining complex. This investment in the refineries is essential, most refineries in Brazil are optimized to work with the heavier oil usually found in the Campos Basin and many of the existing refineries will need major ajustments in order to be capable of processing the much lighter pre-salt oil.

There is an expected increase of 56% in hydrotreatment capacity and 18% in waste conversion. These investments are for improving fuel quality and increasing profit margins.

In 2011, eighteen new units went on stream at the refineries to improve operations, make environmental adjustments at the units, enhance energy efficiency, and increase the flexibility of producing oil products.

Petrobras's domestic and foreign production target for oil, NGL's (natural gas liquids) and natural gas for 2016 is 3.3m boe/day, including 3.0m boe/day in Brazil. Oil and NGL production in Brazil is expected to reach 2.5m bpd in 2016. Most production growth is expected to occur from 2014 onward, with an annual estimated increase of between 5 and 6% for the period 2014-2016. For 2012-2013, the company expects to maintain the same production levels as in 2011 (+/-2%).

2012-2016

The Petrobras business plan for 2012-2016 gives us a clear idea of the importance placed in downstream development, assets and infrastructure, as it only looses to E&P in terms of budget for the segment.

The Downstream segment has investments of $51.7b for the projects under implementation. The refining capacity expansion projects to come into operation by 2016 include the Abreu and Lima Refinery and the first phase of Comperj, already in the implementation phase. The company's strategy entails pressing forward with the refining capacity targets of the previous plan, seeking to align the two new refineries currently under evaluation with international metrics.

Petrobras owns or has an interest in 11 of Brazil's 13 refineries and has four additional refineries under construction or in advanced planning. Consequently, Petrobras accounts for roughly 98% of Brazilian refining capacity. Long-term oil demand is expected to be high, with growth forecasted at approximately 1.9% per year over the next 20 years, from the 2.5mbpd seen in 2009. BMI is predicting that Brazil will be consuming 3.35mbpd by 2020, but at the same time, net exports will rise to 1.98mbpd including biofuels due to the development of offshore reserves.

With these numbers it becomes apparent that the O&G market in Brazil is in a definite growth curve, what is still nebulous is if the country will be able to get the vital infrastructure asset it needs functioning in time, in order to be able to run a smooth Downstream operation for the pre-salt produce. It will be a massive hurdle any way you look at it.

Petrobras Business Plan ($236.5B)

Segment	Investments	%
E&P	141.8	60.0
Downstream	65.5	27.7
Gas & Energy	13.8	5.8
Petrochemical	5.0	2.1
Distribution	3.6	1.5
Biofuels	3.8	1.6
Corporate	3.0	1.3
Total	236.5	100

Ponta Negra viewed from the sea.

(Photo: Claudio Paschoa)

"Unfortunately, the infrastructure necessary does not exist today and everything is being built from scratch. The port to support this refinery is still not approved and its construction still has not begun."

Brazil's Downstream Challenges

For those outside the country, and even sometimes in, Brazil can appear a quagmire of rules, regulations and challenges to conducting efficient, profitable business. To help address some of the inherent infrastructure issues that must be resolved to realize the full potential of the country's O&G business, MR tapped **Douglas Moura (pictured below), Logistics Specialist**, Brazilian O&G market. Moura's experience includes five years in the downstream industry followed by upstream work at Subsea 7, and then on to OGX as procurement analyst. Recently, he has worked with Westshore as a shipbroker and is currently employed by Brazilian tug boat operator SulNorte at its office in Rio de Janeiro as Operational Coordinator.

"The first point is that the newly build refineries probably won't be ready to operate at the same time that they were forecast to at first, so the production company will have to use the refineries that already exist, which do not have the capacity to produce petroleum derivatives during the new production," said Moura. "The Comperj complex is being built in a place that, if looked at through a geographic perspective is good, for they are in the middle of the state of Rio de Janeiro."

"Unfortunately, the infrastructure necessary does not exist today and everything is being built from scratch. The port to support this refinery is still not approved and its construction still has not begun. This would be the TPN port, which would receive the petroleum coming from the pre-salt and would send it to the refinery. The gas from the pre-salt would be sent to the TPN port by an underwater gas pipeline which would make landfall at the TPN port, and continue from there to the Comperj refinery. Another major hurdle is the fact that roads are still not ready, and both the cities of Maricá and Itaborai do not have the necessary infrastructure to support the influx of people and pollution these two major infrastructure projects will bring" said Douglas. "In order to build a refinery destined to pre-salt production there is a lot of work to do."

"The cost of the product following the market law, where the refinery has more capacity to produce than client demand, will force the price of the product to be lower, whereas a scenario in which the capacity to produce is lower than client demand, which in the case, will result in a higher price for the product," he said. "Brazil faces big challenges to supply its market after the product leaves the refinery. The cheapest transport from the refinery to the distribution center is the pump modal. However this is possible only for the company which has its bases as close to the refinery as is possible. The new refinery that is being built does not have any link with any distribution fuel center due to the distance from the traditional market pool."

Bulk Carrier Design Debuts in Athens

"Green Dolphin"

Unveiled in Athens was the Green Dolphin bulk carrier concept design, jointly created by the Shanghai Merchant Ship Design & Research Institute (SDARI) with development partners DNV and Wärtsilä.

Meeting ever stringent environmental emission regulations means that vessel owners increasingly seek technical and operational changes, particularly in regards to the vessel's main mover, fuel, coatings and speed. Looking forward, however, progressive owners are examining the ship from the ground up, incorporating not only the latest equipment, but the accrued knowledge on vessel design and hull lines.

With that, an increasing number of independent entities across the maritime sector have introduced innovative new designs in the past years, each staking claims to savings in fuel and emissions. Last month in Athens at Posidonia 2012, another was added to the list, as a collaboration of three well known and regarded entities has collaborated on a new Handysize Bulk Carrier design.

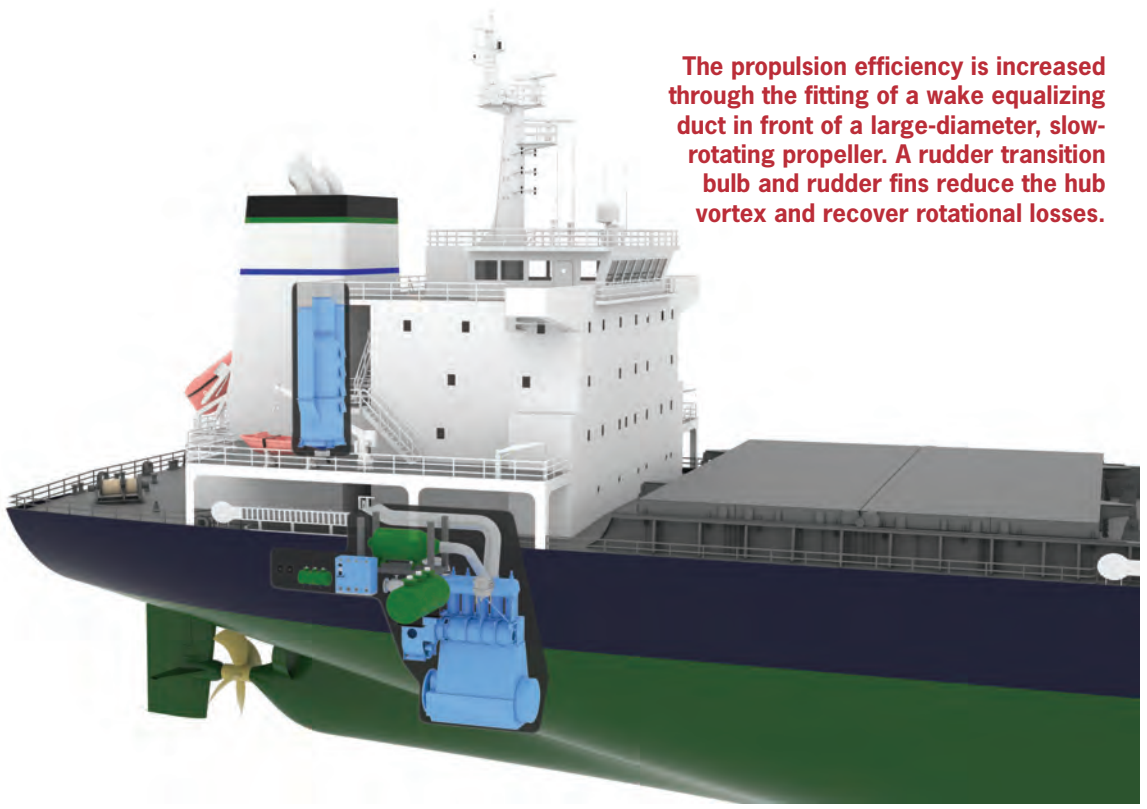
Unveiled in Athens was the Green Dolphin bulk carrier concept design, jointly created by the Shanghai Merchant Ship Design & Research Institute (SDARI) with development partners DNV and Wärtsilä.

"The focus has been on reducing the fuel consumption while giving owners different options to meet the future expected environmental regulations. The concept design is ready for the owners' preferred choice, whether that it is to run on heavy fuel oil using emission treatment systems or to switch to low sulphur fuels or LNG," said Hu Jin-Tao, the president of SDARI during a press conference at the exhibition.

The concept design is a five-cargo-hold CSR double-hull bulk carrier intended to meet current and future expected air and water emissions regulations, aiming to be fuel-efficient and maintenance–friendly, with high operational flexibility.

Green Dolphin's main dimensions also suit the majority of the world's ports which receive Handysize bulk carriers.

Length, o.a.....180m
Length, b.p. 177m
Breadth.....32m
Depth 15m
Draft, design.....9.5m
Draft, scantling 10.5m
DWTt, scantling .....38,800 mt
Speed at design draft .....14 knots



The propulsion efficiency is increased through the fitting of a wake equalizing duct in front of a large-diameter, slow-rotating propeller. A rudder transition bulb and rudder fins reduce the hub vortex and recover rotational losses.

The hull design is a combined effort by SDARI and DNV, and is intended to provide improved overall performance at different loading conditions, speeds and sea states.

The propulsion efficiency is increased through the fitting of a wake equalizing duct in front of a large-diameter, slow-rotating propeller. A rudder transition bulb and rudder fins reduce the hub vortex and recover rotational losses.

The Wärtsilä two-stroke low-speed RT-flex50 main engine is Tier II compliant and can be retrofitted to a dual-fuel engine. Multiple fuel tanks allow for strategic purchasing of heavy fuel oil, low sulfur fuel and distillates.

"Design variants are available for fuel switching systems, installation of selective catalytic reduction and exhaust gas scrubbing systems and, in the near future, the use of LNG as fuel" said Giulio Tirelli, Business Development Director of Wärtsilä – Ship Power.

"The concept design also includes shaft torque and exhaust gas monitoring equipment to maximize the fuel consumption optimization possibilities while constantly monitoring emissions," he adds.

A heavy ballast condition is achieved without using a cargo hold for ballast water and the cargo holds are equipped with compressed air, power and wash water supply. Wash water holding tanks are also included. Wide hatch openings and fully electrical deck equipment improve the loading, discharge and cleaning efficiency so port turnaround time can be minimized. A ballast water treatment system is included as well as holding tanks and treatment systems for sewage and bilge water.

"We have achieved a concept design that is not only fuel efficient, safe and robust today, but is also prepared for the future, with the various design alternatives that an owner can select to comply with environmental regulations," says Michael Aasland, DNV's Business Director for Bulk Carriers.

Synapsis INS for Jumbo Newbuilds

Raytheon Anschütz won a contract for the supply of advanced Integrated Navigations Systems (INS) of its Synapsis Bridge Control series to new Heavy Lift Carriers for Dutch company Jumbo Shipping. The vessels are being built at Brodosplit shipyard in Split, Croatia. Jumbo ordered two Heavy Lift Carriers at Brodosplit with delivery dates in 2013, and holds an option for a third. The 152m long vessels are designed for operation, even in icy waters, and intended to service international transport and offshore installation programs with a lifting capacity of 3,000 tons. The INS includes S-band- and X-band radar sensors, which are configured as full wide-screen multifunctional workstations for Chart Radar, Radar, ECDIS and Conning. Two additional multifunctional workstations with same configuration serve as main and backup ECDIS, another multifunctional workstation with ECDIS and Conning function is supplied for route planning purposes. Additionally, the bridge is equipped with two fixed-role Conning displays. Within the INS all workstations are connected through a redundant Ethernet-based local area network (LAN). Relevant navigation data such as charts, routes and sensor information are shared within the network and stored independently on each system. Thereby, the integrated consistent common reference system (CCRS) monitors all navigation sensors and automatically selects the best available data. For manual and automatic steering control, Raytheon Anschütz provides equipment from the new NautoSteer AS series and the adaptive NautoPilot 5300. The new NautoSteer AS steering control series is based on CAN-bus technology and provides advanced functionalities such as integrated steering failure, wire-break monitoring and a simplified steering mode selector switch. All controls share the same user-oriented design and allow take-over from any steering position on the bridge.

New K-3000 Heavy Lift Carriers for Jumbo Shipping. (Credits: Jumbo Shipping)

Thomas Gunn Launches New Voyager

Voyager 4 is the latest incarnation of an automated chart management system from Thomas Gunn Navigation Services. Launched in the exhibit halls of Posidonia 2012, Thomas Gunn, founder and MD of Thomas Gunn Navigation Services, had this to say about the adoption of new technology in the maritime market: "Some sectors are very into new technology, no matter where the technology is, whether it is bridge, engine room or deck … they have to have the best," said Gunn. "Then there are certain sectors where there is a reluctance to put new technology onboard, because they are very conservative, until they are forced into a corner and have to do it last minute because they have to."

Voyager 4 is designed to offer mariners an easy-to-use, cost-effective and quality database of navigational data neatly designed using an interactive map interface with Admiralty information overlay.

"We have incorporated a number of industry firsts into the new Voyager," said Gunn. "The new route planning functionality will enable the mariner to plot an optimum route then automatically receive a tailored list of corrections for that route alone. Our digital loose leaf application delivers digitzed loose leaf updates straight to the vessel. We are proud of our partnerships with Shipping Guides, Regs4ships and SPOS, and of new features such as ENC display and touch screen technology."

www.thomasgunn.com

Rolls-Royce Power for Korean Navy

Rolls-Royce will supply its MT30 gas turbine to power a new FFX frigate for the Republic of Korea's Navy. The FFX frigate will use a single MT30. The MT30 is derived from Rolls-Royce aero engine, and produces 36 to 40 MW. The FFX Batch II program is for eight ships. This order is for the first vessel in the program, which will be built by Daewoo Shipbuilding and Marine Engineering (DSME).The MT30 engine will be built and tested in the UK before being shipped to Korea, where Hyundai Heavy Industries (HHI) will integrate it into the steel enclosure which also houses the air inlets, exhausts and ancillary equipment, prior to installation in the ship.

Globe Wireless: R6 for Globe iFusion

Globe Wireless' latest software release, R6 for Globe iFusion, is a free upgrade to all existing users. It will feature the following enhancements: a Fixed-Multiple Voice solution for Fleet Broadband, VSAT auto-recovery tools and a prepaid/sponsored email solution.

R6 for Globe iFusion takes the existing GlobeMobile multiple voice lines, currently on over 1000 FB vessels, using it as a VoIP solution. This enables multiple calls using Globe's unique Digital Quality Voice (DQV) technology on both the GSM and VoIP phones over a standard FB terminal. In this release, the Globe iFusionFixed-Multiple Voice solution allows up to 5 inbound and outbound calls over DQV, while the standard circuit switched voice line remains free at all time for the captain's use or for emergencies. **One of key features of Fixed-Multiple Voice is the ability to assign international phone numbers from over 60 countries to each phone line onboard reducing the cost to call the ship from shore as no 870 number is required.** Customers who have offices in the UK, Singapore, Italy, etc. can have a local in-country number that will be routed to the vessel and the vessel will be charged the same rate as if they were making the call from ship to shore.

R6 for Globe iFusionwill support up to 8 VoIP handsets onboard the vessel and POTs handset plugged directly into the i250. Each handset is configured from shore via Globe iPortal allowing a simple name to be assigned, an international inbound number if requested, PIN codes to restrict outbound calls, and split billing for sub-accounts. In the case of a chartered vessel the charterer would have a unique PIN and all calls will be billed under a sub-account in the customers invoice each month.

www.globewireless.com

OMEGA: Rangeable Industrial Pressure Transmitter PX5100

Omega introduces its new PX5100 series of rangeable industrial pressure transmitters.

The CE compliant, compact transmitter features a backlit display for easy reading, all stainless steel wetted parts, high life cycles, program lock function, quick ranging with internal push-buttons, a backlit display (rotates in 90 degree increments to fit the location) for easy reading.

The PX5100 has rugged field-proven thin film sensor technology and can monitor a wide variety of wet or dry media. Applications include: pump control, hydraulic control systems, compressor control, process automation, and water and tank level. Price starts at $625

www.omega.com
Email: info@omega.com


(Photo: USCG)
Salerno


Tonon


Diakun

Svenner


Liebherr

VAdm Brian Salerno USCG to be BIMCO's US Liaison Officer

BIMCO said that the organization's new US Liaison Officer is to be Vice Admiral Brian Salerno, who has retired from the United States Coast Guard as its Deputy Commandant for Operations in USCG Headquarters, Washington DC. He will join BIMCO on 1 August 2012. Vice Admiral Salerno took up his final USCG appointment in May 2010, following assignments as the Assistant Commandant for Marine Safety, Security and Stewardship. He has also served as the Assistant Commandant for Policy and Planning, and as the Director of Inspections and Compliance at Coast Guard Headquarters.

Tonon Appointed VP, R&D in Wärtsilä

Paolo Tonon, MSc (Eng), 42, has been appointed Vice President, R&D of Wärtsilä Industrial Operations as of June 1, 2012.

He will be responsible for the Research and Development of Wärtsilä products. Tonon, who joined Wärtsilä in 1998, has held several leading strategic, operational and technology positions. Prior to this current appointment he has, since 2009, been Vice President, Product Centre Automation, based in Norway, with responsibility for overall development and production of the Wärtsilä electrical & automation portfolio.

Tonon is a member of the Wärtsilä Industrial Operations management team and reports to Lars Hellberg, Group Vice President, Wärtsilä Industrial Operations.

Newport News Shipbuilding Appoints Diakun

Huntington Ingalls Industries said that Peter Diakun, vice president and chief technology officer of its Newport News Shipbuilding (NNS) division, has been appointed to vice president of energy programs.

Diakun, a 26-year veteran of the shipyard, will assume responsibility for energy programs while maintaining certain aspects of his current position. In addition to leading NNS' Department of Energy programs, he will continue to oversee Virginia Advanced Shipbuilding and Carrier

New CEO at OSX

OSX said that Carlos Eduardo Sardenberg Bellot, current Operations, Engineering, Leasing and Developing Officer of OSX assumes the position of CEO of OSX. Bellot has been an officer (COO) of the company during the last two years. Bellot worked at Petrobras for more than 30 years, where he held several managerial positions, including GM of the Campos Basin Business Unit. Bellot replaces Luiz Eduardo Guimarães Carneiro who, after having headed the Company for the past two years, renounced on this date to become the CEO of OGX.

New MD for Damen Shiprepair Götaverken

Damen Shiprepair Götaverken aims to be the best within the Nordic countries, according to its new strategy. As part of this focus, Monica Svenner has been appointed as the new MD. Svenner has wide industrial experience as MD for several international companies, such as Stena Recycling and Atlas Copco. She is the first woman to take an MD post within the ship repair industry and as a Gothenburger she has a burning ambition for her new company.

Offshore Inland Marine Promotes McClure

Offshore Inland Marine, Industrial, Oilfield Services (OIS) announced James McClure as Production Manager. Mr. McClure joined Offshore Inland in 2010 to direct structural steel projects and offshore activities. McClure develops and maintains strong relationships with the people he supervises and with the customers served. OIMO is currently operating service centers in Pensacola, FL; Mobile, AL; New Iberia, LA; Galveston, TX; Dos Bocas, MX; and Doula, Cameroon, West Africa.

Barnes Appointed at GE Marine's Commercial Marine Marketing Director

GE Marine announces it has appointed Jeremy Barnes as the Commercial Marine Marketing Director.

In this role, Barnes is responsible for global commercial market development activities for GE's full line of LM marine aeroderivative gas turbines, including industry analysis, strategic planning, customer education, and channel development. He is based at GE Marine's Evendale, Ohio, headquarters.

Isolde Liebherr Honored

On June 8, 2012, Dipl.-Kfm. Isolde Liebherr, Vice-President of the Supervisory Board of Liebherr-International AG of Bulle, Switzerland, the parent company of the Liebherr Group, was awarded an honorary doctorate of Laws (LLD honoris causa) by the National University of Ireland in Cork, Ireland.

In his laudation, J. Philip O'Kane, Emeritus Professor and former Dean of the Faculty of Engineering, paid tribute to the outstanding achievements and successes of Isolde Liebherr.

Following the death of Dr.-Ing. E.h. Hans Liebherr in 1993, she and her brother Dr. h.c. Dipl.-Ing. (ETH) Willi Liebherr successfully continued her father's legacy, tripling the size of the globally operating family business. At the same time, O'Kane stressed the close ties that Isolde Liebherr has maintained with Ireland for many years, in particular with the region of Killarney. The Group has operated a production site and a number of hotels in Killarney for more than 50 years. He used the opportunity to thank Isolde Liebherr for her support for Irish charitable organizations such as the "Kerry Parents and Friends Association", which provides support for disabled persons and their families.

Trinity Offshore Rebrands to TY Offshore

The re-branding of the company from Trinity Offshore to TY Offshore, according to John Dane III, is intended to provide clear market positioning for the leading Mississippi-based designer and builder of commercial tugs, offshore barges, oil spill response, patrol and oil field support vessels from 10 to 95m (33 to 312 ft.) in length.

The name change is also intended to delineate the company from Dallas, Texas-based Trinity Industries, Inc. TY Offshore is currently building four Harvey Gulf International 302 ft. Dual Fuel Supply Vessels and ten 30,000 Barrel, 297.5 ft. Fuel Barges for FMT.

USMMA

Col (ret.) James HELIS

Colonel (ret.) James Helis, Ph.D., was named as the new superintendent for the U.S. Merchant Marine Academy. Helis, a 30-year Army veteran, will begin work at the Academy next month after spending the past eight years as a department chair at the United States War College. Since 2004, Colonel Helis has led the Department of National Security and Strategy at the U.S. Army War College in Pennsylvania. During his 30 years in the U.S. Army, Colonel Helis served as an Army Ranger and master parachutist and was a veteran of the war in Afghanistan, where he served as Chief of Plans for the NATO International Security Assistance Force. His professional foreign travel includes Belgium, Canada, Estonia, France, Germany, Haiti, Japan, Korea, Kuwait, Kyrgyzstan, Saudi Arabia, and Sweden.

Helis received his Doctorate of Philosophy in International Relations from Tufts University's Fletcher School of Law and Diplomacy. He holds masters degrees from both the U.S. Army Command and General Staff College and the University of Pennsylvania, and he earned his Bachelor of Science from the U.S. Military Academy in West Point, New York. Colonel Helis and his wife, Jan, have two sons, Corbin, 22, a 2011 West Point graduate, and Ian, 18, who joins the Kings Point Class of 2016 this summer.

Trinity Offshore Rebrands

Barnes

Foss

Topaz Ferries

Wärtsilä Hamworthy

Resolve Salvage & Fire

General Dynamics to Acquire Earl Industries' Ship Repair Division

General Dynamics entered an agreement to acquire the Ship Repair and Coatings Division of Earl Industries, an East Coast ship repair company that supports the U.S. Navy fleet in Norfolk, Va., and Mayport, Fla. Earl Industries is a privately held company. The Ship Repair and Coatings Division employs approximately 575 workers in the Norfolk and Mayport areas. Earl Industries has been conducting U.S. Navy ship repair and conversions since 1985. The Ship Repair and Coatings Division of Earl Industries will become part of the shipbuilding, maintenance and repair operations of San Diego-based General Dynamics NASSCO, a leading provider of ships to the Navy and a major producer of Jones Act commercial vessels.

Moss Hydro Offers BWTS Solution

Moss Hydro has been established by Stein Foss, the former CEO and co-founder of OceanSaver, as an independent company with three partners, and an array of engineering, marketing and manufacturing talent to create filters designed specifically for ballast water treatment. Moss Hydro filters have been created for optimized self-cleaning and minimal maintenance. Made from super-duplex stainless steel, they are corrosion free and 50-70% lighter than conventional filters.

www.mosshydro.com

Topaz Wins Ferry Contract

UAE-based Topaz Marine Engineering was commissioned by the Government of Sharjah – Al Diwan Al Amiri to build and deliver Catamaran passenger ferry. The Catamaran will be designed to accommodate 40, with passengers seated on the main deck. It will be used to transport people between mainland Sharjah and the Abu Musa Island, 70 km offshore. The ferry will be built at Topaz's Nicocraft Shipyard in Abu Dhabi and is scheduled for delivery in January 2013. This year Topaz has delivered two 18m Catamaran ferry boats to a client in the UK and completed the delivery of two wind farm support vessels (WFSV) to ASP Work Boats Ltd. Topaz is also completing the delivery of two Anchor Handling Supply (AHTS) vessels, Topaz Dignity and Topaz Triumph on behalf of BP, which are due to be deployed in the Caspian Sea on long-term contracts. Furthermore, Topaz was awarded a contract from GAC Group to provide completion services for two crew/cargo vessels.

Wärtsilä Hamworthy wins MBR Contract

Wärtsilä Hamworthy has won a contract from Fincantieri Cantieri Navali Italiani S.p.A. to supply two Membrane BioReactors (MBRs) to the 141,000gt newbuilding under construction for Carnival group member P&O Cruises. Hamworthy has delivered more than 25 MBR advanced wastewater systems to the world's largest cruise ship operator, Carnival. The company's MBR system produces the highest quality discharge without requiring any addition or generation of chemicals that are hazardous to the environment or vessel operation. For this contract Wärtsilä Hamworthy will also be responsible for UV polishing.

Shipowner Renews Safety Agreement

Singapore-based Masterbulk has renewed its fleet Safety Service Agreement for a period in excess of two years with Wilhelmsen Ships Service (WSS). The Safety Service Agreement program provides standardized solutions for customer's fleets, offering fixed prices for inspection at agreed ports for relevant systems and portable equipment.

Solstad Offshore Invests in SIS Solution

Star Information Systems (SIS) completed the installation of its Star Information & Planning System (Star IPS) across Solstad Offshore's fleet of 50 high-specification vessels. Solstad, which operates platform supply vessels (PSV), anchor handling vessels (AHTS) and construction service vessels (CSV) to service the offshore petroleum industry, looked to SIS for an integrated, centralized fleet management system.

The company will now use key elements of Star IPS functionality to cover planned maintenance, guarantee claims, asset management, projects and document management. Hans Ole Bergtun, Solstad's Technical Superintendent, says that the firm was won over by SIS' tradition of product development, user-driven innovation and market-leading pedigree:

ICS: Resume OECD Shipbuilding Talks

At the Organisation for Economic Co-operation and Development (OECD) in Paris last month, the International Chamber of Shipping (ICS) called on governments to resume negotiations on a new global agreement to eliminate market distorting measures from shipbuilding. Speaking to governments attending an important OECD Working Party, ICS, on behalf of the world's national shipowners' associations (which collectively represent more than 80% of the world merchant fleet) explained that it was a source of great disappointment that the OECD had, three years earlier, terminated negotiations on a new agreement to eliminate subsidies and market distorting mechanisms in the shipbuilding industry.

This was primarily due to differences between the European Commission and Asian governments about the treatment of pricing of new ships in any new agreement, the latter wishing instead to concentrate on the elimination of subsidies, a position that was supported by ICS.

Resolve Completes Removal of LPG

Following weeks of preparation and more than seven days of intensive, round-the-clock operations, Resolve Salvage & Fire, (ASIA) Pte Ltd. announced that more than 1000 MT of volatile LPG 1-Butene have been removed from the stranded and wrecked freighter LPG OBERON in the Taiwan Strait. The Thailand-flagged freighter ran hard aground in strong winds early this year, seven miles from the Penghu archipelago 30 miles northwest of Kaohsiung, Taiwan. The 2695-ton vessel sustained extensive hull damage and has since posed a threat of explosion and severe environmental damage to the ecosystem and reefs as well as local populations and fishing villages on the islands surrounding the wreck site. The casualty had been leaking LPG since the grounding, further increasing the risk of explosion. RESOLVE was one of the only international salvage companies to propose a technically feasible and safe salvage plan. The company's plan to remove the gas and then dismantle the freighter and remove the wreckage from the stranding site was approved by the Taiwanese government in April.

Imtech to Power Sub Rescue Vessels

Imtech Marine said that Elkon (Istanbul), a member of Imtech Marine, signed a contract for the design and supply of the complete electrical systems to power three Turkish Navy Auxiliary vessels. The vessels, consisting of one Submarine Rescue Mother Ship (MoShip) and two Rescue and Towing Ships (RATships) will be built by Istanbul Shipyard in Tuzla Turkey and are scheduled to be delivered to the Turkish Navy by mid of 2015.

W&O: New Branch in Halifax, Canada

W&O launched a new branch in Halifax, Canada. The new branch is located at 133 Ilsley Avenue, Dartmouth, NS B3B 1S9. With a branch already established in Vancouver, W&O's growing Canadian presence well-positions them to support the completion of the Canadian Navy's $35 billion fleet expansion program over the next 20 to 30 years. The Halifax branch will be led by Dan Sawler, a longtime resident of Nova Scotia. W&O recently opened another international location in Rio de Janeiro, Brazil. The new office in Halifax will be W&O's fifth international location.

Vigor Completes Conversion of Barge

Vigor Marine, a Vigor Industrial subsidiary, recently completed work on Barge Klamath, converting the vessel from a petroleum tank barge to an OSVR measuring 350' x 76' x 22'. The barge is owned by Crowley and leased to Shell as part of its comprehensive Alaskan oil spill response fleet in the Beaufort and Chuckchi seas.

AVEVA Opens Office in Chile

AVEVA expanded its Latin American presence by opening an office in Chile. The office in Santiago de Chile will also be the location for AVEVA's Mining & Metals Center of Excellence (MMCoE). The new MMCoE will act as a global resource, working with customers in Latin America, Australia and other mining intensive regions. The Chilean office address is:

AVEVA Chile, Avenida Vitacura 2670, Piso 15, Las Condes, Santiago de Chile, 7550698 – Chile; Tel:+56 2 8204299; Email: hector.pardo@aveva.com

ABS Consulting

ABS Consulting Training Services delivers public and onsite courses as well as customized courses for your organization's specific needs. Attendees receive high-quality training designed to implement programs using proven techniques in the areas of safety, security, risk, reliability, quality and the environment. Thousands of professionals both in the U.S. and internationally attend ABS courses annually. Course attendees are able to take the knowledge gained beyond the classroom into everyday work situations.

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Email: info@absconsulting.com
Tel: 800-769-1199

Bluewater Maritime School

Bluewater Maritime School provides training for professionals and entry level personnel. We are designated by the state of Florida as the State Maritime Training facility. The school is approved by State Vocational Rehabilitation, Veterans Rehabilitation Training, and Veterans Training under the Montgomery and Post 911 GI Bills. We have provided training to Harbor Operations for both NS Mayport, FL and NS Kingsbay, GA and the Marine Firefighting Divisions for both Duval and St. Johns counties in Florida, as well as the Jacksonville Sheriff's Office Marine division. Our entry level students qualify for candidates into Military Sealift Command's OS Advancement Program. We offer Master's training to the 200 Ton Level, Deck training for AB (any grade) and entry level personnel. Our STCW-95 courses include BST and BST Refresher, PSC, and RFPNW (limited). Low cost berthing is available for students.

www.bluewatermaritmeschool.com
info@bluewatermaritimeschool.com
Tel: 904-766-4797

Cal Maritime

Located in Vallejo, California, The California Maritime Academy (Cal Maritime) is a unique and specialized campus of the 23-campus California State University (CSU) system. We are one of only seven degree-granting maritime academies in the United States — and the only one on the West Coast. Cal Maritime offers bachelor's degrees in business administration - international business and logistics, facilities engineering technology, global studies and maritime affairs, marine engineering technology, marine transportation, and mechanical engineering, as well as a master's degree in transportation and engineering management. We also work closely with industry, government and the community to deliver additional resources in continuing education and training, research and job placement.

www.csum.edu
Email: admission@csum.edu
Tel: 707-654-1000

Corporation of Lower St. Lawrence Pilots

A leader in training and development, the Maritime Simulation and Resource Centre (MSRC) of the Corporation of Lower St. Lawrence Pilots offers unique expertise in navigation safety in North America. The MSRC is able to offer high-level training and actively contribute to the development of maritime projects, thanks to its skilled and dynamic personnel. It also features an in-house database compilation capability, which enables it to build, modify or customize simulated geographic areas and ship models to suit client-specific requirements. MSRC's missions include the development of skill improvement techniques for pilots and the design appropriate ship handling scenarios for mariners. MSRC runs the necessary simulation exercises to validate each project and answers any request from industry aimed at improving safety at sea.

http://sim-pilot.com/en/index.php
Email: pracicot@pilotesbsl.gc.ca
Tel: 418-692-0183

Compass Courses

Located in Edmonds, Washington, Compass Courses Maritime Training provides the most needed training for mariners on a frequent and consistent schedule. Our facilities include multiple classrooms, our own full-size lifeboat and gravity davit and a TRANSAS simulator system for Radar training. Our new facility boasts two large classrooms, RADAR simulator lab and galley. We specialize in Maritime safety and maritime training, with a full array of US Coast Guard approved classes including STCW and STCW Refresher courses.

www.compasscourses.com
Email: info@compasscourses.com
Tel: 877-SEA-BUOY

Delgado Community College

Today, Delgado is renowned as Louisiana's oldest and largest community college, serving men and women of all ages who reflect the diversity of the New Orleans metropolitan area. Delgado is a comprehensive, multi-campus community college and a major institution of higher education in the State of Louisiana. Its seven locations form a center for professional and advanced technology career education, academic pre-baccalaureate education, and traditional occupational training.

www.dcc.edu
Email: fireschool@dcc.edu
Tel: 504-671-6620

Florida Maritime Training Academy

Florida Maritime Training Academy is a premier training facility established in the Historic Port area of Fort Pierce as a practical training site for all seafarers. From entry level ordinary seaman to the most experienced unlimited Masters and Chief Engineers, we have resources and knowledge to support you every step of the way. As your training partner, we are committed to providing you the most efficient and cost-effective training available. This includes a range of programs, courses and USCG examination assistance.

www.FMTA.com
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Tel: 772-242-3682

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Maritime training simulators for shiphandling & navigation, engineering, cargo handling, communications, vessel traffic services and crane operations. We provide innovative and reliable solutions for merchant marine, offshore, subsea, navy, coastal marine, fisheries, maritime simulation & training, port & harbor surveillance and more. We deliver systems for dynamic positioning and navigation, marine automation, cargo management and level sensors, maritime training simulators and position reference systems. Important markets include countries with large offshore and shipyard industries.

www.maritimesimulation.kongsberg.com
Email: herb.taylor@kongsberg.com
Tel: 860-536-1254

Marine Learning Systems

Marine Learning Systems is an eLearning software and services provider to the maritime industry. Its main product, MarineLMS, was crafted specifically for the maritime training environment to deliver, support and provide metrics on the training initiatives of vessel operators and other maritime training providers. MarineLMS is an enterprise product which operates with or without internet connectivity and inherently understands maritime concepts such as vessels and routes. Marine Learning Systems also provides a full complement of services to support you from idea, all the way through to ongoing operations and maintenance.

www.MarineLS.com
Email: info@MarineLS.com
Tel: 1-855-E-MARINE

Mariner Group

Mariner is committed to helping maritime enterprises, government agencies, supply chains, and nations avoid threats to their safety and security, and to making them better prepared to respond when emergencies occur. CommandBridge, Mariner's flagship technology, provides users with a highly configurable, security-based, situation-awareness software platform. Web-based technology allows watch-standers, command-and-control centers and intelligence analysts to collaboratively interpret information and make actionable recommendations. CommandBridge provides users with true collaborative situation awareness.

www.themarinergroup.net
Email: support@themarinergroup.net
Tel: 800-341-2755

Maritime Professional Training (MPT)

Known for quality training and knowledgeable career counseling since 1983, MPT is certified to ISO 9001:2008 standards and offers a year round schedule at their 65,000-sq. foot campus including all courses needed for Engineering & Deck Officer and Ratings Training, medical, fire, GMDSS, survival, ECDIS, and a full mission SMART simulation campus. With USCG approved and STCW Compliant courses, MPT offers students an instructor based teaching philosophy, the convenience of the Fort Lauderdale, Florida location, state of the art facilities, a diverse class selection for all levels and budgets, and much more.

www.MPTusa.com / info@MPTusa.com
Tel: 1-888-839-5025

Massachusetts Maritime Academy

The Master of Science in Emergency Management program is to provide graduates with the knowledge, skills and tools necessary to implement both proactive and reactive strategies to reduce the cost of a disaster in life and property and thus to be successful emergency managers and leaders in both the public and private sectors. This program provides graduates with the knowledge and tools to be successful emergency managers in both the public and private sectors of industry. The program provides a multi-disciplinary approach requiring a core set of courses needed to address issues common to virtually all hazards, plus courses addressing special topics including public health and transportation security.

www.maritime.edu/graduate
Email: dc@maritime.edu
Tel: 508-830-5000 x2114

Mid Ocean Marine (MOM)

MOM is a privately owned company specializing in niche U.S. Flag maritime transportation projects. MOM is joint venture minded and seeks partners where core competencies complement one another. Related companies include Mid Ocean Tanker Company LLC (a joint venture between Mid Ocean Marine and private equity firm Alterna) and VanEnkevort Tug & Barge, Inc. (www.vtbarge.com), a U.S. flag bulk transportation company servicing the mining, steel and construction industries on the Great Lakes. VTB operates the most modern self-discharging dry bulk ATB "Great Lakes Trader" and has been a forerunner in converting existing vessels into self-discharging, articulated tug barge units. Of the 7 ATBs on the Great Lakes, VTB has been involved in the conversion and/or ownership of 5 of them.

www.midoceanmarine.com
Tel: +1 (203) 299-0678

Mountwest Inland Waterways Academy

Mountwest Community & Technical College's Inland Waterways Academy, located in Huntington, West Virginia, is the premier educational and training institution for mariners who work on the inland rivers of the United States. Offering courses from Deckhand Basic Training through Marine Firefighting and Tankerman all the way to Master, the Mountwest Community & Technical College Inland Waterways Academy is the one-stop shop for mariners' training needs. Mountwest also offers an Associate in Applied Science in Technical Studies degree in Maritime Technology and an Associate in Transportation Studies degree.

www.mctc.edu

Ocean Manager

OceanManager is web based Comprehensive Maritime QHSE software solution enabling Ship Management & Owner Companies to manage fleet operations efficiently (shore to ship or ship to shore). Installed over fleets size of 400 vessels, OceanManager Enterprise versions includes Document Management, Ship-Shore Analysis & Reporting, Vessel Particulars, Risk Assessment, Vetting Management, Port State Control & Audit Management. OceanManager is for ensuring that ocean faring vessels are compliant, also has a version for Tugboats to provides Subchapter "M" compliance.

www.oceanmanager.com
Email: sales@oceanmanager.com
Tel: 888-642-9530

Texas Maritime Academy

The Texas Maritime Academy provides an opportunity for you to learn how to operate and maintain an ocean-going vessel. In addition to classroom and field training during the regular school year, you will sail aboard the TS General Rudder, the Academy training ship, during three summer cruises to gain practical experience in seamanship, navigation, and engineering operations. At the conclusion of the program, you will be examined to become licensed in the Merchant Marine as a deck or engineering officer and may seek employment in the exciting field of marine transportation. In February 2012, Texas A&M University at Galveston will be commemorating our campus' fiftieth anniversary, and celebrating the remarkable progression into a leading marine-related academy.

www.tamug.edu
Email: beasleya@tamug.edu

United States Coast Guard Academy

The U.S. Coast Guard Academy is the smallest and most specialized of America's five federal service academies. The Academy is an elite professional college renowned for academic excellence and the development of leaders of character. The four-year Academy experience transforms young men and women, preparing them to serve their country and humanity with skill, commitment, and character. Graduates of the Academy are awarded a Bachelor of Science degree and a commission as an Ensign in the U.S. Coast Guard. These fleet-ready junior officers go directly to positions of leadership in one of the most adventurous and rewarding organizations in the word.

www.uscga.edu / Email: admissions@uscga.edu / Tel: 800.883.USCG (8724)

W&O

W&O's iShip is a unique information management platform designed specifically for the maritime industry. Offering real-time operational and event data so vessel operators and engineers can visualize, analyze, distribute, collaborate and act. iShip utilizes the PI System from OSIsoft®, LLC, to connect to and acquire operating data from existing machinery, control, instrumentation, and bridge systems. The PI System stores this time-stamped data at its original resolution virtually forever, creating a continuous record of ship system operations that is secure and easy to access by everyone in your company that needs it.

www.woiShip.com
E-mail: Meghan.Nebera@wosupply.com
Tel: 888-251-5158

SUNY Maritime

SUNY Maritime is a four-year college located at historic Fort Schuyler in Throgs Neck, New York which offers a solid academic program coupled with a structured cadet life in the regiment for both men and women. Maritime College prepares students for careers through a content-centered curriculum and a hands-on, team building approach to learning. Maritime offers undergraduate and graduate degrees, 20 varsity athletic teams, summer training cruises to Europe, five ROTC options, and US Coast Guard license and intern programs.

Maritime College offers undergraduate and graduate degrees in the following areas: Engineering (Marine, Mechanical, Electrical and Facilities), Naval Architecture, Marine Transportation/ Business Administration(minors in Ship Management and Maritime & Port Security), Maritime Studies, Marine Environmental Science (minors in Marine Biology and Meteorology & Oceanography), Humanities, International Transportation and Trade, and a Master's degree in International Transportation Management.

www.sunymaritime.edu
Email: jbartnett@sunymaritime.edu
Tel: 718-409-7200

(L to R): Ryan Powers, Brian Bourgal and Jeff Rhodes at the SUNY Maritime 2012 commencment.

(Photo: D.S.T.)

BUYER'S DIRECTORY

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

AUTOPILOT SYSTEMS

AG Marine, 5711 34th Ave NW 2nd floor, Gig Harbor, WA , tel:253 851-0862, fax:253 851-0865

BARGE FABRICATION

McDonough Marine Services, 1750 Clearview Parkway Suite 201, Metarie, LA 77063, USA , tel:(504) 780-8100, fax:(504) 780-8200, mcdonoughmarine@marmac.net

BOW AND STERN THRUSTERS

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

CABLE TRAY SYSTEMS

Niedax-Kleinhuis USA, Inc., 2260 Westbrooke Drive Building K, Columbus, OH 33619, USA , tel:(614) 921-8469, fax:(614) 921-8676, sales@niedaxusa.com

CAPSTANS

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

CARGO MONITORING & CONTROL SYSTEM

Buffers USA, 10180 New Berlin Rd, Jacksonville, FL 32226 , tel:904-696-0010, fax:904-696-0019, ken@buffersusa.com

COATINGS/ CORROSION CONTROL/ PAINT

Jotun Paints, 9203 Highway 23, Belle Chass, LA
PPG Protective & Marine Coatings, One PPG Place, 38N Pittsburgh, PA 15272 USA
Rustibus, 2901 WEST SAM HOUSTON PKWY, N. SUITE E-325 HOUSTON, TX 77043 , tel:(832) 203-7170, fax:(832) 203-7171, djj@rustibus.com contact: Dominic Jordan

COMMUNICATIONS

Jepessen Marine, Hovlandsveien 52 PO Box 212, Egersund , tel:011 47 51 46 4700, info.marine@jeppesen.com , www.jeppesen.com/marine

COMMUNICATIONS SERVICE

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

CONSOLE- GMDSS

Engine Monitor, Inc., 191 James Drive West, St. Rose, LA 08872, USA , tel:(504) 620-9800, fax:(504) 620-9801, emonitor@emi-marine.com

CONTROL SYSTEM- MONITORING/STEERING

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

CRANE - HOIST - DERRICK - WHIRLEYS

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

DECK FITTINGS

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

DECK MACHINERY- CARGO HANDLING EQUIPMENT

AF Theriault & Son, P.O. Box 10, Meteghan River, NS B0W 2L0, Canada , tel:902 645 2327, fax:902 645 2174
DMW Marine Group, 1123 St Matthews Rd Chester Springs PA 19425 , tel:(610) 827-2032, dw@dmwmarinegroup.com
Liebherr nenzing Crane Co., 7075 Bennington Street, Houston, TX
Nabrico Marine Products, 1050 Trinity Road, Ashland City, TN 37016, USA

DIVING & SALVAGE

Hydrex Headquarters, Haven 29 – Noorderlaan 9 Antwerp 2030, Belgium , tel:32-3-213-5300 (24/7), fax:32-3-213-5321, hydrex@hydrex.be contact: Dave Bleyenberg, www.hydrex.be
Hydrex US, 604 Druid Rd E; Clearwater, FL, USA , tel:727-443-3900 (24/7), fax:727-443-3990, info@hydrex.us contact: Dave Lamon, www.hydrex.us

ELECTRONICS/NAVIGATION COMMUNICATIONS SERVICE AND

Jeppesen Marine, Hovlandsveien 52 PO Box 212, Egersund , tel:011 47 51 46 4700, info.marine@jeppesen.com , www.jeppesen.com/marine

ENGINES

GE Energy, 3993 West Sam Houston Parkway North, Houston, TX , tel:713 895-0068, fax:713 895-0072, Keith.Wyatt@ge.com contact: Keith Wyatt, www.ge-energy.com/electrifyingchange
Mitsubishi Engine North America, Inc., 1250 GREENBRIAR DRIVE, STE. E, ADDISON, IL 10550, USA , tel:(630) 268-0750, fax:(630) 268-9293, than@mitsubishi-engine.com

EXPANSION JOINTS

Elasto Valve Rubber Products, 1691 PIONEER RD SUDBURY ON, P3G 1R2

FUEL ADDITIVES

Nano Fossil Fuels Technology, LLC, 561 Keystone Avenue, STE. 322, Reno, NV
Nano Fossil Fuels Technology, LLC, 561 Keystone Avenue, STE. 322, Reno, NV
Nano Fossil Fuels Technology, LLC, 561 Keystone Avenue, STE. 322, Reno, NV , tel:(775) 356-0280, fax:(775) 356-0283, nanofuels@sbcglobal.net

GALLEY EQUIPMENT

Jamestown Metal Marine Sales, Inc., 4710 Northwest 2nd. Ave. Boca Raton, FL 33431 , tel:561-994-3900 #3112, fax:561-994-3969, allen.powell@jamestownmetal.com
LOIPART AB, P.O.Box 694/Metallgatan 2-4, ALINGSAS , tel:+46 322 668 360, fax:+46 322 637 747, loipart@loipart.se

GROUNDING & EARTHING BRUSHES

Sohre Turbomachinery, 128 Main Street, Monson, MA 01082-0889, USA , tel:(413) 267-0590, fax:(413) 267-0592, tsohre@sohreturbo.com contact: Thomas Sohre, www.sohreturbo.com

GYROCOMPASS

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

HOISTS

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

HVAC

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

HYDRAULIC SYSTEMS

HYTORC, div. of Unex Corporation, 333 Route 17 North, Mahwah, NJ , tel:201-512-9500, fax:201-512-9615, btapp@hytorc.com

INTERIORS

Jamestown Metal Marine Sales, Inc., 4710 Northwest 2nd. Ave. Boca Raton, FL 33431
Thermax Marine-Panel Specialists, Inc., 3115 Range Rd., Temple, TX 76501, USA , tel:813 340-3940, fax:813 264-2507, thermax@panelspec.com contact: John Hutchinson, www.thermaxmarine.com

JOINER- WATERTIGHT DOOR-PANELING-CEILING SYSTEM

Thermax Marine-Panel Specialists, Inc., 3115 Range Rd., Temple, TX 76501, USA

LIFESAVING EQUIPMENT

CM HAMMAR AB, C.M. Hammar AB August Barks Gatan 15 421 32 Västra, Frölunda, Sweden , tel:+46 31 709 65 50, fax:+46 31 49 70 23, info@cmhammar.com , www.cmhammar.com

LIFT EQUIPMENT

DMW Marine Group, 1123 St Matthews Rd Chester Springs PA 19425
Imenco AS, 271 Kingsdale Toronto, Canada M2N 3X6 , tel:(713) 480-7777, al.cohen@imenco.com
Liebherr nenzing Crane Co., 7075 Bennington Street, Houston, TX

MARINE ENGINEERING

Imenco AS, 271 Kingsdale Toronto, Canada M2N 3X6 , tel:(713) 480-7777, al.cohen@imenco.com

METEOROLOGICAL INSTRUMENTS

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

MONITORING SYSTEMS

SPM Instrument Inc., 780 Bailey Hill Rd. Suite 3 Eugene, OR 97402, Eugene, OR

MOORING PRODUCTS AND SYSTEMS

PSI/Tideslide, 3075 Shattuck, Ste 801, Saginaw, MI , tel:989-695-2646, fax:989-695-2648, mbaluha@tideslide.com

NAV/COMM EQUIPMENT

Marlink, Offices in: Oslo, London, Hamburg, Brussels, Athens, Dubai, Mumbai, Singapore, Tokyo, Washington DC and Houston , tel:+32 70 233 220, fax:+32 2 332 3327, customer.service@marlink.com

NAVIGATION

AG Marine, 5711 34th Ave NW 2nd floor, Gig Harbor, WA
Jepessen Marine, Hovlandsveien 52 PO Box 212 N-4379, Egersund , tel:011 47 51 46 4700, info.marine@jeppesen.com , www.jeppesen.com/marine

OFFSHORE SERVICES

Hydrex US, 604 Druid Rd E; Clearwater, FL, USA , tel:727-443-3900 (24/7), fax:727-443-3990, info@hydrex.us contact: Dave Lamon, www.hydrex.us
Imenco, 16111 Park Entry Dr., Ste 100, Houston, TX , USA , tel:(713) 480-7777, fax:909-626-8326, al.cohen@imenco.com contact: Al Cohen, www.imenco.com
Jambon Marine Service, 20804 Highway 1 South, Golden Meadow, LA , tel:(985) 475-5402, dani@jambonboats.com
Jambon Marine Service, 20804 Highway 1 South, Golden Meadow, LA , tel:(985) 475-5402, dani@jambonboats.com

PADLOCKS/LOCKS

Lockmaster USA, Inc., P.O. Box 2532 Panama City, FL 32402 USA

PROPULSION EQUIPMENT

VOLVO PENTA OF THE AMERICAS INC, 1300 Volvo Penta Drive, Chesapeake, VA , tel:+1 757 3824010, lindsy.shrewsberry@volvo.com
Wartsila, Puotikuja 1, Vaasa , tel:011 35 8107090000 contact: Jessica Akerberg, www.wartsila.com

PUMPS

Varna Products, 4305 Business Dr. Cameron Park, CA 95682

RIGID INFLATABLE BOATS

Pennel & Flipo USA, P.O. BOX 1695 MOUNT PLEASANT, SC 29465 , tel:843-881-9026, fax:843-881-9026, lcourcoux@pennelusa.com

RUST AND PAINT REMOVAL

Rustibus, 2901 WEST SAM HOUSTON PKWY, N. SUITE E-325 HOUSTON, TX 77043 , tel:(832) 203-7170, fax:(832) 203-7171, djj@rustibus.com contact: Dominic Jordan

SAFETY PRODUCTS

Landfall Navigation, 151 Harvard Avenue, Stamford, CT , tel:203 487-0775

SATELLITE COMMUNICATIONS

Boatracs, 9155 Brown Deer Rd. Ste 8, San Diego, CA , tel:858 458-8107, fax:858 458-8116
Delta Wave Communications, Inc., 8001 Hwy 182 E. Morgan City, LA 70380 , tel:(985) 384-4100, fax:(504) 617-6393, tom.clark@deltawavecomm.com contact: Tom Clark
Delta Wave Communications, Inc., 8001 Hwy 182 E. Morgan City, LA 70380 , tel:(985) 384-4100, fax:(504) 617-6393, tom.clark@deltawavecomm.com contact: Tom Clark

SEATING

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

SEPARATORS

Westfalia Separator, 100 Fairway Court, Northvale, NJ

SHIPYARDS

HORIZON SHIPBUILDING, INC., 13980 Shell Belt Road Bayou La Batre, AL 36509

STEERING GEARS/ STEERING SYSTEMS

Engine Monitor, Inc., 191 James Drive West, St. Rose, LA 08872, USA , tel:(504) 620-9800, fax:(504) 620-9801, emonitor@emi-marine.com

STORAGE BUILDINGS

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

SURFACE PREP TOOLS

Kleen Blast, 30028 Industrial Pkwy. S.W., Hayward, CA
Rustibus, 2901 WEST SAM HOUSTON PKWY, N. SUITE E-325 HOUSTON, TX 77043

VENTILATION SYSTEMS / PRODUCTS

Americ/Schaefer Ventilation, 1 Industrial Blvd.Suite 101, Sauk Rapids, MN , tel:320 251-8696, fax:320 251-2922

VIBRATION CONTROL PRODUCTS

Detyens Shipyards Inc., 1670 Drydock Ave., Bldg 236, North Charleston, SC 29450, USA

WATERMAKERS

Maxim Evaporators, LLC, 6702 Linwood Avenue, Shreveport, LA , tel:318-629-2460, fax:318-629-2465, www.maximevaporators.com
Watermakers, Inc., 2233 South Andrews Avenue Ft. Lauderdale, Florida 33316

WINCH MANUFACTURER

Measurement Technology NW, 4211 24th Avenue West, Seattle, WA , tel:206 634-1308, LCI@mtnw-usa.com contact: Matt Mostad, www.mtnw-usa.com
Patterson Company, 870 Riversea Road, Pittsburgh, PA , USA , tel:(412) 322-2012, fax:(412) 322-2785, russ.mayhew@pattersonmfg.com

WINCHES & FAIRLEADS

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

Employment/Recruitment • wwwMaritimeJobs.com

Assistant Engineer
Job Location: USA

Assistant Engineer Job
This position requires a minimum of a limited USCG Merchant Mariners 3rd Engineer's License for motor vessels of size of no less than 1600 GT / 3000 ITC.
The Assistant Engineer is the designated maintenance officer and he is directly responsible for the maintenance and repair of all ships machinery, the cleanliness and organization of the various engineering spaces. This individual reports to the Chief Engineer and will take direction from the Chief Engineer with regards to the overall safe and incident free operation and maintenance of all machinery of the vessel.
The Assistant Engineer is responsible for the overall record keeping, administration and operation of the maintenance and preventive repairs in order to remain in compliance with all applicable laws and regulations. The Assistant Engineer, in conjunction with the Chief Engineer, is responsible for the safe operation, maintenance and upkeep of machinery on board the vessel.
The Assistant Engineer should expect to be involved with (at a minimum) the following systems on board the vessel. As such, the individual should expect to be involved with the maintenance and repair of the following systems and should have at least a good familiarity with these systems. Additional experience is preferable; however, experience with these systems should be used as a guide.
1. Main propulsion engines, their associated systems and controls, as well as the related water systems.
2. Auxiliary engine / generator sets, including the power distribution switchgear and the emergency generator.
3. Main reducing gears and shafting
4. Steering gear
5. Hydraulic systems
6. Air compressors, including starting air compressors
7. General repair and maintenance of smaller equipment, including galley and refrigeration items

This role requires the use of an automated planned maintenance system. Our preference is experience with ABS NS5 (Safenet), however, other automated experience would be acceptable.
The Assistant Engineer must also perform other duties and tasks as assigned.
Job Requirements:
This position requires a minimum of a limited USCG Merchant Mariners 3rd Engineer's License for motor vessels of size of no less than 1600 GT / 3000 ITC.
The position requires a valid TWIC card.
The position requires a valid passport.
The position requires a valid MMC or MMD (Zcard).
The position requires STCW training.
The position requires prior experience as a 3rd Engineer with a minimum of 2 years sailing experience.
Starting salary is $412/day with 75 day rotations.
Pay increase available after two full rotations.

Robert Gordon
Manager Crewing
Seabulk Tankers Inc. / Phoenix Crew Management LLC
Phone: 954-627-5277
Cell: 954-625-9954
email: rgordon@ckor.com
Robert Gordon
Seabulk Tankers Inc.
Phone: 954-627-5277
Email: rgordon@ckor.com

Safety Manager
Job Location: USA, Portland, OR

Safety Manager - 38681

Posted: June 27th | Open Until: July 20th | Location: Portland, OR
About Vigor Industrial
Vitality - Intensity - Stamina - Staying Power - Strength… This is VIGOR!
VIGOR Industrial is a thriving provider of innovative industrial services. You'll find VIGOR companies along the West Coast and in the Puget Sound. Our Seattle operation is the largest marine employer in the State of Washington. VIGOR owns several companies that perform industrial work ranging from ship repair to specialty coatings to machining and marine construction.
Job Purpose
The Safety Manager provides leadership in the assigned location and across disciplines for creation and compliance with safety practices supporting the company's commitment to safety. Solutions-based assessment and leadership of work in progress to identify the smartest way to safely accomplish the work. The Safety Manager provides direct leadership to safety personnel to ensure that daily work activities are accomplished consistent with our safety vision and applicable regulations. Responsible for emergency preparedness, evacuation procedures and development, implementation and compliance with work safety and ergonomic standards. Responsible for creating, maintaining and issuing reports to operations that provide visibility into safety outcomes. Responsible for leading the efforts during regulatory inspections and investigations. Must also represent company interests with customers as necessary.
Duties
(This is not an all inclusive list of the regular job duties. Other responsibilities within the accepted job scope will apply.)

1. Guides and promotes safe work performance by developing safety systems, policies and procedures; develops safety campaigns and communications that are consistent with our safety objectives.
2. Enforces safety policies by conducting inspections, reporting statistics and counseling managers and employees.
3. Identifies and anticipates safety, health concerns and hazards by surveying operational and occupational conditions, rendering opinions on new equipment and procedures, investigating violations and recommending preventative programs.
4. Provides critical support to project management teams with regard to customers with unique safety requirements.
5. Provides oversight to our on-site medical provider to ensure Vigor receives necessary support.
6. Promotes a safe environment by coordinating and cooperating with local, state and regional safety groups and agencies; acts as liaison with Port of Portland, Coast Guard, OSHA and other regulatory agencies.
7. Supports company-wide and project objectives. Rewrites and updates procedures and process memorandums as necessary.
8. Manages the Marine Chemist and Shipyard Competent Person Programs.
9. Oversees and coordinates the OSHA required Safety Committee.
10. Identifies the need for, supervises and conducts safety training programs.
11. Provides by direct intervention, or skilled leadership, accident investigation and follow up including root cause analysis and prevention.
12. Facilitates health and safety ownership by the line organization through integration of the Health and Safety Management System.

This position is the safety leader for our Portland facility and as such, is expected to exercise judgment and a level of credibility consistent with that role. Will directly supervise the work activities of safety staff and coordinate thoughtful solutions with project management teams while maintaining regulatory compliance. Must have a good command of regulatory requirements and experience in creating policies consistent with that knowledge and sound production processes.

Please apply online at http://vigorindustrial.com/jobs/details/38681
Human Resources
Vigor Industrial LLC
Email: Daava.Mills@vigorindustrial.com
Web: http://vigorindustrial.com/jobs/details/38681

Project Manager
Job Location: USA, Seattle, WA

Project Manager - USCG - 34088
Posted: May 9th | Open Until: July 7th, or until filled | Location: Seattle, WA
About Vigor Shipyards

Vigor Industrial LLC is a thriving provider of innovative industrial services. Our dynamic operations are united by a 100 year history that reflects pride of craftsmanship. You can find Vigor Industrial companies along the West Coast and in the Puget Sound.

Vigor Industrial's shipyards in Portland and within the Puget Sound have a history rich in ship repair and ship building. Vigor Shipyard, located in Seattle on Harbor Island, is the largest marine employer in the State of Washington. Vigor Industrial's corporate operations, in Portland Oregon houses six companies on Swan Island, doing industrial work ranging from ship repair to specialty coatings to machining and marine construction.

We value hard work and smart thinking, and appreciate that the reward is our ability to provide good jobs and contribute to the communities in which we operate. Our approach is simple. We hold everyone accountable for the success of the company. We don't accept that the status quo is right. We minimize barriers within departments and crafts so that everyone can perform what is needed to accomplish the work. We respond quickly to market conditions and our customer's needs. We take safety and our responsibility for environmental protection seriously.
Job Purpose

As a Senior Member of the Program Management team, manage the Scope, Time, Cost, and Quality of the industrial work that is accomplished under the UCSG Ice Breaker MSMO Contract. Plans and accomplishes the work in the most efficient and cost-effective manner possible while ensuring that the contract requirements and business rules are met.
Duties

(This is not an all inclusive list of the regular job duties. Other responsibilities within the accepted job scope will apply.)

1. Understands the requirements of the contract, and assumes responsibility for assigned areas. Oversees and manages MSMO availabilities for the program. Ensures the completion of the work to the satisfaction of the customer and meets the requirements of the contract and business rules.
2. Ensures that assigned tasks, duties and responsibilities are completed in accordance with the contract and reference requirements, the procurement and business rules, and the ESO guidelines.
3. Oversees and teams with the Ship Manager, Contracts Administrator, and Planning and Estimating Group to ensure that all program efforts are managed in accordance with the Contract Evaluation Criteria and CDRLS
4. Teams with the Ship Manager, Contracts Administrator, Planning and Estimating Group, and Subcontract Buyer to ensure that program funds are managed in accordance with the Contract Evaluation Criteria, CDRLS, and Company Requirements.
5. Teams with the Planning and Estimating Group, Ship Manager, Contracts Administrator and all necessary Vigor Shipyard Departments, including ; Production, QA, Procurement, and Safety, to manage Scope, Cost, Time and Quality to the satisfaction of all Stakeholders
6. Promotes and ensures effective communication with Business Office personnel, project team personnel, Availability subcontractors, the ship's maintenance team members, and the Government's Project Team.
7. Works with the Ship Manager, Planning and Estimating Group, Business Office and Vigor Shipyards management staff to provide status reports/shipyard positions to the customer at project meetings and review conferences.
8. Works with internal and external resources to resolve any problems and coordinate schedules.
9. Ensures compliance with Company, local, state, and federal laws and regulations
10. Conducts negotiations with the authorized Government personnel, and utilizes signature authority as required in the course of assigned duties.

SECONDARY FUNCTIONS:
1. Advocates for and is a model for the Vigor Code.
2. Coordinates with Accounting to ensure accurate customer invoices and timely payment
3. Supports volume forecasting and fee analysis reports to support Project Office reviews
4. Assists in preparation and timely submittal of CPAR responses
5. Utilizes education and training to raise productivity and effectiveness of administrative staff
6. Responds to change productively and contributes to team effort to accomplish desired results
7. Other duties as assigned

Operates within general parameter, but must use sound judgment and independent decision making when carrying out job responsibilities. Has the ability to influence and recommend modifying existing protocols. The projects budgets range up to $25 million in size. The role reports to the Program Manager The incumbent and staff are held accountable for the profitable performance of the work performance. Failure to meet the expectations of the customer could result in significant loss of profit and revenue from future business.
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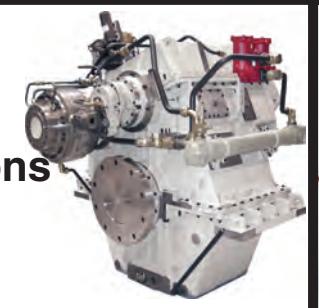

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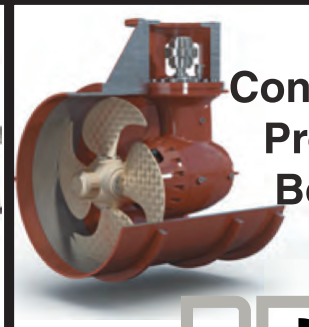

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