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MARITIME REPORTER AND ENGINEERING NEWS

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March 2010

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Maritime Security

Technology vs. Technique

Technical

Integrated Bridge Solutions

Five Minutes With

Karen Hughey, CEO, ABS Nautical

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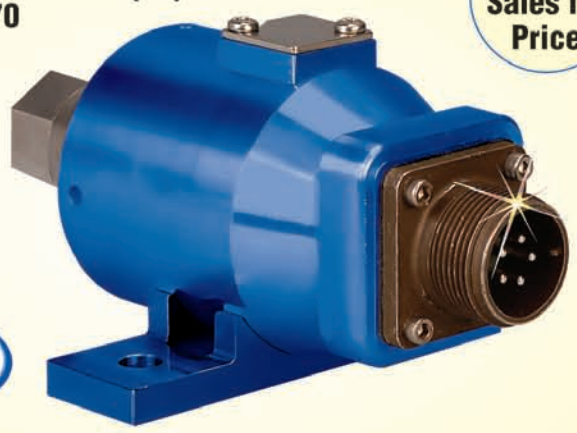

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LIFE MATTERS

FIVE MINUTES WITH THE CEO OF ABS NAUTICAL

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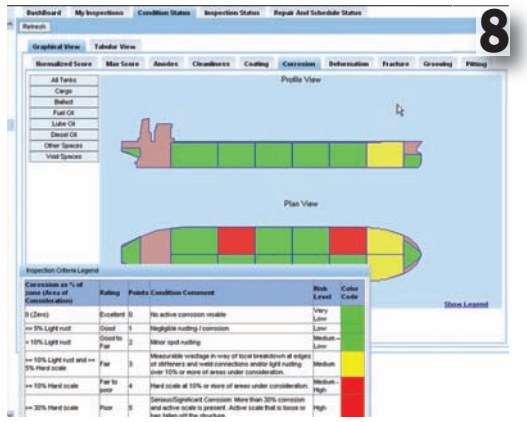
Karen Hughey provides MR a candid view of developments in the world of onboard software solutions.



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Donjon Marine, since 1964, has answered the call to help fix marine emergencies around the world. Built on salvage, today the company is a diversified marine entity.

• by **Greg Trauthwein**

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While the notion of the integrated bridge system is hardly a new one, some key developments from around the industry are helping to make vessels more safe and efficient via modern IBS.

WWW.MARITIMEPROFESSIONAL.COM

Is the SS United States Being Scrapped?

Last month on **www.MaritimeProfessional.com** Ron Oyer posted a blog regarding the rumored scrapping of this storied ship. MaritimeProfessional.com has reporters stationed around the world to bring to you daily news and information pertaining to the business and history of the global marine business.

Read recent excerpts on page 59, or log on to www.MaritimeProfessional.com to join.

COVER STORY

INTERNATIONAL NAVIES

30 Rising Tide

Much attention is deservedly paid to developments in the U.S. Navy, but investment in new ships, boats and technologies is growing globally, with many nations building and fortifying their presence along the coasts, on and under the sea. This month Maritime Reporter profiles the historical development and future prospects of activity in five navies: UK, the Netherlands, Germany, India and Bangladesh

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Double Bevel Doubles Production.

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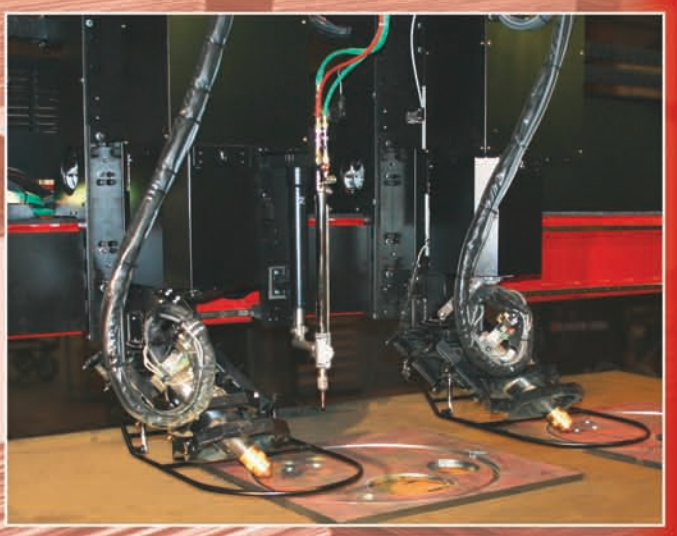
The math is simple: cut twice as much in the same time and you double production. That's just what the dual 3D link plasma contour bevel heads on Koike's new Versagraph Millennium can do. They cut the same shape or mirror image with a positioning accuracy of +/- .005 in. And high production will keep coming because of rugged construction and digital servos on the machine gantry. Operation is easy thanks to integrated technology and a precise sensor-THC height control that maintains consistent torch-to-work distance. Get all the details at www.koike.com.



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For the Love of Ships

In all of my years as editor of *Maritime Reporter & Engineering*, never have I seen the level of interest or out-and-out love of a ship as I've seen with the *SS United States*. Most of our regular readers know the history of this ship well, so in the spirit of saving time and space, I will not elaborate on its long and diverse history. The storied ship is said to be headed for its final resting place, the scrapyard, and the SS United States Conservancy is launching a movement, rapidly trying to raise the funds necessary to buy the ship and save it from a future life as razor blades. To learn more about the group and its plan, visit **www.ssusplankowner.org**.

Another interesting aspect to this story was how it first came to my attention; via our recently launched website, **MaritimeProfessional.com**. We started MaritimeProfessional.com late last year — our effort to provide our ever changing, always mobile readership base with the means to connect not only with us, but with each other. In a few short months the site has attracted more than 5,000 members, and is growing exponentially. We have provided our global network of writers and contributors — from Hong Kong to Mumbai to Rio de Janeiro to San Franciso to Houston — with an additional outlet to keep you abreast of maritime events ... from the merely curious to the critical business informative ... 24/7. The blog in question, by one of MaritimeProfessional's members, Ron Oyer, provides a personal perspective on the ship — one of hundreds I've heard in my 18 years in this post — which I think you will appreciate.

http://www.maritimeprofessional.net/Blogs/Scrapping-the-SS-United-States/March-2010/Scrapping-the-SS-United-States.aspx

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Karen Hughey

Chief Executive Officer, ABS Nautical

How did you get started in the Maritime Industry?

Karen Hughey I'd worked in IT management across multiple industries, but had never found one that truly inspired me. The fact that ABS provided me the opportunity to join their innovative IT department was a major factor, as was their history. ABS has been around since 1862, and that sort of proven stability was certainly attractive.

I have been with ABS – and now ABS Nautical Systems – for 13 years, and while I had always found the maritime industry intriguing, I had no idea how dynamic it is.

Just recently, you came to the helm of ABS Nautical Systems: On entering, what did you count as ABS Nautical Systems' primary strengths? Weaknesses?

KH ABS Nautical Systems' primary strength is that NS5, our current suite of software modules, is an excellent product that continuously evolves to suit industry and customer needs. We are able to ensure it does so because our R&D is driven by feedback from our customers and partners. The fact that NS5's fully integrated modules have built-in configurations that allow for customization is one example of that.

Being a division of ABS is a great strength for us as well. ABS Nautical Systems now has opportunities for collaboration with ABS and access to resources within the global ABS network. That's a unique opportunity for a fleet management software company like ours – none of our competitors have that advantage. The last year has also seen our strength grow in terms of our personnel and organizational structure. We are growing at a rapid pace, opening new offices and hiring new talent.

How would you best describe your management style?

KH I am very fortunate to have a great team at ABS Nautical Systems and our talent is one of the main drivers of our success. It's important to build a culture that recognizes and nurtures the value of talented employees, and my focus is on maintaining that culture.

I have an open door policy and encourage input from everyone. The sharing of ideas, teamwork and collaboration helps build positive working relationships across our team.

ABS Nautical Systems has undergone quite a few changes recently. Can you summarize these changes, with insights on how they have affected your product/service offering?

KH The single biggest change in the past year is that ABS bought out the minority shareholder in ABS Nautical Systems, making us a wholly owned division. This has had a huge impact on our business. We're now able to reach out and utilize resources within ABS to help promote our products and services. It also provides new opportunities to expand our product offerings in cooperation with ABS. For example, the Newbuild Program that ABS launched last year offers free NS5 Hull Inspection, Web-based drawings and Maintenance & Repair modules to all ABS-classed vessels built after January 1, 2009. By integrating our ship maintenance software with the classification and survey requirements of ABS, we will have the ability to streamline the owners' inspection process and move towards developing a more standardized, class-approved maintenance program.

Directly linking ABS class requirements with the maintenance and repair of the hull structure allows for less intrusive and less time-consuming surveys for vessel owners.

Fleet owners and operators want to run their vessels more efficiently, especially in this economy. NS5 has always been good at compiling data, but we've developed new business intelligence tools that allow fleet managers to monitor trends, conduct analysis and capture compliance data in a more user-friendly, less time-consuming manner.

Your niche is a crowded space. How does ABS Nautical Systems differentiate itself?

KH We talk about our stability. Many fleet management software providers have come and gone over the years; others are struggling in the current economy. As a division of ABS, that isn't a concern for us or our customers. Vessel owners want to work with a stable provider who will be around in the future to offer technical assistance and product upgrades.

Because we have a lot of resources within ABS, we can also develop new products that other vendors don't have, like our Hull Inspection module which utilizes ABS' experience and knowledge of vessel structures.

Our client-centered approach also sets us apart. We frequently partner with our customers on product innovation; NS5 is based on decades of client research and incorporates many customer-driven functional enhancements that can increase crew productivity and reduce operating costs.

How has the recent economy affected your business?

KH The recession has hit the industry hard, and I think everyone is experiencing a longer sales cycle. However, ABS Nautical Systems has been fortunate that we are well balanced in our client base between the marine, government, offshore & energy and workboat sectors.

Many vessel owners are using this downtime to improve overall business processes, which includes fleet management software. When the industry was booming, managers couldn't even think about trying to implement a system like NS5. They just didn't have the capacity to do it. Now is the perfect time for them, especially with the Newbuild Program. There's not a lot of upfront investment, and they've got the time and bandwidth within their organization for implementation.

The most significant events for ABS Nautical Systems in 2009 were the launch of the Newbuild Program and the signing of several large global contracts. The Newbuild Program alone has added more than one client per week since its inception, and the large global contracts that we have signed have provided project work well beyond 2010. Its tremendous success has prompted us to double our customer support staff.

In your estimation, what specific marine industry trends/changes are happening that will most significantly impact your business?

KH Compared to many land-based industries, the marine industry has been off pace in adopting IT management systems. That is really changing as vessel owners see the efficiencies and savings that can result from implementing an integrated fleet management system like NS5. The maritime industry is heading towards greater integration of compliance requirements and on-board information management. Increased regulation and the imposition of industry standards have helped highlight how effective a management system can be in capturing the information needed to demonstrate compliance.

What investments is ABS Nautical Systems making today?

KH One of our main investments is in product development. Thirty percent of our revenues are reinvested back into customer-driven research and development. We're enhancing NS5 and putting more stability into it.

Our other investment is in our people. We're hiring new talent and growing our presence globally to meet the needs of our customers worldwide.

What are the biggest challenges to your company's continued success, in terms of:

a. Legislation

There are a lot of changes going on right now around compliance and environmental regulations. Each country, even each state within the U.S., has different environmental regulations. Because of this, vessel owners have to keep better records to meet all types of compliance requirements, putting more pressure on fleet management systems. NS5 currently allows them to track ship maintenance, hazards and equipment, and we will be adding more functionality around environmental compliance in the future.

b. Competition

There are a lot of smaller players in this market. It's difficult to understand how to promote your product capabilities when you're competing with a different vendor every time. We want to promote our strengths, but that can be hard to do when you're not always sure what your competitor is offering.

c. Business in General

We're constantly looking for ways to improve our overall business and be proactive about our future growth. We're investing heavily in technology and in retaining talent so that we are prepared for any future challenges.

Given the current unemployment rate, many people are looking to change companies and move away from the smaller vendors.

Everyone wants job stability and security, which we can offer as part of ABS. We've recently hired some great people and I'm fortunate to have an amazing team that continues to grow.

Seafarers & International House
"Setting the Course"

On Thursday, April 22, 2010, Seafarers & International House will hold its 10th annual awards banquet, Setting the Course, at the New York Athletic Club to Donald Keefe, President of Marine Engineers' Beneficial Association, Philip J. Schapiro, President & CEO of Liberty Maritime Corporation and Joseph C. Sweeney, Distinguished Professor of Law at Fordham University School of Law. Seafarers & International House is a Lutheran mission serving seafarers and sojourners. Its 84-room guesthouse at 123 East 15th Street in Manhattan, once one of several seafarer hotels, is now utilized to accommodate a greater variety of travelers, including domestic violence victims, refugees, asylum seekers, as well as the reduced number of seafarers requiring accommodations.

Its outreach to seafarers now, however, is a portable mission. Its port chaplains operate special vans equipped with sundry items the seafarers are likely to need. They drive up to the port terminals to visit the seafarers aboard ship and take them to whatever destinations they want.

The annual awards banquet helps to underwrite the cost of this port mission in several ports from Philadelphia to the New York/New Jersey maritime complex, Connecticut and Rhode Island. Past honorees have included David Heindel (SUI), Clay Maitland (International Registries), Tim Brown and George Quick (Masters, Mates & Pilots), Per Heidenreich (Heidmar), Bob Johnson (OSG), Tim Casey (K-Sea Transportation), Tom Bethel (AMO), Peter Shaerf (AMA Capital) and John Reinhart (Maersk).

The nine previous Setting the Course banquets have had unexpected moments of entertainment (when Dave Heindel made a surprise presentation of new van from the Maritime Trades Council and then challenged his co-honoree, Clay Maitland, to do the same) and unexpected moments of drama (when John Reinhart was able to make a surprise announcement that Captain Phillips of the Maersk Alabama had just been freed from his pirate captors. The cocktail reception starts at 6; the banquet at 7:30. **Reservations, program journal ads and other information are available by calling (212-677-4800 ext. 1218) or emailing (nfleming@sihnyc.org)**

Incat Crowther Breaks Through with U.S. Office

Debuts 36M Crewboat for Petrobras

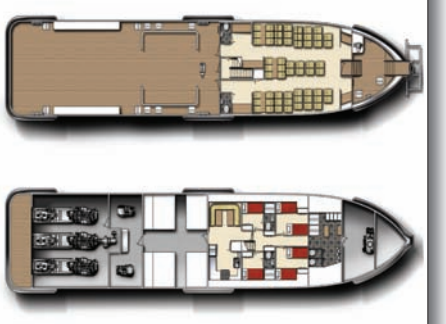
Incat Crowther announced construction of a 36m Monohull Crewboat for Brazil's Petrobras, significant as it is one of the first projects to take advantage of Incat Crowther's new USA office, which was opened in January 2010. The vessel, under construction by ETP Engenharia Ltda in Rio de Janeiro, Brazil, is a 36m monohull crew boat complying with the Petrobras specifications for the P2 type crew boat. The main cabin contains seating for 60 passengers in large reclining seats, some at tables.

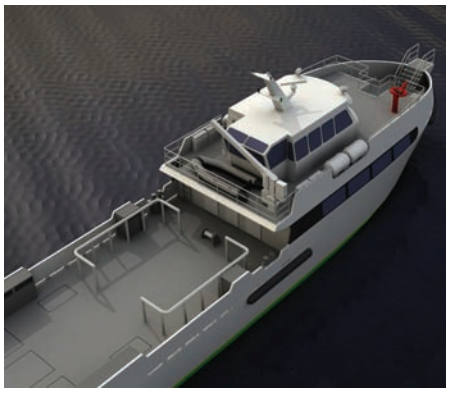
Aft of the passenger accommodation is the main cargo deck, which is divided to perform two main functions. The aft area of the deck is devoted to crew transfer; the forward portion of the main cargo deck is configured to carry cargo, with a capacity of more than 50 tons. In addition to the crew accommodation, below deck also houses the vessel tanks. Aside from the ship's own fuel and water, the vessel is also equipped with cargo fresh water and fuel tanks. Each of these tanks is capable of holding in excess of 30,000 liters. The wheelhouse is located on the upper deck and includes forward and aft facing control stations, with all round visibility. The upper deck also features a rescue boat with slewing davit, fire fighting monitor (10,000 liters/min.) for combating offship fires, and direct access to both forward and aft decks. A purpose-designed transfer platform has been arranged on the foredeck to further suit the Petrobras P2 vessel requirements. The vessel will be powered by three Caterpillar C32 main engines, each driving a Hamilton HM721 waterjet. The center drive line will be arranged to provide booster power, while the outboard jets will add steering functionality.

A ZF3050 gearbox will provide gear reduction and clutching. A single 100 hp bow thruster will be mounted forward for station keeping purposes. The three Caterpillar main engines produce a total of 4,200 hp, giving the vessel a service speed of 25 knots. Primary electrical power is derived from a pair of Caterpillar C4.4 gensets each producing 99kw.

Main Particulars

Length, o.a.	36m
Length, waterline	32.9m
Beam	7.5m
Passenger capacity	60
Crew capacity	10
Ship's fuel	15,100 liters
Ship's water	5,800 liters
Cargo fuel	30,200 liters
Cargo water	30,200 liters
Deck cargo	50 tons
Deadweight	85 tons
Service speed	25 knots
Installed power	4,200 bhp
Main engines	3 x Caterpillar C32 ACERT
Propulsion system	3 x Hamilton HM721
Gensets	2 x Caterpillar C4.4
Gearbox	ZF3050
Survey	Bureau Veritas





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- Managed Services Agreements
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Ferry Designs out for Bid Soon

Caledonian Maritime Assets Ltd. and Société des Traversiers du Québec have both ordered new passenger ferry designs from Deltamarin. The order of the Scottish Caledonian Maritime Assets Ltd. (CMAL) comprises the concept design of two small RoPax ferries (311.6 ft & 114.8 ft). The designs will be used as tendering specifications to shipyards. CMAL are intending to commence a fleet replacement program in the near future, and these ferries will be a part of it. Another contract was signed with the Canadian Société des traversiers du Québec (STQ) for professional services in Naval Architecture and Engineering for the Matane - Baie-Comeau - Godbout new ferry. The work includes concept design for tendering purposes as well as supervision of the works during the construction, trials and commissioning of the ship. The work is to be performed by the consortium of the Canadian Naval Architecture and Marine Engineering company Navtech Inc. and Deltamarin.

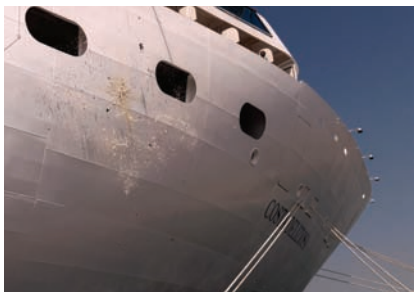
Tech File

NYK, MHI Trial Air-Lubrication System

Aims for 10% Reduction of CO2

NYK and Mitsubishi Heavy Industries, Ltd., report that they are to begin experiments on an air-lubrication system to reduce CO2 emissions during marine transport. Jointly developed by the two companies, the system is designed to effectively reduce the frictional resistance between a vessel's bottom and the seawater by means of bubbles generated by supplying air to the vessel's bottom. The first permanent installation of the system using an air-blower is expected to reduce CO2 emissions by approximately 10%. The experiments will be conducted using module carriers — special heavy load carriers with RoRo rampway to transport thousand-ton prefabricated structures of plant facilities to be installed on oil/gas development sites, or industrial locations – operated by an NYK Group company, NYK-Hinode Line, Ltd. Construction of the vessels will be completed in March and November 2010. Amid a strong demand for effective environmental measures to counter global warming, NYK has taken measures to reduce CO2 emissions throughout its marine transport, while Mitsubishi Heavy Industries has focused on the development of vessels that meet the needs for CO2 reduction as an important issue. Compared to other large vessels, a module carrier has a wide, shallow-draft hull that generates relatively little water pressure and accordingly minimizes the electric energy required by an air blower to supply air to the vessel's bottom. Moreover, due to the flat, wide bottom, the supplied air is considered to be readily retained under the vessel's bottom. For these reasons, it has been determined that experiments into the effectiveness of CO2 reduction can be verified using module carriers. This project is subsidized through Japan's Ministry of Land, Infrastructure, Transport and Tourism's "Support for Technology Development from Marine Vessels for Curtailing CO2" project for fiscal 2009 (announced on May 29, 2009), and is also supported by ClassNK and the Nippon Foundation.

Cruising Dubai



The naming ceremony of Costa Deliziosa, the new diamond of the Costa Cruises fleet, inaugurated last month in Dubai. This is the first ever ceremony of this type for a Cruise Ship in the Middle East.

Recent Ship Sales

(Source: Shipping Intelligence, New York, NY)

Date	Name	DWT	YB(age)	Price
Bulk Carrier				
01/27	NATCHA NAREE	23,593	84(26)	$4.7
01/11	GLOBAL DREAM	24,393	97(13)	$12.6
01/27	DS MIRAGE	25,096	97(13)	$13
01/12	NOSCO PEACE	26,384	83(27)	$4.2
01/27	MIRA R	26,435	95(15)	$14.5
01/11	WRESTLER	29,228	09(1)	$4.6
01/27	IVS LAVENDER	29,727	04(6)	$22
01/27	PRIMROSE	29,738	02(8)	$20.5
01/11	BASIC RELIANCE	29,887	02(8)	$20.2
01/27	OCEAN TWINS	31,699	05(5)	$23.5
01/11	SHINYO PROGRESS	32,500	10(0)	$24.5
01/11	JIANMAO 18	34,750	84(26)	$5.3
01/27	BLED	34,947	83(27)	$4.6
01/27	GOLDEN	37,726	84(26)	$7.6
01/27	MOON SEA	38,313	84(26)	$7.3
01/27	ZAMRUD	41,630	90(20)	$8.7
01/12	STELLAR IRIS	43,003	90(20)	$8.4
01/27	ISLAND OASIS	46,681	99(11)	$22.8
01/27	AOLUCKY	47,280	98(12)	$20.5
01/11	FURNESS TIMIKA	52,508	01(9)	$25.2
01/11	TIARA OCEAN	52,532	04(6)	$25.5
01/27	VICTORIA III	55,303	10(0)	$28.5
01/27	M FARUK	63,494	84(26)	$7.8
01/11	RENA	63,578	81(29)	$5.6
01/27	OCEAN KOREA	64,575	84(26)	$5.8
01/27	GEM OF COCHIN	64,976	82(28)	$5
01/27	SILVERGATE	68,158	87(23)	$11.5
01/27	DARYA RADHE	73,705	99(11)	$27.8
01/27	AEOLIAN SPIRIT	73,739	99(11)	$27.5
01/27	SPRING FORTUNE	74,069	99(11)	$27.3
01/12	NAVDHENU TRUST	75,590	83(27)	$6.8
01/11	PEACE BLOSSOM	148,982	87(23)	$11.6
01/27	CAPE AFRICA	149,533	91(19)	$18.8
01/27	STAR BETA	174,691	93(17)	$22
01/11	AZUL GLORY	178,633	98(12)	$39
01/27	ORIENTAL BAY	179,764	10(0)	$71.5
Chemical Carriers				
01/27	GREEN CHEMIST	3,234	95(15)	$2
01/11	NORTH CASTLE	7,770	09(1)	$17
01/27	JO ASPEN	12,637	91(19)	$3.9
01/27	ORIENTAL BOUQUET	14,298	02(8)	$15
01/27	AZOV WIND	17,127	88(22)	$1.6
01/11	GAN VICTORY	46,700	07(3)	$26.5
01/11	GAN VALOUR	46,700	07(3)	$26.5
01/27	GAN-VOYAGER	46,700	07(3)	$26.5
Containerships				
01/27	VAN PHUC	6,700	96(14)	$2.8
01/12	ID TUXPAN	7,850	84(26)	$2.3
01/27	GLENMOOR	7,968	96(14)	$5.5
01/12	CHRISTIAN RUSS	8,787	94(16)	$4.3
01/12	KAPITAN KONEV	12,400	95(15)	$4
01/12	KAPITAN BYANKIN	12,400	94(16)	$3.3
01/12	YURIY OSTROVSKIY	12,708	94(16)	$3.3
01/12	FESCO ALEUT	13,760	06(4)	$13.3
01/27	JOHANNA RUSS	13,770	06(4)	$13
01/27	MARTHA RUSS	13,770	06(4)	$13
01/12	FESCO ALTAY	13,799	07(3)	$13.8
01/12	MOL BRIGHT	18,185	98(12)	$6.8
01/27	SUNMAN	24,370	95(15)	$6.6
01/27	ACX MAGNOLIA	24,529	98(12)	$7.8
Gas Carriers				
01/11	GAS NATALIE	3,175	97(13)	$6.8
01/27	COMMANDER N	56,875	91(19)	$35
01/27	BW CHALLENGER	56,900	92(18)	$43
01/27	BW CAPTAIN	56,900	91(19)	$41
RoRo				
01/27	NORRLAND	4,355	90(20)	$13
01/27	AYLMER R	7,691	81(29)	$3
Tankers				
01/27	RUDDERMAN	6,417	94(16)	$4.3
01/27	BUNGA KERAYONG	18,130	94(16)	$5
01/27	KYOTO	41,461	92(18)	$6.2
01/12	FREJA BREEZE	42,955	96(14)	$11.5
01/11	ROSE	45,737	04(6)	$24
01/11	FR8 REGINAMAR	70,312	04(6)	$35.5
01/27	DIFKO CHASER	84,040	90(20)	$6.5
01/27	CHEMTRANS LYRA	97,047	93(17)	$12
01/27	PARTHENON	107,181	03(7)	$39
01/27	MARATHON	107,181	03(7)	$39
01/27	BRILLANTE VIRTUOSO	149,601	92(18)	$12.5
01/27	SOUTH SEA	149,993	05(5)	$61
01/27	NAVIGATOR	149,996	06(4)	$63
01/27	AFRICAN RUBY	150,173	94(16)	$15
01/27	ROMEA CHAMPION	154,500	92(18)	$16.5
01/27	TROPIC BRILLIANCE	154,500	92(18)	$16.5
Tweendeckers				
01/27	TEOS	8,312	79(31)	$1.6
01/11	ASIAN ROBIN	9,038	94(16)	$5
01/12	ELISABETH BOLTEN	13,022	01(9)	$11

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FloaTEC Wins $1B Contract

FloaTEC Singapore and J. Ray McDermott, signed a contract worth about $1b with the Papa-Terra Joint Venture, consisting of Petrobras and Chevron, to build and operate the P-61 Tension Leg Wellhead Platform (TLWP). This follows shortly after a Letter of Intention for the unit was issued by the Papa-Terra Joint Venture to FloaTEC Singapore in October 2009. The project scope — comprising design, engineering, construction, maintenance and installation work, as well as a three-year contract to operate the TLWP — will be jointly undertaken by Keppel FELS and J. Ray. Keppel FELS and J. Ray will also enlist the expertise of their US-based joint venture company, FloaTEC LLC, to perform global engineering and basic design work, as well as manage the supply of risers, well systems and tendon components for P-61.

Markets

Wind Power, Shipyard Industries Call for Offshore Wind Expansion

The Community of European Shipyards' Association (CESA) and the European Wind Energy Association (EWEA) are calling on the European Commission and the European Investment Bank (EIB) to support the building of new ships to serve the expanding offshore wind energy market over the coming years. CESA and EWEA urge the European Commission to develop programs and funding mechanisms, and for the European Investment Bank to take the necessary measures to support the risk related to the necessary significant investments, to ensure that a sufficient number of installation vessels are available to the offshore wind industry. They also argue that the offshore wind power industry should be identified as a key industry in the EU's 2020 strategy for smart, green growth.

Investments in new ships totaling $3.2b are needed for the predicted growth of offshore wind. By 2020, the installation of thousands of offshore wind turbines, as well as the necessary substructures and cables, is foreseen. "From 2020 we will see 40,000 MWs per year built offshore" said Eddie O'Connor, founder and CEO of Mainstream Renewables and EWEA Secretary.

"This will require 10 to 12 new heavy lift vessels, other vessels for transporting foundations, towers, nacelles and blading systems. New ports will have to be built across Europe."

"European shipyards provide the necessary engineering power to develop innovative solutions for dedicated offshore equipment" Reinhard Lüken, Secretary General of CESA said. "Together European industry holds unique capabilities to drive fast growth towards the green revolution of sustainable energy production."

"Offshore wind power provides the answer to Europe's energy and climate dilemma – exploiting an abundant energy resource which does not emit greenhouse gases, reduces dependence on increasingly costly fuel imports, creates thousands of jobs and provides large quantities of indigenous, affordable electricity," Justin Wilkes, Policy Director of EWEA said.

The call was made at a meeting in Brussels chaired by O'Connor and Lüken bringing together the wind industry, the European shipyard industry and officials from the European Commission and European Investment Bank. It will be followed by further collaboration between the two associations and their members in order to support the European institutions in taking appropriate action.

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Nakilat, Damen Join Forces

Qatar Gas Transport Company Ltd. (NAKILAT) signed a joint venture agreement with Damen Shipyards Qatar Holding B.V., to jointly operate a shipbuilding facility in the Port of Ras Laffan, Qatar. Nakilat and Damen have agreed to form a 70/30 joint venture company (JVC) to manage the operation of the 15-hectare shipyard, which has been built on reclaimed land in the expanded Port of Ras Laffan.The name of the JVC is Nakilat Damen Shipyards Qatar, Limited. The Ship Construction Facility, scheduled to commence operations in the first quarter 2010, is capable of building vessels with a length overall of up to 394 ft.

Photo courtesy Damen Shipyards Gorinchem

Keppel Clinches Shipbuilding Contracts

Keppel Offshore & Marine Ltd's (Keppel O&M) specialized shipbuilding arm, Keppel Singmarine Pte Ltd (Keppel Singmarine) won three newbuilding contracts totaling about $98.5m. The first was awarded to Keppel Singmarine by Dutch dredging and marine contractor, Royal Boskalis Westminster N.V. (Boskalis) for the construction of a 159-m rock dumping fall pipe vessel to be completed in late 2011.

The vessel will have a carrying capacity for 23,000 tons of rock and will be installed with propulsion machinery and special rock handling equipment supplied by Boskalis to carry out precise rock depositing works at water depths of more than 1000 m with Dynamic Positioning (DP-2) capabilities. This vessel will also have a flexible fall pipe with a Remotely Operated Vehicle installed at the lower end for better positioning. As the vessel moves along her track under dynamic control, the rocks will be lowered through the fall pipe at a controlled rate.

In addition to Boskalis' vessel, Keppel Singmarine has also secured another two tugboat contracts. The first is to build a 65-ton bollard pull twin-screw Azimuth Stern Drive (ASD) tugboat with FiFi1 notation for firefighting for repeat customer, Smit International. This tugboat is based on the proprietary MTD 3265T design developed in-house by Keppel's Marine Technology Development unit.

The second tugboat contract involves constructing a 50-ton bollard pull twin-screw ASD tugboat for an Indonesian customer PT. Pelayaran Trans Parau Sorat. The tugboats are scheduled for completion in the fourth and first quarter of 2010 respectively.

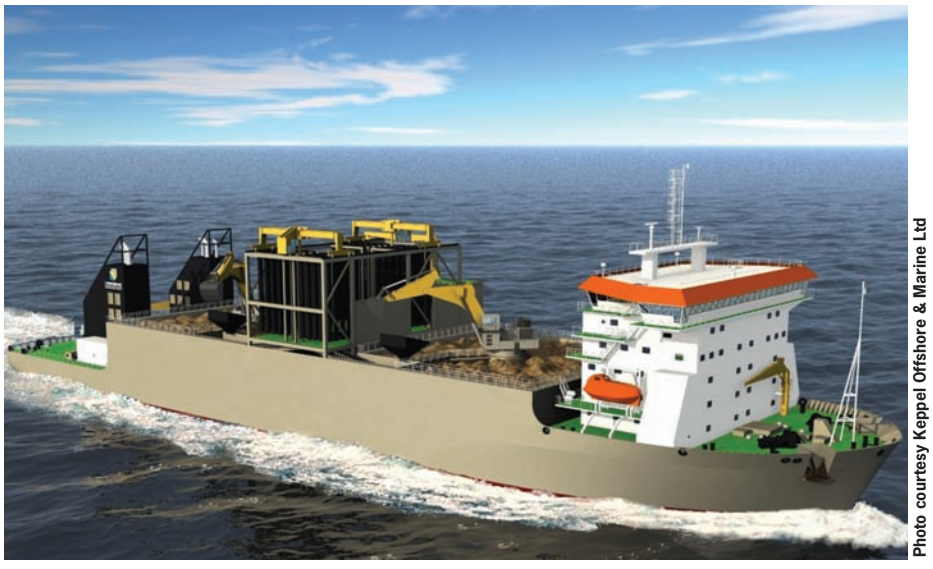

Photo courtesy Keppel Offshore & Marine Ltd

Obituary

Larry Glosten **Naval Architect • 1918 to 2010**

Lawrence Robert "Larry" Glosten, founder of The Glosten Associates, a Seattle naval architecture firm, died February 22, 2010 in his home on Bainbridge Island, Wash. He was 91.

Glosten graduated from Webb Institute of Naval Architecture and Marine Engineering in 1940. He subsequently served as a Ship Repair Officer and dockmaster at the Pearl Harbor Naval Shipyard during the early months of World War II. His naval duty included assignment to the Bureau of Ships Preliminary Design Division and, later, to the Bikini Atoll atomic weapon tests. He left active duty in 1946, but continued to served in the Naval Reserve, retiring with the rank of Captain USNR in 1978.

Upon moving to Seattle in 1953, he entered a partnership with Phillip Spaulding and Robert Herbert. His own consulting practice was established in 1958 as L.R. Glosten, Naval Architect & Marine Engineer.

Glosten established a reputation for adherence to the highest ethical standards. He was a strong supporter of the education and professional development of younger engineers. Within his firm, he encouraged broad-minded inquiry, technical innovation, and publication of technical research and engineering advances. Glosten contributed many important papers to the body of technical literature, but was most proud of his work related to business ethics.

Glosten was a leader in a number of innovative programs contributing to the science of naval architecture and marine engineering. Most notable was his work on the instrumentation platform for Scripps Institution of Oceanography, which became world-famous as FLIP, the cylindrical vessel able to float vertically or horizontally.

Other significant projects for which he gained considerable acclaim were the submersible Hughes Mining Barge used to recover a cold war era Russian submarine, and his patented Sea-Link push barge linkage.

For many years, Glosten was a guest lecturer and advisor to his alma mater, Webb Institute. In 1990, the Webb Alumni Association recognized his service to his profession and his Alma Mater with the William Selkirk Owen Award. In 1997, they further recognized his achievements with an honorary Doctor of Science degree.

Glosten was a Life Fellow of the Society of Naval Architecture and Marine Engineering (SNAME), where he participated in the technical, educational, and licensing committees of the Society. SNAME awarded him the David W. Taylor Medal for notable achievement in naval architecture in 1988. He was elected to the National Academy of Engineering in 1990, where he served as a resource on issues affecting the marine community.

Glosten served as Chairman of the Board of The Glosten Associates through 2000. After retirement, he and his wife his wife Lois Peterson "Pete" Glosten continued to host the firm's annual picnic to meet the newest Glosten Associates.

Glosten is survived by his wife of 64 years, Pete, his three children, Lawrence Robert Glosten, Jr., Dr. Beth Glosten, and Barbara Radovich, and his three grandchildren.

Contributions in his name can be sent to:

- **Kitsap Regional Library Foundation** (1301 Sylvan Way, Bremerton, WA 98310, www.krl.org), or to the
- **Glosten Scholars Endowment at Webb Institute of Naval Architecture** (298 Crescent Beach Road, Glen Cove, NY 11542-1398, www.webb-institute.edu).

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Asian Carp Control

What is Next?

The carp is a freshwater fish of the family Cyprinidae. It is native to Europe and Asia. Carp have been raised domestically, particularly in Asia, mostly for consumption, but also as ornamentals (e.g., goldfish and koi). Four species of carp – Bighead carp, Black carp, Grass carp, and Silver carp – are commonly referred to as Asian carp. Over the past 40 years, these Asian carp have been introduced into the United States for various purposes, including scientific study, pest control, biological control of aquatic weeds, and as a live food fish. Some of these Asian carp have been released into or escaped into the wild. These feral Asian carp have established self-sustaining and expanding breeding populations throughout the Mississippi River Basin. Due to the size (three feet or more in length), fecundity, appetite, and aggressive habits of the Asian carp, in many locations they have crowded out native fish species. Control efforts to date have been small-scale and of little impact. Asian carp are now possibly on the verge of breaking out of the Mississippi River Basin and into the single largest freshwater system in the world – the Great Lakes of North America.

Connecting the Water Basins

There is no natural connection between the Mississippi River Basin and the Great Lakes. The divide between the two water systems lies only a few miles west of the southwest shore of Lake Michigan. This divide was first breached in 1848 with the construction of the Illinois and Michigan Canal. The 1848 canal connected the Chicago River (which naturally flows into Lake Michigan) with the Illinois River (which flows into the Mississippi River just upstream from St. Louis) at LaSalle-Peru. The 96-mile long canal resembled the more famous Erie Canal. It had 17 locks and paths on either side where the mules and their attendants walked as the canal boats were pulled from lock to lock. The 1848 canal has been out of service for years, but various short stretches have been converted into historic sites and parks.

The City of Chicago was formally incorporated in 1833. From the beginning, domestic waste was disposed of in Lake Michigan, first by the natural flow of the Chicago River and then by pumping through pipes laid several miles out into the lake. By the 1880's, it was apparent that the growing population was overwhelming the capacity of Lake Michigan to handle the city's wastes. In one of the most extensive construction projects undertaken up to that time, a series of canals, dams, locks, and pumping stations was constructed to move Chicago's processed waste water from the city to the Illinois River.

The main drainage canal, eventually called the Chicago Sanitary and Ship Canal, was built largely parallel to the 1848 Illinois and Michigan Canal. It was much larger than the old canal and involved an actual reversal of the flow of the Chicago River. The new Canal commenced operation on January 17, 1900. In addition to serving as a conduit for sending Chicago's processed sewage down the Illinois and Mississippi Rivers, the new canal (24 miles long, about 200 ft. wide, and about 24 ft. deep) also serves as a navigation link between the Great Lakes and the Mississippi River Basin. The Canal is also used for flood control purposes in extreme weather conditions. This navigation link now supports a fairly substantial tug and barge industry. Numerous businesses have been established along the canal and on nearby waterways that rely on this transportation link.

Controversy and Litigation

The Chicago Sanitary & Ship Canal was controversial from the beginning. The State of Missouri brought suit against the State of Illinois and the Sanitary District of Chicago soon after the Canal commenced operation, complaining that Missouri in general and St. Louis in particular should not be the recipient of Chicago's sewage. In 1901, the US Supreme Court dismissed the complaint, taking a narrow view of the law of nuisance. The State of Missouri renewed its complaint following an outbreak of typhoid in St. Louis, which it blamed on the Chicago sewage. The US Supreme Court, in 1906, again dismissed the complaint without prejudice.

In 1922, the State of Wisconsin (later joined by other states bordering the Great Lakes) sought an injunction from the US Supreme Court against the State of Illinois, contending that such large amounts of water were being taken from Lake Michigan to support the flow of Chicago's sewage through the Chicago Sanitary & Ship Canal that the level of the Great Lakes was being lowered to a point that navigability was adversely affected. In 1925, the Court appointed a special master to examine the issue and recommend an amount of water diversion that would minimize the impact on the level of the Lakes while allowing Chicago's sewage to continue to be flushed through the Canal. An amount was agreed upon, but the Court has kept the case on its open docket to address issues that may arise as the situation changes.

Electrical Barrier

As it became apparent that the Asian carp were working their way up the Illinois River from the Mississippi, Congress authorized the US Army Corps of Engineers to construct an experimental electrical barrier in the Canal near Romeoville, Illinois. The hope was that the barrier would prevent the carp from proceeding further. Once the experimental barrier showed that such a system could be operated, a larger barrier was built in the same location. Problems soon arose. The electrical current in the water raised safety issues for vessels transiting the location, particularly tank barges carrying oil and other flammable cargoes. The electrical barrier has not normally been operated at full power.

Recently, it was discovered that several Asian carp have gotten past the electrical barrier. In addition, evidence of DNA from Asian carp has been found beyond the barrier. Poison was placed in the water in an attempt to kill any Asian carp near or beyond the barrier. The effectiveness of this poisoning is unknown. The discoveries of carp and carp DNA have generated various responses.

The State of Michigan, joined by several Great Lakes states and the Province of Ontario, filed a motion with the US Supreme Court asking that a preliminary injunction be issued requiring the State of Illinois and the US Army Corps of Engineers to permanently close the locks connecting Lake Michigan with the Chicago Sanitary & Ship Canal. The Court declined to issue the preliminary injunction, but did not close the door to future relief.

Congress Weighs In

Eight bills have been introduced in 111th Congress regarding the Asian carp problem. The Asian Carp Prevention and Control Acts (H.R. 48, S. 1421, and H.R. 3173) seek to prohibit the importation or shipment of Asian carp. The Eradicating Asian Carp in the Great Lakes Study Act of 2009 (H.R. 51) would require a study of feasible approaches to eradicating the carp from the Great Lakes and connecting waters. The Great Lakes Collaboration Implementation Act of 2009 (S. 237) would, among other things, seek enhancement of the dispersal barrier on the Chicago Sanitary and Ship Canal. The Close All Routes and Prevent Asian Carp Today Acts of 2010 (H.R. 4472 and S. 2946) would require the US Army Corps of Engineers to take action with respect to the Chicago waterway system to prevent migration of Asian carp into Lake Michigan by immediately closing the locks at the O'Brien Lock and Dam and the Chicago Controlling Works. Finally, the Asian Carp Action Plan Act of 2010 (H.R. 4604) would require a comprehensive approach to preventing the spread of Asian carp including the installation of additional barriers, application of piscicides (fish-killing chemicals), improvement of locks, and other projects. No action has been taken on these pieces of legislation. On February 9, 2010, though, the Subcommittee on Water Resources and Environment of the House Committee on Transportation and Infrastructure conducted a hearing on the threat posed to the Great Lakes ecosystem by the potential invasion of Asian carp. While no conclusions were reached in this hearing, it did provide a basis for action on the pending legislation.

Federal Government Shifts into Action

The Administration has also been active. The US Army Corps of Engineers has stepped up its efforts, increasing the power on the electrical dispersal barrier, experimenting with piscicides in the Chicago Sanitary & Ship Canal, and increasing its monitoring of the waterway

(Continued on the bottom of page 20)

About the Author

Rich DeSimone is president of Travelers Ocean Marine. He can be reached at rich.desimone@travelers.com

Navigating the Stormy Seas by

Getting Back to Basics

Decades from now, many may still talk about the tough times the maritime industry faced in 2009. Hopefully, they will also be able to reminisce about the recovery that took hold in 2010.

While what lies ahead in 2010 is still unclear, several facts concerning the maritime industry stand out:

- The recession hit marine companies much harder than many other sectors of the economy.

- Many businesses that serve the marine industry have seen the impact of reduced global trade spread to their own bottom lines.

- The companies that remain profitable are generally those that were well-organized, well-funded and well-run long before the recession hit.

These developments should be kept in mind as companies begin to make decisions about whom to partner with in the coming year, including marine insurers. They also provide context for a deeper understanding of the challenges ahead, as those of us involved in the marine industry begin to work our way back to the shared success inherent in healthy global trade.

The Depths Behind Us

As full statistics for 2009 begin to emerge, we can see in black and white the depth of the problems that were brought about by slowing shipments, falling boat sales and declining vessel values. For example, the value of both exports and imports for 2009 declined sharply to about three-quarters of the 2008 figure, according to the U.S. Census Bureau report for January through November 1.

This reduction in international trade translated into lower revenue for many maritime-related companies. For example, shipbuilding was at its lowest point in five years. During times of economic downturns, each industry has its own tale of woe, so the challenges faced by marine businesses are certainly not unusual.

Driving Value and Managing Risk

Just as marine businesses have battled through the past year, marine insurers have remained by their side during the economic challenges. From the perspective of marine insurers, what broadly affects the maritime industry plays out in several dimensions. When shipping declines, revenue from premiums may also decline. In addition, insureds looking to cut their own expenses may opt for less insurance coverage, which could further reduce premium income for marine insurers.

At the same time, other insurers – seeking to broaden their customer base – may enter the marine market and undercut rates. Without ample experience in the market, they may be more prone to misjudgments, or they may not have the financial stability to offer the types of services marine businesses have come to expect from insurers.

When this situation occurs, it is especially important to have partnered with an insurer that has both ample capital and experience in the maritime industry.

For both marine businesses and insurers, it is important amid these pressures to keep in mind the factors that drive the best choices and most value in managing risk. Among the considerations are:

- The advantages of dealing with insurers with a documented track record of handling marine business. This includes accurate assessment of risk, speedy claims handling and access to sophisticated risk control services.

- The assurance that comes with selecting insurers with deep financial resources and stable business models. Businesses need to know that they can count on their insurance company to be around in the future, regardless of temporary market conditions.

- The satisfaction of doing business with an insurer that believes in customer service and has the industry knowledge to meet needs and expectations.

Signs of Calm Ahead

The same statistics that document the maritime industry's dramatic economic downturn in 2009 also provide hints of an upturn that may already be underway. The U.S. Census Bureau recently reported that November exports increased $1.2 billion over October figures, and imports were $4.4 billion higher as well1. Both increases continued the trend of a month-by-month gradual climb in overall U.S. trade that began in mid-2009.

What does it all mean? 2009 was a tough year – one that saw many marine businesses focusing merely on staying afloat rather than thriving. The signs for 2010, however, are looking up, especially for the well-organized and well-funded marine businesses and their insurance partners that prepared themselves for difficult times. Together, we are ready to take on new opportunities in the ever-changing marine industry.

1 US Trade for Nov 2009
http://www.census.gov/foreign-trade/Press-Release/current_press_release/ft900.pdf

Asian Carp Control: What is Next?

(Continued from page 18)

to check for the presence of Asian carp above the barrier site. The Council on Environmental Quality (CEQ) convened a high level meeting on February 8, 2010 at the White House with regional Governors and federal stakeholders to refine a control approach.

The CEQ also released its "draft Asian Carp Control Strategy Framework" to serve as a starting point for development and implementation of control measures.

The issue has gone international. First, as noted above, the Province of Ontario joined in the motion filed with the US Supreme Court seeking a preliminary injunction for closure of the Chicago waterway. Recently, the International Joint Commission, a Canada-United States governmental body that monitors issues related to rivers and lakes on the borders between the two nations, announced that it will hold a public meeting in Ypsilanti, Michigan on February 17 to discuss plans and get recommendations on Asian carp control efforts. The attention devoted by the Canadian public and the Canadian Government to this issue can only be expected to increase.

Dilemma unresolved

If there were easy answers to this problem, they would have been found and implemented already. The threat is real.

The most effective response – permanently closing the Chicago Sanitary & Ship Canal – would be neither 100% effective nor without high costs. Asian carp can be and have been introduced into the Great Lakes by other vectors, including intentional human action. The economic cost to the shipping industry in the Chicago area and to the numerous industries that rely on the waterborne transport of cargoes in the Illinois and Indiana vicinity would be extremely high if the waterway was closed. This is a classic dilemma, with the two primary alternatives both being highly unpalatable.

International Business Regulation in the Shipyard

By Barbara D. Linney, Partner, Blank Rome LLC

Shipyards and contractors whose operations include both U.S. and foreign government naval and Coast guard programs are required to comply with numerous U.S. federal laws and regulations. Of these, export control laws and regulations and anti-bribery laws in particular have been the subject of steadily increasing enforcement activity.

Export control

The primary sources of export control regulations are the Arms Export Control Act, as implemented by the International Traffic in Arms regulations (commonly referred to as the ITAR), and the Export Administration Regulations (the EAR). The ITAR regulate the export of defense articles, defense services, and technical data listed on the United States Munitions List (USML), while the EAR regulate various commercial items, primarily those that are critical to national security or can be diverted for uses contrary to national security or in support of terrorism. These laws and regulations apply to both domestic and international operations of U.S. shipyards and contractors, and have the purpose, among others, of preventing unauthorized access to export-controlled information by foreign nationals both in the United States and abroad.

While the sending or taking of defense articles or technical data or performing a defense service overseas are commonly understood by most to be export activities subject to controls, many shipyards and contractors still fail to appreciate that under the so-called "deemed export" concept, a release or disclosure of export-controlled information or services to foreign nationals in the United States constitutes an export that requires prior authorization from the applicable export control agency. Another misunderstanding that complicates compliance in this area is the still commonly held belief that technical data is not export-controlled if it is not classified. On the contrary, while it is true that all classified information relating to defense articles and defense services is export-controlled, not all export-controlled information is classified, and several recent enforcement initiatives have focused on unlawful exports of unclassified technical data.

Anti-bribery

Shipyards and contractors seeking or performing work for foreign government customers also must comply with the Foreign Corrupt Practices Act (the FCPA), which prohibits corrupt payments (or offers or promises of such payments) to foreign government personnel for the purpose of obtaining or keeping business. This "business purpose" test is broadly applied, and the corrupt "payment" may be anything of value. The list

of prohibited recipients likewise is broadly framed to include foreign political parties and party officials, candidates for foreign political office, and foreign officials – defined in turn to include officers or employees of foreign governments, public international organizations and their departments and agencies, as well as any person acting in an official capacity. Payments may not be made through third party intermediaries, and the recipient need not be the party from whom business is sought.

Recent Enforcement Initiatives

Export control violations can result in both criminal and civil penalties. Numerous recent cases illustrate the importance of vigilance on the part of U.S. government contractors against economic espionage and theft of trade secrets involving export-controlled information, including the case of a former engineer with a U.S. Navy contractor who was found guilty of conspiring with several family members to obtain and illegally export U.S. Navy current and future warship technology to China. Corporations as well as individuals have been subject to criminal penalties for export violations. Civil penalty cases can result in fines and imposition of remedial compliance measures (including compliance monitors and audits), and both criminal and civil penalty cases can lead to suspension or debarment. Although past ITAR enforcement initiatives have tended to focus on larger companies, the last two years have seen a trend towards imposition of civil penalties and related enforcement action against smaller companies. In one such case, a software development company that specialized in creating computer models used for design testing in simulated water and other environments entered into a consent agreement providing for fines and remedial compliance measures after engaging in unauthorized exports of technical data and defense services.

Violations of the anti-bribery provisions of the FCPA are subject to criminal penalties, including fines and imprisonment. Enforcement actions against both U.S. and foreign corporations have resulted in staggering fines, as well as compliance monitoring. Nor are individuals immune from prosecution, as illustrated, for example, by a recent case in which two Virginia men are awaiting sentencing after pleading guilty to charges arising out of a scheme to bribe officials of the Panama Maritime Authority to secure a contract to maintain lighthouses and buoys. The trend towards indictment of individuals for FCPA offenses accelerated in January of this year with the arrest and indictment of 22 employees of military and law enforcement suppliers in connection with an alleged scheme to bribe African government officials. This case is also significant in that it involved a large-scale sting operation claimed by law enforcement officials to be the first of its kind in the FCPA context.

There is also a trend towards convergence of export and FCPA enforcement actions. For example, in a 2008 case, a naturalized U.S. citizen born in China was charged with violations of both the ITAR and the FCPA in connection with the unauthorized export of defense articles and services and related attempt to bribe a Chinese government official.

More recently, a Florida man said to have been linked to the FCPA sting operation has been charged with unlawful exports of controlled goods and conspiracy to violate the FCPA.

Breach of Contract

U.S. defense acquisition regulations require contracting officers to include certain clauses in all U.S. Department of Defense solicitations and contracts involving export-controlled items – i.e., defense articles, defense services, and technical data, as defined in the ITAR, and export-controlled commodities, software and technology subject to the EAR. However, the burden of compliance with the ITAR and the EAR remains squarely on the contractor irrespective of whether the clause is included, and even if export-controlled items are expected to be involved in the performance of the contract, the government has no obligation to specifically identify any such items. Thus, rather than providing clarity as to the export compliance obligations of the contractor, the primary effect of this requirement appears to be that contractors may be subject to breach of contract claims in addition to enforcement action for failure to comply with export control laws and regulations.

Compliance – the Best Defense

In view of these risks, shipyards and contractors should become familiar with the EAR and the ITAR in order to determine whether their operations entail use or generation of export-controlled items, and implement compliance programs designed to limit risks associated with regulatory enforcement as well as the breaches of contractual obligations. Shipyards and contractors vying for foreign government business should ensure that their compliance program includes training and procedures focused on both FCPA and export compliance. In addition to serving as the front line of defense against violations, a compliance program may be considered a mitigating factor in both criminal and civil enforcement proceedings in the event that violations do occur.

About the Author

Barbara Linney is a partner in the Washington D.C. office of Blank Rome LLP, practicing in the area of international trade and transactions. She regularly advises both U.S. and foreign clients regarding U.S. export controls and international economic sanctions, defense trade and security regulations, anti-bribery and anti-boycott regulations, and other international trade and business issues, including foreign investment review, mergers, acquisitions and financings. She represents clients before various federal agencies, including the Departments of Commerce, Defense, State, and Treasury (Office of Foreign Assets Control and Committee on Foreign Investment in the United States). Ms. Linney, who holds a masters degree in international law from Georgetown University, also serves as General Counsel to Women in Federal Law Enforcement and the Washington D.C. chapter of Women in International Trade, of which she is a past President. Linney@BlankRome.com

Helping to reduce fuel consumption and emissions through

Integrated Design Approach

The maritime industry is pressing on with initiatives to cut back emissions. Undoubtedly, reducing the basic ship powering need and hence, fuel consumption is one very effective way to reach this goal. A number of design issues that can achieve fuel savings for new or for existing vessels are explored here. The set of related services ranges from fairly standard, basic design practice in modern ship design to more advanced, developing techniques, either aiming at specific details, novel propulsion applications or an integrated approach leading to effective energy management. The latter approach in particular, requires early client involvement in the hydro-design in order to take into account operational issues right from the start of the concept design. In the end it ensures a design fit that is in line with the new requirements of the upcoming IMO definitions [1] concerning the design and operations energy indices.

Early Design Involvement

Basic ship design features a number of steps, which if properly applied, can already contribute to reduced energy demand in the early design stage.

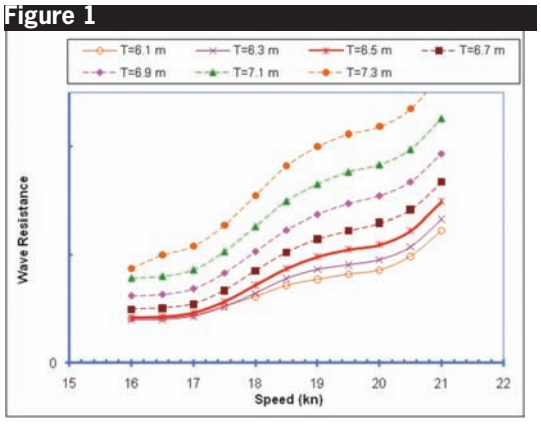
- The exchange of the so-called 'hard' design points, (maximum length, block coefficient, position of gearboxes etc.), for a design looking to minimise resistance will enhance the 'green' character of designs. Often early involvement in the design process enables this optimisation, without giving in too much to pure commercial requirements
- Designing for service facilitates an integrated approach towards energy management on board and hence, lower emissions. This approach requires knowledge of the expected operational profiles of the vessel and of the available management options
- Designing for different operational conditions like speed and draught, often in combination with trim, can lead to lower fuel consumption. Again, the operational profile in terms of expected speed, draught and trim conditions are of key importance

Various hydro-design products can help achieve optimal designs and operational conditions. Some of these products are wellknown steps in a hydrodynamic design and are facilitated by CFD tools and a final model testing confirmation. Others are the results of voyage simulation tools and new developments in propulsion, or the integration of knowledge of various energy systems.

Hull design

Reduction of the wave and frictional resistance

Figure 1



are still the main aspects when it comes to hull design. To minimize wave drag, special attention has to be paid to the design of the bulbous bow, as well as to the fore and aftbody shape. The design of the bulbous bow should lead to optimum interference between the wave pattern of the bulbous bow and the forebody. In the past, the bulbous bow was mainly optimized for the trial speed and design draught but few ships actually sail in this condition. To have an overall improvement, the operational profile of the ship has to be taken into account at an early stage and the bulbous bow has to be developed for a wider range of operating speeds, trim and draught conditions. Results of such studies can be found in Figure 1.

Propulsive efficiencies

Although it is not a big achievement to design a propeller with an efficiency rate of close to 90%, it does become an unprecedented challenge when the main engine and aftbody shape constraints are added into the equation. The delicate balance between efficiency and cavitation-induced vibrations and erosion is typically met today by designing propellers with contemporary tools, such as lifting line and lifting surface codes. Cavitation nuisance assessments (usually vibrations and erosion but in the future likely to include noise constraints) are typically being dealt with in a heuristic manner, using experience to assess whether the observed cavity extent and dynamics are likely to lead to problems. But this approach can lead to large uncertainties. Recent exploratory studies have demonstrated for instance, that propeller efficiencies can be increased when allowing for larger cavity extents (see Figure 2). R&D efforts are ultimately aimed at exploiting the full potential of the optimum integration of propeller and aftbody design, thus allowing for increased efficiencies at similar comfort and safety levels. For example, integration can lead to better use of pre-rotation in the wake (asymmetric aftbody) or to the application of a recess in the hull for an increased propeller diameter. If the current R&D developments are successfully implemented in the industrial environment, the attainable propulsive efficiencies are expected to increase by some 5% to 10% in the next decade. Today, the advanced propeller analysis and design tools outlined are partly being used in the design process of propellers and hulls.

Figure 2

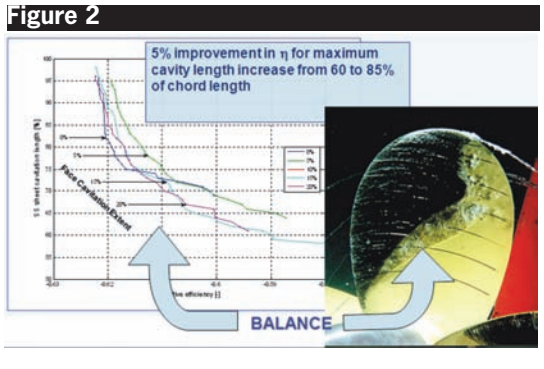
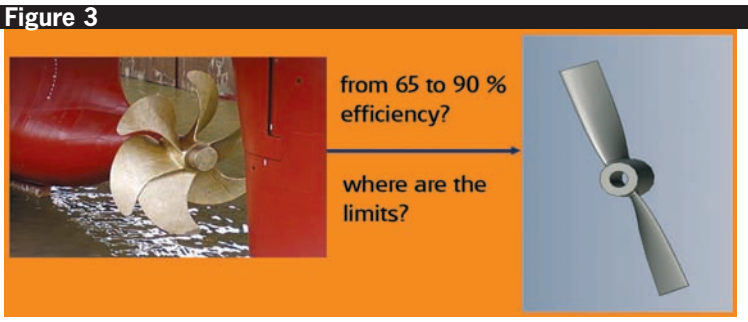


Figure 3



MARIN is focusing efforts on extending the use of these tools to further explore propeller and hull design space, leading to a better exploitation of the tools and adding to our long-standing experience in propeller and hull design.

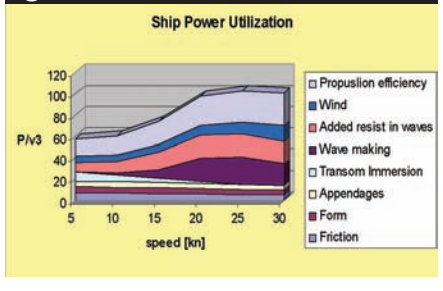
Energy-saving Devices

Another way of increasing efficiency is the use of energysaving devices as retrofit measures. Most of these devices are used to enhance the flow over the aftbody, thereby enhancing the flow into the propeller and consequently, reducing vibration and increasing efficiency. If a new propeller design is also used, overall efficiency can increase even more. An example is the vortex generator. This small device is attached to the hull upstream of the propeller at such a location that the vortex generated by the device can positively influence the flow into the propeller plane. It can reduce cavitation and vibration problems and together with an updated propeller design, improve efficiency.

Another way of energy saving is by reducing energy losses due to flow obstruction, erosion and vibration on appendages. A lot is known about flow alignment of appendages such as bilge keels, stabiliser fins and struts but nowadays, the rudder too, is an important appendage to look at. Due to the rotation of the flow behind the propeller, the rudder encounters different angles of attack leading to high-pressure peaks on the rudder surface, cavitation and eventually rudder erosion. By twisting the rudder over its length in such a way that the local angle of attack is reduced, the pressure peaks will decrease and cavitation and erosion will be avoided. Together with optimised rudder profiles, the overall propulsive efficiency will increase. An integrated design approach is the answer to the ever-increasing energy reduction demand. By combining established design approaches and new sophisticated technologies, the energy management of ships can be brought to an even higher level, making them well prepared for the coming decades.

[1] IMO.MEPSC 59/INF.Y & MEPC 59/INF.Z

Figure 4



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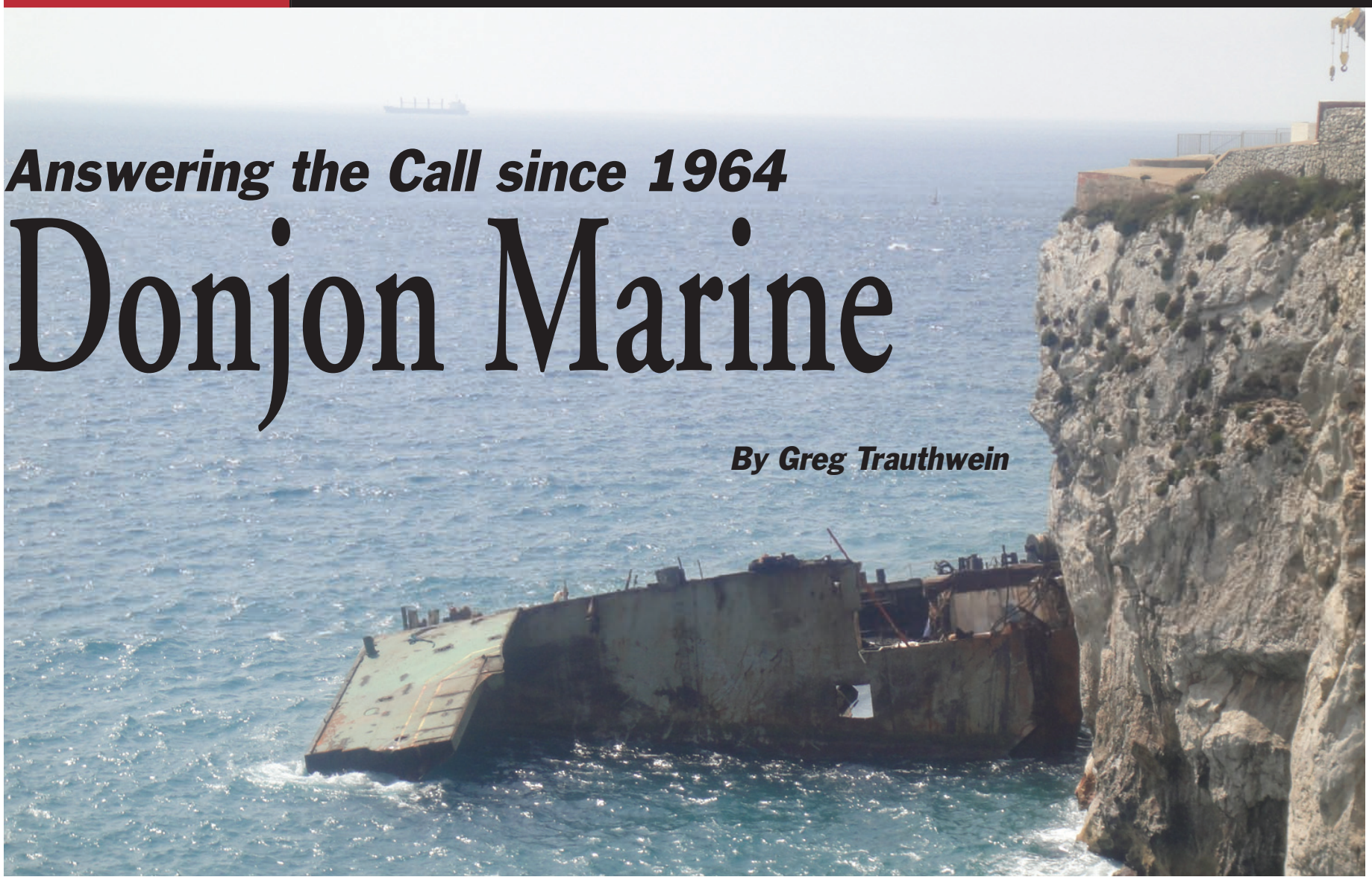


Answering the Call since 1964

Donjon Marine

By Greg Trauthwein

In October 2008, M/V Fedra grounded and sank during a severe storm, and in March 2009 Donjon was awarded the job, which John A. Witte, Jr. cites as one of the most challenging jobs in his career based on the weather, environmental and political conditions.

People.

Sit down and talk for any length of time with John A. Witte, Jr., Executive Vice President - Salvage/Marine Operations of Donjon Marine Co. and it is difficult for him to not to reference, credit, laud or stress enough the importance of the people, both those working with him in his family's business; and colleagues in industry and government instrumental in ensuring smooth, efficient and environmentally sound operations.

Donjon Marine – started by Witte's father Arnold in 1964 solely as a salvage company – is ubiquitous in the marine salvage business, and while there are a host of "Witte's" on the company placard, today it stands more than 600 strong, a diverse organization which has grown and strengthened with salvage as its foundation, but including a number of offshoots including marine transportation, dredging, heavy lift and boatbuilding.

An Emergency Response … Station Wagon?

Donjon Marine is a long-tenured member of the New York maritime fraternity, started by Arnold Witte in 1964 when he decided to shift from a career in law to a career in salvage. John, who is the second oldest of seven Witte siblings, has effectively been in the business since the age of 10, when he was old enough to get out of bed and follow his dad around the harbor. He officially joined the company upon graduating college in 1982, but he and his sister Donna have perhaps the most intimate connection with the company. When Arnold was deciding on a name for the fledgling company, he looked no further than his two oldest children, "Donna" and "John," to arrive at the name Donjon.

In 1964 the family station wagon served as the first official response "vessel", with Arnold driving his pumps and tools around the harbor to jobs as opportunity presented itself. "He had the family station wagon, some pumps, an incredible work ethic and a desire to succeed," Witte said. "He never accepted failure as an option."

While the foundation and identity of the company is solidly in the salvage world, the elder Witte –who is still active in the operation of the company judiciously expanded the company's product and service offering, resulting today in a diverse company with international operations, able to withstand the unpredictability of the salvage business and the general fluctuations of the economy.

"Diversity is a key to Donjon's success," Witte said. "You can have a down year in any of our sectors, but the diversity allows the company as a whole to stay strong. Salvage today is not the same volume as it was in the past. But while the number of jobs are down, the size and the complexity of the jobs has risen, due in large to the ever increasing size of ships."

As a testament to its diversity and growth, the company recently branched into boatbuilding, with the creation of Donjon Shipbuilding and Repair, LLC. Through an agreement with the Erie-Western Pennsylvania Port Authority and the acquisition of the assets of the former Erie Shipbuilding, LLC, DSR will engage in shipbuilding and repair on its 44-acre site on Lake Erie, Pa. DSR's facility, equipped with a 1,250 x 120 x 22 ft. dry dock, is the largest shipyard of its kind on the Great Lakes, and includes 4,000 feet of pier space and more than 200,000 sq.

"He had the family station wagon, some pumps, an incredible work ethic and a desire to succeed. He never accepted failure as an option. "

• John A. Witte, Jr., Executive VP, Donjon Marine, discussing his father Arnold Witte and the start-up on Donjon Marine.

"Technology you can buy, but you need to have competent, trained people in the salvage business that know how to use the tools, and are willing to accept this lifestyle. We work with our people, they don't work for us. It is a subtle, but critical component of what we do."

• John A. Witte, Jr., addressing challenges in today's market

ft. of production area, with fully enclosed fabrication and assembly buildings housing fully automated cutting, fabrication and coating equipment sufficient to build and maintain everything from deck barges to ocean-going ships.

It also expanded its tug fleet to 14 with the acquisition of the 78 x 26 x 10.5-ft., 2,700-hp twin screw tug Sarah Ann (ex-June K). The tug, with twin CAT 3512B diesels and a 9-ft. draft, was built in 2003 by A&B Shipyard, Amelia, La., and was designed principally for ship handling and assist work, barge towing and dredge assist. The tug will support Donjon's existing and future projects in dredging and salvage, as well as broaden the towing services if offer in the New York/New Jersey area.

People

"When people come to work with us, they generally stay, as we provide a good livelihood for those that are capable," said Witte. "It important to note that we don't consider people working 'for' us, rather they work 'with' us."

While Donjon keeps up-to-date with the acquisition and incorporation of the latest tools of the trade, when citing top challenges to keeping his family's company firmly on path for future success, Witte did not hesitate: "Technology you can buy, but you need to have competent, trained people in the salvage business that know how to use the tools, and are willing to accept this lifestyle."

And the lifestyle can be a challenge, particularly in the salvage end of the business with the unpredictable nature of casualties and the need to be on site, wherever in the world that site may be, for up to months at a time. Proof of this was the seven months Witte spent in New Orleans in the wake of Hur-

ricane Katrina, and nearly five months in Gibraltar with the open ocean wreck removal and disposal of the remnants of the M/V Fedra, which Witte cites as one of the most challenging jobs in his career based on the weather, environmental and political conditions.

In October 2008, M/V Fedra grounded and sank during a severe storm, and in March 2009 Donjon was awarded the job, which included removing all of the remaining superstructure, main deck forward of the engine room and all subsurface bottom and side shell forward of the engine room, bulkhead forward and most of the machinery in the engine room, and removal of the shell of the engine room. In addition, Donjon removed thousands of gallons of fuel and related contaminates which remained in the hull from the initial clean up operation, accomplishing one of the primary goals of the project to protect the pristine waters off the coast of Gibraltar and surrounding area.

Witte said the regulatory environment globally is perhaps the most significant change in the way in which the salvage business is conducted, much of it driven by the Valdes grounding and the resultant OPA '90 regulations.

"Today it is a true team effort with local, regional and federal officials, and in the case of Fedra, a foreign government," he said. Thus the challenge is operating effectively in an ever-increasing regulatory environment, with close oversight from many levels in both government and the private sector.

To this end, Witte credits the American Salvage Association (ASA) – an organization which he served for two years as president, and an association created in part through the driving force of his father Arnold Witte – as helping to build and maintain strong relationships across the spectrum. "I am most proud of the relationships that ASA has developed with the United States Coast Guard, the U.S. Navy and the National Oceanic and Atmospheric Administration (NOAA)," said Witte.

"Salvage today is a team effort; you go into a job and you are battling the job itself and the elements … you don't want to be battling the regulatory bodies too. We need to keep our waterways open. It is a collaborative effort to keep commerce flowing, and the waterways are our infrastructure, as important as road, rail and air (transport)."

"You don't go to school to be a salvor, you become a salvor by doing it. It is one thing to find people who are good at what they do, and quite another to find people that are good, as well as willing and able to impart this knowledge on the younger generation."

• John A. Witte, Jr., addressing the value of experience.

International Navy Profile

United Kingdom

by Jurrien Noot

On July 8, 1998, the British Secretary of State for Defence, George Robertson, announced the outcome of the Labour Government's Strategic Defence Review (SDR), which was initiated on May 28, 1997. The strategy set out in the SDR involves a shift away from open ocean capabilities towards a range of capabilities in littoral areas. In terms of force structure, this translates to a decreased emphasis on open ocean anti-submarine warfare and mine countermeasures in the UK region, with increased ability to project force. For the Royal Navy, this meant that the three existing aircraft carriers would be replaced by two large carriers and that the SSN fleet would be reduced from 12 to 10. All of the fleet will be fitted with Tomahawk missiles to increase their capability. The destroyer/frigate force would be reduced from 35 to 32 and the planned improvements in amphibious capability would be continued. The basic conclusions of the SDR have been upheld by an additional new chapter, following the September 11, 2001 terrorist attacks.

The 2007 Comprehensive Spending Review (October 2007) continues the sustained real increases in Ministry of Defense expenditure by providing for 1.5 percent average annual real growth over the three years to 2010-11. This increase in funding, together with value for money reforms generating annual net cash-releasing savings of £2.7 billion by 2010-11, enables the MoD a.o. to:

• enhance conventional capability across the Armed Forces including two new aircraft carriers for the Royal Navy;

• fund the renewal of Britain's nuclear deterrent while ensuring that this does not come at the expense of the other conventional capability required for the Armed Forces.

In March 2008 the Government published, for the first time, a National Security Strategy which sets out how Government will address and manage a diverse range of threats. An update was published in June 2009.

On July 7, 2009, the Secretary of State for Defence announced a new Strategic Defence Review to take place during the next Parliament. The CVF and Trident replacement programs will reportedly be excluded from that review.

Future Strategic Nuclear Deterrent

In December 2006, the UK government issued a white paper on The Future of the United Kingdom s Nuclear Deterrent (Cm 6994). The paper announced the decision to maintain the deterrent system beyond the life of the Vanguard class with a new generation ballistic missile carrying submarine and to extend the life of the Trident D5 missile. It was assessed that the current submarines will reach the end of their (extended) lives during the 2020s. The precise number of new submarines to be acquired was yet to be determined, but would be either three or four. Concept work was to start in 2007 and detail design between 2012 and 2014. The paper indicates that the lead unit would become operational by 2024. It is estimated that a four boat program would cost some GBP11 14 billion for the submarines and GBP2 3 billion for warhead refurbishment or replacement. In addition, there would be a cost of about GBP2 3 billion for infrastructure over the life of the submarines. Parliamentary approval for the programme was obtained on March 14, 2007.

(Photo Credit: BVT Surface Fleet/DSEI 2009)

Type 45 destroyer HMS Daring (D32).

The initial gate business case was expected to be considered in the Autumn of 2009. This will set out the broad submarine and propulsion design options. This should allow moving forward with more detailed design work.

Future Aircraft Carrier Program

After careful consideration of proposals put forward by BAE Systems and Thales UK, and subject to detailed final negotiations, the UK MoD decided, on January 30, 2003, that two ships of the CVF programme will be designed and built by an alliance between the MoD and the industry, with BAE Systems the preferred prime contractor and Thales UK the key supplier.

On December 14, 2005, the Defense Secretary announced a commitment of a further GBP300 million for the Demonstration phase, the first stage of a two stage incremental approach to Main Gate. At the same time, he announced that the alliance would be expanded from the original members BAE Systems, KBR, the MoD and Thales UK – to include the shipyards, Babcock and VT. From a range of proposed designs for the new carriers, the adaptable design labelled "Design Delta" has been selected.

On July 3, 2008, the UK MOD signed contracts valued at about GBP3 billion overall with the new joint venture company BVT Surface Fleet and the Aircraft Carrier Alliance (ACA) for the construction of two aircraft carriers for the Royal Navy, to be named HMS Queen Elizabeth and HMS Prince of Wales. The two carriers were expected to enter service in 2014 and 2016 respectively. Contracts signed are detailed as the following:

GBP1.325 billion for the construction of giant sections of both ships by BVT Surface Fleet at Govan on the Clyde and Portsmouth;

GBP300 million for the construction of giant sections of the ships at the BAE Systems yard at Barrow in Furness;

GBP675 million for the bow section and final assembly and completion of the ships by Babcock Marine, with assembly taking place at Rosyth;

GBP425 million for design and engineering for Thales UK;

GBP275 million for design and supply of Mission Systems for BAE Systems Integrated Systems Technologies (Insyte).

Following a review of MoD spending, Defence Secretary John Hutton announced on December 11, 2008 delays of one to two years in the in-service dates of the two new carriers. In late June 2009 it was revealed that the cost for constructing the carriers would rise to GBP5 billion.

First steel was cut by the Princess Royal for the lead CVF aircraft carrier 'Queen Elizabeth' at the BVT shipyard in Govan on July 7, 2009.

Astute@class SSN Program

Approval was given to proceed with a program of studies at an estimated cost of GBP6 million in June 1991 to define the Batch 2 Trafalgar Class Boat (subsequently known as the Astute class) as the replacement for the Swifture class. Invitations to tender for the first three submarines of the class were issued in July 1994 with competitive bids received in June 1995. GEC Marconi (subsequently BAE Systems Ltd) was identified as the MoD's preferred bidder in December of the same year. A prime contract was placed and announced on 17 March 1997. The approved in service date at Main Gate for the lead unit Astute was June 2005.

Difficulties with regard to the required effort, which included problems with computer aided design and consequent design delays, led to a February 19, 2003 agreement between the UK MoD and BAE Systems to restructure the Astute contract, separating the design, development, build and acceptance of the lead unit from the production of the second and third units, and resulting in the first of class entering service by 2008 rather than June 2005, as originally planned.

The UK MoD announced on May 21, 2007 that it had awarded a GBP200 million contract to BAE Systems to start the construction of hull 4. A contract for the whole boat was expected to be awarded by the end of 2008 and has been placed. Approval was given in December 2007 for long leads items for Astute class hull 5, to the amount of GBP494 million and a contract was placed in January 2008. An order has also been placed for the reactor core for hull 6. In July 2004 the future SSN force level was set at eight SSN,

a figure to be achieved by December 2008. Subsequent reporting indicates that seven Astute class units will be constructed. The first Astute class submarine 'Astute' left Barrow-in-Furness on November 16, 2009 for Faslane on the Clyde in Scotland to commence a set of sea trials prior to her full acceptance with the Royal Navy during 2010. The keel for the fourth unit 'Audacious' was laid down on March 24, 2009.

Maritime Underwater Future Capability (MUFC)

The Maritime Underwater Future Capability (MUFC) program was conceived in the late 1990s to replace the Trafalgar class nuclear powered attack submarines by 2012 and was then known as Future Attack Submarine (FASM). The program is looking into the range of future capabilities required by the UK for the control and denial of the underwater battlespace into the third and fourth decades of the Century. Under consideration is a wide range of concepts, including innovative solutions combining UUVs, ships, airborne and land assets, and submarines. MUFC appears to incorporate a replacement for the Trident capability as well. An in service date for the first platform is not expected until 2020.

Type 45 Anti@Air Warfare Destroyer Program

The Type 45 is a new class of Anti Air Warfare Destroyer to replace the Royal Navy's existing Type 42 class missile destroyers. The Type 45 Destroyer program builds on the assessment work carried out in Phase 1 of the collaborative Horizon project, the warship element of the Common New Generation Frigate programme.

Following the decision of the three Horizon partners (France, Italy and the UK) to proceed with PAAMS, but to pursue national warship programs, BAE Systems was appointed Prime Contractor for the Type 45 in November 1999. The contract for PAAMS Full Scale Engineering Development and Initial Production was placed in August 1999. Main Gate approval for the warship was achieved in July 2000.

The contract for the first three ships was awarded in December 2000 and a second contract for a further three in February 2003. A production run of 12 units was originally estimated, but in July 2004 this number was to cut to eight. On June 20, 2008 the Minister for the Armed Forces stated in Parliament that it had been decided not to take the option to order the seventh and eighth Type 45 destroyer. Instead, it had been decided to bring forward the future surface combatant program, which is the long term replacement program for the Type 22 and Type 23 frigates.

HMS Daring, the lead unit, was commissioned on 23 July 2009. HMS Dragon was launched as the fourth unit in November 2008. BVT Surface Fleet was awarded a GBP309 million contract by Defence Equipment and Support on 16 September 2009 for the in-service support for Type 45 class destroyers for up to seven years, starting in January 2010.

S2C2 Program/Future Surface Combatant (FSC)

In February 2009 the UK Royal Navy and BVT Surface Fleet made an agreement for BVT Surface Fleet to assist in the development phase of the FSC. Under the agreement, BVT is to lead the design and production. Within this context, the the goal of the FSC project was described as delivering the following 26 assets:

C1 - Force Anti-Submarine Warfare Combatant (formerly Versatile Surface Combatant)- around ten large units for high-threat environments;

C2 - Stabilization Combatant (formerly Medium Sized Vessel Derivative) - around eight cheaper units;

C3 - Ocean-Capable Patrol Vessel - around eight smaller ships to replace minesweepers and possibly current patrol ships.

On 23 November 2009, BAE Systems announced it had been awarded a GBP3.4 million contract under the Future Surface Combatant program by the UK Ministry of Defence (MoD) to enable the the joint project team to develop a better view of costs, schedules and design at an earlier stage than has been possible with previous program. The design will be done with export potential being considered. Other reporting related to the contract award seems to indicate that it is being planned for FSC C1 and FSC C2 combined to deliver the first unit by the end of the second decade and subsequently deliver one unit per year from 2020. It is unclear if both versions will be constructed simultaneously or in sequence. A 155-mm naval gun using existing 4.5-inch Mk8 Mod 1 mountings may be under consideration for the FSC.

Military Afloat Reach and Sustainability (MARS)

The Military Afloat Reach and Sustainability (MARS) project will provide the future Royal Navy with the ability to operate away from the UK for protracted periods of time. MARS vessels will replace many of the existing Royal Fleet Auxiliary (RFA) fleet between 2010 and 2020, including Leaf, Rover, and Fort Victoria class units. Four companies were selected by the MOD in May 2008 to finalize the requirements for the MARS Tanker in competition: Fincantieri Naval Vessels, Hyundai Heavy Industries, Navantia and BAE Systems (allied with BMT Defence Services and Daewoo Shipbuilding and Marine Engineering).

The competition was cancelled in March 2009 and new tenders are expected to be issued during the spring of 2010. Contract award is currently scheduled for 2012.

United Kingdom Budget

Total public spending for the UK Ministry of Defence from 2006/07 to 201011 (GBP thousand)

Item	2006-07	2007-08	2008-09	2009-10	2010-11
Resource budget	38,880,816	42,398,478	44,631,994	46,174,823	43,644,575
Capital budget	7,069,574	7,236,130	8,642,384	9,177,477	8,845,854

Source: UK Ministry of Defence, Annual Report and Accounts 2008-2009. (For the year ended 31 March 2009)

International Navy Profile

India

by Jurrien Noot

In 2002 the Indian Navy submitted a 'Vision 2025' report to the Ministry of Defence projecting its long term requirements. Part of the report has evolved into a 15−year ship building plan.

In his foreword to 'Freedom To Use The Seas: India's Maritime Military Strategy' published on May 28, 2007 by the Integrated Headquarters Ministry of Defence (Navy), Chief of the Naval Staff Admiral Sureesh Mehta indicated that the Indian Navy considers itself capable of overcoming a range of potential adversaries in a conflict, that India's maritime military strategy is to prepare for a possible conflict and at the same time maintaining a deterrent posture including strategic deterrence to ensure peace.

In July 2009 the Indian Navy was preparing a Maritime Capabilities Perspective Plan 2022.

As a response to the November 2008 Mumbai attack, the Indian Government has taken measures to improve maritime security. The navy has been designated as the authority responsible for overall maritime security, both coastal and offshore and will be assisted by Coast Guard, state marine police and other central and state agencies. The navy itself is creating a new organization for the purpose called 'Sagar Prahari Bal' since February 2009, comprising 1,000 personnel for protecting naval assets and bases on both east and west coasts and the Island territories. This organization is to be equipped with 80 fast interceptor craft.

Construction Programs

By 2012-2013 the Indian Navy is expected to commission two aircraft carriers. A contract for the acquisition of the 44,000 ton aircraft carrier 'Admiral Gorshkov' was signed in New Delhi on January 20, 2004. This ship was renamed 'Vikramaditya' and is undergoing refit and conversio in Severodvinsk, Russia. Construction of the 40,000 ton Project 71 Indigenous Aircraft Carrier (IAC) commenced in November 2006 at the Cochin Shipyard in Kochi under a contract signed on May 12, 2007. ' Vikramaditya' will be equipped with 12 single-seater MiG-29K and four dual-seater MiG-29KUB fighters also being procured from Russia. The IAC is designed to operate the indigenously developed naval Light Combat Aircraft (LCA), MiG-29K, and Sea Harrier aircraft as well as helicopters. Design support for the IAC is provided by Fincantieri from Italy. A larger IAC follow-on ship may be completed by 2022. The Indian government has approved a 30−year perspective plan for indigenous construction of submarines and acquisition of national competence in submarine building, presumably in or prior to March 2002.

(Photo Credit: India Government)

GRSE waterjet fast attack craft INS Chetlat, during the Commissioning ceremony, at Chennai on February 16, 2009.

Indian Budget

Relevant figures for defence expenditure (INR crores).

Fiscal year	2006-2007	2007-2008	2008-2009	2009-2010
Total defense	85494.64	91680.28	114600.00	141703.00
Navy	16198.16	15885.41	17312.77	20604.02

Source: MOD Annual Report 2008-2009

The plan is to be implemented in two phases. The first phase is scheduled for completion in 2012 and the second phase in 2030. Under the plan, two types of submarines are planned to be constructed. Submarine programs underway include the Advanced Technology Vehicle (ATV) project for which the 6,000 ton prototype 'Arihant' was launched on July 26, 2009, six Project 75 Scorpene class submarines ordered from Mazagon Dockyard in 2005, and the lease of the Russian Akula class submarine 'Nerpa'. Tenders have been floated during 2008 to companies in Germany, France, Italy and Russiafor the construction of six additional submarines with air-independent propulsion (AIP) under Project 75A. The Project 75 Scorpene class submarines are produced in collaboration with DCNS from France and the original schedule called for deliveries of one unit per year from 2012. However, the program will probably see a substantial delay.

Principal destroyer/frigate programs are the Project 15A Bangalore class missile destroyers and the Project 17 Shivalik and Russian Project 11356 Talwar classes of missile frigates., and the Project 28 ASW corvettes The three units of the 6800 ton Project 15A Bangalore class missile destroyers were authorized in May 2000 and construction commenced at the Mazagon Dockyard in September 2003. The lead unit was launched as the 'Kolkata' on March 30, 2006, the second as the 'Kochi' in September 2009. A four-unit follow-on class is planned as Project 15B. Construction of three Project 5300 ton 17 Shivalik class frigates commenced at Mazagon Dockyard in December 2000. All three units have been launched and the lead unit was undergoing trials by September 2009. A seven-unit follow-on class is planned as Project 17A. Construction of Project 17A will be shared between Mazagon Dockyard and Garden Reach Shipbuilders. Rosoboronexport delivered three 3850 ton Russian Project 11356 Talwar class frigates to the Indian Navy in 2003-2004. In July 2006 a contract was signed for the delivery of three more units to a somewhat modified design. These are currently under construction at Yantar Shipyard in Kaliningrad and should be delivered in 2011-2012.

Four 2500 ton Project 28 ASW corvettes are under construction at Garden Reach Shipbuilders in Calcutta. Eight additional units are reportedly to be acquired under the Maritime Capabilities Perspective Plan 2022.

Goa Shipyard received orders during 2007 for four offshore patrol vessels (NOPV) for the Indian Navy and five additional units are reportedly to be acquired under the Maritime Capabilities Perspective Plan 2022. The NOPV are understood to be navalised versions of similar vessels constructed for the Indian Coast Guard. Goa Shipyard will also construct eight mine counter measures vessels to replace the Natya class. An international tender was issued for these ships some years ago.

Garden Reach Shipbuilders is constructing ten 300 ton waterjet fast attack craft (Car Nicobar class) of which four have so far been delivered.

Garden Reach Shipbuilders completed the Magar/Shardul class landing ship tank program with the 'Airavat' delivered on March 30, 2009. LPD's may be constructed in the future.

Fincantieri Naval Vessels has two 27500 ton Fleet Tankers on order. The first of these was launched at Muggiano on February 12, 2010 and will be delivered later in the year. The second is under construction in Genoa and will be delivered during 2012.

International Navy Profile

Germany

The German Navy has three major projects under way which will come into effect during the second decade of the 21st Century. These include the Type 212 A batch 2 submarine, the Type 125 frigate and the Type 130 corvette. Major new projects under planning are the Type 131 corvette, the Joint Support Ship and the multi-purpose support ship. In 2004 the German Defence Minister published a document on the concept and the development of the Bundeswehr. The new course of the Bundeswehr is to adapt itself to the more likely operational needs, specifically conflict prevention and crisis management, including the war on international terrorism. The modernization of the navy will continue with the procurement of more Type 212 A submarines and by starting preparations for the acquisition of the future Type 125 frigates. A new Defence White Paper was published in October 2006. It identifies three categories of forces within the Bundeswehr: intervention forces, stabilization forces and support forces. To be able to meet the challenges of both conventional and asymetric threats, the Bundesmarine is evolving into an expeditionary force. The Navy will improve its future robustness and sustainability with the Type K-130 corvettes. The corvettes will be capable of precision target engagement ashore, thus supporting joint operations from the sea. The Type F125 frigates will be a completely new type of vessel, designed especially for prolonged stabilisation operations. Thanks to innovative concepts for operational deployment, the ship will be able to remain on station in the area of operations for up to two years. Type 212A submarines will maintain the capability for submarine operations in the long term. Their capabilities include antisurface operations, insertion of special forces, plus intelligence collection and reconnaissance. These submarines, together with the P-3C Orion maritime patrol aircraft, frigates, and shipborne helicopters needed for effective engagement of submarines, make up a three-dimensional antisubmarine warfare net. With its Type 702 combat support ships the German Navy ensures logistic and medical support for prolonged operations. Combat support ships can also be used to support joint operations, as well as humanitarian assistance and evacuation operations. They can serve as a command platform during joint operations. Depending on the type of operation, they can be equipped with an operations center, or alternatively, with a mobile naval surgical hospital. The procurement of the MH-90 naval helicopter will mean the future availability of powerful and efficient shipboard helicopters for the German Navy. The Type F124 frigates have improved the Navy's air defence capabilities against aircraft and missiles and contribute to maritime theater ballistic missile defense. They thus help to protect own forces, the civilian population, economic centres and urban areas. As a further elaboration of 2004 Bundeswehr concept and the 2006 Defence White Paper, the Inspector of the Bundesmarine issued a concept paper tailored to the navy on 6 November 2008. Acknowledging that the procurement planning for the navy is fixed through 2021, the paper identifies a requirement for the future introduction of:

• the Joint Support Ship (JSS). Three possible variants are discussed: JSS 800+ (27,000-30,000 tons, 800 troops), JSS 400+ (>20,000 tons, 400 troops) and JSS 400 (<20,000 tons, 400 troops). The JSS 400 is regarded as the preferred platform.

• Modular subsystems for mine warfare, self defense, combatting mini submarines, transportation of equipment, and special forces operations.

• Type 404 tender replacement with a a multi-purpose support ship class referred to as a MZES, fitted out for general replenisment and transportation tasks but also capable of absorbing a command staff and of tanking Type 212 A submarines. The concept could be merged with JSS 400.

(Photo Credit: TKMS)

Corvette K130 class 'Braunschweig' (F 260).

German Budget

Defense Budget (x 1,000 €)

Title	Group	2010	2009	2008
Total authorized expenditure		*32,000,000*	*31,179,477*	*29,450,466*
Research and Development	*551*	*1,210,000*	*1,046,250*	*1,059,650*
Equipment maintenance	*553*	*2,300,000*	*2,956,063*	*2,785,761*
Military procurement	*554*	*5,490,000*	*5,345,150*	*4,730,822*
Procurement of ships, workboats etc.	*0*		*580000*	*360000*

Source: Einzelplan 14 (2009) and Bundeswehrplan 2010

International Navy Profile

Royal Netherlands Navy

by Jurrien Noot

On May 24, 2005, the Minister of Defence presented an interim report on the future of the navy, in which he announced a study to be ready by the introduction of the 2006 budget. The study was submitted to Parliament on October 14, 2005. The requirements specifications for the acquisition of a joint logistics support ship, four patrol ships and improvements to the Walrus–class submarines were submitted to Parliament on May 18, 2006. Only two Karel Doorman–class frigates will be retained.

New Construction Projects

• M-frigate replacement

The 2009 budget indicates that replacement of the two M-frigates is foreseen from 2020.

• Patrol Ships

On November 15, 2007 the Dutch parliament was formally notified of the intent to order four corvettes in December 2007 under a project budget of EUR467.8 million. The first unit will be delivered for trials in 2010 and the fourth unit in 2012.

A EUR240 million construction contract for four 3750 ton units was awarded to Schelde Naval Shipbuilding on 20 December 2007, two to be constructed in Vlissingen and the other two largely to be constructed by Damen Galatz Shipyard. Thales Nederland BV was awarded a EUR125 million contract on December 20, 2007 for the development and supply of four Integrated Masts for these ships, containing the sensors SMILE, SEASTAR and GATEKEEPER.

The lead unit was launched at Damen Schelde Naval Shipbuilding in Vlissingen on February 2, 2010. The keel for the second unit was laid down in Vlissingen on September 21, 2009. Construction of the third started at Damen Galatz Shipyard on November 26, 2009.

• Joint Support Ships (JSS)

There is a requirement to replace AOR Zuiderkruis prior to 2015. The replacement issue was also part of the 2004 study on the future of the surface fleet, which was presented to parliament as part of the 2005 budget proposal. The study concluded with a preference for a vessel subsequently designated as a Joint Logistic Support Ship. The construction contract for a 27800 ton vessel was awarded to Damen Naval Shipbuilding on December 18, 2009 with a scheduled delivery in 2014.

• LCVP Mark V C Project

Damen Shipyards Group was awarded a contract by the Royal Netherlands Navy on December 15, 2006 for the construction and delivery of 12 Landing Craft Vehicle Personnel (LCVP) Mark V C, to be delivered between 2008 and 2011. The LCVP's are constructed by Visser Shipyard in Den Helder, a member of the Damen Shipyards Group. The lead unit L9565 was delivered in July 2008. At least two more units were delivered during 2009. Four UK Royal Navy LCVP's were leased in October 2007 as an interim measure.

• Fast Raiding, Interception and Special Forces Craft

The FRISC project was introduced to provide a capability for supporting land operations from the sea as well as supporting expeditionary and special operations. The project was formally announced on November 17, 2008 and calls for the acquisition of 48 craft, combining several earlier projects: 11 special forces boats forr the marines, 29 small landing craft for marines, six interceptor craft for the new patrol ships and two interceptor craft for port security. Marine Specialised Technology Ltd (Liverpool, UK) was awarded a contract on March 18, 2009 for the delivery of 46 craft.

(Photo Credit: MOD Netherlands)

Rendering of the Joint Logistic Support Ship.

Royal Netherlands Navy Budget

Principal naval forces investments 2010 (amounts x 1 million)

Project	Status	Total	through 2009	2010	2011	2012	2013	2014	Start	End
Fast Raiding, Interception and Special Forces Craft (FRISC)	R	28.2	1.1	13.0	14.1				2010	2013
Patrol Ships	R	498.1	200.7	139.8	89.4	43.2	13.5	11.5	2010	2013
Reintroducing minesweeping capability	A	50 – 100	<25	<25					2009	2015
Joint Logistic Support Ship (JSS)	R	363.5							2009	2014

Projects over EUR25 million undergo four phases during the planning proces: Phase A (requirements formulation), phase B (preliminary study), phase C (study) and phase D (acquisition preparation). Phases may be combined. Each phase is terminated with a decision document. The realization phase (acquisition) is indicated as R in the table.

International Navy Profile

Bangladesh Navy

by Jurrien Noot

The Bangladesh Navy was created during the Bangladesh War of Independence at the Sector Commanders Conference in July 1971. The first naval formation consisting of six smaller vessels was established on November 9, 1971.

Since the mid 1970s, the navy has operated three former UK frigates which are now some 50 years old and while a former Chinese 'Type 053' was acquired in 1989, plans to acquire a second unit were not followed through. Bangladesh obtained a 600 tonne Sea Dragon corvette and the 2,300 tonne DW2000H frigate Khalid Bin Walid (ex-Bangabandhu) from South Korea between 1998 and 2001. Bangabandhu was decommissioned for warranty repairs on February 13, 2002 and recommissiond on July 13, 2007.

Budget

The defence budget request for FY 2009-10 was reported asBDT838216,11,000 which includes BDT812120,11,000 for non-development and BDT26096,00,000 for development expenditure. The share for the navy is reported as 16.1% for FY 2008-09.

Force planning

In March 2004, the Minister in Charge of Defense outlined a BDT1,911 crore procurement program consisting of four submarines to be acquired by 2012 at a cost of BDT1,200 crore, a patrol vessel to be constructed at the Khulna Shipyard, six patrol craft and four missile corvettes. In addition, plans were being made to replace the three former UK frigates. Progress on this program was probably stalled in part due a government crisis developing from 2005 until the elections of December 2008.

In June 2009, the Bangladesh Navy submitted a plan prepared in line with the proposed Forces Goal-2020 to the Armed Forces Division (AFD) of the Minsitry of Defense. The navy plans include purchase of three frigates, three large patrol craft, 12 patrol craft, two landing craft utility (LCU), one hydrographic unit, one salvage vessel, four missile boats and installation of new missiles in some ships to strengthen its surface fleet. The navy also disclosed a plan for purchasing a submarine by 2019, indicating that the government has approved in principle this proposed purchase. Purchase of two helicopters and two maritime patrol aircraft are underway. Specific details for these projects are unclear.

Submarine procurement

During the early 1980s there appears to have been the intent to acquire a Romeo class submarine from the People's Republic of China but there is no indication that the submarine was actually delivered. The requirement for submarines resurfaced in a budget submission made in March 2004 but does not appear to be included in the short to medium term plans of the present government. The present government appears be inclined to give priority to replacing the three former UK Royal Navy frigates. However, reporting also indicates that the navy somehow intends to procure a submarine by 2019, most likely through second hand transfer. There have been reports of crew training carried out in recent years in Turkey on German-designed Type 209 submarines.

Frigate replacement

Although the original plan developed in 2004 called for the procurement of three frigates, the Bangladesh parliament reportedly approved the purchase of two units in July 2009. Tendering is reportedly in progress. It is assumed that second-hand units will be sought.

Large patrol craft

Details of the three large patrol craft to be acquired under the 2009 propsal are unclear. However, there is a project for a 300 tonne offshore patrol vessel to be constructed at the Khulna Shipyard. A tender for this ship was issued in 2003.

Missile corvettes/boats

Four missile corvettes/boats are to be acquired to replace four units of the Hoku class missile fast attack craft. On August 9, 2007 Khulna Shipyard issued an invitation for design, drawing, material package, construction supervision, etc for the construction of five patrol craft for Bangladesh Navy. The invitation was repeated on September 16, 2009.

(Photo Credit: Ananda Shipyard & Slipways Ltd.)

31.2m Fast Patrol Boat.

Bangladesh Coast Guard

Ananda Shipyard & Slipways Ltd delivered two 31.2 m fast patrol boats during 2006. Khulna Shipyard is constructing a number of high speed 15 m aluminium patrol craft as of March 2006. Construction of 14 m FRP high speed harbour patrol boats is also planned or underway at Khulna Shipyard.

Freedom's Maiden Deployment

Freedom's Maiden Deployment

The Navy's first littoral combat ship (LCS), USS Freedom (LCS 1), left Naval Station Mayport Feb. 16 for her maiden operational deployment to the U.S. Southern Command (SOUTHCOM) and U.S. Pacific Command (PACOM) areas of focus.

During the independent deployment, Freedom will participate in counter-illicit trafficking (CIT) operations off the Atlantic and Pacific coasts of Central and South America and the Caribbean Sea. A U.S. Coast Guard Law Enforcement Detachment (LEDET) is embarked aboard Freedom to facilitate CIT operations. In addition, Freedom is scheduled to make theater security cooperation (TSC) port visits in Colombia, Mexico and Panama.

Rear Adm. Vic Guillory, commander, U.S. Naval Forces Southern Command and U.S. 4th Fleet, made a point to personally send off the crew of Freedom, commenting that their sacrifice and hard work in preparing the ship to deploy early is in itself worth recognizing. "We are very excited about what LCS brings to the operational mission – not only its inherent capabilities – its sprint speed, modularity, and tremendous amount of automation … but its new tailored surface warfare mis-

ISS Contract for Destroyers

Raytheon Systems Limited together with Raytheon Anschütz has been awarded the contract for the In-Service Support (ISS) of the Integrated Bridge and Navigation Systems for the Royal Navy's new Type 45 Daring class destroyers. Raytheon Anschütz will be responsible for total maintenance and repair of these systems on board the vessels until at least 2016.

Hydroid Delivers to Italian Navy

Hydroid supplied a REMUS 100 AUV system to the Italian Navy, which is growing its mine countermeasures (MCM) capability. The REMUS 100 system was delivered and accepted into service by in December 2009, and is configured with a sensor suite specifically intended to meet the Italian Navy's requirements for a "Light AUV" for MCM activities. Hydroid's REMUS AUVs can be fitted with a number of different types of sonars, sensors and cameras and have been used to aid in hydrographic surveys, harbor security operations, debris field mapping

sion package as well as its airborne use of force capabilities and the LEDET, will be key enablers to the CIT and TSC mission with our partner nation navies," said Guillory. In addition to the Coast Guard LEDET, embarked aboard Freedom are Helicopter Sea Combat Squadron (HSC) 22, Detachment 2, based in Norfolk, Va., and the first tailored LCS Surface Warfare Mission Package (SUW MP), based in San Diego.

(Photo Courtesy U.S. Navy)

and scientific sampling and mapping. With over 200 vehicles supplied, Hydroid's AUVs are currently being used by 13 NATO and other international navies.

Speed Flooring Replacement for USS Roosevelt

International Flooring and Protective Coatings, Inc. (IFPC) completed removal of the existing non-skid flooring from the flight deck of the USS Theodore Roosevelt. IFPC's water jetting machinery enabled a process efficiency which ultimately improved work flow and reduced costs. "IFPC finished almost three weeks ahead of schedule," said Jason Robinson, Subcontract Coordinator for Northrop Grumman. The company used 40,000 psi ultra high pressure from specially engineered water jetting equipment to take up the existing non-skid flooring so that engineers could inspect the steel deck for cracks and stress on the welds and seams.

www.internationalflooring.com

First of Class

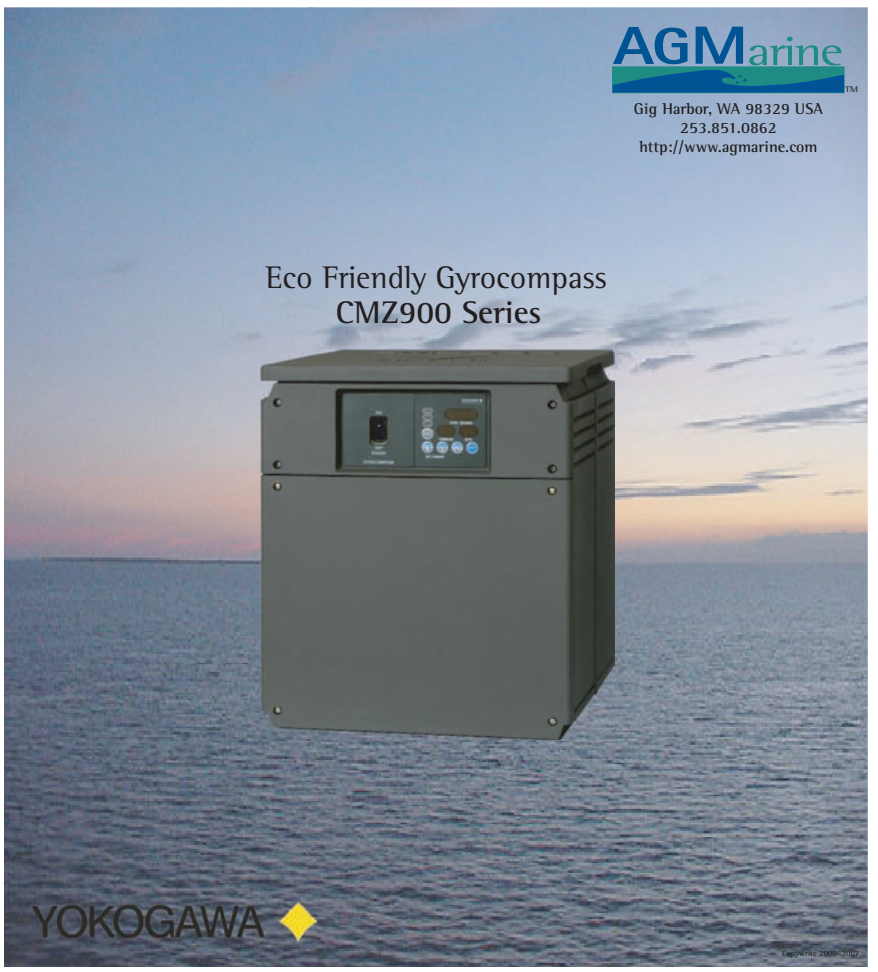
Z-Tech 4500 Tug Delivered to U.S. Navy Pilots

In late December 2009, the YT 802 Valiant, first of the new series of Z-Tech 4500 Class tugs for the United States Navy Pilots operating in Puget Sound in Washington State was handed over to its owners, and after a shakedown period and crew training was placed into active service in early February 2010.

This series of new tugs are being built in Tacoma, WA by J. M. Martinac Shipbuilding Ltd., who are a sub-contractor to Pacific Tugboat Services of Long Beach, CA, the prime contractor for the delivery of the vessels to the Navy. The design was developed by Robert Allan Ltd. of Vancouver, Canada, and was adapted to the Navy Pilots' needs based on the now widely accepted Z-Tech 6000 hull form originally developed by the designers for the Port of Singapore.

The US Navy tugs will be based in Bremerton and Bangor, Wash., and will perform ship-handling duties for the full range of U.S. Navy surface warships and submarines. For this the tugs are equipped with an extensive array of underwater fendering, as well as the typical resilient style fenders for handling surface ships. The propulsion machinery comprises a pair of CAT 3512C, main engines, each rated 1,350 kW (1,810 bhp) at 1,600 rpm, each driving a Schottel Model SRP 1012 steering/propulsion Z-Drive units, with 2,100 mm diameter fixed pitch propellers. This combination delivered in excess of the predicted performance, providing 42 tons (92,500 lbs) Bollard Pull ahead, 45 tons (99,205 lbs.) astern, and a free-running speed of 12.4 knots on trials. Electrical power on the tugs is delivered by a pair of R.A. Mitchell Co. diesel gen-sets with a John Deere 6068SFM75 prime mover, each rated 130 ekW at 1,800 rpm. Deck machinery fitted includes a ship-handling hawser winch forward; JonRie Series 210 Assist winch, fitted with 180 m of 175 mm line. This winch has a brake capacity of 136 tons, and a line pull/speed rating of 9 tons at 53 m/min.

The fendering is all rated "non-marking" for dealing with the grey hulls of warships, and was supplied by Shibata through Schuyler Fenders. The tugs are configured as "day-boats" but also provide accommodation for a crew of up to six persons. A unique feature is the separation of the accommodation deckhouse from the machinery casing, designed to both provide a reasonably dry access to the accommodation spaces in the notoriously damp north-west climate, as well as to provide a significant degree of noise attenuation in the crew spaces.



Oil Analysis Keeps Ships Running

"Increasing demand has driven significant advancement in oil analysis over the past few years, both within and outside of the laboratory environment," said Martin Lucas, managing director, Kittiwake Developments. "Recent breakthroughs mean that relying solely on men in white coats to analyze and interpret test results is no longer necessary – onsite diagnostic equipment now provides laboratory grade results and empowers engineers to make fast and informed decisions with confidence.

Kittiwake's Oil Test Center, for example, is used by navies from countries including the US, Australia, Phillipines, Brunei, Singapore, Canada, Spain, France, UK, Indonesia and Italy. The oil analysis range provides laboratory grade results for a range of test parameters including water in oil, viscosity, Total Base Number (TBN), Total Acid Number (TAN), insolubles and flash point. Oil analysis programs are the first means of defense in diagnosing problems with critical plant machinery and equipment, and the impact of successful troubleshooting can equate to millions of dollars in savings.

"Onboard test kits and wear debris monitors can provide accurate information in minutes, but the real value comes from continuous monitoring of these critical systems. In line with this, the navies are also now looking into sensors - online technology that is advancing at a furious pace.

"Online sensors for monitoring the health of equipment, such as vibration sensors, have been in use for many years and are well trusted. However, only in the past few years have lubricant condition sensors become widely accepted. Now, the condition of the lubricant, the presence of contaminants (including water leaks from seal failures) and even the amount of wear debris and the wear mechanism occurring can be monitored online.

Rolls-Royce Supplies Netherlands Navy

Rolls-Royce announced an order to supply Bergen diesel engines for the Royal Netherlands Navy's Joint Support Ship (JSS). The contract for the engineering, building and delivery of the vessel was signed late last year, by the Royal Netherlands Navy and Damen Schelde Naval Shipbuilding (DSNS) in Vlissingen, Netherlands. The vessel will be equipped with four Bergen B32:40V12A generator sets and one B32:40L6A, which will provide diesel electrical power and propulsion. Construction of the 672.5 ft ship will largely take place at Damen shipyard at Galati, Romania under the supervision of DSNS. Engineering, commissioning and testing will then take place in Vlissingen, and the ship is due to be delivered to the Royal Netherlands Navy in July 2014.

The robust multi-function ship is specifically designed for maritime support, strategic sealift and sea basing missions in both open-ocean, and littoral waters. At its disposal are capabilities for replenishment at sea, storage of supplies, transport of materiel and personnel, and for extensive medical, technical and logistical support.

The modern engine designs are compliant to stringent IMO Tier II emission requirements without the application of common rail modifications, using diesel or gas fuel.

Caribbean Patol Boats Arrive

Austal delivered six-vessel fleet to Trinidad and Tobago Coast Guard Maritime security in the Caribbean region has been bolstered with the delivery of six high speed aluminum patrol craft for the Trinidad and Tobago Coast Guard (TTCG). Capable of speeds greater than 40 knots and armed with general purpose machine guns and a 20mm cannon, the 30-m vessels designed and built by Austal will expand the TTCG's surveillance and enforcement capability in the region.

Director of Trinidad's Defence Transformation and Integration Secretariat, CDRE Garnet Best, said the vessels would be used to create a security blanket around the waters of Trinidad and Tobago. "We are confident that the speed of the vessels will contribute to their effectiveness in the interdiction of illegal drugs," CDRE Best said. "These vessels have been very well designed to perform numerous roles including customs and immigration border control, fire services and prisoner transport, protection of our marine environment as well as protection of our oil and gas resources."

The Austal 30-m fast patrol platform mixes high speed with high endurance and is designed for superior sea keeping and operation in up to Sea State 6 conditions. Their light but strong hard chime, deep "V" monohull delivers maneuverability, durability, speed and a draft of 1.5 m.

Propulsion consists of two Kamewa 56A3 waterjets featuring advanced mixed flow pump geometry,

delivering higher speeds, lower fuel consumption, and the capability to operate in shallow debris laden water. Powering these are two MTU 16V 2000 M92 diesel engines, designed specifically for patrol craft with low load factors that require a high performance rating. Each engine produces 1630kW at 2450rpm. The propulsion unit combines with the lightweight aluminum hull to deliver a maximum speed of more than 40 knots, a range of 1000nm (at 10 knots) and a small tactical diameter and short crash stop distance.

The vessel's main bridge features a Northrop Grumman Integrated Bridge System (IBS) using new generation Sperry Marine Visionmaster FTTM navigation technology, including an "X" Band radar system with high speed scanner. Integrated multi function consoles enhance situational awareness for the bridge watch team. A HF, V/UHF military communications package from CEA Technologies included crew familiarization.

Type	Fast Patrol Craft
Material	Aluminum alloy
Hull Form	Monohull
Deadweight (max)	16 tons
Length, o.a.	30.0 m
Length, w.l.	24.6 m
Beam (molded):	6.4 m
Depth (molded):	3.2 m
Draft	1.5 m
Range at 10 knots	>1000nm
Speed	40 knots
Main engines	2 x MTU 16V 2000 M92
	2 x 1630kW @ 2450rpm
Propulsion	Kamewa 56A waterjets
Classification	DNV

EPS Wins Navy Design Deal

The SSC is intended to provide the functional replacement for the Navy's Landing Craft Air Cushion (LCAC) hovercraft currently in service. To meet the mission requirements for the SSC, this next-generation platform must be designed, developed and produced to reduced operations and maintenance costs, and improved reliability and maintainability. EPS Navy Systems, an EPS business unit, has assembled a team of subject matter experts to perform the studies required and apply its hovercraft design and construction experience to the mission set by the office of the Naval Sea Systems Command (NAVSEA). Over the 60-day study, EPS will prepare and supply the Department of Navy with engineering requirements for repair, replacement, and integration of highly efficient advanced lightweight Fiber Reinforced Plastic (FRP) laminates using glass, Kevlar and carbon fiber for the SSC functional baseline design, specifically in the area of shafting, propulsor blades, shroud, lift van volute, bow thruster nozzle, rudders, and FOD screens structural components.

Lockheed Martin Lab Offers

New MDA Tool

Collecting and analyzing information can leave naval watchstanders and intelligence analysts pouring through volumes of data to find actionable information under time constraints. A new offering from Lockheed Martin, the Maritime Agent Analysis Toolset – or MAAT, claims a solution for their woes.

MAAT, developed by the defense corps' Advanced Technology Laboratories (ATL), is a web-based system that allows users to create intelligent agents that search for maritime vessel activities that meet user-specified requirements.

The basics of MAAT work like this: a user selects a template from a data library and customizes it by providing search values, filter criteria, and run-time parameters. Once the template is customized, the user launches it as an executable entity known as an agent.

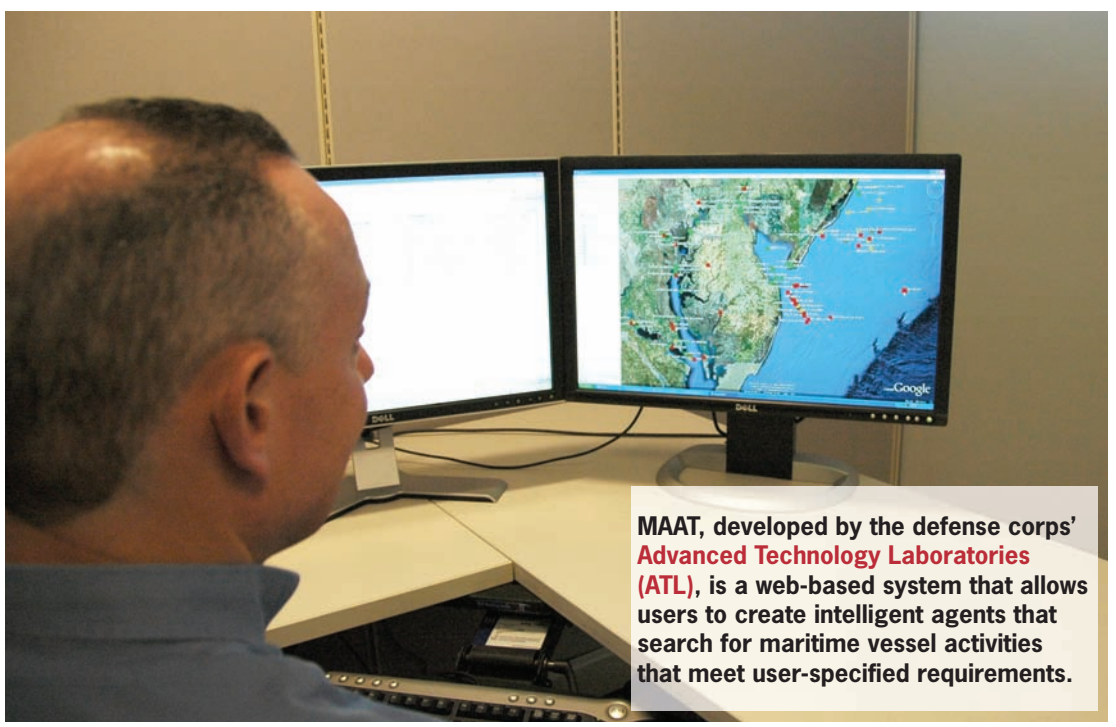
Rich Dickinson, principal engineer at Lockheed Martin ATL, compares the use of software agents to a house hunter's relationship with their real estate agent. "When you're looking for a house, you meet with a realtor to outline what you're interested in, the realtor goes out and looks for you, and then shares their findings. The same principle applies here. A software agent is an entity that can act on your behalf. Agents can vigilantly analyze incoming data to detect conditions, events as they occur, or they can function in historical search mode."

The template-to-agent paradigm allows a user – tech-savy or not – to quickly configure an agent to find information and detect conditions specific to their needs. For instance, MAAT templates can be used to produce agents that can identity vessels moving at an abnormal rate of speed, loitering, traveling within designated geographic areas, crossing set trigger lines, or closing within range of user-specified targets.

MAAT's predecessor, FastC2AP, developed the agent infrastructure and a core set of templates. FastC2AP, deployed by the U.S. Navy's 6th Fleet Theater Maritime Fusion Center in Naples, Italy, allows users to compose agents adaptable to new situations and emergent operational demands. One of the FastC2AP program's primary objectives was to examine the application of agent-based software in an operational environment.

Lockheed Martin then applied internal research and development dollars to enhance the FastC2AP product by expanding the library of agent templates, modernizing the user interface, and adding a comprehensive visualization component. The visualization component consists of a customized Google Earth client that shows the current location of vessels, displays historical vessel movements, overlays MAAT agent search areas, and provides the ability to track vessels. MAAT is also able to work with a variety of data sources. Unclassified demonstrations for the system are run using an Automatic Identification System Live (AIS Live) data feed. Dickinson says it can be, "easily adapted to a number of data sources. We can also federate data from multiple data sources, allowing users to examine multiple data sources at once."

Looking forward, the MAAT team is hoping to show off their wares in the annual Trident Warrior 2010, a U.S. Navy exercise led by Naval Network Warfare Command.



MAAT, developed by the defense corps' Advanced Technology Laboratories (ATL), is a web-based system that allows users to create intelligent agents that search for maritime vessel activities that meet user-specified requirements.

Some ideas about

Facing Seaborne Threats

By Capt. Jeffrey Kuhlman

A recent round of traveling to anti-piracy conferences, from Washington, D.C., to Singapore, led to some interesting observations. It was stated in both conferences that, due to shortages of ships and resources, any vessel crossing the Somali Basin enroute to the traffic scheme in the Gulf of Aden does so at its own peril; it appeared that relatively little could be done to resolve the needs of shipboard security and vessel defense outside the Gulf of Aden. It was also determined that there were ties between piracy and terror, though some still deny this. Recent conversations with the Director General of the Transitional Federal Government of the Republic of Somalia mentioned that these ties are in fact well-known.

There is a worldwide consideration of piracy.

While Somali attacks are more numerous, the most violent piracy today is taking place off the coast of Nigeria; it was alleged that Somali piracy is supported by money laundering and funds transfers through the more polite societies of Europe, the Middle East, and Asia; and the profitability of piracy has spread it to many other areas on the globe's seaways.

To their credit, all of the attendees seemed to have a sincere interest in resolving the Somali piracy issue as expeditiously and safely as possible. There do appear to be some misconceptions, however, about what shipboard security and vessel defense are.

There are varying definitions for shipboard security and vessel defense just as the IMO and the IMB have widely divergent definitions of piracy. We at Castle Shipboard Security Program see shipboard security as the effort taken prior to an attack to avoid either being in a position to be attacked or actions taken prior to the attack to ensure that the defense is relevant and successful. We consider vessel defense as consisting of the actions taken once an attack has begun to ensure the safety of the vessel, crew, cargo and passengers. An attack upon a vessel is an effort by an external agency, people, or person to damage a vessel and/or its cargo, to disrupt the ability of the vessel to do its job, to kill or injure a vessel's crew or passengers, to attempt to use a vessel to perform an illegal act, and/or an attempt to hijack a vessel.

With so much focus upon the Somali piracy issue, the fact that security must be maintained at all times, wherever that vessel operates both now and into the unforeseeable future, has often been ignored. With the focus on piracy, the need for defenses against terrorism, civil unrest, and civil threats have been often set aside. Shipboard security and vessel defense is a far ranging problem, which requires a significant increase in crew training and equipage as well as a pragmatic view of the problem and acceptance of broader rules of engagement by both ships' crews and bona fide maritime security contractors.

Much was said about the application of lethal or non-lethal defense of vessels. Some of the representatives were emphatically against a lethal capability while as many were in favor of it. Some attendees recommended hiring security contractors while others, contrary to many statistics, feared fatal accidents. The agreement reached between most "break-out group" attendees was that the lethal defense question was probably a regional consideration or dependent upon the greatest probable threat.

Most agreed that crew personnel must be better trained to meet the overall needs of vessel security and defense as required by ISPS (the training required by the ISPS and practiced on most vessels is not adequate to meet the needs of MARSEC Levels 2 & 3), and that specialized security augmentation could be provided when necessary. All of this aside, a major deciding factor for some was their level of fear of the "lawyers" as few indemnifications for vessel operators, Masters, and crews for injury and deaths to violent attackers have been provided by Flag and Coastal States.

To alleviate some of these problems, we have a few tools at our disposal, which can be used to help the maritime industry if fear, negligence, a lack of commitment, or ignorance does not stand in our way. SOLAS and the ISPS Code are examples. Relatively meaningless by themselves, they can help to provide for an adequate defense as they provide a structure and authority to provide for a defense. The following statements are paraphrases of a few key entries.

Regulation XI-2/6 covers requirements for port facilities, providing among other things for Contracting Governments to ensure that port facility security assessments are carried out and that port facility security plans are developed, implemented and reviewed in accordance with the ISPS Code.

SOLAS/CONF 5/31, Annex 1, Chapter 1.3 Functional Requirement pertains only to unauthorized weapons. This indicates that when used in context with the provisions of the full document, there is NO prohibition against weapons when properly authorized for defense. This is an authorization on all US flagged vessels and, when Chapter 1.2 is considered, can be authorized by local authorities and the port and shipping industries (commercial) as well when needed to ensure adequate security. Annex 1, Paragraph 8 says that procedures must be reviewed for changes in practices and procedures to provide for adequate levels of security.

SOLAS/CONF 5/31, Annex 1, Chapter 1.2 Objectives establishes international cooperation between government agencies, local administrations, and shipping and port industries. Flag States and shipping and port companies have negotiating powers so that they can negotiate for a proper defense throughout the entire list of signing Coastal State authorities. In our opinion, this power is often ignored for expediency's sake. In addition, governments must offer definitions, policies and laws that provide for the indemnification of the victim ves-

sels' crews for casualties from pirate and terrorist attacks. The responsibility for any damage, injuries, and/or loss of life must be placed upon the heads of the attackers. An example of this is United States Congressman LoBiondi's bill, H.R. 3376 U.S. Mariner and Vessel Protection Act. This provides indemnification to US mariners in the event of a pirate or terrorist's death resulting from an attack.

What else can be done to provide a rapid respond to the various threats against our maritime? Because of the slow moving wheels of international politics, some responses will take time. However, we can begin immediately by using the tools at hand, like those mentioned above. There are certain assumptions that should be made to allow a cooperative negotiating environment among maritime States. Every Coastal State has the international right to have its sovereignty respected. We must also realize that the Flag sovereignty of a country's vessels must also be respected by the Coastal States.

Most Flag States prohibit firearms aboard their merchant fleets. However, many firearms have extensive non-lethal capabilities. Sadly, most in the political and business arenas seem ignorant of these capabilities as a desirable defensive means. Prohibitions against firearms may have made sense when huge "Cold War" Navies plied the seaways; but, as seen in the Somali Basin, where even a large amount of naval resources is being utilized daily, piracy cannot be effectively stopped outside of relatively narrow seaways. Therefore, when the Flag States and Coastal States are incapable of providing for the effective protection of their merchant fleets, wherever they are, this capability must be enabled within the merchant fleet itself. Flag States must accept the role of enabler and indemnifier.

The professional training of chosen and vetted crew personnel for the shipboard security and defense functions is essential. Shipping companies and operators must decide whether or not these trained mariners should have an armed capability for those times when security contractors are not appropriate or are unavailable during an unexpected attack. Many discussions have taken place regarding the possibility of arming merchant mariners. At best, the general arming of merchant mariners would be a poor and ill-conceived option. It must be recognized, however, that certain threats may demand a lethal capability by a trained security team of designated personnel from a ship's company.

Coastal States must realize that merchant mariners, trained and armed or unarmed, are NOT threats to their population, economy, or sovereignty. Coastal States must also understand that these professional mariners, whose work is essential to the welfare of that Coastal State's economy, have the legal right and obligation to protect their lives, their vessels, their cargoes, and their passengers whose safety has been entrusted to them.

When the Navies of the world say that they are not able to provide security, wherever the merchant fleets sail, the merchant fleets are charged with the total responsibility for their own security at all levels from all threats. The world's nations, therefore, must accept a moral, legal, and economic responsibility to enable those merchant fleets to meet those requirements.

About the author

Captain Jeffrey Kuhlman has been the Master of commercial vessels in Africa, Asia, and the Middle East for many years. He is the originator of the Castle Shipboard Security Program which, with its affiliates, Sig Sauer Academy and Nova Southeastern University, provides fused training in shipboard security and vessel defense for professional mariners and law enforcement officers.

www.castlesecurityprogram.com

Coast Watcher Radar

Thales proposes a new family of dedicated coastal surveillance radars named "Coast Watcher" radars, developed with the idea of proposing for each coastal surveillance mission, from local to long range security, a dedicated radar designed to fulfill the specific mission of the end-user within his budget. Thales has been a global radar specialist for more than 50 years. Today, its portfolio comprises more than 40 different radars operating within all capacities (Naval, Ground, Airports and Coastal), and in every operational role. Their worldwide customers include Navies, Coast Guards, VTM operators, Oil & Gas operators, Port authorities. Thales decided in 2007 to enter the Coastal radar market, as coastal surveillance takes place in a particularly difficult environment, where:

- Numerous small and non-cooperative objects are hidden in an intense ship traffic;
- Among these various small objects it is uneasy to discriminate between jet-skis, speedboats, sail boats and potential security threats;
- Islands, harbors, cliffs, can be masking the radar signal, and potentially degrading radar performances;
- Waves, buoys, windmills and many other items, add unwanted "noise" and false alarms, that might also degrade the radar performances;
- High moisture of most coastal areas, extreme temperatures, winds and frequent rain are a menace to the longevity of the equipments.

At the source of all Thales coastal radars is the "Kinematic Scant to scan" patented algorithm, designed to provide an excellent detection and discrimination of very small dynamic targets in any weather.

Tech vs. Technique?

"Technology can provide valuable tools to assist in the fight against piracy threats," said Clare Williamson-Cary, Chief Executive, Securewest. "But while a particular technology may 'do exactly what is says on the tin' the biggest challenge will always be how to integrate and operate that technology to achieve optimum results. Thermal imagery will pick up a heat source, while additional analytics can provide clear video streaming allowing for identification of vessel registration or what activities are taking place on deck. Such information might prove invaluable in determining the intent of an unidentified craft transiting at speed toward you but only if the user is well trained and drilled in interpretation of the imagery presented. Similarly, radar and video cameras may also offer opportunities for early identification of threat but it will be the response to that threat that will determine the outcome not the identification alone. Any technology then must be part of a carefully crafted vessel security plan identifying risks and appropriate responses and executed by experienced, well trained personnel regularly drilled to maintain effectiveness."

Maritime Rapid Deployment Unit

The Maritime Rapid Deployment Unit (MRDU) is a self-contained, fully mobile canister into which a 50 ft. (15m) IN-Stabarrier coil is encased. The unit can be

readily transported and deployed as a temporary SPM barrier. The stainless steel coil is easily removed from the container and can be attached to a wall bracket or fixture. Upon termination of the emergency, the coil simply redeploys into the canister. The current MRDU is 32.5 in. diameter, 11.5 in. deep, and weighs less than 65 pounds.

www.razorribbon.com

New Anti-Piracy System

BCB International unveiled its anti-piracy system, a system has been developed to provide a ship's master with a flexible reaction system to incidents at sea, ranging from a man overboard to attack by pirates. Using either compressed gas from cylinders or the ship's compressed air system, the Buccaneer can deploy anything from single man liferafts, line or netting to solid projectiles up to a range of 300 m. Although significant kinetic energy can be delivered without resort to dangerous or volatile explosives, the SBSL is accepted as an essential safety and survival system. As such it is a genuine non-lethal response and deterrent to pirate attack.

Due to the range of the system, an early demonstration of intent is likely to deter and dissuade an aggressor. Moreover, the effect can be spread over a wider area, thus improving the chance of a 'hit' on smaller, fast moving vessels.

Post-Piracy Seafarer Care

The Seamen's Church Institute (SCI) published Preliminary Guidelines: Post-Piracy Care for Seafarers, outlining preliminary strategies on caring for seafarers (merchant mariners) affected by piracy. The document, based on cutting-edge mental health research and ongoing discussions with shipowners, crewing agencies, representatives of governments, and other stakeholders in the industry, provides practical guidelines for the maritime industry. SCI presented the Preliminary Guidelines to Working Group 3 of the United Nations Contact Group on Piracy off the Coast of Somalia on January 27, prior to the Plenary Meeting of the Contact Group the following SCI will update Preliminary Guidelines, available online at

http://www.seamenschurch.org

Marine Electronics

The Integraged Bridge

In the push to increase efficiency and safety onboard vessels of every shape and size, increasing focus is paid to the bridge, and specifically the function and ergonomics inherent in modern integrated bridge systems. As the size of crews continues to shrink and more spaces on vessels are by function unmanned, the bridge has taken on even more importance as the hub for information and maritime activities. In addition, with "the human factor" cited as cause in more than three-quarters of all casualties, offering a well-designed, ergonomic bridge that stresses ease-of-use is the norm rather than the exception. This month, *Maritime Reporter & Engineering News* focuses on recent developments and installations which support this trend.

The offshore vessel M/V Troms Vision, NB339, was recently delivered from Kleven Verft in Norway to its owners Troms Offshore AS. The vessel is equipped with the state-of-the-art bridge solution from **Transas** based on Transas 4000 Multifunction Display system. The Vessel Bridge is designed in DNV Naut-OSV class and the bridge constellation consists of five multi functional workstations and extended conning displays: 2 x Navi Radar 4000 MFD Chart Radar (X and S Band);1 x Navi Radar 4000 MFD Chart Radar Slave with extended Navi-Conning 4000; 1 x Navi-Sailor 4000 ECDIS MFD; and, 1 x Navi-Sailor 4000 ECDIS MFD with extended Navi-Conning 4000.

All stations are configured in a dual fully redundant network. In addition all workstations are fully multi functional, independently equipped with all databases (e.g. Charts and configurations), and critical sensors.

Designed by mariners for mariners, the user-friendly interface and redundancy is designed to ensure greater efficiency and an increased level of safety at sea.

Transas Integrated Bridge System is built on the technology of its type-approved INS Class C. Transas Integrated Navigation Bridge combines Navi-Sailor 4000 ECDIS MFD, Navi-Radar 4000 MFD (IMO Chart Radar), Navi-Conning 4000 and Alarm Monitoring System developed and produced by Transas. Integrated with its steering control system and navigation sensor interface, it forms a single environment for navigators.

"Troms Offshore is one of Transas' most trusted and good customers," said Capt. Andreas Arvidsson, International New Building Manager, Transas Marine International. "The bridge solution delivered to Troms Vision is designed using the pure essence of our technology."

In the battle to be the biggest among cruise ships, the recently delivered Oasis of the Sea is ahead by many measures. Royal Caribbean International's (RCI) groundbreaking mega cruise vessel - Oasis of the Seas - enters 2010 with navigation, maneuvering and automation functions under command of **Kongsberg Maritime** control systems. The extensive design and installation project, which is a realization of Kongsberg Maritime's The Full Picture ethos was undertaken in close collaboration with RCI at the STX yard in Turku, Finland.

Complete Cruise Control is the driving concept behind the Kongsberg Maritime installation aboard the world's largest cruise vessel, which at its heart features a complex bridge control system. With six Wärtsilä diesel electric engines delivering close to 100MW of power to four large 5MW bow thrusters and three 20MW azipods supplied by ABB Marine, Oasis has a unique and powerful propulsion system. The challenge of controlling all of that power from the bridge, in order to safely and efficiently move the 360m long, 47m wide, 225,282 GRT Oasis fell to Kongsberg Maritime, when it was contracted to supply the propulsion control system and dynamic positioning (DP2),

Pictured is the bridge from the "Green Coastal Tanker" MT Seychelles Paradise, which measures 67.8 x 13.2 x 5.2 m and was built by Lindnau for Seychelles Petroleum Ltd. The ship is suitable for the transport of oil and products with flashpoint < 60°C, maximum density 1,025 t/cu. m. and maximum filling temperature 60°C. Six epoxy-coated cargo tanks with smooth surfaces are provided to ensure short discharge times and minimum slop residues.

in addition to power management, machinery automation and HVAC automation systems.

Captain Bill Wright, Senior Vice President of RCI, and Captain of Oasis of the Seas believes that many different components came together to make the system meet RCI's requirements for such a large vessel: "Oasis has about 15,000 sq. m. of sail area, so maneuvering the vessel in and out of small or busy ports in challenging wind and sea conditions requires a powerful and dynamic propulsion control system. We worked closely with Kongsberg Maritime to ensure we got the right bridge control system and functionalities in the software solution to match our needs."

Captain Wright's influence also extended to fine tuning the Kongsberg DP system by suggesting some software refinements to ensure the redundant DP system was optimized for the Oasis. "There were some functions we didn't need and others we wanted, and with Kongsberg's help, we ended up with a system which meets our requirements. In fact, there are elements to the DP system aboard the Oasis which I am confident would be of interest to the offshore industry."

"Oasis is among the largest, most challenging projects we've ever worked on," said Rolf Taxt, Kongsberg Maritime's Project Manager (Integrated Control Systems). "In addition to customizing the DP software and bridge control systems, RCI wanted wide-screen monitors, which allows us to make available more information on screen for bridge officers. Following this, we are now able to offer the same widescreen solution to other customers."

Latest integrated bridge system developments from **SAM Electronics** include an advanced range of new-generation vessel control systems combining navigation, automation and control functions, NACOS Platinum. Jointly developed with associate companies, Lyngsø Marine of Denmark and L-3 Valmarine of Norway, the series provides a complete range of functionality for vessels of all types and sizes while ensuring unprecedented levels of usability and scalability.

The entire series is based on identical components and a common network. They support a complete portfolio of Radarpilot, Ecdispilot, Trackpilot and Conning functions in addition to those for Alarm, Monitoring and Control, Propulsion Control and Power Management as well as other requirements.

Based on a new platform concept, solutions can extend from a small alarm system or a stand-alone ECDIS to very large, complex configurations for highly advanced vessels such as cruiseships. Moreover, any system can be easily expanded, upgraded or modified to provide increased functionality. Versatility of the series is evidenced by a new IP radar which, by direct connection to a ship's own IP network, enables complete radar images to be accessible from any workstation. Similarly, ECDIS displays can be made available for viewing in an engine control room, the Captain's office or any other ship area.

A key concept of the NACOS Platinum series is that all products have been developed observing User Centered Design principles. Drawing on SAM Electronics' 50-year experience and that of leading in-

(Photo courtesy SAM Electronics)

Latest integrated bridge system developments from SAM Electronics include an advanced range of new-generation vessel control systems combining navigation, automation and control functions, NACOS Platinum.

ternational Human Factors institutes in the Netherlands and Sweden, an ambitious collaborative design process has resulted in the development of a Human Machine Interface (HMI) which is uniquely intuitive, transparent and completely consistent across the full range of products. This results in systems which are ultra-efficient and easy to operate by providing unrivalled overviews and simplicity of operation, enabling crews to concentrate on managing ships safely without any undue distraction or stress.

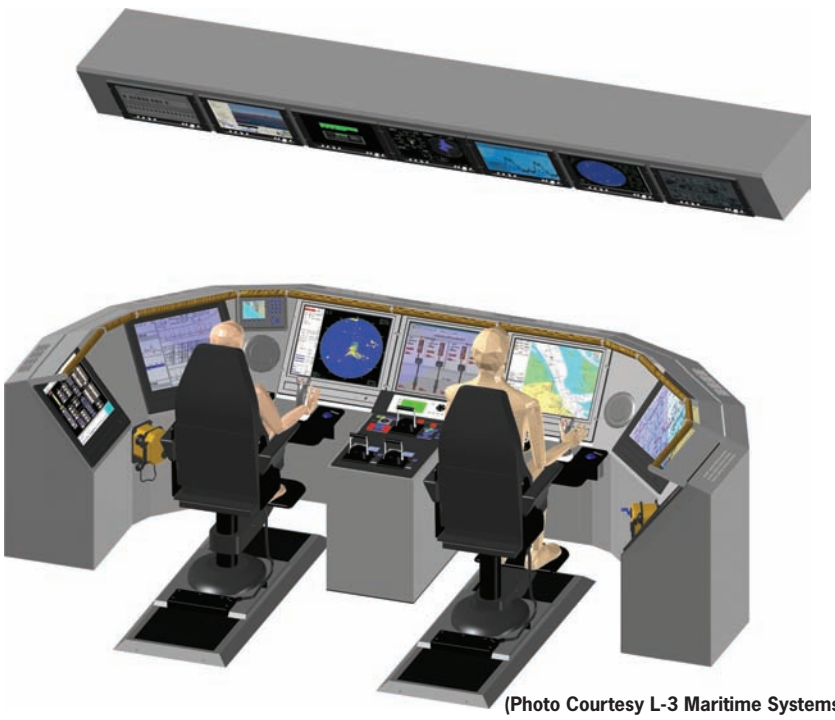
In mid-February **Northrop Grumman's Sperry Marine** won a contract to supply the navigation and communication systems for nine new 35-m patrol boats being built for the Iraqi navy. The $19m contract was awarded by Swiftships Shipbuilders, LLC of Morgan City, La. Each of the vessels will be fitted with an integrated bridge system (IBS) based on Sperry Marine's VisionMaster FT navigation technology. The IBS will include navigation radars and electronic chart display and information systems running on TotalWatch multi-function workstations.

The package will also include Northrop Grumman's Integrated Tactical Data Link, tactical communications, interior communications, and other navigation subsystems and sensors. The contract will also include engineering and technical support for installation, commissioning, testing and training.

The nine coastal patrol boats feature hull and superstructure are aluminum alloy, designed to operate up to 200 miles from shore, with four officers and eight crew members. On the commercial side, the company was chosen to supply radars for the Sydney Harbor Ferries fleet.

(Photo courtesy Transas)

One of the most sophisticated new built offshore vessels in the market, M/V Troms Vision is equipped with the new series of Transas Integrated bridge solution TIBS 4000 MFD, Naut-OSV class notation.



(Photo Courtesy L-3 Maritime Systems)

The 19 inch LCD display unit from Hatteland is designed as a breakthrough for international military naval markets.

Sydney Harbor Ferries operates a fleet of 28 vessels, which transport more than 14 million passengers and travel more than 1.3 million kilometers per year. The extensive ferry network connects 39 destinations, including Parramatta, Manly and Watsons Bay, from its hub at Circular Quay on Sydney's waterfront.

In a recent realignment, L-3's Henschel and Marine Systems divisions have been combined to form **L-3 Maritime Systems**. The creation of L-3 Maritime Systems is designed to broaden its ability to provide products, systems and services across the maritime environment, while developing new technologies for the shipboard navigation, automation and sensing, communications and networks marketplace. "In coming together, our broader base of operations will allow us to develop additional state-of-the-art technologies and provide greater responsiveness to our customers' needs," said Don Roussinos, president.

With facilities in Newburyport, Mass., and Leesburg, Va., L-3 Maritime Systems will have the capacity to undertake and execute naval system design, manufacturing and integration programs, while taking advantage of U.S. Navy, Coast Guard and Merchant Marine customer proximities and core competencies.

Hatteland Display announced the successful conclusion of TEMPEST testing on one of its most widely used maritime display models. The 19 inch LCD display unit breaks into new ground, providing the military naval market with a unique combination of proven product performance and in demand cutting edge technology. The market leading high performance 19 inch MMD display was put to the test with the NATO SDIP-27

Cruise Control from Kongsberg Maritime aboard world's largest cruise vessel.

TEMPEST standard and passed.

The combination of the maritime standards like the EN60945 and the TEMPEST compliance gives the product performances for many applications. "We know that the product will satisfy many different applications in the military naval segment. This is an ideal product for both bridge or below deck use where maritime standards combined with TEMPEST technology requirements are needed.

The product will be an exiting expansion to our growing portfolio of product for naval use", said Brede Qvigstad, Director - Naval & Defense, Hatteland Display.

Techsol Marine Group Inc. is comprised of Techsol Marine Inc., Sea Marine Inc., Soudure Technologie Inc. and the recently acquired Scantech Inc.

Scantech Inc. is a telecom and navigation aids corporation, which the group envisions reaching higher international levels via the network and clients held by the Techsol Marine Group.

Techsol Marine Group begins with Techsol Marine, which was incorporated by Claude Messiaen in 1996, who leveraged his 20 years of experience in the Canadian coast guard. At that time, Techsol Marine offered technical support for private marine companies. In 1997, Pierre Lemay was hired in order to answer the growing demand; he later became an associate in the company.

The company rapidly expanded beyond the North American boarders, and today employs more than 80.

The company is seeking to establish itself as a leader in the marine electrotechnology market, as its principal field of activity is directly related to the design, installation and startup of the MAX system (Monitoring Alarm and Control System). This software has a touch screen interface where all the vital parts of the ship are reproduced, allowing the user to know at any time the status of the entire ship's machinery.

Other than the MAX System, Techsol Marine offers different systems such as wireless thruster & winch control, fuel consumption monitoring systems, Fi-Fi wireless control systems, fuel and ballast transfer systems, video surveillance systems, generator control and power management systems, bulk and liquid mud control and transfer systems, switchboard and motor control centers, integrated fire detection systems and much more.

In 2005, the group acquired Sea Marine Inc., a manufacturer of marine electrical panels. In 2007, Techsol Marine Group acquired Soudure Technologie, which has activities in the transformation of metal leaf, the manufacturing of pieces of furniture, custom-builtcases and components.

Northstar Contract from L-3 MAPPS

Northstar Network won an add-on to the multi million contract awarded by L-3 MAPPS in March 2009 to build consoles for land-based trainers for the Halifax Class of ships. The original contract to manufacture 66 Standard Marine Consoles and 60 Local Operating Panels as part of its IPMS was broadened in August 2009 to include the design and manufacture of the land-based training simulators for the East Coast Navies. Now the contract is once again being expanded to add the Canadian Navy's west coast training simulators, engineering support for the program and additional components for both domestic and foreign naval upgrade programs.

www.northstarnetwork.ca

Moosally Named President Fincantieri Marine

Moosally

Fred P. Moosally has taken office on February 8, 2010 as President and CEO of Fincantieri Marine Group (FMG), a subsidiary of Fincantieri-Cantieri Navali Italiani S.p.A. Moosally, who will report directly to Alberto Maestrini, Fincantieri Executive Senior Vice President of Naval Vessels Business Unit, will be responsible for all Fincantieri Naval Vessels Business Unit activities in the United States. His headquarters will be located in the Washington, D.C. area.

Prior to joining FMG, Moosally served for seven years as President, Lockheed Martin Maritime Systems & Sensors (MS2). During this time he led the integration of multiple independent businesses under the MS2 umbrella, and implemented common business processes to facilitate the transfer of knowledge and talent across the enterprise. Under his leadership, the MS2 team achieved seven consecutive years of profitable growth by expanding core U.S. Navy programs to the international community, and by establishing positions in adjacent market spaces, such as the littoral combat ship program and sea based missile defense.

Before his selection as MS2 President, Moosally was President of Lockheed Martin Surface Systems, and also served in business development and strategic planning capacities for MS2.

Prior to joining Lockheed Martin in 1997, Moosally spent seven years in executive-level government relations and business development positions with Rockwell International and the Standard Missile Company. His move to industry followed a 24-year career in the U.S. Navy during which he held command positions aboard a guided missile destroyer and a battleship, and served as the U.S. Navy's Deputy Chief of Legislative Affairs before retiring in 1990 with the rank of Captain. Moosally is a graduate of the U.S. Naval Academy at Annapolis, and received a master's degree in finance from Central Michigan University. In March 2005, Fred was honored with the U.S. Navy League's Fleet Admiral Chester W. Nimitz Award for his lifetime of service to the nation.

www.fincantieri.com

Viking Life-Saving Equipment CEO Retires

VIKING Life-Saving Equipment A/S CEO and Group Managing Director, Kjeld Amann, will retire following the group's annual general meeting on March 15, 2010. During Amann's tenure as CEO the group has grown its business volume considerably. The company has enlarged its global owned network of sales, service and stock points to more than 50 and with more than 250 certified service and sales agents. Amann will be succeeded as CEO by Henrik Uhd Christensen the present Global Sales and Marketing Director, who has been with Viking for 17.5 years, including five years as managing director of Viking Germany.

Davie Yards' CFO Resigns

Davie Yards Inc. said that Alain Tanguay has tendered his resignation as CFO of the Corporation, effective February 26, 2010, to pursue other career opportunities. The corporation has begun a search for a new CFO. Marc Veilleux, Davie's Vice President, Finance, will act as interim CFO until a successor is identified.

www.davie.ca

Pemberton Named GM at Austal Service

Pemberton

Austal announced the appointment of Chris Pemberton to the position of General Manager - Austal Service. Pemberton previously held senior positions within Austal's Sales and Marketing team and brings to the role more than 15 years experience in the aluminum vessel industry. The appointment comes during a period of significant growth for Austal Service.

BAE's Smith Honored

BAE Systems Ship Repair's Director of Safety Assurance, Phil Smith was named Signal Mutual's 2009 Safety Professional of the Year. The annual award honors safety professionals who are instrumental in the development and implementation of outstanding safety practices within their respective industries. Smith was also recognized for helping to improve safety culture by sharing best practices and new safety initiatives with other Signal Mutual member companies.

Smith and the BAE Systems Ship Repair team were recently recognized at a Signal Mutual Indemnity Association Board of Directors and Members meeting held January 29 in Olympic Valley, Calif. BAE Systems Ship Repair recently adopted the OHSAS 18001-2007 Safety Management System to ensure safety and health excellence. In 2009, all four of BAE Systems Ship Repair sites were certified and registered by Lloyds Register Quality Assurance, the international safety management system whose certifications markedly exceed standard regulatory requirements.

MacDonald VP, Procurement at Crowley

MacDonald

Crowley Maritime said that Wendy MacDonald has been promoted to vice president of procurement, replacing Matt Jackson who has been named vice president, Caribbean island services. MacDonald will remain domiciled in Jacksonville and report to Susan Rodgers, Crowley's senior vice president of corporate services.

www.crowley.com

Cosalt Names Cunningham to Lifeboat Division

Cunningham

Cosalt Offshore, a provider of lifting, tooling and marine services to the oil and gas industry, has appointed Colin Cunningham to help drive the growth of its expanding lifeboat business both in the UK and internationally. Cunningham will be General Manager of the new Lifeboat Division and will be based in Aberdeen.

Quinn Promoted at Samson

Samson, a supplier of performance cordage, announced the promotion of Michael Quinn to director of sales over its industrial division. Quinn started at Samson as the customer service manager in 2007. In 2008, he began managing the recreational marine sales division. Previous to Samson, Quinn held both regional and corporate sales manager positions, in addition to various operations management roles in wire manufacturing. He also holds a bachelor-of-science degree from the Colorado School of Mines. Quinn is based in the corporate headquarters in Ferndale, Wash.

www.samsonrope.com

Martin, Schiller Retire from Panel Specialists

Left to right: Ray Schiller, VP, John Hutchison, Marine Sales Manager, Hal Martin, President (Photo courtesy Panel Specialists, Inc.)

Hal Martin and Ray Schiller, owners of Panel Specialists, Inc. in Temple, Texas, retired December 31, 2009. As life-long residents of Temple, both had careers with Wilsonart. Schiller spent 30 years with Wilsonart and has been involved with the marine industry for 35 years.

Martin and Schiller started PSI April 1, 1990 when they bought the laminating division of Wilsonart in Temple. Wilsonart began supplying laminated marine panels with USCG Certificates in the mid 1970's. Panel Specialists, Inc. continued the marine panel manufacturing and today is the agent and distributor in the Americas for the Thermax-Fipro Marine Interior Decorative Wall and Ceiling Panel System.

G&G Shipping Orders 190-ft. Landing Craft

A sistership.

G&G Shipping announces that it has signed and awarded a contract for new construction of a shallow draft 190' roll-on, roll-off, landing craft to be built by St. Johns Shipbuilding in Palatka, Fla. Mike Grandonico, President of G&G Shipping, said, "We work to continuously offer the best, most reliable, on-time shipping service for our customers throughout the Caribbean and this new vessel will allow us greater capability to expand this quality service to our customers." Construction of the yet-to-be-named vessel will be performed at St. Johns Shipbuilding's 90 acre, state-of-the-art facility located near Jacksonville, Fla. Delivery of the vessel is expected November 2010.

Michaelides Joins Veson

Veson Nautical said that Evan Michaelides has joined the company as Veslink Technical Director to drive the development of its latest service. Veslink is a web-based solution that is designed to provide a flexible, end-to-end messaging platform for collecting and distributing information from vessels, agents and other third parties and provides an API to interface to other third party systems.

CEPSA Panama New Barge, Port of Cristobal

CEPSA Panamá, consolidated as physical supplier of marine fuel at both sides of the Panama Canal, set up a new barge at the port of Cristobal. The Panabunker-Once started operations Jan. 22 2009. The barge supplies the container terminal of Port of Manzanillo, all other port terminals along the Atlantic sector and the anchorage area of Port of Cristobal. The Panabunker-Once is a double-hull barge.

This new acquisition, together with the Panabunker-Diez and the Panabunker-Uno at the Pacific coast, represent a total of 11,000 MT of marine fuel supply capacity.

Wärtsilä Wins Advanced Lube Order

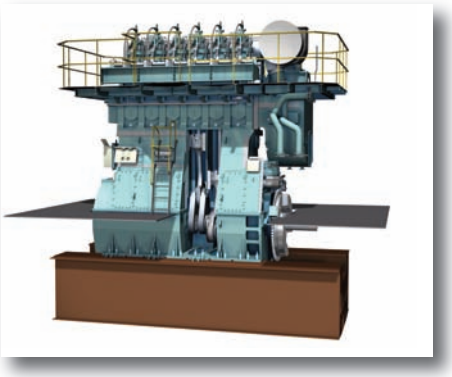


Photo courtesy Wärtsilä Corporation

Wärtsilä has been awarded a contract by DSD Shipping AS of Stavanger, Norway to retrofit the main engines on four DSD Shipping vessels with the Wärtsilä Retrofit Pulse Lubricating System.

The Retrofit Pulse Lubricating System (RPLS) is designed to lower the oil feed rate to the engine, thus cutting the consumption of lubricating oil. This creates savings in operating costs, and also has a positive effect on exhaust emissions. The DSD Shipping contract is Wärtsilä's first order for the retrofitting of small bore two-stroke engines with this system.

The order calls for the sale, installation

Sealub Opens Ops in U.S., Canada

Sealub Alliance Americas, Inc., an affiliate of Gulf Oil Marine Ltd. headquartered in Hong Kong, announced a fully operational manufacturing and supply and distribution network in the United States and select areas of Canada. Sealub Alliance Americas is producing all marine products in four blending facilities and has established a comprehensive distribution network to support delivery operations in more than 80 ports in the U.S. and Canada. Additionally, the Americas group has established new supply operations in Panama, Hawaii and on the Mississippi River. This market opening complements the existing Sealub Alliance global coverage of more than 700 ports in over 90 countries. Sealub Alliance has additional plans to expand its capabilities in Canada and to establish a presence on the Great Lakes.

Boskalis Launches Public Offer for Smit

Boskalis Holding B.V., a wholly owned subsidiary of Boskalis and Smit announced that the Boskalis is making a public cash offer for all the issued and outstanding ordinary shares with a nominal value of $3.11 each in the capital of Smit.

Mackay Communications Expands

Mackay Marine expanded its operations with the opening of two new marine-electronics service locations in Corpus Christi, Texas and Panama City, Panama. The addition of these facilities, coupled with the opening of Mackay Rotterdam BV in May 2009, enables customers to choose from 15 U.S. locations, two Mackay International service centers, and 90+ international marine service agency affiliations.

and commissioning of RPLS on the Wärtsilä main engines of four DSD Shipping vessels. Three vessels (Stavanger Bay, Stavanger Viking and Stavanger Blossom) are equipped with 6-cylinder RTA58T engines, and one vessel (Stavanger Prince) operates a 7-cylinder RTA62U. The vessels are all approximately 105,000 dwt, and were built during the past eight years.

www.wartsila.com

ABB Acquires Turbocharging Service

ABB acquired the turbocharging service activities of ABCO Industries Limited located in Lunenburg, Nova Scotia. ABB did not disclose the value of the transaction. Prior to the acquisition, ABCO's Industrial Equipment Group was the approved and licensed service station for ABB Turbocharging Service covering Atlantic Canada. Customers will now have direct access to ABB's full range of turbocharger service offerings. The acquisition is being integrated into ABB in Canada's Turbocharging network, which also includes service centers in Dorval, Quebec and Burnaby, British Columbia. The business will move into a larger facility with an expanded workshop outfitted with a full line of the latest service, tooling and test equipment, as well as spare parts inventory.

www.abb.com

Rolls-Royce Opens DP Training Center in Norway

Rolls-Royce opened its new Dynamic Positioning (DP) and Automation & Control training center in Ålesund, Norway. The simulation center is designed to provide students with real-life training to become proficient with operating DP controls, without the risk of using real ships in close proximity to real offshore installations. The training center, temporarily based at the Ålesund University college campus, will move into the Rolls-Royce Training Centre in Ålesund, once that facility is completed in 2011.

The classrooms are equipped with six sets of DP consoles and joysticks, which students can use interactively under the supervision of the instructor. A complete DP2 operator station arranged as an aft bridge is part of the new training center. A realistic view from the bridge is projected on a curved wall. Students can see the effects of their inputs to the DP controls without the risk of using real ships and real installations.

A technical room also houses Rolls-Royce control and automation systems, so students can obtain hands-on experience with these systems.

www.rolls-royce.com

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$8B Needed for Offshore Wind Support Ships

The Community of European Shipyards' Association (CESA) and the European Wind Energy Association (EWEA) are calling on the European Commission and the European Investment Bank (EIB) to support the building of new ships to serve the expanding offshore wind energy market over the coming years.

CESA and EWEA urge the European Commission to develop programs and funding mechanisms, and for the European Investment Bank to take the necessary measures to support the risk related to the necessary significant investments, to ensure that a sufficient number of installation vessels are available to the offshore wind industry. They also argue that the offshore wind power industry should be identified as a key industry in the EU's 2020 strategy for smart, green growth.

Investments in new ships totaling $7.87b are needed for the predicted growth of offshore wind. By 2020, the installation of thousands of offshore wind turbines, as well as the necessary substructures and cables, is foreseen.

"From 2020 we will see 40,000 MWs per year built offshore" said Eddie O'Connor, founder and CEO of Mainstream Renewables and EWEA Secretary.

"This will require ten to twelve new heavy lift vessels, other vessels for transporting foundations, towers, nacelles and blading systems. New ports will have to be built across Europe."

STX Europe to Build Simon Møkster PSV

STX Europe entered a new contract with Simon Møkster Rederi for the building of a Platform Supply Vessel (PSV). The vessel is of STX Europe PSV 09 CD design, featured with the new environmental friendly hull lines optimized for eco-drive in all weather conditions. The vessel is scheduled for delivery in Q4 2011.

The vessel is arranged for regular platform supply duties. In addition it will be arranged for Rescue- and Oil Recovery operations in connection with accidents at sea. The vessel is in particular designed for environmental friendly operations with focus on low fuel consumption, and in accordance with Clean Design requirements. The hull will be built at STX Europe in Romania, and outfitted at one of STX Europe's yard on the north-west coast of Norway.

Image courtesy STX Eorope

GAC Launches Training Initiative

GAC, provider of shipping, logistics and marine services, announced the launch of GAC Training & Service Solutions Limited (GTSS), a new initiative that will provide training solutions for the LNG and tanker markets, as well as other commodity and maritime sectors. A joint venture between GAC and the National Maritime College of Ireland (NMCI), the partnership will provide expert delivery of a portfolio of training courses for both seafarers and shore-based shipping personnel.

Courses will be available at the $100m training facility at NMCI in Cork, Ireland, the client's location and through the latest e-learning provision, or any combination thereof. Course content has been developed and will be delivered by respected names in maritime training, including Howard Candelet, the former Vice President of British Gas LNG Services and Nick de Spon, a former master mariner with over 40 years high level experience of the oil and gas sectors.

The courses are designed to provide "hands-on" training to ship owners, operators, managers, charterers and trading companies, oil, gas and chemical companies (on shore and off shore), terminal owners and operators, industry bodies, trade finance banks, insurance companies and P&I Clubs, cargo inspection companies and ship brokers.

Christer Sjodoff, Group Vice President, GAC Solutions and John Clarence, Head of College, NMCI.

RINA Classes Offshore LNG FSRU

RINA has taken a lead in the developing market for floating LNG terminals. It has been chosen to class the first offshore Floating Storage and Regasification Unit (FSRU), and is providing studies and support for a number of additional offshore LNG projects, including the newbuilding which is likely to be the world's second offshore LNG FSRU.

The OLT development will see the 138,000 cu. M. Moss-type Golar Frost converted into a 3.75 billion cu. m. (bcm) per year FSRU, moored in 120 m of water off Italy's west coast port of Livorno. It will act as a receiving terminal for importing LNG, regasifying the LNG and pumping it into Italy's gas grid.

The OLT FSRU is currently under conversion in Dubai Drydocks and will be towed to Livorno at the end of 2010, with the aim of coming on stream in 2011. An external turret is being fitted, along with over 2,400 tonnes of regasification equipment. The main contractor is Saipem, working for the terminal owners - a joint venture between E ON Ruhrgas, Iride, Golar LNG and OLT Energy. RINA will class the vessel and provide statutory certification on behalf of the government. Through its oil and gas team it is also providing authority and owner engineering, ship handling simulation and assistance with local and international regulatory compliance.

SeaArk Completes Haiti Coast Guard Boats

SeaArk Marine completed the first two boats of a five boat contract for the Haiti Coast Guard. The vessels were purchased through the Global Peace and Security Fund, administered by the Department of Foreign Affairs and International Trade (DFAIT), through the Canadian Commercial Corporation (CCC). The contract included SeaArk Model 40-ft V Dauntless Class vessels.

The vessel and her crew are tasked with law enforcement, surveillance, search and rescue, disaster relief, migrant repatriation operations and in securing Haiti borders and territorial waters.

The SeaArk Dauntless Class vessel is based on a hull designed by C. Raymond Hunt & Associates, of Boston, MA, and is constructed of all-welded marine grade aluminum. The vessel features a deep-vee variable deadrise hull that produces a smooth, dry and stable ride.

The vessel is powered by twin Cummins QSB5.9 diesel engines, rated at 375 hp each coupled to ZF gears. These patrol boats can attain top speeds of 26 knots with a range of 300 miles and operate at a service speed of approximately 22 knots. Pilot house accommodations include seating for a crew of four (4). Forward cabin accommodations include an enclosed berthing area for two (2), marine head, full galley, weapons lockers and hanging storage lockers. All interior spaces on the vessel are climate controlled. The electronics suite includes military communications equipment and radar/NavNet with GPS, plotter with color sounder, and a Force Ten – more-tracking system. For onboard electrical service, a 10kW Northern Lights generator and 30 amp shore power are provided, supplying 110 volt auxiliary power to the boat.

40' V Dauntless
(Photo courtesy SeaArk Marine, Inc.)

Main Particulars

Length, o.a.	40 ft
Length, w.l.	36 ft
Beam	14 ft
Draft Hull/Max	3 ft
Dead rise	22°
Displacement lbs.	28,000
Fuel	400 gal
Max speed	26 knots
Service speed	22 knots
Range	300 miles
Main engines	Cummins
Marine gears	ZF

www.seaark.com

SRDC Partners with RAL in Tug Bid

The Shipbuilding and Repair Development Co. of Trinidad and Tobago Limited (SRDC), the commercial business entity of the Trinidad and Tobago Shipbuilding and Repair Cluster, recently participated in its first bid proposal for the design and build of two Harbor Tugs for a state-owned company. The bid involved partnering with Robert Allan Ltd. "We are fortunate to work alongside Mr. Robert Allan and his team of naval architects who are best known for their work in the fields of tug and barge transportation, ship-assist and escort tugs, fast patrol craft, fireboats, supply vessels and shallow-draft vessels," said Wilfred de Gannes, Chairman and CEO of SRDC. "The bid proposal developed with the efforts of several local cluster stakeholders including Alstons Shipping Limited (Ansa McAl Group), Damus Limited (ISO 9000:2008 approved for fabrication of steel structures), Inter-Isle Construction & Fabrication Company Limited and Tracmac Limited (Neal and Massy Group), alongside Louisiana Machinery who are part of Caterpillar's network of Marine Excellence Centers (MEC), provides a platform to offer further ship design and build proposals on an international level."

Trio of 12m High Speed Rapid Response Cat

Ultra Dynamics supplied three sets of twin UltraJet UJ377 Waterjet installations to South Boats for its new Mk II GRP 43/12m WFSV RRV Catamarans RRV Audrey, Offshore Response 1, and Spike Islander. The boats have all been tailored to meet specific code and operational requirements of Wind Farm operations operators Turbine Transfers (Holyhead Towing) and Offshore Wind Power Marine Services: Limited (OWPMS) and Waddentaxi in the Netherlands respectively. Built on the Isle of Wight the new hull incorporates a number of design features using a high ratio of convex underwater shapes coupled to an enhancement of South Boats' proprietary under bridge design, producing a hull with an increased weight carrying capacity. A new Mk II wheelhouse has also been designed and molded giving the vessel a complete new look. As well as simplifying outfitting, this has reduced weight and decreased construction costs.

Measuring 13.3m long it reaches a maximum speed of 34 knots powered by twin Iveco FPT NEF 500 BHP diesel engines, viaTwin Disc MG5071SC gearboxes coupled to twin Ultra Dynamics UltraJet UJ377 waterjets. The jets supply maximum thrust for holding station at wind farm turbines and for high speed crew transfers. With a draft of less than 700mm this is also ideal for shallow water sites, or for working from harbors with draft restrictions where engineers can be transported potentially hours before the main work vessels can transit.

Spike Islander Main Particulars

Operator	Waddentaxi, Nl.
Boat Builder	South Boats Special Projects
Length, o.a.	13m
Beam	5.1m
Draft	0.65m
Displacement	13 tons
Engines	2 x Iveco FPT NEF 500 hp 67
Propulsion	2 x UltraJet UJ377 waterjets
Top Speed	34 knots
Cruise speed	27 knots
Fuel capacity	1450 liters
Water tank	300 liters
Life Raft	Zodiac life raft 2 x 8 persons
Navigation	Furuno & Simrad
Classificaton	UK MCA Workboat Code of Practice Category 2, up to 60 miles from safe haven with up to 12 passengers

Ciane Returns to Çiçek

Frecciamare and Brezzamare:
Main Particulars

Length, o.a.	278.5 ft
Length, b.p.	255.8 ft
Breadth	41.3ft
Depth	20.9 ft
Design draft	17.3 ft
Scantling draft	17.7 ft
Deadweight	3,087 tons (at 17.3 ft draft)
Gross	1,980 tons
Main engines	2 x 6-cylinder Mitsubishi S12R-MPTK diesels each generating 940 kW @ 1600 rev/min
Coatings	MarineLine
Service speed	11 knots at 85% mcr

The Turkish shipbuilder Çiçek Shipyard has delivered to Italian owners the second of four 3,100 dwt chemical tankers. Named Brezzamare, it is expected to be employed in the bunker trades.

The Italian shipowner Ciane Spa purchased a second double-hull bunker tanker from the Turkish shipbuilder Çiçek Shipyard, a vessel which was due to start bunkering operations upon its delivery in February.

In May 2009, Çiçek delivered Chem Flower, the first of a series of four 3,100 dwt IMO II chemical tankers it had had under construction for its associated shipowning company White Tulip Shipping, to Ciane. This vessel has since been operating successfully as Frecciamare out of Genoa and neighbouring ports including Savona, Vado Ligure, La Spezia and Marina di Carrara, providing bunker fuel to vessels calling at these ports. Now the Italian owner has decided to purchase the second vessel in the series, which was to have been named Chem Rose, and named her Brezzamare.

Based in Augusta, on the east coast of Sicily, Ciane is part of the Novella Group, headed by Marco Novella and his family, and specializes in coastal tanker and bunker operations. Augusta is one of Italy's largest ports, a major centre for oil refining and a popular bunkering centre, being on the main east-west trade route through the Mediterranean.

Although Ciane Spa intends using Brezzamare for bunkering duties, operating alongside Frecciamare, the two ships are flexible, capable of trading worldwide, transporting oil products, chemicals (IMO type II) and vegetable, animal and fish oils.

MarineLine coatings were selected by Çiçek to give the ability to carry a wide range of cargoes while high manoeuvrability is guaranteed by the choice of twin azimuthing propellers and a bow thruster. They are classed by Bureau Veritas and constructed to meet Ice B standards.

According to Berke Çiçek, Vice President of Cicek Shipyard, interest from European owners for such vessels is strong, despite the overall weak state of the shipping market. He explained:

"New double-hulled vessels like these are still in demand to replace older tonnage and because we took the initiative to start construction of the four ships to our own account, new owners benefit from extremely short delivery periods. We are talking to a number of other potential owners and charterers and are confident of finding buyers who can secure immediate and profitable employment for these vessels. We still have two sister vessels from the same series which are waiting for their new owners.

Speaking on behalf of the owner, Luca Stegagnini, who is the technical manager and a board member of Ciane spa, said:

"Frecciamare is proving to be an excellent vessel. Being an IMO II chemical tanker, she might be considered to be 'over qualified' as a bunker tanker but we are sure she will prove to be a good long-term investment.

"With her twin azimuthing propellers and a powerful bow thruster, she is already very popular with our masters who find her excellent manoeuvrability helps considerably when coming alongside vessels awaiting bunkers in crowded or otherwise restricted areas. More than this though, we see that her qualities and up to date features will give added value and wider opportunities in actual and future market conditions.

"For example, while a deep well pumping system may be unusual on a bunker tanker, it offers us the possibility of varying the tank capacities we allocate to different grades of bunker fuel. New regulations on marine sulphur content are expected to see ships bunkering with different grades of fuel at the same time to meet the changing legal requirements as they pass from one emission zone to another. This is a real challenge for operators of older, more traditional bunker tankers."

Admiral Seats for the Alucia

A pair of Series 500 Admiral helm seats from marine seating manufacturer STIDD Systems was chosen for the helm of the Alucia, a 183-ft former research vessel rebuilt as an exploration yacht. The Alucia, originally launched in 1974 as RV Nadir by the French government as a platform for marine science and research, is now exploring the world's deepest oceans for DeepOcean Quest. The STIDD Admiral helm seats aboard Alucia feature black Ultra-Leather upholstery and are finished in tough, baked-on black powdercoat.

www.stidd.com

Digital Thermometer For RTD Sensors

Omega's DTG-RTD100 Series features a large backlit display with 25mm (1-in.) digits that are designed to be read as far as 10.7m (35 ft.) away. Reading features include, process, Min., Max., Alarm condition and battery status. An additional analog output signal is standard on all models. The rugged, splash proof, 316 Stainless Steel enclosure is designed specifically for wash down, sanitary or marine applications. Models are available with or without integral standard or sanitary sensors. Low power operation and sleep mode provides long battery life. Software and a USB cable is included that allows for easy setup and calibration via your computer. The Wireless Transmitter Option sends readings to remote locations and allows for PC-based chart recording and data logging. This proprietary product is also CE compliant. Price starts at $395.

www.omega.com

Compact Stainless Steel Triplex Plunger Pumps

Cat Pumps introduces the 7CP6111 and 7CP6171 stainless steel pumps; stainless steel triplex plunger pumps feature corrosion resistant 316 Stainless Steel liquid-end for corrosion resistance. Both 7CP stainless steel pumps provide a compact, space saving footprint and deliver 10.5 GPM up to 2000 PSI.

www.catpumps.com

Inmarsat Fleetbroadband 150 Flyaway Kit

Delta Wave Communications announced its new Inmarsat FleetBroadband (FB) 150 portable kitted solution.

Delta Wave's Inmarsat FB150 Flyaway kit is a turnkey package which incorporates either the Skipper or Thrane FleetBroadband 150 products with stabilized antenna, along with all components necessary for quick and easy deployment. All items are contained in a Pelican 1610 case with extendable handle for ease of transport. The versatile FB150 Flyaway kit is ideal for field operations.

www.deltawavecomm.com

Cathelco for USCG Hulls

A series of fast response cutters being built for the US Coast Guard will be protected against hull corrosion and marine pipework bio-fouling with a system manufactured by Cathelco Ltd. The Sentinel Class cutters, measuring 154ft (46.9m) in length and capable of speeds of more than 28 knots, are being constructed at the Bollinger Shipyard's facility in Lockport, Louisiana. The order for the Cathelco equipment has been won by Russ Equipment Co Inc, Cathelco's agent based in New Orleans.

www.cathelco.com

FLIR Expands Handheld Thermal Camera Line

FLIR Systems released two new models of its First Mate line of handheld maritime thermal night vision cameras. The new First Mate XP and XP+ feature improved 320 × 240 thermal image resolution, as well as expanded environmental survivability ratings and still image capture capability. The XP+ variant even offers users the ability to capture live thermal video to a removable SD card.

Hatteland Launches Pair

Hatteland Display launched two new stand-alone computers; HT B17 and HT B18, both based on the previous Maritime Stand-Alone Computers. Upgraded performance, enhanced cooling systemand completely soundless, configured without fans and hard drives.

www.hatteland-display.com

ShaftMaster

Hillhouse Industrial & Marine, Inc. has the ShaftMaster which is designed to be reliable and relatively inexpensive. The ShaftMaster 1000 model provides shaft horsepower, shaft torque, shaft RPM, total shaft revolutions, total shaft horsepower and engine hours as standard data. Other models include the standard data plus options such as color graphic touch screens, remote displays, networking, etc. All models are user friendly and are setup by entering the parameters of the shaft and with a simple built in program which does the calibration without any external voltmeters or special tools. For more information, call (603) 566-4330.

DYNATITE Sealing Plugs for Immersion Tunnel

More than 35 years ago Beele Engineering started with gastight penetrations for utility pipes, preventing gas explosions due to leaking gas inlets. The latest specialist sealing concerns the immersion tunnel near the South-Korean city of Busan that is being immersed by Mergor, a subsidiary of Strukton. The deepest element of this tunnel was placed recently at a depth of 50 m. The Geoje Fixed Link connects the second capital of South Korea, Busan, with the Geoje peninsula, reducing the travel time between the two from 2.5 hours to just 50 minutes. The tunnel is 3.2 km long. For the watertight sealing of pipe penetrations the Dynatite system of Beele Engineering is used. Prior to the field application, tests were carried out to determine the max. pressure load of this advanced sealing plug. The plug was tested under a pressure load of 1400 kg (14 kN). The pressure test was even continued with higher loads to determine the max. compression of the plug. Even at the extremely high pressure load of more than 18 kN (equalling a pressure of 27.5 bar) the profiling of the Dynatite plug hadn't reached bulk modulus and thefore could be compressed even further.

www.rise-nofirno.com

The global maritime industry has a social networking, news and information portal to call its own: **MaritimeProfessional.com**. Log on and network with thousands of colleagues and potential business partners from around the globe, and keep up to date on critical maritime matters via our exclusive, insightful reports — including samples from last month found on the ensuing pages — from a global network of bloggers and industry insiders.

COLD IRONING

While there are harbors worldwide offering shore power thereby permitting Cold Ironing, an obstacle is that there is no real standardization as yet.

Cold Ironing, is the term applied to stopping all on-board engines, main and auxiliary including gensets when in harbour. Running auxiliary and generator diesel engines in harbour, produces noise and exhaust pollution. Already there are harbours worldwide offering shore power thereby permitting Cold Ironing and there are several new initiatives. An obstacle is that there is no real standardization as yet. Two international standards on this subject are currently under consideration.

In the days of steam engines, the naval expression for shutting down the coal fired boilers in port was Cold Ironing, when literally the iron boilers became cold. Today the term is applied to stopping all on-board engines, main and auxiliary including gensets when in harbour. Even in port, it is of course necessary that various ship systems continue to operate as normal, pumps, ventilation, electronic systems, lights etc.

Running auxiliary and generator diesel engines in harbour, produces noise and exhaust pollution. In Europe's busiest port of Rotterdam studies suggest that offering shore power for visiting ships could alone reduce CO2 emissions by 65 per cent and in addition reduce other emissions significantly.

Already there are about 15 harbours worldwide offering shore power thereby permitting Cold Ironing and there are several new initiatives to do more about this by providing shore power connections appropriate for the needs of the ship.

There is however the obstacle of different ships having different power requirements and there is no real standardization as yet. While most ships use a 60Hz on board system, more than half the world is using a 50Hz shore system. To illustrate this point, in Gothenburg they use a 10kV 50Hz single plug connection, while in Los Angeles there is a 440V 60 Hz ship-shore power supply consisting of a number of separate connecting plugs.

An initiative for ship-shore power in the Baltic Sea area called the New Hansa Project applies to 15 ports in 5 countries. Their system favours a 10kV 60Hz supply with option for 50Hz. It is automatic and after the power cable is connected, an on-shore computer communicates with an on-board computer and works out the electrical power profiles/requirement. After approx 5 minutes synchronization is complete and power flows!

There are two international standards on this subject currently under consideration: ISO/CD 29501 Ships and marine technology – On shore Power supply, "Cold ironing" and IEC/CD Electrical installations on ships High Voltage Shore Connections. (HVSC).

Let's hope the port authorities and the ship owners worldwide adopt a single international standard and make Cold Ironing more achievable worldwide.

Posted by Keith Henderson
on MaritimeProfessional.com

International Navies

Admiral Ivan Kruzenshtern, Russian Imperial Navy (1770-1846)

Opening the Russian Navy to blue-water operations

Though born into a German family (birth name: Adam Johann Ritter von Krusenstern) living in what is now Estonia, he is better known by his Russian name Ivan Fedorovich Kruzenshtern. He joined the Russian Imperial Navy in 1787. He served in the Royal Navy for six years (1793-1799) before returning to Russia. In 1803, he was commissioned by Tsar Alexander I to lead the first circumnavigation of the world by Russian Navy vessels. The purpose of the voyage was to establish trade with China and Japan, facilitate trade in South America, and examine California for a possible colony. The two ships sailed from Kronstadt (an island just west of St. Petersburg) in the Baltic in August 1803. After rounding Cape Horn, they made calls in ports on the west coast of South America and charted portions of the California coast. Additional calls were made in the Russian possessions in Alaska and in China and Japan. Various islands in the Central Pacific were also charted before the ships returned via the Cape of Good Hope to Kronstadt, arriving in August 1806. His detailed report of the voyage was translated into German, English, French, Dutch, Danish, Swedish, and Italian, and led to his honorary membership in the Russian Academy of Sciences. Most in the maritime community today know his name from the Russian sail training vessel Kruzenshtern or from the icebreaker Ivan Kruzenshtern. The sail training vessel sailed around the world in 2005-06 to commemorate the 200th anniversary of the Admiral's voyage. Some recall that Cape Krusenstern is located on the north side of Kotzebue Sound in Alaska. Few, though, note that the Russian fur trading base at Fort Ross (originally Fort Rus) was established in northern California just a few years after he charted the area. Admiral Kruzenshtern was largely responsible for opening the vision of the Russian Navy to offshore operations.

Posted by Dennis Bryant on
www.MaritimeProfessional.com

Offshore Brazil

1 Well, 2 Discoveries

The two new discoveries in one well, announced by Petrobras strengthen the thesis pertaining to the possibility of the existence of a great reservoir beneath the salt layer of the Campos Basin.

The Campos Basin pre-salt shows its potential even if volumes are less than at the Santos Basin, as various factors related to logistics, production timeline and development costs make this possibility very attractive to players and specially to Petrobras.

As is widely known, the Campos Basin is presently responsible for over 80% of the Brazilian O&G production. The discoveries indicate the existence of hydrocarbons in both the pre-salt and the post-salt layers in a single well at the Barracuda field in the Campos Basin, 100km from the coast of Rio de Janeiro. The possibility of a second Campos Basin in the pre-salt depths, containing light oil in contrast to the mainly heavy oil of the mature wells in the Campos Basin, would be a definite boost to the already growing Brazilian O&G market.

Posted by Claudio Paschoa on
www.MaritimeProfessional.com

Western Shipyard Group

Western Shipyard Group is one of the largest corporations in Lithuania. It combines 22 different closely related specialized companies. The main activities of the Group of companies are shipbuilding, ship repair and modernization, port stevedoring and warehousing services, metal construction production, metal processing and other services.

Western Shipyard has established itself in ferry, multi-purpose, offshore shipbuilding industry, has won its share in ship-repair market. It touts itself as the first ship industrial enterprise in the Baltic countries, engaged in the construction of the facilities, necessary for the renewable energy sources – wind parks. Most of the production (about 85%) Western Shipyard exports to other countries of the world. About 1500 people are on the company group payroll, and the company manages five floating docks.

The year 2009 was the year of large and technically complex projects in the field of conversion of ships for Western Shipyard Group, including the conversion of M/V Thorshovdi from a container carrier to a krill processing factory. The projects was carried out in close cooperation with Norway's Fiskerstrand Verft AS, as the shipyard and Fiskerstrand Verft AS established joint company Fiskerstrand BLRT AS in 2007 to deal with the preparation of shipbuilding conception, marketing and project management. In total more than 1000 tons of steel was used for the conversion.

Western Shipyard also completed the conversion of the fish farming industry ship M/V Michal Within 2009, a job which entailed extender the ship's hull by 12 meters with a 250 tons insert.

Bunkers, for fish food, a new fish food distribution line was installed on board.

DP system will also installed, and the capacity of power plant increased by the integration of additional 500 kW diesel generator. Modern air conditioning and hydraulic systems was also fitted, electric power station capacity was increased and other technically sophisticated works were completed.

Last year, the shipyard also completed one of the first large-scale ship modernizations, a project which took more than five months, a modernization to the 61 x 13.5 m oil rig service ship M/V "Sentinel" for Diamar S.p.A.

In all, 76 tons of steel were renewed, bow and aft thrusters were mounted, DP system was installed, new power diesel generators, electricity, ventilation and other systems were mounted. The main deck was also renewed, thorough renovation of all accomodation spaces was accomplished, new furniture and techniques were installed.

In 2009 Western Shipyard Group companies opened in Vilnius, which is one of the most modern and one of the largest hot-dip galvanizing plant in the Baltic countries and Eastern Europe. The Ice-class ferry Skarven was built, the ferry Saaremaa1 delivered and construction was commende on the ferry Saaremaa2.

The shipyard also established itself in car and passenger ferry construction market. As during the decade more than 40 unique shipbuilding projects have been realized. In 2007, under the order of the Estonian company, the company has started the construction of three most modern ferries Saaremaa"in Europe.

Last year the company also built the ice-class ferry Skarven by the order of the Aland Islands (Finland) government. This ferry, operating in the freezing part of the Baltic Sea, is the first ferry in the Baltic Sea region, outfitted according to

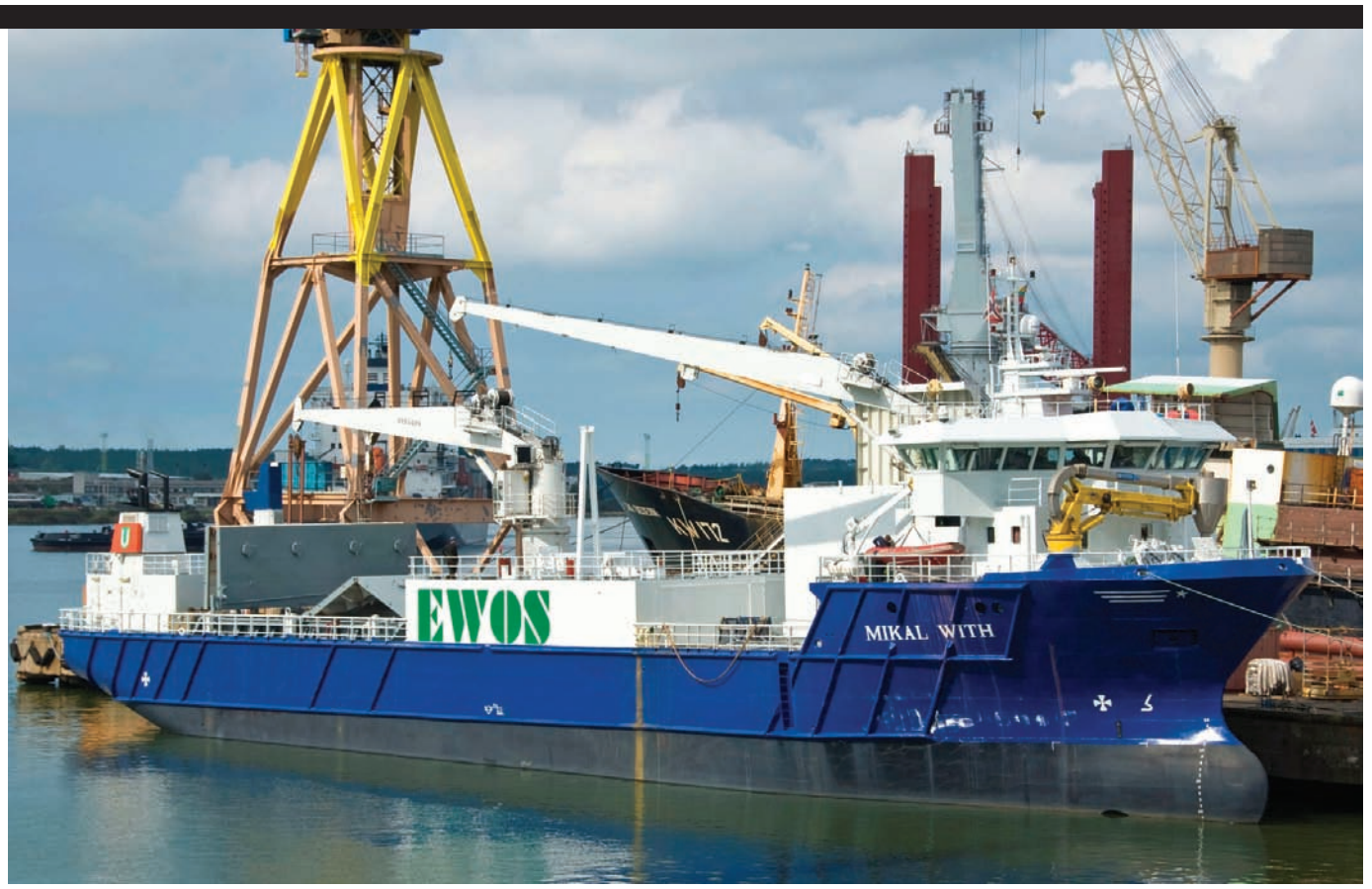
European Union directives to ensure services for disabled people. The completed ferry was issued a “green passport,” certifying that the vessel is made in accordance with environmental protection requirements and can be safely recovered at the end of her operation period.

Western Shipyard Group began the construction of environmentally friendly gas-powered ferry under the order of the Norwegian company to be operated within the Norwegian fjords; also other unique projects were implemented in 2009.

Last year Western Shipyard Group delivered the vessel WindLift1, a unique vessel for heavy and oversized cargo transportation and elevation, representing the largest shipbuilding project in the company’s history. The project is unique in all proportions, including operational techniques and technological parameters. More than 6,000 tons of steel were used on the ship, the first time in the Baltic countries desiged for the construction and maintenance of the offshore wind farm. The ship will serve at mounting and installation power wind farm.

This complex and specific 101.8 x 36 m ship construction project called for a number of highly skilled professionals, new knowledge, complex technological solutions and expertise to manage such volume of the project.

WindLift1 is powered by a four-wheel-rotating propeller mechanism, each of 1100 kW capacity. Auxiliary 25 tons crane, a helicopter landing site, modern accomodations, recreation and common spaces with modern equipment and mechanical workshops outfotted with the latest technological facilities are equipped on the ship outside the basic 500 ton lifting capacity crane.



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• Provide ultimate weld joint design to meet requirements of the classification society, facilitate production process, and save material and labor costs.
• Assist Planning/ Estimating group in machinery/ piping systems material take-off, preliminary weight estimate, scope of work development for subcontractor quotations, etc.

REQUIREMENTS:

Bachelor degree in naval architecture, marine engineering, or mechanical engineering.
5 years experience in structure and piping design within the shipbuilding industry is required.
Be capable of using AutoCAD 2008. Experience with the following software will be a plus: 3-D modeling: ShipConstructor 2008, Hydrostatics: GHS, Surface fairing and curved plate expansion: Rhino, MultiSurf, FastShip, etc.
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QMED Engineer
Job Location: Marshall Islands, Kwajalein

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• Safely operates and maintains the assigned vessel's propulsion and auxiliary engineering systems as instructed by the vessel's Chief Engineer.
• Assists in ensuring passenger safety.
• Determines parts, supplies, and material requirements for job accomplishment. Assists in the on and offloading of passengers, cargo and/or provisions.
• Properly maintains all required logs and records.
• Performs other duties as assigned. Able to utilize electronic testing equipment.
• Operate and maintain all propulsion and associated machinery and equipment on board the assigned vessel.
• Identify and troubleshoot all minor engineering problems. Any major problem or casualty will be immediately reported to the vessel's Chief Engineer.
• Be capable of being trained to properly respond to emergency situations, e.g., fire, flood, man overboard, etc.
• Assist in determining parts, supplies, and material requirements for job accomplishment.
• Be able to work in extreme heat conditions, inside a moving vessel in an engine room around noisy machinery. Be able to stoop and bend repeatedly to accomplish engine repairs.
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• Desired:

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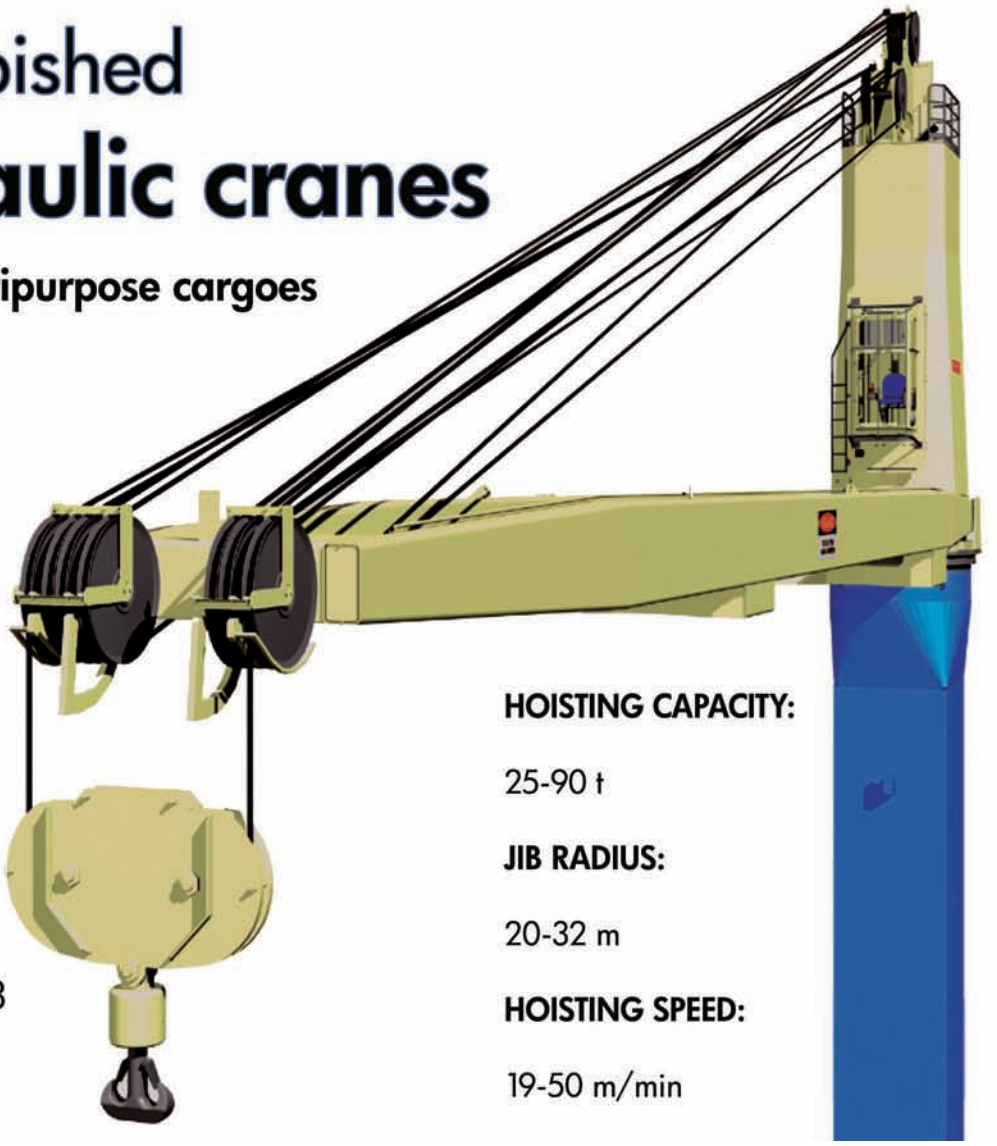

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