The World's Largest Circulation Marine Industry Publication • The Information Authority for the Global Marine Industry since 1939

MARITIME REPORTER AND ENGINEERING NEWS

www.marinelink.com

February 2011

Promise & Perils of Maritime

Arctic Ops

Cruise Ships Become

Clean & Green

US Navy

ONR Invests in the Future

Legal Beat

Protecting Maritime Trademarks

Leadership Roundtable

SatCom Solutions Center Stage

5 Minutes With Alfa Laval Inc.'s

John Atanasio, President

JRC FleetBroadband Power Duo

Quality voice and high-speed data
Proven antenna design
Single coax installation
Dedicated compact solution

FleetBroadband 500
JUE-500

Option Interface Unit (OIU)
Optionally available for the JUE-500, this add-on system is packed with a range of additional features, like 4 configurable LAN ports, 4 telephone lines, GPS input and output signal, and much more.

FleetBroadband 250
JUE-250

JRC Launch IT
JRC Launcher is a dedicated user interface freely available across both terminals, developed to improve the functionality and configuration options of the JRC FB systems.

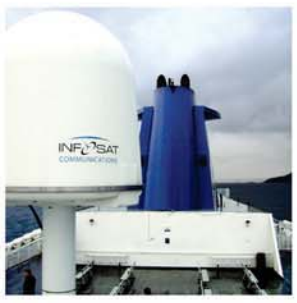
Feel connected. Communicate further.

JRC
Since 1915

JRC Americas
(206) 654-5644
www.jrcamerica.com

25 years of experience working with marine industry customers has provided Infosat with insight into the unique set of satellite communication needs and challenges faced by maritime customers utilizing satellite technologies for everyday communications.

Infosat has built our reputation by providing high quality, reliable satellite communication systems to our customers. You can rest easy knowing Infosat offers state-of-the-art satellite systems designed for all types of vessel, with any communication requirement.



MARINE STABILIZED VOICE & DATA
SERVICE PARTNERS YOU CAN COUNT ON

Infosat makes choosing a satellite solution for your requirement easy, straight forward and uncomplicated. Infosat has the knowledge and professionals ready to support your satellite communications project. Infosat offers an in-house Engineering and Technical Services Team, highly skilled installation and maintenance technicians, and 24 Hour Customer Support.

It's time to put your trust in an Infosat solution.

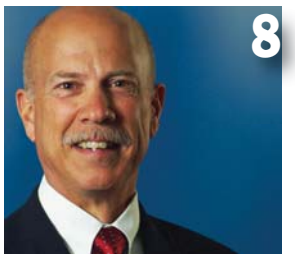
Contact Infosat today to find out more.

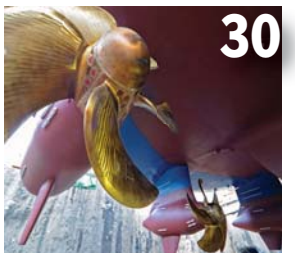
Toll Free 1 888 524 3038
info@infosat.com
www.infosat.com/marine

INFOSAT
COMMUNICATIONS

25

INFOSAT — A QUARTER CENTURY OF QUALITY AND INNOVATION





WRITERS Flohr, Bryant, Segercrantz

Henrik Segercrantz is a Finnish Naval Architect with 30 years experience from the shipbuilding industry. A regular contributor to *Maritime Reporter & Engineering News*, this month Henrik records a double dip with separate articles on cruise shipping and the arctic.

Power to propel both vessels and business.

Since 1902, commercial mariners around the world have relied on Scania engines to power their fishing boats, patrol boats, tug boats and ferries. No matter the application, Scania marine engines have earned areputation for their robust performance, legendary durability and outstanding fuel economy.

Read more at www.scaniausa.com

Scania engines - 12 or 16 liter with ratings from 300 to 800 hp

SCANIA
Scania U.S.A. Inc.

Scania U.S.A., Inc.• San Antonio, TX • Phone 210.403.0007 • Fax 210.403.0211
E-mail: contact@scaniausainc.com • Web site: www.scaniausa.com

DISTRIBUTORS

Northeast/Great Lakes	Northwest	Southeast/Gulf Coast	Southwest	Central/Eastern Canada
Mack Boring & Parts Co.	Cascade Engine Center	Certified Diesel	Boatswain's Locker	ADF Diesel
908-964-0700	206-764-3850	954-583-4465	949-642-6800	800-517-1489

MARITIME REPORTER AND ENGINEERING NEWS

NEW YORK
118 E. 25th St., New York, NY 10010
Tel: (212) 477-6700; Fax: (212) 254-6271
e-mail: mren@marinelink.com • Internet: www.marinelink.com

FLORIDA • 215 NW 3rd St., Boynton Beach, FL 33435
Tel: (561) 732-4368; Fax: (561) 732-6984

SUBSCRIPTION INFORMATION
One full year (12 issues)
• in U.S.: $69.00; two years (24 issues) $98.00 • in Canada: $73.00; two years (24 issues) $105.00
• Rest of the World: $98.00; two years $152.00 including postage and handling. For subscription information:
Email: mrcirc@marinelink.com • www.marinelink.com
Tel: (212) 477-6700 • Fax: (212) 254-6271

POSTMASTER: Send address changes to: **Maritime Reporter** 118 East 25th Street, New York, N.Y. 10160-1062.
Maritime Reporter is published monthly by Maritime Activity Reports Inc. Periodicals Postage paid at New York, NY and additional mailing offices.

PUBLISHERS
John E. O'Malley
John C. O'Malley • *jomalley@marinelink.com*

Associate Publisher & Editor
Gregory R. Trauthwein • *trauthwein@marinelink.com*

Contributing Editors Dennis L. Bryant • Rich DeSimone • Edward Lundquist • Matt Gresham
Editorial Consultant James R. McCaul, President, International Maritime Assoc.

PRODUCTION

Production Manager Oksana Martemy • *martemy@marinelink.com*
Production Assistant Amanda O'Malley • *aomalley@marinelink.com*

CORPORATE STAFF

Manager, Accounting Services Esther Rothenberger • *rothenberger@marinelink.com*
Manager, Public Relations Mark O'Malley • *momalley@marinelink.com*
Manager - Marketing Jocelyn Redfern • *jredfern@marinelink.com*
Manager, Information Technology Services Vladimir Bibik • *bibik@marinelink.com*

CIRCULATION

Circulation Manager Kathleen Hickey • *mrcirc@ marinelink.com*

SALES

Vice President of Sales & Marketing
Rob Howard • *howard@marinelink.com*

Sales Administration & Office Manager Rhoda Morgan • *morgan@marinelink.com*
Sales & Event Coordinator Michelle Howard • *mhoward@marinelink.com*
Classified Sales Manager Dale L. Barnett • *barnett@marinelink.com*; Tel: (212) 477-6700

Advertising Sales Managers

National Sales Manager
Jack Bond
bond@marinelink.com
Tel: (561) 732-1659
Fax: (561) 732-8063

Lucia Annunziata
annunziata@marinelink.com
Tel: (212) 477-6700
Fax: (212) 254-6271

Dawn Trauthwein
dtrauthwein@marinelink.com
Tel: (631) 868-3575
Fax: (631) 868-3575

Tristan McDermott
mcdermott@marinelink.com
Tel: (561) 732-0312
Fax: (561) 732-9670

Mike Kozlowski
kozlowski@marinelink.com
Tel: (561) 733-2477
Fax: (561) 732-9670

Terry Breese
breese@marinelink.com
Tel: (561) 732-1185
Fax: (561) 732-8414

Scandinavia Roland Persson • *roland@orn.nu*
ÖRN MARKETING AB, Box 184, S-271 24 Ystad, Sweden
Tel: +46 411-184 00; Fax: +46 411 105 31

Western Europe Uwe Riemeyer • *riemeyer@intermediapartners.de*
Tel: +49 202 27169 0 ; Fax: +49 202 27169 20

United Kingdom Paul Barrett • *E- ieaco@aol.com*
Hallmark House, 25 Downham Road, Ramsden Heath, Essex CM11 1PU UK
T- +44 1268 711560; M- + 44 7778 357722; F- + 44 1268 711567

Japan Katsuhiro Ishii • *amskatsu@dream.com*
Ace Media Service Inc., 12-6, 4-chome, Nishiike, Adachi-ku, Tokyo 121, Japan
Tel: +81 3 5691 3335; Fax: + 81 3 5691 3336

Korea Jo, Young Sang • *biscom@biscom.co.kr*
Business Communications, Inc., Rm 1232, Gwanghwamoon Officia Bldg.
163, 1-Ga, Shinmoon-Ro, Jongro-Gu, Seoul, Korea 110-999
Tel: +82 2 739 7840; Fax: +82 2 732 3662

FROM INSTALLATION TO OPERATIONS
PLUG AND CONNECT

Experience the Intellian VSAT Difference

Installation-Ready

Minimal Maintenance & Total Cost of Ownership

Unmatched RF Performance

Utmost Reliability Satisfying Stringent ET Standards

v60 (60 cm) | v110 (1.05m) | v130 (1.25m)

For more information on Intellian 3-axis v-Series antennas,
please visit **www.intelliantech.com/vsat**

Intellian Americas Tel : +1-949-727-4498
Intellian EMEA & APAC Tel : +82-2-511-2244

MARITIME REPORTER AND ENGINEERING NEWS

www.marinelink.com

ISSN-0025-3448
USPS-016-750

No. 2 Vol. 73

118 East 25th Street, New York, NY 10010
tel: (212) 477-6700; fax: (212) 254-6271

Founder: *John J. O'Malley 1905 - 1980*
Charles P. O'Malley 1928 - 2000

Maritime Reporter/Engineering News is published monthly by Maritime Activity Reports, Inc. Mailed at Periodicals Postage Rates at New York, NY 10199 and additional mailing offices.

Postmaster send notification (Form 3579) regarding undeliverable magazines to Maritime Reporter/Engineering News, 118 East 25th Street, New York, NY 10010.

"Challenges" is a word bandied about quite frequently in the page of *Maritime Reporter & Engineering News*, though not strictly in the context of the technical side of our business. Whether you work on a towboat plying the mighty Mississippi or own a fleet of containerships in the Pacific Rim trade, you are faced daily with technical, political, environmental and operational challenges that more often than not are likely to stretch your personal and corporate resources.

The February 2011 edition is replete with challenges and solutions. This month, contributing editor **Henrik Segercrantz** provides an unusual double dip of feature articles, first on the Cruise Shipping industry and second on the Arctic. For any of you who know Henrik, his long career with one of the world's preeminent cruise shipbuilders and his physical location in Helsinki, Finland, make him uniquely qualified to present both.

The Cruise Industry is besieged with challenges, perhaps more so than any other sector of the maritime market by virtue of the high-profile nature and high cost of its ships. In this edition, Segercrantz examines the quantum leap in cruise shipping technology, focusing on advances in propulsion that have made today's ships "cleaner and greener," but including insights on a number of "next-generation" features that have found their way onboard the world's new fleet of cruise ships. In the article **Royal Caribbean cites a 30 to 40 percent improvement in energy efficiency** over the last 10 to 15 years, an impressive figure owed not to one action or improvement, rather though "thousands of different actions." Factors driving cruise ship technology is diverse, from a fickle travelling public which demands ever-evolving entertainment options; to environmental concerns at the local to global level.

The Arctic presents its own special brand of challenges to the shipping and offshore industry. From technical matters regarding the stability and safety of structures and people working in one of the world's harshest environments, an environment with minimal infrastructure to contend with disaster response. To the political and environmental challenges of assessing, discovering and recovering – and ultimately sharing – the vast natural resource wealth that is believed to be contained under the fast-melting polar cap. Read how companies are gearing up for Arctic work starting on page 34.

I took the opportunity last month to visit the Middle East, a region that is about as far from the Arctic as one can get, at least from perspective of the climate. While this world region comes with its very own set of unique and widely known political challenges, I'm pleased to report that business is again booming in the region with a high level of port infrastructure, new shipyard facilities, booming oil and gas business and subsea salvage and construction projects well underway. This trip and these projects will be covered in-depth in the March 2011 edition of Maritime Reporter. The caveat in the Middle East is always the specter of political unrest and military action, and we watch with interest the evolution of political activity in Egypt, and the possibility of disruption of the Egyptian-controlled Suez Canal, one of the world's leading pipelines for energy products.

Never a dull minute; always a challenge.

ON THE COVER

Pictured on this month's cover ...

is just one of the challenges maritime and offshore operators may face in the expansion of business to the Arctic. While the Arctic possesses many intriguing opportunities, there are seemingly more challenges, including:

- the technical challenges of operating in some of the harshest conditions on the planet;
- the safety challenges of building a reasonable response network in the event of catastrophe;
- the environmental challenge of not disrupting one of the earth's more pristine environments;
- the political challenge of dividing and sharing resources equitably.

Read how these challenges are being met, starting on page 34.

(Photo Courtesy of Det Norske Veritas [DNV]; Polar Bear Courtesy of Mother Nature)

These are the tools I use
to support my ship
to maintain a healthy crew
to build my future
to support my family
and take command of my career
with Military Sealift Command

It's your turn to get the career you deserve. No contracts or long-term commitments – just secure, stable employment with the federal government. Opportunity awaits at

sealiftcommand.com

MILITARY SEALIFT COMMAND

Take Command of Your Career®

John Atanasio *President & CEO, Alfa Laval Inc.*

What is background and your management philosophy?

I was appointed President and Chief Executive Officer of Alfa Laval Inc. in January 2011. In this role, I am responsible for leading Alfa Laval in the USA to drive profitable growth in its markets, leveraging the company's key technologies of heat transfer, separation and fluid handling.

I like to keep my management philosophy quite simple, and something I recently read sums up my philosophy well:

"Achievement is overrated. There are those who sit comfortably on their laurels, then there are those who get uncomfortable when they achieve a milestone. For them, standing on achievements is like looking at nowhere. For them, every milestone is a work in progress to move beyond. To do more. To be better. Again and again."

– Author unknown

Our greatest challenges are what make us work harder and climb higher. The greatest success also holds lessons to be learned to adjust and make the next success even more rewarding to all.

Alfa Laval has been quite active in recent years: Can you give our readers a brief overview as to the Alfa Laval philosophy in building the company to serve the marine industry?

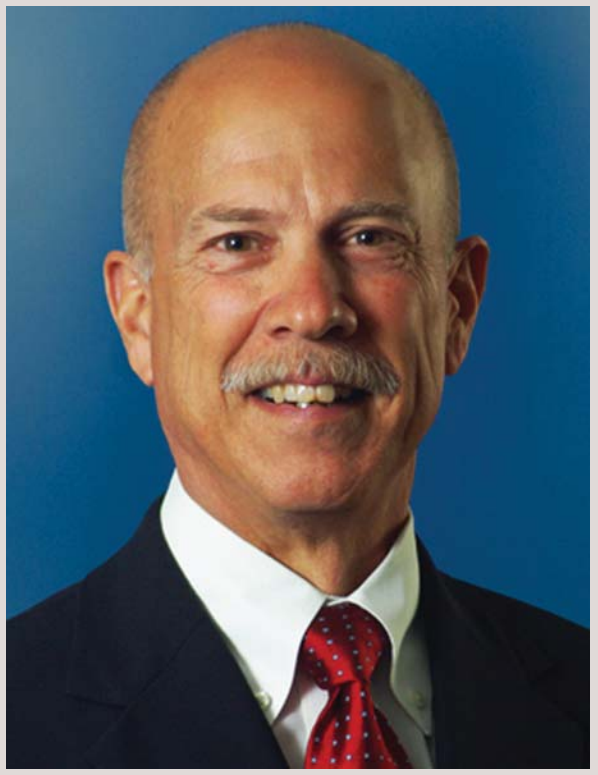
The Alfa Laval Marine and Diesel Equipment team is driven to develop cost-effective, easy-to-use technology that allows ship owners and ship operators to remain competitive and profitable. Through focusing on the essentials in these processes for more than a century – Alfa Laval has steadily made solutions more reliable, more economical and with less environmental impact. We call this way of thinking, "Marine Essentials."

We've developed technologies to meet the needs of shipbuilders and ship owners; each has reflected a single aim: optimal cost and process efficiencies while supporting a sustainable environment. To be specific, we address the fuel oil, process fluids and the seawater itself.

Oil treatment/purification: We separate the heavy particles and dirt and also the water – from the fuel oil. Our equipment is designed to further extend the fuel, the equipment and also parts and service consumption. The new S-separator, for instance, provides even greater separation efficiency due to – among other enhancements — a major increase in separation area and a function that detects and adjusts to the nature of the oil. The increase in separation area, disc modifications and other improvements allow for up to 20% more flow with retained separation performance. Ship operators can now handle the same amount of oil with a smaller separator. The P-separator compliments the S-separator to create a dual approach to fuel and lubrication oil treatment. The P-separator shares the S-separator's economical and low-maintenance features, however the P-separator is intended for well-defined oils with fewer variations.

The customer chooses the option that best matches their oil and application needs and automation requirements.

Water: We supply a range of fresh water generators for



the conversion of seawater into freshwater by vacuum distillation to supply high quality freshwater for domestic and process utilization. Both onboard and land based units are available and may be used in waste heat recovery applications. Both are highly sea water resistant because of the titanium plates selected for the heat transfer surface.

Ballast Water Treatment: PureBallast is our chemical-free system for ballast water treatment, addressing one of today's most critical environmental issues: the introduction of invasive marine species into new environments via ballast water. The PureBallast system works much the same way during ballasting and deballasting procedures. Water is treated by at least one Wallenius AOT (Advanced Oxidation Technology) unit, which contains titanium dioxide catalysts that, when contacted by light, generate hydroxyl radicals. These radicals break down the cell membrane of microorganisms – without the use of chemicals or the creation of harmful residuals. After its short, "few milliseconds" life, each radical becomes a water molecule. This process was described as a "from nature to nature." We have 120 units sold and 30 in operation.

PureBallast involves no environmental or operational compromises. It produces radicals that neutralize organisms in ballast water. In pilot tests, onboard trials and during IMO certification, PureBallast has demonstrated the necessary biological efficiency. Since the system is also compact and flexible, it can be installed even in cramped engine room conditions or in areas that are otherwise difficult to utilize.

PureBallast has received full Ballast Water Type Approval from DNV, on behalf of Norwegian authorities. The certificate, which was issued on June 27th, 2008, confirms that PureBallast complies in full with pending ballast water treatment legislation from the International Maritime Organization (IMO).

Tank Cleaning: We offer tank cleaning units designed to keep the insides of tanks and storage holds clean by creating an optimized helical or criss-cross spray pattern to reach the whole tank in a fraction of the time.

Crankcase gas emissions: An estimated 3500 m3 of lube oil ends in the world's oceans every year by allowing crankcase gas containing oil mist from marine diesel engines to pass into the atmosphere un-cleaned. PureVent cleans the crankcase gas in high-capacity installations. The separated oil can even be re-circulated for use as lubricant. Cleaning efficiency is as high as 99.99% for a capacity of 40 m3/hour and 98.5% at 150 m3/hour.

What do you see as the company's strengths?

Our number one strength – without doubt – is our people. We strive to deliver expertise and experience to the customer. In addition, we have products that have promoted a sustainable environment for over 125 years. From the beginning, Alfa Laval's products have been designed for minimizing waste and optimizing efficiency. There is reward in selling a product that you know will be optimal for both the customer and the environment. An ongoing and consistent focus on product research and development has been crucial in building, strengthening and developing the company's global market leadership. We have a program in place that we call "Time To Market," targeting reducing the time it takes to get our newest innovations to the customer to optimize their costs and processes.

What changes in the marine market have most dramatically affected the business of Alfa Laval?

The three changes that stand out the most for us are:

1. The demand in shipbuilding has declined
2. Globalization
3. Environmental awareness

How did the recent global economic downturn affect your business?

Although global economic growth experienced a dip during the past year, Alfa Laval expects that structural changes in the global environment will continue to drive long-term demand for the company's products: Growing energy needs, new environmental requirements and ongoing globalization are the driving forces expected to play the most crucial role.

How is Alfa Laval investing today?

Alfa Laval's investment strategy is 1) organic growth, especially with new products and technologies and 2) acquisitions. This means that Alfa Laval will undertake acquisitions and alliances that:

- strengthen our existing key technologies
- add new key products
- complement the existing business in terms of geography or in the form of additional ways to market.

Where do you see opportunities for growth?

As I mentioned previously, we see many opportunities for structural growth. The three dramatic marine changes mentioned earlier are also the three areas that stand out as having the greatest growth potential: The

demand in shipbuilding has declined; Globalization; and Environmental Awareness.

• **The demand in shipbuilding has declined:** Although demand in the shipbuilding industry declined sharply during the past year, the demand for Alfa Laval's specialized products, parts and services for ships will continue in the future. Separators used to clean fuel before it enters the vessel's engines and heat exchangers that produce freshwater are two of many examples. Our S and P separators to create a dual approach to fuel and lubrication oil treatment; the Eliminator for lube oil filtration is a full-flow back flushing system that bolts directly to the engine – eliminating cartridge filter disposal. Our onboard and land-based desalination units convert seawater into freshwater for the supply of high quality freshwater for domestic and process utilization. PureVent cleans the gas vented from engine crankcases to remove oil mist and other particles. Our ballast water treatment system offers chemical-free treatment that protects against the threat of invasive species, while staying true to the essentials of life on board: safety, efficiency, simplicity and ease of use. The system is available in an Ex version for potentially explosive environments. Our solutions are designed to meet and exceed rules and regulations.

• **Globalization**: Globalization has progressively intensified over the past century. With locations all over the world, Alfa Laval is ready to serve wherever – and whenever the customer requires – 24 hours a day, 7 days a week, 365 days a year.

• **Environmental awareness:** Demand for Alfa Laval's products is governed by an increasing need for energy-efficient solutions for various types of processes. Demands for efficiency have resulted in a technology shift, where our core competencies of heat transfer, separation and fluid handling provide the solution. Our equipment and separation systems not only take up less space, they also reduce energy consumption and emissions, enabling a payback period that is often well under one year.

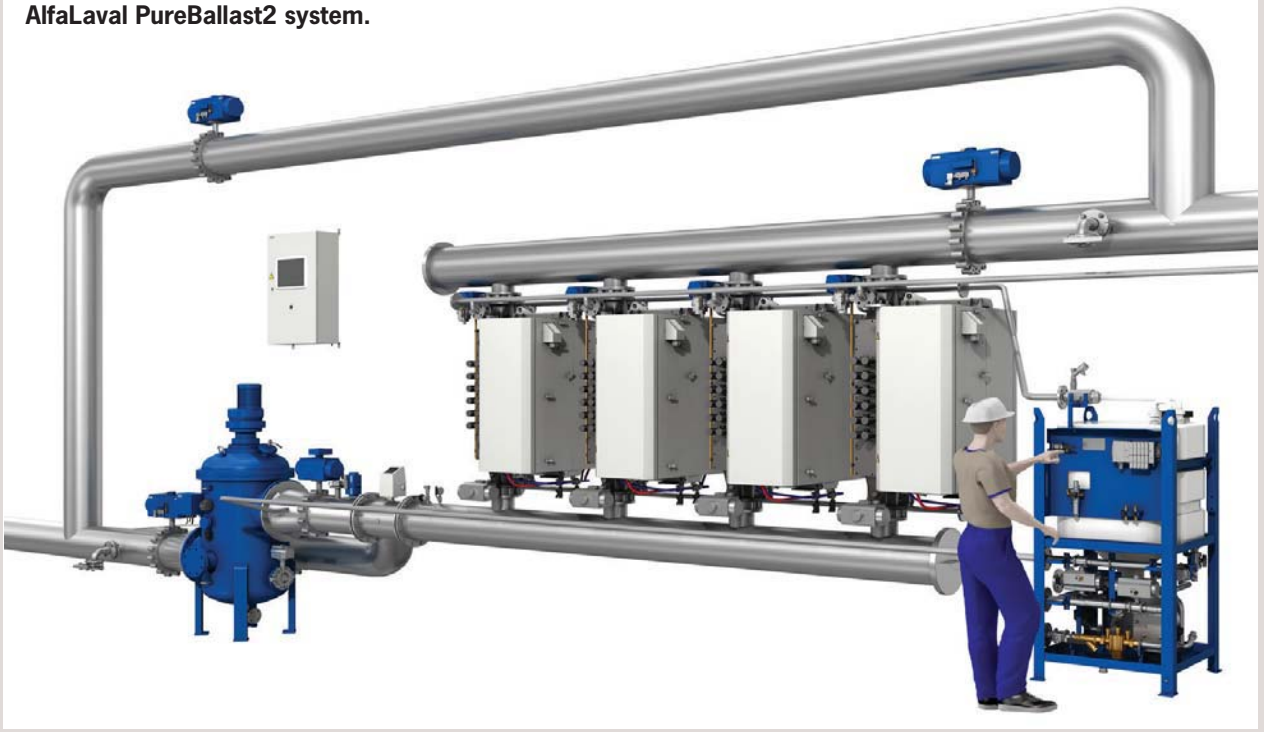
What do you count as the top challenges to expanding Alfa Laval's market penetration?

The marine industry is global by nature, so those challenges that some companies face are opportunities for us. We serve ports worldwide – with field and customer service available 24 hours a day, seven days a week to support our customers when and where they need it. We like to call it "glocal" – global and local service.

Discuss a few case studies which you think best exemplify your company's range and success.

Well, a few cases come to mind that give a snapshot of not only our commitment to optimizing the customers process, but also our commitment to promote a sustainable environment. **Recently we received a PureBallast order for a demanding naval application. This particular order involves two PureBallast systems for the Royal Australian Navy – confirming that PureBallast is fully capable of meeting the strict requirements of naval applications.** The two Australian systems are the first PureBallast installations for naval use, and are fitted aboard the Australian LHD (Landing Helicopter Dock) vessels built by Spanish shipyard Navantia Ferrol. Vessels of this type, which allow flexible deployment of smaller land vehicles and helicopters, are of strategic interest as Australia and other nations shift their military focus from territorial defense to international response and peacekeeping operations. Each has a treatment system flow of 250 cu. m./hr. We worked together with a prominent barge company in the US to design, test and outfit their full fleet with fuel and lube oil purification, crankcase gas cleaning, and heat transfer solutions for full optimization of their processes and costs. These solutions also eliminated the high cost of maintenance – and greatly reduced the related man-hours. In combination with the company's focus on the concept of imparting zero harm, they also wanted to achieve a solution that posed fewer risks to the environment. By eliminating cartridge filter disposal, reducing engine emissions by removing oil and particles from crankcase gas, and optimizing the engine room – the barge company achieved their goal for optimal cost and process efficiencies while supporting a sustainable environment.

AlfaLaval PureBallast2 system.



Incat to Build LNG-Powered Fast RoRo

Incat won a contract to build what it reports to be world's first high speed passenger RoRo powered by LNG. The 99m high speed ferry, with capacity for more than 1000 passengers and 153 cars, is being built at the Incat Tasmania shipyard at Prince of Wales Bay in Hobart for delivery in 2012 to an unnamed customer. Incat and Revolution Design engineers are working with technical personnel from GE in Europe and the U.S. on this project, which will be the first installation of LNG powered dual fuel engines in an Incat high speed ferry, and the first high speed craft built under the HSC code to be powered by Gas Turbines using LNG as the primary fuel and marine distillate for standby and ancillary use. In each catamaran hull a GE Energy LM2500 Gas Turbine will drive a Wärtsilä LJX 1720 waterjet, a departure from the usual use of two engines and two jets per hull as used in the diesel powered Incat vessels. The GE Energy LM2500 Gas Turbines are to be modified to meet class requirements so that either LNG or marine distillate can be burned.

Demand for Offshore Vessels will Drive India

According to new analysis from Frost & Sullivan, the shipbuilding and repair market in India is poised to pick up momentum with the increasing penetration of Indian shipbuilding companies in the offshore vessels (OSVs) segment. Indian companies have established strong credentials in the building and repair of OSV, resulting in a spike in orders for such vessels from the Indian industry. The limited capacities related to OSVs in leading shipbuilding nations such as Japan and South Korea are resulting in diversion of orders to India, driving up the fortunes of the Indian shipbuilding and repair market.

The market earned revenues of $1.6b in 2010 and expects this to reach $3.5b in 2016.

"About 40 percent of the India-owned fleet is more than 20 years old, and Indian owners will need to spend about $4 billion to replace these during 2010-2015," said Frost & Sullivan Transportation & Logistics Program Manager Srinath Manda. "In addition, the International Maritime Organization (IMO) has mandated the phasing out of all single-hull vessels by 2010, and single hull tankers constitute about 15.8 percent of the total vessels owned by Indian shipping companies."

The Indian Government is encouraging greater private participation in the sector ... the Government is also facilitating improvements in port and infrastructure facilities and easing regulations and taxes to assist the industry ...

The future of the Indian shipbuilding and repair market looks promising and is likely to double in size in the next five to six years. The growth potential is further enhanced with the Indian Government aiming for the nation's shipbuilding sector to attain a 5 percent share in the global market by 2017.

Although the outlook for the market is bright, there are some challenges clouding its landscape. "India has a vast coastline, but there is an acute shortage of deep draft water space along the coast," said Srinath. "This restricts the type and size of ships that can be built or repaired in India, thereby severely curbing the full growth potential of the Indian shipbuilding and repair market."

The Indian Government is encouraging greater private participation in the sector and a new world-class commercial shipyard is being built on the eastern coast. These factors will rev up growth prospects for the market. The Government is also facilitating improvements in port and infrastructure facilities and easing regulations and taxes to assist the industry in addressing the challenges and overcoming its barriers. Participants in this space are striving to gain a foothold in the small and special category vehicles segment, such as offshore vessels to optimize business traction.

Orders Pour in at Pipavav Shipyard

Pipavav Shipyard, India's largest shipyard and rated as the world's sixth largest shipping facility, is flush with orders and the number is growing dramatically. However, Pipavav has yet to make a debut on the delivery side though there is no definite day fixed for its first delivery.

Anil Tiku, General Manager of Pipavav Shipyard Ltd. confirms that they are getting ready with a series deliveries but he would not commit on the likely date when this is likely to happen.

"The first delivery will take place in the coming year" he says. He also confirmed that the company was in talks for more contracts and the deals would be clinched soon.

Pipavav's order book boasts of 22 Panamax bulk carriers with capacity of 74,500 DWT each for delivery by 2012 to various European consortia. One of these would be of Ice Class. They have orders for six offshore support patrol vessels and contract for another 12 offshore vessels for the Oil & Natural Gas Corporation Ltd (ONGC) is being finalized.

Recently it signed a memorandum of understanding (MOU) for defense co-production with the Swedish group SAAB Dynamics AB, a part of Wallenberg Group. This partnership offers access to SAAB's cutting edge technology for production in the defense and aerospace sectors. With this Pipavav Shipyard would be able to cater to the entire gamut of the defense services sector.

Pipavav also signed a protocol with Rosoboron Export State Corporation for constructing war ships under Russian collaboration, technology and supervision at its yard. Under the pact, four additional Stealth frigates will be constructed in collaboration with the Russian firm at the company's shipyard. The agreement will help Pipavav develop technology to build frontline warships on a cost-effective basis. The agreement covers mid-life updates, dry docking repairs and modernization of submarines of Russian origin in use by the Indian navy

Pipavav Shipyard is located within the vicinity of Pipavav Port, on the West coast of India. It was initially conceived as a ship dismantling yard. For this purpose, the yard was developed with two large wet basins each measuring 680 meters length and a respective width of 60 meters and 65 meters. These are among the largest wet basins built in the world. Given its size, Pipavav Shipyard has the potential to become one of the largest shipyard complexes in the world.

Having thefirst eco-friendly dockyard facility in the world for dismantling/repairing ships its yard has achieved the distinction of being one of the five largest docks in the world and largest in the country, and will therefore be equipped to handle almost any size of ship. The project is inherited with various unique features in its design, location, facilities, size, integration, environment compliant, funding, etc.

— Joseph Fonseca, Mumbai

NSPRP Project Book

The National Shipbuilding Research Program Project Book Winter 2010 edition is now available. The Project Book was created as a concise compilation of both major and panel projects funded under the Program with the goal of increasing awareness of ongoing work under NSRP, stimulating interaction among project teams, and accelerating transfer of technology throughout the U.S. shipbuilding and repair industry. **http://www.nsrp.org**

Daewoo Expects 18% Jump in Offshore Orders

According to a report from Bloomberg, Daewoo Shipbuilding & Marine Engineering Co., the world's third-largest shipyard, expects orders for drilling vessels and offshore platforms to increase 18% this year, helped by higher fuel prices.

General Maritime Sells Tankers

General Maritime Corporation entered into an agreement to sell three product tankers, the 2004-built Genmar Concord, the 2005-built Stena Concept and the 2005-built Stena Contest, to affiliates of Northern Shipping Fund Management Bermuda, Ltd., an alternative capital provider to the shipping and offshore oil service sectors. General Maritime was to receive net proceeds totaling $61.7m for the sale of the three vessels. The sale will fulfill the requirement under the amended bridge loan, which is expected to be repaid in the current first quarter of 2011.

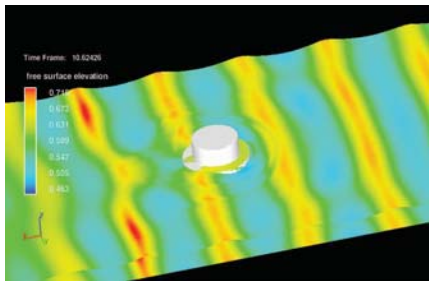
The sale is subject to the leaseback of the vessels under bareboat charters to be entered into with the purchasers for a period of seven years at a rate of $6,500 per day per vessel for the first two years of the charter period and $10,000 per day per vessel for the remainder of the charter period.

As part of the agreement, General Maritime will have options to repurchase the vessels for $24 million per vessel at the end of year two of the charter period, $21 million per vessel at the end of year three of the charter period, $19.5 million per vessel at the end of year four of the charter period, $18 million per vessel at the end of year five of the charter period, $16.5 million per vessel at the end of year six of the charter period, and $15 million per vessel at the end of year seven of the charter period.

Safe Producton & Transportation of Offshore O&G via

Accurate Numerical Simulations of Environmental Loads

Oceanic Consulting Corporation signed a contract with the Atlantic Canada Opportunities Agency (ACOA), entitled "Accurate Numerical Simulations of Environmental Loads for the Safe Production and Transportation of Offshore Oil and Gas." This contract will allow Oceanic to develop engineering software tailored to the needs of the offshore oil and gas industry specializing in harsh environments, which includes ice-covered water and extreme waves. The objective is to accurately predict the forces and resulting motions acting on complete offshore systems (such as drill ships, FPSOs, semi-submersibles, spars, support vessels, and shuttle tankers). Through this initiative, Oceanic will work to address specific and immediate technical challenges of oil and gas exploration and production in harsh environments. The global challenges of the performance of marine vessels in the offshore petroleum industry are reflected in Atlantic Canada: the impact of wind, water, and ice on the motions and loads of moored or moving structures; safe passage for tankers and Liquefied Natural Gas (LNG) carriers between production site and shore terminal/refinery; and safe berthing and maneuvering of vessels in harsh and/or confined waters. Oceanic sees tremendous potential for the growth of business in numerical simulation, and this development work has already resulted in several commercial contracts which would have been impossible to complete without this support from ACOA.



A Strong 2010 at

Sinopacific Shipbuilding

It might be hard to judge now if the global shipbuilding industry is recovering, but an encouraging story is taking place in China in 2010. According to Clarkson Research Services, China has overtaken Korea as the world's top shipbuilder in the first half of 2010 and kept ahead in terms of three major industry indicators, including new orders, order backlogs and delivery. Sinopacific Shipbuilding Group – a leading private Chinese company – is a significant engine driving the industry.

According to the data, till the end of November 2010, Sinopacific Shipbuilding delivered 54 vessels in 2010, and completion DWT amounted to 1.8 M. In terms of order backlogs, there are nearly 4.2 M DWT in the pipeline. As a highlight of these achievements, Sinopacific had signed a frame agreement with Bourbon in June worth $1b for building 62 offshore vessels. "In light of our clear corporate position of 'perfection in simple products, leadership in niche markets', we provide unique value to our clients. With a strategic international vision and strong integration capacity, Sinopacific wins trust and many partnership opportunities from overseas." Simon Liang, CEO of Sinopacific Shipbuilding Group said.

In the coming 2011, Sinopacific Shipbuilding Group expects to improve its production efficiency by producing 24 vessels in one dock in one year. There will be more milestones for group's development. In the first quarter of 2011, the 100th OSV and several 1st vessels, including SX130, GPA696, PX105 OSVs and 1st Crown 118 bulk carrier, are scheduled to be delivered; the steel cutting of the new designed Crown 63 bulk carrier.

Chinese Yard Logs LNG Ship Orders

Exxon Mobil and Mitsui O.S.K. Lines (MOL) selected Hudong-Zhonghua Shipbuilding (Group) Co., Ltd. (Hudong), a subsidiary of China State Shipbuilding Corporation, to build four LNG carriers in China. These carriers will provide LNG transportation from the Papua New Guinea (PNG) and Gorgon Jansz LNG projects and will be jointly owned by MOL and China Shipping (Group) Company (CS). On hand for the ceremonial signer were Zhang Guobao, vice chairman, National Development and Reform Commission, and minister, National Energy Administration; Mark Albers, senior vice president, Exxon Mobil Corporation; Akimitsu Ashida, chairman, Mitsui O.S.K. Lines, Ltd.; Zhang Guofa, vice president, China Shipping (Group) Company; Tan Zuojun, president, China State Shipbuilding Corporation and Wang Yong, president, Hudong Zhonghua Shipbuilding (Group).

Onboard performance

Worldwide experience

PureBallast 2.0 gives you more

When ballast water treatment regulations take effect, you'll want a mature technology to meet them.
PureBallast 2.0 is the second generation of Alfa Laval's market-leading ballast water treatment system, which means it's even better adapted to your vessel's real-life needs.
Reduced power consumption, more responsive control and a PureBallast 2.0 EX version for explosive onboard environments are just a few of the new advantages.

By choosing PureBallast 2.0, you choose the world's most experienced supplier in ballast water treatment. Behind the updated system are thousands of hours of experience, logged both with shipyards and out at sea.
In addition, you select a global working partner. With a far-reaching organization and a worldwide network of harbour support, Alfa Laval can provide the parts, service and true peace of mind you need.

ALFA LAVAL

www.alfalaval.com/pureballast

Book Review

Cost Management in Shipbuilding

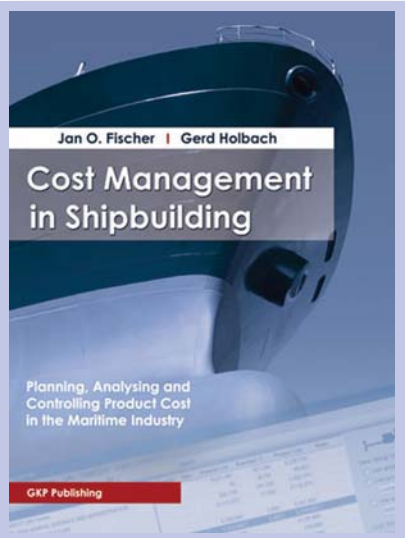
Global competition in the shipbuilding industry, which is continuously intensifying due to the entry of developing countries into the shipbuilding market, leads to decreasing margins and enormous cost pressure in this industry. Many shipyards have already gone bankrupt through the inability to keep to their original budget that the offer was based on. In the naval sector it is not unusual to double the originally estimated costs when building the vessel. The first oil crises in the 1970's and later oil price increases have substantially increased the importance of operating costs and the life cycle costs. Even if the significance of operating costs has sometimes temporarily waned in the face of periodic price reductions, the current state of limited resources now requires the integration of the entire life cycle of a ship into cost management. These circumstances are forcing shipyards to implement effective cost management during product development and manufacture. However, the difficulty in shipbuilding cost management is that the majority of costs for a ship have already been defined before the start of production. Therefore, a cost management system implemented during the initial design and design engineering phases is especially effective. The information about estimated costs for the ship and its elements, such as components or systems, should be obtained and incorporated into the decision-making process in order to capitalize on its potential. In reality, however, the available cost information at the beginning of the project is usually incomplete and imprecise, making cost management during the early phases highly complex and elaborate. Simultaneously the pressure of time limits leads to difficulties with determining exact and robust cost information. Last but not least, the existing data base, generated in past projects, is far from complete, caused by the lack of an integrated system for managing and providing the cost information. Therefore, the shipbuilding process requires special cost management procedures.

Against this background the authors of the book "Cost Management in Shipbuilding" demonstrate how effective cost management methods and processes strengthen and ensure a manufacturer's competitiveness in the maritime industry. To do so, the authors first provide an overview of the current state of cost management in the shipbuilding industry, presenting the relevant terminology and methodological principles and showing the weak points in current methods, processes and systems. The book then shows how planning, analysis and management of costs should ideally occur. This takes place with a main focus on the cost management system "costfact". This system has been developed specially for the maritime industry and enables users to capitalize on the enormous potential arising from cost-oriented design and engineering. The chapters of the book contain the following procedures, methods and the corresponding support the costfact system offers:

- Planning of the costs according to the ship's building structure.
- Cost estimations for new projects based on existing calculations by deriving the costs of new objects from those of existing components and assemblies.
- Parametric cost estimation: Determining cost functions, based on a statistical examination and validation of the technical and economical characteristics of existing objects.
- Structured and simplified specification creation which is supported by the costfact system's ability of importing, structuring and working on specifications as well as checking the consistency of specifications and cost prognoses.
- Risk analysis to calculate the extent to which future real costs could deviate from forecasted costs.
- Cost driver analysis based on Pareto's law to determine the cost drivers that have the biggest influence on these costs.
- Analysis of the costs caused by a change in the customer demands.

An advantage of the costfact system which is described in this context is that it supports cost management throughout all project phases. Cost planning and control can be carried out at various analysis levels based on the information available. Various sources of cost information for the different levels can be utilized, such as calculated planning values or actual costs from previous and current projects.

In addition to optimize production costs incurred before the ship is operational, managing life cycle costs is also key in shipbuilding. Life cycle costs are the various costs the product user incurs through the purchase and utilization of the product. Since, a ship's purchase price often (depending on the ship type) comprises only a small portion of the total life cycle costs for the customer, it is not enough to only optimize production costs. When evaluating design concepts, shipbuilding companies should also take the sometimes contradictory effect on production costs vs. life cycle costs into account as well as how any adjustments will be perceived by the customer. The authors describe how life cycle costs can be calculated based on an estimation of all expenses in the ship's life cycle. In this context a focus is on the comparison of alternative projects respectively technical variants of a project. Moreover, the consideration of effects by uncertainties of the in-service phase parameters is illustrated in detail. The book is based on knowledge, which the authors gained by more than 10 years experience in industrial cost management and shipbuilding and addresses specialists confronted with the practical challenges of cost management in everyday business.



Cost Management in Shipbuilding - Planning, Analysing and Controlling Product Cost in the Maritime Industry,
by Jan O. Fischer, Gerd Holbach,
- GKP Publishing, Cologne 2011
196 p. 101 ilus.,
ISBN: 978-3-00-033225-8,
Price: 54.95 €

STANDARD OF EXCELLENCE

- GLOBAL SALES AND SUPPORT
- EXTENSIVE RANGE OF PRODUCTS AND SERVICES
- ONGOING PRODUCT DEVELOPMENT

CLOCKWISE FROM TOP LEFT

DAMEN STAN PATROL 4708 - BUILT UNDER LICENSE BY BOLLINGER SHIPYARDS
DAMEN PLATFORM SUPPLY VESSEL 7216
DAMEN STAN TUG 2909
DAMEN STAN PATROL 2600 - BUILT UNDER LICENSE BY BOLLINGER SHIPYARDS
DAMEN OFFSHORE PATROL VESSEL 950
DAMEN FAST CREW SUPPLIER 5009

DAMEN

DAMEN SHIPYARDS GORINCHEM

Member of the DAMEN SHIPYARDS GROUP

Industrieterrein Avelingen West 20
4202 MS Gorinchem

P.O. Box 1
4200 AA Gorinchem
The Netherlands

phone +31 (0)183 63 91 74
fax +31 (0)183 63 77 62

americas@damen.nl
www.damen.nl

Recent Ship Sales

(Source: Shipping Intelligence, New York, NY)

Date	Name	DWT	YB(age)	Price
Bulk Carriers				
12/28/10	AL JABER 18	18,297	94(16)	$8.000
12/17/10	AROSA	20,001	02(8)	$17.500
12/08/10	SALVADORA	21,274	07(3)	$15.000
12/08/10	SEVERINA	21,274	07(3)	$15.000
12/17/10	ACACIA N	23,193	78(32)	$2.400
12/28/10	ABDUL	23,821	85(25)	$6.100
12/08/10	ENFORCER	26,338	92(18)	$12.500
12/17/10	PHOENIX ISLAND	28,655	96(14)	$18.000
12/08/10	DARYA TAAL	29,971	98(12)	$19.000
12/28/10	PFS KESHAVA	31,850	80(30)	$4.200
12/28/10	CS GREEN	32,395	03(7)	$23.500
12/28/10	ACTOR II	32,401	10(0)	$32.500
12/28/10	APOLLONAS	32,401	10(0)	$32.500
12/17/10	ATTRACTIVE	41,524	85(25)	$9.100
12/17/10	GRAND GLORY	48,437	01(9)	$25.000
12/17/10	SAFFRON	50,341	04(6)	$28.000
12/17/10	WESTERN OSLO	56,548	08(2)	$38.000
12/17/10	PRIMERA	72,495	98(12)	$26.800
12/28/10	COAL AGE	72,861	97(13)	$26.300
12/08/10	MARITIME DIGNITY	73,350	93(17)	$20.400
12/17/10	IRON BROTHERS	151,511	91(19)	$19.500
12/28/10	FORMOSABULK ENERGY	170,089	02(8)	$43.500
12/17/10	HANIN GLADSTONE	207,009	90(20)	$23.500
01/19/11	OCEAN WALKER	18,040	81(30)	$2.100
01/17/11	FANI	23,245	87(24)	$7.000
01/13/11	SEVEN OCEAN	23,948	96(15)	$14.000
01/12/11	THOR CAPTAIN	25,082	83(28)	$3.800
01/12/11	ANDRONIKI	29,159	84(27)	$6.000
01/17/11	WADI HALFA	31,948	85(26)	$7.300
01/17/11	ALWADI AL GADEED	31,957	85(26)	$7.300
01/12/11	EL CONDOR PASA	33,476	01(10)	$22.000
01/24/11	ADELINE DELMAS	33,504	86(25)	$6.500
01/24/11	DELPHINE DELMAS	33,520	86(25)	$6.500
01/24/11	CAROLINE DELMAS	33,611	86(25)	$6.500
01/24/11	BLANDIN DELMAS	33,660	86(25)	$6.500
01/12/11	JORITA	36,663	85(26)	$8.400
01/19/11	SIAM PEARL	38,023	83(28)	$5.300
01/12/11	MARYBELLE	42,569	87(24)	$10.500
01/17/11	ANTONIS	45,090	84(27)	$8.300
01/26/11	JIN MING	45,564	82(29)	$7.500
01/19/11	BEST FORTUNE	63,179	82(29)	$5.800
01/12/11	SUN	63,251	83(28)	$6.000
01/12/11	FIVE STARS UNION	64,135	82(29)	$6.200
01/12/11	KIRTI	68,255	86(25)	$10.000
01/26/11	PACIFIC EAGLE	73,592	04(7)	$35.200
01/24/11	NORDSTAR	150,661	83(28)	$14.600
01/12/11	CASTILLO DE GORMAZ	153,572	89(22)	$17.000
Chemical Carriers				
12/17/10	PLEVNE	6,937	05(5)	$12.000
12/17/10	EBONY	12,512	86(24)	$2.400
12/08/10	CHEM TAURUS	19,399	00(10)	$15.000
12/08/10	STOLT NANAMI	19,932	03(7)	$22.500
12/17/10	VEGA SPIRIT	22,820	01(9)	$12.500
12/28/10	FORMOSA FOUR	35,672	91(19)	$6.100
12/17/10	PAYAL	37,159	07(3)	$27.500
12/17/10	ALAM BITRA	45,513	99(11)	$18.000
01/12/11	SUN CROWN	1,999	87(24)	$1.500
01/19/11	SHINY DEE	6,050	07(4)	$8.500
01/12/11	TJORE ELIEZER	9,220	08(3)	$5.800
01/13/11	STELLAR ACACIA	12,000	10(1)	$25.000
01/17/11	FAJA DE ORO II	44,999	95(16)	$12.000
Containerships				
12/08/10	POSITANO	22,878	96(14)	$39.900
12/17/10	DUBURG	26,288	90(20)	$6.000
12/08/10	FRISIA KIEL	33,847	04(6)	$36.000
12/28/10	EURUS OTTAWA	34,380	89(21)	$5.700
12/28/10	EURUS OSLO	34,380	89(21)	$5.700
12/17/10	FOURTH OCEAN	82,200	10(0)	$75.000
01/19/11	SUDERTOR	5,364	00(11)	$4.300
01/19/11	HAL ALEXANDRA	8,350	96(15)	$7.200
01/12/11	MERKUR LAKE	12,576	84(27)	$7.500
01/26/11	SINAR BANTAN	14,971	02(9)	$13.600
01/26/11	ASIAN TRADER	22,735	91(20)	$7.000
01/24/11	TAICANG DRAGON	34,325	08(3)	$28.800
01/12/11	OOCL XIAMEN	43,093	03(8)	$26.600
Gas Carriers				
12/28/10	BOUGANVILLE	4,867	01(9)	$12.500
Reefers				
12/28/10	SPICA	7,000	91(19)	$3.400
01/17/11	FIONA	5,232	86(25)	$1.600
RoRo				
12/17/10	MED VISION	6,704	81(29)	$2.000
12/17/10	STRAIT OF GIBRALTAR	10,800	10(0)	$86.800
12/17/10	STRAIT OF DOVER	10,800	10(0)	$86.800
01/13/11	PARNAVERA	3,300	03(8)	$12.500
01/17/11	OMO WONZ	3,500	81(30)	$1.400
Tankers				
12/08/10	SAN GIORGIO	4,600	97(13)	$5.000
12/17/10	ATORA	28,610	91(19)	$6.000
12/17/10	ARAEVO	28,610	91(19)	$6.000
12/28/10	ISOLA VERDE	36,457	94(16)	$10.500
12/28/10	LYRA PIONEER	45,985	03(7)	$21.600
12/17/10	NORTHERN DAWN	47,000	03(7)	$19.800
12/28/10	CE-EXPRESS	69,998	90(20)	$7.500
12/17/10	FORMOSAPRODUCT COSMOS	70,426	05(5)	$31.000
12/28/10	SUMMIT AUSTRALIA	73,427	09(1)	$43.400
12/17/10	DOMUS AUREA	107,197	03(7)	$32.000
12/17/10	JUANITA	126,491	88(22)	$12.000
12/08/10	RUBY III	274,990	90(20)	$16.300
12/17/10	ASCONA	307,151	99(11)	$55.000
01/24/11	VANGUARD	47,059	92(19)	$9.000
01/24/11	SPOTLESS	47,084	91(20)	$7.000
01/24/11	DOUBTLESS	47,086	91(20)	$7.000
01/19/11	FREJA SCANDIA	53,540	10(1)	$40.000
01/24/11	SUMMIT AFRICA	73,427	09(2)	$42.300
01/24/11	TAMARA	95,793	90(21)	$9.000
01/24/11	GENMAR PRINCESS	96,648	91(20)	$8.000
01/17/11	OPAL QUEEN	107,181	01(10)	$34.000
01/27/11	PACIFIC SPIRIT	113,000	08(3)	$54.500
01/13/11	SFAKIA	250,267	86(25)	$16.000
01/12/11	GRAND	263,097	94(17)	$20.000
01/12/11	FRONT SHANGHAI	298,971	06(5)	$91.300
01/13/11	SUNRISE JEWEL	302,440	92(19)	$36.000
01/13/11	GRAND SEA	310,444	08(3)	$99.900

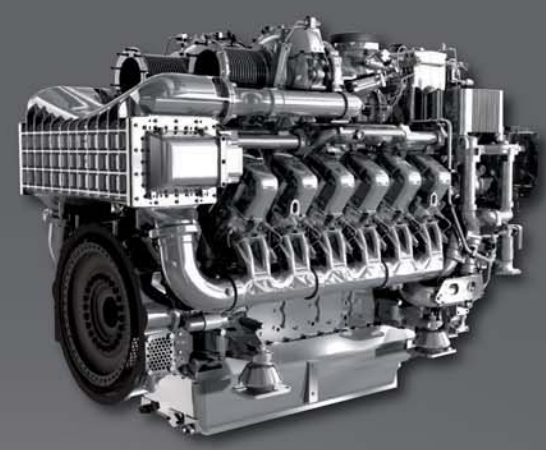
Prepared by SHIPPING INTELLIGENCE, INC., New York

Hickman Rowland,
President
Wilmington Tug, Inc.
New Castle, Delaware

MTU – A Tognum Group Brand

I'M ONE OF THE IRONMEN.

"My family has been in the shipping business on the Delaware River for at least 200 years. If we don't have reliable engines we don't have a business. So we have to have virtually 100% reliability. And with MTU we've found that at this point, quite frankly."



IRONMEN: BUILT TOUGH TO TAKE IT.

MTU SERIES 4000 WORKBOAT EDITION

www.mtu-ironmen.com

Power. Passion. Partnership.

MES Delivers M/V Fortune Wing

(Photo courtesy Mitsui Engineering & Shipbuilding Co., Ltd.)

Mitsui Engineering & Shipbuilding Co., Ltd., (MES) delivered a 56,000 dwt type bulk carrier M/V Fortune Wing (MES Hull No. 1759) at its Tamano Works on January 12, 2011 to White Citron Shipping S.A., Panama. This vessel is a handy-max type bulk carrier of 56,000 dwt with a huge cargo hold capacity over 70,000 cu. m. and marks the 116th ship of its series. This 56,000 dwt type bulk carrier series of MES is widely called Mitsui's 56. More than 160 units of this series have been ordered from MES.

Length, o.a .....623.3 ft
Length, b.p. .....597.1 ft
Breadth (molded).....105.8 ft
Depth (molded).....58.7 ft
Gross Tonnage 31,248
Deadweight .....55,650 metric tons
Main Engine.....Mitsui-MAN B&W Diesel
.....Engine 6S50MC-C x1set
Maximum Continuous Output.....9,480 kW
.....x 127.0rpm
Service Speed.....14.5 knots
Complement.....24 persons
Classification Society.....KR Flag Hong Kong
Date of Delivery.....January 12, 2011

Construction Begins on Washburn & Doughty Hull 101

Image courtesy Washburn & Doughty Associates

Washburn & Doughty Associates, Inc. of East Boothbay, Maine began construction of a 93-ft by 38-ft, 6,000 hp Z-Drive tug for Moran Towing Corporation of New Canaan, Conn. Washburn & Doughty is building the vessel to its newest in-house design based on the yard's previous 92-ft by 32-ft design, of which there are 22 tugs in operation. The increased length and beam will allow for increased horsepower while maintaining the maneuvering characteristics and handling capabilities. The tug will be powered by two MTU M63L16 cylinder series 4,000 main engines each rated at 3,000 bhp at 1,800 rpm. The propulsion units will be Schottel model SRP 1515 FP drives, equipped with stainless steel propellers.

Ocean Empire LSV

A 44m Solar Hybrid Superyacht

The Ocean Empire LSV (life support vessel) is a 44m Solar Hybrid Superyacht with 2 Hydroponic farms and fishing facilities to harvest the sea. Her solar powered propulsion systems and all the Hotel amenities of a luxury global voyager are supplied by harnessing three major sources of sustainable of energy. The first and foremost source of energy is from the Sun which powers Solar Cells (covering the entire surface of the vessel) while at the same time illuminating 2 Hydroponic farms.

The second source is energy from the Wind which powers an auxiliary automated SkySail that drives the Ocean Empire to 18+knots while charging her GM ESS2 batteries through power sailing KER.

The third source is energy from Waves captured through Motion Damping Regeneration (MDR). A new form of ATMD (Adjustable Tuned Mass Damper) developed in collaboration with Maurer Sohnes Gmbh

The MDR system is basically an ATMD utilized in skyscrapers such as Taipei 101 to reduce their swaying motion. In this application 16 tons of batteries are the Mass while linear generators produce up to 50 kws of electricity as they dampen the motion of the vessel.

"The Ocean Empire life support Superyacht liberates the Superyacht community from its strict dependence on unsustainable resources by harnessing the renewable collective power ever present in the Earths Biosphere," said Richard Sauter head of design.

The Ocean Empire LSV is positioned as a state of the art Superyacht catamaran. As such her Green Tech innovations are able to optimize what is easily the most dynamic form of ocean going platform. Her Daimler Turbo Compound BueTec engine is the most advanced EPA Diesel ever built. Her Sunpower Solar Cells are the most efficient to date as are her Voith Surface Drives.

Existing OEM technology present in the Ocean Empire LSV;

- Daimler Turbo Compound DD16 Electric Power Generation
- SkySail Automated Traction Kite
- SunPower Solar Cells
- GM Allison Electronic Controller (KER) (Kinetic energy regeneration)
- Maurer Sohnes Gmbh Motion Damping Regeneration. (MDR)
- Voith Turbo Advanced Propulsion Surface Drives
- Carbon Composite Wave Piercing Hi-efficiency displacement hulls
- Advanced Aerodynamic Radar Canopy with PV Wing Spoilers
- Energy Efficient Equipment, AC & Refrigeration with Waste Heat Recovery
- Plug-in Computerized Energy Management, Maintenance & Guidance.
- GM Allison ESS2 Battery Storage UPS rated at 2,000Kwh.

The innovative yacht design incorporates many of the latest Renewable Energy devices, designed to derive power from the sun, the wind and the waves.

(Images Courtesy: SauterCarbonOffsetDesign.com)

Ocean Empire LSV Specifications:

Length 44m
Beam 15.5m
Draft 0.8m
Guests 10
Crew 8
Tonnage .....<85tons
2 Hydroponic farms 30sq.m
SkySail 200kw
SunPower .....solar cells , 70kw
Maure Sohnes MDR 50kw
Daimler DD16 Diesel Electric power generation350kw
Siemens AC induction motors 300kw
Voith propulsion surface drives 1.5m
Fuel: Diesel/GM ESS2 batteries 20t/2,000kwh
Maximum speed .....18+knts
Cruising speed .....12+knts
Hybrid power sailing range at 18knts ....3,500+nm
Zero Carbon power sailing range
at 14 knots average .....Unlimited
Carbon Neutral power sailing range ...<12,000+nm
Zero carbon motoring range
at 10knts average .....Unlimited

For more details contact;
Richard@SauterCarbonOffsetDesign.com

MARITIME REPORTER AND ENGINEERING NEWS

Jan. 4 - May 10, 2011

www.maritimephotographs.com

First Annual
Don Sutherland Memorial

Maritime Photo Contest

Your photo could be published in the world's largest maritime magazine

This is the perfect opportunity to share your personal view of the maritime world. Candidates may enter as many photos as they like, in each of the five categories below. Entries can be submitted and viewed at:

www.maritimephotographs.com

The best entries from each category will be published in the June 2011 edition of Maritime Reporter and Engineering News. All photos will be hosted online, where voters will choose one overall Grand Prize winner. Votes must be entered by May 10 to be counted.

Established to honor the memory of Donald S. Sutherland, photographer extraordinaire.

Grand Prize:
Canon EOS Rebel Digital T1I 15.1 MP
w/18-55MM IS Lens
-SLR
-3.1x Optical Zoom
-SD/MMC Memory Card

Contest rules at http://www.maritimephotographs.com/rules-and-terms.asp

Sponsored By:

HMI Monitoring and Control

Building Blocks of a SCADA System

By Jim Martz, Governor Control Systems, Inc.

User interface is the most visible system component when it comes to equipment operation. From the steering wheel and instrument cluster on your vehicle's dashboard to the most complex industrial control system, the purpose is the same; it must allow human interface into a system. The interface must provide the user a means to control the equipment, provide feedback from the equipment to show operational conditions and alert us when something is wrong. And it should do these things efficiently, be easy to use, and visually and ergonomically pleasing. These concepts are the same in the case of industrial or commercial control systems, but the interface can be controlling a complex system or series of systems behind it.

There are many different terms for an interface into an industrial control system; however Human-Machine Interface (HMI) is the most widely used. HMI is most often defined as a system that provides a window into the operation of a single machine or simple network of multiple machines in a common control system.

HMI Hardware and Software

Today's HMI systems offer advanced hardware platforms with powerful software development suites to allow an engineer to create an interface completely customized to meet any system requirements. Modern HMI hardware can combine a touch screen interface with a fan-less cooling system, and integrated Windows-based operating system. Since the hardware is designed for installation in switchgear panels or other industrial environments often high in temperature and vibration, flash memory is utilized to eliminate the moving parts in a traditional hard drive, which improves robustness. The software suite provides an environment to create a customized series of screens for your application to allow simple control of the machine or system, display current and historical information, and alarm handling. In addition, more complex operations can be integrated such as data acquisition and graphical trending. Windows based operating systems easily interface to external programs such as Excel, which allows data to be manipulated for additional formatting and charting.

Remote Access

One of the most useful features of an HMI system is remote access via the Internet. This functionality allows an operator or plant manager to access the system from most computers with an Internet connection. Remote accessibility provides a convenient way to troubleshoot or control the system without maintaining full-time operator personnel - reducing cost, man-hours and, often, response time to a problem. Furthermore, with modern HMI systems, it may not even be necessary for any operator, regardless of location, to actively monitor the system. In the event of a warning or alarm condition, most systems can be set up to send an automatic e-mail or even a phone message via text to operations personnel.

An HMI can provide a window into one specific machine or local system, however many operations require greater capability for their facilities. HMI systems are usually building blocks in Supervisory Control and Data Acquisition (SCADA) systems: a higher-level system that incorporates multiple processes into one integrated package controlling and monitoring remote systems from a central location. Plant electrical systems can be monitored and controlled from the same interface as mechanical processes, fire systems, water and wastewater treatment, communications and alarm systems, HVAC and more.

SCADA Systems

Much has changed in the HMI/SCADA industry since the first systems began entering the market in the 1970s. We have come a long way from the days of individual Remote Terminal Units (RTUs), computer systems with bulky communication infrastructure and inefficient software interfaces. With developments in electronics design and communication protocols, today's systems are smaller, faster, more efficient, more configurable and scalable than ever. Smaller SCADA systems may consist of a single HMI, while larger systems can incorporate multiple HMIs, distributed I/O, and redundant communications networks with multiple controls or PLCs.

Monitoring and control are the functions of the SCADA system with individual processes under the control of a local system. In a power generation facility, for example, an engine or turbine control performs most functions, i.e. maintaining the speed of the prime mover or maintaining a process like air-fuel ratio or steam header pressure control. A generator control will maintain a base load power output or share the plant electrical load among multiple generators.

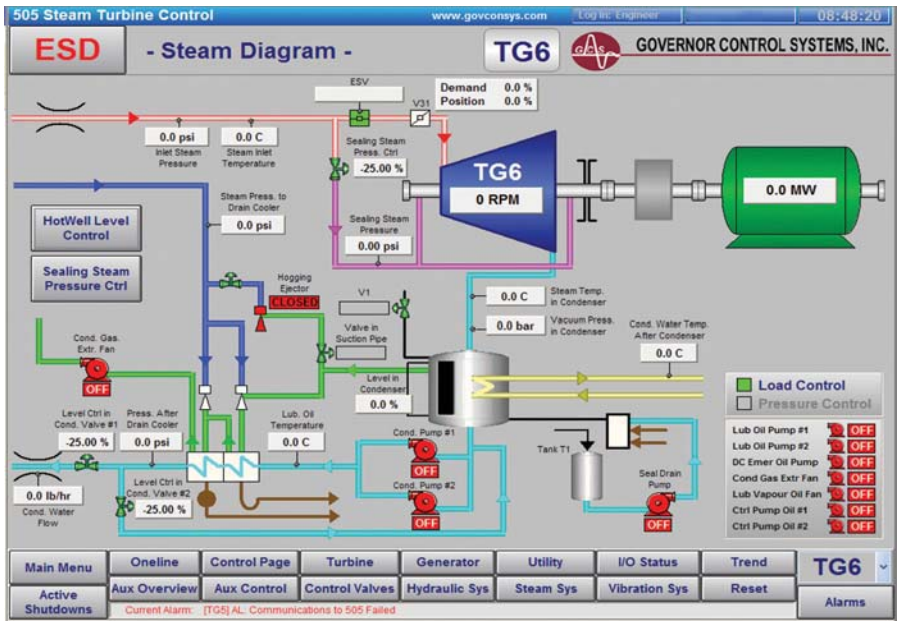
The SCADA system provides the operator with the interface through which a desired set point can be entered like a base load or process reference. These set points are then transferred to the local machine controls that perform the desired function. The SCADA system provides detailed information such as valve and circuit breaker positions, power flows, alarm conditions, and many other parameters, most of which can be used in graphical trending and historical data logging. The operator uses this information to determine if any changes need to be made, based on the operating conditions for the overall plant. The system also providing the user interface through which those changes are made.

The speed and efficiency at which this data is transferred has greatly improved with developments and standardization of communication protocols. Most hardware manufacturers now use open and non-proprietary protocols such as Modbus or OPC to enable system designers to easily integrate multiple controls or hardware platforms. Ethernet has become a widely used network for the interface between controls and HMI/SCADA systems, as many protocols that were originally developed for serial communications have been adapted for TCP/IP.

Today's HMI and SCADA systems are now more affordable as well. Smaller companies and organizations

can take advantage of the convenience these systems provide. If a project calls for the construction of a new facility with new communications infrastructure, it would be the ideal time to consider implementing a SCADA system. However, with the hardware and software available on the market today, systems have become more expandable than in the past. Organizations that do not have SCADA systems in their facilities or that have very simple small HMIs and are looking to either upgrade or expand their system have many implementation options. Some organizations choose to install single or multiple HMIs monitoring a dedicated machine or a single system in the facility. Others choose to implement a simple master station in a remote control room at first and add to the system over time. Control system integrators, such as Governor Control Systems, Inc. who offer HMI and SCADA systems as part of their product and service offering have experience in many applications across multiple industries. These companies develop a library of standard screens that can be applied to new projects. While every project and site is different and will require some custom work to be done, much of the development time is eliminated through the reuse of screens and concepts from past development. Taking advantage of this type of experience can not only result in a better system, but also eliminate some of the costs associated with installing and commissioning a SCADA system. Regardless of your industry, the benefits of SCADA systems are many. As with any investment, there must be a return. The savings that come from operating more efficiently will quickly offset the initial cost of installing a SCADA system. With the advancements in modern HMI and SCADA technology, your possibilities are endless, only dependent on your budget and imagination.

HMI Screen



About the Author
Jim Martz is an Applications Engineer for Governor Control Systems, Inc. Jim has engine control systems design experience with Caterpillar, Inc. and engine and power management systems experience with Woodward Governor Company. GCS offers comprehensive control system support, from engine and turbine systems integration to turnkey project management for a broad range of marine, power generation and industrial projects.
Email: Jim.Martz@govconsys.com

Quality Checking of CFD

How reliable is CFD?

Complementary to model testing, Computational Fluid Dynamics (CFD) has carved out a firm position in the MARIN portfolio. But when go or no-go decisions are at stake, the question naturally arises: how reliable is a particular CFD application?

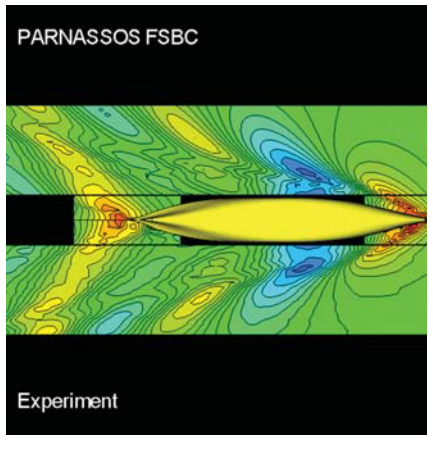
The advantage of CFD is that it gives insight into flow details, most of which are not directly revealed in a physical experiment. However, the CFD practitioner can do a lot of things wrong and even if he is careful, his model is not a perfect representation of the real world. To understand the consequent uncertainty of the results, a research field has evolved known as "Verification and Validation". MARIN's CFD team has taken an active part in this research, the greatest efforts been made by Luís Eça within the productive MARIN – Instituto Superior Técnico (IST) cooperation, which has now lasted more than 20 years!

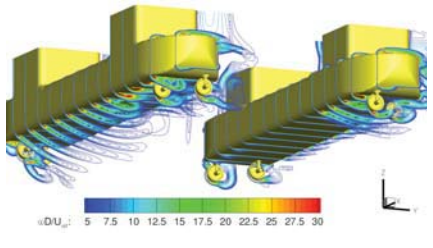
Validation

CFD is essentially the numerical solution of a mathematical model supposed to govern the behaviour of the flow past an object under proper boundary condition settings. That mathematical model typically contains simplifications and these introduce modelling errors. Validation checks the adequacy of the model and involves the comparison of numerical results with experimental data, taking the uncertainties of both into account.

..and Verification

Even if the mathematical model would be perfect, the results of CFD still have numerical errors. The process of estimating the numerical error of a computational result of a specific code is called "verification". Three error sources can be distinguished: round-off, iterative and

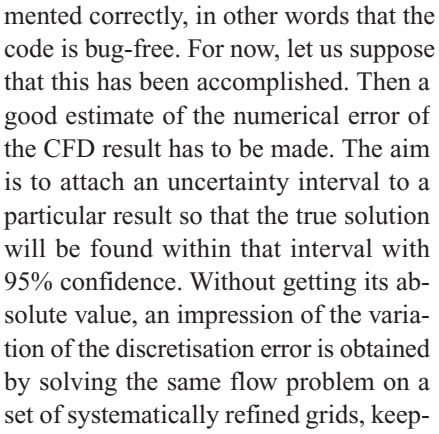


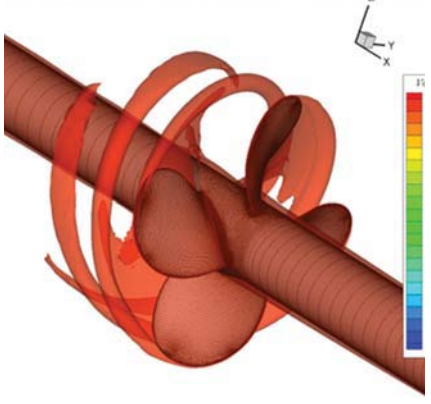


discretisation errors. Verification has two aspects: verification of the results of a CFD application and verification of the code. The latter is to make sure that the mathematical model has been implemented correctly, in other words that the code is bug-free. For now, let us suppose that this has been accomplished. Then a good estimate of the numerical error of the CFD result has to be made. The aim is to attach an uncertainty interval to a particular result so that the true solution will be found within that interval with 95% confidence. Without getting its absolute value, an impression of the variation of the discretisation error is obtained by solving the same flow problem on a set of systematically refined grids, keeping everything else the same. To avoid contamination of the results by the iterative error, the solution must be properly converged on each grid. Comparison of solutions on two grids is already informative but with solutions on three or more grids, procedures are available to estimate the uncertainty of the solution on any of the grids.

The validation process

Validation is more than plotting the results of CFD with experimental data on the same graph. Validity of the mathematical model can only meaningfully be checked after having established the uncertainty of both the numerical and experimental result. Incidentally, it may happen that a coarse grid solution is closer to the experimental data than a finer grid solution. This does not mean that the coarse grid is good enough. Numerical errors may have cancelled the modelling errors but their nature being different, they may well add up rather than cancel in the next application. Evidently, one cannot validate a code but only validate the results of a particular application against a corresponding experimental data set. What does this mean for practicing CFD? To get a good guess of the uncertainty, it seems hardly feasible to solve the flow in any application on several systematically refined grids. But a CFD group taking its work seriously will make verification and validation studies for representative flow problems time and again. That is what MARIN's CFD team does to make sure customers get value for money.





About the Author

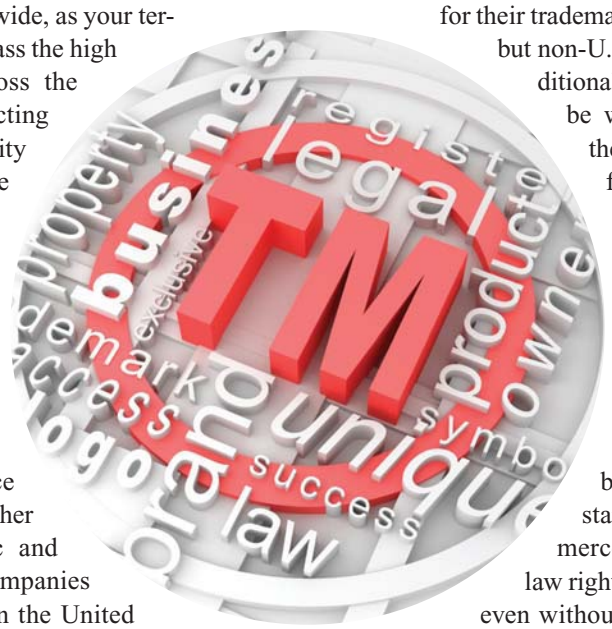
Martin Hoekstra is senior researcher at MARIN, the Maritime Research Institute Netherlands.
For more information:
a.v.d.ploeg@marin.nl / www.marin.nl.

Protecting Your Good Name

Special considerations for protecting Maritime Trademarks in the United States

About the Author
Susan B. Flohr, partner
Blank Rome LLP Intellectual Property & Technology
with the assistance of
John Paul Oleksiuk, associate Blank Rome LLP Intellectual Property & Technology
Tara L. Leiter, associate
Blank Rome LLP Maritime

Whether you are a cruise line, drilling company, vessel owner, cargo owner, shipbuilding and repair company, watercraft rental company or employment company crewing vessels, protecting your name and trademarks around the world is vital to your business. Your name may be known worldwide, as your territory of operations may encompass the high seas and touch on shores across the globe, but the strategy for protecting that name and commercial identity may differ from one country to the next. This is because trademarks are territorial and thus creatures of the laws of each sovereign state, with the exception of a few regional authorities such as the European Union.



The challenges facing maritime companies seeking to register their trademarks and service marks in the United States, whether U.S. companies with domestic and overseas reach, or non-U.S. companies wishing to protect trademarks in the United States, will vary depending in part upon whether they are U.S. entities or non-U.S. entities, or whether they base their applications for U.S. registration on use in commerce, or on a non-U.S. registration.

Sample case in point: Are the considerations different for a U.S. company that sells fuel oil and provides bunkering services seeking a U.S. trademark and service mark registration than for a non-U.S. company?

In the United States there are several bases upon which owners of marks can file applications for trademark registration.

- U.S. companies can file applications based on either use in commerce or a bona fide intent-to-use the mark (Sections 1(a) and 1(b) of the Lanham Act, 15 U.S.C. §§ 1(a) and 1(b) respectively, hereinafter referred to as the "Trademark Act").
- Non-U.S. companies have these options as well, and additionally can file applications based on their own national applications or registrations in their home countries or a regional registration such as a Community Trademark Registration ("CTM") issued in any member state of the EU (if they have such registrations) either under certain provisions of the Trademark Act (§§44(d) and 44(e); 15 U.S.C. §§ 1126(d) and (e)) or based on an International Registration filed under the Madrid Protocol System, to which the United States is a signatory, through the World Intellectual Property Organization ("WIPO"), which designates the United States as part of its expansion.

There are pros and cons to each approach and while this article cannot cover them in depth, it will touch on the most foreseeable issues and point out some tactical options.

Should each company in our hypothetical case study above try to protect its trademark for fuel oil and its service mark for bunkering services in the United States by filing applications based on use in commerce?

Ultimately, U.S. companies must prove use in commerce prior to obtaining a federal trademark registration for their trademarks and service marks, but non-U.S. companies have additional options and thus may be well advised to avoid the potential pitfalls and file for registration on a non-use basis.

As stated above, trademarks are territorial and the law of each national jurisdiction may differ. In the United States, trademark rights can be created in the first instance by use in commerce, known as common law rights and can be protected even without registration. Federal trademark registrations are issued by the U.S. Patent and Trademark Office ("USPTO") and while non-U.S. companies have additional options, domestic companies may not secure a registration until the applicant proves that it has used its mark in commerce.

I. Challenges of filing in the U.S.

A. Proving "use in commerce" for Products.

For an application based on use in commerce or a bona fide intent-to-use, the applicant eventually must assert use of the mark in commerce, and prove such use before a registration will issue.

In the case of products, to satisfy the "use in commerce" requirement, the mark must be placed in any manner on the goods or their containers or the displays associated therewith or on the tags or labels affixed thereto, or if the nature of the goods makes such placement impracticable, then on documents associated with the goods or their sale, and the goods must be sold or transported in commerce. (Section 45 of the Trademark Act, 15 U.S.C. § 1127.)

The requirement of proof of use on products is more challenging to comply with if your products are bulk products such as fuel oil, crude oil, coal or other bulk products shipped without any labeling or packaging at all. For example, where fuel is transported by tanker truck on land, the company brand may appear on the tanker and satisfy the USPTO's affixation requirement.

But what about where the fuel or other bulk products are transported by vessel? The likelihood is high that the vessel will be chartered, not owned by the shipper, and thus the name of the company selling the bulk products and its brand will not likely appear on the vessel. How are such companies to prove the requisite use of the mark on the goods in commerce?

In such cases, section 45 of the Trademark Act permits shipping invoices, bills of lading or other shipping documents showing the mark associated with the goods, or webpage screenshots depicting the products associated with the mark to satisfy the requirement for use in commerce where the nature of the goods makes normal affixation impractical. (37 C.F.R. §2.56(B)(1);Trademark Manual of Examining Procedure ("TMEP") § 904.03(k)). However, a mere assertion of impracticability will not suffice, the record must establish that the goods are of such a nature that traditional trademark use is impracticable.

Trademark Examiners at the USPTO may not initially accept alternative specimens unless the impracticability of complying with the affixation requirement is fully supported. Where the applicant's goods are not sold in gallon drums or at gasoline pumping stations, but rather are sold in bulk, stored in dedicated tanks and delivered through a combination of pipelines, tanker trucks, barges and other methods of bulk storage and transportation of fuels, there should be no difficulty as such a scenario is analogous to the natural gas, grains, and chemicals sold in bulk or transported via tanker cars, all of which are examples specified in the TMEP as prototypical of impracticability for affixation of the mark to the goods.

Because the power of the federal government to register marks comes from the Commerce Clause of the Constitution, the sales of such goods bearing the mark must be "in commerce" lawfully regulated by Congress in order for the applicant to rely on such use to obtain a federal trademark registration. (Section 1 of the Trademark Act, 15 U.S.C. § 1051(a) or (b); Section 45 of the Trademark Act, 15 U.S.C. § 1127).

The term "use in commerce" includes sales of goods either in commerce between the U.S. and a foreign country or in interstate commerce among the several states. Sales of bulk products, bunkers or oil by either a U.S. entity or a non-U.S. entity to U.S. customers is clearly "in commerce". Sales of such goods by either entity to foreign customers located in the United States or within its territorial waters would also seem to constitute use "in commerce". Sales of bulk products, bunkers or oil by a U.S. entity to a foreign customer in a foreign country would not constitute a sale "in commerce" under applicable case law. But the question of whether or not sales of such goods by either a U.S. or non-U.S. entity to foreign customers at sea constitutes use "in commerce", outside U.S. territorial waters, may depend upon a variety of factors such as the ownership of the vessel and citizenship of the purchasers, and the outcome would likely be very fact-specific. As a result, there may be some risk in attempting to rely on such sales to establish use in commerce for registration purposes. For prospective applicants with other options, such as non-U.S. entities with national, regional or international registrations, it may be best to file on one of those bases instead.

B. Proving "use in commerce" for Services.

In contrast to proving use for bulk products, proving use of a mark for services, such as providing bunkers at sea, is more straightforward, since there is no affixation requirement. Use of a mark for services is easily established through submission of printed or online promotional materials including screenshots of web pages showing use of the mark in association with the sale or advertising of the services, (37 C.F.R. § 2.56(b)(2)) provided that the service is being rendered in commerce.

"Use in commerce" for services can be established when the mark is used or displayed in the sale or advertising of services and the services are rendered in commerce, or the services are rendered in more than one state or in the United States and a foreign country and the person rendering the services is engaged in commerce in connection with the services. (Section 45 of the Trademark Act, 15 U.S.C. §1127.)

As indicated above, the scope of federal trademark jurisdiction is commerce that may be regulated by the United States Congress. (TMEP § 901.03.) Thus, rendering a service in commerce typically requires advertising the services across state lines, or having customers who travel across state lines to obtain the services or licensees rendering the services in more than a single state. When services are rendered at sea, there are analogous uncertainties to those raised above with regard to whether or not goods sold at sea comprise commerce regulable by Congress. Services rendered in U.S. waters should be sufficient to establish use in commerce, but for services rendered outside of U.S. waters, the satisfactory establishment of use in commerce may also depend upon the extent to which those services are advertized or promoted in the United States in connection with the service mark, whether the customers receiving the services are U.S. citizens or U.S. vessels, whether the services are provided through U.S. ports, and other similar factors.

II. The Advantages of Filing Based on a Foreign Registration or Application.

A. Avoiding the requirement to prove use.

If you are a non-U.S. company and proving use of the mark in commerce would be difficult due to the framework set forth above, or if you are unsure that you will actually use the mark in commerce in the next several years, you may still have other options. If you own an application or registration in your home country, or a regional one such as a CTM, you can file a U.S. application based on your foreign filing. Alternatively, you can file for an International Registration through the WIPO and designate the United States under the Madrid Protocol, as mentioned above. Each of these options has a number of advantages over filing in the U.S. based on use or intent-to-use. Most importantly, these options remove the requirement of establishing use in commerce prior to issuance of the registration. In order to avoid losing your trademark rights in the U.S., you will need to be able to prove use eventually, at least between the fifth and sixth year after registration, when the statutory use declaration is due and then later for renewal at the ten year anniversary. (§§ 8 and 9 of the Trademark Act, 15 U.S.C. §§ 1058 and 1059). Nevertheless, this approach gives the company five years to work with counsel to develop acceptable specimens prior to the deadline for filing. The only caveat here is, as mentioned above, that the U.S. registration is reliant on the non-U.S. registration which may be vulnerable to cancellation, and a cancellation would necessitate re-filing in the U.S. on a use basis ultimately requiring proof of use in any case. These are all factors that need to be weighed.

B. Securing a broader description of goods and services.

Another advantage of filing based on a foreign national registration, CTM regional registration, or an International Registration through the Madrid Protocol is that any of these options would likely allow you a broader description of goods and services than if you file directly with the USPTO based on use or intent to use. There are two reasons for this. First, the USPTO is known for its stringent regulations on the manner in which applicants can describe goods and services. Second, you must be using the mark for all the goods and services covered by the application prior to registration, and this requirement naturally would limit the breadth of goods or services you could claim, over an application with no such requirement.

Conclusion

Tactical considerations for maritime companies seeking to register their trademarks and service marks in the United States will differ depending upon whether or not they are U.S. entities or non-U.S. entities. This article has highlighted some of those considerations. For a U.S. entity there is no way forward but to prove use in commerce; for a non-U.S. entity it may be wise to select an alternative route to registration.

About the Author

Susan Flohr, partner in Blank Rome LLP, concentrates her practice in the intellectual property field, including trademark, copyright, trade dress and unfair competition litigation, licensing, and counseling.

AIS Coming to an ATON Near You

About the Author

Dennis L. Bryant, Maritime Regulatory Consulting,
Gainesville, FL
Tel: 352-692-5493
Email:
dennis.l.bryant@gmail.com

Mariners are intimately familiar with aids to navigation (ATON), both fixed (e.g., lighthouses, daymarks, etc.) and floating (e.g., buoys). Mariners are increasingly familiar with the Automatic Identification System (AIS). Until recently, the two concepts were separate and distinct, but no longer.

ATONs have been utilized for millennia to mark harbors – the Pharos lighthouse at Alexandria, Egypt was a conspicuous example – and waterways worldwide. With the industrial revolution and the growth and electrification of cities, it has become difficult for mariners to identify certain ATONs against a lighted background. Efforts, such as the installation of radar reflectors and radar beacons (racons) on various aids have lessened, but not eliminated, the problem.

AIS was developed in recent years as a collision avoidance device. It was designed to transmit via VHF-FM the identity, course, and speed of the vessel on which it was installed, along with certain other information. Ships receiving the signal could quickly learn if there was a risk of collision with the transmitting ship and appropriate arrangements could be made. Following the horrific terrorist attacks of September 11, 2001, the mission of AIS was expanded to include maritime security. Nations installed AIS receivers along and off their coasts in order to learn the identity of nearby and arriving ships. Recently, other uses have been found for AIS. Owners, operators, charterers, and shippers use it to keep track of vessels for commercial reasons. Coastal states have also found AIS to be useful in identification of vessels suspected of illegal activity, such as pollution.

Now, experiments are being conducted to place AIS transmitters on ATONs. In 2007, the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) developed a formal recommendation on the use of the Automatic Identification System (AIS) in marine aids to navigation services. IALA took this step in recognition that the AIS transponder has the capability to provide information and data that could: (1) be used as an aid to navigation; (2) complement existing aids to navigation; (3) monitor the performance of aids to navigation; (4) monitor the "on station" position of floating aids to navigation; (5) provide identity, state of health, and other navigational information, such as meterological and hydrological data to ships and shore authorities; and (6) be used to assess traffic type and pattern to assist in providing the appropriate level of service and mix of aids to navigation.

There are three categories of AIS ATON: physical, virtual, and synthetic. The physical category is where the AIS is installed on actual aid. The virtual category is where the AIS-formatted symbol is displayed on an electronic chart system, but no physical aid exists at that location. Use of a virtual AIS ATON may be appropriate to mark a hazard to navigation or wreck until such time as a physical aid can be established. The synthetic category is where information is received from other physical non-AIS aids and then ported to and broadcast by an AIS station. The synthetic AIS ATON could be used where a physical aid does not have AIS installed, but the provider wants to call better attention to the aid. An AIS station would broadcast the AIS signal that would have been broadcast by the aid if it had AIS actually installed.

Various issues must be taken into consideration before AIS can be installed on an ATON. A Maritime Mobile Service Identity (MMSI) number must be assigned. The MMSI number is unique nine-digit number for vessels or coast stations transmitting radio signals in the maritime band. In the United States, non-federal MMSI numbers are assigned by the Federal Communications Commission (FCC), normally as part of the processing of a radio station license application.

The frequency of transmission must be determined. Since the ATON does not move (or at least it shouldn't), rapid retransmission required on a vessel is inappropriate, and wastes energy. On the other hand, the low height of the antenna (particularly on a floating ATON or day mark) will limit the distance within which the signal is likely to be received. Obstructions, such as headlands, must also be considered.

Advanced AIS ATON stations can serve as Search and Rescue Transponder (SART) repeaters, allowing for greater likelihood that rescue units can rapidly respond to mariners in distress, while minimizing search time and effort. When combined with the capabilities now found on "smart" buoys deployed by the National Oceanic and Atmospheric Administration (NOAA), they can monitor and report in real time wind speed and direction, temperature, wave height, current, and other data of value to the mariner.

The AIS ATON may be particularly valuable when used for marking of wrecks as it can highlight for the mariner the existence and location of this unexpected danger. Similar aids can also mark offshore structures and facilities, such as rigs, wind farms, wave and tidal energy devices, and fish farms. Various commercial interests are developing and marketing AIS transmitters and transceivers for potential sale to ATON providers. These devices come in a range of sizes and capabilities. The UK and Irish General Lighthouse Authorities (GLA) have moved the furthest to date in development of detailed processes for AIS ATON and the Irish Lighthouse Authority has probably established the most AIS ATON. Other nations, such as South Africa, are also considering the issue. The US Coast Guard has made some initial steps to test AIS ATON, but the sheer size of its ATON program and the state of the budget have restrained efforts to get beyond limited trials. An AIS ATON sta-

tion has the potential to enhance marine safety and the efficiency of navigation by: (1) providing a positive and all-weather means of identification; (2) complementing services (such as racons) currently on the ATON; (3) transmitting an accurate position for a floating ATON; (4) indicating whether a floating ATON is off station; (5) marking tracks, routes, areas, and limits; (6) marking offshore structures, such as wind farms; and (7)providing weather, tidal, and sea state data. In addition, the AIS ATON station may benefit the service provider by: (a) monitoring the status of the ATON; (b) tracking a floating aid that is off station; (c) monitoring and identifying marine traffic in the vicinity; and (d) allowing for remote control of ATON parameters. Only time will tell how many of these potential capabilities will be adopted and how widespread the use of AIS on ATON will become. The possibilities, though, are just beginning to be explored.

Samsung Fights Pirates ... the 21st Century Way

The 'Samsung Anti-Piracy Solution' was announced last month week, a solution that integrates three state-of-the-art technologies into a vessel with an important emphasis on safety:

- **A surveillance radar system** which analyzes the distance, speed and moving direction of ships within 10 kilometers to automatically detect and track any suspicious activity.
- **A night-vision technology** that tracks and displays the movement of suspected vessels in real-time, generating high-quality infrared images.
- **A high-pressure, remotely controlled water cannon** that shoots a powerful stream of water as far as 70 meters to thwart the pirates' approach. The cannon – which has a maximum pressure of 10 bars, or equal to the force of 10 kilograms applied to an area of 1 square centimeter – can be controlled remotely from the bridge, thus reducing the risk of exposure of the crew to potential gunfire attacks.

Samsung Heavy Industries plans to install this anti-piracy system on all the vessels the company builds from its shipyard in Geoje, located in the southeastern coast of South Korea.

LPG

New Liquid ME-GI Engine Signals Expansion of MAN B&W Gas Portfolio

MAN Diesel & Turbo debuted its Liquid ME-GI (Liquid Gas Injection) engine, which is powered by LPG (Liquid Petroleum Gas), a smaller market than LNG but of significance in certain segments such as the small tankers that ply river traffic and coastal shipping routes. The Liquid ME-GI is a variant of MAN Diesel & Turbo's ME-GI engine.

All MAN Diesel & Turbo electronically controlled ME-engine types are available in dual-fuel versions with the LPG-fuelled version designated ME-LGI. The Liquid ME-GI engine's performance is equivalent in terms of output, efficiency and rpm to MAN Diesel & Turbo's ME-C and ME-B series of engines. As the Liquid ME-GI engine's fuel system has few moving parts, it is also more tolerant of different fuel types and accordingly can run on DME (DiMethyl Ether). DME can act as a clean fuel when burned in suitably optimized engines.

Generally speaking, LPG-fuelled engines experience safe and reliable running with comparatively low maintenance costs while gas valves and gas pipes are smaller but similar to those of the ME-GI engine.

The Liquid ME-GI engine uses liquid gas for injection all the way from tank to engine and non-cryogenic pumps can be used to generate the required pressure, comprising standard, proven equipment readily available from a large number of suppliers within the LPG industry.

By introducing LPG as fuel to the dual-fuel GI system, substantial emission benefits can be obtained, especially with regard to SOx and CO2 emissions and particulate matter. NOx emission reductions and Tier-III targets can also be achieved if LPG operation is combined with either an SCR or EGR system. Furthermore, LPG sulfur levels are naturally minimal. "There is already great interest in the Liquid ME-GI engine as operators look to control costs and emissions. We already have several interesting projects underway, not least with a general-cargo carrier newbuilding where we have signed a letter of intent with the shipowner," said Ole Grøne, Senior Vice President Low-Speed Promotions and Sales, MAN Diesel & Turbo . The carrier will be designed in Gothenburg, Sweden by FKAB. The coming years are likely to see an increase in LNG production. This will cultivate the interest in using LNG and LPG as a fuel on ships in general since gas is expected to be cheaper than other types of fuels for a significant period of time, a price difference that will be even greater in comparison with other types of low-sulphur fuel.

This increased volume of LNG will generate additional LPG as LPG is a by-product of LNG production – consequently, as an additional benefit, LPG production is not driven by demand. This is expected to lower the existing LPG price level and make it more competitive with MDO and MGO. While LNG is considered the fuel of the future, establishing bunkering facilities, terminals and a network of supply ships is costly, time-consuming and subject to safety concerns. Only a few countries currently have an LNG network in place for general use as a marine fuel, for example Norway, and realistically, the widespread use of LNG for ship operation is some time away. In contrast, LPG is already a well-established fuel that enjoys a mature, global supply network with less-costly terminals and comparatively minor safety issues. As such, older LPG carriers could function as bunkering stations as all have onboard reliquefaction plants installed, which are less demanding and less expensive to run than such LNG systems. Furthermore, ship to ship loading of LPG is not considered complicated. Some MAN Diesel & Turbo gensets are already running on LPG as the fuel on LPG carriers.

(Photo: MAN Diesel & Turbo)

The general-cargo carrier newbuilding will be designed by FKAB in Gothenburg, Sweden's largest marine-consulting firm specialising in ship design and construction, and powered by MAN Diesel & Turbo's new Liquid ME-GI engine running on LPG. FKAB can trace its roots back to 1961 and has vast experience in ship design: pictured here is another FKAB design for an LNG feeder vessel.

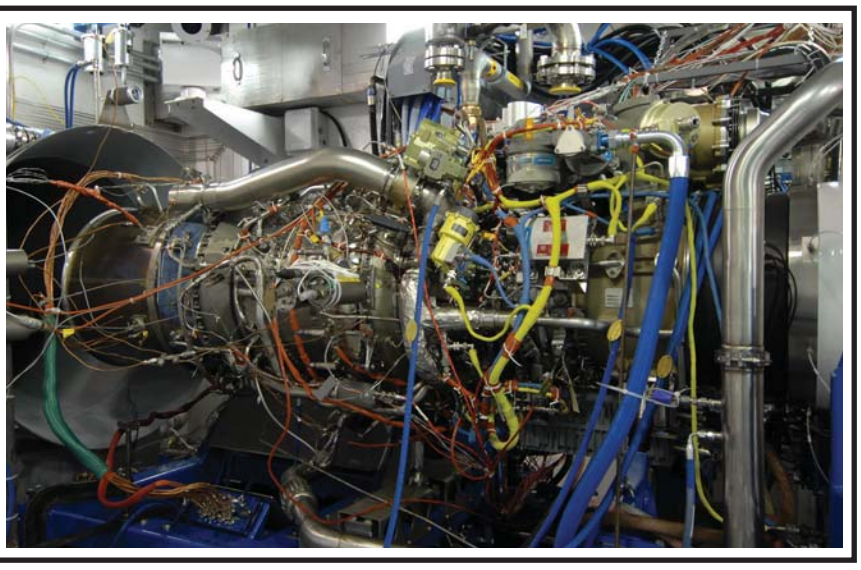
Evaluation of Liquid ME-GI performance

Overall efficiency	**Comparable to ME-C and ME-B engines**
Operational expense	Dependent on current gas prices, comparable to alternative low-sulphur fuels
Reliability	Unchanged
Emissions	Fulfills Tier-II requirements
	Can meet Tier-III with EGR/SCR installation
	95% reduction in SOx compared with other fuels
Load response	Unchanged during gas operation
Pilot-oil amount	Scheduled for Copenhagen test engine
Gas operation	Gas operation during full load
Auto Tuning	Available
Gas Supply system	Developed by Hamworthy
Fuels	Currently LPG and DME; likely methanol and ethanol in the future

GE38 Looking to Take to the Sea

GE Aviation leveraging the GE38 for marine applications.

The GE38 was will power the Sikorsky CH-53K helicopter in development for the United States Marine Corps. Compared to its T64 turboshaft engine predecessor, the GE38 provides 57% more power within the same envelope, 18% better fuel consumption, and has 63% few parts. The marine version of the GE38 is identical to its aircraft engine cousin with the exception of some control schedules in the Full Authority Digital Engine Controls (FADEC) software. GE is also looking to leverage this existing technology to offer the United States Navy maintenance commonality, smaller logistics footprint, as well as lower operating and support costs. GE Aviation believes the GE38 has performance specifications for the U.S. Navy's Ship-to-Shore Connector (SSC) program and electric power generation for DDG-51-class destroyers.



Wärtsilä Scrubber to Containerships Ltd

Wärtsilä signed a turnkey contract with Containerships Ltd Oy for the retrofitting of a Wärtsilä fresh water scrubber for the vessel Containerships VII, which is equipped with a Wärtsilä W7L64 main engine. This is Wärtsilä's first commercial marine scrubber project for a main engine. The scrubber will be delivered to the customer in August 2011. The conversion will enable the vessel to meet future sulfur oxides (SOx) emission requirements in Sulphur Emission Control Areas.

Rolls-Royce Deal to Power 10 U.S. Navy LCS

(Photo Credit: Rolls-Royce)

The Rolls-Royce MT30 Marine gas turbine on the test bed.

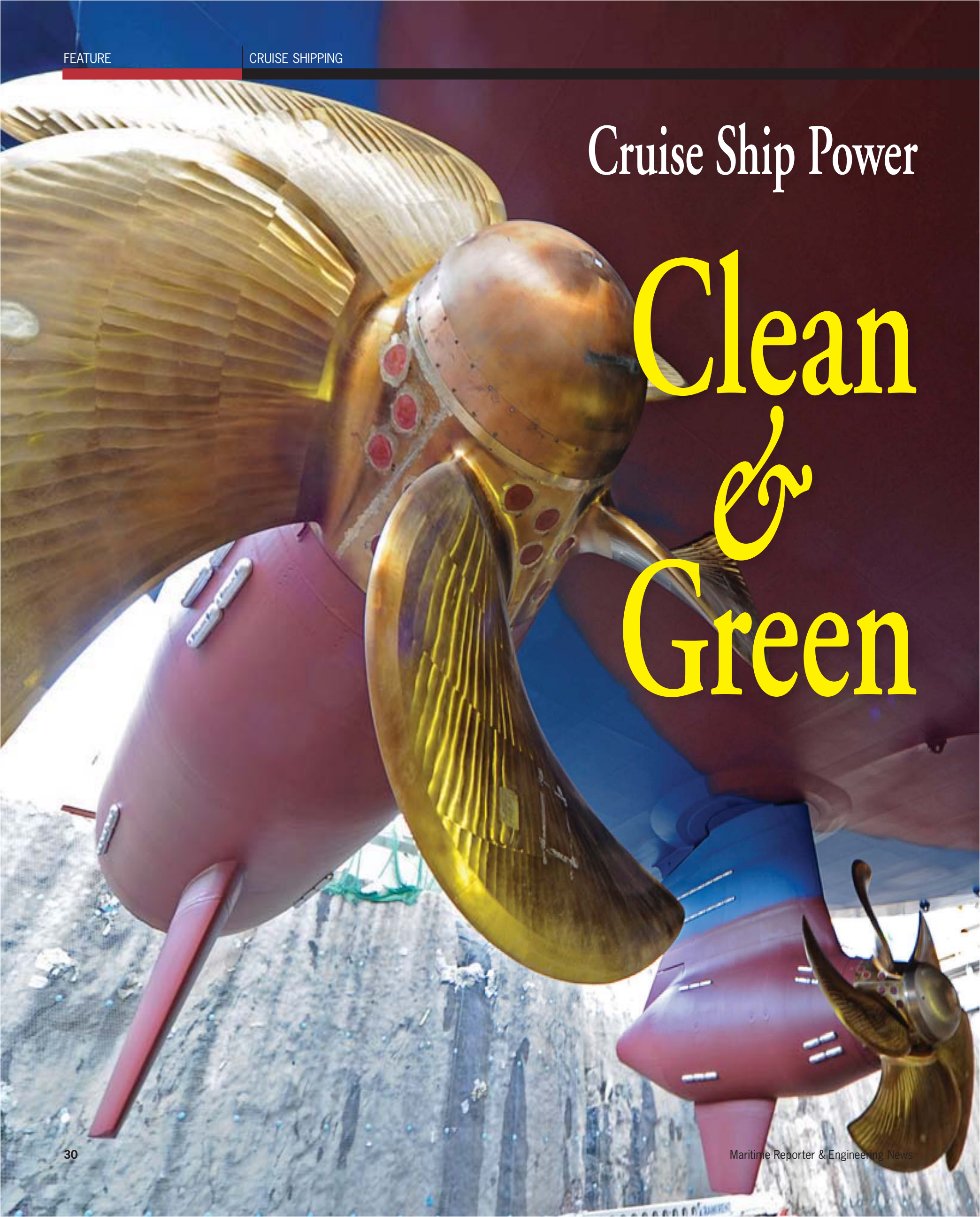
Rolls-Royce won the contract to supply 36 MW gas turbines and waterjets for 10 of the U.S. Navy's Littoral Combat Ships (LCS) – the Group's largest ever marine naval surface ship contract. Each LCS will be equipped with two Rolls-Royce MT30 gas turbines powering four large waterjets, enabling the vessels to reach speeds in excess of 40 knots. The waterjets are among the largest produced by Rolls-Royce and can pump water at a combined rate of 25,000 gallons per second – enough to fill an Olympic style swimming pool in 25 seconds.

Chemical Free Water Treatment

The chemical free EnwaMatic Maritime technology by ENWA Water Treatment has obtained approval from engine manufacturer Wärtsilä. One of the critical parameters for maritime engine efficiency and life time is internal corrosion. The instant water enters the cooling system, it causes corrosion, scaling, bacterial contamination and fouling. This has a significant impact on energy consumption, motor components and overall Life Cycle Cost (LCC). No more than 2 mm of rust can reduce heat transfer by 5% across component surfaces. Scale has an even more significant effect on the transfer efficiency with a small 0.5 mm layer generating as much as 4% loss. EnwaMatic technology is based on filtering and treating the water with minerals balancing, removing oxygen and neutralizing the water. The unit is fully automatic while it protects the engine or the HVAC system internals. In connection with the intense testing period, the shipowner Color Line, operating several cruise ferries, has decided to change all closed loop water systems for engines and HVAC systems on their entire fleet.

Cruise Ship Power

Clean & Green



Today's new mega-cruise ships are tasked not only with providing for more than 6,000 guests, they must accomplish this mission while delivering the lowest environmental impact. *Maritime Reporter* climbs onboard latest generation of new cruise ships to uncover the technologies that help minimize a ship's carbon footprint.

by Henrik Segercrantz

Cruise lines are heavily committed to the task of minimizing the environmental footprint of their fleets. Cruise ships operate in some of the most beautiful and environmentally sensitive areas of the world and their guests, and surrounding communities, require that these vessels do not negatively affect the environment. And not just in these areas. International and national environmental regulations continue to become stricter, requiring both cruise lines and the suppliers of technology to continuously invent environmentally improved products.

Today, typically, the regulations lead the way and the technology has to catch up to comply. For the cruise lines it is a major task to implement green technologies and environmentally focused routines onboard and among their staff. All big operators have their own organizations in charge of environmental issues with dedicated staff both onboard the vessels and ashore, and environmental matters is a vital part of the staff training. All this costs money, but as pollution is directly related to energy consumption, savings in energy also results in savings in fuel costs, and in capital costs, where less powerful engines and smaller equipment proves sufficient thanks to the improvements made.

Much development has taken place in recent years, at a time when the biggest and technically most demanding cruise ships have been built. New technologies and solutions have been applied in systems in the machinery compartment and in the ship's traditional marine design and marine equipment. In recent huge newbuilding projects all equipment suppliers have had to focus on energy saving and 'green' improvements. This has led to technical development in all types of different products and systems onboard, not just in traditional marine equipment.

A medium-sized cruise ship consumes typically some 40-50,000 tons of fuel per year. Ninety percent of this is burned by the engines, providing propulsion and electricity, and steam through the exhaust gas boilers, for onboard needs. Some 10 percent of the total fuel consumption is consumed by stationary boilers, which produce steam and heat onboard also when the engines are not running. The fuel consumption can be divided in another way too. **Roughly a third of the fuel is consumed by propulsion, a third by the HVAC heat, ventilation and air conditioning systems, and a third by other onboard consumers, such as lighting.** This includes the total fuel consumption both when the ship is at sea and when in port.

Carbon dioxide CO2 emissions, or so called greenhouse emissions, are directly related to fuel consumption. There are no means to cut out the CO2 from the exhaust gases. Sulfur oxides on the other hand can be reduced by using distillate marine fuels with less sulfur content or by using so called scrubbers to clean the exhaust gas. Very strict limitations are being introduced both worldwide and particularly in dedicated special emission control areas, and engine manufacturers and shipbuilders are pressed hard to find the most efficient solutions. Better fuels cost more and more fuel burned creates more exhaust gases. A reduction in fuel consumption pays off also in cutting sulfur oxide emissions. Regarding nitrogen oxides NOx emissions, the engine manufacturers already comply with IMO's Tier II limits, which entered into force from the beginning of this year for new built ships, and are working hard to reach the Tier III NOx emission limits for ECA areas of year 2016, which are more challenging and cannot be solved through improved engine technology alone. The technology needed to cut NOx emissions to Tier III in fact still today somewhat increases fuel consumption, but the development is rapid. Engine manufacturer MAN with their latest EGR exhaust gas recirculation technology developed to reach Tier III, 80 percent NOx is cut with a fuel penalty of less than one percent, but the good thing is that EGR cuts fuel consumption when running on Tier II levels. This means fuel savings when the ship operates outside the ECA area. Wärtsilä also works with similar technologies, which also include other technologies such as two-stage turbocharging. Engine manufacturers walk two paths, and also propose Selective Catalytic Reactors, when operating in ECA areas, or to switch to dual fuel engines and use liquefied natural gas as fuel. Stricter exhaust gas regulations have clearly trigged the adoption of liquefied natural gas as an alternative, as the exhausts are much cleaner and below the set limits. The ship's propulsion, on a cruise ship, consumes around a third of all fuel. Much focus has been put on improving propulsion efficiency over the years, and many improvements have been made, even lately. In a new cruise ship project the ship's hull form is individually developed and optimized through computer-based Computational Fluid Dynamics (CDF) calculations continuing with streamlining the final versions through model testing in dedicated test basins. Typically work is directed at optimizing the bulb forward and the hull shoulders aft, where the hull form starts to narrow towards the propellers. The hull is often also improved through lengthening, by installing a so called duck tail. Foreship Ltd, the marine engineering company, found out that by also moving the longitudinal center of buoy-

Pictured left is Azipod propulsion units on Oasis of the Seas.

ancy of cruise ships forward from what has been typical lately, much can be gained. A transfer from -5% to -1.7% from midships required a design with repositioned main engines, tank arrangements etc., a duck tail and a blunter forward end of the deckhouse, not perhaps that easily accomplished to provide the most visually attractive solution. But who cares, if the potential is savings from optimizing the hull of up to 15 percent in fuel consumption, a number claimed by the company. All these efforts are done to reduce wave resistance, the resistance component that is increases with increasing speed and is the major resistance factor at high speed.

In striving for lower fuel consumption, also hull paints have gained a lot of focus, and much development has taken place lately. A smooth hull reduces the friction of the hull, an important resistance factor which is not changing much with the speed of the vessel. Paint manufacturer Hempel's silicone-based X3 solid silicone fouling release coating comes in a package consisting of the paint system, a fuel saving guarantee and a third-party monitoring system. The foul release system is guaranteed to reduce the vessel's fuel consumption by at least four to eight percent within the first year, depending on the type of ship. On Holland America Line's cruise ship Zaandam the reduction in fuel consumption was 8.4 percent in early measurements. Meanwhile Jotun, with its latest SeaLion Repulse repellent silicone fouling release coating, claims up to ten years lifetime of the coating system, with a touch-up after five years, with major expected fuel savings and paint manufacturer International, with its fluoropolymer based Intersleek900, claims saving of up to 9% in comparison to biocide containing self polishing copolymer antifoulings. In-service experience on a range of vessel types has shown savings considerably higher than this, the company claims, noting that if every ship in the world was coated with their Intersleek Foul Release technology the potential exists for annual CO2 emission reductions of 90m tons. For cruise ship owners the hull friction side should be well under control. Propulsion efficiency is improved hydrodynamically through optimizing the size, type, shape and placing of the propellers, shaftlines and brackets, or when azimuthing propulsion is used, through optimizing the propellers and pods. When ABB's Azipod azimuthing electric thrusters were first applied on the last two cruise ship newbuildings of Carnival Cruise Lines Fantasy class series, an eight to nine percent improvement in efficiency was achieved, when operating at service speed. With their new improved Azipod version which implements all latest developments made on the product, ABB claims another nine percent improvement, a total 18 percent improvement in slightly more than a decade! Fuel consumption can also be cut by optimizing the trim of the vessel. Trim sensors integrated into the bridge and automation system onboard are today increasingly used. Eniram, a supplier of these, has examples of fuel savings of three to five percent.

Much of the improvements come from optimizing the operation of the diesel-electric power plant of the vessels. Modern diesel engines use common-rail technology with electronically fed fuel injection, significantly reducing smoke emissions at lower engine load ranges. Wärtsilä's latest engines come with a module-based automation control system UNIC, providing control of basic engine safety, engine control and monitoring as well as engine combustion control. MaK's DICARE online engine condition monitoring and maintenance management system is part of their delivery. With Flexible Camshaft Technology, valve timing changes at part load to raise effective compression and enhance complete combustion. The latest propulsion frequency converters by ABB are of Voltage Source Inverter -type with improved efficiency especially at partial loads.

The low losses of their IGCT power semiconductors allow the use of a fuseless main circuitry and result in less required cooling capacity. It provides fast switching which enables further improved control. On Norwegian Epic, built by STX in France, Converteam applied for the first time their new type of induction motors and PWM MV7000 type frequency converters through which the converter size can be optimized, the design is simpler and much system weight is saved, in addition to a small gain in efficiency. The monitoring and control systems of the engines are connected to the vessels machinery automation system with controls and monitor the entire operation of the system, and provide means for efficient optimization. Modern cruise ship fleets use latest voyage reporting systems and route optimization systems which also adjust the ship's power, to guarantee an arrive at the destination at the time set with minimum fuel consumed. According to Napa Ltd., a supplier of these systems, calculations have lately been further automated where in practice manual input for departure, arrival and pilot times is needed. Linking with the advanced automation systems all energy consuming systems onboard are be monitored, and their histories tracked along with the route data of the vessel. The data is used in the owner' office ashore comparing the performance of the entire vessel fleet. Major savings in fuel consumption and in greenhouse gases are achieved through reducing the ships speed. Slow steaming has become a rule of the maritime trade. For cruise ship operators this means optimising the itineraries so that maximum speed can be avoided.

Carnival Dream received a new developed hull form, streamlined fixed propulsion, and efficient onboard systems resulting in major energy savings. Despite being 18% bigger, the vessel need no more power to operate than her sisterships. Carnival Magic will introduce further technologies to save energy.

(Photo by Maurizio Eliseo - www.transatlantici.com)

In 10 to 15 years, a 30 to 40% improvement in energy efficiency has been achieved, according to Royal Caribbean Cruise Line, but this is not achieved through just one action, but through thousands of different actions.

The propulsion efficiency of Oasis of the Seas and sistership Allure of the Seas (pictured) improved relatively by 10% just compared to the previously built vessel, and hotel load, per passenger, was improved by some 13%. The efficiency of Azipod azimuthing propulsion has improved remarkably over the years.

Carnival Dream, Carnival Cruise Lines' largest cruise ship so far, built by Fincantieri, received a completely new hull form compared to the somewhat smaller sisterships. Also the total propulsion power was increased, from 21MW to 22MW, compared to the earlier vessels in the series, but this power increase was not needed in the end. It turned out, according to Fincantieri, that the ship was capable of doing exactly the same speed with the same power as the previous vessel of the class, in spite of increased tonnage, implying, according to Fincantieri, a 17-18 percent improvement in hull efficiency. Carnival Dream carries 3,646 passengers and has a gross tonnage of 128,251gt. The previous 3006-passenger vessel in the fleet, Carnival Splendor has a gross tonnage of 113,300gt. Also to reduce resistance, the fin stabilizers were changed to fold out in the forward end.

Following the design on the Princess class vessels Fincantieri applied six-bladed fixed pitch propellers also on Carnival Dream, instead of five-bladed, to further reduce pressure pulses. Already some years back the shipbuilder switched from variable pitch propellers to improve efficiency and to reduce fuel consumption. This vessel, although being diesel-electric, has traditional shaftlines and fixed pitch propellers.

Royal Caribbean Cruise Lines recent huge newbuildings Allure of the Seas and Oasis of the Seas, built by STX in Finland, have a 10 percent better propulsion efficiency, per passenger, than the previous Freedom class vessels, according to the owner. These vessels are fitted with Azipod azimuthing thrusters.

On Carnival Dream, Fincantieri succeeded to reduce also the energy consumption of the hotel side of the vessel. According to the yard, the ship has practically the same hotel load as the sister vessels, although being eighteen percent bigger. **The improvements in the AC air conditioning technology of the Oasis of the Seas class have been particularly efficient, with some 30% less AC space in the passenger areas.** The air conditioning systems of the passenger cabins is optimized, and the ventilation in the galleys is automated. The elevators use less energy with sophisticatedly traffic optimized operation, such as the Advanced Group Control system by Kone, which optimizes the positioning of the elevators in each elevator group onboard.

The most recent ware washer designs according to manufacturer Meiko cut detergent consumption with up to 50% and energy consumption by 30%. Oasis of the Seas, for example, has in all 128 different types of dishwashers onboard, why savings here are important. Meiko's food waste system earlier used a 55kW compressor injector vacuum pump. This has been replaced by a pressurized system with vacuum, cutting power consumption down to 15kW. Another example of efficient energy savings achieved, where the incentive has come from the maritime industry.

Much improvement are gained also from using efficient fluorescent lighting and LED lighting, compared to more energy consuming halogen bulbs, and through dimming and optimization of its use. The hotel load, per passenger, of Oasis of the Seas is some 13 percent lower than on the Freedom class ships, and some 19 percent lower than on the Voyager class, and as much as 35% lower than a Panamax size cruise ship. In all, the new vessels have a 15 to 20% improved energy efficiency, and lower carbon footprint, per passenger. In 10 to 15 years, a 30 to 40 percent improvement in energy efficiency has been achieved, according to Royal Caribbean Cruise Line, but this is not achieved through just one action, but through thousands of different actions.

Aker Arctic seeks to meet & beat the

Icy Challenge

(Photo Courtesy: Det Norske Veritas)

As the global maritime and offshore industries eye with great anticipation the business opportunities inherenent in an accessible Arctic Region, Henrik Segercrantz explores some of the challenges ahead.

"We had a good last year," notes Mikko Niini, Managing Director at Aker Arctic Technology, the Finnish marine engineering company specialized in designing and developing ice-going vessels and offshore structures capable for operation in Arctic conditions. "Net sales were EUR6m. Aker Arctic has grown into a company which employs 40 people," Niini notes. The company operates an ice model basin at its facilities in Helsinki, capable of simulating operations in all types of ice conditions, with test methods backed-up and confirmed by hundreds of real full-scale tests made over the years, many during the heydays of icebreaker construction at the nearby Helsinki shipyard. Since year 2005 Aker Arctic Technology has operated as an independent company, separated from the yard, although STX Finland, the Korean-owned Finnish shipbuilder, still maintains a majority shareholding. Now Aker Arctic Technology again seems to be increasingly gaining work from the shipyard.

In recent years Aker Arctic took over some of the key staff from the shipyard in Helsinki. The Helsinki yard saw its shipbuilding activities being transferred to the bigger Turku shipyard and has in recent years been primarily involved in ship refurbishments and conversions and some small scale shipbuilding activities. Last year though STX Finland sold 50 percent of the yard to Russia's state-owned United Shipbuilding Corporation USC. Now the activities at the Helsinki yard are being revitalized through this joint-venture, and an own design office and other vital functions at the yard, renamed Arctech Helsinki Shipyard, are currently being established. As a vital part of this deal, USC also received an option to acquire a 20.4 percent shareholding in Aker Arctic Technology, with shares sold by STX Finland, which still retains a 51% majority. The remaining shares are still held by ABB and Aker, each having 14.3% of the shares.

In connection with the new ownership arrangements, Sovcomflot placed a $200m order at the yard for two multifunctional icebreaking platform supply vessels. The delivery is set for spring 2013. These vessels of type Aker ARC 105 have been developed by Aker Arctic Technology. The vessel type is further improved from the icebreaking supply and standby vessel Fesco Sakhalin, delivered by the yard in 2005. They continue the growing fleet of Aker Arctic's "double-acting" ships, which have proven very efficient in breaking ice going backwards with the stern first, utilizing azimuthing thrusters to clean the ships path from the broken ice blocks. The 50 percent ownership in the Helsinki shipyard gives Sovcomflot and other Russian shipowners the possibility to order their Arctic ships from close-by Finland, where historically the main share of the Russian icebreaker and Arctic cargo vessel fleets have been built, and where the Arctic know-how and technology has been maintained and further developed over the years, very much thanks to the activities of Aker Arctic Technology.

The vessel Fesco Sakhalin was built for serving a drilling platform operated by Exxon Neftegaz in the Sakhalin area. Sovcomflot last summer bought this vessel from Far East Shipping Company. Sovcomflot has also expanded into operating supply vessels in the area, having recently also bought another vessel, the Pacific Endeavour, built in Norway. Exxon is building a second offshore platform in the area, Arkutun-Dagi, and Sovcomflot's two newbuildings will add the fleet which will serve the two platforms to three vessels.

A ship project currently being finalized by Aker Arctic Technology and the yard in Helsinki, together with Russian clients Sovcomflot and Russian port organisation Rosmorport, is the Oblique Oil spill and Combat Icebreaker, another Aker Arctic invention. This vessel has an asymmetrical hull allowing the vessel to break ice and perform oil spill combat by proceeding sideways with the help of three azimuthing thruster units. "This project would provide a nice continuation to those vessels now ordered," Niini notes.

Another major project based on Aker Arctic's double-acting principle, and also detailed design services, were two 70.000dwt Arctic shuttle tanker newbuildings built by Admiralty Shipyards in St. Petersburg, Russia. The project was concluded last year, with the delivery of MT Kirill Lavrov. The first vessel, Mikhail Ulyanov, was handed over to owner Sovcomflot a year earlier. The diesel-electric vessels, fitted with two ABB's Azipod propulsion units, are intended to serve the Arctic oil production platform Prirazlomnoye, being built in

Aker Arctic Technology operates an ice model test basin 75m (229ft) long and 8m (24.4ft) wide, where all existing ice conditions can be simulated. Model tests are a cost efficient method to design ships and structures for Arctic conditions.

Northern Russia, a project which has been delayed by several years already. The tankers are thus currently operating on the spot market in warmer regions while awaiting deployment with the task they were designed for, as Arctic shuttle tankers.

"The "double-acting" stern-first icebreaker technology is now definitely becoming the pre-dominant solution for real icebreaking operations. It is also applied on the three similar tankers built recently for Sovcomflot by Samsung, for carrying oil from the Varandei terminal at the Arctic coast of Pechora Sea in Russia. Other large vessel projects include, besides the two 106.000dwt tankers MT Mastera and MT Tempera owned by Finnish Neste, include the series of Arctic container vessels owned by Russian mining company Norilsk Nickel, built to independently handle their export transports from the Yenisei River to Murmansk. "It seems like it is the Russian shipowners who utilize this latest available technology in their Arctic projects," Niini points out. "Shipowners in the US seem to be more conservative in their thinking, although I think that we have by now proven that this technology is superior," he says. The propulsion power needed to penetrate ice by using this technology has been proven to be much lower than through operating conventionally, with bow first, another step taken towards more "green" shipping. These vessels operate the traditional way, with bow first, only in open water and in light ice conditions.

Aker Arctic Technology has also been active in vessel for the oil fields of the Northern Caspian Sea, which have quite tough ice conditions in wintertime, combined with very shallow waters. The company's latest reference is a series of five shallow draught diesel-electric icebreaking tugs being built by STX Europe. Based on the company's Aker ARC 104

Left & Right:
Aker Arctic Technology operates an ice model test basin 75m (229ft) long and 8m (24.4ft) wide, where all existing ice conditions can be simulated. Model tests are a cost efficient method to design ships and structures for Arctic conditions. Mikko Niini, Managing Director, provides insights to the facilities capabilities.

The Oblique Oil Spill and Combat Icebreaker

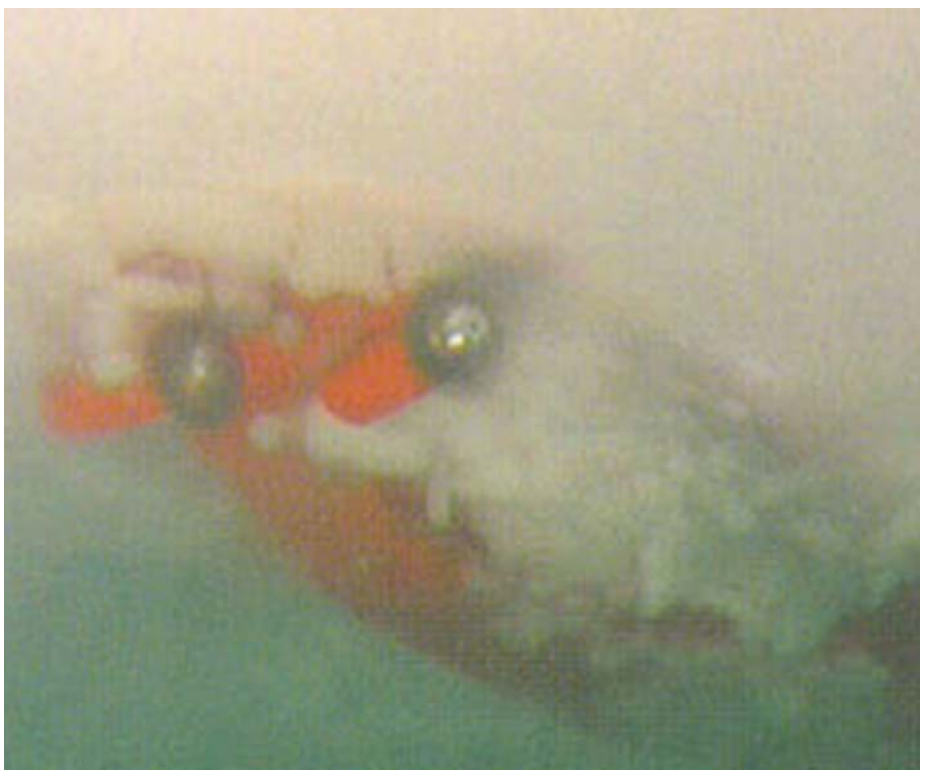
(pictured left and to the right during model testing), another Aker Arctic invention, has an asymmetrical hull allowing the vessel to break ice and perform oil spill combat by proceeding sideways. The project is currently being finalized together with Russian clients Sovcomflot and Rosmorport.

design, these vessels have a draft of only 2.5m and are fitted with Norwegian company Novencos asynchronous squirrel cage motors which power three azimuthing thrusters of type Shottel SPR 2020, each rated 1600kW. These ships, for Caspian Offshore Construction, will handle ice management at the oil platforms and tow barges year-round in the area. The first two vessels, Mangystau-1 and -2, were delivered last fall.

Last year Aker Arctic Technology also worked on a concept Niini calls the 'Year-round Arctic Floater'. "The floater can mean a drilling vessel or an oil production vessel, a vessel which is kept stationary in Arctic ice conditions," he explains.

"It started off as an in-house development project, but when presented to potential clients, it received good response and we are now working on this project also for a client," he says. Niini tells Maritime Reporter that the concept design of a special ice-flushing hull and a fully enclosed design has now been made together with the client. "This concept can be interesting for both the Beaufort Sea and also for Arctic Russia," he says. The concept ideas are now also being marketed to Russian interests. In order to be able to cope with the ice loads derived from ice floating against the anchored vessel, various ice management simulations have been made using a very powerful icebreaker assisted by other smaller icebreakers to break the approaching ice into smaller blocks. "These type of matters are now on the agendas of oil companies," Niini notes, but points out that President Obama's moratorium, after the oil spill catastrophe in the Mexican Gulf, to forbid drilling operations also in Arctic waters besides in deep water, has now delayed the offshore projects for these areas. "But I think this will be resolved in due time," he says.

Global warming is affecting the ice conditions in Arctic waters. Niini presents a graph showing that the mean ice thickness in the Arctic has decreased from a maximum of some 3.6m in winter time and a minimum 2.8m in the fall down to less than a maximum mean of 2m in winter down to a mean minimum of 1m in the fall. "More open water will mean that the ice floes will move faster, due to current and wind," he reminds. For Aker Arctic global warming is actually resulting in an increasing number of development projects, with increasing year-round Arctic traffic and oil exploration projects foreseen, in conditions increasingly reminding of those in sub-Arctic regions, such as in the Baltic. Another example of this is a re-vitalized development project of exports of liquefied natural gas over the Arctic Sea from Yamal in Russia, where Aker Arctic Technology has worked with optimizing the LNG transport operation and LNG carrier designs.



The Arctic — Special Ships for Special Needs

Ketchikan Shipyard: Inviting Teaming for Special Ships in Alaska

Alaska is investing in a maritime future to help connect the state's resources with domestic and global markets. Alaska has America's longest state coastline, the only US boundary with the Bering Sea and Arctic Oceans, a strategic geographic position in the globalizing economy, and a source of fisheries, mineral and energy wealth.

Key to unfreezing the wealth and national security issues associated with America's last frontier is logistics, or in business terms, supply chain management. Access to this vast territory is almost totally dependent on air and water transportation. Only 100 of Alaska's 300 communities are connected by road or rail.

The Arctic Circle cuts across seven countries: Russia, Greenland, Norway, Sweden, Finland, Canada and the United States. North of the 45th parallel lies 29 percent of the world's ice-free lands and many trillions of dollars in combined GDP. Climate change, a globalizing economy and converging political interests are bringing these northern lands into focus. Laurence C. Smith, author of The World in 2050 envisions… " the high Arctic, in particular, to be rather like Nevada—a landscape nearly empty but with fast-growing towns. Its prime socioeconomic role in the 21st century will not be homestead haven but economic engine, shoveling gas, oil, minerals and fish into the gaping global maw. Special vessels will help gain access to this region.

Alaska began its maritime future in the last century, building the Alaska Marine Highway System, a 3,500 mile route served by state owned-operated ferries. These vessels move vehicles and people. Ferries and tug-barge systems move over 95 percent of the weight of imported or exported commerce. As population centers in Alaska grow, so do needs for special vessels. Alaska invested in the Ketchikan, Alaska shipyard, a public-private venture with Alaska Ship and Drydock, Inc. (ASD), to maintain and repair the ferry fleet and other commercial and government vessels that operate in Alaska waters. In recent years, additional investment has expanded the capacity and efficiency of this shipyard to support new vessel construction. This shipyard is adding a large covered vessel assembly hall and production support complex to continue building, maintaining, and repairing Arctic-serving vessels.

With the need for special vessels looming on the horizon, retired Navy Captain Lew Madden envisioned a variable-draft high-speed logistics support vessel that could operate in icy waters. The concept was supported by Alaska's Matsu Borough and the Office of Naval Research, evolving from a Lockheed preliminary concept through a Guido Perla design, and finally into a major-scale demonstration project dubbed E-Craft. This vessel, delivered by ASD in 2010 will begin service as MV Susitna. Development of fast-growing outposts, then towns along Arctic coastlines will need electrical power, intermodal transportation, and other floating port assets. Self-loading multi-cargo vessels may have roles in supporting Coast Guard or Navy bases and natural resource extraction or value-adding centers.

Forward-thinking political, business, academic, and economic development leaders are beginning to shape a maritime industrial cluster concept that can more innovatively and efficiently tap into the wealth and excitement of Arctic resources and northern sea routes. An industry cluster can bring together organization stakeholders and value-adding knowledge sources to solve vexing issues needing further research and complex problems needing unique resources.

For more information,
Email: dward@akship.com

The vision of the expanded Alaska Ship & Drydock facilities
Construction on Ship Hall No. 1 on the left begins in 2011 with a planned completion date in 2012. The concrete pad for Berth No. 1, in front of Ship Hall No. 1, is complete, but the canopy is planned for the future as funding becomes available.

New Maintenance Rig for the Campos Basin: More Urgently Needed

The importance of increasing the number of maintenance rigs in decreasing accident risks on older production rigs should not be underestimated, and Petrobras will need to speed up their construction, as there is no shortage of old rigs out there.

Petrobras is finally increasing its investments on Maintenance and Security Units "Unidades de Manutenção e Segurança" (UMS). The new unit UMS Cidade de Arraial do Cabo, will be supplying logistics support for production rigs at the Campos Basin, its main function will be to increase safety on the rigs through maintenance and renovation in order to increase the life expectancy of these rigs. Some of the older production rigs at the Campos Basin are plagued by equipment fatigue, rust and small leaks and seepages that if not checked could lead to serious accidents and spills. Last year Petrobras had to deal with major oil worker strikes on many of these old production rigs, due to lack of sufficient maintenance.

At the time the oil workers union divulged some alarming pictures of rusted decks, stairways, stanchions and pipes that appeared to be serious safety hazards. The local operator downplayed the dangers and insisted that they were keeping to their maintenance schedules.

The new UMS rig is equipped with the latest technology, including a last generation DP system, which allows it to connect with any type of rig, fixed or floating, even in foul weather.

The UMS is 109 meters long and 36 meters wide, and works as a floating repair shipyard. It contains mechanical and electrical workshops, paint shops, welding and weld inspection areas along with a berthing area with adjoining cafeteria for 350 workers and crew. The first production rig to be visited will be PCH-1 located over the Cherne field. The UMS is scheduled to start operations at the end of February.

A there are many old production rigs in operation, and this new rig will be only the second operational UMS. Petrobras will have to increase its investment in UMS rigs in order to keep maintenance up to date on older rigs up and down the coast, as it is hardly the case that all the older rigs are found in the Campos Basin. The truth of the matter is that there are old production rigs up and down the coast, from the south all the way up to the far north of the Brazilian coast and all will need to have their maintenance and safety issues addressed as quickly as possible in order to avoid catastrophic accidents, such as gas leaks leading to explosions and major oil spills caused by ruptured flow pipes, not to mention production stoppages due to faulty equipment, such as pumps and generators.

— Claudio Paschoa, Brazil

Researching tomorrow's navy today

ONR Invests in the Future

The Navy's key to the future is the research and development being conducted today around the nation, and even around the world. Science and technology (S&T) is foundational for future naval capabilities, and the Office of Naval Research (ONR)—the interface between S&T and future naval forces—leads the sea service's science and technology efforts.

"Our top priority is to focus on those areas that deliver the biggest payoff for our future and ensure we make every single dollar count for maximum benefit for the war fighters," says Rear Adm. Nevin Carr, Chief of Naval Research.

ONR's mission is to "plan, foster, and encourage scientific research in recognition of its paramount importance as related to the maintenance of future naval power, and the preservation of national security" and to "manage the Navy's basic, applied, and advanced research to foster transition from science and technology to higher levels of research, development, test, and evaluation."

To do that, Carr says, ONR sponsors scientific research and technology to pursue revolutionary capabilities for Naval forces of the future; mature and transition S&T advances to improve naval capabilities; respond to current critical needs; and maintain broad technology investments both to hedge against uncertainty and to anticipate and counter potential technology surprise.

(U.S. Navy photo by John F. Williams/Released)

Rear Adm. Nevin Carr, center, Chief of Naval Research, addresses attendees during the Naval Aviation Enterprise Day conference sponsored by the Office of Naval Research. With Carr are Vice Adm. Allen Myers, right, commander of Naval Air Forces, and Vice Adm. David Architzel, left, commander of Naval Air Systems Command.

Strategic Plan

The Navy and Marine Corps leadership and reaffirmed its support of the Naval Science and Technology Strategic Plan, which ensures S&T has long-term focus, meets near-term requirements, and makes our course clear to decision makers, S&T partners, customers and performers.

ONR directs a portfolio of research that spans a spectrum that includes basic research; applied research; through Advanced Technology Development (6.3). The funding is divided between Discovery and Invention (D&I), Innovative Naval Prototypes (INP), and Future Naval Capabilities (FNC).

The S&T Plan focuses on 13 key areas where ONR's S&T investment will have high payoff: 1) Power & Energy, 2) Maritime Domain Awareness, 3) Operational Environments, 4) Asymmetric and Irregular Warfare, 5) Information Superiority & Communication, 6) Power Projection, 7) Assure Access and Hold at Risk, 8) Distributed Operations, 9) Naval Warfighter Performance, 10) Survivability and Self-Defense, 11) Platform Mobility, 12) Fleet/Force Sustainment, and 13) Total Ownership Cost.

"Not only does basic research give us those technologies that will open doors tomorrow, it's also the basis for employing the people and the scientists at the warfare centers and the Naval Research Laboratory (NRL), and out in academia and industry that conduct the basic research," says Carr. "Our investment ensures that the Navy and the nation can count on continued and meaningful research from qualified and experienced scientists who have the necessary tools and systems."

ONR's investment spans all warfighting domains—land, sea, air, undersea, space, and cyber—and provides the bridge between the fleet and the S&T community, contributing to immediate warfighter needs as well as long-term basic research that is the foundation for future discoveries and innovations.

STEM

The U.S. remains the world's technology leader, but it is the dynamics and the trends that are a concern. That's why the Navy's support for Science, Technology, Engineering and Math—or "STEM"—initiative are so important to the Navy and the nation.

Of the 3 million high school graduates last year, 2 million go on to college and half of those will major in STEM disciplines. About 480,000 graduate with those degrees, and about 300,000 go on to an advanced degree. In 2009, most of those advanced degree STEM graduates were non-U.S. citizens.

"We've been charged by the Secretary of the Navy to look at and help orchestrate the Navy's effort to support science, technology, engineering, and math education and the Navy's support and our outreach," Carr says. "It is important do this for the country, but also obviously we want to do this because we want good scientists and engineers to support Navy efforts."

"At ONR, we do not take that S&T workforce for granted. Our nation's technological superiority and competitiveness depends on it," says Carr. "By investing more than half of ONR's Basic Research funding with university programs, we not only gain valuable knowledge and discovery, but at the same time educate and develop the scientists and engineers of the future. We make grants to individual investigators and sponsor fellowship programs that support faculty, graduate, and undergraduate education of U.S. citizens who plan to work in Navy laboratories. Special programs also support the education and professional development of minority students and faculty members."

Teaching Moments

That strategy calls for investing in both research, and in people to conduct that research today and into the future.

Across the full science and technology (S&T) portfolio, ONR is engaged with the NRL, the Navy's warfare centers, the Federally Funded Research and Development Centers (FFRDCs), academia and industry to expand the boundaries of human knowledge, especially as that knowledge can meet current and emerging warfighter needs and deliver future force capabilities.

"We seek the best and brightest minds in academia and industry to be aware of and look at the Navy's priorities and needs and help deliver solutions," says Carr. "ONR-sponsored research is taking place in all 50 states, as well as in 70 countries around the world."

One of the most important metrics that ONR uses in determining the success of its research investments with academic institutions is the number of students who achieve advanced degrees as a result of those Navy-funded projects. Without smart, well educated scientists and engineers in academia, industry and the work force, America will not be able to retain its competitive edge.

Research at Sea: A Long-term Commitment

To help with this research the Navy continues to invest in better systems for data collection and better platforms from which to conduct ocean research. "We are justifiably proud of the Navy-owned research fleet, and our academic partners who help us operate them," says Carr. In 2010 the Navy contracted for the construction of two Ocean-class research ships, and named Scripps Institution of Oceanography and Woods Hole Oceanographic Institute as our partners who will operate them.

Some S&T investments in infrastructure and tools pay dividends for many years. The Floating Instrument Platform, or FLIP, still turns heads, and despite its age, is still a one-of-a-kind research capability that is enabling cutting edge science today.

Built in 1962, the 355-ft. non-propelled seagoing research platform actually flips. The vessel is towed to sea in a horizontal position and transitions to a vertical position so scientists can conduct extended data collection or testing. FLIP is also a superb platform to conduct geophysics, physical oceanography, meteorology, and other scientific fields, according to Capt. William Gaines, a retired naval officer who manages the ONR-supported FLIP program at the Marine Physical Laboratory of Scripps Institution of Oceanography, a part of the University of California San Diego.

FLIP has been used to examine ocean circulation, storm wave formation, and how thermal energy is transferred between the ocean and the atmosphere. Because FLIP can be moored in one location without making any noise, scientists can lower hydrophone arrays and other sensors into the water to conduct significant acoustic research.

Tim Schnoor is manager of facilities for ONR, which includes the Navy-owned research ships, as well as the deep diving submersible, Alvin, and FLIP, invites researchers who need the capabilities that FLIP provides to contact ONR. "It's available," he says.

A 2010 research cruise involving FLIP took place off the coast of California and involved a variety of platforms, including moored buoys, satellite imagery, research ships and aircraft, utilizing a host of sensors, sampling platforms, video and data recording equipment. Called High Resolution Air-Sea Interaction DRI (Hi-Res DRI), the data collected is helping to better understand and model the interaction between wind and waves at the sea surface, which will help develop and employ better ship-based radars.

Long shot

The Navy's 33-megajoule test-firing of its electromagnetic rail gun at the Naval Surface Warfare Center at Dahlgren, Va., was a world record. The test was conducted at the Navy's rail gun test facility using power drawn from the same electrical grid that local homeowners get their house current. "The electromagnetic railgun is a totally different way of launching projectiles," Carr says. "It works off electromagnetic force. It's extremely powerful. It does not involve any energetics in the projectiles, so you move all of the explosives out of the magazine and basically rely on your fuel tanks to launch projectiles. Because of the way this technology works, we can launch projectiles over 200 miles, and they can arrive in about six minutes. The projectile leaves at about Mach 7 and arrives at about Mach 5. And its destructive power is based on that kinetic energy that it brings. The mass of a projectile is important, but it's the square of the velocity that delivers far more destructive potential and more accuracy. The railgun may also have some applications for missile defense that we're looking very closely at, as well as long range surface fires."

- Domination of the electro-magnetic spectrum and cyberspace
- Implemented directed energy weaponry – fighting at the speed-of-light
- Achieved persistent, distributed surveillance in all domains
- Comprehensive maritime domain awareness with large vessel stopping and weapons of mass destruction detection for EMIO
- Affordable platform design and construction
- Adaptive, wireless communications networks
- Decision tools for commanders that provide tactical advantage
- Determination of threat intent through social and cultural understanding
- Lighter, faster, more lethal Marine forces
- Accelerated team training and skill development
- Increased operational effectiveness through more efficient power and fuels
- Responsive and visible logistics to enable distributed forces
- Greater tactical advantage through superior knowledge and use of operational environments

(U.S. Navy photo/Released)

High-speed camera image of the ONR Electromagnetic Railgun located at the Naval Surface Warfare Center Dahlgren Division, firing a world-record setting 33 mega-joule shot, breaking the previous record established Jan. 31, 2008. The railgun is a long-range, high-energy gun launch system that uses electricity rather than gunpowder or rocket motors to launch projectiles capable of striking a target at a range of more than 200 nautical miles with Mach 7 velocity. A future tactical railgun will hit targets at ranges almost 20 times farther than conventional surface ship combat systems.

SatCom Solutions *Answering the Call*

The advent of ship-to-shore communications continues to evolve, driven by improving technology, capable of bringing shore-side service speed and quality to sea. *Maritime Reporter* gathered leaders from varied sectors via a virtual roundtable to get the inside scoop on new tech in the pipeline in 2011 and beyond.

The Participants

Broadpoint
Jennifer Medcalf, VP, Sales & Mrktg

DeltaWave Communication
Tom Clark, President

GE Satcom
Andy Frost, VP Marketing & Business Development

Harris CapRock Communications
Pal Jensen, President, SeaAccess

Intellian
Søren Einshøj, Global Chief Strategy Officer and President

Iridium Communications Inc.
Ted O'Brien, VP, Americas

KVH Industries, Inc.
Patricio Baez, VP of Commercial Sales, Americas

Mackay Communications
Patrick Fisher, Satellite Services

MTN Satellite Communications
Jonathan Weintraub, CEO

PortVision
Dean Rosenberg, CEO

Thrane & Thrane
Casper Jensen, VP, Maritime Business

Ship Equip
Stein Oro, Vice President, Americas,

Stratos Global
Michiel Meijer, Maritime Solutions

Put in perspective the way in which the maritime community uses SatCom today versus just 10 years ago?

Jensen, Harris CapRock The commercial maritime market's appetite for satellite communications has certainly increased over the last decade. Basic voice, fax and Internet have been offered for some time now by Mobile Satellite Service (MSS) providers, but today's vessel operators need more. In the past, satellite solutions provided limited bandwidth based on metered pricing structures – making it virtually impossible to deploy certain types of business applications or offer crew morale services onboard the vessels. But with advanced satellite communications capabilities via VSAT (Very Small Aperture Terminal) technology, commercial shipping companies can operate their vessels as an extension of the corporate office and offer a variety of services to retain and recruit talented crews. Ship captains can improve the efficiencies of their day-to-day vessel operations and save valuable hours by leveraging real-time applications such as the company's Enterprise Resource Planning (ERP) system, access to the corporate network, monitoring engine performance, and holding a video conference. Additionally, the crew can stay in touch with family and friends via pre-paid calling cards, utilize an onboard entertainment system to listen to music, watch movies and get the latest headlines, or surf the web at an Internet kiosk.

Medcalf, Broadpoint One of the greatest changes has been the emphasis on crew welfare and the understanding that communication can reduce crew turnover and the associated costs. Also with SatCom becoming more prevalent, many software applications are being developed that allow companies to see and do things in a more economical fashion and save both money and time.

Baez, KVH Ten years ago, broadband satellite technology was limited and cost prohibitive. The primary choices for onboard communications at that time were L-band services, and HF/ VHF. Today, the maritime industry demands robust, reliable, and affordable solutions for broadband communications at sea as mariners adopt new IP-based systems and as a result, broadband satellite communications are becoming mariners' primary choice for both business requirements and crew morale.

Oro, Ship Equip A recent study of Ship Equip maritime clients worldwide showed a jump in average data usage from 9GB per month to 19.7GB — and it continues to grow. High-speed VSAT at a fixed monthly rate allow vessels to send and receive important documents and manuals, diagnose problems, order replacement parts, send/receive emails, and more without hesitation. High-speed communications ship-to-shore improve efficiency just as businesses on land are more efficient when connected.

Einshøj, Intellian Consumption of maritime communication has gone from being safety driven to become an enabler for commercial and leisure focused communication and entertainment. SatCom is no longer a sophisticated over engineered technology serving the few; but has increasingly become the answer to a simple request for internet at sea.

Clark, DeltaWave It has become more prevalent and an expectation among service companies to provide an what amounts to a remote extension of their office environment. As broadband service pricing has become very competitive, more and more customers seem to expect it, and there has been a bit of a paradigm shift over the years. Our clients expect now to move seamlessly from office to boat to rig no matter where they are located.

Rosenberg, PortVision 10 years ago, satellite communications were focused primarily on vessel tracking. Today, data-based satellite communications are being leveraged by companies to drive business intelligence and operational efficiencies. It is no longer sufficient to see the "points on a map." Today's SatCom users are leveraging bigger VSAT pipes to extend enterprise systems onboard, and fusing vessel tracking data with 3rd-party intelligence including weather, shore-side services, and related vessel activities.

Fisher, Mackay Fifteen years ago Satellite Communications was basically an analog system, consisting primarily of voice and fax transmissions. Data was just beginning to be desired within the maritime industry and availability of fleet software applications was minimal. Today we are operating in a digital world, requiring more software applications and larger and faster transmission speeds. The transition to digital has put more emphasis on vessel communication efficiency and budgets. The variety of satellite products offerings to the industry has grown to the point that a radio operator position is now being replaced by entire IT departments.

Jensen, Thrane & Thrane Ten years ago there wasn't much in the way of IP based satcom communication at sea. Nowadays, IP is becoming an integral part of maritime communication and in the future it will be an important aspect of the navigation set-up too. Even just five years ago, an internet connection at sea was more akin to an old dial-up connection on land. You turned it on when you needed it, say 4-6 times per day, just to send some email back to the office, or if you were lucky, to friends and family. It really was still voice based solutions that were prominent. Now though, it is possible to stay online and being connected 24/7. I think we really are at the next level. We have network

technology from land at sea. Companies are connecting their vessels by LAN and WAN and data communication has increased dramatically.

Where do you see opportunities for growth in your sector?

Einshøj, Intellian Commercial shipping is still the most promising growth market looking ahead although the offshore sector still represents this prime market for the SatCom sector in 2011.

Frost, GE Satcom Growth opportunities are clearly within the commercial shipping sector. These include: global coverage of high speed services at a flat rate, a range of included services and an ability to support an ever growing suite of commercial management applications to ensure a ship's efficient operation.

Meijer, Stratos We see opportunity for continual growth in crew-welfare services. There also will be lots of opportunity for growth wherever our communications solutions can support IT services. This includes remote management – which allows headquarters personnel to manage the ship's computers without visiting the vessel. With FleetBroadband, engineers now can achieve high-performance, direct remote access to the ship's computer terminals, the FleetBroadband terminal and the onboard firewall via popular remote-support applications. In the future, we also expect an even greater number of operators to use FleetBroadband for engine-performance analysis and emissions monitoring, to help reduce fuel costs and comply with emissions regulations.

Baez, KVH Global demand for maritime communications continues to grow steadily, primarily driven by the oil and gas and commercial shipping markets. Fishing is an additional subsegment of the commercial market that is generating strong demand, and we believe it to be an up-and-coming niche market. We also expect the leisure market to continue growing steadily with the introduction of new products and services, seasonal rate plans, and smaller VSAT solutions.

Medcalf, Broadpoint There are several areas that have opportunity for growth. One area is international growth, like many other industries, SatCom is seeing the globalization of its industry. Many of the companies that SatCom services such as the Energy and Marine have moved beyond their normal geographic boundaries and have international locations that needs communication services. These international locations are also not the normal that we have seen in the last couple of years but areas such as the Antarctica. Another area of growth is technology/software applications. Many companies are turning to new software applications to better manage their business. Many of these applications have large files that need to be moved from remote locations to onshore offices and the only medium to do that is VSAT.

In your opinion, what has been the biggest driver for improved satellite communication services between ship and shore?

Oro, Ship Equip In our opinion it is the ship owners desire for more billable days/fewer days off hire giving increased bottom line profit. This may come as a surprise to some but here is why: The im-

Intellian

Søren Einshøj

Our VSAT product portfolio will continue towards completion both towards smaller Ku-bands in addition to C-bands.

Harris CapRock

Pal Jensen

Captains can improve efficiencies of their day-to-day vessel operations and save valuable hours by leveraging real-time applications such as the company's ERP system

MTN

Jonathan Weintraub

Over the next 5 to 10 years, I expect to see more development of new satellite frequencies, which will allow users to communicate with higher bandwidths and smaller antennas.

KVH's V7.

KVH

Patricio Baez

The primary challenge is a widespread misconception that satellite communications systems are bulky, expensive, and unreliable. That just isn't the case anymore.

Iridium

Ted O'Brien

We are moving forward with our next-generation satellite constellation under the Iridium NEXT program.

Thrane & Thrane

Casper Jensen

Downturn or not, we have not reduced our development of new products. We are continuously developing our VSAT offering ...

Stratos recently deployed FleetBroadband on 16 vessels for Germany's Vega-Reederei GmbH & Co. (Vega).

Seacor Joyce McCall, which is now located in the Caspian Sea. (Photo: Broadpoint

mediate reason appear as any one or a combination of the following causes: a) to retain qualified crew, b) to improve communication between key equipment experts and ships' crew, c) to enable the exchange of operational experience between land support staff and ships officers, d) to enable crew to stay in contact with family and friends and attend to personal matters. Because people run ships and when you keep the best crew on the job, ensure they stay focused on their job, give them online and offline support from vendors of key equipment, provide online support from IT staff, keep computer systems updated and do all this in real time and at high speed, ships are kept running and earning money for the owner — which is what shipping is about.

Frost, GE Satcom There are essentially two drivers. The first is crew welfare, the second is efficiency. With improving electronic bridge systems the need to network these between ship and shore is becoming more important. Data collection is typically performed centrally on shore combined with processing and (re)distribution back out to shipping fleets to enable the efficient operation of commercial fleets. Typical applications include weather, chart and routing and could extend to cargo monitoring, security and on-board plant efficiency using SCADA.

Jensen, Thrane & Thrane The need to move more and more data for applications like crew welfare, remote maintenance and monitoring. Simply the need to stay in touch for operational or personal reasons.

Rosenberg, PortVision The biggest driver for improved satellite communications is that customers are demanding more services, more data and, consequently, a bigger pipe. Increasing demand has resulted in economies of scale for both the communications services and hardware manufacturers, which has resulted in greater bandwidth at lower price, which has further increased demand.

Fisher, Mackay Simply put, faster throughput has enabled more software applications to be developed for fleet operators. Tasks that were once done on shore are now being handled by the vessels themselves. It has taken a long time to see this become a reality, but companies are requiring more than just communication equipment, they want solutions.

Einshøj, Intellian Need for internet access both utilizing company IP standards internally as well as getting access to the external information and services equal to what's offered at shore.

O'Brien, Iridium At the moment, crew welfare calling – including phone, e-mail and Internet – is primary driver in the industry. Crew morale and retention have an impact on the bottom line since the cost of recruiting and retraining crew is expensive. The other driver is the never-ending quest for lower monthly satellite communication costs.

What trends do you see today that you believe will fundamentally change the market in the coming decade?

Weintraub, MTN Over the next five to ten years, I expect to see more development of new satellite frequencies, which will allow users to communicate with higher bandwidths and smaller antennas. This could come out as wide area Ka-band or higher power Ku-band satellites covering larger footprint areas. With the current development of spread spectrum and CDMA, it will allow users "to continue to push the envelope" when bandwidth requirements exceed today's capabilities. The higher frequencies will allow for smaller and lighter terminals used in the field for military and government operations. We can expect to see many new antenna designs being delivered using flat-array technology instead of the more commonly used parabolic or dish antenna.

Clark, DeltaWave Free use of the internet and the availability of communications over the airwaves. The total accessibility of the internet and the use of streaming video to have instant contact.

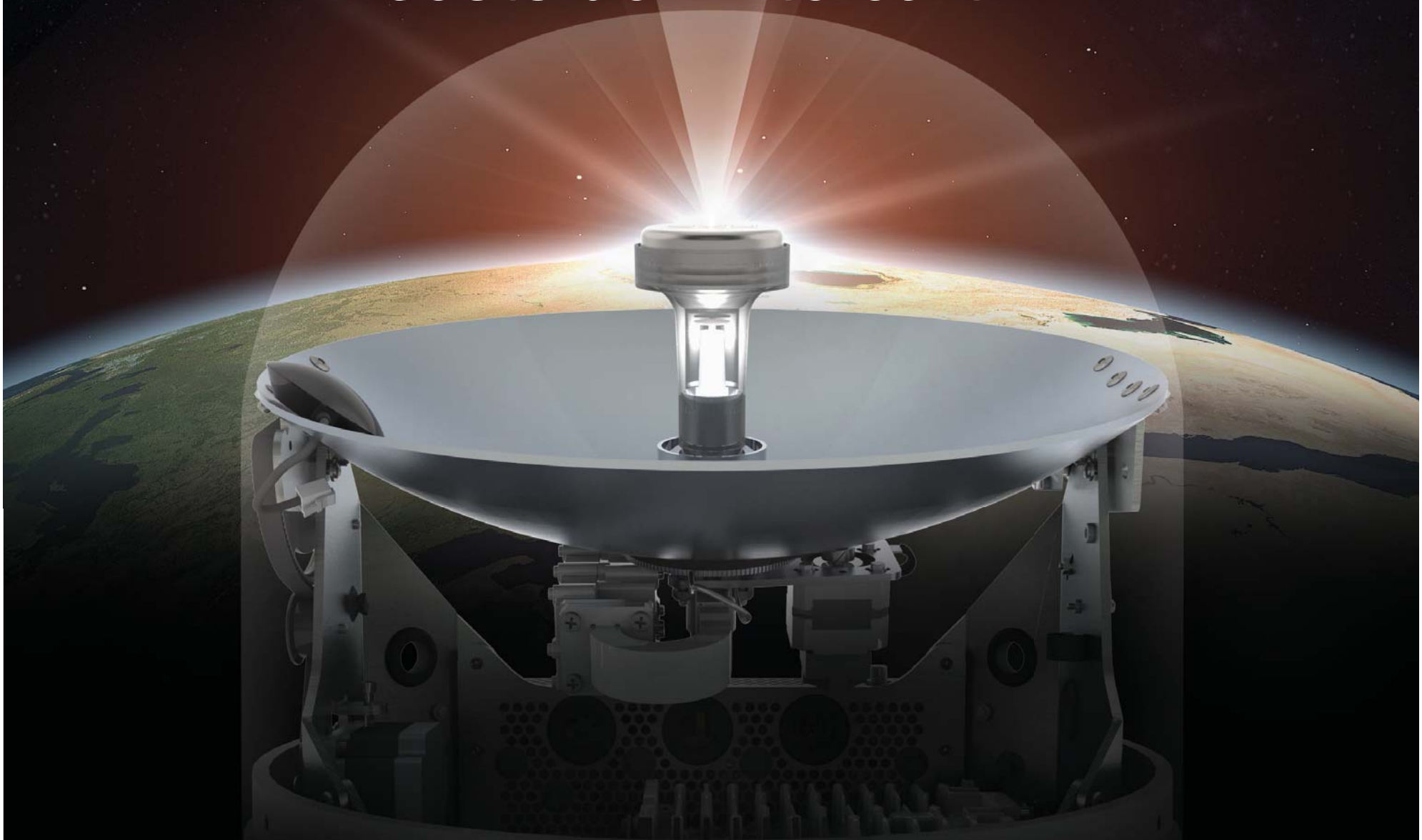
Fisher, Mackay I see more competition with L-Band technologies and Ku and Ka products. Customers will have a wider variety of product choices and value-added services to match their unique communications requirements. There will be a vast array of communications solutions from simple handheld L-Band products with docking stations, to a variety of L-Band FleetBroadband terminals, additional Ku offerings, and the upcoming Global Express products. The customer will be the beneficiary, enabling more cost-efficient and a reliable communications.

O'Brien, Iridium The proliferation of VSAT service providers in the maritime market will have a big impact, although the large gaps in VSAT cover-

KVH® INDUSTRIES

MINI-VSAT BROADBAND℠

Bringing satellite communications costs down to earth.



The next-generation of satellite communications is here.
What you learn will change the way you think about SATCOM at sea.

www.kvh.com/downtoearth

KVH®

KVH Industries, Inc. • 50 Enterprise Center • Middletown, RI 02842-5279 U.S.A. • Tel: 401.847.3327

Mackay
Patrick Fisher

Simply put, faster throughput has enabled more software applications to be developed for fleet operators.

Compact, High Performance Fleet-Broadband Replaces Saturn B Terminal.

(Photo: Mackay Communications)

PortVision
Dean Rosenberg

PortVision subscriber revenue grew 38 percent in 2010. We are definitely seeing signs of improvement in the macro economy.

Stratos
Michiel Meijer

Stratos is expanding it's its broadband solutions to include end-to-end, managed IP services – which include design, installation, maintenance and support.

age over the ocean areas will require secondary satellite communication systems to fill in the gaps for ships using VSAT as their primary communication medium. Ships will be fitted with integrated VSAT-Iridium shipboard systems with automatic failover to Iridium whenever the ship sails out of VSAT coverage. We also expect to see a surge in low-data-rate satellite data devices for monitoring shipboard systems, including engines, auxiliary systems, fuel consumption and the like.

Oro, Ship Equip The arrival of dedicated maritime satellites is leading to better coverage and more value for money. Until recently, Ku-band satellites were only pointed at land areas, leaving fringe cover the only option for maritime communications. A strong growth in the maritime market has made it financially viable to launch satellites that serve maritime markets primarily, leading to improved coverage and availability of higher bandwidths. Alongside this trend we see a consolidation where a handful of larger companies emerge, that are able to deliver worldwide coverage, 24/7 support and value added services that are going to be must-haves to stay competitive.

How was business in 2010?

Weintraub, MTN 2010 was a tremendous year for MTN. Despite the difficult economy, we grew in each of our markets – cruise, yachts, commercial shipping, government and aviation – by retaining existing customers, expanding contracts with new customers in various markets, and winning government contracts such as our 5-year, $50 million DISA government contract.

Rosenberg, PortVision PortVision subscriber revenue grew 38 percent in 2010. We are definitely seeing signs of improvement in the macro economy. But the biggest trend we are seeing is that customers are getting more sophisticated in how to incorporate satellite- and AIS-based data into their business processes. It used to be about showing points on a map. Now customers are using location-based data overlaid with third party data sources to accelerate revenue and drive cost efficiencies.

O'Brien, Iridium At this writing, we have not yet released our end-of-year financial results for 2010, but our third- quarter 2010 financial statements showed double-digit increases in our overall revenues and operational EBITDA over the same period the previous year. Our third-quarter SEC filings and earnings release describe our financial results in greater detail. Our base of billable subscribers had risen to 413,000 – a 22 percent year-on-year increase. The maritime industry remains one of our largest market segments, and continues to show strong growth trends, largely driven by revenues from the broadband Iridium OpenPort maritime system.

What do you count as the leading technical challenges to making SatCom services even better?

Baez, KVH There are two main challenges here, the first being bandwidth/footprint coverage throughout all maritime routes, which affects all aspects of satellite communications service, but especially speed and network availability. The second is the adaptive return and forward links as these will increase the overall capacity and performance of the service.

What challenges (outside technical) do you face to increase your penetration in this market?

Fisher, Mackay Satellite communications has always been a cost driven industry. Most companies resented the high cost of communications. Yet relative to the average cost of vessel maintenance, plus the increased reliance on timely communications, hardware and airtime is being viewed as a positive price-performer. Price competition and enhanced robustness of the satellite communications equipment is leading to additional adoption by smaller commercial vessels.

Rosenberg, PortVision We have a unique challenge in the SatCom market. Since we incorporate real-time AIS-based vessel location reporting into our solution, a key requirement is to collect AIS location reports from a VHF receiver network around the world. AIS global networks (including terrestrial and satellite AIS) are still very much a "frontier," and we are working very hard to enhance both the coverage, quality, and value that customers can derive from AIS-based data.

Baez, KVH The primary challenge is a widespread misconception that satellite communications systems are bulky, expensive, and unreliable. That just isn't the case anymore.

Clark, DeltaWave Our customers are used to all you can eat connectivity in their offices for low cost and

do expect them same service anywhere in the world. Bandwidth availability and the expectations of our customers may be currently higher than the available technology. Lower operating costs are also key, but distribution channels and competitors lowering their profit margins at next to nothing when is also a key factor.

How is your company investing today to better serve the maritime market?

Oro, Ship Equip Ship Equip has invested heavily in the training of personnel and developing infrastructure, so we can better serve the market today and meet increasing needs tomorrow. We recently opened two new Network Operations Centers (NOC), one in Singapore and one in Houston. These strategically located facilities support our primary NOC in Alesund, Norway.

Meijer, Stratos Stratos incorporates The Stratos Advantage value-added services into each total customer solution – enabling ship managers to attain the highest possible performance and support from their satcom solutions, at the lowest possible cost. The foundation of The Stratos Advantage is Stratos Dashboard and AmosConnect. Stratos Dashboard is an online communications management solution that enables ship managers to remotely derive maximum cost control and traffic control from their broadband usage. To support the changing requirements of shipping companies, Stratos is expanding it's its broadband solutions to include end-to-end, managed IP services – which include design, installation, maintenance and support.

Fisher, Mackay Vessel management tools to control communication costs, and troubleshoot onboard satellite equipment problems. Vessels can no longer afford to wait to get into port to fix a communications problem.

Baez, KVH Our engineering and product development teams are working on new, lower-profile antenna designs that could offer onboard satellite communications to a larger segment of the maritime market. We will continue to work together with our partner, Viasat, to implement strategies that will increase bandwidth utilization and extend network management features for the fleet operators, platform managers, and end users who depend on our network. Finally, KVH continues to invest in our global mini-VSAT Broadband network. Our latest satellite footprint expansion, which brings coverage to Brazilian waters, demonstrates our commitment to providing global connectivity.

Jensen, Thrane & Thrane
Downturn or not, we have not reduced our development of new products. We are continuously developing our VSAT offering with some exciting results which we plan to introduce this year. Also last year we launched a major new product line at SMM, the SAILOR 6000 GMDSS Series, which is a combination of new radio, satcoms and ICT products. It will be the first such system to offer touchscreen operation and the ability to significantly reduce maintenance through the introduction of our new ThraneLINK networking solution.

O'Brien, Iridium We are moving forward with our next-generation satellite constellation under the Iridium NEXT program. We have contracted with Thales Alenia Space to be the prime contractor for Iridium NEXT, and secured favorable financing with guarantees from the French export agency Coface. Launches of the new satellites are scheduled to take place in 2015-2017. Iridium NEXT will use an IP-based architecture offering data speeds up to 1.5 Mbps. Importantly, Iridium NEXT is being designed to be 100 percent backward compatible with the current satellites, meaning that all existing Iridium satellite terminals will be able to work on the new network.

Weintraub, MTN MTN is investing in the rollout of iDirect's most powerful EVOLUTION DVB-S2 operating system, this will further enhance MTN's already established iDirect powered seamless global communications network. Today, MTN uses iDirect technology to provide "always on" two-way VSAT services from ten teleports around the globe utilizing over 900 MHz of transponder capacity on 21 communications satellites. The new Evolution upgrade will bring MTN Adaptive Coding and Modulation (ACM) into their technology platform, which preserves signal quality from rain fade and other weather-related issues. The upgrade also provides additional bandwidth segmentation, Automatic Beam Switching (traversing satellite beams), the ability to operate smaller antenna sizes using spread spectrum technology and provides more effective network management.
In the next 12 months MTN will be launching the next generation of its Internet Café's, leveraging both the technology on the ships as well as technology devices including laptops and hand held

MTN

Broadpoint

Jennifer Medcalf

With Satcom becoming more prevelant, many software applications are being developed that allow companies to see and do things in a more economical fashion.

Ship Equip

Stein Oro

A recent study of Ship Equip maritime clients worldwide showed a jump in average data usage from 9GB per month to 19.7GB ... and it continues to grow.

GE Satcom

Andy Frost

With improving electronic bridge systems the need to network these between ship and shore is becoming more important.

DeltaWave

Tom Clark

Our clients expect now to move seamlessly from office to boat to rig no matter where they are located.

devices from passengers. In addition, our commercial, government and yacht divisions will introduce new technology that automates much of the communication to the satellites as well as introduce technology to maximize overall efficiency.

Clark, DeltaWave We are focusing on kitted solutions which offer ease of deployment and transport. We pride ourselves on having a highly trained and knowledgeable staff. That said, continual training on new technologies an keeping up with current ones is also a key investment and continual commitment on our part in order to provide the best product support available.

What new product or service will you deliver to the market in the coming 12 months?

Einshøj, Intellian Our VSAT product portfolio will continue towards completion both towards smaller Ku-bands in addition to C-bands.

Weintraub, MTN We are developing new antenna systems and modulation techniques which will allow our sales and marketing to offer VAST systems immediately which will also meet new satellite technology demands coming in the next couple of years.

Jensen, Thrane & Thrane
SAILOR 6000 GMDSS Series is due to ship within Q1 and we are already seeing a lot of interest in the communication, safety and operational benefits that the new solution can offer. We will have a big VSAT development later in the year and of course, ThraneLINK will become more visible in not just our product strategy but possibly in other manufacturers' products. We are also going to expand our radio product offering targeting the fish and workboat arena with a new system that includes units with AIS receive built in.

Meijer, Stratos In 2011, Stratos expects to announce the availability of several innovative packages – including maritime hardware bundles, hybrid FleetBroadband-VSAT solutions and global flat-fee broadband options up to 432kbps. These new Stratos solutions are ideally suited to provide a convenient migration path toward Inmarsat's Global Xpress 50Mbps services, which will be commercially available in 2014.

Baez, KVH We plan to announce a series of new products and services this year, with the first scheduled to be unveiled at the Miami Boat Show in February.

Clark, DeltaWave We now offer a new Inmarsat IsatPhone Pro flyaway package – the "iFly". This is intended to be a cost-effective voice and data solution when it comes to installation time and costs involved.

O'Brien, Iridium Our service partners are developing a host of new Iridium-enabled products for release in 2011. They include remote tracking and monitoring devices built around the Iridium 9602 SBD transceiver and new solutions using the Iridium OpenPort platform such as integrated VSAT-Iridium packages with automatic least-cost routing software.

DeltaWave offers the new Inmarsat IsatPhone Pro flyaway package – the "iFly".

Omnipure Series 55 Receives USCG Certification

Omnipure Series 55 marine sanitation treatment systems from Severn Trent De Nora have received final certification from the United States Coast Guard (USCG) to the International Maritime Organization's MEPC.159(55) effluent standards. Certification by the USCG involves testing environmental standards such as shock and vibration above and beyond IMO requirements. The Omnipure Series 55 technology utilizes a unique electrolytic treatment process, combined with electrocoagulation to both effectively treat wastewater and provide sanitary solids for handling. The OMNIPURE Series 55 systems can accommodate treatment capacities up to 598 persons for black water and up to 197 persons for black and gray water. The Omnipure Series 55 systems range in capacity up to 65 m3/day (17,280 gal/day) as individual units that can also be combined for increased capacity.

EnviroLogic - 802A: Biodegradable Grease

Grease frequently finds its way into the environment, creating sheens, as well as killing plants and animals. Envirologic 802A is a biodegradable, nontoxic #2 grease that offers excellent water wash-off protection and works under a wide range of temperatures. It also offers excellent extreme pressure and anti-wear protection and meets the highest NLGI standards of GC/LB.

www.terresolve.com

Standards for Application of Corrosion Resistant Steels

ClassNK developed and released what is says is the world's first set of standards for the application of corrosion resistant steels to the cargo oil tanks of oil tankers. The new Guidelines on Corrosion Resistant Steel for COT are the first guidelines to lay out clear requirements for the application of the new steels, whose use was approved by the IMO's Maritime Safety Committee (MSC) earlier this year.

www.classnk.or.jp

Maritime Simulators

A Dynamic Positioning (DP) Operator Training Facility, featuring an extensive simulator suite developed by Kongsberg Maritime was opened in Northbridge, Western Australia. Owned and run by the Australian Maritime College (AMC), the new facility is positioned to serve the growing Western Australia oil & gas business from its center in Perth.

RWO's CleanBallast System

No Impact on Corrosion or Coatings

The risks of ballast water treatment systems on ballast tank coatings and corrosion has been a hot topic. Bremen-based RWO GmbH, a Veolia Water Solutions & Technologies company, has been a pioneer in the field, and according to the company has proved that the CleanBallast ballast water treatment system with its EctoSys disinfection technology does not increase the corrosive properties.

RWO – in cooperation with a leading European corrosion institute (SWEREA-KIMAB) and Germanischer Lloyd – has carried out thorough accelerated corrosion studies in treated full-salinity seawater with the CleanBallast ballast water treatment system. The tests simulated operation over an approximate entire lifetime of a ballast water tank/piping structure (approx. 40 years).

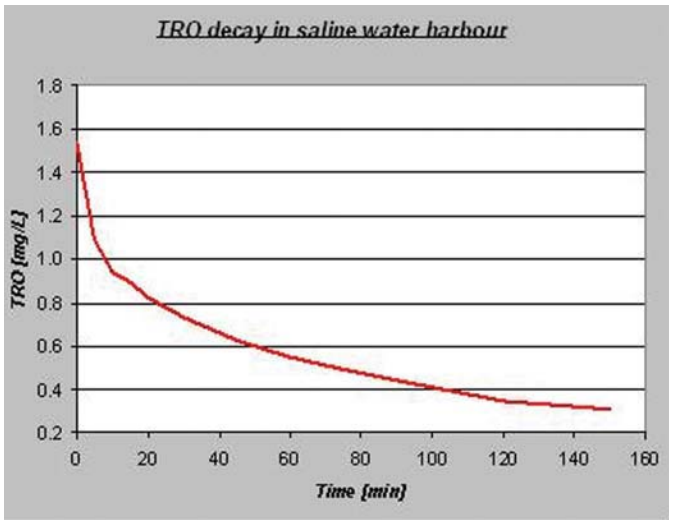
CleanBallast operates readily in waters with low and full salinity. The natural corrosiveness of those environments differs significantly, with, for example, full salinity (>32PSU) being a very corrosive media to common construction materials. It is also well known that larger quantity of active chlorine has further negative effect on corrosion, increasing the wear rate of non-passivated metals, etc.

The disinfection unit "EctoSys" used by the CleanBallast system is based on electrochemistry, however operating very differently compared to, for instance, conventional chlorination or electrolysis systems using salt water (containing chloride), where a maximum production of active chlorine is desired. Instead, EctoSys produces short-lived mixed oxidants, which together have a more striking and powerful effect compared to active chlorine. Thus, the EctoSys is not dependent on chloride content (salinity), but produces oxidants directly from the water. The negative effects of active chlorine on corrosiveness can effectively be avoided.

In natural brackish and full-salinity seawater, besides the short-lived oxidants hydroxyl radicals the disinfection unit EctoSys will produce only low levels (up to maximum 2mg/l) of more persistent oxidants, summarized as TRO (Total Residual Oxidants). Being oxidizing agents, such substances in higher concentrations are relevant for corrosive properties of water. TRO will decay via interactions with, for example, dissolved organic matter. Fig. 1 illustrates a typical decay curve of TRO, showing that the natural blank level of 0.2 - 0.3mg/l of TRO is reached within approximately two hours.

The tests included accelerated comparative studies (treated and untreated seawater) using both uncoated steel test specimens but more importantly test specimens with two-coat paint systems according to NORSOK Coating 3B approved according to DNV Classification Note 33.1 class B1, common and approved for use in ballast water tanks, for instance, the Jotun system 'Balloxy HB light'. The tests included parallel tests with both continuous exposure to the water and intermittent cyclic exposure of water and air. Intermittent exposure resembles better the real conditions in ballast water tanks and a worse corrosive case than continuous exposure. The tests were accelerated, that is, the exposure of the test panels was set to simulate an approximate entire lifetime of a ballast water tank/piping system, regarding initial maximum concentration of TRO and natural decay.

Fig. 1: Natural decay of residual oxidants TRO produced by CleanBallast, T=22°C, pH=7.9, salinity 15PSU



Based on the result of these tests, both SWEREA KIMAB and Germanischer Lloyd concluded that there are no additional corrosive properties of seawater treated with CleanBallast, compared to untreated seawater. Thus, the tests proved that the CleanBallast equipped with the EctoSys disinfection unit does not increase corrosion in ballast water tanks. Furthermore, CleanBallast is certified and classified by the GL as compatible with epoxy-based ballast water tank coating systems.

www.rwo.de

Bearing Condition Monitor

Open-up inspections can now be avoided if an AMOT XTS-W+ Bearing Condition Monitor is installed. The XTS-W+ is reportedly the first bearing wear monitor to gain approval from MAN Diesel & Turbo and Germanischer Lloyd after completion of extensive trials on the Hapag-Lloyd vessel Hanover Express. The approval will allow ship owners to apply for Survey Arrangement Condition Monitoring (SACM) if an XTS-W+ is installed and there is a reassurance that the bearings are in good condition. Eliminating unnecessary open-up inspections of the crank train bearings represents huge operating cost savings, since such inspections are a major cause of premature bearing failure, resulting from mis-assembly, ingress of dirt or even physical damage. Because of this MAN Diesel & Turbo does not recommend unnecessary opening up of the crank train bearings on its 2-stroke low speed engines.

Email: info@amot.com

3340 Color MultiFunction Display

Offshore Systems introduced the compact Offshore Systems 3340 Color MultiFunction Display, a 95mm sq screen unit with a high resolution sunlight readable bright full color display for showing data from all ships tanks, DC sources and AC sources. Connects to the NMEA2000 network with a single cable, while function selection is fully flexible with user selectable screen layouts. The 3340 MultiFunction Display can accommodate up to 16 each of fuel tanks, fresh water tanks, grey water tanks, black water tanks and oil tanks.

23-in. LED Display Tested to MIL Standards

Comark offers the MDU23, a 23" UXGA LED backlit display, which can be set at up to 400 NITS at full brightness.

The MDU23 has been tested in accordance with IEC 60945, and is ECDIS and ECDIS-N compliant. In addition, it is fully MIL Tested to MIL-STD 901D grade A, MIL-STD 167- class 1, type A; MIL-STD-810F; and MILSTD-461E.

www.comarkcorp.com

Salwico G2000 AmbientOil Mist Detector

The G2000 Ambient Oil Mist Detector is developed for monitoring pump rooms, engine and motor rooms and attached onto boilers or diesel engines. The G2000 is ideal for applications where an instantaneous and accurate response to oil mist, but also smoke or steam, is required in unattended machinery spaces.

Email: cmsab@consilium.se

Emerald Princess Cruise Ship Coated by Hempel

Hempel US has completed a Hempasil X3 application on the M/V Emerald Princess that Dry Docked in the Grand Bahamas. This was considered significant by the company as it is the first Hempel sale to Princess Cruises Lines, a division of Carnival Corp., the largest cruise ship company in the world. The Hempel team conveyed the silicone´s fuel saving attributes, resulting in its incorporation of Hempasil X3. "SeaTrend" Fuel Monitoring system from Force Technology was a key component of the offer and was included and sold as part of the Hempasil X3 Program, allowing the client a correct monitoring of the fuel consumption and consequently the precise outcome on fuel saving.

The three-year-old Emerald Princess is one of the largest vessels in the fleet at 113,561 gt. The complete system consisted in 15,200 liters. Even though it is a relatively new vessel, it was decided to remove all the original underwater hull coating system consisting of AF and AC system. The full blast of both the vertical and flat bottom and full application of Hempasil X3, was accomplished in a 10-day period.

A unique aspect of the job was that the Hempasil X3 System was applied with a custom color, Princess Ocean Green, which is a signature color of the fleet.

Bilge Water Solutions Kit

Built by authors of IMO MEPC.1 /Circular 677, the Bilge Water Solutions Kit uses patent pending technology to diagnose OWS problems & help find solutions. It was developed by mariners who authored the new IMO MEPC.1 / Circular 677. The Kit is designed for the demands of shipboard use — and allows crews to identify causes of OWS & OCM malfunction while underway. Based on scientific research & field testing, the Kit makes all seven Circular 677 tests easy to use. The tests include: Non-Emulsified Oil; Emulsified Oil; Detergents & Alkaline Solvents; Turbidity Causing Iron Particles; Bacteria/Microbial Composition; Color/Opacity; and Soot.

Email: brussell@circ677.com

Rolls-Royce MT30

Rolls-Royce achieved full power operation of its first production MT30 powered main turbine generator set delivered to the US Navy. The MT30, delivered to the US Navy for the DDG-1000, USS Zumwalt program, achieved full power operation at 36 MW during testing at the US Navy's land based test site in Philadelphia.

Sound Damping Sandwich Steel

Antiphon AB introduced a new product for structure borne sound damping; antiphon MPM (metal-polymer-metal) foiled, a sheet metal laminate with a thin foil on one side. The core material is two zinc coated sheet steel laminated with an acoustic inner layer to obtain the best structure borne sound damping. MPM foiled makes it possible to use laminated sandwich systems in more visible environments and also to choose MPM foiled deliberately as a decoration material where sound damping is wished for. The thinnest sheets is 1,04 mm where the system consists of two sheet steel of thickness 0,5 mm laminated with a 0,04 mm acoustic inner layer. For aluminum minimum thickness is 1.44 mm. Maximum thickness is 6.1 mm.

www.antiphon.se

Portable Mobile Refrigeration

Dometic Marine offers the new CF850 Portable Mobile Insulated Refrigerator. Providing 29.3 cu. ft. of portable AC/DC refrigeration and an integrated battery that provides up to eight hours of operation without a power supply, the CF850 offers an innovative solution for the transportation and storage of a wide range of temperature-sensitive products including food and medical supplies.

The CF850 refrigerator features an energy-efficient air circulation system that ensures optimal temperature distribution within, as well as digital controls that enable users to set temperatures between 32°F and 53°F. The unit can be easily installed anywhere, including into the vessel's galley space, without the use of tools, while the included belt set ensures quick and secure anchoring. The CF850 refrigerator is housed within a robust casing, providing exceptional durability and protection of its contents in the maritime environment.

www.dometic.com

Volvo Penta SOLAS Engines

Volvo Penta offers a range of SOLAS approved engines for fast life- and rescue boats. The range comprises three base engines, with no less than 14 output options from 110 to 435 hp, all of which are in-line diesels with common rail and the latest in electronic management for sterndrive, inboard and water jet propulsion. The SOLAS range consists of the D3, D4 and D6 engines, all featuring the very latest in technology with common rail, 4-valves per cylinder and supercharging with aftercooler. The SOLAS engines are based on standard engine design with a SOLAS kit mounted and tested in factory before delivery to boat builders. The kit includes a shut off valve for crank case ventilation and a tilt switch, to be mounted on the engine room bulkhead.

www.volvopenta.com

ClassNK: Standards for Application of Corrosion Resistant Steels

ClassNK developed and released what is says is the world's first set of standards for the application of corrosion resistant steels to the cargo oil tanks of oil tankers.

The new Guidelines on Corrosion Resistant Steel for COT are the first guidelines to lay out clear requirements for the application of the new steels, whose use was approved by the IMO's Maritime Safety Committee (MSC) earlier this year. The new guidelines are available on the ClassNK webpage at the following address:

www.classnk.or.jp

HHI Delivers VLCC with Electrolysis BW System

On January 10, 2011, Hyundai Heavy Industries delivered a 317,000DWT VLCC to Oman Shipping Company (OSC). The ship, measuring 1,093 ft in length, 197 ft in height and 99.7 ft in depth, is reportedly the first VLCC with the new electrolysis ballast water treatment system that can treat as much as 100,000 ton ballast water.

"Intelligent" Combustion Monitoring for 2-Strokes

Wärtsilä introduced its Intelligent Combustion Monitoring system for two-stroke diesel engines. By operating at optimal firing pressures, fuel cost savings of up to two percent compared to deteriorated parameters can be achieved. The Wärtsilä Intelligent Combustion Monitoring system provides a means for measuring the pressures in each cylinder during the entire combustion process, continuously, in parallel, and under all load conditions. By monitoring the exact position of the crankshaft, and in combination with advanced mathematical modelling of the engine, it provides highly accurate, real-time data for diagnostic analysis.

www.wartsila.com

YoYo Winch

Patterson offers the patented YoYo winch, designed and field-tested to alleviate common problems: No more springcoil; No more fouling; and no more problems created by uncontrolled spooling of wire rope on the drum. Developers of Patterson's YoYo winch insist that it is safer, as the contained spring coil virtually eliminates injuries due to rope memory; it eliminates 'bird nesting' or 'fouling' or wire rope on the winch drum; and full gear shroud protects wire rope, gearing and operators. In addition, the maker claims that intuitive one-man operation of the system, a patented double-dog design for easy maximum line tensioning, and a fully open design makes the winch safer, easier and faster to operate.

Email: info@pattersonmfg.com

Foul Weather Gear

Port Supply, the wholesale division of West Marine, has expanded its line of technical and uniform apparel for industrial settings. Third Reef foul weather jackets and bibs are designed for freedom of movement using breathable yet waterproof fabrics, allowing crew to work in comfort, longer. Offered in sizes small through 3X and 4X sizes, they provide a single convenient source to cover everyone in the team. All apparel can be customized with embroidery and silk-screening to professionally brand your organization.

www.portsupply.com

ARMOR Rugged Mobile Computer

DRS Technologies' Tactical Systems Group unveiled the ARMOR rugged mobile computer, the ARMOR X7 compact tablet. The small mobile computer is designed for those tasks that require connectivity, hand-held mobility, ease of use and the durability to support all-weather operations. The ARMOR X7 is certified to MIL-STD-810G for extremes in temperature, vibration, shock and drops. It is highly resistant to dust and moisture, earning an IP65 rating for ingress protection, while providing a 7-in. sunlight readable touch screen display. It includes a range of connectivity options such as Gobi 2000 WWAN, Bluetooth wireless, integrated GPS and 802.11 a/g/n WiFi, at a weight of only 2.8 lbs.

www.drsARMOR.com.

Halawi Appointed CEO of Thuraya

Dubai-based satcom provider Thuraya Telecommunications appointed Samer Halawi as CEO. He assumed the office January 23, 2011 following the return of Mr. Yousuf Al Sayed to the Etisalat Group. Thuraya leads the mobile satellite telecom industry in handheld voice solutions with nearly 70% market share in its 140-country coverage area spanning Europe, Africa, the Middle East, Asia Pacific, and Australia.

Teekay Management Appointments

Teekay announced that its current President of its Shuttle Tanker and FSO business unit, Kenneth Hvid, has been appointed to the position of Executive Vice President and Chief Strategy Officer effective April 1, 2011. Hvid will succeed Peter Evensen, who will take over as Teekay's President and CEO in April 2011 as a result of the previously announced retirement of Bjorn Moller.

Ingvild Sæther has been appointed Hvid's successor as President, Teekay Navion Shuttle Tankers and Offshore effective April 1, 2011.

Grove Takes on Chief Technology Role at ABS

ABS announced the appointment of Todd Grove to the position of Chief Technology Officer (CTO). Grove will report to ABS President and COO Christopher J. Wiernicki and be based in the society's headquarters in Houston. Grove, a 28-year veteran of ABS, has served as President and COO of three ABS operating divisions – Europe, Pacific and Americas. He also has extensive experience in the offshore sector having served as Director, Energy Project Development and Manager, Offshore Engineering.

Mustang Survival's New CEO

Mustang Survival completed its executive management succession , first announced in October 2009, with the goal to successfully realign key executive roles and operation teams by January 2011. As of January 1, 2011, Bob Askew, former Mustang Survival President and CEO. will become Mustang's Chairman to its newly formed Advisory Board, and Jim Hartt, former Mustang Survival Chief Operating Officer, will become Mustang's CEO.

Buchner is MARIN's New President

Incoming president Buchner (left), and outgoing president Hubregtse.

As of January 1, 2011, Bas Buchner is president of the Maritime Research Institute Netherlands (MARIN). He's taken over the helm from Arne Hubregtse, who stood down to become general director of the heavy lift shipping company Biglift. Buchner:

Nordic Tankers, WOMAR establish "Nordic Womar" JV

Nordic Tankers A/S and WOMAR Logistics Pte. Ltd. have reached an agreement to establish a jointly owned independent pool management company with the name of "Nordic Womar". Nordic Womar will initially manage two pools of coated chemical tankers with a total of approximately 40 vessels in the 10,000 to 25,000 deadweight tonnes (dwt) segment.. Tommy Thomsen will be Chairman of the Board and Hans van der Zijde will be CEO in Nordic Womar. The company will be managed out of Singapore and will commence operations 1 February 2011.

Newbury Joins STX Canada

STX Canada Marine is said that Scott Newbury joined their team in January. He an authority in physical model testing in ice having conducted research into the interaction loads imposed on ship propeller and shafting systems and carried out full-scale ship trials in ice in the Antarctic.

Nickless VP Crowley Finance & Planning, Shipping & Logistics

Crowley Maritime said that David Nickless has been promoted to vice president of finance and planning for Crowley's shipping and logistics business line. He will remain in the company's Jacksonville office and report to Steve Collar, senior vice president and general manager, logistics.

Gilliam VP Crowley Sales & Chartering, Petroleum Services

Crowley Maritime said that Tucker Gilliam has been promoted to vice president of sales and chartering for Crowley's petroleum services team. He will remain in the company's Jacksonville office and report to Rob Grune, senior vice president and general manager, petroleum services.

Tidewater Selects ABS NS

ABS Nautical Systems was selected by Tidewater Inc. to trial its fleet management software. With this partnership, ABS Nautical Systems intends to become Tidewater's global fleet management software provider. Tidewater would be replacing an internal system with ABS Nautical Systems' fully integrated software suite to help manage its principal operational functions including maintenance, vessel-initiated requisitions and relevant regulatory requirements. Tidewater will implement several modules from ABS Nautical Systems' software suite NS5, including Maintenance & Repair, Drydocking, On Demand Reporting and Web Based Vessel Drawings, to name a few, as well as interfaces to its current and future ERP solutions. Following a successful Pilot Phase, the modules will be installed in a phased approach on approximately 185 of Tidewater's vessels over the next 24 months.

Paxocean Orders Two Rolls-Royce Designed Vessels

Rolls-Royce announced an order from Singapore-based offshore company, PaxOcean, to provide the ship design, propulsion systems and deck machinery for two platform supply vessels. The order is worth over $19.1m to Rolls-Royce with additional options to construct a further four vessels of the same type. The UT 755 CD will be built at PaxOcean Engineering's offshore vessel shipyard in Zhuhai, China, with delivery due in 2012.

MAN PrimeServ's Breakthrough

Nakilat's fleet of LNG ships is now covered by MAN PrimeServ, MAN Diesel & Turbo's after-sales division, after an EMC maintenance agreement signed with STASCO – the shipping division of Royal Dutch Shell – which manages the Nakilat ships. The contract

covers a period of 10 years and represents a breakthrough for the Engine Management Concept in that the contract covers an entire fleet. The agreement covers maintenance management/planning, assistance from PrimeServ superintendent engineers and fitters, as well as spare-parts for 25 LNG carriers (14 Q-Max and 11 Q-Flex). Each LNG carrier is equipped with two type MAN B&W 7S70ME-C or 6S70ME-C main-engines, and four type 9L32/40 or 8L32/40 auxiliary engines, and turbochargers. The engines power a new fleet of LNG carriers delivered to Nakilat between October 2008 and August 2010.

W&O Employees Race for a Cause

Top: Pon Teams Before Ragnar.

Right: Pon SVP and WO CEO Jack Guidry running.

W&O said its 15 employees, along with 19 employees from other Pon-owned companies, participated in the 191-mile Ragnar Relay Race between Miami and Key West, Fla. on January 7-8,2011. "We strongly encourage all of our employees to participate in activities that promote an aspect of wellness as part of our 'W&O: We Are Fit' program," said Jack Guidry, Senior Vice President of Pon, and President and CEO of W&O. "W&O took part in the Ragnar Relay in 2008, in which our employees were very passionate and excited to participate; so we extended our invitation to all Pon North America companies' employees to join us this year. We were thrilled with the response and are very proud of everyone who participated."

Fifteen W&O employees took part in the race, including Rogier Blokdijk, Don Danley, Jason Galatas, President and CEO Jack Guidry, Matt Hallisey, Christina Hoyt, Greg Johnson, Greg Lechwar, Fred Loomis, Colin Luke, Allison McQuillan, Alex Piquer, India Starnes, Elier Vilata and Bram Zeegers.

The additional Pon companies that participated include DMC-Carter Chambers, based in Baton Rouge, La. Employees from DMC-Carter Chambers that participated include Steven Berthelot, Clarence Johnson, Howard Jordon, Jason Lee, Renee Mallar, Colleen McDermott and Brandy Piazza. Employees from Equipment Depot that participated include Chris Aiello, Brian Anderson, Bernie Bowles, Dan Dubois, Casey George, Mike Hassell, Mike Louis, Lisa Martin, Kevin Taylor, Joe Saultz, Samantha Saultz and Jim Wedoff.

http://www.ragnarrelay.com

ABS NS Records Strong Growth

ABS Nautical Systems announced a year of record growth in 2010, signing 83 new clients with a combined total of 1053 vessels. In the month of December, 18 new customers were signed – a number that roughly equates to a new contract signed daily. New clients signed across the globe include Chevron, Reederei Offen, Hapag-Lloyd, Donnelly Tankers Management, Nereus Shipping, Fleet Management Ltd., NAVSEA and Arab Maritime Petroleum Transport Company.

ABS Nautical Systems opened new offices in Vancouver and Shanghai in 2010, and also entered the Vietnam market last year with two new contracts.

DSS Rebrands to Rustibus

For more than 30 years they have gone under the name Dalseide Shipping Services and have provided the shipping industry worldwide with their patented chain drum de-scalers. And as part of their new rebranding, their offices in Antwerp, Singapore and Houston have changed their name to Rustibus. The official name change will take place February 1, 2011.

Rustibus is now looking to enter the industrial tool market with a new 110V model of their hand held series. Effective for vertical areas and as good and dependable as their current walk behind equipment, theR35 is ideal for removing heavy rust and old coatings; in marine and commercial applications.

Viking Signs Contract with Stolt Tankers

Viking Life-Saving Equipment reports it is finding success with its Shipowner Agreement servicing contracts, with the latest being the signing of a liferaft exchange contract with Stolt Tankers BV worldwide. With a fleet of more than 70 deep draft tankers, and more than 80 coastal tankers and inland tankers, Stolt Tankers operates one of the most technically advanced tanker fleets in the world. Stolt Tankers vessels will receive Viking liferafts, which will simply be exchanged as their certificates expire.

www.VIKING-life.com

New Polaris Skjold High Speed Nav Simulator

The official inauguration of the new Kongsberg Maritime delivered Polaris ship's bridge simulator at the Royal Norwegian Naval Academy in Bergen took place earlier this year. The specially developed 1:1 simulator features a 240 degree visual system offering realistic scenarios for officer training. It is designed as an exact replica of the bridge aboard the Skjold class MTB (Missile Torpedo Boats), which are regarded as one of the fastest warships in the world with speeds of more than 60 knots/h (110 km/h). The Skjold simulator features advanced software that simulates the Skjold MTB movements at sea and is interfaced to real navigation equipment, also delivered by Kongsberg Maritime, comprising: 3 x multifunction displays including Kongsberg ECDIS and radar, 2 x operator chairs, AP 2000 adaptive autopilot, custom made bridge consoles and a voyage data recorder (VDR) in addition to the operator panels and control systems for four gas turbines.The Royal Norwegian Naval Academy is a University College providing bachelor's degrees in military studies for officers in the Royal Norwegian Navy. The program is recognized for its combination of theory and practical exercises, and the Skjold simulator will be essential for training officers in navigation, tactical maneuvering, decision making and routines onboard the vessels.

110-Year-Old Ship to Become Floating Health Clinic

The preservation of an important historic vessel is doing more than protecting the past, it's saving lives in the future. This timeless icon of maritime history is being transformed into a mobile healthcare clinic, thanks to the collaboration of several maritime organizations who know how to give back.

Christina DeSimone, President and CEO of Future Care, Inc. and the founder of the People Reaching Out Foundation announced support of The Chauncy Maples Project, Lake Malawi's first mobile health clinic. Through this support and that of other organizations, the M/V Chauncy Maples, a 110 year old ship and the oldest floating ship in Africa, will be used to treat Malawians living around this 350 mile lake.

DeSimone

Advanced Polymer Coatings (MarineLine)
PO Box 269
Avon, OH 44011
www.adv-polymer.com
David Keehan
tel: 440-937-6218
fax: 440-937-5046
email: dave.keehan@adv-polymer.com
Descr: Cargo tank lining manufacturer
Products: MarineLine — high performance cargo tank lining system

BioCoatings LLC
1007 N Federal Hwy Suite 227
Ft. Lauderdale, FL 3304
www.biocoatings.org
Janet Simmons
tel: 866-201-2877
fax: 866-201-2877
email: info@biocoatings.org
Descr: BioCoatings is a marketer of environmentally friendly VOC compliant “green” products - primers, paints, coatings and sealers for concrete, wood and rubber — for marine, industrial, commercial and home improvement markets

Blastech Mobile LLC
12400 Highway 43 North
Axis, AL 36505
www.blastech.com
Tervor Neale
tel: 519-754-3722
fax: 519-753-1453
email: trevorn@blastech.com
Descr: Specialist applicator of protective coatings and linings
Products: Blast and primed steel plate

Calico Coatings
P.O.Box 901
Denver, NC 28037
www.calicocoatings.com
Tracy Trotter
tel: 704-483-2202
fax: 704-483-2145
email: info@calicocoatings.com
Descr: Calico Coatings is customizing coating solutions that reduce friction and wear, save fuel and increase performance for their clients
Products: Applies performance coatings to a wide array of items ranging from bearings to wrist pins

Coating Systems and Supply, Inc.
11479 Darryl Dr.
Baton Rouge, LA 70815
www.coatingsystemsandsupply.com
Mike Lea
tel: 800-867-3127
fax: 225-272-6385
email: mike@cssbtr.com
Descr: Supplier of high performance marine, industrial and specialty coatings
Products: Epoxies, enamels, urethanes, cargo tank linings, lead abatement materials

The Columbia Group-Rosenblatt Ship Design Division
1201 M St. S.E., Suite 020
Washington, DC 20003
www.columbiagroup.com
John Deller
tel: 202-608-8443
fax: 202-544-5645
email: jdeller@columbiagroup.com
Descr: TCG supports the U. S. military in acquisition, program and financial management, logistics, engineering, and design, fabrication and test
Products: TCG-RSDD provides ship coatings solutions for underwater hull, tanks and non-skid, including the selection of speciality coatings; devolps specs and performs 3rd party evaluations

ComCor Tech, LLC
30529 East Mill Run
Milton, DE 19968
www.comcortech.com
Christopher Moore
tel: 302-644-14535
fax: 302-644-1437
email: cmoore@comcortech.com
Descr: ComCor Tech provides tank cleaning, surface preparation and coating services to the commercial marine and cruise ship industries
Products: Provider of tank cleaning of all types, water blasting, slurry blasting, high solid paint application

DeFelsko Corporation
802 Proctor Ave.
Ogdensburg, NY 13669
www.defelsko.com
Terry LaRue
tel: 315-393-4450
fax: 315-393-8471
email: techsale@defelsko.com
Descr: U.S. manufacturer of coating thickness gages and inspection instruments
Products: PosiTector, PosiTest, PosiPen

Ecorr Systems, Division of Root International, Inc.
288 Cindy Lou Place
Mandeville, LA 70448-4632
www.ecorrsystems.com
Roland Ledet, VP
tel: 985-624-9782
fax: 985-674-5370
email: roland@rootintl.com
Descr: Distributor of corrosion control products

Epmar Corporation/SynDeck
13240 Barton Circle
Whittier, CA 90605
www.epmar.com
tel: 562-236-1175
fax: 562-944-9958
email: villaw@quakerchem.com
Descr: Full line of ultra lightweight underlayments and systems to meet the toughest performance standards
Products: Underlayments, Membranes, Coatings, Bond Coats, Grouts, Adhesives, Sealers

Elzly Technology Corporation
833 Wesley Ave
Ocean City, NJ 08226
www.elzly.com
Pete Ault
tel: 609-545-8751
fax: 609-545-8752
email: pault@elzly.com
Descr: Corrosion and coatings consultants
Products: Consulting engineering services, inspections, surveys

Hempel USA Inc.
600 Conroe Park North Dr.
Conroe, TX 77303
www.hempel.com
tel: 936-523-6000
fax: 936-523-6073
email: sales@us.hempel.com
Descr: Hempel USA Inc manufactures and commercializes marine and industrial coatings
Products: Silicone, antifoulings, ballast tanks, cargo holds, cargo tanks, epoxies, shop primers and more

Interbay Coatings, Inc.
3209 E. 3rd. Ave.
Tampa, FL 33605
www.InterbayCoatings.com
Scott Lancaster
tel: 813-242-4100
email: scott@interbaycoatings.com
Descr: Distributor for International Paint Co.
Products: Marine coatings

International Paint LLC
6001 Antoine Dr.
Houston, TX 77091
www.international-marine.com
John Kelly
tel: 713-684-1221
email: john.kelly@akzonobel.com
Descr: International Paint has over 800 qualified technical staff around the world, many qualified to NACE Coating Inspector Level II, FROSIO Inspector Level III or equivalent; Backed up by 16 manufacturing plants, operations in 60 countries, 13 specialist marine laboratories and over 500 delivery points worldwide

Jotun Paints Inc.
P.O.Box 159, 9203 Highway 23,
Belle Chasse, LA 70037
Tel: 800 229 3538
Fax: 504 394 3726
E-mail: mailusa@jotun.com
www.jotun.com
Over 15,000 vessels protected by Jotun
Jotun offers sophisticated products that effectively prevent corrosion and fouling on any vessel. More than 600 coating advisors are on hand to ensure optimum results.

NGF Canada Ltd
255 York Rd.
Guelph, ON N1E3G1
Canada
www.ngfcanada.com
Jason Martin
tel: 519-823-7323
fax: 519-836-4052
email: mail@ngfcanada.com
Descr: Manufacture/distribution of glass flake additive
Products: Microglas glass flake as paint/coating additives for enhanced corrosion protection

Ocean and Coastal Consultants
35 Corporate Drive, Suite 1200
Trumbull, CT 06611
www.ocean-coastal.com
Dan Kinard
tel: 203-268-5007
fax: 203-268-8821
email: dtki@ocean-coastal.com
Descr: Marine and coastal engineers with on staff professional engineer divers
Products: Corrosion evaluation and consulting

PEL Associates
1084 Shennecossett Rd.
Groton, CT 06340
www.pelassociates.com
Mort Wallach
tel: 860-448-6522
fax: 860-448-6522
email: mlwallach@pelassociates.com
Descr: New product development
Products: Sensors & coatings, antifouling systems

Platypus Marine Inc.
102 North Cedar St.
Port Angeles, WA 98363
www.platypusmarine.com
Charlie Crane
tel: 360-808-4303
fax: 360-452-9881
email: capt@platypusmarine.com
Descr: Full service shipyard-
Products: Painting, modifications, steel, wood, fiberglass, aluminum

Port Supply
500 Westridge Dr.
Watsonville, CA 95076
www.portsupply.com
Steve Hyland
tel: 800-621-6885 ext. 4436
fax: 831-768-5436
email: steveh@portsupply.com
Descr: Wholesale marine items at competitive wholesale pricing
Products: Specialty antifouling and bottom paints

Seacoat Technology, LLC
11215 Jones Rd. West, Suite H
Houston, TX 77065
www.seacoat.com
John Bowlin
tel: 832-237-4400
fax: 832-237-4414
email: jbowlin@seacoat.com
Descr: Siloxane foul release coatings
Products: Sea-Speed V5

Sea Shield Marine Products
17907 Arenth Ave.
City of Industry, CA 91748
www.seashieldmarine.com
Gregg Macellven
tel: 800-638-2577
fax: 626-854-0931
email: macspacs@sbcglobal.net
Descr: Manufacturer
Products: Zinc, aluminum & magnesium anodes

Sherwin-Williams
101 Prospect Ave.
Cleveland, Ohio 44115
http://protective.sherwin-williams.com/coatings
tel: 800-524-5979
fax: 440-826-1989
email: sherwin@ultlead.com
Products: Sherwin-Williams offers a full line of topside, ballast and hull coatings

SIPCO Surface Protection, Inc.
2798 East Harbor Dr.
San Diego, CA 92113
www.sipcosp.com
Peter Lignos
tel: 619-807-6504
fax: 619-595-0112
email: lignos@muehlhan.com
Descr: Corrosion control, blasting, painting, general services
Products: Abrasive blasting, water-jetting, protective coatings, general maintenance painting

Substructure, Inc.
P.O. Box 4094
Portsmouth, NH 03802
www.substructure.com
tel: 603-436-1039
fax: 603-431-1032
email: info@substructure.com
Descr: Substructure, Inc. provides marine industrial services to commercial and government organizations worldwide; Underwater capabilities include ultra-high-resolution hydrographic surveying and mapping, epoxy marine pile encapsulation and corrosion control for structures and vessels

Thermal Spray Solutions, Inc.
1105 International Plaza, Suite B
Chesapeake, VA 23323
www.thermalsprayusa.com
Chris Nichols
tel: 757-673-2468
fax: 757-673-3128
email: chris@thermalsprayusa.com
Descr: Thermal Spray Solutions, Inc. is a full-service thermal spray facility featuring rotating equipment repair, corrosion control and HVOF coatings as hard chrome replacement on hydraulic cylinder rods

Whitehall Management Int’l, Inc.
6 Village Dr.
Mahwah, NJ 07430
www.fujihuntsmartsurfaces.com
Jim Bambrick
tel: 210-819-5274
fax: 210-825-2740
email: jebambrick@optonline.net
Descr: FUJIFILM Hunt Smart Surfaces, LLC
Products: Duplex foulant release silicone hull coating system

Wilson Walton International
3349 Route 138, Bldg. B, Suite B
Wall, NJ 07719
www.wilsonwalton.com
Patrick Robinson
tel: 732-681-0707
fax: 732-681-6118
email: patrick@wilsonwalton.com
Descr: Marine corrosion control specialists
Products: Sacrificial anodes, impressed current cathodic protection (ICCP), marine growth prevention systems (MGPS)

Xiom corp.
78 Lamar St.
West Babylon, NY 11704
www.xiom-corp.com
Jeff Zero
tel: 631-643-4400
fax: 631-643-4111
email: jeff@xiom-corp.com
Descr: Manufacture of environmentally friendly polymers for thermal spraying and portable equipment for applying polymer powder coatings on site without the need for ovens
Products: Marine vessel hull protective coating, chemical protection coating, polyethylenes, polyesters, nylons, thermal spray equipment

ZRC Worldwide
145 Enterprise Dr.
Marshfield, MA 02050
www.zrcworldwide.com
Lorraine DeWald
tel: 781-319-7211
fax: 781-319-0404
email: info@zrcworldwide.com
Descr: Manufacturer of high-quality zinc-rich, anticorrosion coatings
Products: ZRC, Galvilite, ZRC-221 cold galvanizing compounds; ZRC Zero-VOC water-based zinc coating

OceanTech Expo

Explore the business of Ocean Technology

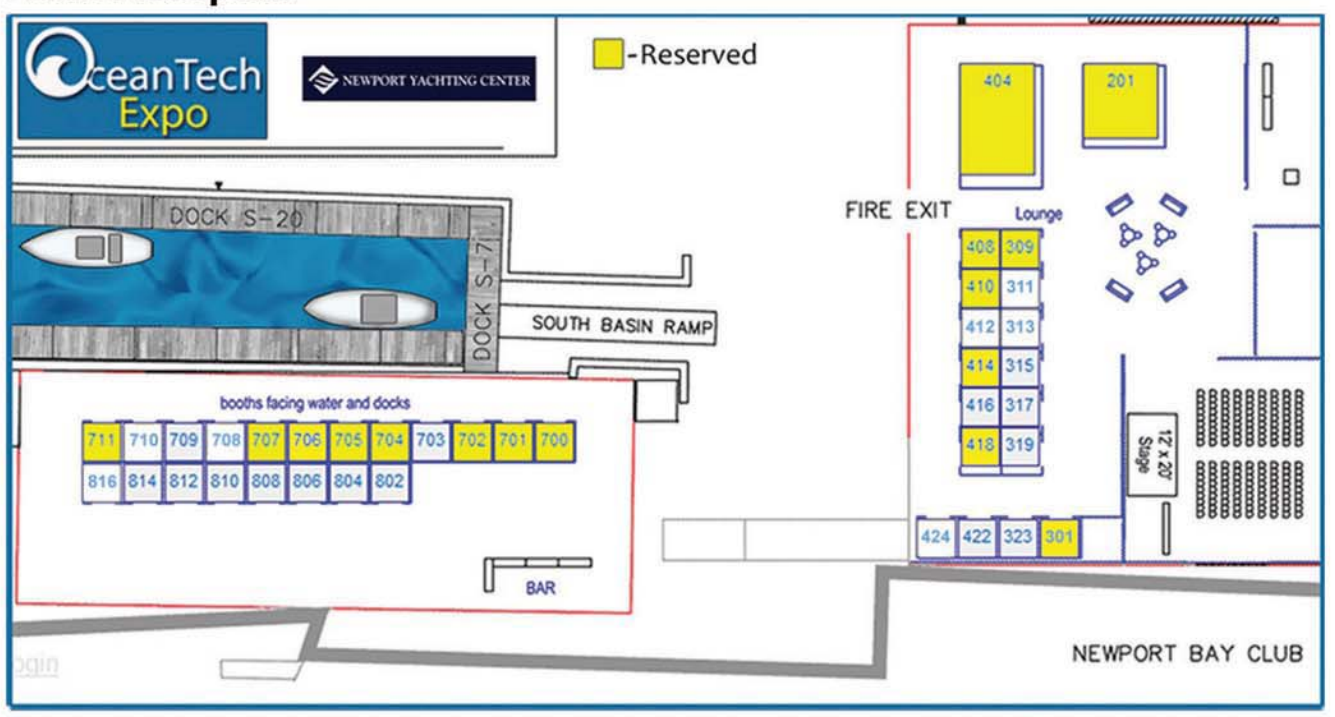
See you back on the water in Newport.

In response to the demand for more room for cutting edge ocean technology demos, OTE is expanding the booth space for Demo Tent!

We would also like to welcome our media partner, Hydro International ; they will be chairing the hydrographic panel at this year's event. We look forward to working with them on another successful OTE.

Space is filling fast. Register today!

2011 Floorplan



Supporting Organizations:

MARINE TECHNOLOGY REPORTER
Newfoundland Labrador
Hydro International
RIEDC Rhode Island Economic Development Corporation
SAIC From Science to Solutions
American Salvage Association

Newport, R.I. May 17-19, 2011

Contact Rob Howard @ 561-732-4368 or howard@marinelink.com to reserve your demo and booth space today!

oceantechexpo.com

BUYER'S DIRECTORY

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

ALUMINUM

Mandel Metals, 147 Main Street, Chardon, OH

AUTOMATION AND COMMUNICATION SYSTEMS

L-3 Maritime Systems, 9 Malcolm Hoyt Drive, Newburyport, MA 34232, USA

AUTOPILOT SYSTEMS

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

AZIMUTH CONTROLS

Prime Mover Controls, 3600 Gilmore Way, Burnaby, BC V5G 4R8, Canada

BOAT BUILDING AND DESIGN

Textron Systems, 1010 Gause Blvd., Slidell, LA , tel:985 661-3621, fax:985 661-3631, dmirelez@tmls.textron.com contact: Daniel Mirelez, www.textron.com

BOATBUILDER

Alaska Ship and Drydock, Inc., 3801 Tongass Avenue, Ketchikan, AK , tel:907 225-7199, fax:907 247-7200, dward@akship.net contact: Doug Ward, www.akship.net

Washburn Doughty, P.O. Box 296, E. Boothbay, ME 04544, USA

BOATBUILDING AND DESIGN

Brunswick Commercial and Government Products, 420 Megan Z Avenue, Edgewater, FL Molde, Norway , tel:(386) 423 - 2900, fax:386-423-9187, BCGPinfo@brunswick.com

BOW AND STERN THRUSTERS

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

BRAKE SYSTEMS

Hilliard Corporation, 100 West 4th Street Elmira, New York 14901-2148, NY , tel:607 733-7121, fax:607 732-8979, rdoud@hilliardcorp.com contact: Rob Doud, www.hilliardcorp.com

BRONZE VALVES

William E.Williams Valve, Inc., 3852 Review Avenue, L.I.C., NY , tel:718 392-1660, fax:718 729-5106, sales@williamsvalve.com contact: Kevin Cole, www.williamsvalve.com

CAD/CAM SYSTEMS

Autoship Systems Corp.,, 409 Granville Street Suite 1451, Vancouver, BC V6A 1E1, Canada

CENTRIFUGES

Westfalia Separator, Inc., 100 Fairway Ct., Northvale, NJ , tel:201 784-4395, fax:201 767-3416, Francis.Kennedy@geagroup.com contact: Frank Kennedy, www.wsus.com

CHAINS

Washington Chain & Supply, P.O. Box 3645, Seattle, WA 98124, USA

COATINGS/ CORROSION CONTROL/ PAINT

Eureka Chemical Company, 234 Lawrence Ave., South San Francisco, CA

COMMUNICATIONS SERVICE

Delta Wave Communications, Inc., 8001 Hwy 182 E. Morgan City, LA 70380, Morgan City

CONTROL SYSTEM-MONITORING/STEERING

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

CORDAGE

Yale Cordage, 77 Industrial Park Road, Saco, ME , tel:207 282-3396, fax:207 282 4620, info@yalecordage.com contact: Dick Hildebrand, www.yalecordage.com

CRANKSHAFT REPAIR

In-Place Machining, 3811 N. Holton St., Milwaukee, WI 53212, USA

DECK MACHINERY- CARGO HANDLING EQUIPMENT

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

Smith Berger Marine, 7915 10th Ave. S., Seattle, WA 98108, USA

DIESEL ENGINE- SPARE PARTS & REPAIR

Goltens Worldwide, PO Box 1176, Marion, MA , tel:508 728-3128, fax:508 536 6025

Motor-Services Hugo Stamp, 3190 SW 4th Avenue, Ft. Lauderdale, FL 33315, USA , tel:954 763-3660, fax:954 763-2872 , www.mshs.com

DOOR LOCKS

The Brass Works Inc., P.O. Box 566, Deland, FL , tel:386-943-8857, fax:386-943-8810, info@marinedoorandcabinethardward.com

DOORS- MARINE & INDUSTRIAL

Advanced Structures Corporation, 235 W. Industry Court, Deer Park, NY , tel:631 667-5000, fax:631 667-5015, advstrcorp@aol.com contact: Paul Eisenberg, www.AdvancedStructuresCorp.com

Walz & Krenzer, Inc, 91 Willenbrook Rd.Unit B4, Oxford, CT , tel:203 267-5712, fax:203 267-5716, sales@wkdoors.com contact: Melissa Shepstone, www.wkdoors.com

DRIVES

Konrad Marine-, 1421 Hanley Road Hudson, WI 54016 USA

ELECTRIC PROPULSION

Avtron Industrial Automation, 7900 E.Pleasant Valley Road, Independence, OH , tel:216 642-1230/ext 1263, fax:216 642-6037, mduskey@avtron.com contact: Mark R. Duskey, www.avtron.com

ELECTRICAL SERVICES

Ward's Marine Electric, 617 SW 3rd Avenue Fort Lauderdale, Fort Lauderdale, FL , tel:(954) 523-2815 x124, fax:(954) 523-1967, sales@wardsmarine.com

ELECTRONICS/NAVIGATION COMMUNICATIONS SERVICE AND

Mackay Marine, 921 Seaco Avenue, Deer Park, TX 27616-1851, USA , tel:281 478-6245

ENGINE AND COMPONENT ALIGNMENT

Dynamold, Inc., 2905 Shamrock Ave., Fort Worth, TX 76107, USA , tel:817-335-0862, fax:817-877-5203, pmpeck@dynamold.com contact: Michael Peck, www.dynamold.com

EPC CONTRACTORS AND ENGINEERING

Waller Marine, 14410 W.Sylvanfield Houston, Texas 77014 , tel:281 444 9650

EPIRB

Whiffletree Corporation Inc., PO Box 27, Bridgton, ME , tel:207 647-3300, fax:207 647-3700, glcl@bellatlantic.net

FENDERING SYSTEMS/ BUOYS - DOCK & VESSEL

Schuyler Rubber Co., 16901 Woodred Rd.NE, Woodinville, WA 98072, USA , tel:425 488-2255, fax:425 488-2424, Greg@schuylerrubber.com contact: Greg Armfield, www.schuylerrubber.com

FILTRATION

Boll Filter, 9822 General Drive. Ste. 180, Plymouth, MI 48170, USA , tel:734 451-4680, fax:734 451-4681, Latorre@bollfilterusa.com contact: Michele Latorre, www.bollfilterusa.com

FURNITURE

Wright Computer Products Inc., PO Box 565, Woodbury, NJ

GALLEY EQUIPMENT

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

LOIPART AB, P.O.Box 694/Metallgatan 2-4, ALINGS?S , tel:+46 322 668 360, fax:+46 322 637 747, loipart@loipart.se

Maritime Associates International, 3832-010 Baymeadows Rd. #407, Jacksonville, FL 32217, USA

US Outfitters, 10752 Deerwood Park Boulevard South Waterview II Suite 100 Jacksonville, FL 32256, Jacksonville, FL

GANGWAYS

Ravens Marine, 3295 South Orange Avenue Kissimmee, FL 34744, FL , tel:407-935-9799, fax:(407) 935-9436, matt@ravensmarine.com

GOVERNORS

New York State Canal Corporation, Interchange 23, Rt 9w, Albany, NY

GYROCOMPASS

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

HATCHES & DOORS

Maritime Associates International, 3832-010 Baymeadows Rd. #407, Jacksonville, FL 32217, USA

US Outfitters, 10752 Deerwood Park Boulevard South Waterview II Suite 100 Jacksonville, FL 32256, Jacksonville, FL

HORNS/WHISTLES

Kahlenberg Brothers Co., P.O. Box 358, Two Rivers, WI 54241, USA , tel:920-793-4507, fax:920-793-1346, EKahlen@Kahlenberg.com contact: Erick Kahlenberg, www.Kahlenberg.com

HVAC

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

HYDRAULIC MANUFACTURING AND SALES

Pennecon Energy, 2 Maverick Place, Paradise NL , tel:709 726-3490, mn1@pennecon.com contact: Eddy Knox, www.pennecon.com

INSURANCE SERVICES

WQIS (Water Quality Insurance Syndicate), 60 Broad Street 33rd Floor, New York, NY

INTEGRATED BRIDGE SYSTEMS

L-3 Maritime Systems, 9 Malcolm Hoyt Drive, Newburyport, MA 34232, USA , tel:978 462-2400, fax:978 462-4497, Jon.Miller@L-3com.com contact: Jon Miller, www.L-3com.com/MPS

INTERIORS

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

Maritime Associates International, 3832-010 Baymeadows Rd. #407, Jacksonville, FL 32217, USA

Thermax Marine-Panel Specialists, Inc., 3115 Range Rd., Temple, TX 76501, USA , tel:813 340-3940, fax:813 264-2507, thermax@panelspec.com contact: John Hutchinson, www.thermaxmarine.com

US Outfitters, 10752 Deerwood Park Boulevard South Waterview II Suite 100 Jacksonville, FL 32256, Jacksonville, FL

JOINER PANELS/FURNITURE

Maritime Associates International, 3832-010 Baymeadows Rd. #407, Jacksonville, FL 32217, USA

US Outfitters, 10752 Deerwood Park Boulevard South Waterview II Suite 100 Jacksonville, FL 32256, Jacksonville, FL

LIFEBOATS/RAFTS

DBC Marine Safety Systems, 101-3760 Jacombs Rd., Richmond, BC V6V 6T3, Canada

LIFESAVING EQUIPMENT

C.M. Hammar AB, August Barks Gatan 15, 421 32 Vastra Frolunda , Sweden

LIGHTING SYSTEMS/ EQUIPMENT

Maritime Associates, P.O. BOX 1788, Crystal Bay, NV 89402, USA

LUBRICANTS

Kobelco Eagle Marine, Inc., 366 Fifth Avenue, Suite 712, NY, NY 10017, USA

Varna Products, 4305 Business Drive Cameron Park, CA 95682 , tel:530-676-7770, fax:530-676-7798, tmcachran@VARNAproducts.com

MARINE & OFFSHORE SIGNAGE

Maritime Associates, P.O. BOX 1788, Crystal Bay, NV 89402, USA

MARINE FLOORING & ACCESSORIES (IMO CERTIFIED)

Tuflex Rubber Products, LLC Marine Division, 1101 Channelside Drive Suite 244, Tampa, FL , tel:1 800-770-6008, fax:813 875-2312, marine@tuflex.com contact: Kristy Nash, www.tuflex.com

METEOROLOGICAL INSTRUMENTS

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

NAVAL ARCHITECTS, MARINE ENGINEERS

JMS Naval Architects & Salvage Engineers, 34 WATER STREET MYSTIC, CT 06355 06340, USA

NAVIGATION

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

PARTS LOCATOR SERVICE

Inventory Locator Service, 8001 Centerview Parkway Suite 400, Memphis, TN 38018, USA

PARTS/SERVICE AND REPAIR

Westfalia Separator, Inc., 100 Fairway Court, Northvale, NJ 07647, USA , tel:(201) 784-4335, fax:(201) 784-4399, Klaus.Brinkrode@geagroup.com contact: Klaus Brinkrode, www.wsus.com

PIPE FITTINGS/CUTTINGS/CONNECTING/ SYSTEMS

Tube-Mac Industries Ltd., 853 Arvin Avenue Stoney Creek, Ontario Canada L8E 5N8

PROPELLERS

Kahlenberg Brothers Co., P.O. Box 358, Two Rivers, WI 54241, USA , tel:920-793-4507, fax:920-793-1346, EKahlen@Kahlenberg.com contact: Erick Kahlenberg, www.Kahlenberg.com

PROPULSION EQUIPMENT

VOLVO PENTA OF THE AMERICAS INC, 1300 Volvo Penta Drive, Chesapeake, VA

PROPULSION EQUIPMENT AND SERVICES

Motor-Services Hugo Stamp, 3190 SW 4th Avenue, Ft. Lauderdale, FL 33315, USA

Sound Propeller Systems, LLC, 9130 15th Pl.S Suite A, Seattle, WA , tel:206 392-0021, fax:206 392-0026, nhansen@soundpropsys.com contact: Norm Hansen, www.soundpropellersystems.com

PROPULSION ORDER TELEGRAPHS

Prime Mover Controls, 3600 Gilmore Way, Burnaby, BC V5G 4R8, Canada

RIGID INFLATABLE BOATS

Pennel & Flipo Inc., P.O. Box 1695 Mount Pleasant, SC 29465 , tel:843-270-4191, fax:843-883-3000, orca@pennelusa.com

Wing Inflatables, P.O. Box 279, 1132 Samoa Blvd., Arcata, CA 99521, USA

RUST AND PAINT REMOVAL

Dalseide, 2901 WEST SAM HOUSTON PKWY, NORTH SUITE E-325, HOUSTON, TX , Norway

Rustibus, 2901 WEST SAM HOUSTON PKWY, NORTH SUITE E-325, HOUSTON, TX

SATELLITE COMMUNICATIONS

Delta Wave Communications, Inc., 8001 Hwy 182 E. Morgan City, LA 70380, Morgan City

Intellian Technologies, 9261 Irvine Blvd., Irvine, CA , tel:949 916-4411, fax:949 271-4183, sales@intelliantech.com contact: John Minetola, www,intelliantech.com

SEALS

Kobelco Eagle Marine, Inc., 366 Fifth Avenue, Suite 712, NY, NY 10017, USA , tel:212-967-5575, fax:212-967-6966, hawkins@kobelco-eagle.com contact: David Hawkins, www.kobelco-eagle.com

SEATING

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

SHAFT HORSEPOWER SYSTEMS

Hillhouse Industrial Marine, 296 Knox Mountain Road, Sanbornton, NH , tel:603 566-4330, fax:603 934 5388

SHIPBOARD SURGE SUPPRESSORS

Wright Computer Products Inc., PO Box 565, Woodbury, NJ , tel:856 845 6767, fax:856 384 1145, wcpinc@verizon.net contact: David Wright Sr., www.wcp-usa.com

SIMULATION TRAINING

Transas Marine USA, 18912 N.Creek Parkway Ste 100, Bothell, WA 98134, USA , tel:425 486-2100, fax:425 486-2112, gtoma@transasusa.com contact: George Toma, www.transasusa.com

STORAGE BUILDINGS

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

SURFACE PREP TOOLS

Aurand Mfg., 1210 Ellis St., Cincinnati, OH 45223, USA

Dalseide, 2901 WEST SAM HOUSTON PKWY, NORTH SUITE E-325, HOUSTON, TX , Norway

TANK GAUGING AND SENSORS

Electronic Marine Systems, 800 Ferndale Pl., Rahway, NJ 07065, USA , tel:631 928-5015, fax:732 388-5111, jferencz@emsmarcon.net contact: Joe Ferencz, www.emsmarcon.com

TANK LEVELING INDICATORS

King Engineering Co, PO Box 1228, Ann Arbor, MI 48106, USA

Technical Marine Service,Inc., 6040 North Cutter Circle, Suite 302, Portland, OR 97217-3956, USA , tel:503-285-8947, fax:503-285-1379, SBrox@tms-usa,com contact: Steve Brox, www.Levelcom.net

VALVES

Leslie Controls, 12501 Telecom Dr., Tampa, FL 33637, USA

WASTE WATER TREATMENT

Enwa Water Treatment AS, PB 257 Forus 4066, Stavanger

Marinfloc AB, Industrivagen 10, Verekil , tel:+46 (0) 304-606 300, fax:+46 (0) 304-100 51, pl@marinfloc.com

WATERMAKERS

Reverse Osmosis of SF, Inc., 2860 W.State Road 84, Suite 108, Fort Lauderdale, FL 3331633312, USA , tel:888-768-2993, Info@Reverse-Osmosis.net

WINCHES & FAIRLEADS

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

Markey Machinery, P.O. Box 24788, Seattle, WA 98124, USA

Skookum, P.O. Box 280, Hubbard, OR 97032, USA

Employment/Recruitment • wwwMaritimeJobs.com

MaritimeJobs.com

where employers and job seekers connect

The Maritime Industry's Leading Employment Website. For more information contact: Jean Vertucci at vertucci@marinelink.com

WOODS HOLE, MARTHA'S VINEYARD AND NANTUCKET STEAMSHIP AUTHORITY

LIFELINE TO THE ISLANDS — The Steamship Authority

MAINTENANCE SUPERVISOR

The Steamship Authority is seeking an experienced individual who will be responsible for the supervision of all maintenance department trades personnel and vessel personnel assigned to repair to ensure that all work assignments are completed in a safe, efficient manner. Responsibilities include planning, scheduling, prioritizing and assessing manpower requirements for work assignments; the maintenance, installation and repair of equipment; and all stockroom and warehouse activities. The individual shall act as the onsite Safety Officer for the maintenance facility and be responsible for investigation and preparation of reports on work-related injuries. The individual will coordinate with other management personnel in identifying and procuring material and equipment necessary for all work assignments prior to each vessel's annual overhaul and repair period. The individual must be available to respond to emergency calls at all times. The candidate must have a bachelor's degree in Marine Engineering or equivalent experience (USCG License preferred); be computer literate (MS-Word, Excel, Project and CMMS programs preferred); have knowledge in the operation and maintenance of main propulsion and auxiliary systems with five to ten years experience supervising various trades personnel in the repair and maintenance of ships. The candidate should have a general understanding and familiarity with USCG regulations for the repair and construction of commercial vessels with the ability to interpret and comprehend engineering drawings along with the ability to plan work assignments and evaluate manpower resources to develop production schedules for the overhaul and repair of the Authority's vessels.

Competitive salary and fringe benefit package. EOE
SEND RESUME TO: DIRECTOR OF HUMAN RESOURCES
STEAMSHIP AUTHORITY
P.O. BOX 284, WOODS HOLE, MA 02543

Vice President of Sales and Marketing

W&O Supply, Inc. is the largest marine supplier of pipe, valves, valve automation services and fittings in the United States. We serve all facets of the marine community including U.S. and Foreign shipping companies, the U.S. Navy, cruise companies, barge owners, offshore rig companies and shipyards that build and repair vessels of all sizes. W&O is committed to being the premier supplier of total piping solutions to the marine and offshore industries. W&O is a wholly owned subsidiary of a large, European-based international industrial products distribution company, is seeking an experienced Vice President of Sales and Marketing. This position is located at the W&O corporate office in Jacksonville, FL.

Responsibilities include but are not limited to: (1) Professional management, goal setting, account planning, with and for a direct sales force of approximately 20 spread out in North America and Europe.(2) Direct and coordinate sales and marketing functions, (3) Plan and coordinate public affairs and communications efforts, (4) Establish and implement short- and long-range goals, policies, and operating procedures, (5) Supervise the planning and development of marketing and communications materials, and (6) Promote positive relations with partners, vendors, and distributors.

Qualifications include (1) 10+ years in sales and marketing with five in an executive-level position such as general manager or vice president, preferably in the marine industry, (2) Extensive experience at senior sales level in company with multiple branches in multiple states (3) International background with geographical expansion experience and (4) Excellent interpersonal, communications, public speaking, and presentation skills.

We offer a very competitive salary and extensive benefit package. We are also an equal opportunity employer committed to a drug-free workplace. Send resumes to David Black: email david.black@wosupply.com or fax 904-899-4918. Visit our Web site at www.wosupply.com.

THE VANE BROTHERS COMPANY

NEW YORK ✯ PHILADELPHIA ✯ BALTIMORE ✯ NORFOLK ✯ CHARLESTON

On Course For the Future

The Vane Brothers Company is recruiting qualified candidates for positions on our state-of-the-art marine transport vessels operating along the Atlantic Seaboard.

Tug Masters and Mates, Marine Engineers and Tankermen opportunities are available.

Learn more at www.vanebrothers.com or contact fleet recruitment at 410-735-8212.

VANE BROTHERS
Delivering Maritime Excellence

WÄRTSILÄ

Wärtsilä North America is currently seeking **Electrical Supervisor / Commissioning Engineer** for our Power Plants Division, Project Management / Installation and Construction Services.

Wärtsilä supplies products, services and support to the Marine and Energy markets. Wärtsilä enhances the business of its customers by providing them with complete lifecycle power solutions. When creating better and environmentally compatible technologies, Wärtsilä focuses on the marine and energy markets with products and solutions as well as services.

Accountabilities:
• Perform electrical commissioning for Wartsila Engines at power plant construction projects
• Perform electrical advising and supervising works at power plant construction projects
Responsibilities:
• Perform electrical pre-commissioning of Wärtsilä installations. • Perform electrical commissioning on power plants
• Perform electrical advising and supervising on power plants
• Prepare Construction and Commissioning reports and travel expensive on time and with expected Wartsila quality
• Identify failures, making adjustments, assist on trial runs and testing of electrical installations according to instructions.
• Check and adjust relevant systems (i.e. auxiliary .).
• Provide internal and external work reports according to Wärtsilä standards.
• Collect and organize time and expense reports. Reporting and informing administrative personnel as required.
• Able to give basic training to customers.
• Lead major activity and site repairs.
• Report executed work according to Wärtsilä standards.
Requirements:
• Motivation and flexibility to travel around USA for at least 9-10 month per year.
• Desire and flexibility to be stationed at power plant construction projects site for long periods.
Education: BS degree or equivalent and 3 years related experience or Technical schools or Vocational (preferably electrical) or 7 years related experience as an:
• electrical engineer on Diesel Engines or
• electrical experience on Power Plants or
• electrical Technician on large industries or refinery or
• electrical officer on Ships or
• electrical or electronic technician within the Navy or Army

We look forward to hearing from you.
Qualified candidates should apply online at our website at
http://www.wartsila.com, Careers tab, or directly at
https://careers.fi/wartsila/add_application.cgi?job_id=4460

BENEFITS: Wärtsilä North America offers leading industry comprehensive benefit package, including: Medical, Dental, Vision, Vacation, Matching 401K, and more.

Wärtsilä North America is an EOE/AA employer.

MASSACHUSETTS MARITIME ACADEMY

Founded in 1891, the Massachusetts Maritime Academy is the nation's oldest and finest co-ed maritime college. The Academy prepares young women and men for exciting and rewarding careers on land and sea. Our graduates have been at the very top of seagoing, engineering, environmental, and international business professions.

POSITIONS AVAILABLE

(2) FT, Tenure-track Engineering Faculty
FT, Tenure-track Marine Transportation Faculty
FT, Tenure-track Humanities Faculty
Vice President of Advancement

The Academy is located in Buzzards Bay at the mouth of the scenic Cape Cod Canal and is a special mission college within the Massachusetts university college system.

For information about this positions and how to apply, visit the employment quick link on our web page at **www.maritime.edu.**

Massachusetts Maritime Academy is an AA/EEO employer. Under-represented groups are encouraged to apply.

WÄRTSILÄ

Wärtsilä North America is currently seeking **Mechanical Supervisor / Commissioning Engineer** for our Power Plants Division, Project Management / Installation and Construction Services.

Wärtsilä supplies products, services and support to the Marine and Energy markets. Wärtsilä enhances the business of its customers by providing them with complete lifecycle power solutions. When creating better and environmentally compatible technologies, Wärtsilä focuses on the marine and energy markets with products and solutions as well as services.

Accountabilities:
• Perform mechanical commissioning for Wartsila Engines at power plant construction projects
• Perform mechanical advising and supervising works at power plant construction projects
Responsibilities:
• Perform mechanical pre-commissioning of Wärtsilä installations.
• Perform mechanical commissioning on power plants
• Perform mechanical advising and supervising on power plants
• Prepare Construction and Commissioning reports and travel expensive on time and with expected Wartsila quality
• Identify failures, making adjustments, assist on trial runs and testing of mechanical installations according to instructions.
• Check and adjust relevant systems (i.e. auxiliary...).
• Provide internal and external work reports according to Wärtsilä standards.
• Collect and organize time and expense reports. Reporting and informing administrative personnel as required.
• Able to give basic training to customers.
• Lead major activity and site repairs.
• Report executed work according to Wärtsilä standards.
Requirements:
• Motivation and flexibility to travel around USA for at least 9-10 month per year.
• Desire and flexibility to be stationed at power plant construction projects site for long periods.
Education: BS degree or equivalent and 3 years related experience or Technical schools or Vocational (preferably mechanical) or 7 years related experience as an:
• mechanical engineer on Diesel Engines or
• mechanical experience on Power Plants or
• mechanical Technician on large industries or refinery or
• mechanical officer on Ships or
• mechanical or electronic technician within the Navy or Army

We look forward to hearing from you.
Qualified candidates should apply online at our website at
http://www.wartsila.com, Careers tab, or directly at
https://careers.fi/wartsila/add_application.cgi?job_id=4459

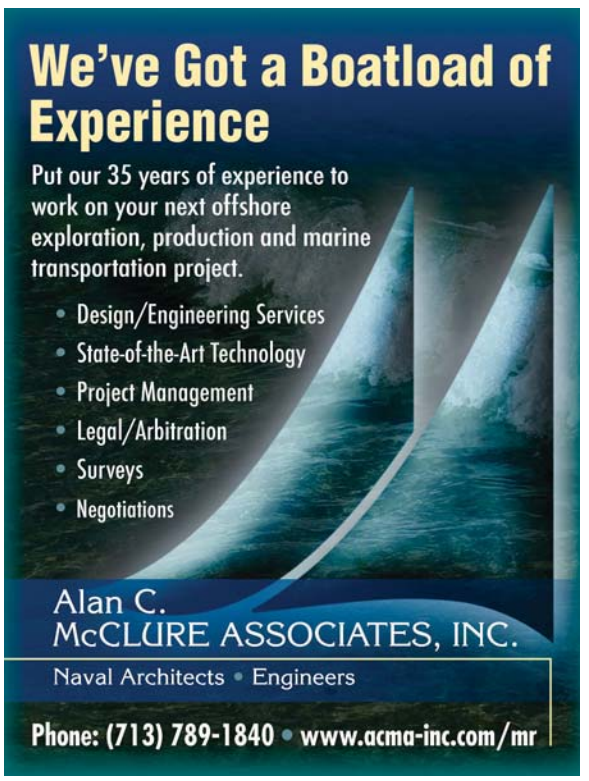
BENEFITS: Wärtsilä North America offers leading industry comprehensive benefit package, including: Medical, Dental, Vision, Vacation, Matching 401K, and more.

Wärtsilä North America is an EOE/AA employer.

A. K. Suda, Inc.
NAVAL ARCHITECTS & MARINE ENGINEERS
- Concept & Contract Design
- Transportation Analysis
- Construction Drawings
- Owner Representation

3004 19th Street • Metairie, LA 70002
Ph. (504) 835-1500 • Fax (504) 831-1925 • info@aksuda.com

Boland Industrial
Consulting Services, Inc.
Equipment Reliability • Vibration Analysis
• Laser Alignment • Lubrication
All Vibration and Alignment Problems
Office: (228) 762-3172 Fax: (228) 762-3108
Cell: (251) 232-7163
John S. Boland, President
P.O. Box 612
Pascagoula, MS 39568



BOKSA MARINE DESIGN, INC.
Naval Architecture/Marine Engineering
- Conceptual Design
- Naval Architecture
- Marine Engineering
- Lofting & Nesting
- Production Engineering
- Tooling Design

6129 Churchside Drive
Lithia, FL 33547
TEL: (813) 654-9800
www.bmdinc.com
nick@bmdinc.com

CDI MARINE COMPANY
NAVAL ARCHITECTURE
MARINE ENGINEERING
CONCEPTUAL & DETAIL DESIGN
ACQUISITION SUPPORT
LOGISTICS SUPPORT SERVICES
PROGRAM MANAGEMENT
LIFE CYCLE SUPPORT
Contact: Robert Bergeron
robert.bergeron@cdicorp.com
Phone: (904) 805-0700 ~ Fax: (904) 805-0710
For immediate openings see www.cdigs.com
CDI Marine Company is an EEO Employer.

MARITIME REPORTER AND ENGINEERING NEWS

ADVERTISER INDEX

GET FREE INFORMATION ONLINE at: www.maritimeequipment.com/mr

Page#	Advertiser	Website	Phone #
10	ABS	www.eagle.org	(281) 877-5861
14	Alaska Ship and Drydock	www.akship.net	(907) 225-7199
13	Alfa Laval Tumba AB	www.alfalaval.com	Please visit our website
53	Anchor Marine	www.anchormarinehouston.com	(713) 644-1183
23	Boll Filter Corporation	www.bollfilter.com	800- 910-2655
29	Brunvoll A/S	www.brunvoll.no	47 71 21 96 00
47	C.M. Hammar AB	www.cmhammar.com	(800) 828-1131
53	Click Bond	www.clickbond.com	(775) 885-8000
2	CMA Shipping 2011	www.shipping2011.com	(203) 406-0109
25	ComRent International	www.comrent.com	(888) 881-7118
15	Damen Shipyard	www.damen.nl	31 (0) 183 63 9174
20	DBC Marine	www.dbcmarine.com	(604) 278-3221
39	Delta Wave Communications, Inc.	www.deltawavecomm.com	(966) 650-9283
41	Diamond Sea Glaze	www.diamondseaglaze .com	(800) 770-0455
19	Donald Sutherland Photo Contest	www.maritimephotographs.com	Please visit our website
16	Donjon Marine Co., Inc.	www.donjon.com	(908) 964-8812
27	ENWA WaterTreatment AS	www.enwa.se	47 51 63 4300
39	Floscan	www.floscan.com	(206) 524-6625
14	GEMAK Shipbuilding Industry & Trading S.A.	www.gemak.com	90 216 581 2300
4	Governor Control Systems	www.mshs.com	(954) 763-3660
21	Hempel	www.hempel.com	45 45 88 3800/45273676
22	IMTRA Corporation- Imtra Advertising.	www.imtra.com	(508) 995-7000
1	Infosat Communications	www.infosat.com/marine	(888) 524-3038
5	Intellian Technologies	www.intelliantech.com	(949) 727-4498
C2	Japan Radio Company	www.jrcamerica.com	(206) 654-5644
27	Jeppesen Marine (Norway)	www.jeppesen.com/marine	47 51 46 47 00
C4	Karl Senner, Inc.	www.karlsenner.com	(504) 469-4000
45	KVH Industries, Inc.	www.kvh.com	(401) 847-3327
27	Loipart	www.loipart.com	0 32 2 668 385
14	Maritime Associates	www.marinesigns.com	(775) 832-2422
23	Marlink AS	www.marlink.com	32 70 233 220
7, 9	Military Sealift Command	www.sealiftcommand.com	(888) 228-5509
17	MTU Detroit Diesel	www.mtu-ironmen.com	(313) 592-7000
54	NEVA 2011	www.transtec-neva.com	44 1449 741 801
39	Oceanic Consulting	www.oceaniccorp.com	(709) 722-9060
10,56	OceanTechExpo	www.oceantechexpo.com	(561) 732-4368
41	Pima Valve	www.pimavalve.com	(520) 796-1095
31	Retlif Testing Laboratories	www.retlif.com	(631) 737-1500
22	Rustibus	www.rustibus.com	(832) 203-7170
3	Scania USA	www.scaniausa.com	(210) 403-0007
29	SeaArk Marine	www.seaark.com	(870) 367-9755
53	Senesco Marine	www.senescomarine.com	(401) 295-0373
53	Smith Maritime	www.smithmaritime.us	(904) 284-0503
C3	SNAME	www.snameexpo.com	Please visit our website
6	SNAME Membership	www.sname.org	Please visit our website
16	Sohre Turbomachinery	www.sohreturbo.com	(413) 267-0590
11	Ward's Marine Electric	www.wardsmarine.com	(800) 545-9273
52	Washburn Doughty	www.washburndoughty.com	207-633-6517
33,35,37	Wilhemsen Ships Equip.	www.wilhelmsen.com	47 67 58 40000
26	WQIS	www.wqis.com	(212) 292-8700

The listings above are an editorial service provided for the convenience of our readers.
If you are an advertiser and would like to update or modify any of the above information, please contact: productionmanager@marinelink.com

SNAME 2011

ANNUAL MEETING & EXPO

WHERE INDUSTRY & TECHNOLOGY MEET

2011 ANNUAL MEETING CALL FOR PAPERS

NOVEMBER 16 – 18, 2011, HOUSTON , TEXAS

PAPERS ARE WELCOME WHICH AIM TO ADVANCE THE ART, SCIENCE, AND PRACTICE OF:

- NAVAL ARCHITECTURE AND MARINE ENGINEERING
- SHIP CONSTRUCTION AND OPERATION
- OCEAN ENGINEERING
- OFFSHORE TECHNOLOGY
- AND OTHER MARINE-RELATED FIELDS

OTHER GENERAL AREAS OF INTEREST INCLUDE:

- ENVIRONMENTAL CONSIDERATIONS
- HUMAN FACTORS
- LIFECYCLE ENGINEERING
- MARINE ECONOMICS
- MATERIAL TECHNOLOGY
- PIPELINES AND RISERS
- REGULATORY ISSUES
- RENEWABLE OCEAN ENERGY
- SAFETY AND STABILITY
- STRUCTURES AND HYDRODYNAMICS
- SUBSEA TECHNOLOGY
- TRANSPORTATION SYSTEMS

SNAME ANNUAL MEETING & EXPO
EXTENDED ABSTRACTS DUE: FEB 15, 2011
ABSTRACTS ACCEPTED: MARCH 1, 2011
SUBMIT TO: AM2011@SNAME.ORG

SHIP PRODUCTION SYMPOSIUM
EXTENDED ABSTRACTS DUE:MARCH 1, 2011
ABSTRACTS ACCEPTED: JUNE 1, 2011
SUBMIT TO: SPSPAPERS@SNAME.ORG

WWW.SNAME.ORG

When Only the Best Will Do!

KARL SENNER, INC.

M/V Raymond C. Pecor

Karl Senner, Inc. supplied Two (2) Reintjes WAF 665 reverse reduction gears, with ratios of 4.081:1 for this new construction recently added to the Lack Champlain Transportation fleet.

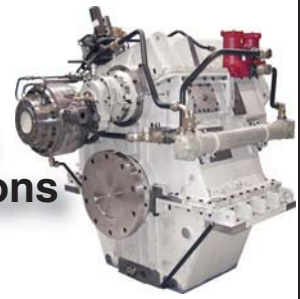
Shipyard: Eastern Shipbuilding
Panama City, FL

Owner: Lake Champlain Transportation
Burlington, VT

Azimuthing thrusters

Steerprop

Marine Transmissions



REINTJES

Controllable Pitch Propellers and Bowthrusters

BERG PROPULSION

Contact Us

NEW ORLEANS Karl Senner, Inc. 25 W. Third St. Kenner, LA 70062 Phone: (504) 469-4000 Fax: (504) 464-7528

WEST COAST Karl Senner, Inc. 12302 42nd Drive S.E. Everett, WA 98208 Mr. Whitney Ducker (425) 338-3344

E-MAIL US Service: service@karlsenner.com Sales: sales@karlsenner.com Parts: parts@karlsenner.com

Please visit our new website

www.karlsenner.com