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MARITIME REPORTER AND ENGINEERING NEWS

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June 2010

2010 World Yearbook

Tragedy in the GOM
Spill Will Resonate for a Generation

Shipbuilding
Brazil Comes on Strong

A Fearless Forecast
The Recovery Continues

Future Design
Alternate Propulsion via Fuel Cells

5 Minutes With
Richard Marler, Signal International

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LIFE MATTERS

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See story on page 50

Dusty Rybovich is currently a Senior at Webb Institute. After graduation, he hopes to work in Chile for a year with a program that teaches English to children.
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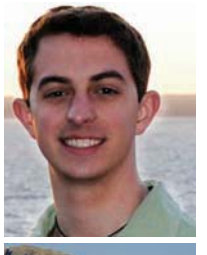

Michael Cariello studies Naval Architecture and Marine Engineering at Webb Institute, from which he will graduate in June 2010.
See story on page 50

Henrik Segercrantz is a Finnish Naval Architect with some 30 years experience from the shipbuilding industry. Today he is as a freelance journalist writing about maritime matters.
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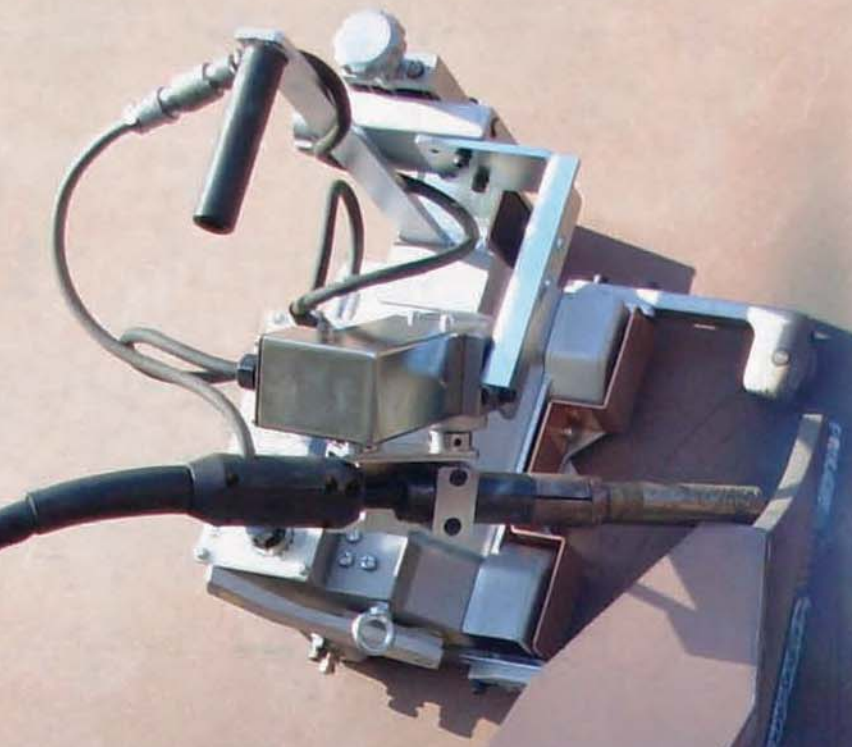

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In the 17 years that I personally have been responsible for delivering to you our annual World Yearbook, I can honestly say that never once has the final product matched the original vision, a testament to nothing else other than the fluid and dynamic nature of the business in which you work.

In late April, which is usually the time when we are completing a good number of the stories and statistics that go into making up this edition, the maritime and offshore oil and gas world changed forever with the explosion on and sinking of the Deepwater Horizon, and the continued outflow of oil which — at press time — was still gushing.

The political, financial and environmental aspects of this story will play out for many months, in fact many years. While the industry wrestles with the problem of fixing the oily mess while trying best to maintain "business as usual," the one thing for certain is a heightened level of rule and regulation that will hopefully work to make the prospect of working in the world's deepest waters more safe and efficient. This month we offer a couple of unique perspectives on the situation, first an article from **Carleen Lyden-Kluss**, Co-Founder and Executive Director of the North American Marine Environmental Protection Association, who delivered an excellent presentation at the recent OceanTech Expo in Newport, Rhode Island that gave a thorough overview of the situation. Her story starts on page 24. We also are able to present information "from the front lines," as one of our New Orleans based correspondents, **Susan Buchanan**, delivers on page 66 an insightful look at how the mess is impacting marine operations.

Throughout this edition you will find our signature selection of articles that are designed to apprise you of interesting information and opportunities — from your town to your world.

To the left are two images originally published in the December 2001 edition of *Maritime Reporter & Engineering News*, images taken by long-time *Maritime Reporter* and *MarineNews* contributor **Don Sutherland**. I am sorry to report that Don passed away late last month, a loss that is difficult to put into words. Don was an exceptional photographer and one of the maritime industry most fervent supporters, gracing our pages every month since he found me after the terrorist attacks of 2001. Read more on the man and his work, on page 20

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NG Continues Design of Gerald R. Ford

Northrop Grumman Corporation was awarded a $186.6m cost plus fixed fee contract from the U.S. Navy to continue the engineering and design effort for the nation's newest nuclear-powered aircraft carrier, USS Gerald R. Ford (CVN 78).

The company's Shipbuilding sector is the prime contractor. This planned contract modification funds additional design, planning and system integration activities and analysis to support CVN 78 construction.

"This planned contract modification is essential to continuing the ship design to support construction," said Mike Shawcross, vice president of aircraft carrier construction program. "Now that the design is in the three-dimensional product model our effort is focused on the production of instructions for the shops and ship assembly. We're excited to continue progress on the engineering and construction of CVN 78."

Named after the 38th president of the United States, Gerald R. Ford (CVN 78) is the first ship of the new Gerald R. Ford class whose keel was laid Nov. 14, 2009. The Ford class will continue the legacy of highly capable U.S. Navy nuclear-powered aircraft carrier ship platforms. Enhancements incorporated into the design include flight deck changes, improved weapons handling systems, and a redesigned island, all resulting in increased aircraft sortie rates. It will also include new nuclear power plants; increased electrical power generation capacity; allowance for future technologies; and reduced workload for the sailors, translating to a smaller crew size and reduced operating costs for the Navy.

Carnival Contracts for Two Ships

Princess Cruises, a unit of Carnival Corporation & plc, announced that contracts to build two 3,600-passenger ships have been finalized with Fincantieri. The 141,000-ton ships are scheduled to enter service in spring 2013 and spring 2014.

Mid-America Delivers 3 Tug Boats

Mid America Shipyards LLC of Ft. Smith, Arkansas, delivered three tug boats to MNO of Suriname. Two vessels are 31.5 x 14 ft. with a hull depth of 5.5 ft. and an eye level of 21 ft. Each vessel is equipped with two Cummins engines QSL9 @ 330 hp each continuous duty, supplied by Mid South Cummins). The 660 hp tugs came complete with living quarters featuring a set of bunk beds, toilet, sink, shower, refrigerator, hotplate, air conditioning, 9 kW genset, two 10-ton winches, 3-in. shafts and 38-in. props. The third boat was a single engine 135 hp (John Deere) helper tug. It is 25.5 x 8 ft. wide with a 3.5 ft. deep hull. Its engine was provided by C K Power.

Richard Marler

Chairman, President & CEO, Signal International

Maritime Reporter & Engineering News recently had the opportunity to meet with Richard Marler, Chairman, President and CEO of Signal International, on the sidelines of OTC to discuss his company's rapid growth and promising future. – by ***Greg Trauthwein****, Editor*

What is the primary focus of Signal International?

RM Our principal focus is offshore drilling rig and ship overhaul, repair, upgrade and conversion. Additionally, we provide services to the general marine and heavy fabrication markets and are moving into shipbuilding.

When and why did you start Signal?

RM The company was created in January 2003. After the Friede Goldman bankruptcy, we essentially picked up the offshore sector, which included four yards in Texas and two yards in Mississippi. The name Signal was chosen for its meanings associated with communication and outstanding achievement.

To what do you attribute your company's strong growth?

RM On day one we realized that we needed to be diversified, but first and foremost we realized that we needed to be an ISO certified yard, and that we needed to be focused on safety. From the outset we knew we had a challenge entering both old and new markets, and adopted the stance that we would 'crawl, walk, run.'

How is your company investing?

RM At the Orange (Texas) facility we have invested more than $40 million to achieve heavy fabrication using continuous flow manufacturing techniques and processes. In February (2010) we purchased select assets of Bender Shipbuilding for $31.25 million, the bid accepted by the United States Bankruptcy Court for the Southern District of Alabama. The Bender yard will be branded as Signal Ship Repair. It fits squarely with our strategy to seek attractively priced acquisitions that continue to add market diversity. The Bender acquisition brings us up to five yards now, as we had previously closed two of the original yards in Texas.

Have there been any surprises after the Bender acquisition?

RM It has been a lot easier than I thought it would be. They had some really good management and craft workers that we kept, and we had to go in, clean up the yard and upgrade the adherence to safety and invest $5M in capital.

A number of times you referenced the importance of safety …can you share with us some examples of how you enhance the safety culture?

RM A good example is our Texas and Mississippi yards, where the employees would not wear their protective eyewear. To help turn this culture around, we sourced eyewear that looked like Maui Jim sunglasses, and now we are finding that they wear them both at work and outside of work. Safety and Quality is a culture … and it is the culture of Signal.

Are there any exciting new projects on the horizon?

RM We were recently awarded a $30M contract by Waller Marine Inc. of Houston, Texas, to build and support the outfitting of two 300 x 100 ft power barges. Each barge will have a single GE 7FA Gas Turbine and 171 MW generator. Upon completion of the barges Waller Marine will install and operate the units in Venezuela. This contract will be built at the Orange, Texas, fabrication facility and shipyard, and proves that the investment in this facility is paying off.

Where do you envision future business for your facilities?

RM The next step is shipbuilding … tugboats, large double hull barges, offshore supply vessels, NOAA-type vessels and perhaps selected Navy ships. Signal's quality and safety are unparalleled in the U.S. Marine and heavy fabrication industry. The improvements we have made at Orange will be enhanced by a new side launch capability this year. We are entering the shipbuilding market with all of the resources necessary to be competitive with regard to cost and schedule for a variety of ship and vessel designs.
We are also looking to go into Brazil with overhaul and repair capacity, but right now this plan is in its infancy.
Finally, we see the offshore alternative energy sector growing much like the offshore oil and gas sector did; starting out close to shore, and eventually moving further offshore with floating platforms.

Since the company's inception, what has been the greatest challenge?

RM Hurricanes Katrina, Rita and Ike.

Signal facilities in Orange, TX (left) and Pascagoula, MS.

We had hurricanes hit the yards in a matter of six weeks. In the aftermath, the challenge was simply getting manpower, as people had dispersed to tend to their personal needs. At this time, contract labor was about the only way you could get people, and this comes with its own set of challenges.

How has the overall economic slowdown affected your business?

RM 2008 was our best year ever, and in 2009 we did about 30% of our 2008 revenue.

What plans were in place to emerge stronger?

RM We stayed ahead of the decline, planning reductions well in advance, starting in December 2008. Also, when we made cuts, we kept intact our supervisors, who basically were 'moved back to their tools.' Even though their role shifted, we kept their pay up, because we wanted our management team to stay in place, and that's what happened. We could never have built back up that quickly had we not kept our management in place particularly in our Orange yard. Employment there had dwindled to around 150 employees when we were awarded the Waller power barges. With the supervision in place we increased our craft manning by 500 employees in about eight weeks and we did so with local hires and no contract labor and no sacrifice in safety, productivity, and quality.

In your experience, what technology advances do you credit for improving safety and efficiency?

RM Capital equipment … robotics, welding machines, etc … are great, but it takes a good management team and dedicated skilled craft to make it work. The machines can't do the work without a strong management team.

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Raytheon delivered the first Electronic Modular Enclosure (EME) for the Zumwalt-class destroyer (DDG 1000) to the U.S. Navy. EMEs are large subsystem assemblies that efficiently package the shock mitigation, electromagnetic interference protection, thermal conditioning, security and vibration isolation for commercial off-the-shelf electronics integrated inside. The EME unit, which houses ruggedized and commercial electronic equipment for the ship's external communications, was shipped from Raytheon's facility in Largo, Fla., to Northrop Grumman Shipbuilding, Pascagoula, Miss. The EME will be integrated into DDG 1000's advanced composite deckhouse. There are 16 EMEs on each Zumwalt destroyer, and each unit contains more than 235 individual electronics cabinets.

Laser Destroys UAV in Maritime Environment

Naval Sea Systems Command (NAVSEA), with support from Naval Surface Warfare Center (NSWC) Dahlgren, reports that for the second time it successfully tracked, engaged, and destroyed a threat representative Unmanned Aerial Vehicle (UAV) while in flight, May 24, at San Nicholas Island, Calif. This marks the first Detect-Thru-Engage laser shoot-down of a threat representative target in an over-the-water, combat representative scenario.

A total of two UAV targets were engaged and destroyed in a maritime environment during the testing, the second series of successes for the U.S. Navy's Laser Weapon System (LaWS) Program. Members of NAVSEA's Directed Energy and Electric Weapon Systems (DE&EWS) Program Office (PMS 405), Program Executive Office for Integrated Warfare Systems (PEO IWS), Raytheon Missile Systems, and NSWC Dahlgren fired a laser through a beam director on a KINETO Tracking Mount, controlled by a MK 15 Close In Weapon System (CIWS). This brings to a total of seven UAVs destroyed by the Surface Navy's first tactical development for fielding a Directed Energy weapon system.

MSI Goes Hollywood

The big-budget Hollywood motion picture 'Robin Hood' has just hit our screens, a Ridley Scott Movie which opened at the Cannes Film Festival. The Dover beaches were recreated at Freshwater West, in Pembrokeshire, Wales where the guaranteed surf produced the right effect. The last 15 minutes of the film is set on the beach with 130 horses doing a full speed gallop charge into 600 actors.

Maritime Services International (MSI) was called in to source a suitable vessel that could be **converted into a 12th century landing craft for the French invasion fleet.** MSI found an old LASH barge in Castleford that seemed to suit the brief.

They then liaised with the Merry Men Film Arts Department to prepare structural drawings for the modification and design of the vessel.

This was not an easy task as it had to meet the requirements of the Arts Department while still being able to achieve certification from the Maritime & Coastguard Agency.

Modifications included removing the side decks and fitting a ramp, which meant that the vessel had to be structurally stabilized to compensate for the loss in strength. MSI worked with two marine coordinators from Merry Men Film Productions and three surveyors from the MCA in this complicated conversion, not only measuring the vessel's stability and structural strength for filming but ensuring that compliance and safety were acceptable for the vessels to carry over 200 people in potentially dangerous waters.

For the new 'Robin Hood' move, MSI was tasked to turn an old barge (inset) into a 12th Century landing craft.

Once one vessel was converted, it was a simple matter of cloning to produce the rest of the French invasion fleet of landing craft. Nobody was hurt or injured during these scenes although on occasions the boats suffered damage in the surf.

During the film viewers only see the vessel propelled by oars but this was not practical in the dangerous waters off the Pembrokeshire coast. This meant that outboard engines had to be fitted, which were cunningly concealed underneath the barges' swims.

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The Castor Green Terminal includes a terminal and vehicle processing centre (VPC), which will handle products such as automotive, agricultural, construction, and other rolling equipment and offers services for receiving and delivery, cargo handling, storage, loading and discharging in a sustainable environment.

Coupled with E/S Orcelle, the company's zero emissions concept cargo ship unveiled five years ago, the Castor Green Terminal embraces WWL's vision of a more environmentally sound future for land and sea logistics operations.

The energy used to handle each unit of cargo within the terminal complex will be reduced by as much as 80 percent.

Wind turbines will provide the prime source of power for the Castor Green Terminal along with solar photovoltaic roof panels.

The terminal will also be self sufficient for all its water needs – rain water collected from its roofs will be stored in underground tanks and then reclaimed. The Castor Green Terminal will be run on lean production techniques focusing on the elimination of waste and adding value during each stage of the cargo's movement through the terminal.

Energy usage will be further minimized by using wind for cooling and sunlight for heating and light and smart lighting sensors will ensure the maximum efficient use of electricity. Space requirements for the terminal will be significantly less than a conventionally-built terminal. For example, cars and small cargo will be stored in a multi level storage area supported by automatic lifting equipment and conveyer belts.

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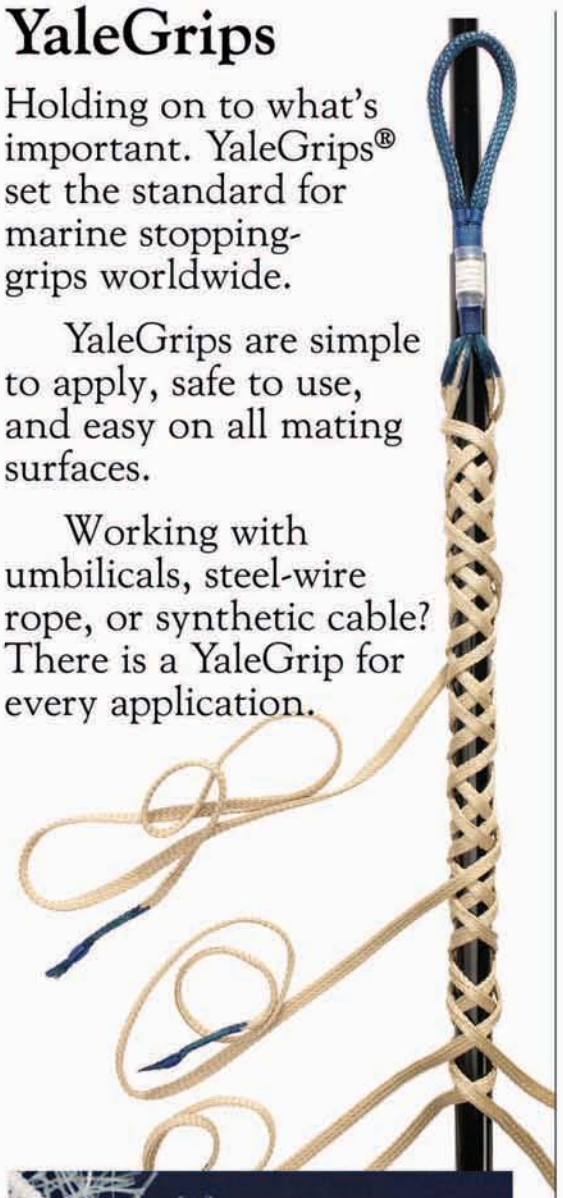

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CSS The Compact Semi Submersible

Hallin Orders Unique $110m, DP3 Vessel

"The CSS Derwent will support the oil operators' desire to improve production and reduce costs. Here at Hallin we believe that the CSS is the future."

John Giddens, CEO, Hallin

John Giddens (left), CEO of Hallin Marine, and Denis Welch, CEO of Drydocks World - Southeast Asia, sign the contract for the $110m, DP3 CSS.

Hallin Marine has commissioned a unique, $110m semi-submersible, subsea operations vessel to be named the CSS Derwent. "The CSS (compact semi submersible) delivers big ship capability in a low cost package," said John Giddens, Hallin's CEO. "It will support the oil operators' desire to improve production and reduce costs."

The 84 m CSS is the culmination of a five-year project designed to deliver 'large boat capability' at a price of a smaller vessel with a primary focus on light well intervention. Hallin and its partners have achieved the goal by designing a vessel that uses a semi-submersible style hull to provide exceptional seakeeping characteristics, increased deck space and good project load carrying capacity. The result is the CSS Derwent, a dynamically positioned class 3 (DP3) vessel fitted with a 200 ton multi-purpose tower, a 150 ton active heave crane, both operational to depths of 3,000 m; along with two deep water construction class ROVs. CSS Derwent boasts two moon pools, accommodation for 152 personnel and the operational deck space comparable to a 120-m vessel.

Designed by STX Canada Marine Inc., the diesel/electric CSS's primary function is to facilitate repair and maintenance to an existing well, via chemical injection on braided lines, extending perforation tunnels and effectively maximizing and extending the productive life of the well. The CSS will be equipped with four fixed-pitch Azimuth thruster units and full DP-3 capacity.

"It will enable the marine equivalent of keyhole surgery to sub-sea oil production systems," said Denis Welch, CEO of Drydocks World – South East Asia. "This is an exciting first for Drydocks World, also the first of its kind to be manufactured in Batam.

Other features of the 84 m, 8,200 dwt vessel include an active heave-compensated offshore crane, a single line lifting of SWL (Safe Working Load) 150 tons, a complete active heave-compensated, electro-hydraulic Deep Water Lowering System, a five tons provision crane and two ROV systems, one launched via the internal moonpool and the other from the vessel's starboard. The CSS can accommodate up to 152 sub-sea team members.

Key to the diesel electric powered CSS Derwent's success will be its strong financial advantage over larger vessels of a similar capability said Giddens, speaking at the signing of the build contract with Drydocks World in Singapore. "There are very few new build vessels being ordered for our industry and certainly none as exciting or as groundbreaking as the CSS Derwent. She will have the capacity of a 120m vessel, but not the cost either initially or operationally."

The CSS Derwent will join the Hallin fleet during the second quarter of 2012. The project has been backed by Hallin's parent company, Superior Energy Services, Inc, further supporting the combined strategy to grow this business sector.

The CSS Derwent is MODU compliant and, when interfaced with the Superior-owned 3,000m Lubricator systems, provides a one-stop shop for subsea light well intervention, inspection repair and maintenance, plus subsea construction support. The CSS Derwent was designed by STX Canada Marine Inc and has undergone extensive testing and development. The CSS Derwent will be the third vessel that Drydocks World has built for Hallin, and will join the SOV Ullswater and the SOV Windermere.

CSS Derwent Particulars & Features

- Owner: Hallin Marine
- Builder: Drydocks World
- Designer: STX Canada Marine Inc.
- Classification: ABS Class +A1 Mobile Offshore Drilling Unit +AMS (E) DP3 UWILD Helideck
- Built in ROV hangers amidships and starboard house 2 off 250hp construction class ROVs, both operational to depths of 3,000 m.
- 150T SWL active heave compensated knuckleboom subsea crane which will work in 3,000m depths
- Speed 10+ knots
- Deadweight 3200T @ 8.2m
- Main generator engine 6 x 2800KW @ 900rpm
- Thrusters 4 x 3000KW; 450KN thrust
- Multi Purpose Tower with 200T SWL AHC, and 3000m hook travel
- Combination of tower and crane gives a versatile twin deployment capability with vessel ballasted down to 14m deep water capability - enhanced stability
- Deck space comparable to 120m plus vessels
- Large cargo deck area - in excess of 1300 sq. m. at 10T/sq. m.
- Working deck designed to give a single length run of 50m and width of 32m within easy access of the subsea crane

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National Shipbuilding Research Program (NSRP)

Eight New Shipbuilding R&D Projects

The Executive Control Board of the NSRP awarded funding for eight new research projects as part of the Navy/Industry co-funded portfolio focusing on cost reduction in the U.S. shipbuilding and ship repair industry.

These new projects, valued at approximately $16m including industry cost share, include:

Weld Shrinkage and Distortion Allowance for Neat Construction Project
Yard: Bollinger Shipyards
Team Members: Northrop Grumman Shipbuilding-Gulf Coast; Todd Pacific Shipyards; Marinette Marine; ShipConstructor USA; Gatekey Engineering; Edison Welding Institute; Hepinstall Consulting Group; Victoria Dlugokecki
Objective: To map weld shrinkage and resulting distortion for both uniform and non-uniform steel assemblies, and apply the mapping data via regression analysis. Deliverables will include a computer model of weld shrinkage data for uniform and non-uniform panels. **$4m**

Common Parts Catalog Enhancements
Yard: GD Electric Boat
Objective: To analyze, identify and monitor the implementation of distinct enhancements to the current Common Parts Catalog -- a real-time, searchable intershipyard parts catalog currently used in production in several shipyards. This project will focus on enhancements in: Network, Software and Application Changes; Model Inclusion and Exchange; and Functional Enhancements. **$4m**

Streamlining Shipyard Rigging Analysis
Project Lead: GD NASSCO
Objective: To develop a tool for simplified finite element analysis (FEA) of rigging and lifting, while ensuring that safety measures remain. The analysis will be verified by using strain gauges on lifts of complex blocks. Additionally, the project will evaluate the use of integrated lifting lugs in place of temporary pad-eyes. **$756,000**

Large Scale Computer Simulation Modeling System Enhancements
Project Lead: NASSCO
Objective: To expand upon the current Large Scale Modeling and Simulation project, which focuses on scheduled production workload modeling within simulated facilities subject to their constraints, with the intention of identifying production bottlenecks and enabling the user to identify improved production plans. The project will enhance the system to add the ability to: define and use statistical variances; apply learning algorithms; and define, generate and use parametrically described interim products within the system. **$2m**

Project: ERP Integration with CAD
Project Lead: VT Halter Marine
Objective: To automate the exchange of business data contained in the Product Information Model (PIM) and Enterprise Resource Planning (ERP) material management/procurement application by creating a non-shipyard specific tool that can be implemented throughout the industry. **$1.4m**

Process Oriented Visual Planning Tool (POV Planner)
Project Lead: Todd Pacific Shipyards
Objective: To develop a user-friendly production planning tool that incorporates data from three commercial software tools: a Product Modeler (ShipConstructor), a Product Visualization Tool (NavisWorks) and a Work Simulation Tool (WorkSim). The POV Planner will consist of a complete set of standard shipbuilding process templates and a suite of tools. **$868,000**

Project: Integrated Logistics Environment (ILE)
Project Lead: GD Electric Boat
Team Members: NG Shipbuilding-Gulf Coast, Product Data Services Corp.
Objective: To continue the efforts of the Integrated Shipbuilding Environment (ISE) series of projects by facilitating data exchange and interoperability throughout the entire life cycle of the ship. In particular, the Ship Common Information Model (SCIM), will be completed and the Ship Common Information Model Evaluation will demonstrate the effectiveness of the Navy Product Data Initiative (NPDI) by migrating the Virginia Class product model data to a Joint Team environment, focusing on piping and structural models. **$2.4m**

Advanced Systems Development of the Remote Climbing Robot
Project Lead: Robotic Technologies of Tennessee; Team Members: NG Shipbuilding-Gulf Coast, Bath Iron Works, Tennessee Technological University
Objective: To develop enhancements to the current mobile robot which will increase the number of weld types, broaden the spectrum of applications and provide for remote operation. The three-phase project includes actuation and instrumentation to enable remote operation; 'close-the-loop' enhancement to provide adaptive motion control to follow geometric features of the weld seam; and efficiency gains in the welding process by offloading repetitive control tasks and allowing the operator to focus on bead setup and quality monitoring. **$396,000**

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Push to Thwart Piracy

An unprecedented coalition of organizations – from trade unions to shipowners' associations and insurers – has joined forces to back a global e-petition demanding concrete action to end the piracy that is putting lives at risk and threatening world trade.

The petition **www.endpiracypetition.org** is the centrepiece of a new campaign to persuade all governments to commit the resources necessary to end the increasing problem of Somalia-based piracy. It is intended to deliver at least half a million signatures to governments by IMO World Maritime Day, September 23. It calls on nations to:

• Dedicate significant resources and work to find real solutions to the growing piracy problem.

• Take immediate steps to secure the release and safe return of kidnapped seafarers to their families

• Work within the international community to secure a stable and peaceful future for Somalia and its people

The campaign is being backed by BIMCO, ICS, IFSMA, IMEC, IPTA, Intercargo, InterManager, International Group of P&I Clubs, INTERTANKO, ISF, ITF, IUMI and SIGTTO*, as well as national shipowners' associations and trade unions worldwide. ITF General Secretary David Cockroft commented: "With one click everyone can now make their feelings about piracy known, and then pass the link on to all their colleagues around the world who feel the same. In this way we can signal our belief that it is past time for all governments to do what has to be done to protect seafarers, ships and the goods that they carry and on which we all rely."

BIMCO (The Baltic and International Maritime Council)	• *www.bimco.org*
ICS (International Chamber of Shipping)	• *www.marisec.org*
IFSMA (International Federation of Shipmasters' Associations)	• *www.ifsma.org*
IMEC (International Maritime Employers' Committee)	• *www.imec.org.uk*
IPTA (International Parcel Tankers Association)	• *www.ipta.org.uk*
Intercargo (International Association of Dry Cargo Shipowners)	• *www.intercargo.org*
InterManager (International Ship Managers' Association)	• *www.intermanager.org*
International Group of P&I Clubs (IGP&I)	• *www.igpandi.org*
INTERTANKO	• *www.intertanko.com*
ISF (International Shipping Federation)	• *www.marisec.org/isf*
ITF (International Transport Workers' Federation)	• *www.itfglobal.org*
IUMI (International Union of Marine Insurance)	• *www.iumi.com*
Society of International Gas Tankers & Terminal Operators Ltd	• *www.sigtto.org*

GMATS Presents

Piracy Countermeasures

June 23-24, 2010

The Global Maritime and Transportation School at the U.S. Merchant Marine Academy along with co-sponsor American Military University will convene its second annual Piracy Countermeasure Seminar on June 23 and June 24. The seminar will take place aboard the Academy's scenic waterfront campus conveniently located in Kings Point, N.Y. on the North Shore of Long Island just outside of New York City.

This two day seminar offers practical analysis of the maritime industry's newest, best practices as well as proven seaborne preventive steps developed in response to current piracy operations off Somalia and other choke points and piracy hot spots around the globe.

The first day will examine piracy's socio-economic, business and political dynamic. Topics to be covered include the insurance industry's response to the evolving threat to vessels, cargo and personnel. Also being discussed are the effectiveness of the existing international maritime security infrastructure and naval coalitions. Company piracy incident policy and procedure, including countermeasures and techniques will be evaluated. The program will review media reaction and piracy's impact on crew members' families as well as corporate responsibility and liability.

Day two focuses on at-sea operational and tactical procedures, highlighted by a practical waterfront demonstration of emerging technology along with a featured hostage ransom negotiation. The day and seminar will conclude with critical analysis and discussion.

http://gmats.usmma.edu

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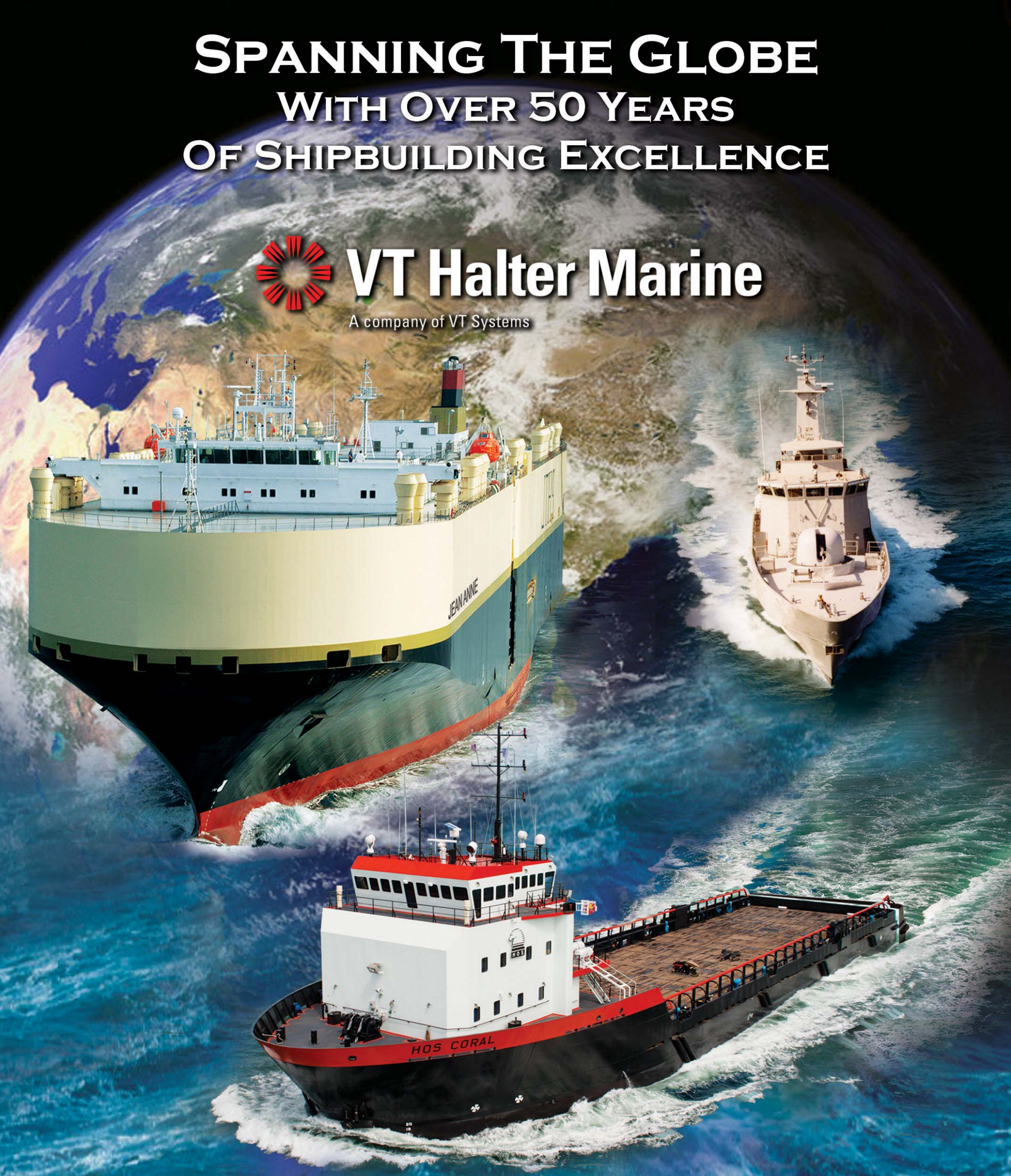

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Scania-Powered EcoJet Ferry Delivered

Aluminium Boats Australia (ABA) delivered its latest ferry; a 24 m Eco-Jet commuter catamaran designed by Sydney-based One2three Naval Architects. The Kurrowera I is the third of four vessels built for Bay Islands Transit Systems (BITS) services in Queensland's Moreton Bay Marine Park. The first of the four new ABA fast waterbuses for the Southern Moreton Bay Islands, the Jumpinpin, entered service in May 2009, being joined by the second, the Perulpa, last September. Custom designed and built for Moreton Bay's environmentally sensitive waters, with particular attention to protecting dugongs and turtles in the shallows of the southern part of the bay, the ABA sisters deliver an optimum solution for any area where there are shallow waters and an environment at risk.

"The ferries have been designed to move at speed but in a way that simply pushes a turtle or dugong (note: dugongs are related to manatees) to one side rather than harming it," said Graham Leishman, Director of Transit Systems Pty Ltd, owner of the BITS ferry service. The waterbuses offer large carrying capacity; up to 200 passengers on short trips, while delivering low fuel consumption. Aluminium Boats Australia Director Roy Whitewood said, "They are remarkably easy on the fuel because weight has been kept to an absolute minimum." Like her sisters, the Kurrowera I is powered by two Scania DI12 59M diesel engines, each rated 331kW at 100% MCR.

Delivering swift acceleration they quickly work up to a service speed of 22 knots and in a notable first they are the first vessels to meet stringent requirements permitting them to run within their operational corridor inside the Moreton Bay Marine Park at maximum speed. Via Twin Disc MG 5114 SC gearboxes, engine power is converted to propulsion thrust through two HamiltonJet HJ 364 waterjets. Jet control is enhanced by the HamiltonJet blueARROW electronic control system. With the intuitive control provided by the MouseBoat maneuvering controller, blueARROW reduces the learning curve for masters and makes docking simple, fast and accurate.

A new, second generation, hull shape from the drawing boards of One2three Design has provided enhanced fuel efficiency and indeed with the same power the Kurrowera 1 is faster than her earlier sisters by approximately 1.5 knots. From a passenger point of view the craft is instantly distinguishable from her sisters thanks to her enhanced external styling, larger boarding access ways, increased headroom in the fully composite cabin and larger windows creating an impressive sense of light and space. The fourth vessel, currently under construction, is schedule for delivery in June.

Principal Particulars: Kurrowera I

Owner . . . . . .Bay Islands Transit Systems (BITS)
Builder . . . . . .Aluminium Boats Australia, ...Brisbane, Queensland, Australia
Designer . . . . . .One2three Naval Architects
Length . . . . . .24 m
Beam molded . . . . . .6.2 m
Draft (loaded) . . . . . .0.80 m
Main engines . . .2 x Scania DI12 59M diesel engines
TransmissionTwin Disc Quick Shaft MGX 6599 SC, 2.45:1.
Propulsion power . . . . . .2 x 331kW at 100% MCR
Water Jets . . . . . .2 x Hamilton HJ 364 waterjets
Speed, max. . . . . .30 knots
Speed, service . . . . . .22 knots
Passengers 200
Fuel . . . . . .2 x 1000 ltr.
Survey: . . . . . .Uniform Shipping Laws (USL) 1E

www.allyboats.com.au

Recent Ship Sales

(Source: Shipping Intelligence, New York, NY)

Date	Name	DWT	YB(age)	Price
Bulk Carriers				
04/15/10	THOR TRANSIT	23,930	87(23)	$4.3
04/27/10	RUBIN PEARL	26,472	94(16)	$15
04/12/10	BJ QUEEN	26,587	85(25)	$7.1
04/12/10	HANJIN PENANG	27,365	97(13)	$18
04/19/10	ARTEMIS	28,082	84(26)	$7
04/27/10	MOON RIVER	28,494	02(8)	$24.7
04/15/10	PATRIOT	31,838	02(8)	$24
04/12/10	OCEAN RANGER	32,409	83(27)	$5.5
04/27/10	CS STAR	32,874	00(10)	$20.5
04/12/10	MARITIME ALLIANCE	36,639	87(23)	$10
04/27/10	CONSTANTINOS G	37,940	83(27)	$7.3
04/27/10	STEEL GLORY	39,345	84(26)	$9
04/27/10	BENARITA	40,688	84(26)	$8.8
04/27/10	VELEBIT	42,249	90(20)	$13.3
04/27/10	DESERT TRADER	42,294	85(25)	$10.5
04/27/10	NONI	44,381	96(14)	$18.8
04/27/10	MED TRUST	48,320	90(20)	$11.4
04/27/10	ALIOS	49,675	83(27)	$9.3
04/27/10	AGIOS NEKTARIOS	52,600	88(22)	$8
04/08/10	HELGA SELMER	57,000	10(0)	$32.1
04/12/10	THERESA GUANGDONG	57,000	10(0)	$32.8
04/12/10	THERESA SHANDONG	57,000	09(1)	$32.8
04/27/10	CEMTEX LEADER	66,647	89(21)	$12.9
04/19/10	PEORIA	70,293	96(14)	$22.5
04/27/10	MAKIKI	73,049	97(13)	$28.1
04/15/10	MARIGO P	73,810	02(8)	$36
04/19/10	IORANA	75,151	09(1)	$41
04/08/10	ARABELLA	75,563	01(9)	$33.7
04/19/10	PHILOMENA L	76,602	03(7)	$36
04/29/10	JIN STAR	79,800	10(0)	$41
04/08/10	HEBEI EAGLE	170,603	85(25)	$12
04/12/10	CAPE JACARANDA	183,863	95(15)	$37.5
Car Carriers				
04/27/10	MONTE CARLO	12,282	10(0)	$35
Chemical Carriers				
04/19/10	SOUTHERN YORK	6,545	03(7)	$10.5
04/12/10	OSM ENCORE	8,789	91(19)	$3.3
04/27/10	ORIENTAL ORCHID	10,308	98(12)	$9
04/27/10	BUNGA SIANTAN	16,924	91(19)	$3.1
04/08/10	SANON	19,817	04(6)	$22
04/15/10	SOUTHERN EAGLE	19,908	07(3)	$27
04/27/10	PANNA	37,145	07(3)	$27
04/19/10	FR8 ADRIA	47,300	95(15)	$26.8
Containerships				
04/27/10	OCEAN PARK	8,285	90(20)	$3.2
04/15/10	MOL EVOLUTION	17,781	96(14)	$6.4
04/08/10	IWATO	24,372	85(25)	$7.5
04/27/10	CITY OF LONDON	30,461	97(13)	$12
04/27/10	PRIDE	35,592	96(14)	$8.5
04/27/10	GRAND VISION	44,005	91(19)	$6.8
04/15/10	MSC BLACK SEA	44,014	90(20)	$6.7
04/15/10	MARMARA SEA	44,014	90(20)	$6.7
Gas Carriers				
04/15/10	ZEPHYR	1,296	86(24)	$1.2
04/29/10	GAS PROPHET	2,999	96(14)	$6.7
04/27/10	GAZ GALAXY	7,155	02(8)	$20
Tankers				
04/19/10	HIGH RIDER	41,502	91(19)	$6.7
04/12/10	ARIADNE JACOB	74,896	07(3)	$43.5
04/12/10	COLIN JACOB	74,896	07(3)	$43.5
04/27/10	LIVIA	93,600	03(7)	$38
04/19/10	FALSTER SPIRIT	95,416	95(15)	$17
04/08/10	TAIYOH I	96,114	91(19)	$6
04/19/10	BALTIC SEA	97,046	93(17)	$12.5
04/08/10	ARSOS	107,500	10(0)	$52
04/27/10	WALTZ	150,393	08(2)	$66.2
04/27/10	TANGO	150,393	08(2)	$66.2
04/27/10	SANKO UNITY	298,920	00(10)	$62
04/29/10	ATLANTIS GLORY	319,300	10(0)	$110
04/29/10	ANDROMEDA GLORY	321,300	09(1)	$106
04/29/10	CALLISTO GLORY	321,300	09(1)	$106
Tweendeckers				
04/27/10	ELVITA 1	2,703	79(31)	$.3
04/12/10	ELTSEN	6,471	81(29)	$.8
04/08/10	OLIVA	12,349	85(25)	$3

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Random Roamings within the Moran Fleet

By William duBarry Thomas

We all appreciated **Don Sutherland's** celebration of the 150 years of Moran towing *(Maritime Reporter & Engineering News*, April 2010). It was an exciting collection of vignettes on the life of the company and of its founder, Michael Moran. There were many other aspects of that remarkable company and of its equally remarkable founder that might further inform, if not entertain, the readers of *Maritime Reporter*.

Rarely has a Moran tug been lost, but during the 1890s one vessel was overcome by heavy weather conditions immediately outside of New York harbor. The company had contracted during this period to tow refuse barges to be dumped in the open sea outside of Sandy Hook.

(Photo: Don Sutherland)

Laura K. Moran delivers a docking pilot to NCC Dammam, inbound to Bayonne. Pilots seem to endorse the stability of a Z-drive, when taking those first steps up the side.

In Memory of
Don Sutherland

By Greg Trauthwein, editor

It is with sadness that I report the passing on May 23, 2010, of Don Sutherland, a long-tenured contributor to both *Maritime Reporter & Engineering News* and *MarineNews* magazines.

Having worked with Don for nearly a decade, I was privy to a media professional who was not only passionate about the prose and images he provided to us on a monthly basis starting in December 2001, but a man who was intensely passionate about the maritime industry: the boats, the history, the burning issues of the day, but first and foremost, the unique personalities, the strands that together weave the fabric that is the core strength of the maritime market.

Most everyone who met or knew Don has a story to share, as, he housed a strong personality, a sharp wit and a keen sense of humor. He was a born communicator, with the unique capability to eloquently tell a story in 5,000 words when 500 would suffice.

But while he could write and talk at great length of varied topics, Don was first and foremost a professional photographer who provided a collection of artistic images that told the ongoing tale of the workboat market — the boats and the people — that have graced our pages for more than a decade.

Don was, in fact, a digital photography guru, making a career of rating and reporting on cameras.

As much as the words, his images told the story, and if I ever had the audacity to remove one of these critical bits from his work, he was never shy to share his feelings. And while he took his craft seriously and brought new meaning to "stick to your guns," he was affable and rather easily swayed, particularly after hashing it out over a peace offering of several dozen oysters and beer.

Most who know me know that I rarely remember what I had for lunch, let alone the exact date of an event that happened nearly 10 years ago.

But I will never forget that first edition that Don supplied text and images, for **it is Don who actually found us after the terror attacks on New York City on September 11, 2001**, providing to the December 2001 edition of *Maritime Reporter & Engineering News* words and haunting images that captured not only the personal and structural destruction in lower Manhattan, but also the nerve and resolve of the maritime community's response to help save lives, untangle an unthinkable mess, and start to build again.

Don Sutherland striking a familiar pose in 2007.

(Photo ©2010 Jonathan Atkin)

That started a nearly 10 year journey of "Don" stories that, in my estimation, helped to capture essence and insights into this industry, a unique spin that is rarely found in traditional business-to-business publications.

Only once in 10 years did I actually assign a topic to Don, as he had free reign to find and report, living on a tug for two weeks in one instance, or his annual sojourns to cover a variety of "Tug Round-Ups." The one assignment I did hand out was an open-ended ticket to New Orleans in the wake of Hurricane Katrina, where Don spent nearly a month collecting a dizzying array of images and stories on this vital maritime region's response in the wake of natural devastation; reporting on one hurricane while dodging the next, Hurricane Rita.

Personally and professionally, Don Sutherland will be sorely missed.

The tug F. W. Vosburgh, built for Michael Moran in 1883 by Peter Magee, of Athens, New York, was lost at 2 a.m. on March 10, 1895 in a blinding snow storm when she ran upon Romer Shoal, off Sandy Hook, while towing a garbage scow. The crew of nine was rescued by the nearby tug Carrie A. Ramsay.

More recently, was the loss of the third Eugene F. Moran. She was a steel-hulled tug of 1905 vintage named Protector when she was acquired by Moran in June 1917. Her life in the fleet was short, for on 8 December 1917 she foundered off Absecon, New Jersey — not far from the site of the F. W. Vosburgh loss. Alas, of the 13 men aboard at the time, only four were saved.

The naming of the tugs after members of the family was, until recently, a fact that any tugboat admirer could look forward to. From eldest to youngest, Michael's offspring consisted of Thomas E., Richard J., Eugene F., Agnes A., William J., and Joseph H. There were, according to recent research, nine vessels were named for Eugene F., seven for Julia C. (Eugene's wife), six each for "M." (Michael) and Doris, and five each for Marion and Thomas E. Surprisingly, Michael's wife, Maggie, provided the name for only one vessel in the fleet.

The appearance of tugs has, needless to say, changed remarkably over the years, from the gracefully proportioned vessels of the late nineteenth century to the push-boats of today having tower pilot houses. Among the tugs that many thought was a good looking tug was the first Marion Moran, built by Neafie & Levy in 1888. Originally named E. L. Levy, she ran until June 1917 for the Lake Champlain Towing Co. and the Cornell Steamboat Co. Sold at that time to Thomas J. Scully, she was renamed Mary F. Scully, then went to the Neptune Line as Chelsea, and in the Moran fleet from 1925 to 1948. This vessel was one of the historically significant tugs operating in New York waters over her sixty-year lifetime. For many years she was an important line-haul tug on the Hudson River under her original name, and she was a long time member of the Moran fleet.

Since the change in ownership of the company, the tugs continue to be christened with Moran names, but the people so honored contemporaneously are not family members. According to the company website, the current tug Kaye E. Moran honors Kaye E. Barker, wife of corporate officer James R. Barker, for whom the tug James R. Moran was named. It matters not, for the new vessels are nicely named.

Don mentions the fact that the first diesel-propelled tug in the fleet dated from 1923. She was built in 1919 for the U. S. Navy as a unit of a class of forty wooden hulled harbor tugs of a type built in great numbers through World War One. She was named Harbor Tug No. 84 and was powered with a single-cylinder steam engine — which made her what the old timers used to call a "high-pressure boat." Sold to Moran in 1923, she was renamed Eugenia M. Moran and was fitted with a diesel having remarkable cylinders 14.5 inches in diameter by 21 inches stroke. She was sold out of the fleet about 1930 and was lost a few years later.

The next diesel vessel was Marie S. Moran, built by Pennsylvania Shipyards, Inc., at Beaumont, Texas in 1936, and fitted with a 550-hp Winton diesel. I recall

reading of the vessel in a copy of Diesel Progress of that period. In 1937 came two more tugs from the same builder — Eugenia M. Moran (the second of the name) and Elizabeth W. Moran —powered by 1350-hp Wintons. From that point onwards came an enormous fleet of General Motors-powered diesel and diesel-electric tugs. There was a close association between Moran and the GMAC in those early days which undoubtedly contributed to the growth of the diesel fleet.

During World War II, the United States Maritime Commission built a fleet of ocean-going diesel-propelled tugs of their Design V4-M-A1 to provide services to the enormous numbers of vessels in the wartime fleet. The V4 was something more than a tug; she was about 200 feet in length with a beam of 37.5 ft., and propelled by a diesel engine of about 2300 hp. No less than 49 tugs of this design were built, and all were operated by Moran. The irony of this is that they were propelled by Enterprise diesels, not General Motors.

Among the late entries into the wooden hulled tugboat world was a fleet of 58 vessels having a length of about 100 ft. built by the United States Shipping Board. A large number of these tugs were based in New York, and the Moran fleet at one time or another owned no less than twenty-one units of this fleet. Of these, many were acquired with the purchase by Moran of other towing fleets — six tugs from Meseck, six from Amboy Towboats, two from E. E. Barrett, two from Goodwin-Gallagher.

Three of the vessels were bought from the Shipping Board by Moran about 1921, while two were purchased from Federal Shipbuilding in 1936 and sold the same day to the Mystic Steamship Company. The last of this fleet owned by Moran was Margaret A. Moran (ex-Edward A. Meseck). She lasted until 1963, when she was out of documentation.

In 1954, the Moran organization acquired the business of the Meseck Towing & Transportation Company and its entire fleet, which consisted almost entirely of steam tugs, ranging from wooden hulled, single-cylinder-engined vessels built by A. C. Brown at Tottenville, Staten Island, through the Shipping Board tugs mentioned above, and culminating in a group of welded steel tugs equipped with Skinner Unaflow engines and built at Newburgh, New York, between 1940 and 1945 by Harry A. Marvel.

The capstone of the Unaflow fleet was C. Hayward Meseck, a 115-footer built in 1945. Originally to have been 135 ft. in length for ocean service, she was shortened before construction, keeping the originally specified three-cylinder 25 x 26-in. engine and watertube boiler — a plant rated at 1500 hp, but capable of continuous output of around 2000 hp. Her scantlings were extra heavy as built, for the steel had been delivered for the 135-foot vessel.

Moran operated this vessel as Alice M. Moran. After a meeting at the Moran office a year or so after the tug had been sold for scrap, this author, who incidentally had laid her down in the mold loft, spoke with a Moran staff member who stated that scrapping Alice M. Moran was a terrible mistake, and that with her splendid hull, she should have been given a modern diesel engine. Sadly however, this remarkable last vessel built by Harry Marvel was gone.

Finally, there was the side-wheel towboat Belle, mentioned by Don relative to an 1892 photograph. Belle had been built as a passenger steamboat in 1837 and was converted in mid-career to a towboat. She was bought from the Schuyler Towing Line by Michael Moran and Peter Cahill for $7,000, probably just prior to the 1892 view, but she was not in Michael Moran's fleet for a long time.

It is this author's surmise that she might have been acquired to start a towing enterprise on the Hudson River, moving a part of that immense fleet of Erie Canal barges from Albany to New York, perhaps in competition with the Cornell Steamboat Company. That never happened, for Belle was sold to Cornell in 1893, her sale price part of the cost of keeping Michael off the river. Belle was abandoned in 1897, but during her short Moran ownership, the ancient vessel was always referred to by Michael, in his inimitable auld-country accent, as "me Belle."

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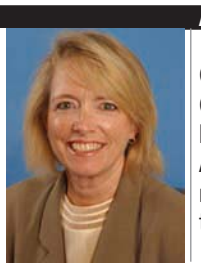
Deepwater Horizon

Further proof that oil and water don't mix



About the Author

Carleen Lyden-Kluss is the Co-Founder and Executive Director of NAMEPA (North American Marine Environment Protection Association). She holds a USCG 100-ton Captain's license.

On April 20th, our maritime world changed. No matter how you slice it, everyone in the maritime industry feels the effects of the tragedy; the loss of 11 lives and injury to 17 others, the extensive environmental impact, the economic fallout and ongoing costs, the exposure of weaknesses in the response system, and the regulatory changes that will result from this. The details of the event are well known: the Deepwater Horizon oil spill, also called the BP Oil Spill/the Gulf of Mexico oil spill, is now considered the largest offshore spill in U.S. history. It has surpassed in volume the 1989 Exxon Valdez oil spill as the largest ever in U.S. territorial waters; however, it is still outranked in the greater Gulf of Mexico by the 1979 Ixtoc I oil spill. The spill emanates from a sea floor oil gusher 5,000 miles below the surface that started with an oil well blowout. The blowout caused a catastrophic explosion on the Deepwater Horizon offshore oil drilling platform that was situated about 40 miles southeast of the Louisiana coast.

Current estimates of the amount of oil being discharged range from 12,000–100,000 barrels per day, although as of this writing, the preliminary best estimate that was released on May 27 by the semi-official Flow Rate Technical Group put the volume of oil flowing from the blown-out well at "only" 12,000 to 19,000 barrels per day, which had amounted to between 440,000 and 700,000 barrels as of the date of the blowout. Obviously, as further data is collected and evaluated, the estimates will get more reliable.

In a response plan BP submitted to the U.S. Minerals Management Service (the regulatory body covering offshore drilling) as it's "worst case scenario", BP asserted that it could handle up to 162,000 barrels per day release, and that the chance of oil reaching the shoreline within 30 days was estimated at 3 percent or less for most coastal areas, except Louisiana's Plaquemines Parish, which the company said had a 21 percent chance of seeing oil onshore within 30 days. Clearly, this plan has proven to be optimistic rather than realistic.

The impact on the environment remains unclear, as the daily reports of oil landings, death or rehabilitation of affected fish and wildlife continues, not to mention the impact on the fisheries. While some estimates say that it will take 10 years for the event's impact to be "flushed out", others point to the historic Ixtoc I release and the Gulf's survival from that event. Dr. Quenton Dokken, Executive Director for the Gulf of Mexico Foundation summarizes it as follows:

"Oil in the Gulf of Mexico is not new – it has been entering the Gulf of Mexico for as long as the Gulf has existed:

1. **Natural seepage** (1-2 supertankers/year or ~1,090,910 barrels/yr)
2. **Marine shipping disasters** (just since 1990 145,234 barrels and during WWII 56 ships were sunk in the GOM)
3. **Shipping os** (bilge cleaning)
4. **O&G production** (IXTOC I in 1979 3.2m barrels over a 10-month period)
5. **Chronic spills** in recreational and commercial marinas (significant)
6. **Storm water runoff** within the watershed of the Mississippi River and all other river systems feeding into the Gulf of Mexico and from coastal communities (perhaps largest source of all)
7. **Spills from hurricane impact** (159,091 barrels during Katrina)
8. **Other** (refinery spill 71,000 barrels)

Why is this important to know? Based on scientific measurement and history - hydrocarbons in the system have always been adequately dealt with by nature. It is not likely that the oil flowing into Gulf today will still be there a year from now. That being said, although oil and gas in the Gulf is not new, it is imperative that we reduce and eliminate human inputs where possible. Science does not have a clue as to the total capacity of the Gulf of Mexico to absorb pollutants that we dump into it. We do not know which straw "will break the camel's back." Without question these human inputs can be stopped if we humans are willing to make the commitment to do so."

While the environmental impacts are still unknown, the financial ones are easier to quantify. Since the event of April 20th, BP has lost $67 billion of its market value. Further, as of this writing, the cost for cleanup to BP totals nearly $1 billion, an average of $22 million a day. It is impossible to put a price tag on the reputational cost to BP, but between the cost of the cleanup, the pending litigation, and the drop in share price has made them vulnerable to a takeover. The fishing industry is estimated to lose $2.5 billion and the Florida tourism $3 billion.

What are truly revealed by this tragic event are the weaknesses in responding to a subsea disaster. It seems our technologies are advanced in exploration and extraction, but these advances are not matched by corresponding advances in response and remediation technologies. While our capabilities to reach new depths to reach oil and gas reserves in waters over 10,000 feet deep, this event has put a spotlight on how our response to crisis is inadequate to the task of dealing in such depths. Dr. Dokken attributes that to the lack of funding for such technologies outside of military or research use. Finally, there is Congress who must act to demonstrate their leadership in the wake of this event. The writing is on the wall that OPA 90 will be rewritten, but it is hoped that Congress will take a surgical approach, rather than treat shipping and offshore as the same entity, especially when it comes to lifting the cap on liability. As many have said, removing the cap entirely will make it impossible to insure risk. And that is the lesson we must learn: managing risk. Perhaps it is the wrath of Poseidon that we are reminded that our environment needs our care and protection. Perhaps in our world of advanced technologies and communications we need to better evaluate our risk management procedures. As George McBundy said: "There is no safety in unlimited technological hubris."

Responders Look High and Low to Stop, Contain Oil Spill

Searching for Solutions

The oil spill in the Gulf of Mexico crosses many political, economical, ecological, technological and emotional boundaries; an industrial accident that will have ramifications for a generation. As oil continues to spew from the disabled well more than a mile beneath the Gulf of Mexico, *Maritime Reporter & Engineering News* examines some of the technologies and techniques that have come forward to help stop the oil flow and clean up the burgeoning mess.

Though not a product or system designed for deployment, we found interesting the new website **www.whatshouldBPdo.com**, which touts itself as "crowdsourcing" to help BP solve its problem. Though we skeptically envisioned this as an internet bin for the collection of technology bits, ARM Insight, an Oregon technology company which launched the site touts crowdsourcing — the concept that the wisdom of crowds, if harnessed, can usually provide the best answer (think "Who Wants to be a Millionaire"). In this regard, the mere logical gathering of information seems a wise step, as BP has reportedly received more than 10,000 phone calls and 60,000 Emails offering solutions.

Field of Nightmares?

In "Field of Dreams" actor Kevin Costner's character Ray Kinsella was instructed to "Build it, and they will come;" 'it' being a baseball field on the character's farm. In real life, it appear Costner has help to conceive and create something entirely different – and oil-spill clean-up device dubbed **Ocean Therapy** – which according to multiple news sources BP has approved for trial. While there have been mixed reports regarding Costner's present-day involvement in the product and company, the barge-mounted system is reportedly designed to suck in large quantities of polluted water, separate out the oil and return 97% clean water. The company reportedly has 300 machines in various sizes; the largest is reportedly able to clean water at a rate of 200 gal/min.

Breaking Up: Is it Hard to Do?

Much attention has been paid to chemical dispersant solutions, solutions designed to break the oil down so that it can be more easily managed by nature. The problem: never before has dispersants been used in this quantity or manner, and there have been concerns voiced, from individual citizens to the EPA, as to the short- and long-term effects on the environment. **U.S. Polychemical Corp.** claims to offer a solution which cleans oil discharges and spills without affecting wildlife. At the opening stages of the spill BP was using a product which was approved for use by the U.S. Environmental Protection Agency (EPA). But on May 20, 2010, EPA called on BP to find alternative, less-toxic and more effective dispersant to break up the oil spill. While the dispersant was on the agency's approved list, clean-up crews were using it in unprecedented volumes and also began using it underwater at the source of the leak – a procedure that has never been tried before. Polychem's Dispersit (http://uspoly.com/dispersit.html) is a water-based surfactant used to clean up oil spills, and according to the company has shown a significant reduction in the harm caused to both human and aquatic life. Polychem's Dispersit is a blend of water, water-soluble surfactants and a coupling co-solvent, which the company claims does not pose the threats that petroleum dispersants do to human health.

Pitching In

Countless individual and corporations have and continue to converge on the GOM to offer what they believe will be the brawn and the brain to help clean the oily mess more efficiently and effectively. **Centek Industries** (www.centekindustries.com/oilspill.pdf) offers three products to help contain and clean up oil in the contaminated areas: The Sheen Devil, Terraguard and Versimat, which are infused with patented Mycelx, designed to bind on contact with hydrocarbon pollution and does not absorb water. **SeaArk Marine, Inc.**, of Monticello, Ark., announced immediate plans to expand its production capacity to better meet the needs of the Gulf oil spill response. "Unfortunately, it appears this catastrophe is going to be around for some time" said Ken McFalls, Vice President of Sales. "We already have the manpower and overflow facilities to handle emergency situations such as this. It's just simple matter of putting these resources to use. We're ready to run 24/7 if necessary." SeaArk Marine, formerly MonArk Boat Company, has been serving the Gulf coast oil industry for over 50 years. Vessels range in size from 17 to 65 ft and include specialty craft for the deployment of boom and dispersants, skimmer platforms, shallow water sampling and high speed drop ramp cargo barges.

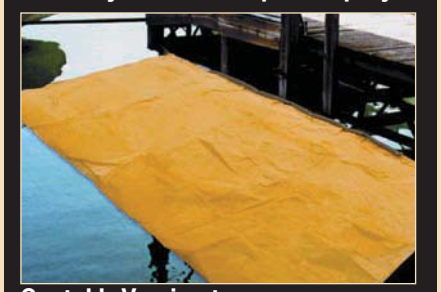
(Continued on page 73)

(Photo © BP p.l.c.)

Semi-sub spuds the first probe.

Air-launched buoys to collect data.

U.S. Polychemical dispersit spray.



Centek's Versimat.

Pirates Burn Galveston

Pirates burned Galveston to the ground – but not recently

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aThe pirates were led by Jean Lafitte. Rather than trying to pillage Galveston, they were fleeing in order to avoid an impending assault by a naval task force.

Jean Lafitte and his older brother Pierre began their free-lance privateering in the Caribbean in about the year 1800. By 1807, they had established a base on the island of Barataria, in Barataria Bay in the new United States Territory of Louisiana. The Lafitte's oversaw operation of a fleet of corsairs that plundered vessels in the Gulf of Mexico and the Caribbean Sea. Merchandise seized was often sold in the thriving black market in New Orleans. In their spare time, the Lafitte brothers engaged in smuggling. Both the piracy and the smuggling brought the Lafitte's to the attention of federal officials, including the Customs officers in New Orleans, the Revenue Cutter Service (predecessor of the US Coast Guard), and the US Navy. Several vessels operated by Lafitte were seized by the Revenue Cutter Service, but illicit activities continued. The Lafitte brothers were arrested and jailed in New Orleans. After posting bail, they fled back to the relative safety of Barataria Island. During the War of 1812, when the British Navy tried to recruit the Lafitte brothers, they negotiated an arrangement with US Army General Andrew Jackson to assist in the defense of New Orleans in exchange for pardons for past offenses. The Lafitte brothers and their band of Barataria pirates fought well during the Battle of New Orleans and duly received their pardons.

After the War, the Lafitte's and their friends promptly returned to their prior practices. Needless to say, this made them quite unwelcome by federal officials. By the middle of 1816, things were becoming difficult on Barataria Island. The Lafitte brothers and compatriots decamped, looking for an alternate base.

Also in 1816, Mexico was engaged in a war of independence from Spain. Mexican rebels worked out an arrangement with Louis Michel Aury, another privateer, for him to set up operations on Galveston Island in sparsely settled Texas. [There was a surfeit of pirates in the Gulf of Mexico and Caribbean Sea at that time.] He would provide logistical support to the rebellion and harass the Spanish Navy. The Mexican Government would provide him with Letters of Marque so as to possibly legitimize his activities and would provide whatever protection it could. Aury duly established a small base on Galveston Island.

Jean Lafitte moved his men and vessels to Galveston later that year. Showing more profit potential than Aury, it did not take Lafitte long to win over the loyalty (if that is the right word) of the pirates and privateers in Galveston. Aury soon departed for Amelia Island, Florida (but that is a different story which will not be pursued here). Lafitte was not only engaged in piracy and smuggling, he was also involved in duplicitous diplomacy. At the same time that he was reassuring the Mexican rebels that he had taken over the role of Aury, he was telling the Spanish Government that he was spying against the Mexicans on their behalf. There is little evidence, though, that Lafitte provided material support to either side in the Mexican War of Independence. The base at Galveston Island, now renamed Campeche, soon became the pirate headquarters for the entire Gulf of Mexico, attracting a growing number of miscreants and law-breakers. Lafitte and his band built gambling houses, boarding houses, saloons, and houses of prostitution. Lafitte built a home/fortress called Maison Rouge (the Red House) to serve as his headquarters. Cannons were installed on the roof.

It had everything a pirate needed. It was a protected harbor. It was near a ready market – Houston. Most importantly, from Lafitte's perspective, was the jurisdictional situation. Galveston was in a legal vacuum. It was outside the reach of traditional government and law enforcement. The island was claimed by both Spain and Mexico, but neither had the capability at that time of exerting their authority. The United States was reluctant to act directly against the island, since it was part of a foreign nation. Thus, the pirates could plunder at will in the Gulf of Mexico and the Caribbean and then scurry back to Galveston to dispose of their ill-gotten gains and replenish for another foray.

By 1821, the United States Government had gotten totally fed up with the activities of the Lafitte brothers at their headquarters on Galveston Island. The USS Enterprise was dispatched to advise Lafitte to cease his piratical activities. Jean Lafitte received the message politely, but continued as before. Several months later, in May 1821, the Enterprise returned, but with a flotilla of Navy and Revenue Cutter Service gunboats. Lafitte stalled for several days while he made preparations.

On the night of May 7, 1821, the pirates set fire to most of the buildings in Galveston (including Maison Rouge) and quickly departed in their fastest vessels. Rumors persist that, prior to his hasty departure, Lafitte buried some of his ill-gotten gains on Galveston Island and in surrounding locations.

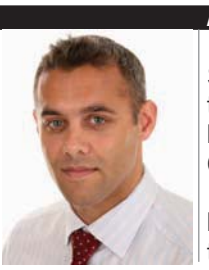
The US naval force was not required to fire a shot, thus avoiding a diplomatic confrontation with the Mexican Government, which by that time was in the final stages of winning its War of Independence.

As governments became better established throughout Latin America, the possible refuges for pirates rapidly disappeared. Several operated off the coast of Cuba for a few years, but increasing pressure from US naval forces and from the Spanish colonial government on Cuba brought that to an end. The traditional piracy problem in the Western Hemisphere was largely resolved, not so much by defeating the pirates at sea (although that occurred with regularity), but by destroying or otherwise eliminating their shore bases.

It is unclear how much of this history translates to the situation in the current problems in the Indian Ocean and the Gulf of Aden. There seems to be a consensus, though, that these modern-day pirates will not be totally defeated until law and order are returned to the coastal villages of Somalia.

Alternative Route

To Achieving Energy Efficiency and Greener Shipping



About the Authors

Simon Burnay (left) is Director for the Shipping and Ports Division of BMT ARGOSS Ltd.

Del Redvers is Head of Sustainability at BMT Group Ltd.

The management of Greenhouse Gas (GHG) emissions from shipping has been widely talked about and extensively reported on over the past six months. The disappointment of COP 15 and the resulting lack of clarity has caused some frustration as well as an increased likelihood that there will be a plethora of regional and potentially costly regulations to respond to. So with this new set of challenges on the horizon perhaps now is the time to reflect on some of the alternative ways of promoting energy efficiency and greener shipping. Del Redvers and Simon Burnay of the BMT group, experts in corporate sustainability and ship performance matters reflect on how the appropriate deployment of a comprehensive Energy Management strategy can lead to significantly reduced fuel consumption and the associated environmental benefits.

Current estimates indicate that shipping's share of global CO2 emissions could increase to 20-30% by 2050. With 90% of global trade carried by sea, this is an issue that cannot be sidestepped. It is important to note that while the emissions debate is beneficial for all in terms of reducing the environmental impact, it is sometimes hard to see the plethora of solutions being proposed as anything other than a cost that the shipping industry must bear, with little financial benefit. Solutions with tangible commercial benefits may provide significantly more leverage to establish the win/win situation that will reduce costs and limit damage to the environment.

There are a number of measures that are currently being trialed or introduced more widely that have the potential to achieve the win/win that is required to be successful. New technology can be harnessed to make ships more fuel efficient through making engines more efficient and increasing hull efficiency.

Perhaps more importantly, technology can be used to measure performance throughout a ship's life-time and provide a baseline against which improvements can be measured. To quote the eminent physicist and engineer Lord Kelvin: 'to measure is to know'. Solutions such as BMT's SMARTPOWER record and collate real-time performance data, providing much improved performance data over the standard manual 'noon' reporting process. By measuring, recording and analyzing good quality data it is possible to break down the overall performance into individual components (engine, propeller, hull performance), remove any variables, identify where efficiency losses are being introduced into the system and react accordingly.

Changes in operational procedures can also deliver environmental and commercially beneficial improvements. While accepting that ultimately, many decisions are driven by the charterer, or factors beyond the control of the operator of that ship, there is still scope for improvements in voyage planning and speed optimization. The 'sprint/loiter' approach, where a ship proceeds as fast as reasonably possible to its destination and then waits to be unloaded or to receive further orders, has benefits in enabling maintenance time (for example) but has a detrimental effect in terms of fuel efficiency and emissions. By optimizing vessel speed (or 'slow steaming') based on knowledge of environmental conditions including

wind, wave and current, the speed profile of the voyage can be tailored to ensure that the ship arrives at the destination just in time to be loaded or unloaded. While this strategy could be extremely effective, there is the need for all parties in the logistics chain to understand the issues involved and ensure that there is suitable shore based infrastructure to service ships as they arrive. 'Slow steaming' certainly has its benefits but there are downsides too. If we accept that slow steaming is here to stay, will we need extra ships to cater for trade growth? Should new ships be designed with slow steaming in mind in order to optimize their efficiency? There are issues associated with running a ship that is designed to do 25 knots at an off design condition. Inherently it is not as efficient as it should be and will require increased maintenance. BMT is beginning to see the effect of slow steaming as part of its hull and machinery condition survey work, and engine manufacturers are now issuing service bulletins recommending preventative measures that should be taken to prevent damage in long term.

The International Maritime Organization (IMO) has already identified the importance of shipboard energy efficiency and has established a mechanism for a company and/or a ship to improve the energy efficiency of a ship's operation. The Shipboard Energy Efficiency Management Plan (SEEMP) is a document that seeks to improve a ship's energy efficiency through four steps: planning, implementation, monitoring, and self-evaluation and improvement. At present it is mandatory for a ship to carry its SEEMP but there is no requirement to comply with it. Many operators are already pursuing this initiative as market forces make it beneficial to do so, however, as the culture changes and the importance of energy efficiency becomes more widely accepted, the SEEMP will become an increasingly valuable tool.

In order for the SEEMP to be effective, it is essential to have a performance baseline in place that provides the feedback that can be used to help learn and improve. Areas such as optimizing maintenance and hull cleaning can be improved by moving away from fixed schedules to 'condition based' approaches. With access to up to date, accurate, performance data, maintenance and cleaning can be carried out at the optimum time to ensure that energy usage is maintained at the lowest possible rate. An excellent example of this is one of the first ships that deployed BMT's SMARTPOWER technology. Using data from the system that indicated a worsening in hull performance, BMT recommended that the ship had a hull clean ahead of schedule. The net result was a direct saving of approximately seven tons of fuel per day and the obvious benefits in terms of reduced emissions. This particular system had only been on board for two months so immediately ticked the 'win/win' boxes in delivering environmental and commercial benefit.

Success also depends on the buy-in of the crews using the new technology or deploying new working practices. As so often happens when implementing change, a cultural shift is required to ensure that the best use is made of the improvements that are available. Some crews will be proactive and engage as a matter of course while some will need a form of incentivization. When there are examples of two very similar ships running two very similar routes with very different performance the only real variable is the crew. It is hardly surprising that operators are beginning to give their crews' bonuses based on improvements in fuel consumption and related environmental aspects.

The final element of deploying a comprehensive energy management strategy is having an understanding of how the carbon markets work. The shipping industry is going to be charged for its carbon emissions. Whether it is a bunker fuel levy tied to shipping fuel efficiency measures such as that proposed by the World Shipping Council (WSC), regional emissions trading or another of the many proposed schemes, having an appreciation of the carbon market will prove invaluable to any organization in the shipping industry. BMT Group's experience in working on sustainability projects with cruise lines and other major shipping organizations has highlighted the impact internalizing carbon costs may have, and how poorly understood this is by the industry at large. Here, there is a thirst for knowledge that BMT Group is working to satisfy.

There are certainly major environmental and commercial benefits in achieving greater energy efficiency and making shipping 'greener'. Shipping lines and major shipping organizations are beginning to recognize this but we are still in the early stages of the process. For these new initiatives to be successful in the long term there needs to be a five pronged attack focusing on:

- Deploying new measurement technology to define baseline performance;
- Changing operational procedures to improve performance;
- Ensuring awareness of new legislation;
- Engendering a shift in culture to promote the importance of fuel economy and environmental issues.
- Embracing the R&D into new technologies (such as alternative fuels) to help them become commercially viable propositions.

Only then can shipping start to become truly energy efficient.

About the Authors

Del Redvers is Head of Sustainability at BMT Group Ltd. As a corporate sustainability specialist Del has particular expertise in environmental sustainability, corporate responsibility and organisational development.

Simon Burnay is Director for the Shipping and Ports Division of BMT ARGOSS Ltd, a subsidiary of BMT Group Ltd. Simon specialises in ship hydrodynamics and operations.

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Several years ago many people in the marine industry either did not know about LNG or did not think that it would amount to anything worth more than a passing interest. At that time there were just four LNG import terminals in the USA and even they were underutilized.

Marine Firefighting Inc. conducting an evaluation drill involving a simulated leak as a tug holds an LNG ship against the dock while also using its fire monitors and deluge system to disburse vapors and protect its crew.

Today there are eight LNG import terminals in operation with two more slated for their first "cool down" shipments this year or early next year. In addition there is an LNG facility in Mexico just over the California boarder where US companies are also operation. There are also currently many applications, which have been approved, for new LNG facilities within the USA and Mexico or just offshore.

During a Marine Firefighting Inc. drill tug crews learn the properties of Liquid Natural Gas (LNG) as the liquid rapidly changes to a gas when it is warmed by the atmosphere"

Even with the slow down in LNG imports due to the recent economic downturn, LNG is expected to continue its rapid growth. Hence the huge investment in LNG ships, facilities and tugs designed for this industry.

For the marine industry this has meant extraordinary growth in the tug boat fleets who will be escorting the new massive LNG carriers into our ports. Tens of millions of dollars have been invested to upgrade the tug fleets to meet the stringent safety requirements set by the LNG industry. That industry has enjoyed one of the most exemplary safety records of any marine shipper of petroleum or gas products.

Their demands include that state-of-the-art firefighting equipment be installed on the new tugs used to escort LNG ships. In addition, the tug crews must receive training to familiarize them with the safe use of that equipment and also with the properties of the LNG product they are being asked to assist into dock.

Marine Firefighting Inc. has been providing that familiarization over the past seven years for most of the tug boat companies involved in the LNG trade and in five of the LNG facilities the US and one in Mexico. LNG is a cryogenic liquid formed when natural gas is cooled to minus 260 degrees F (160 degrees C.). It is a colorless and odorless product which is not under pressure while being transported aboard ship. The tug crews are taught that this product will only burn when it is in the gaseous state and, even then, only when it is between five and fifteen percent in the atmosphere. Below five percent it is too lean to burn and above fifteen percent it is too rich to burn.

The tug crews are taught that their new firefighting equipment, which satisfies the ABS requirements for a Fi Fi 1 class firefighting vessel with more than 10,000 gallons of water per minute capacity, will not extinguish an LNG fire. The main extinguishing agent for an LNG fire is dry chemical. In fact, the indiscriminant use of water on an LNG spill or fire might actually make the situation worse!

This is why the familiarization training is so important. Tug crews need to know how their massive fire pumps and fire monitors might be used during an emergency. They are shown that, other than for their own safety, they are to do nothing at an LNG fire or emergency unless

they receive a request to do so by the "person-in-charge" of the off-loading operation. Without coordination of this training among the tug crews, the LNG vessel's crew, and the facility's crew the response to an emergency might not be successful.

To determine the compatibility of the three different forms of training given to these three different partners in the marine transfer Marine Firefighting Inc. recently ran a full scale scenario at an operating LNG facility. Due to this drill, many recommendations were made and implemented that would insure that all three entities involved in the marine transfer of LNG were operating on the same game plan and each had the proper equipment to insure a coordinated operation. The Fi Fi 1 equipment on the new tugs also serves to protect the tug's crew. The massive monitors can be used, in a disbursed spray, to actually direct a gas vapor cloud away from the tug or from a source of ignition. Deluge systems aboard the tugs can act as a sprinkler system to continuously wet the metal surfaces of the boat to prevent the embrittlement effect of the LNG should it come in direct contact with the tug.

As we recover from the economic slump the LNG industry will continue its growth which will provide work within the marine community in the years ahead. Understanding the product and its characteristics as well as having a good knowledge of the new tools the tug boat crews will work with will help to continue the envious safety record of the LNG industry and insure jobs for the future. To keep that safety record all partners of the marine transfer of LNG must have on-going training that is coordinated between all the parties involved.

MARIN Stereo PIV System

A Tool for Flow Measurements

About the Author

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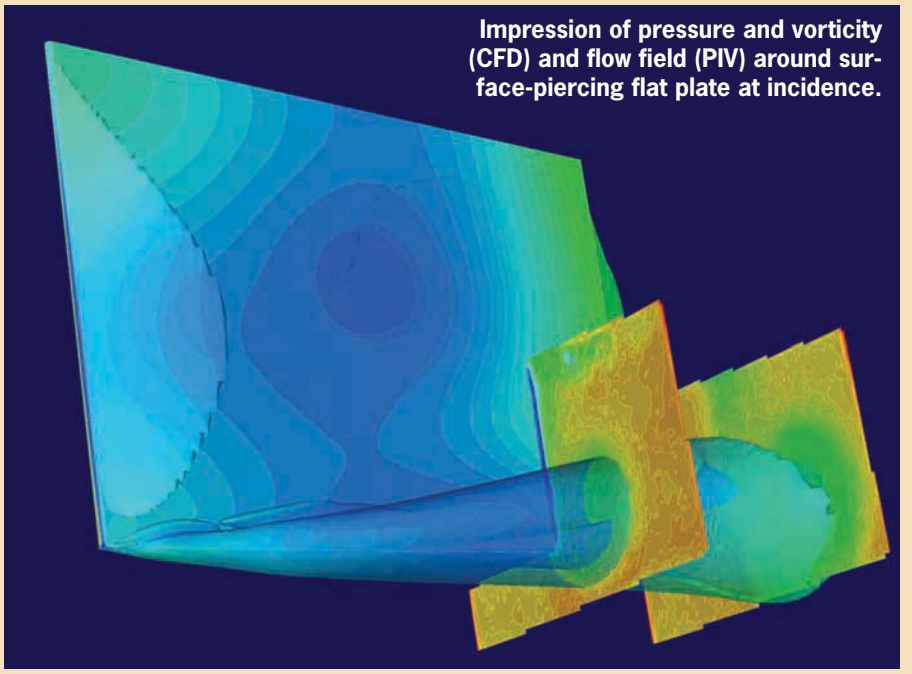
Stereo Particle Image Velocimetry (PIV) is an advanced measuring technique for obtaining 3D velocity information in a plane. PIV can be used to investigate the spatial structure of a flow by efficiently measuring in multiple planes. It is an important tool for the experimental validation of CFD calculations and for obtaining flow field information. This information can then be used for appendage or propeller design for instance.

This technique is based on the measurement of the displacement Dx of particles in a target plane between two successive light pulses with a time delay. The flow is seeded with particles and the target plane is illuminated with a light sheet. Particle positions are recorded by two special digital cameras. One PIV image consists of two image frames belonging to the two successive light pulses. Special image processing software analyses the movements of the group of particles in subsections of the PIV image using correlation techniques. The output is an instantaneous velocity field in the measuring plane. The third velocity component, perpendicular to the measuring plane, can be derived by using two cameras in a stereoscopic arrangement. Therefore, this method is called stereoscopic-PIV or stereo-PIV.



Impression of pressure and vorticity (CFD) and flow field (PIV) around surface-piercing flat plate at incidence.

Successful System Tests

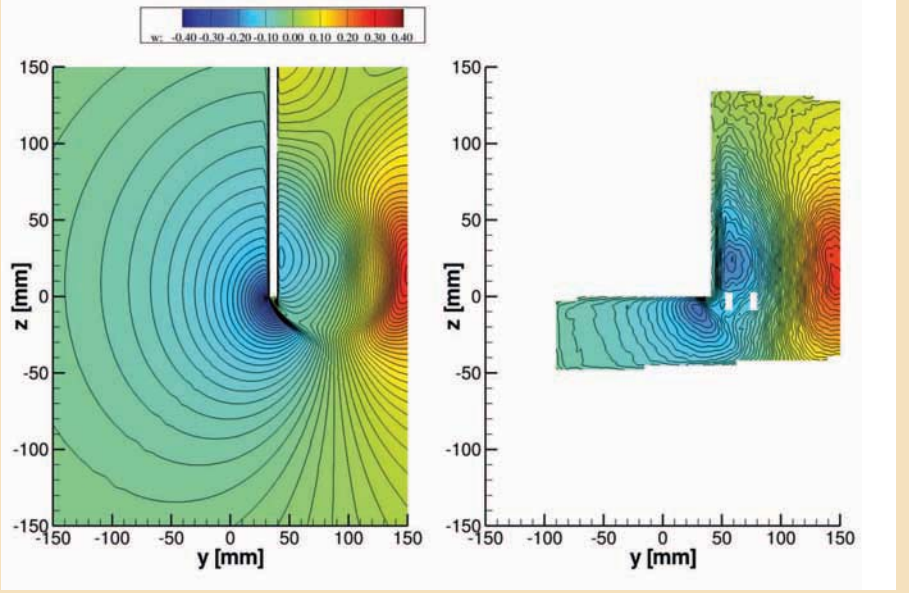
Over the last five years MARIN cooperated with Sirehna in the field of PIV, using a shared system. To make PIV more interesting for customers, MARIN invested in a new system and last September, successful acceptance tests were performed. Designed by DANTEC, the new MARIN stereo-PIV system draws on experiences with the previous system and it is based on the very latest developments. A powerful 200 mJ laser and high-resolution four-Megapixel cameras are mounted on one rigid probe. The new system is optimized for efficient use in a production environment and is permanently installed at the towing carriage. Special effort has been put into reducing the time required for set-up and for calibration, therefore making the PIV system very cost-effective. The new system has already been successfully used for several projects in recent months.

PIV Capabilities

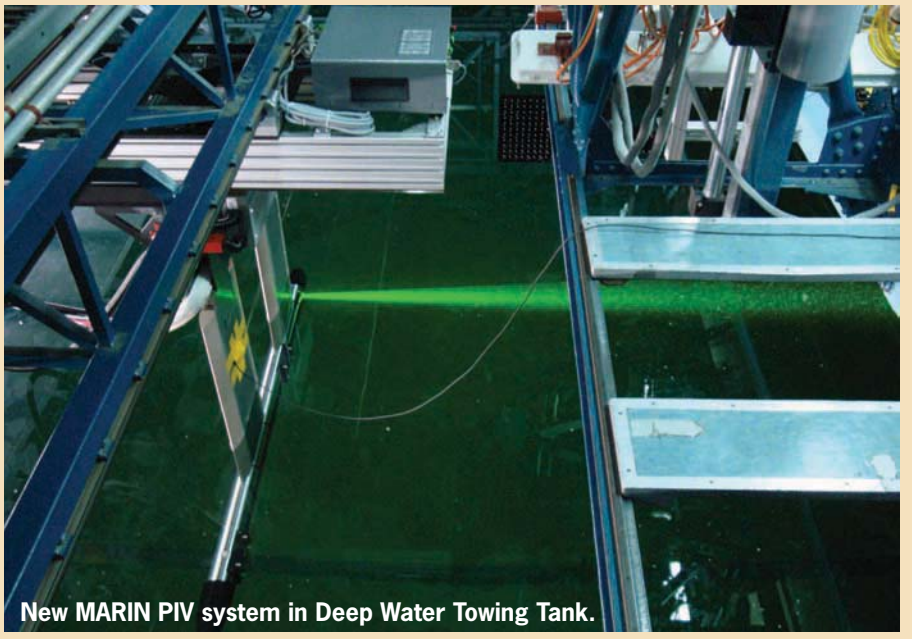
To demonstrate the strengths of PIV, as well as the CFD capabilities, one of the projects performed with the previous system will be discussed in more detail.

PIV measurements were performed in MARIN's Deep Water Towing Tank on a surface piercing flat plate. MARIN carried out these benchmark tests as part of the HydroTesting Alliance (HTA) project. HTA is the European FP6 Network of Excellence set up to facilitate the continuation of world leadership of the European hydrodynamic testing facilities. The objective of this alliance is to develop a formal and lasting structure to coordinate the definition and introduction of novel measurement techniques for ship model testing.

The flat plate was selected as a benchmark geometry by the HTA and was towed at an incidence of 20 degrees, while measurements were made at a plane next to and in the wake of the plate. Although a simple geometry, a lot of important phenomena such as vortices, velocity gradients, free surface deformation and wall surface reflections are present. This benchmark test gives insight into the state-of-the-art stereo-PIV capabilities in different testing facilities.



Calculated (left) and measured (right) vertical velocity fields.



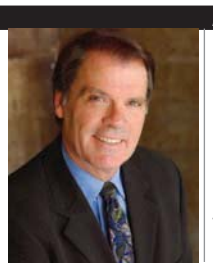
New MARIN PIV system in Deep Water Towing Tank.

Valuable Future Use

The advance of computational techniques allows hydrodynamicists to obtain flow fields numerically as well. Therefore, a separate numerical exercise using the viscous-flow solver FreSCo to predict the flow around the flat plate was performed. FreSCo is a URANS solver for general hydrodynamic purposes. Availability of the measurement data and the computed data provides a unique chance to crosscompare both experimental and computational results. The calculation was conducted using the same conditions deployed during the measurement tests. The only simplification made was the neglect of the deformation of the free surface. The location of the measurement plane relatively far from the free surface and the moderate velocity justify this simplification. Careful comparisons between the predicted and measured velocity fields show that they concur very well. The magnitude and position of the vortex sheet coming from the lower edge of the plate are well resolved. Both the PIV system and FreSCo, are valuable tools for future projects.

Offshore Ventures

Financing Offshore Ventures in Today's Economic Climate



About the Author

David Lyons has 35 years' of experience in providing international business and financial advisory services to offshore industry in 84 countries. He has setup and sold six ocean tech companies.

By David P. Lyons, B. Comm., MBA, Founding Partner & President, Capital Partners Worldwide Inc.

Regardless of today's economic and financial reality, wealth creation and oil prosperity go hand in hand. While the medium to long term prospects are good, it is a major challenge for the offshore and maritime communities to secure the financing that is required to respond to immediate market opportunities, and also re-finance the completion of existing projects, such as offshore supply vessel new-builds.

The funding necessary to invest in leading-edge research & development, introduce alternative & renewable ocean energy sources, fully commercialize promising technology, fast-track the expansion & grow of companies, and restructure capital requirements for mergers & acquisitions, is the driving force behind the need for innovative long-term capital solutions to meet our ocean industry requirements.

After a flurry of merger and acquisition activity in the geophysical and seismic survey business, there is still a lag in the data processing capabilities of most of the major service providers. These same companies have made significant investments in next-generation vessels at prices that are staggering when compared to the last new build boom. Whether it is the funding necessary to acquire yet another round of leading edge technology, or restructure the debt for an existing asset base, a non-traditional approach to financing is essential.

With offshore drilling waters depths advancing quickly from deep to ultra-deep, and target drilling depths increasing at a similar pace, we are seeing a need to finance high-specification rigs and special-purpose vessels that require a major infusion of investment capital. The success with floating production, storage & offloading systems [FPSO's] in the deep waters of Brazil, West Africa, and now the United States Gulf of Mexico's Continental Slope has generated a growing demand for similar and more advanced FPSO's for planned exploration & production expenditures by the international, independent and state-owned oil companies. The early-to-production feature of these systems does include a substantial cost savings to the oil company. The same can be said for the use of FPOS's to achieve higher recovery rates in mature and marginal fields. These advantages to the oil companies create a major financial challenge for the service providers who must keep pace with their own investment in leading-edge technologies. The strong demand for liquefied natural gas [LNG] has seen a dramatic increase in the number of LNG projects. This requires a very capital-intensive infrastructure that includes new receiving terminals, specialized vessels, and new & expanded production facilities. These projects tend to bring together buyers and sellers on a global scale, including the need to secure a blend of debt and equity financing at an international level that recognizes the importance of taking a long-term perspective of the investment.

Sustainable, alternative and renewable ocean energy will increasingly challenge today's conventional thinking in tomorrow's capital markets. High on the list of future energy projects that will be at the frontier of this new thinking are coastal & offshore wind farms, ocean power, and waste water to energy. To meet these immediate and future funding challenges, our industry will need to attract capital that recognizes the market applications for new technology, understands the collaborative nature of the oceans community, and appreciates that a long-term investment strategy is essential and profitable. For those companies frustrated by the lack of interest by the traditional banking community to fund their projects will continue to be left high and dry unless they think "outside the box". There are new equity sources of capital that represent a joint-venture partnership between the project owner/sponsor and private equity firms representing institutional investors.

In our case, we invest in projects over $50 million and up to many billion dollars. The exceptionally stable and long-term nature of this source of capital requires an equally exceptional level of credibility, experience, and business ethics in those with whom we chose to invest. There tends to be a teaming approach for ventures ranging from investment in sub sea infrastructure to industry & institutional R&D collaboration, and from technology-intensive startups to corporate expansions.

Two essential ingredients for a successful funding application are a compelling business proposal and an experienced management team with a proven track record. The business proposal should clearly state the business proposition offered to the funder.

Remember, the funder is an investor who shares in the profitability of the venture, and not a bank adding interest points.

Our approach is not to micro-manage a venture, but to reply on the talent of the management team. The funder's long-established relationship with key players throughout the industry does bring added value to a venture, but the day-to-day management is entirely the responsibility of the team in place.

The offshore and maritime industries have always pushed the technical frontiers and found innovative solutions to meet new challenges. An exceptionally tuff global economic environment has stimulated a more creative approach to financing that can result in break through shareholder value.

Forecast for

Brazilian Shipbuilding

The rise and fall of the Brazilian shipbuilding market is well-known, having plummeted from the top of the world list in the early 1980s to the bottom by 1999. Today, Brazil is storming back, an amazing revival of the nearly defunct shipbuilding industry driven by the sudden influx of orders from major offshore oil & gas players, namely Petrobras.
*— By **Claudio Paschoa**, Rio De Janeiro*

Today the shipbuilding market in Brazil has in excess of 100 firm orders for ships in a variety of shapes and sizes, in addition to a large number of drill rigs and production unit orders. In addition, companies from around the globe are flocking to Brazil to set-up shop and engage in the industry's renaissance. The national shipyard workforce has hit 50,000, impressive considering its rise from a low of around 2,000 just a decade and 25,000 just three years ago.

"The Brazilian shipyards are prepared for the challenge of producing drillships, production platforms, support vessels, tankers and all the equipment necessary for Brazil´s new phase of oil production in the deep layers of the marine seabed, known as pre-salt." said Ariovaldo Rocha, President of SINAVAL (National Syndicate for Naval Construction and Repair Industry and Offshore).

While maritime and offshore O&G industries are notoriously cyclical, the demand from Brazil is forecast to be steady for a generation, as the amount of potential new reservoirs is projected to continue driving demand for ships and rigs for the coming two decades.

Unique is that positive signs are coming from many different market sectors, a variety of organizations and companies, such as Brazil´s SINAVAL, but also including majors such as Transocean, Pride, Noble, Seadrill, Sevan, Modec, BW Offshore and Teekay. In addition, a number of leading shipbuilders are setting up shop in Brazil including market leaders such as Samsung Heavy Industries, Hyundai Heavy Industries, Daewoo, Jurong, STX and the Chinese shipbuilding giant Cosco (CSSC), which is in discrete talks with potential local partners. Many are busy forming partnerships with Brazilian shipbuilders or investors, in order to fulfill national content policies to be eligible to compete for the shipbuilding contracts.

These shipbuilders are lining up to invest billions in local infrastructure and allow technology transfer, made all the more interesting by the status of global shipbuilding today due to last year's economic meltdown. The conclusion can be drawn that the high level of investment speaks to the market's potential for many years to come.

This level of investment points to a long-term commitment and, consequently a belief that there will be continued demand for shipbuilding services in the long-term. The growth of the Brazilian shipbuilding market is a reality and Brazil is already considered the sixth biggest shipbuilding nation in the world and is growing.

The pre-salt development alone will be responsible for a major amount of the short and mid-term demand, as the orders for pre-salt production rigs, FPSOs, MODU´s and support vessels have only just begun to be placed and are expected to be massive.

BNDES (Banco de Desenvolvimento Social), or Brazil´s development bank and major financing institution will award around $70b to the Brazilian shipbuilding industry in 2010 alone. Part of this financing is done through the FMM "Fundo da Marinha Mercante" or Merchant Marine Fund.

FPSO at Tupi (Photo Petrobras)

To meet this demand for ships, there are priority finance projects approved by the FMM for the construction of 17 shipyards along the Brazilian coast and the expansion and modernization of another five shipyards.

All of this is driven by the projection that the world oil demand is pegged to grow from the present 85 million b/d to around 107 million b/d by 2030.

Local shipbuilders are eyeing the opportunity to modernize production lines and methods. EAS (Atlantico Sul Shipyard) – which has the most modern and highly automated production line in the Brazilian shipbuilding industry – has planned a 20% increase in IT investments for its production plants and hope to be in position to compete in equal terms with the major players in the future, targeting the highly competitive cruise ship construction industry as an objective to diversity its operations when demand from O&G slips.

(Photo)Regys Loureiro de Macêdo)

Rio Grande Shipyard crane arrival.

The Demand for Drillships

Petrobras announced its drillship construction program, which will be through direct acquisition or leasing. Twelve drillships will be or are being built in shipyards outside Brazil (three units of this first batch will be built by Brazilian Odebrecht in a new shipyard in the state of Bahia). Twenty-eight drillships will be built in Brazilian shipyards. The local tender process will start with nine drillships, with deliveries set from 2013 to 2018 and local content increasing between 55% and 65%.

The modern deepwater drillships are being leased from specialized companies such as Seadrill, which has recently delivered a third deepwater drill rig to Petrobras. At press time the rig was sailing to Brazil from Singapore´s Jurong Shipyard and is expected to start operations in July. Alf C Thorkildsen, CEO of Seadrill Management AS, said, "We are pleased to report the third consecutive on-time, on-budget delivery of a semi-submersible drilling rig to Seadrill from the Jurong shipyard. This is the third deepwater newbuild delivered to Seadrill that starts a long-term contract with Petrobras." The West Orion is a sixth generation, high specification, ultra-deepwater, state-of-the-art semi-submersible drilling unit. The rig has a high load carrying capacity, an efficient drilling floor layout with improved safety and working environment measures. West Orion is designed with a dynamic positioning system and a water depth capacity up to 3,000 m. It has one of the highest day-rates going: $615,000 p/d, losing out only to the West Taurus, which runs at $647,000 p/d.

A new deepwater drillship concept will soon be introduced with the recent arrival in Brazil of Sevan Marine´s Deepwater Driller, which is a circular design MODU operated by eight thrusters and is designed to be more stable, safer and also more cost effective than traditional ship hulled or platform deepwater drilling units. The Sevan Driller will be working on a six-year fixed contract with Petrobras. As a new, one of a kind, proprietary model by Sevan Marine, it will have to be tested through time, but Petrobras´ E&P executives are excited by the preliminary drilling tests and according to William Glover, Operations Manager for Sevan Drilling Units, "The drilling tests have gone very well, with no major issues and the core crew on the rig has been handpicked by me from the best in the market. I consider them to be the best in the business. We work under a very strict safety policy, where safety always comes first, even if that affects our up time." Petrobras is so enthusiastic that it has already ordered another Sevan drilling unit (Sevan Driller II), which is currently being built in China, with

delivery forecast for 2012, and also awarded a six year fixed contract.

Transocean is building nine drillships, of which one is the Petrobras-10000 drillship, at the Samsung yard in Korea. Upon commissioning it will go on a 10-year service contract with Petrobras. Transocean is presently the biggest drilling structure supplier in Brazil.

Noble has three drillships and two semi-submersible drill rigs which will be starting 5 to 6 year contracts with Petrobras. The three drillships will be modernized in Brazilian shipyard with investments of $175 million per ship. Another drillship is being built in the STX Dalian yard in China and will then sail to Holland on its own power, where Huisman drilling equipment will be installed, before sailing on to Brazil. Noble is also building a fixed drilling rig for another Petrobras contract.

Pride is building five drillships at the Samsung yard in Korea, with one already contracted to Petrobras and two contracted to BP. Pride presently has seven semi-submersible drilling rigs operating in Brazil.

Other orders will follow until the demand for drilling ships and equipment for the pre-salt and recent post-salt discoveries are met. The priority will be given to drillships and rigs built in Brazilian shipyards, with emphasis on modern deepwater drillers that are efficient and safe. Massive investments will be made by the shipyards that are awarded the drillship building contracts, the greatest challenges these local shipyards will face will be in terms of acquiring the latest building technology and also experienced know-how (experienced engineers and technicians) in order to build safe and efficient drillers and deliver them on time.

The Brazilian government has created the FGCN "Fundo de Garantia da Construção Naval" (Naval Construction Guarantee Fund) specifically to reduce the risks to the pioneer local drillship construction projects. Petrobras is also negotiating a special credit program with national banks, exclusively for financing the supply chain for pre-salt drillship construction in national shipyards.

Although executives from the companies that lease drilling units are skeptical about the capacity of local shipyards to build these latest generation units, primarily because the local shipyards lack the experience, a problem being circumvented via strategic partnerships with experienced drillship builders.

Despite the recent tragic deepwater loss and resultant oil spill in the Gulf of Mexico, there are no plans to halt or even decrease deepwater drilling operations in Brazil. Petrobras was quick to state it will review its present safety measures, drilling specialists consulted were unanimous to point out that the drilling industry in Brazil learned important lessons from the P-36 accident in 2001 and that safety measures are very stringent, to the point that they consider it to be highly unlikely for a spill of that magnitude to occur here, but they are still worried since the equipment used on deepwater rigs in the GOM is the same used in Brazil. They also expect that the safety standards will be increased in Brazil.

The Demand for Production Platforms

The demand for production rigs, of varied models, is estimated to be around 150 units up to 2020. The estimate for Petrobras demands alone is for 95 units. The contract for eight FPSO hulls went through a tender process and was awarded to Brazilian Engevix in a partnership with GVA for construction at Estaleiro Rio Grande (Rio Grande Shipyard), the yard, which is part of a complex to be composed of three areas and already has an operational dry dock for rig construction, it is located in the city of Rio Grande, in Rio Grande do Sul State, South Brazil. This shipyard will be making what Petrobras executives call the Hybrid FPSOs slated to work the deepwater pre-salt plays. The intention in to emulate a proven design and build a production line based on this model, thus standardizing the pre-salt production platforms design. Petrobras has recently signed a letter of intent valued at $3.75b with Engevix Engenharia SA, authorizing it to initiate the construction process, including hiring new employees. The workforce in the Rio Grande naval complex is forecast to reach a high of 7,000 during five years.

Private O&G operators are expected to have a demand for 55 production rigs, including 48 units for OGX Petroleo alone. The OGX rigs are to be built at the OSX shipyard, which will start being built in mid 2010 and is expected to be operational by mid 2011. The yard will be built in Santa Catarina, also in South Brazil. The OSX shipyard went public in early 2010 and brought in around $1.4 billion to invest in the yard´s construction and infrastructure. Although the work on the shipyard construction is presently halted due to local environmental concerns, negotiations are underway and the problem should be resolved by mid 2010. If worse comes to worse, OSX could potentially be forced to find a new location, which is not a major problem in view of the huge Brazilian coastline, with numerous locations offering incentives for shipyard construction. Both OGX Petroleo and the OSX shipyard are owned or have as major partner the EBX Group, owned by Brazilian businessman and mega-investor Eike Batista, who is currently slated as the eighth richest man in the world and is known as the "Midas of money making" in Brazil. Mr. Batista is also considered a visionary by many and is deeply committed to the development of Brazil.

To meet this demand for ships, there are

EAS shipyard 3D (Illustration courtesy EAS)

priority finance projects approved by the FMM for the construction of 17 shipyards along the Brazilian coast and the expansion and modernization of another five shipyards.

From 2007 to 2010, investments by Petrobras and private O&G players has financed the contracting of 23 production platforms of varied models, of these, only four will be fully built in Brazil. These are:

- P-51 - built by the BrasFels /Technip partnership.
- Mexilhão gas field fixed platform – Built by Mauá shipyard.
- P-55 – In construction at the EAS shipyard (Atlântico Sul Shipyard), through a EAS/Quip partnership.
- P-56 – In construction at the BrasFels shipyard, though a BrasFels/Technip partnership.

Of these 23 platforms, seven have modules built and integrated in Brazil. Twelve rigs were fully built in international shipyards outside Brazil and are leased to Petrobras and other players, being six units from Modec, two units from SBM (Single Buoy Mooring) and one each from BW Offshore, Prosafe, Teekay and Floatec.

FPSOs make up the majority of the production rigs, with 15 units. Semi-sub rigs come next with four units and one unit is a TLP (Tension Leg Platform). One is a FSO (Floating, Storage, Offloading), which does not process the oil, only stores and pumps it. One is a FPU (Floating Production Unit), which does not store the oil, only processes and distributes it and one is a fixed platform. Presently, there are 258 FSO in operation worldwide, of which 50 belong or are contracted to Petrobras, which is the player with the highest activity rate when it comes to offshore O&G production.

The tendency and forecast is for this high rate of Petrobras activity to actually increase as the success rate in the pre-salt is at a very impressive 82%, considering that a 50% success rate is already considered excellent. Many new discoveries in pre-salt and post-salt and in both deepwater and shallow water are expected to be announced in the near future (up to 5 years) and mid future (from 5 to 10 years).

(Photo)Petrobras

Atlantico Sul Shipyard´s first Suezmax.

Forecast for Brazilian Ship and Rig Orders

With a current workforce of around 50,000 people, the Brazilian shipbuilding industry is on a growth curve. Considering the indirect jobs from the supply and service industry, this number grows to around 230,000 jobs.

The Brazilian shipyards finished 2009 with an estimated income of $2.9 billion. The portfolio of orders registers 132 units presently under construction;

- 52 tankers of various models for Transpetro (Promef phases 1 and 2).
- 10 tankers for Venezuelan state company PDVSA.
- 19 offshore support vessels of various models including multipurpose vessels.
- 18 port support tugs.
- 27 vessels for river and lake navigation.
- 4 container ships for Log-in (Vale do Rio Doce).
- 2 grain carriers also for Log-in.

In 2010 tenders for another 17 ships will take place along with 20 river barges and tugs;

- 8 LNG carriers for Transpetro.
- 9 Tankers for Petrobras – to be leased from the EBN program “Empresa Brasileira de Navegação” and built in local shipyards.
- 20 river convoys (20 tugs and 80 barges) for ethanol transport through rivers, the tendering process for these has been announced by Transpetro.

On May 5, Petrobras signed the leasing contracts for the seven tankers from the BSC (Brazilian Shipping Company) program, completing the 19 ships planned for this phase of the program. These tankers must be built by Brazilian companies in Brazilian shipyards and the ships will be required to be Brazilian flagged during the duration of the contract.

Kingfish do Brasil Navegação Ltda., will build three vessels of 45,000 dwt for dark products (oil, fuel oil, etc.), while Pancoast Navegação Ltda., will build four 30,000 dwt vessels, two for light products (naphtha,

diesel, kerosene, gasoline) and two for dark products. The BSC program is an inseparable part of a set of initiatives Petrobras has undertaken to drive shipbuilding in Brazil, while using international cost and quality parameters as references.

Financing priorities established by the FMM include the construction of 253 ships and construction or modernizing of 17 shipyards:

- 147 Offshore support vessels of various kinds, including large multipurpose vessels
- 33 Port support vessels
- 13 Vessels for inland waterways
- 48 Ships for coastal trade-transport "cabotagem"
- 04 Ships for international trade-transport
- 08 Large fishing vessels

A total of around $5.2 million in FMM financing was awarded for ship construction and around $1.4 million for shipyard modernizing and expansion.

Currently there are 78 ships being built and three shipyards being modernized using FMM financing funds.

Brazil is building its first VLCCs, Suezmax and Panamax Tankers and the revival of the national shipbuilding industry starts with the EAS shipyard, which launched the first tanker (Suezmax) built in Brazil after 13 years, on Friday May 7, at the EAS Suape yard with the presence of Brazilian President Luiz Inácio "Lula" da Silva.

"This launch is a milestone. They used to say it was impossible for Brazil to start building ships again. Not only did we resume building them, but we are also establishing a modern, competitive shipping industry, creating jobs and changing the lives of Brazilians," said the CEO of Transpetro, Sergio Machado during the launching ceremony.

Brazilian President Luiz Inácio "Lula" da Silva also spoke during the ceremony. "All of us have to take the construction of this ship seriously. It is the self-affirmation of a people which had long been forgotten," said the president. President Lula's determination that the construction of vessels and oil production platforms be resumed in Brazil was the foundation of the Promef, a program created in 2004 to revitalize the shipbuilding industry on globally competitive bases, based on the placement of orders for the first 49 vessels.

Transpetro Orders

Promef I

In the first phase of the Fleet Modernization and Expansion Program, the bidding-winner companies are constructing the following ships:

- Atlântico Sul (PE) Shipyard: 10 Suezmax ships; Lump-sum price: $1.2 billion
- Atlântico Sul Shipyard (PE): 5 Aframax ships; Lump-sum price: $693 million
- Ilha S.A. Eisa Shipyard (RJ): 4 Panamax ships; Lump-sum price: $468 million
- Mauá Shipyard (RJ): 4 Product transport ships; Lump-sum price: $277 million
- Three gas tankers of 7.000 cu. m. in bidding process

Promef II

The second phase of the Fleet Modernization and Expansion Program was released on May 26, 2008. The 23 ships provided will have capacity to transport 1.3 million tons of gross deadweight and shall demand about 250 thousand tons of steel during the construction period. Four Suezmax DP, three Aframax DP, eight Product ships, five Gas (LPG) tankers and three Bunker ships will be constructed.

Ten ships are already ordered, of which seven, built for the first time in Brazil, are state of the art dynamic positioning shuttle tankers and have loading system by the bow. Their purpose is to store and transport the oil from the production platforms. Three other oil tankers are for bunker transport.

- Atlântico Sul S.A. Shipyard (PE) - 4 Suezmax DP (dynamic positioning) ships; Lump-sum price: $746 million;
- Atlântico Sul S.A. Shipyard (PE) - 3 Aframax DP (dynamic positioning) ships; Lump-sum price: $477 million;
- Superpesa Industrial Ltda. (RJ) - 3 Bunker transport ships; Lump-sum price: $46.5 million;
- Rio Nave Shipyard (RJ) - 5 Product transport ships; Lump-sum price: $268.5 million;

11 ships are in final phase of bidding, of which 8 are from the 2nd phase of Promef and 3 Gas tankers of 7,000 cu. m. from the 1st phase.

The Shipyard Building Boom

The shipyards being modernized or expanded are Aliança shipyard, STX Brasil shipyard and Mauá Shipyard, all in Rio de Janeiro. The total steel processing capacity and infrastructure of all 27 shipyards currently operational in Brazil is;

- 562 million tons year of steel processing
- 4,311 thousand sq. m. of yard area
- 19 dry docks
- 21 carrier cranes
- 42 service quays

Rio de Janeiro continues leading the market in terms of shipyards, as it concentrates 51.25% of the country´s steel processing capacity and 41.73% of the shipyard acreage in terms of square meters. The Northeast region of Brazil is growing in shipyard construction and catching up with two states (Ceará and Pernambuco) accounting for 31.14% of the country´s steel processing capacity and 38.97% of the shipyard acreage in terms of square meters. Soon, the State of Bahia will help improve the Northeast statistics, with at least one new shipyard planned for the near future in Bahia (of a total of three shipyards originally planned for Bahia) and there are also other possibilities of shipyard construction in the Northeast that are being discussed, such as the EISA Alagoas project, in the Northeast state of Alagoas, planned by the Sinergy Group, owned by mega investor German Eframovich.

On Monday, May 10, Petrobras and the Government of the state of Rio de Janeiro reached an agreement for the lease by Petrobras of the area of the old Ishibras shipyard, which is located in the port zone in Rio. Presently two companies operate in this area, Sermetal, which processes steel for neighboring shipyards and fixes ships and Bric-log, which does logistics services for the offshore industry. According to the government of Rio de Janeiro, the Sermetal works will be transferred to the Bric-log area.

The new shipyard will go back to having the original name it was given upon foundation in 1954, Inhaúma shipyard. The area which includes the second biggest dry-dock in South America will be modernized to build rigs and drillships for Petrobras.

According to the Governor of Rio de

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Janeiro, Sergio Cabral, Petrobras and the state government reached an agreement on ISS tax decreases, where Petrobras asked for a decrease from 5% to 2%. A financial agreement with the owner of the area, CBD has also been reached.

Although Petrobras has declined to comment on the final agreement, the Governor of Rio de Janeiro has officially announced the conclusion of the deal. The modernizing of the installations has been calculated cost between $50 and $100 million. Petrobras plans to have an as yet undisclosed third party run the shipyard.

New Shipyards to be built;

- Paraguaçu shipyard in Bahia.
- Bahia shipyard in Bahia.
- Alusa shipyard in Pernambuco.
- STX-Promar (Suape) shipyard in Pernambuco.
- Construcap (Suape) shipyard in Pernambuco.
- Schhin-Tomé (Suape) shipyard in Pernambuco.
- MPG shipyard (Suape) in Pernambuco.
- WTorre (Rio Grande Shipyard – Phase 2) in Rio Grande, Rio Grande do Sul.
- Wilson, Sons in Rio Grande, Rio Grande do Sul.
- Quip in Rio Grande, Rio Grande do Sul.
- São Miguel in São Gonçalo, Rio de Janeiro.
- Aliança in São Gonçalo, Rio de Janeiro.
- OSX in Santa Catarina.
- Jurong in Espirito Santo.
- Wilson, Sons in Guaruja, São Paulo.
- EISA in Alagoas.

The Maritime Machinery Market

The local marine machinery industry (MMI), is striving to join this growth in shipbuilding, "With no local content policy for marine machinery or industrial machinery in general and tax exemptions for machinery import, the industry faces an unfair battle," said Cesar Prata, President of CSEN (Sector Board for Naval and Offshore Equipment), the marine machinery department of ABIMAQ (Brazilian Machinery Builders Association). The high interest rates and low dollar exchange rate compound their problems.

In early 2009, with the dollar at a higher exchange rate, shipyards were buying much more machinery from local manufacturers, mainly medium to small scale machinery but also some large machinery, and these manufacturers were hiring more employees. For the marine machinery industry in Brazil, 2010 started with a serious decrease in demand and job positions being lost, almost the exact opposite to what was happening to the shipbuilding industry, which was and still is facing a massive demand for services and strong growth. Considering the exchange rate fluctuations alone, from January to May 2010 it can be seen that it has been maintaining a relatively stable rate, so there was no major currency rate increase to help the industry and up to now there has been no major policy change towards benefiting the local MMI. The situation the MMI faces is still very uncomfortable, even with the increase in shipbuilding. According to Cesar Prata, of the 70% local content demand for the shipbuilding industry, 40% goes to manpower and 30% to steel planks, leaving nothing obliging foreign and local investors to buy local machinery in large quantities. The marine machinery is an aggregated value industry, which invests in technology and higher education, employing many different engineering specialties, IT managers and technicians, along with an ever growing number of automation technicians.

It is also an industry that invests in high level technology research and training.

Unfortunately for the MMI, Brazil is in the midst of an election year and it looks as though any government sponsored incentives will only occur after the ballots. The only good news is that both main presidential candidates know about the MMI troubles and appear to be sympathetic to this industrial plight.

Policy in Favor of Shipbuilding

One of the main governmental policies that favors the shipbuilding industry is the PDP "Política de Desenvolvimento Produtivo" (Productive Development Policy).

Through this policy the Ministry of Science and Technology sponsors naval construction technology research at UFRJ (Federal University of Rio de Janeiro) and USP (University of São Paulo). Both are higher education excellence centers, equipped with state-of-the-art research facilities and equipment and also have a high profile and respected faculty in naval engineering and other technological areas. UFRJ is also a center of excellence in O&G and Subsea engineering and houses a vast O&G research complex composed of various laboratories in partnership with companies such as Petrobras, Schlumberger and Halliburton. LabOceano which is run by the UFRJ engineering branch COPPE is a state of the art research tank which was originally projected to develop models for structures and equipment used in deepwater O&G exploration and production. It also serves as an excellent test tank for ship and rig design. LabOceano has one of the deepest test tanks in the world, and has helped strengthen Brazil´s position as a leader in deep sea technology development and structure design.

This government policy has also permitted laws to be passed freeing equipment destined to shipbuilding from at least two modes of taxation, (PIS-PASEP and COFINS).

The PAC (Program for Accelerated Growth) secured orders for Brazilian shipyards through resources to finance the shipbuilding industry released by the FMM.

The FGCN, "Fundo Garantidor da Construção Naval," is a special fund created through taxation of financial market transactions, which has more than $2 billion in funds financing shipbuilding.

SINAVAL, the shipbuilding industry national syndicate, also has a program directed at raising local content on tankers and rigs built in Brazilian shipyards. SINAVAL is responsible for oversight on the shipbuilding industry and is the source of most of the industry numbers in this article, which were released in April 2010.

This is only the Beginning

Brazil is gearing up for a long and lucrative run in the international shipbuilding fraternity, with its home market for deepwater oil and gas discovery and recovery planting the seeds for diversification in the future.

The financial support offered by the Government and local investment banks, particularly BNDES, has been vital as a catalyst for this sudden growth and it is expected that this will also be true in the coming years, in order to maintain this growth.

The major challenge – in Brazil and in most every shipbuilding nation – is the dire need for specialized manpower.

To this end, the Brazilian government has introduced important mass qualification programs that are turning out scores of laborers, seafarers, technicians and engineers, while still maintaining a high level of instruction for the candidates.

(Photo by Ken Wright, General Dynamics staff photographer)

Float-off of the M-T Empire State into San Diego Bay.

Pacific Coast U.S. Delivers West Coast Action

By Wes Starratt P.E.

While maritime activity showing renewed signs of life along the entire Pacific Coast, from Prince Rupert to San Diego, shipbuilding is becoming evermore dependant on the US Navy and Jones Act ships, while ship-repair yards are focused on a broad spectrum of boats and ships.

In California, some of that work has focused on re-powering harbor craft to meet the state's stringent environmental regulations.

Along the Columbia River, shipyards remain centered on meeting the on-going demand for ocean-going barges, while Puget Sound shipyards continue to focus on aluminum high-speed boats and catamarans.

And there is some logic to that, since the region is the site of the major hydroelectric power plants that provided the low-cost power for an expanding aluminum industry.

Todd Pacific

An exception to that trend is the venerable Todd Pacific yard in Seattle with associated yards in Bremmerton and Everett, Washington. We talked with marketing director, John Lockwood, who noted that, "We will be building automobile ferries for Washington State Ferries for quite a while," with one ferry about to be delivered, work started a second one, a third under contract, and an option to build for a fourth one." These are steel-hull, 64-car ferries with aluminum superstructures built by Nichols Brothers, since Todd does not do work in aluminum. Lockwood also pointed out that "We are also doing a lot of work on Coast Guard ice-breakers. The 410-ft Healy just left the yard after several months of upgrade and repair work. The 399-ft Polar Star is being re-activated, and the Polar Sea will be in the yard shortly for an extended availability.

"We are also doing a lot of work on fishing vessels, and over in Bremerton, we continue to work on aircraft carriers. We have a five-year contract with the Navy to perform non-nuclear work on the CVN-68 Aircraft Carriers."

NASSCO, the San Diego Shipbuilder for the Navy

Navy ships also continue to figure prominently in the work of NASSCO, the largest shipbuilding yard on the US West Coast, with a work force of some 4,200 workers. A subsidiary of General Dynamics Corp., the yard dates back to World War II when it became a part of the Kaiser group of companies that, among other activities, built wartime ships.

At NASSCO, we talked with Bryan Ruiz, manager of governmental shipbuilding, who stressed that, "Right now, we are going gangbusters on the Navy's dry-cargo/ammunition vessel or TAKE program. We recently got a contract for #13 and #14, the last two ships of that class, which will provide work for the yard through 2012. In addition, we are beginning work on the MLP, a mobile landing platform vessel. It is essentially a heavy lift vessel, based on our BP tanker design, except that the tanker space will be transformed into a flat deck for lifting and staging equipment from other vessels." Dave Baker, manager of commercial shipbuilding, commented that, "We have been building five product carriers. They are basically 43,000 dwt tankers with 12 main tanks for a wide variety of liquid cargos. Three have been delivered, and we have two more to go, with the last to be finished at the end of the year. Then, our work force can be transferred to government work until we pick up our next commercial contact." Baker continued, "Three of the ships are currently operating with oil companies, and the final two are going to go under charter to the Military Sealift Command."

We asked, "Where do you go from

here?" and the answer was, "It all depends on the market for Jones Act ships. We are constantly looking for new business." Among new business leads that NASSCO is pursuing is MARAD'S Marine Highway Program with research undertaken by a full-time Manager of Government Relations resulting in the recent publication of an impressive volume entitled, "A Shipbuilder's Assessment of America's Marine Highways."

BAE, Ship Repair in San Diego and in San Francisco

Another major defense contractor, BAE, operates ship-repair yards in San Diego and San Francisco, as well as in Hawaii. We talked with Bob Kilpatrick, general manager of the San Diego Yard, whose first comment was, "We have a lot of work going on, with a payroll of as many as 1600 people!" and explained, "Our San Diego yard, in conjunction with the three other nearby master ship-repair contractors for the US Navy … NASSCO, Northrop-Grumman, and Continental Maritime … is engaged in major modernization programs for the US Navy's cruisers, destroyers, and LSD-41 class ships." The program for cruisers, currently underway, comprises a six-month mechanical modernization program, followed an electronic overhaul in a second six-month period.

Kilpartick noted that, "In June, we will be starting a modernization program for the USS John Paul Jones, as the beginning of the Navy's destroyer modernization program.". The program for destroyers is huge, involving over 50 ships built some 20 years ago and bringing them up to the standard of brand-new ships with an additional 20 years of active duty. BAE's San Diego yard, along with the other ship-repair contractors in the area, is also providing "post-shakedown services" for an ongoing stream of new Navy ships, which adds up to a very busy ship-repair load.

At the venerable BAE San Francisco Drydock, the focal point is the 900x150-ft floating drydock, the largest on the US West Coast, and the only one capable of servicing many of the cruise ships calling at the Port of San Francisco. The yard has a second floating drydock, measuring 528x90-ft. These two drydocks are the only ones on the bay capable of cleaning the hulls of many of the old ships from the US Maritime Administration's (MARAD) Reserve Fleet, prior to their being towed to yards in Texas for scrapping. BAE is definitely not prepared or equipped to scrap these ships at its yards in environmentally-conscious California, but it does power-wash them, clean the hulls of invasive species, and inspect them, prior to their being towed to Texas. As of May 1st, the yard has cleaned six of the more than 50 MARAD ships in the Reserve Fleet.

Among recent ships repaired at BAE's San Francisco Drydock are Coast Guard cutters, cruise ships, barges, a Matson container ship, and the hospital ship, USNS Mercy. The yard employs some 300 workers.

Bay Ship & Yacht, the Other Shipyard on the Bay

The only other shipyard of note on San Francisco Bay is Bay Ship & Yacht in Alameda, which provides repair and maintenance services for the diversified array of workboats on the bay including the growing fleet of ferries and excursion boats. The yard has developed an expertise in aluminum metalworking and believes that it could build the Bay Area's

(Photo courtesy BAE)

MARAD's Reserve Fleet ship from World War II, the Rider Victory, entering BAE's San Francisco Drydock for hull cleaning prior to being towed to Texas for scrapping. San Francisco Bay Bridge in background.

high-speed aluminum ferries that are now built in the State of Washington. Traditionally Bay Ship & Yacht has played an essential role in maintaining the historic ships at the Ntional Park' Hyde Street Pier in San Francisco.

Bay Ship & Yacht has a work force of about 250, with facilities that include 1,000 ft of waterfront dredged to 42-ft, two outfitting docks, a 390-ft floating drydock, a 1,200-ton/200-ft Syncrolift and transfer system for seven 200-ft vessels on land, and an array of diversified shops.

As for the ships in MARAD'S Reserve Fleet, its facilities should be able to handle the cleaning of some of the smaller ships, although the yard has not participated in solicitations up to this point.

MARAD Settles Litigation on Reserve Fleet

In the years following World War II, the US Maritime Administration (MARAD) acquired ships for a "Ready Reserve Fleet" that would be available for national emergencies, and the Korean War proved to be such an emergency. But, MARAD continued to acquire more and more ships for its fleets on the East Coast, the Gulf Coast, and the Pacific Coast where scores of ships remain anchored in Suisun Bay, a part of San Francisco Bay.

As the years passed, it became obvious that many of the old ships were less and less capable of playing any role other than fodder for ship-scrapping yards. But, with a limited budget, MARAD initially began disposing of its ships from its East Coast and Gulf Coast fleets, by towing them to scrapping yards in Texas.

Since there are no ship-scrapping yards on the Pacific Coast, the ships from California not only had to be towed down the coast and through the Panama Canal to Texas, but also required intensive hull cleaning to prevent the transfer of invasive species to Gulf waters. The budget for hull cleaning and towing amounted to more than $2 million for each ship, while ship-scrapping could add another $1 million, depending on the price of steel scrap. Ships from MARAD'S other two yards could be scrapped for half that cost, thus leaving the old ships in California waters essentially stranded, with the state and the environmental community fuming and finally taking MARAD to court.

One of the litigants in the legal case concerning the disposal of MARAD's Suisun Bay fleet was California's Water Regional Quality Control Board, San Francisco Bay. We talked with its chief, Bruce Wolf, who explained, "First MARAD is required to file a permit for the existing 57 ships in the fleet. Within 120 days they must compete the cleaning of the decks of all of the ships and then clean the sides of the ships down to the waterline. The first 25 ships must be disposed by 2012 and remained of the ships by 2017.

Ship Scrapping at the former Mare Island Navy Yard

"There is a provision in the Water Quality Control Board's agreement with MARAD that, if the ships could be disposed of in San Francisco Bay, they could take the ships directly to that disposal site. Right now work is being done to reopen the old drydocks at the Navy's former shipyard at Mare Island, only a few miles from the site of the reserve fleet. MARAD is supportive of that, because it would save the cost of towing the reserve fleet ships to Texas, which costs about $1 million per ship. It would cost about half as much at Mare Island.

"The Water Quality Control Board actually issued a permit for re-opening the two dry-docks at Mare Island a couple of years ago. There are four drydocks at Mare Island, but the two in question measure 88 by 680 ft and 84 by 650 ft. The present problem is that, while the drydocks are functional, a lot of sediment has built up against the drydock doors. So, now the issue is getting the dredging permits and determining where the dredge material can go. But, there is optimism that the permits will be in place this Summer." We talked with retired Navy Officer Gary Whitney, who established a firm Allied Defense Recycling LLC to restore and operate the Mare Island Drydocks. He emphasized that, "We have asked for a dredging permit no later than 30 May with a target for dredging to start on 02 Aug. If everything goes as planned, we should by open sometime this Summer and be operational this Fall. Then, we will enter into negotiations with MARAD for the ship disposal program. We will also be negotiating with MARAD for master ship-repair contracts. It is my intent to have a full service shipyard at Mare Island, probably called Mare Island Shipyard (MISY)."

MARAD's Marine Highway Program: A New Market for Shipbuilders?

A spokesperson for NASSCO commented that "We are interested in the Marine Highway concept as a potential market and a means of adding an additional mode to our national transportation system." NASSCO has studied the concept extensively and prepared a report entitled, "A Shipbuilder's Assessment of America's Marine Highways." That report concludes that "An economical, effective Marine Highways network could serve as a potential new and substantial market for U.S. shipyards … through series production and by leveraging recent experience gained through international collaboration."

The report calls for the removal of the Harbor Maintenance Tax on domestic cargoes, and points to proposed vessels that could range from container-on-barge to Roll-on-Roll Off vessels, to Ro-Pax vessels.

For California Marine Highway Project

MARAD Awards "TIGER" Grants

Earlier this year, MARAD announced a series of Transportation Investment Generating Economic Recovery Grants, or TIGER grants, that included $30 million for what has been termed the $69.3-million California Green Trade Corridor/Marine Highway Project. As proposed, it would link the Port of Oakland with the inland ports of West Sacramento and Stockton with a barge system that would reduce the present heavy highway congestion between Oakand and the inland ports. A second round of TIGER grants is expected later this year.

Mike Lukens, director of the Port of West Sacramento, commented "we first need to develop a memorandum of understanding between the three ports regarding the project" and noted that this initial grant is expected to be used largely for an environmental assessment and an investment in shore-side cranes and other infrastructure.

Bill Lewicki, marketing director for the Port of Stockton, noted that the Green Trade Corridor program could develop into a lot more than a barging program between the inland ports and Oakland. He commented that, "Right now we can barge to Portland-Seattle or to Los Angeles-Long Beach and that is where the future is looking."

Both ports noted that the Denver-based shortline-railroad investing firm, Broe Group, had been in contact with them. Earlier this year, it was reported that the Broe had established a firm called Eco-Transport, a short-sea shipping venture that, according to its website, "moves your containers on barges between the Ports of Oakland and Stockton." The Port of Oakland declined to comment.

Money for Nothing

Maritime Salvage for Fun & Profit

By
Thomas H. Belknap, Jr., Blank Rome LLP,
& Peter E. Mills, Blank Rome Solicitors
and Notaries

You are sailing along in your ship, minding your owner's business, when suddenly you come upon a vessel in distress. Under the SOLAS Agreement, you are obliged to assist in saving the lives of those onboard the vessel, but in so doing, you also manage to save the vessel itself from imminent total loss.

This article examines what you should do next to receive your just desserts—and where you should do it.

The British Experience

Under the English common law, as well as in many other British Commonwealth countries, the right to claim for maritime salvage forms part of the Admiralty jurisdiction of the High Court. A lengthy and exhausting explanation of the origins and scope of this jurisdiction may be found in the High Court and Court of Appeal decisions leading up to the House of Lords decision in the "GORING" [1988] 1 Lloyd's Law Reports 397.

In essence, a person who renders services to a vessel in danger, at sea or within tidal waters, is entitled to be remunerated for having rendered such assistance. The remedy is exercised by way of an admiralty action in rem against the owners of the vessel, her bunkers, stores, cargo and freight at risk, if any. The in rem writ of summons that commences the action is served upon the vessel to which the services were rendered, or upon another vessel in the same ownership, while the vessel is physically within the jurisdiction where the writ was issued.

If that jurisdiction is one of those which have incorporated the 1989 International Convention on Salvage into its laws, then once the entitlement to a salvage award is established, the court will proceed to assess the amount of its salvage award using the criteria set out in Article 13 of that convention, namely:

(a) the salved value of the vessel and other property;

(b) the skill and efforts of the salvors in preventing or minimizing damage to the environment;

(c) the measure of success obtained by the salvor;

(d) the nature and degree of the danger;

(e) the skill and efforts of the salvors in salving the vessel, other property, and life;

(f) the time used and expenses and losses incurred by the salvors;

(g) the risk of liability and other risks run by the salvors or their equipment;

(h) the promptness of the services rendered;

(i) the availability and use of vessels or other equipment intended for salvage operations;

(j) the state of readiness and efficiency of the salvor's equipment and the value thereof.

Alternatively, the parties to the salvage claim may opt to have salvage remuneration assessed by way of a private arbitration. By far, the most popular form of contractual salvage assessment is that offered under Lloyd's Open Form of Salvage Agreement "No Cure - No Pay" (LOF).

This form of salvage contract may be entered into by the parties at any time, before, during, or after the services have been performed and, as its name implies, requires success for payment to be due to the salvor. One exception to this principle that "success" is required is where the Special Compensation Protection & Indemnity Clause (SCOPIC) is incorporated into the LOF2000 form. If SCOPIC is invoked, and should the salvor fail to save the vessel or her cargo, he may still be compensated for his out-of-pocket expenses reasonably incurred in his attempt, plus an uplift of up to 100% thereon. The rationale behind this is to encourage salvors to continue their efforts to prevent or minimise marine pollution in circumstances where their award under Article 13 of the Convention (which is also applicable to LOF) would not warrant continuing with the services.

The Position in the United States

In the main, U.S. law closely tracks the English law of salvage. Three elements must be proven to be entitled to a salvage award: (1) service is voluntarily rendered, (2) to assist a vessel or other maritime property, such as cargo, which is in marine peril, (3) which is at least partially successful. The law of salvage applies in respect of "navigable" waters that are within the Federal court's admiralty jurisdiction. One might think it perverse that there is no entitlement for an award for the "mere" salvage of human life; however, one who acts to save life, while others simultaneously act to save the damaged vessel, is entitled to share in the salvage award in respect of the vessel.

As one might expect, each of the above "elements" of salvage has been subject to extensive judicial gloss. Thus, for instance, fire fighting services rendered in a harbor by a town fire department are not "voluntary" because the fire crew was under a pre-existing duty to the town to aid in fighting fires. And a vessel that is "softly aground" in mud or silt, with no imminent danger from weather and the ability to re-float herself on the next tide, is not necessarily in marine peril. And success can mean something less than saving the vessel from total loss where, for instance, some portion of her cargo is rescued before she sinks.

The factors to be considered in determining what level of salvage award should be granted are essentially in keeping with the English system, following the basic principle that salvages of valuable property in serious peril and at extreme risk to the salvors should be more handsomely rewarded that simple and routine acts of assistance. Importantly, the award is not intended to be a simple quantum meruit reimbursement—i.e., to cover the salvor's expenses. Rather, it is intended to be a reward which is large enough to affirmatively encourage those at sea to attempt to rescue property in marine peril.

Notably, U.S. courts and arbitrators, recognizing the valuable aid that commercial salvors render to the shipping community at large, and acknowledging the large overhead expenditures those companies need to make in order to have assets at the ready at all times, frequently award commercial salvors a commercial "uplift" for a successful salvage.

A claim for salvage can be enforced either against the salved vessel in rem by commencing a maritime arrest action, or against the owner by commencing a lawsuit against him personally, pursuant to the admiralty jurisdiction of the Federal courts. Federal courts have exclusive jurisdiction over salvage claims, and state courts are not competent to make maritime salvage awards.

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As is the case under English law, the parties can, and often do, agree to arbitrate salvage claims. This is often preferred on both sides of the table because of the significant potential cost savings and the ability to have the dispute decided by arbitrators who are experienced in this somewhat esoteric field. The Society of Maritime Arbitrators, Inc. in New York has published a form salvage agreement (the MARSALV Form) and salvage arbitration rules that are finding more widespread use recently—particularly in the area of pleasure-boat salvage.

Conclusion

Finally, the best thing a person who has rendered assistance at sea can do next is to contact a lawyer. There are many pitfalls for the inexperienced, and a lawyer with good salvage experience can help his client negotiate a path through them and get the salvor paid for the valuable services he has rendered.

T&T Bisso Teams with CISPRI

T&T BISSO, an industry leader in vessel emergency response, salvage and marine firefighting services, is pleased to announce an exclusive cooperative services agreement with Cook Inlet Spill Prevention and Response (CISPRI). Based in Nikiski, Alaska, CISPRI is a comprehensive standby oil spill response cooperative whose mission is to provide immediate response capability to its member companies. The agreement provides a unique platform for OPA 90 related salvage, emergency lightering, firefighting and oil spill response services in Alaskan waters and further strengthens the planning and response posture for tankers and non-tank vessels operating in the area. In 2009, T&T BISSO deployed and permanently stationed emergency response resources with CISPRI to serve the Cook Inlet and Alaska areas and participated in equipment deployment exercises in Kachemak Bay to demonstrate response capabilities. T&T BISSO was the first OPA 90 salvage and marine firefighting provider to receive United States Coast Guard approval of its primary resource provider agreement. "We are the most committed resource provider in the effort to provide vessel owners with a comprehensive salvage and marine firefighting compliance package," said Mauricio Garrido, general manager, Americas and Europe.

TITAN Removes Fuel from Ship off Saint Lucia

TITAN Salvage has successfully removed 230 tons of fuel from a submerged vessel off the southern coast of Saint Lucia. The 6,704-gross-ton fully cellular containership (657-TEU capacity), which was en route to Guyana in late February, capsized and sank in 105 feet of water about two miles from the port Vieux-Fort. No lives were lost in the incident. TITAN was contracted by vessel owners to re-

move the hydrocarbons and other hazardous materials onboard.

TITAN worked closely with Saint Lucia Air and Sea Ports Authority (SLASPA), and local contractors to safely complete the fuel removal operation mitigating the risk of an environmental incident. The removal of fuel and other contaminants onboard the vessel was performed by a team of seven TITAN divers working from a supply vessel moored over the casualty. The vessel functioned as dive platform as well as place to receive and store the contaminated bunker fuel. While divers worked in near perfect visibility in turquoise Caribbean waters, they regularly encountered rough seas and strong currents. All recovered fuel and hydrocarbons were transported to Puerto Rico for proper disposal.

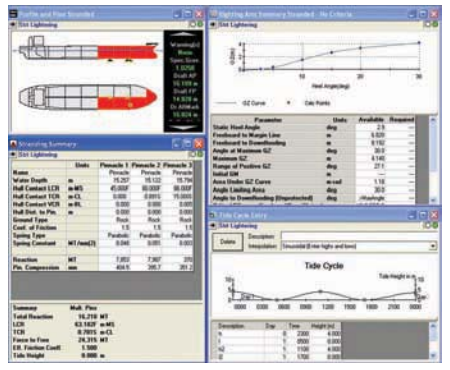
Resolve Engaged in Deepwater Horizon Rescue and Recovery

Actively engaged since the start of fire fighting operations Resolve continues to actively respond to the spill by deploying personnel and equipment to the gulf region in response to the Horizon oil spill.

Resolve is working for several different clients in multiple capacities. The vessels Resolve Pioneer and Lana Rose are engaged in Offshore Skimming operations.

A number of Resolve's crane barge platforms are providing skimming vessels support and offshore boom deployment. Ground and small vessel crews are providing inland and coastal boom operations.

Herbert Engineering



HECSALV is HSSI's industry leading casualty response software trusted by naval architects, salvors, navies, and regulator societies around the world. HECSALV enables rapid evaluation of damaged conditions of a ship, including the analysis of intact conditions, free-floating damage cases, oil outflow prediction, and various types of groundings.

T&T Responds to Spill in Wake of Collision

T&T Marine Salvage helped clean up an oil spill after a collision between an oil tanker and a barge spilled 450,000 gallons of crude oil into the Sabine-Neches Waterway. T&T Marine Salvage responded to the oil spill by mobilizing 50 personnel, 20,000 ft of spill boom, a 1,500-bbl skimming vessel, response vessels, portable skimmers, eight portable fire pumps and other equipment.

"T&T Marine cleanup operations were performed around the clock," said Vice President Kevin Teichman. "We also supplied Incident Command System personnel and safety personnel to assist in monitoring the vast number of people working on the project."

The Eagle Otome was carrying crude oil to a nearby refinery when the 807-ft oil tanker collided with one of two tank barges being pushed by a tugboat, creating a gash in a starboard compartment near the tanker's bow and spilling 450,000 gallons into the water.

T&T Marine used 3,300-gpm fire pumps to decontaminate the oil tanker and several other vessels. T&T Marine also supplied personnel and five portable hydraulic lightering systems to discharge recovered oil from a tank barge.

T&T Bisso also responded to the collision under the U.S. Coast Guard's Salvage and Marine Firefighting Requirements, Vessel Response Plans for Oil. T&T Bisso is an emergency response contractor that combines the resources of T&T Marine and Bisso Marine.

T&T BISSO mobilized a salvage master, other personnel and equipment, including response vessels, portable fire pumps, lightering gear, salvage equipment and dive gear.

The company assisted in transferring the tank barge's chemical cargo to another barge by providing lightering services and firefighting equipment as a precaution.

www.tandtmarine.com

SMIT Reports Solid Result in Turbulent Year

Smit reports that while it was indeed a turbulent year, the company overall can report solid results, namely a net profit of EUR 102.4 million vs. EUR 107.8 million a year earlier.

"Despite the world wide recession, which off course also impacted our business, we continued to realize good financial results," said Ben Vree, CEO.

"This result, however, has been influenced by the settlement of the "Thunderhorse" project and a non-recurring tax benefit. During 2009 we noticed that the decline of the Harbor Towage market stabilized and at certain locations even improved slightly towards the end of the year.

Salvage remains unpredictable. The result was heavily influenced by the settlement of prior-year salvage jobs; as a result the Division performed well."

Salvage Division

Salvage, wreck removal, environmental care and consultancy accounted for revenue of EUR 93.5 million vs. EUR 116.7 million a year ealier.

The work load for the Division Salvage was below the historical average due to less casualties during 2009. The profit for the year 2009, however, is at a very high level due to the settlement of prior year salvage cases which generated additional salvage income. The main settlement relates to the "Thunderhorse" project (Gulf of Mexico, 2005) with an impact of EUR 10 million on net profit.

Major projects in 2009 included:

- "Full City", Norway;
- "Maria M", Sweden;
- "Xin Dong Guan", Malaysia;
- "Kiran", South Africa;
- "Pride Wyoming", Gulf of Mexico; and
- "Ice Prince", UK.

Due to the settlement of prior year salvage cases working capital has been reduced substantially.

The level of activity in this division is unpredictable. SMIT targets complex projects in this market, projects in which SMIT can use its expertise to offer a great deal of added value, particularly in environmental care activities. The target is to maintain a market share of 25–35%.

A Fearless Forecast

The Recovery Continues

By Clay Maitland, The Marshall Islands Ship & Corporate Registry

The headline in the Financial Times is enough to raise the hair on the back of our necks: "Growing Global Confidence Helps Risk Appetite."

I hope that this headline, if you saw it, scared you as much as it did me. Although I have some confidence about the future of shipping, or I wouldn't be here, my topic today is about forecasting. Forecasting, to the ancient Greeks and Romans, had a lot to do with omens. The ancient Greeks sought their guidance from the stars, which they believed help them predict the course of future events.

The Romans, on the other hand, sought to predict the future in the flight of birds, the cackling of geese, and most famously in the examining of entrails of poultry and domestic animals.

The experts who did this kind of thing were called augurs.

Today, we rely on Alan Greenspan and Ben Bernanke. History, however, is on the side of the ancients. Their track record, after all, was reasonably good, and over a longer period of time than we have put in.

When you consider that the past decade was famously that of Mr. Greenspan's efficient markets hypothesis (EMH), the entrails of goats and chickens begin to look fairly reliable.

There is an old joke about an economist and his friend walking down the street. The friend points to a $100 bill lying on the pavement. The economist says: "It isn't really there, because if it was, someone would have already picked it up."

Economists, in other words, are good at telling about statistical probability. They are also good at telling investors how to focus on the short term, where the opportunities supposedly lie, rather than on the long term, where the true informational advantage is likely to be.

"To sustain its shipping industry against competition, China will have to focus on a strategy of independent ownership and management, as Japan did 20 years ago."

The real world is something quite different, and drawing upon my experience of about 40 years in this business, I would like to regale you with a few observations.

I of course cannot forecast the future with any degree of accuracy. What I, and you, can do is to make a number of hopefully astute predictions. We all, here today, can make some observations about what is happening at present. First of all, there are time-tested market indicators that have proven to be reasonably reliable in the past. They are likely to be just as reliable in the future.

The following indicators are instructive:

- China's demand for base metals;
- China's demand for other commodities;
- The availability of credit in China and elsewhere;
- The Baltic Dry Index;
- The price of coking coal, particularly in China;
- The value of ships, in various categories;
- Global seaborne trade;
- The size of the world fleet today;
- The projected size of the world fleet in coming years.

There is no question that we are in the presence of a massive contraction in trade. This comes after a significant expansion of the world fleet during the last decade. Over the last 5 years, this has averaged 7% per year, by capacity, of new ships ordered. During January of 2010, the global fleet expanded further, totalling 80,770 ships of a total of 890.2 million gross tons at the beginning of February.

Most of the new ships entering the market have been under construction in China and Korea. This brings me to my first prediction, which is that notwithstanding all the talk of cancellations, most of the ships under construction will be completed and will enter the maritime supply chain over the next few years. These include tankers, dry bulkers, and containerships.

And so we are told that up to January 1 of this year, 107 orders for ships totalling 4.6 million dwt, at those famous Chinese shipyards, have been cancelled.

Statistics from the China Association of the National Shipbuilding Industry tell us that 65% of China's shipyards did not obtain a single order during 2009.

The picture is more complex, however. Over the past year, leading shipbuilders in China did receive considerable financial support from local banks.

Believe me: most of the ships on order in China will in fact be built; when you hear the word "cancellation", please remember the advice of former President Bill Clinton, "That depends on how you define the word sex". The word "cancellation" has a similar elasticity. A great many of these ships will be built, and delivered to owners in the Far East, or elsewhere, even if they were ordered by companies in other parts of the world.

"There will be significant economic recovery in 2010, and I think the omens are better than many of us realise for a resumption in the growth of seaborne trade."

When it comes to predictions, the old adage "you pays yer money, and you takes yer choice" still applies. But some predictions seem to me to be very wise. One prediction is very interesting. This is put forward by researchers at DnB NOR Bank, to the effect that Chinese annual iron ore imports will continue to increase, and could peak as high as 1.3 billion tons a year before 2020.

This would be double last year's level, and would create a demand for a further 584 capesize bulkers by then.

I agree that industrialization and urbanization will continue in China over the next 10 years, notwithstanding all of the talk of this bubble, that bubble and the other bubble.

This is reflected in the little-noticed agreement earlier this month, for a 55% increase in coking coal prices, a critical element in the manufacture of steel. We saw an agreement take place between BHP Billiton, the world's largest miner, and JFE Steel of Japan, and which will run only for the quarter between April and June of this year, marking a break with decades of annual contracts.

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The sharp increase in coking coal and iron ore costs is likely to boost the price of steel, possibly by about 30% over the next 3 years. Quarterly contracts will track the spot price of iron ore, and reflect a drop in the production of China's domestic production of coking coal. Last year, China imported about 30 million tons of coking coal, an increase from 1 ton in 2008!

This is a very basic indicator of the shape of things to come, and certainly — to me at least — means that not only China, but Europe and North America, as well as India and Brazil, will be emerging from the current recession a lot more quickly than many augurs and omens seem to indicate.

When China, a year ago, announced a stimulus package to assist its shipbuilding industry, it also showed China's policy "hand".

While we understand that smaller Chinese yards are suffering, and may be shut down, leading shipbuilders such as Jiangsu Rongsheng Heavy Industries and New Times Shipbuilding have received

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significant financial support from the government.

Domestic Chinese banks have considerably increased their advances to the shipbuilding sector.

China's largest ship finance service provider, Exim Bank of China, has used its export credits to extend the amount available to local shipyards and their customers.

Exim Bank has supported foreign shipowners such as Overseas Shipholding Group in support of its newbuilding program at Chinese yards.

So there is ambiguous news in this message of continued growth: What are we going to do with the ships that will be built? And are we making a mistake by using China as an example, when conditions are often very different in other parts of the world?

I believe that overcapacity will continue to afflict the global shipping market, as deliveries of new tonnage are pushed back by most shipowners from the years 2009 and 2010 to 2012. This means that the total supply in the global market will increase by 56% in 2012 — by which I mean the newbuildings — by about 56%, by 2012, to 103 million dwt.

I also fearlessly forecast that the considerable fall in vessel values and prices is going to greatly reduce the profitability of ship yards in China, Korea, and elsewhere. We saw that during 2008 and 2009, the average price of all of the major ship types fell by 30% to 40%.

It appears that the session this month of China's National People's Congress, the highest legislature of China has approved the strategic industrial sectors of that nation, including shipbuilding and shipping. It appears that China hopes to provide a significant domestic demand for shipping, as a result of the development of its growing consumer economy.

But while Chinese growth remains strong, and the United State's economy is starting to recover, the weakness of the recovery in Europe is a cause for concern.

I have dwelt on the completion of newbuilding orders, and I have predicted that most of them, at least in China, will be completed, although they will be delivered to "players to be named later."

I am optimistic because I see significant economic recovery this year - - 2010 - - and I think that the omens are better than many of us realize for a resumption into the growth of seaborne trade. We should not remain in the grip of inert academic theories. Shipping is not an industry that lends itself to the projections and prognoses of quants, techies and academics. It is cyclical, and also cynical.

We must turn away from bad theory and incorrect information. We must also recognize that while prosperity may be just around the corner, traditional forms of credit have suffered a severe blow. Financing remains a major problem as we recover from the current recession. One of the biggest problems in securing finance is the collapse in vessel asset values. As Hamish Norton of Jefferies and Co. recently said: "You can't finance something that costs more than it's worth." Where debt appears to be higher than the value of the asset, banks and other lenders will be reluctant to lend. While it is a hopeful sign of Spring that IPOs seem to be making a modest comeback, some of the real losses, and possible bankruptcies in the shipping industry quite possibly lie ahead.

And so we bid farewell not only to hard times — or so we hope — but also to faulty risk management, option pricing theory, the belief that markets know best, and its faith in the efficient markets hypothesis.

We look ahead, or at least I do, optimistically. In doing so, I hope we remember the past, particularly the recent past. As the late professor J.K. Galbraith said, financial markets — and shipping is no exception — are characterized by "extreme brevity of financial memory; there can be few fields of human endeavor in which history counts for so little as in the world of finance."

The lessons of the past, our "financial and commercial memory" remind us of what may happen in the future: China's approximately 90 ship yards accounted for about 38% of global newbuildings in 2009. As Svein Steimler, executive vice president of NYK Group Europe recently said, "Western owners may boast about cancelling ships to be built in Chinese yards, but those ships will continue being built, and many will become Chinese-owned and financed at a lower price."

- This overhang of newbuildings raises some unappealing prospects:
- Speculative purchases by speculative purchasers;
- Inexperienced operators and managers of highly leveraged ships;
- A decline in the quality of maintenance, and of crews;
- A lack of transparency of ownership and management;
- Growing protectionism.

While China may view shipping as a "champion" industry, essential to China's economic future, and the transportation of raw materials to feed its growth, there is a danger that unrestrained growth in this particular sector could lead to a succession of bust as well as boom. China presently follows a strategy of supporting its shipping industry by owning its ships. As capital is drawn down, it may however see the wisdom of acquiring overseas partners, integrating into world markets rather than dominating them.

Right now, China's obvious aim is to maintain control of the raw materials that it needs, and its own supply chain. If we look at the past, other industrialized countries have eventually done the same thing. As its shipping sector matures, China is likely to find that, as costs increase, financial subsidies to the industry, including builders, carriers and banks become less attractive. To sustain its shipping industry against competition — which will come — China will have to focus on a strategy of independent ownership and management, just as Japan did 20 years ago.

"Western owners may boast about cancelling ships to be built in Chinese yards, but these ships will continue being built, and many will become Chinese-owned, and financed at a lower price."

Lessons Learned from the Galaxy

Tragedy & Courage on the Bering Sea

It will never happen to me!

Isn't that belief lurking somewhere in the consciousness of every mariner? Isn't it, in fact, most deeply rooted in the minds of the most qualified and experienced among us?

For those with long years at sea, the proximity of danger becomes routine, and that's a danger in itself. It's easy to begin to regard oneself as too competent and too capable. Drills and training? They're important for the junior members of the crew, but the old salts know it all by heart. They've got better thing to do.

Captain Dave Shoemaker believed it couldn't happen to him. He had 28 years under his belt as skipper of the big crabbers and catcher processors that work the Bering Sea. Of course, the fishing industry is uniquely dangerous. The Seattle-based distant water fleet that dominates the offshore harvests in Alaska works year-round on one of the world's toughest oceans. While most vessels load their cargos at the dock, fishermen open their hatches in mid ocean and as product fills the fish hold, the fuel and stores diminish. Stability is a major challenge, and in today's industrial fisheries, along with all of the traditional responsibilities of seamanship, the captains have crews of minimally trained processing workers to contend with.

Big challenges didn't intimidate Shoemaker. The ex-marine and devout Christian was supremely confident in his own abilities. In a quarter century at the helm, he'd never suffered a major casualty. From the beginning, he had been fortunate to work for some of the best operators in the business, owners whose boats were referred to as Northwest Cadillacs, locally built and regarded as ideally suited for Alaskan waters.

The 190-foot Galaxy was the biggest freezer-longliner in the Alaska fleet when Shoemaker took the helm in 1998 after a major conversion. He immediately lobbied the owner to have her certificated as in class by the American Bureau of Shipping, although they were under no legal requirement to do so, and the vessel was awarded Maltese Cross certification.

I said, if we're going to take a vessel of this size and we're going to go out there and we're going to make a splash with Aleutian Spray Fisheries getting involved in the hook and line industry with the biggest hook and line boat that's been put on the water, let's do it right, and he said, I totally agree with you. In that respect, a lot of conscious effort went into having all of the proper equipment, safety procedures, backup equipment, all of the things that a lot of vessels won't do because it's costly.

The burning F/V Galaxy. Captain Shoemaker and two crewmembers, visible on the bow in their immersion suits.

The crew of U.S. Coast Guard helicopter CG6021 which responded to the casualty.

Captain Shoemaker is awarded the U.S. Coast Guard's Gold Medal Life Saving Award.

Last sighting of the F/V Galaxy on October 21, the day after the fire and explosions.

Still, he admits that the fishing industry as a whole was lax in meeting its legal and moral requirements to undertake regular onboard drills and training. Nobody trained on the cod grounds because it cut into fishing time, he says, and when you're transiting to the grounds you're sleeping because you just offloaded, and when you're transiting back from the grounds to town, you're sleeping because you just spent several days working your heart out to fill up that boat.

Rather, Shoemaker relied on his own skill and experience and the qualifications of his key officers to ensure the safety the vessel and its 26-member crew.

The Galaxy was proceeding at 11 knots on a heading of 270 degrees approximately 30 to 35 miles Southwest of St. Paul Island in the Pribilofs on her way to retrieve longline gear on the afternoon of October 20, 2002. The wind was out of the North-Northeast at 20 to 30 knots and the seas were 15 to 20 feet. The air temperature was 35 degrees F., and the water temperature was 43 degrees F.

It was no different than any other commute, Shoemaker says. We were in the trough, in the ditch, we were running back up to the NW and we took a wave on the starboard stern quarter. I remember it specifically because we were having a meal at that time and I remember thinking about the cook being really mad, really angry because it probably shifted everything in the galley.

Nobody will ever know for sure, but perhaps the impact of the wave disrupted more than the galley. At approximately 1622 local time, crewmembers sighted smoke on multiple decks. Shoemaker was in the wheelhouse when a processing foreman rushed in and advised him there was smoke in the fish factory.

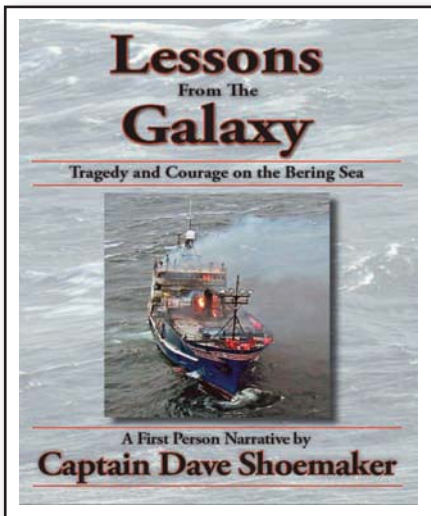
What kind of smoke, the captain demanded? What did it look like?

Like that smoke behind you, was the reply and Shoemaker turned to see thick black smoke corkscrewing out of corner joints in the fidley. Shoemaker's mind

raced as he tried to envisage the source of the emergency. Within seconds, smoke began pouring into the wheelhouse from multiple sources and as he activated the general alarm, he thought, this may be a little more serious than I imagined. He quickly realized that despite the blaring alarm, there would be crewmembers asleep in their bunks and bounded down the stairs to the main living space where he ran through the hallways kicking open doors and screaming fire on board. By the time he returned to the wheelhouse, it was filled with heavy black smoke and as he struggled to hold his breath and search for a radio, there was a muffled explosion, like a big gulp of air, as the boat rocked violently from side to side. Now he turned to look through the back windows of the wheelhouse to see crewmembers pouring out of interior spaces onto the back deck gagging and coughing. Suddenly, everybody started screaming man overboard. According the U.S. Coast Guard report on the incident, the vessel's chief mate was leading a fire team below decks when he mistakenly assumed that the fixed carbon dioxide fire suppression system had been triggered and ordered crewmembers to open exterior hatches to ventilate smoke from the space where he and his team had mustered. Approximately one minute later, the backdraft explosion that rocked the vessel blew the three-member fire team through the gear setting hatch at the stern and into the water. None was wearing a survival suit. Shoemaker climbed through a small hatch onto the housetop to see three of his key crewmembers in the water with the vessel still making way. He screamed at the personnel assembled on the aft deck to throw them life rings and buoys as a column of thick, black smoke poured out of the hatchway from which he had just emerged.

I realized I needed to get back down inside, I needed to clutch out, I needed to take these mains out of gear, I needed to somehow address getting this thing turned back around to get to these guys in the back and when I went down in that wheelhouse, I held my breath, I got down in there, I clutched out the mains, and that point another explosion takes place. I needed to make a mayday call and I knew when I went back down in there, it wasn't going to be easy and so when I went back down in I'm trying to find the radios and it's pitch black and the fire is just engulfing the inside of the boat and I remember that when I took that first breath, once I got back in the wheelhouse and I'm looking, searching frantically because it's pitch black, I'm trying to find radios, the alarms are screaming, the radios are squelching, they're all squelching out and the ringing of the buzzers and the general alarm and the fire alarm and all this stuff is still going and I can't find a radio and all of a sudden it's dawning on me that I'm losing control, rapidly. Nobody knows where we are. The intensity of the heat in the wheelhouse was now unbearable. The books on the shelves were in flames and paint was burning on the walls. And I found a radio and I started puking and the snot's coming out of my nose and I'm dropping to my knees and I'm trying to squeak out a mayday, mayday, mayday and I realize that my radio cord is hanging just by the cord, because it's already melted off the radio. Four minutes, 20 seconds had elapsed from the discovery of fire to the first explosion, and the horrific events aboard the Galaxy were just beginning. Captain Shoemaker would enter the wheelhouse multiple times, suffering severe burns, in his efforts to make a distress call. I was black, totally black, the raw blood and meat exposed on my arms and my thighs, my clothes smoking and smoldering and I remember going up on the back deck and I crawled through that same hatch up on the back and my crew was back there and I remember that there needed to be some control and I remember looking at them and I pointed my finger at them and I said, We will survive, we will survive this day, you listen to what I'm telling you, you pay attention to me, we're going to make this. And I'm out on the back deck and I'm spitting orders and I'm going we will survive this, you pay attention to what I'm telling you, we will survive this, and in my heart, I knew we would not. As the fire consumed the vessel, her steel plates glowed red. The port liferaft would be consumed in flames and as the crew extricated survival suits from storage lockers and tossed them on deck, the suits melted before their eyes. Struggling to distribute additional suits as explosions continued to rock the Galaxy, Shoemaker was blown off of the wheelhouse deck and fell 25 feet to the foredeck where he lay on the blistering steel deck plates.

I remember landing on my side and I broke three ribs when I hit and it knocked my shoes off my feet and I remember laying there and it sounded almost like bacon frying in a frying pan. The captain had lost propulsion, he had lost radio communication, he had lost vital safety equipment, he had lost critical crewmembers and now he was isolated on the foredeck with most of his crew mustered on the stern and others in the water. What he never lost was his will to survive. Almost unbelievably, 23 of 26 members of the Galaxy crew would endure the events of that day and Shoemaker would be given the U.S. Coast Guard's highest civilian award for lifesaving. Equally surprising, Aleutian Spray Fisheries did such an effective job of caring for the survivors and the families of those who died that not a single lawsuit was filed in the wake of the casualty. Now, the captain has a new mission: to share with other seamen the lessons learned on the Galaxy, and his newfound commitment to safety education and training. It's the one thing that I can hang on my hat rack, the day that I die, is that at least I could contribute something to this industry.



Shoemaker tells the gripping story of the events that overwhelmed his vessel in a powerful new DVD training program: *Lessons from the Galaxy, Tragedy and Courage on the Bering Sea:* http://www.johnsabella.com/detail.lasso?title=650712. For more information, contact John Sabella & at **Email: info@johnsabella.com**

World Fleet Development (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	276	13.5	264.8	15.2	166.7	736.2
2001	281.3	15	274	14.6	169.3	754.3
2002	274.9	15	287.4	13.8	174.7	765.9
2003	278.8	15.4	295	12.6	181.2	783
2004	287.9	17.3	303.3	12.2	189.6	810.3
2005	304.1	18	320.7	11.7	200.5	855
2006	326.9	19.2	341.9	11.7	213.3	913
2007	344.4	21.4	365.1	11.3	232.5	974.8
2008	362.1	24.4	392.9	11.3	255.5	1046.2
2009	380.8	26.4	411.1	10.5	283.9	1113.5
2010	408.9	28.6	459.2	9.7	312.3	1218.7

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

Deliveries (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	19.2	1.7	13.6	N/A	8.5	43
2001	13.1	0.2	20.6	N/A	10.5	44.4
2002	22.7	0.8	13.6	N/A	10.4	47.5
2003	27.9	2	11.8	0.2	11.2	53.1
2004	26.4	0.8	18.3	N/A	11.9	57.4
2005	28	1.5	22.3	N/A	13.8	65.6
2006	23	2.4	25.5	N/A	20.3	71.1
2007	28.7	3	28.6	N/A	23	83.3
2008	33.2	2.9	22.9	N/A	28.4	87.4
2009	45.7	2.2	48.3	-	28.4	124.7

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

New Orders (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	34.9	0.9	14.5	0.2	17.5	67.9
2001	26.2	0.7	8.7	N/A	10.5	46.1
2002	17.7	1.6	21.9	N/A	8.4	49.6
2003	47.9	1.4	27.9	N/A	27.5	104.7
2004	34	2.2	28.8	N/A	28.1	93.1
2005	24	0.9	16.8	N/A	25.9	67.6
2006	74.7	6.8	39	N/A	25.7	146.2
2007	42.1	10.1	161.6	N/A	50.5	264.3
2008	47.4	2.7	91.4	N/A	50.5	192
2009	10.3	0.8	33.6	N/A	1.5	46.2

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

Orderbook (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	24.8	10.4	30.5	N/A	15.5	81.2
2001	39.3	9.5	34.3	0.2	24.5	107.8
2002	52	10	22.4	0.2	27.9	112.5
2003	45.3	10.8	30.3	0.2	22.9	109.5
2004	65.1	10.2	48.4	N/A	41.2	164.8
2005	72	11.6	60.6	N/A	56.2	200.4
2006	76.5	3.3	61.4	N/A	68.1	209.3
2007	128.7	11	78.9	N/A	80	298.6
2008	147.7	19	216.1	N/A	105.7	488.5
2009	164	11.3	286.3	N/A	92.2	551
2010	126.8	7.7	268.7	N/A	70.5	473.7

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

Tonnage Sold for Scrapping, Lost and Other Removals (Mill.dwt)

Start	Tankers	Chemical carriers	Bulk carriers	Combined carriers	Others	Total
2000	13.9	0.2	4.4	0.6	3.1	22.1
2001	19.5	0.2	7.2	0.8	4	31.7
2002	18.9	0.4	6	1.2	3.9	30.4
2003	18.8	0.1	3.5	0.7	2.8	25.9
2004	10.2	0.1	0.8	0.5	1	12.7
2005	5.1	0.3	1.2	0	1	7.6
2006	5.5	0.2	2.2	0.3	1.1	9.4
2007	10.7	0.4	0.7	0	1.4	13.2
2008	14.9	0.5	4.7	0.8	4.3	24.8
2009	17.1	0.5	9.9	0.9	6.7	35.1

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

Tanker Fleet (incl. chemical carriers) (Mill.dwt)

Start	Existing fleet	Lay-up storage	Tankers operating	Combined in oil	Oil fleet operating
2000	289.5	9	280.5	9.1	289.6
2001	296.4	6.6	289.8	12.5	302.3
2002	290	6.1	283.9	12.8	296.7
2003	294.2	5.6	288.6	10.8	299.4
2004	305.2	3.4	301.8	6.7	308.5
2005	322.1	3.2	318.9	5.5	324.4
2006	346.1	2.5	343.6	5.5	349.1
2007	365.8	2.5	363.3	4	367.3
2008	386.4	0.8	385.6	1.2	386.8
2009	407.1	1.2	405.9	2.6	408.5
2010	*437.5*	*2.6*	*434.9*	*3.5*	*438.4*

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

New Orders of Tankers by Size (incl. chemical carriers) (Mill.dwt)

	10 to 69,999	70 to 119,999	120-199,999	200,000+	Total
2000	4.4	6.2	5.8	19.3	35.7
2001	5.8	10.2	3.3	7.6	26.9
2002	5.8	6.8	2.8	3.9	19.3
2003	10	15.2	8.7	15.5	49.3
2004	7.8	10.9	4.5	13	36.2
2005	7	5.8	1.1	11	24.9
2006	16.2	21.6	13.3	30.3	81.5
2007	15.4	13.5	8.3	15	52.2
2008	6.3	5.3	5.8	32.8	50.1
2009	1.4	0.6	3.3	5.8	11.1

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

Bulk Carrier Fleet (Mill.dwt)

Start	Existing fleet	Lay-up	Bulk carriers operating	Combined in dry	Operating dry bulk fleet
2000	264.8	1.9	262.9	6.2	269.1
2001	274	1.3	272.7	4.3	277
2002	287.4	1.8	285.6	3.7	289.3
2003	295	0.5	294.5	2.5	297
2004	303.3	0.6	302.7	4	306.7
2005	320.7	0.7	320	5.3	325.3
2006	341.9	0.7	341.2	4.5	345.7
2007	365.1	0.7	364.4	5.3	369.7
2008	392.9	0.3	392.6	6.7	399.3
2009	411.1	0.9	410.2	5.4	415.6
2010	459.2	0.6	458.6	3.3	461.9

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

New Orders of Bulk Carriers by Size (Mill.dwt)

Start	10-59,999	60-79,999	80,000+	Total
2000	6.5	3.7	4.3	14.5
2001	3.5	2.2	3	8.7
2002	7.7	4.8	9.4	21.9
2003	7.7	7.7	12.6	27.9
2004	9.5	4.5	14.8	28.8
2005	6	1.8	9	16.8
2006	14.6	2.3	22.2	39
2007	38.6	7.1	115.9	161.6
2008	31.7	5.1	54.6	91.4
2009	11.8	3.4	18.4	33.6

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

Second Hand Prices of 5 Year Old Tankers (Mill.dwt)

Start	MR Product	Aframax	Suezmax	VLCC
2000	19	24	35.5	53
2001	25.5	41	49	70
2002	20.5	31	38	60.5
2003	21	28	37	52
2004	28	38	48	72
2005	39	56	71.5	106
2006	45	61.5	75	113.5
2007	45	64	81	118
2008	50	68	93	136
2009	38	53	71	102
2010	*25*	*40*	*56*	*82*

(Source: The Platou Report 2010, RS Platou Group • www.platou.com)

Second Hand Prices of 5 Year Old Bulk Carriers (Mill. Dwt)

	Handymax	Panamax	Capesize
2000	16	17.5	28
2001	15.5	16	27
2002	12.2	13.4	22

U.S.-Flag Oceangoing Privately Owned, Foreign Trade Fleet

(10,000 Deadweight and Above, Year-End 2008)

Foreign Trade Current Name	Year Built		Ship Type	Owner	Deadweight
ADVANTAGE	1977	General Cargo	General Cargo Ship	Fortune Maritime	27,750
ALLIANCE NEW YORK	2005	Roll-on/Roll-off	Vehicles Carrier	Alliance New York	15,880
ALLIANCE NORFOLK	2007	Roll-on/Roll-off	Vehicles Carrier	Wilmington Trust Co	21,500
ALLIANCE ST. LOUIS	2005	Roll-on/Roll-off	Vehicles Carrier	Wilmington Trust Co	15,880
AMERICAN TERN	1990	General Cargo	General Cargo Ship	Tern Shipholding	17,175
APL BALBOA	1998	Containership	Container Ship	Apl Bermuda Ltd	10,488
APL CHINA	1995	Containership	Container Ship	Wilmington Trust Co	66,520
APL KOREA	1995	Containership	Container Ship	Wilmington Trust Co	66,520
APL PHILIPPINES	1996	Containership	Container Ship	Wilmington Trust Co	65,642
APL SINGAPORE	1995	Containership	Container Ship	Wilmington Trust Co	66,520
APL THAILAND	1995	Containership	Container Ship	Wilmington Trust Co	66,520
BLACK EAGLE	1983	Containership	Container Ship	Tuskeegee Shipholding	32,709
CAPT. STEVEN L. BENNETT	1984	Dry Bulk	Bulk Carrier	Sealift Llc	41,151
CHARLESTON EXPRESS	2002	Containership	Container Ship	Hapag-Lloyd Usa	40,478
COURAGE	1991	Roll-on/Roll-off	Vehicles Carrier	Fidelio Ltd Partnership Inc	29,213
FREEDOM	1997	Roll-on/Roll-off	Vehicles Carrier	Freedom Trust	19,884
GLOBAL PATRIOT	1978	General Cargo	General Cargo Ship	Redstone Shipping	27,192
GREEN BAY	2007	Roll-on/Roll-off	Vehicles Carrier	Waterman Steamship Corp	18,090
GREEN COVE	1994	Roll-on/Roll-off	Vehicles Carrier	Central Gulf Lines Inc	16,178
GREEN DALE	1999	Roll-on/Roll-off	Vehicles Carrier	Us Bank Nation Association	15,894
GREEN LAKE	1998	Roll-on/Roll-off	Vehicles Carrier	Central Gulf Lines Inc	22,799
GREEN POINT	1994	Roll-on/Roll-off	Vehicles Carrier	Central Gulf Lines Inc	14,930
GREEN RIDGE	1998	Roll-on/Roll-off	Vehicles Carrier	Central Gulf Lines Inc	21,523
HARRIETTE	1978	Dry Bulk	Bulk Carrier	Sealift Llc	25,952
HONOR	1996	Roll-on/Roll-off	Vehicles Carrier	Fidelio Ltd Partnership Inc	19,844
HORIZON EAGLE	2007	Containership	Container Ship	Hl Eagle Llc	39,276
HORIZON FALCON	2007	Containership	Container Ship	Hl Falcon Llc	39,420
HORIZON HAWK	2007	Containership	Container Ship	Hl Hawk Llc	39,418
HORIZON HUNTER	2006	Containership	Container Ship	Hl Hunter Llc	39,266
HORIZON TIGER	2006	Containership	Container Ship	Hl Tiger Llc	39,266
INDEPENDENCE II	1994	Roll-on/Roll-off	Vehicles Carrier	Interocean American Shipping	15,199
INTEGRITY	1992	Roll-on/Roll-off	Vehicles Carrier	Fidelio Ltd Partnership Inc	29,152
LIBERTY	1985	Roll-on/Roll-off	Vehicles Carrier	Liberty Trust	27,609
LIBERTY EAGLE	2004	Dry Bulk	Bulk Carrier	Liberty Glory Corp	51,812
LIBERTY GLORY	2001	Dry Bulk	Bulk Carrier	Liberty Glory Corp	50,601
LIBERTY GRACE	2001	Dry Bulk	Bulk Carrier	Liberty Glory Corp	50,601
LIBERTY SPIRIT	1986	Dry Bulk	Bulk Carrier	Liberty Star Shipping Corp	64,152
LIBERTY STAR	1986	Dry Bulk	Bulk Carrier	Liberty Star Shipping Corp	64,059
LIBERTY SUN	1986	Dry Bulk	Bulk Carrier	Liberty Star Shipping Corp	63,400
LTC CALVIN P. TITUS	1985	Containership	Container Ship	Titus Shipholding	24,500
LTC JOHN U.D. PAGE	1985	Containership	Container Ship	Maersk Line Ltd	58,869
MAERSK ALABAMA	1998	Containership	Container Ship	Maersk Line Ltd	17,375
MAERSK ARKANSAS	1998	Containership	Container Ship	Maersk Line Ltd	17,375
MAERSK CALIFORNIA	1992	Containership	Container Ship	Maersk Line Ltd	25,275
MAERSK CAROLINA	1998	Containership	Container Ship	Maersk Line Ltd	62,229
MAERSK CONSTELLATION	1980	General Cargo	General Cargo Ship	Maersk Line Ltd	21,213
MAERSK GEORGIA	1997	Containership	Container Ship	Maersk Line Ltd	62,242
MAERSK IOWA	2006	Containership	Container Ship	Maersk Line Ltd	61,454
MAERSK MICHIGAN	2003	Tanker	Chemical/Oil Products Tanker	Maersk Line Ltd	47,047
MAERSK MISSOURI	1998	Containership	Container Ship	Maersk Line Ltd	62,226
MAERSK MONTANA	2006	Containership	Container Ship	Maersk Line Ltd	61,499
MAERSK OHIO	2006	Containership	Container Ship	Maersk Line Ltd	61,454
MAERSK RHODE ISLAND	2002	Tanker	Oil Products Tanker	Maersk Line Ltd	34,801
MAERSK TENNESSEE	1980	Roll-on/Roll-off	Ro-Ro Cargo Ship	Maersk Line Ltd	32,904
MAERSK TEXAS	1979	Roll-on/Roll-off	Ro-Ro Cargo Ship	Maersk Line Ltd	32,904
MAERSK UTAH	2006	Containership	Container Ship	Maersk Line Ltd	61,454
MAERSK VIRGINIA	2002	Containership	Container Ship	Maersk Line Ltd	62,007
MAERSK WISCONSIN	2000	Containership	Container Ship	Maersk Line Ltd	62,441
MAJOR BERNARD F. FISHER	1985	Containership	Container Ship	Remington Shipping	24,500
MARILYN	1978	Dry Bulk	Bulk Carrier	Remington Shipping	25,515
NATIONAL GLORY	1988	General Cargo	General Cargo Ship	R&D Investments	13,864
NOBLE STAR	1977	General Cargo	General Cargo Ship	Sealift Tankships	18,230
OVERSEAS LUXMAR	1998	Tanker	Chemical/Oil Products Tanker	Luxmar Tanker Llc	45,999
OVERSEAS MAREMAR	1998	Tanker	Oil Products Tanker	Maremar Tanker Llc	47,225
PATRIOT	1987	Roll-on/Roll-off	Vehicles Carrier	Fidelio Ltd Partnership Inc	15,681
PHILADELPHIA EXPRESS	2003	Containership	Container Ship	Hapag-Lloyd Usa	40,478
PRESIDENT ADAMS	1988	Containership	Container Ship	Wilmington Trust Co	54,655
PRESIDENT JACKSON	1988	Containership	Container Ship	Wilmington Trust Co	54,665
PRESIDENT POLK	1988	Containership	Container Ship	Wilmington Trust Co	54,700
PRESIDENT TRUMAN	1988	Containership	Container Ship	Wilmington Trust Co	54,700
RESOLVE	1994	Roll-on/Roll-off	Vehicles Carrier	Fidelio Ltd Partnership Inc	13,548
SEA-LAND CHAMPION	1995	Containership	Container Ship	Maersk Line Ltd	59,840
SEA-LAND CHARGER	1997	Containership	Container Ship	Maersk Line Ltd	59,961
SEA-LAND COMET	1995	Containership	Container Ship	Maersk Line Ltd	59,840
SEA-LAND EAGLE	1997	Containership	Container Ship	Maersk Line Ltd	59,840
SEA-LAND INTREPID	1997	Containership	Container Ship	Maersk Line Ltd	59,840
SEA-LAND LIGHTNING	1997	Containership	Container Ship	Maersk Line Ltd	59,840
SEA-LAND MERCURY	1995	Containership	Container Ship	Maersk Line Ltd	59,961
SEA-LAND METEOR	1996	Containership	Container Ship	Maersk Line Ltd	59,940
SEA-LAND PERFORMANCE	1985	Containership	Container Ship	Us Bank Nation Association	58,869
SEA-LAND QUALITY	1985	Containership	Container Ship	Us Bank Nation Association	58,869
SP5. ERIC G. GIBSON	1984	Containership	Container Ship	Military Sealift Command	24,500
SSG EDWARD A. CARTER JR.	1985	Containership	Container Ship	Maersk Line Ltd	58,943
ST LOUIS EXPRESS	2002	Containership	Container Ship	Wilmington Trust Co	40,478
TSGT JOHN A. CHAPMAN	1978	General Cargo	General Cargo Ship	Sealift Llc	26,763
VIRGINIAN	1984	General Cargo	Heavy Load Carrier	Sealift Inc	21,541
WASHINGTON EXPRESS	2003	Containership	Container Ship	Wilmington Trust Co	40,478
YORKTOWN EXPRESS	2002	Containership	Container Ship	Hapag-Lloyd Usa	40,478

(Source: U.S. Maritime Administration via Lloyd's Register/Fairplay)

U.S.-Flag Oceangoing Privately Owned Jones Act Fleet

(10,000 Deadweight and Above, Year-End 2008)

JONES ACT Current Name	Year Built	Vessel Type	Ship Type	Owner	DWT
ALASKAN EXPLORER	2005	Tanker	Crude Oil Tanker	Ami Leasing	193,049
ALASKAN FRONTIER	2004	Tanker	Crude Oil Tanker	Ami Leasing	193,049
ALASKAN LEGEND	2006	Tanker	Crude Oil Tanker	Bp Oil Shipping	193,048
ALASKAN NAVIGATOR	2005	Tanker	Crude Oil Tanker	Ami Leasing	193,048
ANASAZI	1958	Tanker	Chemical/Oil Products Tanker	American Heavy Lift Shipping	39,385
ARIZONA VOYAGER	1977	Tanker	Oil Products Tanker	Chevron Usa Inc	39,836
BLUE RIDGE	1981	Tanker	Oil Products Tanker	Crowley Petroleum Transport	42,268
CALIFORNIA VOYAGER	1999	Tanker	Chemical/Oil Products Tanker	Lightship Tankers Ii	45,671
CAPTAIN H. A. DOWNING	1957	Tanker	Chemical/Oil Products Tanker	American Heavy Lift Shipping	40,017
CHARLESTON	1983	Tanker	Chemical Tanker	Uscs Charleston	48,844
CHEMICAL PIONEER	1968	Tanker	Chemical Tanker	Uscs Chemical Pioneer	34,930
COAST RANGE	1981	Tanker	Oil Products Tanker	Crowley Petroleum Transport	40,631
COLORADO VOYAGER	1976	Tanker	Oil Products Tanker	Chevron Usa Inc	39,842
DELAWARE TRADER	1982	Tanker	Oil Products Tanker	Keystone Dt Inc	50,921
EL FARO	1975	Roll-on/Roll-off	Ro-Ro Cargo Ship	Sea Star Line Llc	17,915
ENERGY ENTERPRISE	1983	Dry Bulk	Self Discharging Bulk Carrier	Enterprise Ship	33,373
GREAT LAND	1975	Roll-on/Roll-off	Ro-Ro Cargo Ship	Totem Ocean Trailer Express	16,138
HORIZON ANCHORAGE	1987	Containership	Container Ship	Us Bank Nation Association	21,282
HORIZON CHALLENGER	1968	Containership	Container Ship	Horizon Lines Llc	21,257
HORIZON CONSUMER	1973	Containership	Container Ship	Horizon Lines Llc	25,651
HORIZON CRUSADER	1969	Containership	Container Ship	Horizon Lines Llc	20,685
HORIZON DISCOVERY	1968	Containership	Container Ship	Horizon Lines Llc	20,568
HORIZON ENTERPRISE	1980	Containership	Container Ship	Horizon Lines Llc	31,423
HORIZON FAIRBANKS	1973	Containership	Container Ship	Horizon Lines Llc	22,086
HORIZON HAWAII	1973	Containership	Container Ship	Horizon Lines Llc	22,086
HORIZON KODIAK	1987	Containership	Container Ship	Us Bank Nation Association	20,668
HORIZON NAVIGATOR	1972	Containership	Container Ship	Horizon Lines Llc	31,203
HORIZON PACIFIC	1979	Containership	Container Ship	Horizon Lines Llc	31,213
HORIZON PRODUCER	1974	Containership	Container Ship	Horizon Lines Llc	25,651
HORIZON RELIANCE	1980	Containership	Container Ship	Horizon Lines Llc	45,895
HORIZON SPIRIT	1980	Containership	Container Ship	Horizon Lines Llc	46,154
HORIZON TACOMA	1987	Containership	Container Ship	Us Bank Nation Association	20,668
HORIZON TRADER	1973	Containership	Container Ship	Horizon Lines Llc	31,495
JEAN ANNE	2005	Roll-on/Roll-off	Vehicles Carrier	Pasha Hawaii Transport Lines	12,561
KAUAI	1980	Containership	Container Ship	Matson Navigation	26,350
KEYSTONE TEXAS	1981	Tanker	Oil Products Tanker	Keystates	39,990
KODIAK	1978	Tanker	Crude Oil Tanker	Seariver Maritime Inc	122,805
LIHUE	1971	Containership	Container Ship	Matson Navigation	38,656
LURLINE	1973	Roll-on/Roll-off	Ro-Ro Cargo Ship	Matson Navigation	22,030
MAHIMAHI	1983	Containership	Container Ship	Matson Navigation	30,825
MAJ. STEPHEN W. PLESS	1983	Roll-on/Roll-off	Ro-Ro Cargo Ship	Wilmington Trust Co	21,529
MANOA	1982	Containership	Container Ship	Matson Navigation	30,825
MANUKAI	2003	Containership	Container Ship	Matson Navigation	38,261
MANULANI	2005	Containership	Container Ship	Matson Navigation	38,261
MARY ANN HUDSON	1981	Dry Bulk	Bulk Carrier	Mary Ann Hudson Llc	36,414
MATSONIA	1973	Roll-on/Roll-off	Ro-Ro Cargo Ship	Matson Navigation	22,501
MAUI	1978	Containership	Container Ship	Matson Navigation	24,683
MAUNALEI	2006	Containership	Container Ship	Matson Navigation	34,027
MAUNAWILI	2004	Containership	Container Ship	Matson Navigation	38,261
MIDNIGHT SUN	2003	Roll-on/Roll-off	Ro-Ro Cargo Ship	Totem Ocean Trailer Express	22,437
MISSISSIPPI VOYAGER	1998	Tanker	Oil Products Tanker	Lightship Tankers V Llc	46,094
MOKIHANA	1983	Containership	Container Ship	Matson Navigation	30,652
NEW RIVER	1960	Tanker	Chemical/Oil Products Tanker	American Heavy Lift Shipping	39,483
NORTH STAR	2003	Roll-on/Roll-off	Ro-Ro Cargo Ship	Totem Ocean Trailer Express	22,437
OVERSEAS DILIGENCE	1977	Tanker	Oil Products Tanker	Overseas Diligence Corp	39,959
OVERSEAS GALENA BAY	1982	Tanker	Oil Products Tanker	Overseas Galena Bay Llc	50,920
OVERSEAS HOUSTON	2007	Tanker	Chemical/Oil Products Tanker	Asc Leasing I Inc	46,911
OVERSEAS INTEGRITY	1975	Tanker	Oil Products Tanker	Overseas Integrity Corp	39,847
OVERSEAS LONG BEACH	2007	Tanker	Chemical/Oil Products Tanker	Asc Leasing Ii Inc	46,812
OVERSEAS LOS ANGELES	2007	Tanker	Chemical/Oil Products Tanker	Asc Leasing Iii Inc	46,817
OVERSEAS NEW ORLEANS	1983	Tanker	Oil Products Tanker	Us Bank Nation Association	43,644
OVERSEAS NEW YORK	2008	Tanker	Chemical/Oil Products Tanker	Asc Leasing Iv Inc	46,810
OVERSEAS PHILADELPHIA	1982	Tanker	Oil Products Tanker	Us Bank Nation Association	43,648
OVERSEAS PUGET SOUND	1983	Tanker	Oil Products Tanker	Overseas Puget Sound Llc	50,860
OVERSEAS TEXAS CITY	2008	Tanker	Chemical/Oil Products Tanker	American Shipping Corp	46,800
PFC. DEWAYNE T. WILLIAMS	1985	Roll-on/Roll-off	Ro-Ro Cargo Ship	Military Sealift Command	22,454
PFC. EUGENE A. OBREGON	1982	Roll-on/Roll-off	Ro-Ro Cargo Ship	Wilmington Trust Co	25,073
POLAR ADVENTURE	2004	Tanker	Crude Oil Tanker	Polar Tankers Inc	141,740
POLAR DISCOVERY	2003	Tanker	Crude Oil Tanker	Polar Tankers Inc	141,740
POLAR ENDEAVOUR	2001	Tanker	Crude Oil Tanker	Polar Tankers Inc	141,740
POLAR ENTERPRISE	2006	Tanker	Crude Oil Tanker	Polar Tankers Inc	141,740
POLAR RESOLUTION	2002	Tanker	Crude Oil Tanker	Polar Tankers Inc	141,740
PRINCE WILLIAM SOUND	1975	Tanker	Oil Products Tanker	Shipco 667	125,926
R. J. PFEIFFER	1992	Containership	Container Ship	Matson Navigation	28,555
S/R AMERICAN PROGRESS	1997	Tanker	Crude Oil Tanker	Wells Fargo Northwest	46,103
S/R BAYTOWN	1984	Tanker	Crude Oil Tanker	Seariver Maritime Inc	58,646
S/R LONG BEACH	1987	Tanker	Crude Oil Tanker	Seariver Maritime Inc	214,862
S/R WILMINGTON	1984	Tanker	Oil Products Tanker	Seariver Maritime Inc	48,846
SEA VENTURE	1972	Tanker	Chemical/Oil Products Tanker	Uscs Sea Venture Llc	18,924
SEABULK AMERICA	1975	Tanker	Chemical Tanker	Seabulk America	46,312
SEABULK ARCTIC	1998	Tanker	Oil Products Tanker	Lightship Tankers Iv	46,103
SEABULK CHALLENGE	1981	Tanker	Chemical/Oil Products Tanker	Seabulk Petroleum Transport	49,636
SEABULK ENERGY	1999	Tanker	Chemical/Oil Products Tanker	Lightship Tankers I	45,671
SEABULK PRIDE	1998	Tanker	Crude Oil Tanker	Lightship Tankers Iii	46,094
SEABULK TRADER	1981	Tanker	Chemical/Oil Products Tanker	Seabulk Energy Transport Inc	49,568
SEADRIFT	1942	Tanker	Chemical Tanker	United States Of America	16,576
SGT. MATEJ KOCAK	1981	Roll-on/Roll-off	Ro-Ro Cargo Ship	Wilmington Trust Co	24,032
SGT. WILLIAM R. BUTTON	1986	Roll-on/Roll-off	Ro-Ro Cargo Ship	Wilmington Trust Co	26,523
SHEILA MCDEVITT	1980	Dry Bulk	Bulk Carrier	Sheila Mcdewitt Llc	37,244
SIERRA	1979	Tanker	Crude Oil Tanker	Seariver Maritime Inc	125,091
SS EL MORRO	1974	Roll-on/Roll-off	Ro-Ro Cargo Ship	Sea Star Line Llc	16,079
SS EL YUNQUE	1976	Roll-on/Roll-off	Ro-Ro Cargo Ship	Sea Star Line Llc	16,144
SULPHUR ENTERPRISE	1994	Tanker	Chemical Tanker	Isc-Sulphur Holdings Inc	21,649
THE MONSEIGNEUR	1959	Tanker	Chemical/Oil Products Tanker	American Heavy Lift Shipping	39,483
TINA LITRICO	1973	Dry Bulk	Bulk Carrier	Tina Litrico Llc	29,984
WASHINGTON VOYAGER	1976	Tanker	Oil Products Tanker	Chevron Usa Inc	39,795
WESTWARD VENTURE	1977	Roll-on/Roll-off	Ro-Ro Cargo Ship	Totem Ocean Trailer Express	17,915

(Source: U.S. Maritime Administration via Lloyd's Register/Fairplay)

Alternate Propulsion Plant Using Fuel Cell Technology

Since the marine industry continually laments restocking engineering talent to power its future, Maritime Reporter & Engineering News decided to hit the road and find where the future lies. The journey wasn't far, approximately 45 miles from our office on Long Island at the ***Webb Institute****. Presented here is the recent work of two Webb upper classmen,* ***Dusty Rybovich*** *and* ***Michael Cariello****.*

It is our responsibility as engineers to design a better world. Currently, the world is moving toward more environmentally friendly, or "green," technologies with a focus on reducing emissions and finding more efficient sources of energy. Traditional marine diesel propulsion relies on the combustion of finite sources of energy and is ultimately an inefficient generator of electrical power and also creates harmful emissions. We have designed an alternate propulsion plant that uses fuel cells instead of engines, and makes excellent use of the boil off gas that naturally occurs aboard liquefied natural gas (LNG) carriers.

The primary objective of our thesis is to design and to evaluate a conceptual propulsion plant for an LNG carrier that uses fuel cells as the propulsive energy source. This includes the selection of an appropriate type of fuel cell and its associated fuel, and the design and optimization of the propulsion system and any related systems. Additionally, we have performed a comparison against a modern dual-fuel diesel-electric LNG carrier to evaluate the economic, environmental, and operational feasibility of our design.

There are many reasons to use an LNG carrier for the investigation of the fuel cell propulsion plant. The LNG trade is a profitable venture with expected longevity that is actively investigating alternate propulsion methods to reduce shipping costs while reducing negative environmental impacts. Additionally, modern technology has made natural gas acceptable for most fuel cell types because of advances in reformation technology that allow the hydrogen to be extracted immediately before the chemical process. LNG tankers possess a plentiful supply of fuel, and are already equipped with time-tested systems capable of dealing with this explosive gas. Additionally, the boil-off gas (BOG) that is naturally generated onboard an LNG tanker can be used as the main fuel source for the fuel cell system. Loading times in port would be reduced if the ship uses the BOG from the cargo as a main source of fuel, and does not need to spend time loading liquid fuel at a separate location. We have referenced a 2008 Webb Institute thesis by Adam Van Doren extensively in our work. He created a methodology for comparing LNG carrier propulsion systems in order to find the most economically efficient case. In his work, he concluded that a dual-fuel diesel-electric (DFDE) system was the most efficient. Thus, we have chosen to compare our fuel cell results to his best-case scenario.

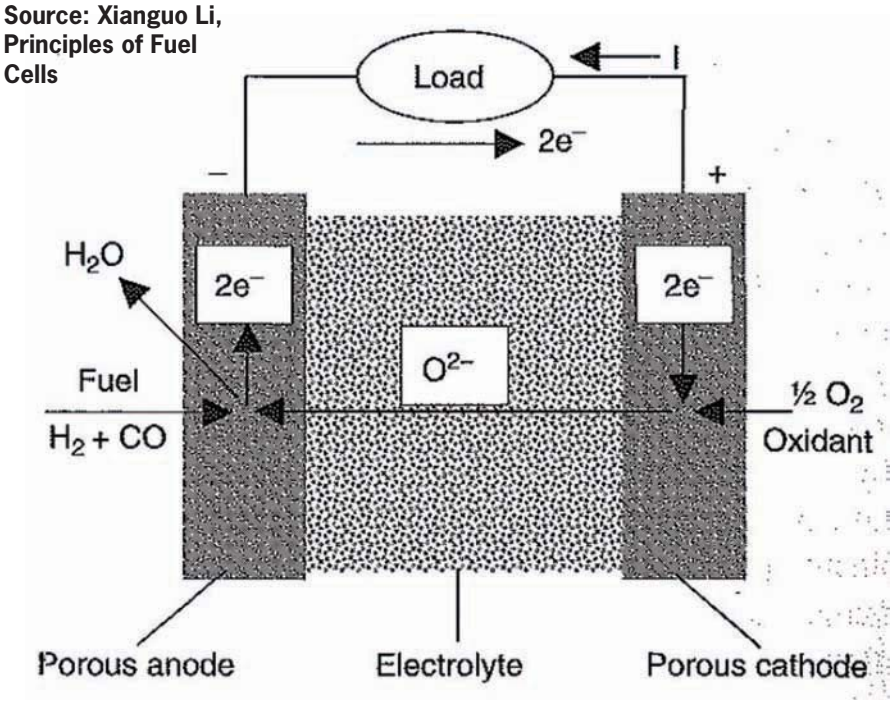
We have used a concept solid-oxide fuel cell system produced by Fuel Cell Energy Corporation, the DFC-3000, to model our 23 MW propulsion system. A schematic of the internal process in one fuel cell is shown below.

In the simplest case, pure hydrogen gas is provided to the anode, where it is combined with the oxygen ions flowing through the electrolyte. This combination yields steam and electrons. The water is ejected from the cell while the electrons migrate through the load circuit to reach the cathode, where they combine with oxygen to create ions capable of passing through the electrolyte and continuing the conversion process. The work done by the movement of the electrons through the load circuit provides the electric power output.

However, it is difficult to obtain pure hydrogen and pure oxygen. Instead, standard air is used to meet the oxygen requirements, and a process known as internal reformation is used to extract hydrogen gas from hydrocarbon fuels. This procedure consists of mixing a hydrocarbon gas with steam in a high-temperature environment while in the presence of a catalyst.

We propose to use BOG as the main fuel for propelling the ship. The rate of production of BOG is unsteady, and may have to be stimulated at times. Because of this, the gas will be stored in holding

Source: Xianguo Li, Principles of Fuel Cells



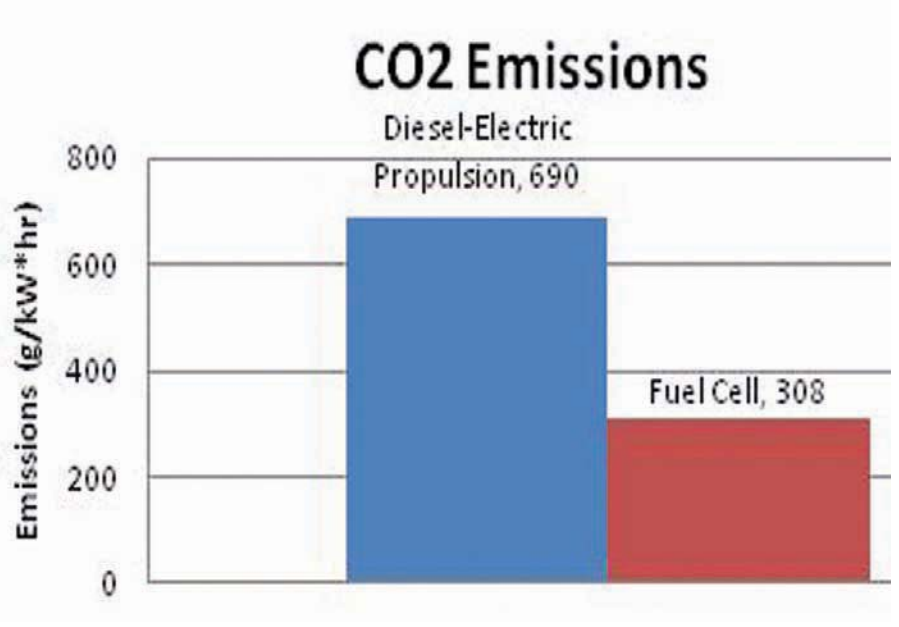


Figure 2: Carbon Dioxide Emissions Comparison

tanks as it boils off from the cargo tanks. The gas can then be used in the fuel cells. Should the contents of the supply tank become low, and BOG is not being produced in sufficient quantities in the cargo tanks, a supply will be created by stimulating boil off of the cargo. This involves pumping some LNG out of the tank and passing it through a seawater heat exchanger to boil it.

With the added power produced from the waste heat recovery system, we predict that we can produce 408 kW per fuel cell stack. Designing to our goal of 23 MW gives us a fuel cell system that includes 56 DFC-3000 fuel cell stacks. The combined weight of the 56 fuel cell stacks is 680 tonnes. Estimating the weight of the auxiliary systems for the fuel cell system, including the fuel, water, reformation, and electrical conditioning equipment, we get a total combined weight of 800 tonnes for the fuel cell system. So, in terms of weight, it is feasible to use fuel cells for shipboard power.

The weight of the fuel cell system is comparable to that of other power production plants for the same power output. Four medium-speed, marine diesel engines with the required power output weigh about 576 tonnes. However, this is the dry weight of the engines alone, and does not include the weight of supporting systems, oils, and fuels. Because of this, we estimate that our fuel cell system will not weigh much more than the total diesel engine system, and may even weigh less. With the rapidly improving technology in this field that leads to more power-dense cells, it is increasingly likely that the fuel cell system will see further reductions in weight before the first commercial application.

For a laden voyage, we predict that 117% of our total required fuel supply is produced by natural boil off gas. This means that the natural BOG will be more than sufficient to power the voyage. The additional BOG can be stored for the return voyage in the holding tanks, burned in the boiler to increase efficiency, or incinerated. All of this BOG is accounted for in our economic analysis.

For the ballasted return voyage, we predict that 72% of our total fuel supply will come from natural boil off gas. This means that additional BOG will have to be stimulated. On the return voyage, a "heel", or small amount of cargo, is left in the tanks of an LNG carrier to maintain their temperature so as to avoid thermal cracking and minimize boil-off during the next cargo loading operation. Our design requires that a slightly larger amount remain in the tanks, with the extra being allocated for power generation during the return voyage. In addition to stimulated BOG on the return voyage, extra BOG may be left over from the laden voyage and stored in the holding tanks. This could reduce the amount of retained LNG needed for the ballast voyage, thereby increasing the amount of cargo delivered.

On a round trip voyage, we have estimated that approximately 3% of the total cargo loaded is ultimately used as fuel. This can effectively be treated as a 3% reduction in the cargo carrying capacity of the vessel, but the cost is offset by the fact that no money is spent on traditional fuel for the round-trip voyage. The ship in Van Doren's thesis seems to act similarly, as he makes the assumption that no HFO will be burned in the engines on the round trip voyage and power will be supplied primarily from BOG. For our purposes we are assuming similar amounts of cargo delivery between the two cases.

Van Doren's thesis estimated that a DFDE system would spend approxi-

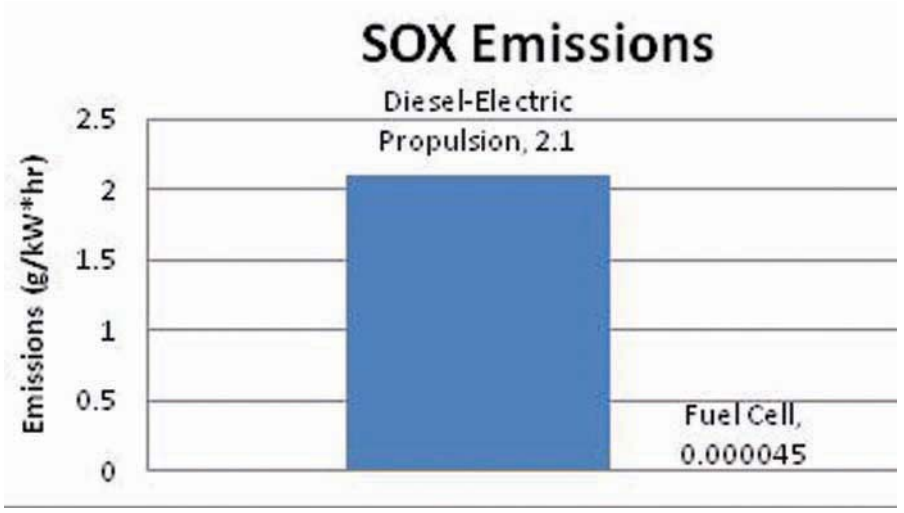


Figure 3: Sulfur Oxide Emissions Comparison

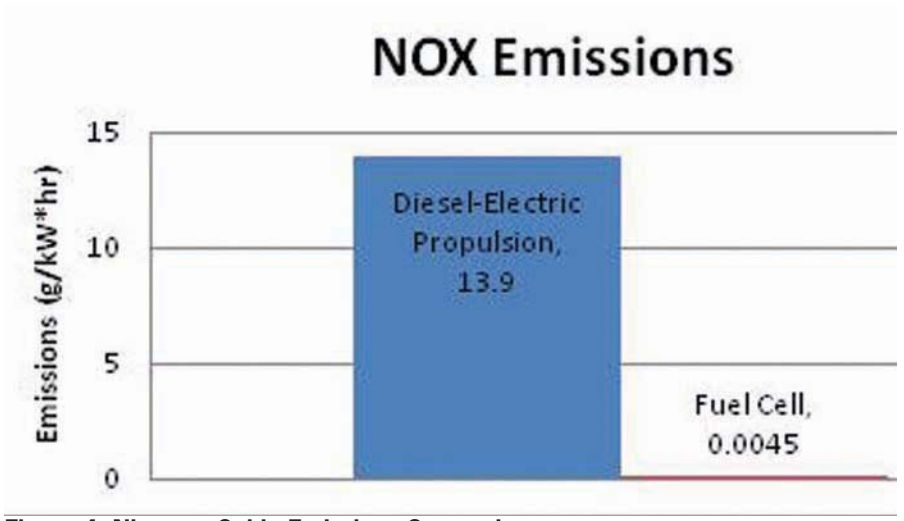


Figure 4: Nitrogen Oxide Emissions Comparison

mately $765,000 on a roundtrip voyage, not including maneuvering and port operations. Our system will spend approximately $655,000 on a similar voyage assuming 3% consumption of LNG, which results in a 14% savings of approximately $110,000 per voyage. Over the course of the year, a ship with a similar operating profile would save about $1,250,000.

Our cost analysis confirms our expectation that money will be saved during transit by using a fuel cell system instead of a DFDE system. Capital costs for the fuel cell system will likely be much higher than those for a DFDE system, even when the technology is ready for its initial application. However, with such large savings in fuel costs, it may be possible to recoup that cost and make the system more economically competitive. If its lifetime cost can be within the range of that of a diesel, other advantages like environmental cleanliness could make it a very desirable option. Eventually, as further investment is made in this technology, engineering advances and the benefits of mass production should radically decrease the costs from their current values.

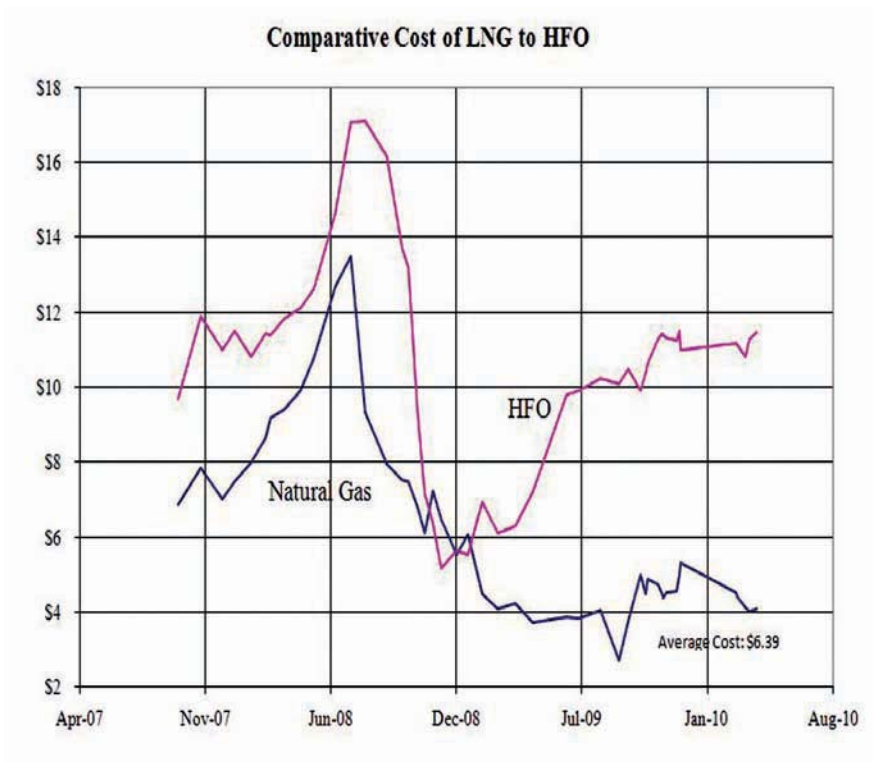
We would have liked to give an estimate of the cost of this system, so as to draw a more thorough analysis between it and existing ships. However, the technology is only just being applied commercially and many corporations closely guard data on costs. We have had difficulty obtaining any reasonable estimate for a system of this size, or for a comparable system that could be scaled for this application. However, we have estimated the net present value of the fuel savings over a 20 year life to be between $10.7 and $15.6 million. This is a significant amount of savings, a portion of which could be applied to the capital cost of the fuel cell system to offset any price difference between it and a DFDE system.

There are other advantages to the fuel cell system that make it more desirable for shipboard application. The reduced emissions make this a clear leader in environmental cleanliness. With increasingly stringent legal and financial implications for ships that produce harmful emissions, it is in the operator's best interests to ensure that his ship is as "clean" as possible. The fuel cell system not only fulfills all current and pending legal restrictions on CO2, NOX, and SOX emissions, but it far surpasses any other propulsion choice

After comparing available experimental emissions data, we determined that our system would emit only about 45% of the carbon dioxide, 0.002% of the SOX, and 0.033% of the NOX of a comparable DFDE system. Please see Figures 2 -4 below. These values assume that some MDO is being burned in the DFDE case, and that the LNG fuel and fuel cell exhaust contain a

We were unable to find any thorough documentation of the byproducts resulting from fuel cell creation. These products could influence the fuel cell's absolute environmental impact. However, that is not within the scope of this analysis. Ship operators generally do not account for the lifetime "carbon footprint" of their propulsion systems, although in the future it could be a consideration in the event that proposed "carbon taxes" are implemented. This could result in higher capital costs because of the carbon taxes paid during the fuel cell production process, the burden of which would be shifted to the buyer. However, because we have not found any concrete research into the byproducts of fuel cell production versus diesel engine production, it is impossible for us to draw any real conclusion on this topic, other than to note that it should be investigated while implementing the system. The real concern for a business is the relative environmental impact of a propulsion system choice after purchase, in which case a fuel cell system is the obvious decision.

In conclusion, we believe that fuel cell technology is readily adaptable for shipboard applications, especially as a main propulsion plant for an LNG carrier. It carries with it a promise for a brighter future of reduced emissions and cost savings, while allowing for increased efficiency and flexibility in ship design. We hope that our research inspires others to investigate this technology.

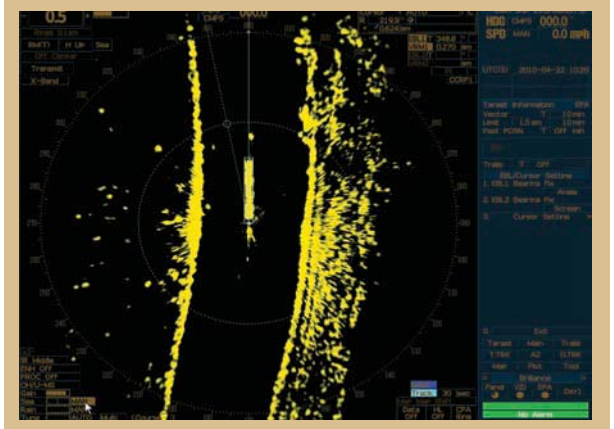


Dusty Rybovich *is currently a Senior at Webb Institute. After graduation, he hopes to work in Chile for a year with a program that teaches English to children.*

Michael Cariello *studies Naval Architecture and Marine Engineering at Webb Institute, from which he will graduate in June 2010. He plans to further his engineering knowledge and experience through professional research.*

JRC America

Debuts of New River Radar



JRC America, in a joint development effort with Campbell Transportation, introduced a new generation of the JMA-5200MKII and JMA-5300MKII, into the inland waterway market. To fully assess the products, evaluations were performed on actual shipboard environments on three vessels: Bill Stile; Georgetown; and Allegheny, in separate locations on the lower Ohio, Allegheny and Kanawha Rivers. The test on actual working vessels allowed operators to address their concerns in a real-world environment, specifically their concerns with poor close target image quality, ghost echoes, primarily caused by barges and power lines, and riverbank outlines with their current systems.

"We are making progressive efforts to better the situational encounters of our vessel operators by seeking out, testing, and providing our fleet with the best equipment available," said Tim McCahill, Director of IT and Communications, Campbell Transportation Company.

In addressing the needs of Campbell Transportation Company (CTC), JRC presented the opportunity to test market the JMA-5200/5300MKII systems on CTC vessels. This testing was performed simultaneously using JRC equipment in conjunction with the current systems to provide a clear evaluation. Most notable improvements included barge icons allowing the tug to see the barges (available in different sizes) on their screen while navigating; notable echo quality, even in poor weather conditions; superior radar picture quality; and the ability to display the radar screen in a portrait mode while featuring the statue mile and rate of turn indicator on the display. Available in June 2010, the new generation of JMA-5200MKII/5300MKII are the first systems to be marketed exclusively to the inland waterway market.

"With the recent push to move more commerce from the roads to rivers in an already populated river system, it is extremely important the captains and crew have the best technology available. This industry has been neglected, navigating with a basic open water radar product. Unlike Europe with the Rhine River specification, the U.S. has not mandated any such provisions," said John Schwiering, Regional Sales Manager of JRC America. As always, the JMA-5200/5300MK II is also equipped with the Constaview feature, offering in-house tornado technology, that uses three high-speed processors, allowing smooth image rotation within milliseconds, ensuring top-quality picture and split second speeds to ensure the safety of the crew and vessel.

For more information, Email sales@jrcamerica.com

At SMM 2010

'Green' Technologies Center Stage

*Last month MR's **Henrik Segercrantz** traveled to Hamburg for an exclusive preview of the SMM 2010 exhibition.*

The SMM international trade fair for shipbuilding, machinery and marine technology will take place in Hamburg, Germany, on 7-10 September. This year much focus will be on environment-friendly technologies and products. The supporting program for **SMM 2010 will for the first time this year include the Global Maritime Environmental Congress (gmec), and the Offshore Dialogue,** which will also look into maritime technologies for offshore mining and wind farms. The semi-annual mega-size event is now arranged for the 27th time by Hamburg Messe und Congress GmbH, owned by the City of Hamburg.

In 2008, SMM attracted 53,000 visitors from over the world. "We expect the same number this year," Peter Bergleiter, Project Director at Hamburg Messe, told Maritime Reporter. There will be some 2000 exhibitors from some 60 countries, exhibiting in the eleven permanent halls and some outside areas of the exhibition, in downtown Hamburg. "In 2008, we used for the first time the whole 90,000 sq.m. (967,000 sq.ft) trade fair area for SMM. The area cannot be extended further," Bergleiter said.

The number of national pavilions at SMM has increased to some 30. A joint US and Canada Pavillion will again this year be set up for some twenty-four companies and the U.S. Dept. of Commerce and in all at SMM, more than fifty companies plus a number of agent and distributor representatives for North American products.

Efthimios E. Mitropoulos, Secretary-General of the IMO is to be the main speaker at the opening of SMM 2010 and the gmec environmental congress on September 6th, with Germany's Chancellor Angela Merkel acing as patron. Gmec is to be held during the first two days of the trade fair. David Dingle, Chairman of the European Cruise Council and CEO of Carnival UK, is to open the congress, which will gather representatives from the shipping, shipbuilding and port sectors as well as from the IMO, European Commission and related authorities worldwide. The panels of the congress are to be headed, apart from Dingle, by Hermann J. Klein, ISACS Chairman and Member of Germanischer Lloyd's Board, Tom Broadley, Managing Director at Lloyd's Register of Shipping and Emanuele Grimaldi, CEO at Grimaldi Group. Chairmen at gmec are Micky Arison, Chairman and CEO of the Carnival Group, Spyros Polemis, Chairman of the International Chamber of Shipping and Corrado Antonini, chairman of Fincantieri. Gmec 2010 is to bring together the stakeholder to identify the status quo and to show ways to move forward in global environmental protection.

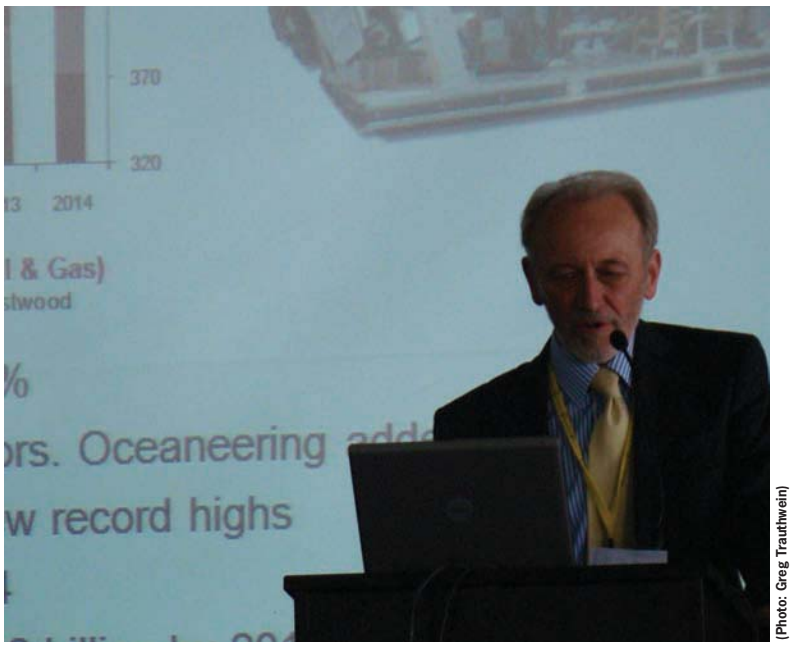
Another new event is the Offshore Dialogue, a two-day workshop to be arranged on September 8th and 9th, with lecturers of international standing from the industry, institutions and associations. Participants are expected from the shipping and marine equipment industry, oil and gas and also wind energy sector, as well as from shipping companies and research institutes. According to figures by Douglas-Westwood Ltd, $167 billion is to be invested in only the deep-water sector between 2010 and 2014, and increase of 37% from the previous five year period. The investments in the offshore wind energy sector is estimated at $30 billion in Europe alone, by 2030, and $2 billion just in 2010, according to Trendresearch GmbH. John Westwood, Chairman of Douglas-Westwood Ltd is to open the conference. The Oil & Gas Dialogue will look into the market potential and current and future requirements for special-purpose ships for the offshore industry.

The Deep Sea Mining Dialogue will focus on the resources and technologies in this sector, and the Offshore WindEnergy Dialogue will look at the markets and technologies for special-purpose vessels for installation and maintenance.

The International Ship Finance Forum is to be arranged, already for the third time, on September 6th. The theme this year is "The Future of Ship Finance - Crises and Chances". With lecturers from the maritime sector and the financial world the Forum will cover subjects like winners and losers after the financial crisis, the new conditions and long-term ef-

Hamburg Messe in Germany will once again host the world's largest commercial marine event, including more than 2,000 exhibitors and 53,000 visitors.

From left: James M. Hunn, Martin Stopford, Lars Gorvell-Dahll and Bernd Aufderheide



(Photo: Greg Trauthwein)

John Westwood, Chairman of Douglas-Westwood Ltd., pictured delivering the Keynote Address at the recent OceanTech Expo (www.oceantechexpo.com), held May 25-27, 2010 in Newport, RI. Westwood will open the new "Offshore Dialogue," a two-day workshop to be held September 8-9, 2010 in conjunction with SMM'10.

fects for ship financing, the crisis and the position of the KG models and rescue schemes which really work for this sector. The marine engine industry's CIMAC Circle panel discussion will this year be held on September 9th, around the topic "Total Cost of Ownership of Marine Propulsion Engines". SMM has traditionally been the meeting place for a number of events. This year a total of some 150 conferences, workshops, symposia and meetings are to be held.

This year, a new online visitor service system is to be set-up (from August, at www.smm-hamburg.com) for connecting visitors and exhibitors and help setting up meetings.

Optimism on the Horizon

"Trade fairs mirror the market," Bernd Aufderheide, President and CEO of the organizer Hamburg Messe und Congress GmbH, said when talking about the current mood of the shipbuilding industry. If the full booking of SMM is an indication, Aufderheide's words were good news for the audience of a recent advance press conference organized by SMM. "One of the aims is to provide a better understanding of the issues by all," Captain James M. Hunn, steering committee member at the global maritime environmental congress gmec, and SVP Maritime Policy and Compliance at Carnival Corporation & plc, said, about goals of the gmec. "When it comes to environmental stewardship and sustainable operations, the maritime industry is part of the solution, not part of the problem," he said. Lars Gorwell-Dahll, Vice-Chairman of the European Marine Equipment Council and SVP, Corporate Business Development at Kongsberg, noted that marine equipment can influence on all environmental aspects of a ship's lifecycle.

Dr. Martin Stopford, MD at Clarkson Research Services, provided his views on the state of World Shipbuilding: **The weak performance in shipping rates has moderated in 2010, and the earning index has recovered to $18,397/day from $11,330/day in 2009. In May 2010 the ship orderbook was 489mdwt down from the peak 619mdwt of 2008.** "No one knows exactly the destiny of all existing orders," he though said. The price of a VLCC is now $101m, but is edging up again. Although a slight pick up in ship contracting, it is still very slow, only $4.6bn during the first quarter. Bulk carriers dominate investment, with $3.5bn worth of contracts in the first quarter, compared with $0.9bn worth of tankers and no containerships. In 2009 new ship contracts were signed for $26bn and in 2008 for $160bn. Marine equipment orderbooks are estimated at $212bn in 2009 with sales $23bn. Stopford still sees **an increase in shipyard capacity from 116.7mdwt in 2009 to 143mdwt in 2010**, though more slippage remains likely. In 2009 shipbuilding deliveries increased by 29% to 116.7mdwt, but a scheduled 61.3mdwt were not delivered.

In 2009 China jumped into second place with 27% of ship deliveries, overtaking Japan with 21%. Korea lead with a market share of 35%. China might overtake Korea in 2010, measured in cgt. "But this is a small margin in a very uncertain situation, so we will have to wait and see what happens," Stopford noted. **The world fleet is estimated to grow by about 7% in 2010 and 8.7% in 2011, to 1,443mdwt. This is an increase by 42% in five years.**

"Given this growth the future business climate in shipbuilding and marine engineering depends on a strong sustained recovery in the world economy," Stopford concluded.

Expansion North means contending with

Icebergs Across the N. Atlantic

From the first voyages across the North Atlantic, icebergs have been a major threat to shipping interests. The most famous disaster was the sinking of the RMS Titanic on April 15, 1912. On her maiden voyage from Southampton to New York, the vessel struck an iceberg approximately 400 nautical miles south of Newfoundland, Canada. Less than 3 hours later the Titanic sank beneath the surface, taking with her over 1500 passengers.

There were many other ship-iceberg accidents before the Titanic. On April 14, 1897, the French Brigt Vaillant collided with an iceberg near St. Pierre (French territory south of Newfoundland). Seventy-eight lives were lost with only four survivors who were picked up seven days later (Hill, 2005). On February 19, 1893, the SS Naronic struck an iceberg in a snowstorm across the Grand Banks, killing all 74 people onboard (Hill, 2005). More recently, on March 18, 2000, the Shrimp Trawler BCM Atlantic sank approximately 240 km east of Goose Bay, Labrador. The vessel struck a bergy bit (small iceberg) while in heavy snow. Everyone on the vessel was rescued safely (Hill, 2005).

However, it was the sinking of the Titanic that spurred the global marine community to create an iceberg patrol. The first ice patrol was sent by the United States Coast Guard in 1913 utilizing two Cutters. From then on, the International Ice Patrol (IIP) has been providing prudent iceberg information to vessels transiting the North Atlantic shipping lanes.

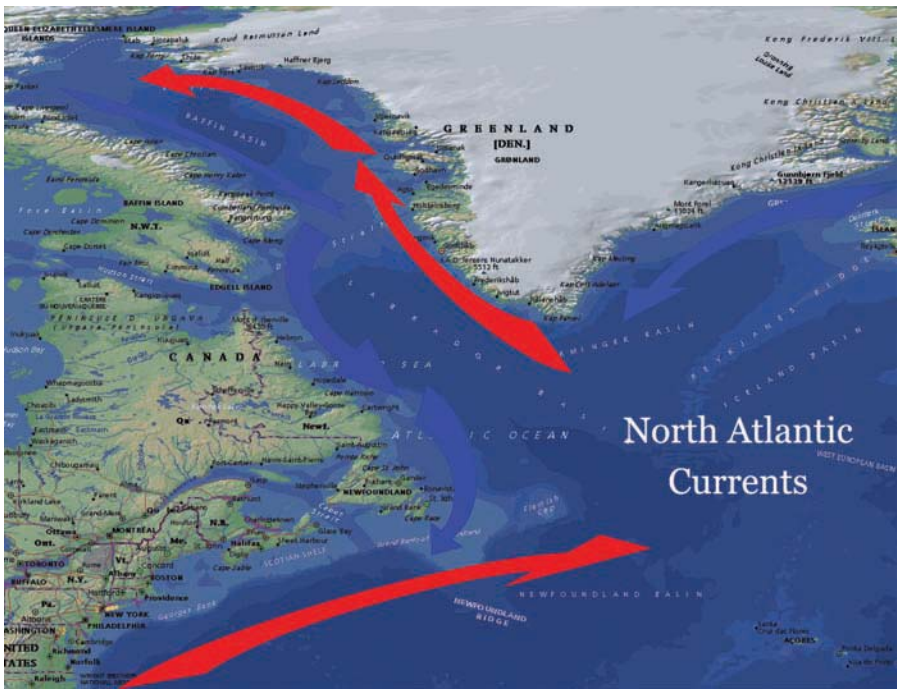


Figure 1. Main current systems for the North Atlantic which contribute to iceberg movement.

Icebergs Defined

An iceberg is a large piece of ice that has broken away (or calved) from a glacier and is at least 5m above sea level. Icebergs are categorized by size from very large (over 75 meters high and 200 meters wide) to growler (less than 1 meter high and less than 5 meters wide). Approximately one-tenth of an iceberg's mass is above the surface. Icebergs are usually 20% to 30% longer under water than above and twice as deep as they are long at the waterline (mollybawn.com/icebergs.html). About 90% of icebergs found near Newfoundland and the Grand Banks come from the glaciers of western Greenland. The remaining 10% come from the East Greenland glaciers and the ice shelves of northern Ellesmere Island (International Ice Patrol). By the time an iceberg reaches the Grand Banks, it has already lost approximately 85% of its' original mass. After being calved off the glaciers of western Greenland, icebergs are transported 1800 nautical miles over a 2-3 year period along the Baffin Island and Labrador currents before reaching the Grand Banks of Newfoundland. Once the icebergs reach the waters of the Gulf Stream, they melt rapidly. Occasionally an iceberg can be transported across the Gulf Stream waters in cold water eddies with minimal melting, though this is fairly rare.

Iceberg season for the North Atlantic

Across the Grand Banks, the most active months of the iceberg season (from March to May) create the most problems for shipping lanes across the North Atlantic. During a typical season, icebergs can migrate as far south as 39N across the Grand Banks. The farthest south an iceberg has been spotted was in 1926 near 30-20N/62-32W, approximately 150nm northeast of Bermuda. Vessels typically maintain at least 30 to 60 nautical miles safe berth south of the limit of all known icebergs as issued by the IIP, which usually means additional distance steamed for trans-Atlantic vessels proceeding to Newfoundland, Nova Scotia, and New England.

The International Ice Patrol (IIP) monitors the shipping lanes of the North Atlantic near the Grand Banks for icebergs year round. During the iceberg season, which generally runs from February 15 to June 1, iceberg advisories and charts are issued by the IIP.

These advisories delineate the southern limit of all known icebergs and show the icebergs' location and density. This information can be accessed by going to the IIP's website at www.uscg-iip.org. In the summer and fall months, when icebergs are usually north of 50N, the Canada Sea Ice Patrol (http://iceglaces.ec.gc.ca) provides daily bulletins on the latest iceberg limits.

Advances in Iceberg Detection

Before the sinking of the RMS Titanic, the detection of icebergs was not an exact science. If a master saw an iceberg, he would report the date, time, and location and submit the information to the Hydrographic Office. The Hydrographic Office (during the iceberg season) would produce weekly charts of iceberg locations and climatological tracks. Of course the coordinates of the icebergs were not exact in the early 1900s as ships used celestial navigation to estimate their location. Also, currents and winds cause the icebergs to move on a daily basis, which creates large discrepancies in their location.

In 1912, after the sinking of the RMS Titanic, the US Navy initially patrolled the North Atlantic for icebergs before the Coast Guard and the IIP replaced them in 1913 (Carlson, 2006). In 1943, the first trained ice observers were sent on an aircraft to detect icebergs. Shortly after that, in 1945, radar was also used in experiments to detect floating ice. In 1995, RADARSAT-1, Canada's first earth observation satellite was launched. The satellite images created by RADARSAT-1 are used to detect white spots along the ocean surface (these are known as radar targets). If a radar target is inconclusive, the IIP investigates further by flying over the coordinates of the given target to confirm if it is an iceberg or not. RADARSAT-2 was launched in December 2007 and has the capability to acquire better iceberg images with ultra-fine spatial resolutions (J.J. van der Sanden, 2004). Reconnaissance flights are still made on the average of five days every two weeks to confirm the southern limit of the iceberg area and to track individual icebergs (IIP).

Safely navigating ships away from icebergs

Vessels typically maintain at least 30 to 60 nautical miles safe berth south of the iceberg limit issued by the IIP. This means added distance and extra fuel consumed. During the peak of iceberg season, vessels must navigate south of the typical shortest routes, passing south of the icebergs, which typically reach as far south as 39N.

The added distance means added cost to owners or charterers due to additional steaming time and more bunkers consumed, though this is a small price to pay compared to striking an iceberg and severely damaging or sinking the vessel.

However, vessels do travel through the iceberg limits at times. Icebergs are known to be located in groups (due to prevailing currents and winds as they break-up). Frequently there are broad areas within the iceberg limits where there are no known icebergs. Vessels have been known to transit across this area cautiously, however weather conditions must be ideal for this to occur. Especially in the spring and early summer, low visibilities due to fog frequently occur across the Grand Banks (fog across the vicinity caused by the interaction between the cold Labrador current and the warm Gulf Stream). Vessels will not risk traveling through the iceberg limits in these conditions, as visual detection would be extremely limited.

Conclusion

Icebergs remain a major threat to shipping lanes across the North Atlantic. However, since the sinking of the RMS Titanic, there has been better detection and monitoring of icebergs thanks to the IIP and continuing advances in radar and satellite technology. With RADARSAT-2 in place, smaller icebergs are now being detected. These tools helps the IIP produce better iceberg warnings, which in turn allows for increased vessel safely while minimizing extra distance steamed and fuel consumed. Despite the improvements in technology that monitors and detects icebergs, vessels must continue to use extreme caution during the iceberg season when navigating near the Grand Banks.

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Joshua J. KearnsJ, Marine Meteorologist at Weather Routing, Inc. Glens Weather Routing, Inc. (WRI) can be contacted via email at wri@wriwx.com or phone at (518)-798-1110.

The Gulf of Mexico Oil Spill

Few Delays, but Owners Brace for New Regs

By Susan Buchanan

As oil from BP's sub-sea well laps coastal Louisiana, most ships in the Gulf have avoided contact with the spill but owners fear that regulations will be tightened after the disaster, raising their costs.

"We've seen no delays from the spill, and it hasn't affected the operations of any of our ships," said Dean Taylor, president of Tidewater Inc. in late May. Four vessels owned by Tidewater, which is headquartered in New Orleans, have been involved in recovery efforts. The company's work boat Damon B. Bankston rescued 115 crew members from BP's Deepwater Horizon platform when it went up in flames in late April.

"Two of our boats have delivered topkill and dispersants to the spill site," Taylor said. BP used topkill or heavy mud to try to plug the flow of oil from its underwater well. Meanwhile, another Tidewater boat, the M/V War Admiral, is monitoring ocean currents on behalf of BP to watch the direction of oil plumes. With 394 vessels, Tidewater owns the biggest, international fleet devoted to the offshore-energy industry.

At the Mississippi River's mouth in Venice, La., Captain Michael Fitzpatrick, stationed with Associated Branch Pilots, said "so far we've been extremely lucky and have seen few delays to traffic." Branch pilots guide vessels through the lower part of the river. "One inbound ship that was drifting because of engine damage had to be decontaminated" or cleaned, he said. "And an outbound passenger ship was decontaminated to meet requirements at its next port."

Fitzpatrick said ship crews read the spill information posted daily on the National Oceanic and Atmospheric Administration's website to navigate around waterborne oil. "Crews on inbound ships that we've encountered entering the Mississippi River say they've seen very little oil," he said in late May. "But other ports are starting to require that ships coming from the Gulf and the mouth of the Mississippi be decontaminated."

Reports in early May of spill-related delays to shipping a huge, space-shuttle fuel tank by water from the Michoud Assembly Facility in New Orleans to the Kennedy Space Center in Florida were inaccurate, the National Aeronautics and Space Administration said in early June. The tank's departure on the NASA barge Pegasus was delayed by a few days because of high winds in the New Orleans area, not the spill, according to a NASA spokesman.

Cleaning Stations Opened for Vessels

In the New Orleans suburb of Metairie, Kevin LaGraize, president of Southport Agencies Inc., river steamship agents, said, "we haven't experienced problems or delays to vessels so far. The Coast Guard has contingencies in place, including stations for cleaning hulls of any ships that need it so that oil isn't tracked into the river." A light, oil sheen has been seen intermittently in the area near the entrance to Southwest Pass, the main, deep-draft passage to the Mississippi River, Port of New Orleans spokesman Chris Bonura said in late May. "Generally, however, vessels have been able to either avoid affected areas, or oil hasn't clung to their hulls," he said. If boats do need cleaning, four stations have been opened in shipping lanes that are either in or lead to the Mississippi River, and cleaning stations have been set up at other Gulf Coast ports too.

(Photo © BP p.l.c.)

Contractor crews remove DeCon bags from the sands of the South Pass of the Mississippi River.

"Should it become necessary, the focus will be on cleaning vessels quickly to accommodate maritime commerce with minimal delays," Bonura said. "One tanker that was contaminated had to anchor in an affected area, and was delayed for about thirty minutes so that it could be cleaned. But no vessel calls have been canceled and no ships have been diverted to other ports."

The three, inbound cleaning stations include one that's four miles below Southwest Pass and able to knock heavy material off vessels coated with thick oil. A station in Southwest Pass is for ships in transit that need pressure washing, and one is located in the Venice-Boothville, La. area for anchored vessels. An outbound, offshore station using pressurized water to clean hulls of boats is located near a shipping lane outside of the spill. On the Gulf Intracoastal Waterway, a cleaning station at mile-marker 33 has been established in case transiting vessels have to be cleaned.

Paul Clancey, district manager at Transmarine Navigation Corp., a steamship agency in Gretna, La., said "the oil spill hasn't affected my business or accounts. Some foreign vessels may be staying away from this region based on the perception that that they could get stuck or slowed in the Gulf or lower Mississippi River. But they're simply erring on the side of caution."

In the wake of the spill, industry members anticipate a spate of new regulations. At Offshore Marine Service Association in Harahan, La., president Ken Wells said "we hope that Congress doesn't rush to judgment and make bad law just to pass a law." OMSA represents owners and operators of U.S. flag supply vessels that support offshore energy.Congress is considering changes to the $75 million, oil-spill liability cap, enacted after the 1989 Exxon Valdez spill, Wells noted. And some Congressional members want no cap at all, he said. "But with unlimited liability, insurance underwriters would leave the market, and without insurance no vessel owner would transport oil." Wells continued, saying "vessel owners are concerned about what will happen with regulations that the Coast Guard was revising long before the oil spill. They are particularly concerned about what might happen to the Subchapter N regulations — which govern activity at offshore drilling and production facilities and which the Coast Guard has been revising for some time." Updating those rules has had industry support, he said. "But in the current environment, there's a real danger that the Coast Guard will be under pressure to rush out the regulations, without having adequate time to consider their complexities or to hear from the public."

(U.S. Navy photo)

Tugboat Janet Colle pressure washes the exterior of USCGC Harry Claiborne (WLM 561) of residual oil after an oil clean up mission.

Wells also said "for vessel owners, there is an added risk of being swept into a process that really does not apply to us. Our vessels are already covered by very stringent, Coast Guard regulations, and our overall safety record shows that those regulations are the right fit for our operations." He worries that vessel owners will be included in new efforts to regulate drilling and production safety.

Another concern of OMSA members, Wells said, is about the spill's impact on the structure of the Minerals Management Service and Interior Dept. and the number of oil-drilling leases. "The Dept. of Interior's organizational chart may not have a direct impact on OMSA members but anything that affects customers of vessel companies affects the whole industry," he said.

The Obama Administration has proposed dividing the MMS, which has been criticized for being too cozy with the offshore oil industry, into three agencies. One would inspect rigs and enforce safety, another would oversee leasing and development of offshore drilling, and a third would collect the billions of dollars in government revenues from drilling. Taylor of Tidewater said he believes that "transportation of oil provides a much greater, ecological risk than oil exploration and production do." He worries that regulations will be passed that discourage offshore drilling, forcing companies to move operations to other nations and making the U.S. more dependent on foreign oil. On May 6, U.S. Interior Secretary Ken Salazar ordered a halt to new, offshore-drilling permits, and President Obama extended that ban in late May.

In early June, it looked as if BP's sub-sea well might keep gushing into July or August. "And once the well is capped, we'll still be watching winds to see which way the oil blows" for shipping interests, LaGraize said. Storms during the June to October hurricane season could push oil further into marshes near the Mississippi River, up into canals and lakes, and to other ports, he and others said.

Ohmsett Provides Comprehensive

Oil Spill Responder Training

Ohmsett – The National Oil Spill Response Research & Renewable Energy Test Facility offers a comprehensive training program for oil spill responders. In partnership with the U.S. Coast Guard, Texas A&M University National Spill Control School, and SL Ross Environmental Research Ltd., Ohmsett provides training in U.S. Coast Guard Class C Response Technician training, Oil Spill Response and Strategies Training (in English and Spanish), and Dispersant Training for the Oil Spill Responder. Training emphasizes classroom exercises and practical hands-on use of the oil spill equipment in realistic marine conditions. Following classroom instruction, students receive hands-on training in the tank recovering real oil with full size oil spill recovery equipment in both calm water and in harbor chop conditions. The two principal efficiency measures are Oil Recovery Efficiency (ORE), and Throughput Efficiency (TE). Oil Recovery Efficiency is the percentage of the volume of oil recovered divided by the volume of fluid (oil plus water) recovered. Throughput Efficiency is the volume of oil recovered divided by the volume of oil encountered. A high ORE score indicates that the fluid recovered by the student contained a high percentage of oil and a low percentage of water. A high TE score indicates the student was able to recover a high percentage of the oil that was spilled. In partnership with SL Ross Environmental Research Ltd., Ohmsett conducts hands-on dispersant training for oil spill responders. This two-day course emphasizes practical experience in full-scale dispersant applications using the Ohmsett dispersant testing protocol and dispersant effectiveness monitoring using the U.S. Special Monitoring of Applied Response Technologies (SMART) visual and fluorometry methods. Portions of the training are designed to meet the needs of U.S. Coast Guard Strike Force Monitoring Teams. Training focuses on practical experience dispersing oil slicks of crude oil under near-at-sea conditions in the Ohmsett tank. There is a brief refresher on dispersants and effectiveness, as well as a discussion of new developments in dispersants followed by a full day of experience spilling oil and dispersing the slicks in Ohmsett's tank, making observations of effectiveness on untreated and dispersed slicks as per the SMART dispersant effectiveness monitoring protocol, familiarization with a Turner C3 submersible fluorometer and Turner 10-AU digital field fluorometer.

www.ohmsett.com

MPV to Enter Service in Vietnam

Damen's new Multi Purpose Vessel, suited for oil spill response, is set to enter service in the next few weeks in Vietnam after undergoing sea trials. Kitted with two large sweeping arms, this reportedly is the first time an oil spill response vessel of this type has been operated in Asia. Built by Song Thu shipyard in Danang in Vietnam under a DAMEN license, the MPV 5212 will be deployed by Vietnam's Oil Spill Response Centre for Central Vietnam. The Vietnamese Authorities are expected to order another two oil spill response vessels and all three will be deployed along the coast of Vietnam.

Damen Technical Cooperation (DTC) provided the engineering and material package and the drawings for the MPV 5212 to allow Song Thu to build the complete vessel. Thomas ten Hagen, Assistant Project Manager DTC, says Song Thu wanted a good quality, proven design. "This oil recovery system is proven to be very successful and much more effective when compared to other systems."

The MPV 5212 is actually based on a previous DAMEN-designed oil spill response vessel, the 80 m ARCA, which is stationed in the port of Scheveningen and owned by the Dutch Ministry of Transport. Built in 2003, this vessel has already proven its ability to handle oil spills and has worked on several major incidents over the years including the Erika and Prestige disasters.

DAMEN has taken the ARCA concept a step further following input from the crew onboard the ARCA. Ten Hagen said DAMEN decided to boost the oil spill recovery capacity of the MPV 5212, recently named SOSRCEM (which translates as Safety Oil Spill Response Center Middle Region). The input from the experiences of the crew was invaluable in the new design because they are the ones with direct experience of spill incidents, he adds. Schuurman says the MPV also has a good oil separation system onboard which means that oil and water can be separated very quickly.

The vessel is equipped with the "SeaDarq" radar that detects differences in wave patterns, allowing the vessel to identify oil patches day and night. Although the vessel has been designed for a performance speed of 12.8 knots and a Bollard Pull of 45 tons, in recent sea trials the MPV 5212 managed 14.1 knots and a 47.5 ton Bollard Pull.

Arctic-Bound Luxury Vessel

Drawing inspiration from the world of O&G

The Northern Star is a 75m motor yacht built by Lurssen Shipping in Germany which has received an extensive bridge navigation and maneuvering solution from Kongsberg Maritime. With Kongsberg Maritime's systems onboard and a hull-mounted iron reinforcement for ice-breaking, the Arctic expeditions that the Northern Star owner has planned, including the re-tracing of Norwegian explorer Roald Amundsen's route traversing the North-West passage off the coast of Canada, have been made possible. "The owner of the Northern Star has a good understanding of ships, and has been personally involved in the whole decision making process," said Craig Franks, Captain of the Northern Star. "He

Solar Powered Ship

PlanetSolar is an 85-ton, 31m (101.7 ft.) long and 15m (49.2 ft) wide catamaran, covered by 537 sq. m. of solar panels. The futuristic-looking ship is powered by two 10 kW electric motors. On board it has what is reported to be the world's largest lithium-ion battery, with a power storage capacity of 2910 Ah and a weight of 11 tons. In total, PlanetSolar can travel 1,000 km without sunlight. PlanetSolar has a top speed of 14 knots (25 km/h) and can house around 40 guests. It produces zero environmental pollution and the ship moves noiselessly. The Knierim Shipyard together with HDW constructed the ship in Kiel, Germany. PlanetSolar is an initiative of Swiss national Raphaël Domjan, president and skipper of the ship. Jean Verne, the great-grandson of Jules Verne is one of the project's "godfathers." This is the first ship to undertake a cruise around the world powered entirely by solar energy. The 50,000 km journey is expected to take 140 days at an average speed of eight knots (15 km/h). The planned route is via the Atlantic Ocean, through the Panama Canal, across the Pacific and Indian Oceans, and home via the Suez Canal and the Mediterranean Sea. "Energy Consciousness Stops" will be made amongst others in New York, San Francisco, Darwin, Hong Kong, Singapore, Abu Dhabi and Marseilles. Imtech is acting as technology partner on PlanetSolar and is responsible for the project management, engineering, implementation and commissioning of the high-tech energy distribution system, the technology that provides for charging the lithium-ion battery, the alarm and monitoring system and the cable system. In the U.S., Imtech is involved in an ecological sightseeing boat powered by a combination of solar energy and sustainable electrical propulsion. Together with Feadship (designer and builder of luxury yachts) and MTU (builder of ships' engines), Imtech is researching the possibilities of constructing "green" luxury megayachts.

Imtech N.V. is acting as technology partner of PlanetSolar, a solar energy powered ship. In 2011, PlanetSolar will set sail on a world cruise of approximately 50,000 km to promote solar energy and the use of environmentally-conscious alternative fuel for sailing. Photo courtesy Imtech Marine Group

wanted to use the offshore market as a reference when choosing systems for the Northern Star, and recommended us to look at equipment from Kongsberg Maritime."

The Northern Star owner's special interest in adventure travel means that it has been designed to sail anywhere in the world. Because of this, special features have been implemented, such as a large fuel range and extra insulation for extreme climates and cold water, in addition to the Kongsberg Maritime systems.

Kongsberg Maritime was chosen to deliver systems for navigation, Dynamic Positioning and thrusters control aboard Northern Star. Within this, the scope-of-supply included: K-Bridge MULTI, a multi functional operator station for the bridge; K-Bridge conning display for efficient monitoring of all key information; K-Bridge operator and planning stations; steering functions; radio/GMDSS; cJoy operator terminal; K-Thrust thruster control system; bow thruster and pump jet.

Kvichak Marine Delivers P/V Yellow Rose

Kvichak Marine Industries recently delivered P/V Yellow Rose, a 77.8 ft x 21.6 ft Pilot Boat for operation by the Houston Pilots on the Houston Ship Channel – the largest landlocked port in America. The vessel is designed to operate as a

pilot launch transporting pilots to and from a shore side dock and the Houston Pilot's SWATH, and to perform pilot transfers to commercial vessels.

Designed by Camarc Design, UK, the all-aluminum vessel is powered by twin Tier II Cummins QSK-38 engines rated for 1,400 bhp each, which are coupled to ZF 4600 transmissions driving twin Hamilton 651 waterjets. This combination allows for excellent maneuverability and a top speed of about 29 knots when fully loaded.

Additional vessel features include:
Lengh, o.a. .....77.8 ft
Beam, o.g. .....21.6 ft
Draft (RFS) .....3.5 ft
Fuel capacity .....1,770 gal
Fresh water .....50 gal
Pop-Safe fendering
Rescue platform & A-frame
Day galley & crew accommodations
Northern Lights M55C2 55kW Genset
Complete electronics package

New PSV for Simon Møkster Rederi

STX Europe entered into a contract with Simon Møkster Rederi to build a Platform Supply Vessel (PSV) to the STX Europe PSV 09L CD design. The vessel is scheduled for delivery in 1Q 2012. The new vessel is arranged for regular platform supply duties. In addition it will be arranged for winterized operations with de-icing system and ice class, and also for rescue- and oil recovery operations. Some of the vessels features will be: Oil Recovery in accordance with DNV and latest NOFO 2009 guidelines; Emergency towing arrangements; Rescue of 300 persons in accordance with Norwegian Maritime Directorate (NMD); Prepared for working in winterized areas; AND Dynpos AUTR, dynamic positioning. The vessel is in particular designed for environmental friendly operations with focus on low fuel consumption, and in accordance with Clean Design requirements. Catalytic reactor exhaust

system will be installed for reduced emissions to air. With its new highly optimized hull form and fore ship together with the specified propulsion configuration, the vessel will have particularly good sea-keeping abilities, a fuel efficient transit mode and a good station keeping performance. The hull will be built at STX Europe in Romania, and outfitted at the STX Europe's yard Søviknes.

Main Particulars:
Length, o.a. .....93.5 m
Breath, molded .....19 m
Depth, main deck .....8 m
Deadweight .....4900 tons
Cargo deck area .....1055 sq. m.

Meet The BRAtt

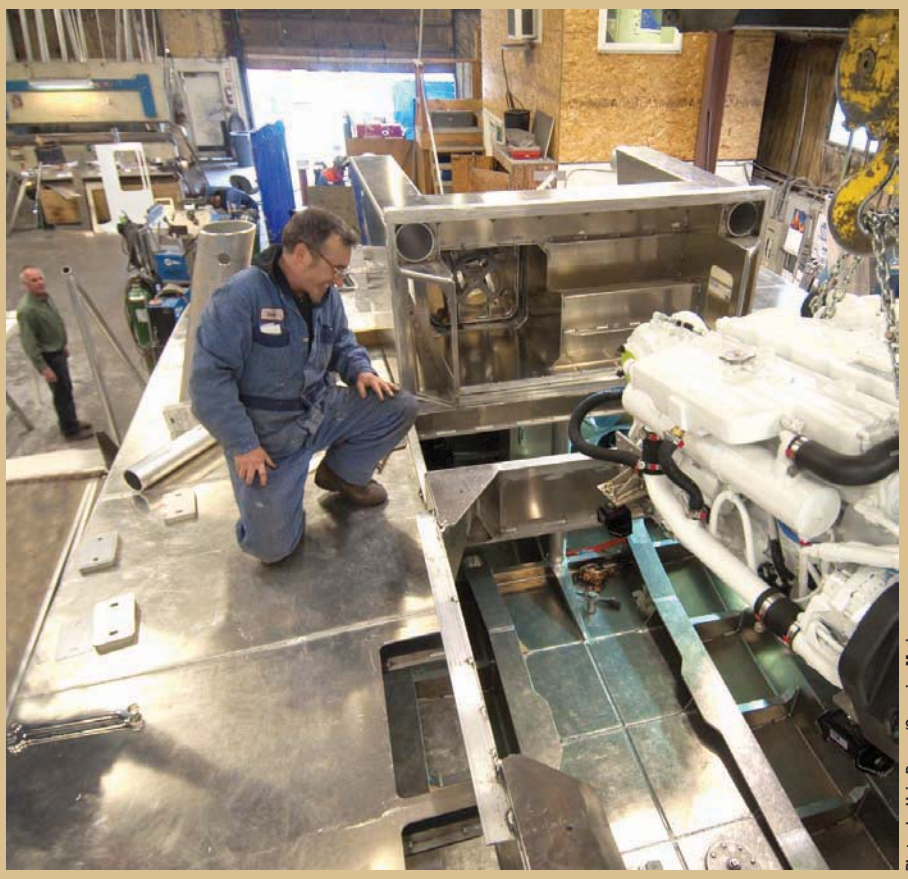
Burchette Robert Allan Training Tug

The BRAtt project evolved from Ron Burchette's training programs for tug operators using radio-remote controlled scale models. **Why not build a model that is large enough for the operator and instructor to ride on and learn in the same space frame of reference as the boat?**

The BRAtt is a 25.6 ft by 14.7 ft. aluminum-hulled training tug designed by Robert Allan Ltd, with the designer's distinctive double-chine hull form. Under the counter of the broad stern the hull tucks in quickly providing good water flow over the twin azimuthing drives located aft in the ASD manner. Forward, a relatively deep bow is augmented by a skeg that makes this an escort capable tug. When complete, the little tug will be able to provide real water training to aspiring assist and docking tug masters without taking an expensive full-size ASD tug off the job. The boat will be fitted with a fully operational Braden hawser winch forward with the Samson tow line passing through a polished stainless-steel staple.

The BRAtt is being built by Adrenalin Marine Ltd. of Delta, B.C., which has been selected as the licensed builder for all BRAtts in North America. The 450-hp BRAtt features most of the same technology and operating systems as similar full-sized Z-drive tugs, so operators can be trained to handle the more expensive and larger tugs that have become common in the world's major ports without putting those major assets at risk.

The propulsion system on the BRAtt is scaled to proportionately represent the full size tugs. It begins with a pair of Cummins QSB5.9-230 HD engines, each delivering 225 hp at 2,600 rpm into engine mounted ZF280.1 gears with 1:1 ratios. To allow for further reduction below the engines' 600 rpm idle, the gears have slipping clutches. Flexible Centa torsional couplings are installed between the engines and their gears. Additional flexible couplings are at either end of the drive shafts to reduce vibration and to accommodate any movement in the flexibly mounted engines. The Z-drives are Olympic Model HD3 with 2:1 reduction. The propellers are 25 3/4 inch stainless



Photos by Haig-Brown/Cummins Marine

in stainless nozzles. Both the engines and the Z-drives are mounted with a five-degree angle upward to the stern. The 450 hp twin-engined tug is anticipated to deliver an 8000-pound bollard pull.

Robert Allan Ltd.'s project manager Michael Burgess said, "We have tried to stay all aluminum for the piping and fittings. Where that is not practical, such as the staple on the bow, we have used stainless. The engine is isolated from the aluminum with stainless shims."

Among the many interesting and innovative features of the BRAtt are the four bollards built to also serve as lifting points for the 16-metric ton vessel. The wheelhouse will be fitted on resilient mounts to provide a lower ambient noise level in the training area. In operation there will be room for at most three people on the boat, but ideally just two. In addition to its training functions, the BRAtt can serve effectively as a real tug, doing smaller towing, docking and line-handling duties, and other harbor tasks such as boom deployment.

BRAtt is equipped with Samson's Quantum-12 rope, one of Samson's most popular towing lines. "Samson is honored to have been invited to participate in this unique opportunity," said Director of Sales Terry Crump. "Just like any towing environment, the student tug operator shouldn't be concerned about the performance of the towline. This is why Samson recommended Quantum-12. It's extremely strong and it grips better than standard HMPE towlines. Quantum-12 is perfect for this little BRAtt." Designed as a flexibile and easy handling 12-strand, Quantum-12 uses Samson's patented DPXTM technology, blending Dyneema and polyester to provide high strength, superior abrasion and cut resistance, and greater grip for use on winches, capstans, and H-bitts than other high modulus polyethylene ropes.

Vessel	BRAtt
Builder	Adrenalin Marine Ltd. of Delta, B.C.,
Designer	Robert Allan Ltd.
Engines	Cummins
Z-Drives	Olympic
Couplings	Centa
Gears	ZF
Rope	Samson

Tug Tommaso Onorato Delivered

Boluda Shipyards – Union Naval Valencia S.A. recently delivered a unique tug dubbed Tommaso Onorato. The ABS-classed vessel is power by a Caterpillar 3516B diesel engine, driving Voith Schneider propulsion units.

Builder . .Boluda Shipyards – Union Naval Valencia S.A.
Type . . . . . .Tug Series UNV 755 VS
Classification . . . . . .ABS
Main Engines . . . . . .Caterpillar 3516B
Power . . . .2000 kW "C-rating" at 1600 rpm 100% MRC
Propulsion units . . . . . .Voith Schneider 28R5/210-2
Generators2 x Volvo Penta D9 MG KC/UCM 274G-1 diesel engine 239 KwM + a 145 KVa 400V, 50Hz
Alternator . . . . . .Stamford
Firefighting . . . . . .2 x Jason Eureka . . . . . .MM602-EED-V-01 monitors . . . . . .2 x FiFi pumps KVAERNER OGF 250x350
Gearboxes . . . . . .Kvaerner Jason SRG C-255 UK CW;
Length, o.a. . . . . .29.5 m
Length, b.p. . . . . .28 m
Breadth, molded . . . . . .11 m
Depth . . . . . .4 m
Draft, molded baseline . . . . . .2.5 m
Draft, max. . . . . .5.8 m
Crew 8
GT 395
Net tonnage 118

Capacities
Gas oil . . . . . .183 cu. m.
Fresh water . . . . . .29 cu. m.
Oil . . . . . .5 cu. m.
Foam . . . . . .27 cu. m.
Ballast . . . . . .26 cu. m.
Speed/Pull Speed . . . . . .13 knots
Bollard pull . . . . . .54 tons
Anchor windlass . . .1 x Ibercisa MAN-E/H/20,5-22-D/2
Towing Winch . . . . . .1 x Ibercisa
Drum capacity . . . . . .150m of 80mm rope
MF/HF radiotelephone . . . . . .SAILOR
EPIRB & radar transponder . . . . . .Kannad
NAVTEX . . . . . .JRC NCR-330
VHF . . . . . .SAILOR RT4800
Echo-sounder . . . . . .JRC
Radar . . . . . .JRC JMA-5310/6 with antenna 6"

Liberty Promise Joins U.S. Flag RoRo Service

Liberty Global Logistics LLC, of Lake Success, New York, announced the inauguration of a three ship U.S. flag RoRo service from the U.S. to the Middle East and Asia. The announcement was made in connection with a naming ceremony to be held at the Charleston Naval Weapons Station in South Carolina of the vessel the M/V Liberty Promise.

Liberty Promise was delivered to its owners in March 2010 in South Korea and is on its maiden voyage. The ship will be loading military equipment and other cargo in Charleston, as well as other U.S. ports, for delivery to the Middle East for Liberty's customers and to support our armed forces overseas. The ship was designed to transport commercial vehicles, rolling stock and project cargo, as well as military wheeled and containerized equipment such as M ATVs, HUMVEEs, MRAPs, armored personnel carriers, tanks, helicopters and unit equipment. When used to carry commercial cargoes, the vessel is capable of carrying up to 6,500 cars on 12 decks.

"We are proud to welcome the Liberty Promise to the Liberty family and especially to have the opportunity to support U.S. military personnel abroad," said Philip J. Shapiro, President of Liberty Global Logistics LLC (LGL).

The Liberty Promise is the sister ship to the M/V Liberty Pride, delivered in September 2009 and will be operated by LGL together with the M/V Alliance New York (2005 built) to provide world wide service for the carriage of military and commercial cargoes.

DSV Caballo Maya Hits the Water

Strategic Marine launched the first of two 143 m Dive Supports Vessels, Caballo Maya (Hull 156) in Vietnam. The vessel was launched on of April 5, 2010, with the second vessel (Hull 157) approximately 90% complete and eight weeks from completion.

"We were originally awarded the contract for Hull 156 in late 2006, and were engaged to exclusively carry out the steel fabrication works on the vessel," said Managing Director Mark Schiller. In late 2007 the Vung Tau based shipbuilder was awarded a contract for an additional vessel (Hull 157). **"Around mid-2008, our client took the decision to change the ship design from a direct drive to a diesel electric configuration.**

Amidst all of these variations to design, we later tendered for the outfit contract for Hull 156, and were successfully awarded the contract in late 2008," Schiller said.

As originally planned the Caballo Maya will be transferred to Singapore, so that cranes and other machinery can be installed.

Ferry Launched by Incat Crowther

Incat Crowther launched the 29m ferry Freedom Monarch, built by Aluminium Marine/Reefmaster Boats. It will be operated out of Rosslyn Bay in Queensland, Australia, by Freedom Fast Cats, servicing the Keppel Islands. The main deck

passenger cabin is a large, light and airy space featuring seating for 182 in a mix of forward facing and booth configurations. On the mid deck, there are 30 external seats and 75 internal seats. Located forward of this is the wheelhouse, featuring excellent visibility over the bow, which aids beach landings and makes for safe loading over the bow. It also features external bridge wing stations for extra operational safety and flexibility during close quarter berthing.

The sun deck is fitted with low benches that allow passenger access to the rails to take in the views. Freedom Monarch is powered by two Yanmar 6AYM – GTE main engines and is propelled by fixed-pitch 5-bladed propellers. The vessel has ample space around the main engine for maintenance and ventilation.

Freedom Monarch Main Particulars

Length, o.a.	95.2 ft.
Length, w.l.	87.9 ft.
Beam (excluding sponsons)	27.9 ft.
Draft, max.	5.5 ft.
Depth	11.9 ft.

Capacities

Fuel Oil (Main tanks)	1,795 gallons
Fresh water	264 gallons
Sullage	528 gallons
Crew	8
Passengers (Internal)	257
Passengers (External)	45
Max. Deadweight	37 tons
Speed	25 knots
Main Engines	2 x Yanmar 6AYM - GTE
Power	950hp / 670kW
Gensets	1 x Cummins 4BT 40kVa, 1 x Cummins 6BT 80 kVa
Flag	Australia

Aker Philadelphia Delivers Tanker

Aker Philadelphia Shipyard delivered its ninth Veteran Class MT-46 product tanker last month to American Shipping Company. The 46,000 dwt vessel, named the Overseas Martinez, left the shipyard under the operation of OSG America to transport petroleum products for Tesoro. A small naming ceremony was previously held to bless the ship and name her the Overseas Martinez.

www.akerphiladelphia.com

King River Class by Foss & Cruz Marine

Foss Maritime and Cruz Marine LLC have partnered to launch the first of the King River class of tug: a shallow draft vessel designed specifically for remote, extreme environments like the north slope of Alaska, the Canadian Arctic and the Russian Far east. "When our customers talk to us about what they need in places like Alaska or the Russian Far East, we listen," said Gary Faber, President and COO of Foss Maritime. "That's why we reached out to Cruz Marine, another company with extensive knowledge of extreme environments. **The Dana Cruz is our answer to the shallow-draft ports, the hazardous weather and the ice you encounter in spades working above the Arctic Circle**." The Dana Cruz is powered by three low-emission Caterpillar EPA Tier 2 engines. The tug was designed by AG McIlwain with an ABS Load Line and is 92 x 36 ft. Built to work in remote, shallow draft environments, Dana Cruz head north to support the summer ice-free construction season in Western Alaska and the N. Slope.

Searching for Solutions

(Continued from page 25)

All products are available for direct purchase under the Federal Disaster Relief program or General Services Administration Contract.

Horizon Marine (www.horizonmarine.com) was tapped to deploy buoys to monitor and track the growing oil spill. In support of NOAA's monitoring and forecasting of the oil spill from BP's Macondo well site, Horizon Marine has been deploying additional Far Horizon Drifting (FHD) GPS buoys to track the dispersion of the oil in the Gulf of Mexico. At NOAA's request, six buoys were deployed from an aircraft on the spill's perimeter, two buoys were deployed into the slick and two buoys between the slick and the fast-flowing Loop Current. Prior to those, Horizon deployed three buoys in the region just after the accident. In addition to monitoring ocean currents south of the Deepwater Horizon location with drifting buoys, BP has contracted 'FAST Eddy', Horizon Marine's vessel-mounted, ocean current surveying system. The system is mounted on Tidewater's 'War Admiral' and measures ocean current speed and direction in real time from just below the keel of the vessel to 450m below the sea surface.

Keeping Open the Lines of Communication

When disaster strikes anywhere in the maritime community, often the first consideration is keeping open the lines of communication in order to better coordinate rescue and response. **Mackay Communications** has plenty of experience in dealing with providing communication solutions in times good and bad, and in fact past experience has helped the company enhance its overall customer service, according to Patrick Fisher, Director of Satellite Services. When disaster strikes, "we get calls from all over to provide additional communication units and services," said Fisher. When disasters are natural and catastrophic, such as Hurricane Katrina, or when they happen in particularly remote areas, the first consideration is simply to establish or reestablish communication links. In the case of the most recent disaster in the Gulf of Mexico, comms links are plentiful and secure, but there are a host of other considerations. For example, Mackay Communications has four dedicated service specialists that continually monitor communication traffic volume, regularly issues warnings to companies when various limit levels are being hit. "Most people forget that although they are down there in a relief situation, the units and the airtime can be costly. It's not like unlimited minutes with your cell phone. We've had experiences where customers have run bills into the hundreds of thousands of dollars, and quite simply, they couldn't pay," Fisher said. Mackay offers this monitoring and alert system simply so clients new and existing are constantly aware of the costs being incurred. "(Hurricanes) Katrina and Wilma were real eye-openers for us in terms of seeing a usage spike."

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

Tier 3 and the Demise of HFO

Dr Herman Klein, of Germanischer Lloyd expressed his belief that the forthcoming IMO Tier 3 NOx rules will make the continued use of heavy fuel oil impractical, forcing commercial shipping fleets to switch permanently to distillate fuel from 2016. Using SCR catalysts is not an alternative as they quickly become clogged using HFO. Dual fuel HFO/distillate is impractical – hence his prediction of the demise of after 2016. A possible alternative is the Ecospec CSNOx system of exhaust gas scrubbing. A solution is passed through an exhaust scrubber to remove CO2, SO2 and NOx by absorption. Normal HFO can continue to be used, meeting the 0.1 percent sulfur 2010 EU Directive, Tier 1 and 2 emission regulations and Tier 3 emission requirements. In a recent address Dr Herman Klein, Member of the Executive Board of Germanischer Lloyd expressed his belief that the forthcoming IMO Tier 3 NOx rules will make the continued use of heavy fuel oil impractical, forcing commercial shipping fleets to switch permanently to distillate fuel from 2016. Attempting to meet Tier 3 using SCR catalysts is not an alternative as they quickly become clogged using HFO. According to Klein, the dual fuel HFO / distillate option is impractical and therefore does not provide a viable alternative – hence his prediction of the demise of HFO as a fuel for merchant ships and their obliged exclusive use of distillate after 2016. Klein did however concede, that a possible alternative (that was verified by rival ABS in Feb 2010) is the Ecospec CSNOx system of exhaust gas scrubbing. Using fresh or sea water treated to become alkaline by an on board electrolysis process, the solution is passed through an exhaust scrubber to remove CO2, SO2 and NOx by absorption and converted into harmless substances found in water. The scrubbed water may pass through a filter to remove solids and may undergo a treatment to comply with discharge water standards. According to Ecospec, normal HFO can continue to be used with the CSNOx system while meeting the 0.1 per cent sulfur 2010 EU Directive. The present Tier 1 and 2 emission regulations are surpassed and the stricter Tier 3 emission requirements are fulfilled, eliminating the need for a duel fuel solution.

Dr. Herman Klein

Posted by Keith Henderson on MaritimeProfessional.com

Container Carriers Comeback

When it comes to financial results, the world's container lines sure know how to take shareholders on a wild, wild ride. Anyone who ever questioned the cyclic nature of the global container shipping business should take a look at some of the latest liner results. Even Maersk, the market leading, market-share chasing giant has managed to stack up some impressive revenue growth in the last quarter as the market improved. Although "improved" doesn't really do justice to what the market has done compared to the first quarter last year. "Spectacularly rebounded" would be a better description. And that rebound has seen Maersk go from a $581 million loss in the first quarter last year to a $168 million net profit. Nice rebound if you can get it. Maersk carried more than 20 percent more boxes in the three months, too.

Over at troubled Hapag-Lloyd the troubles are no more. In the first quarter last year, the German line managed to lose euro 222 million and had to be bailed out . This year it is euro 13 million in the black. The rapid change in fortunes has extended to other carriers, even CMA CGM. We say "even" because the French line was deep in a financial hole not too long ago. The carrier predicts it will post an EBITDA of around $380 million and carry 22 percent more containers in Q1. Hanjin Shipping and Hyundai Merchant marine, Korea's two major carriers, also made it back into the black in terms of operating profits in the first quarter.

Also rebounding majestically all over the balance sheet was Neptune Orient Lines, parent of APL. NOL was close enough to smudge the black ink with a fat finger but fell just $98 million short. Still, it is a far better position to be in than the red drenched $245 million loss posted in last year's Q1. So it appears that the container lines are bulletproof and there is plenty of business to go around at the moment.

But this is traditionally the moment when caution gets folded up into a neat little aeroplane and then tossed into the wind. Container shipping executives need to fight their instinctive need to chase market share and keep their hands in their pockets.

But this is traditionally the moment when caution gets folded up into a neat little aeroplane and then tossed into the wind. Container shipping executives need to fight their instinctive need to chase market share and keep their hands in their pockets. It might also be a good idea to get them to switch off their Blackberries so they aren't tempted to call up a shipyard newbuilding manager and put in an order for 150 27,000 TEU ships. The market has improved but there are still too many container lines in business, too much idle capacity and rates at too low levels to break out the bubbly. We are still deep inside "anything can happen" territory.

Posted by Greg Knowler on MaritimeProfessional.com

Bharati Shipyard in Control of Great Offshore

One of the significant acquisitions in recent times in the Indian maritime sector ended recently with Bharati Shipyard taking over Great Offshore

The battle for Great Offshore, country's largest integrated offshore services firm, has finally ended with Bharati Shipyard in total control and ABS shipyard left trying to dilute its share holding in the company. Last week Bharati Shipyard informed the Securities and Exchange Board of India (SEBI) of being in total control of the management of the company and the Board of Directors.

Mr P. C. Kapoor, Managing Director of Bharati Shipyard Ltd (BSL) informed that as on date his group companies owns 49.73 per cent shares in Great Offshore and has been represented on the Board of Director of Great Offshore through three member, viz Vijay Kumar, himself (both promoters of BSL) and Chetan Mehra. Their appointment was confirmed by the shareholders on 29th April, 2010. There after last week two more representatives came on the Board of Great Offshore thus bringing the number to five representatives of BSL. For the two shipyards involved in the construction of a large array of specialized sophisticated vessels for diverse offshore, coastal, and the marine market sectors Great Offshore, the integrated offshore oilfield services provider is considered a value fit for their operation.

Posted by Joseph Fonseca on MaritimeProfessional.com

Too Big to Fail?

The scope of the U.S. Gulf oil spill continues to expand, testing the limits of public and private response capabilities. We can't afford to fail. Can BP afford to pay?

There's nothing like an oil spill the size of West Virginia to take your mind off a catastrophic volcano eruption. Even President Obama is paying attention. His designation of the BP Oil Spill as an event of National Significance has triggered the appointment of the U.S. Coast Guard Commandant to serve as the National Incident Commander for the administration's continued, coordinated response. His authority will leverage every possible resource to respond and minimize the associated environmental risks. Oh, and BP will helping, too. The President says that they will pay for every penny of the now Herculean effort now ongoing in the Gulf of Mexico.

The insertion of the "Thad Allen" variable into the equation is a welcome event, especially for those of us that remember his 2005 rescue of the Bush Administration's foundering response to hurricane "Katrina." The Coast Guard's dynamic leader seems to be making a career of saving the Sportsman's Paradise from man-made and natural disasters alike. I have little doubt that he will get the job done. It's the "BP" part I'm worried about, but perhaps not for the reasons that you might think. Follow along, if you will:

A Blessing in Disguise?

In cases like this, I prefer to let the experts assess blame, determine causes and suggest the ultimate fixes to ensure that something like it never happens again. Make no mistake about it: this could have happened to anyone. In this case – like the EXXON VALDEZ disaster that it is now being compared to – we should be glad that it happened to an oil major with the wherewithal, resources and staying power to weather most storms. Not withstanding its somewhat star-crossed safety record in this hemisphere for the past decade or so, BP is a good company — better than most — with arguably good operating and safety protocols in place. Or, at least that's what my British ex-patriot consultant friends told me, ad nauseam, back in the 1980's and 1990's.

Back in 2006, BP's chief executive identified a Texas City refinery blast as the catalyst for an internal management and operations overhaul, but the impetus to improve could have come from any number of unfortunate events involving the massive company. The effort was to include the standardization and unification of global operations. With BP already under enormous pressure to improve its safety practices, the latest news accounts further strain the credibility of BP's "safety first" philosophy, but also cast doubt as to just how prepared the oil giant was for what happened. Still, I would rather have BP in charge right now than some fly-by-night operator in Cuban waters (120 miles from the pristine Florida Keys). You can bet that the latter scenario, if not already in play, is coming, and soon. Who will be responsible then?

Too Big to Fail?

Up north in Alaska, the litigators are still settling up with anyone tooling around in an 8-foot motor skiff and a fish net, some twenty years after the EXXON VALDEZ ran up on Bligh Reef. That metric will also be in play down in Louisiana, long after the last spill contractor has packed his absorbent kit and gone home. It's here where I have my greatest worries. About 18 months ago, my wife and I were drifting along towards what I had hoped would be an early retirement, largely predicated on her executive employment at one of those "too-big-to-fail" banks. I won't recap for you every wonderful event that has taken place during that time frame, but I can tell you that the concept of "too-big-to-fail" no longer has any place in our collective vocabulary. As the magnitude of this spill unfolds and also drifts along towards America's Gulf Coast, the assumption that the responsible party can completely absorb (no pun intended) the considerable effect of this event and keep on chugging should be made at your own peril.

At last count, the cost of the spill was pegged at USD $6 million per day, and rising. Some analysts are saying that the total price tag could reach or exceed $15 billion. On Monday morning, a job call from my alumni WEB site pleaded for six 1600 ton masters, three OSV certified Chief Engineers, 6 deckhands, 3 oilers and a bunch of other ratings for just one employer. The 'pier head jump' jobs were advertised for a minimum of 120 days. This is going to get a lot more expensive before it is all said and done.

Earlier this week, shares of BP stock continued to fall in the wake of the latest disaster. And, just as this metric can affect the liquidity of large financial institutions, a 'weather' eye should be kept on the mounting costs of the spill. BP is a big outfit, to be sure, but is it capable of losing 20 percent of its stock value, billions in market cap literally overnight AND still pay the full tab for the spill? President Obama has publicly stated that BP will pay for the spill, and for their part, BP has said that they will do just that. Still, the gargantuan effort to mitigate the effects of the oil already spilled and a so-far unsuccessful strategy to stop the gushing oil will almost certainly climb into the billions of dollars.

Excerpted from Joseph Keefe report on MaritimeProfessional.com

Admiral Zheng He (1371-1433)

The Eunuch Mariner

Zheng He was a Muslim from Yunnan Province in southern China. As a youth, he was captured by forces of the Imperial Army, made a eunuch, and sent to the Imperial court. He rose to become a trusted adviser to the Yongle Emperor. In 1405, the Emperor appointed him to lead a naval expedition to establish a Chinese presence and to impose Imperial control over trade in the Indian Ocean basin. The so-called "Treasure Fleet" consisted of more than 200 warships and cargo vessels, with more than 20,000 crewmembers. Admiral Zheng eventually led seven voyages, each lasting almost three years.

The Treasure Fleet visited eventually Java, Malacca, Sumatra, Siam, Ceylon, Cochin, Calicut, Hormuz, Mogadishu, Aden, and Muscat, among other locations. Along the way, Admiral Zheng suppressed pirates and opened trade routes throughout the Indian Ocean basin (generally peacefully, but by force when necessary). The treasure ships (the largest in the fleet) were up to 400 feet in length and over 150 feet wide; they carried up to nine masts. By comparison, the Santa Maria sailed by Christopher Columbus in 1492 was about 55 feet in length. After the Yongle Emperor died in 1424, Admiral Zheng made one more voyage with the Treasure Fleet. He died during this seventh voyage while the Fleet was off Hormuz.

He was buried at sea. Admiral Zheng opened up Southeast Asia, India, Arabia, and East Africa to foreign trade years before the arrival of the Portuguese and other European mariners "discovered" the region.

Ironically, Imperial China turned its back on foreign trade following Admiral Zheng's death.

Posted by Dennis Bryant on MaritimeProfessional.com

Papp Takes USCG Helm

Adm. Robert J. Papp, Jr., assumed command as the 24th commandant of the Coast Guard today, relieving Adm. Thad W. Allen during a military ceremony at Fort Lesley J. McNair in Washington, D. C. last month. "I am honored to serve as the 24th commandant of the Coast Guard," said Papp. During the ceremony, Secretary of Defense Robert Gates awarded Allen the Defense Distinguished Service Medal. Secretary of Homeland Security Janet Napolitano presided over the change of command and awarded Allen the Homeland Security Distinguished Service Medal. While the ceremony marked the end of his term as commandant, Allen will continue to serve as the National Incident Commander for the Deepwater Horizon oil spill, managing an unprecedented response effort.

Papp reports to Coast Guard Headquarters from Portsmouth, Va., where he served as commander of Coast Guard Atlantic Area since 2008.

Allen became the 23rd commandant of the U.S. Coast Guard on May 25, 2006. He has led the largest component of the Department of Homeland Security, comprised of 42,000 men and women on active duty, 7,000 civilians, 8,000 reservists and 34,000 volunteer Coast Guard Auxiliarists. Allen's leadership in times of crisis includes the aftermath of Hurricanes Katrina and Rita, when he served as the principal federal officer responsible for response and recovery operations. Allen has led the Coast Guard through a recapitalization effort to replace an aging fleet of cutters, aircraft and sensors, as well as a modernization program to better organize, train, equip and deploy Coast Guard personnel to meet the challenges of the 21st century.

Adachi Joins GAC Japan Team

GAC appointed marine sales engineer Yuichi Adachi as Marketing Manager - Shipping for Japan. He joins an established team – Senior Marketing Manager Ichiro Tanami and Marketing Manager Jose Miyazaki.

Promotions at BMT Marine & Offshore Surveys Ltd

BMT Marine & Offshore Surveys Ltd. appointed Nigel Clark as Managing Director with former Managing Director Dr Phil Thompson taking on the role of non-executive Chairman. Nigel has been with the company since September 2009 having joined as Finance Director. He has a strong background in the marine and offshore sectors having held senior positions within a number of oil and gas companies and within London Marine Group (LMG) where he was both Group Finance Director and acting CEO. Whilst with LMG Nigel was instrumental in helping the Company to achieve significant growth.

Black Named Globe Wireless CFO

Globe Wireless said that Thomas M. Black has been appointed CFO of the company. Black owned a successful consulting practice, providing financial and strategic guidance to maritime companies. He was a financial partner in Tatum, LLC, and also held multiple positions with Tropical Shipping, including Senior VP of Foreign Operations and CFO.

Moore Takes on Western Industrial Sales for Samson

Samson announced the retirement of Dave Strauss, western regional sales manager of industrial markets, and the hire of his replacement, David Moore of Portland, Ore. After almost 20 years of service, Strauss is retiring in June 2010. Strauss has served in both the recreational marine and industrial markets during his career. Samson has filled the position with the hire of Moore, who has a bachelor of science in aerospace engineering and a master of business administration in marketing.

Foss Promotes Two

Foss Maritime announced that two marine transportation veterans will take over key assignments at the company. Andy Stephens has been promoted to Vice President, Business and Planning Development, where he will be responsible for developing initiatives for the consolidated business activities of Foss Maritime. Stephens, who joined the company in 1993, will also become chief of staff to Foss Maritime COO and President Gary Faber. Faber also announced the hiring of Mike Magill, who will become Vice President, Technical Services. He will take over responsibilities for Foss' shipyards, purchasing and engineering departments; areas previously managed by Stephens. Magill comes to Foss with 29 years of experience in the maritime transportation industry, most recently with K-Sea (formally Sea Coast Towing), where the scope of his position included divisional operations, fiscal performance, safety and compliance on the East Coast, the Gulf of Mexico, and internationally.

BAE Systems Acquires Atlantic Marine

BAE Systems entered into a definitive agreement to acquire Atlantic Marine Holding Company (Atlantic Marine) from JFL-AMH Partners, LLC, a portfolio company of the private equity firm J.F. Lehman & Company for $352m.

Atlantic Marine is a privately held vessel maintenance, repair, overhaul and conversion (MROC), marine fabrication, and ship construction services provider with operations at Mayport and Jacksonville, Florida; Moss Point, Mississippi; and Mobile, Alabama. The acquisition does not include Atlantic Marine's Boston and Philadelphia operations, which will be retained by JFL-AMH Partners, LLC. The acquisition will be funded from BAE Systems' existing cash resources. The proposed acquisition is conditional, among other things, upon receiving certain U.S. regulatory approvals and is expected to close in the third quarter of 2010.

Wärtsilä, Robert Allan Sign Cooperation Agreement

Wärtsilä signed a Letter of Intent with Canadian ship design company Robert Allan Ltd. to develop a Strategic Cooperation Agreement. Both parties see market opportunities for advanced tug designs, utilizing improved hull forms and new fully integrated power and propulsion technologies. The aim of the cooperation agreement will be to jointly develop advanced, environmentally

Bollinger Wins Safety Awards

Bollinger Shipyards, Inc. received awards for Excellence in Safety, Improvements in Safety, and Occupational Safety awards from two industry groups. The Award for Excellence in Safety and the Award for Improvement in Safety for 2009 were presented to Bollinger by the Shipbuilders Council of America (SCA). The awards were received during the association's April 26-28, 2010 general membership meeting held in Washington, D.C. The Award for Excellence in Safety is given to member companies who have an end-of-year Total Recordable Incident Rate (TRIR) that is below the average SCA rate. The Award for Improvement in Safety is given to member companies who have reduced their TRIR by ten percent or more.

(Photo courtesy Bollinger Shipyards)

Pictured left to right: Ian Bennitt, SCA - Manager Government Affairs; Chris Bollinger, Bollinger Shipyards - Executive Vice President; and Matthew Paxton, SCA - President.

sound solutions, resulting in a range of optimized tug designs to be supplied by Wärtsilä for the world market.

Thölin Named Alfa Laval GM

Joakim Thölin has been appointed General Manager, Segment Marine & Diesel at Alfa Laval AB, effective as of April 1, 2010. He will be based in Tumba, Sweden, and he replaces Peter Carlberg who has taken up the position as Managing Director of Alfa Laval KK, Seoul Korea.

Austal Wins Safety Award

Austal USA received two awards from the Shipbuilders Council of America (SCA) for commitment to improving safety and health in the workplace. Austal USA President and COO, Joe Rella' Health, Safety and Environmental Manager, Chris Blankenfeld and Vice President of External Affairs, Bill Pfister attended the SCA General Membership Meeting in Washington DC at the end of April where they were presented with the SCA Award for Excellence in Safety and the Award for Improvement in Safety.

The Award for Excellence in Safety is presented to shipyards that complete all four quarters of their survey and have an end-of-year total recordable industry rate (TRIR) that is below the aggregate SCA TRIR. Austal's 2009 TRIR was 56 percent below the SCA TRIR. The Award for Improvement in Safety recognizes shipyards that complete all four quarters of their survey without a recordable fatality and have reduced their TRIR by 10 percent or more over the year. Austal reduced their TRIR by 72 percent.

LR Authorized by Japanese Government

Lloyd's Register was confirmed as the first foreign classification society to be formally authorized by the Japanese government to carry out surveys on ships flying the Japanese flag. Under Japanese legislation, Lloyd's Register has been designated as a Recognized Organization by the Japanese government and is granted delegated responsibility for statutory surveys and permission to issue statutory certificates.

Prior to the authorization of Lloyd's Register, only ClassNK, the domestic classification society and fellow IACS member, has held such recognition.

Caterpillar's New Logistic Center in Germany

Caterpillar celebrated the launch of a new logistic center located in Henstedt-Ulzburg, Germany, north of Hamburg. The warehouse, comprising an interior area of nearly 161,450 sq ft, is the fourth facility in Germany for Caterpillar Motoren GmbH & Co, and will serve as a hub for MaK spare parts for customers throughout the world. With its close proximity to both the international airport and the port infrastructure in Hamburg, the logistic center will increase velocity for parts availability to customers and reduce costs.

Signal Wins Power Barge Contract

Signal International won a $30m contract by Waller Marine Inc. of Houston, Texas. Under the contract Signal will

New Naval Engineering Education Center

The U.S. Navy's Naval Sea Systems Command (NAVSEA) signed a contract agreement May 6 to establish a Naval Engineering Education Center (NEEC). The purpose of the NEEC will be to educate and develop world-class naval systems engineers for the Navy's civilian acquisition, engineering and science workforce. Led by the University of Michigan, the NEEC Consortium will initially be comprised of 15 colleges and universities, along with the American Society of Naval Engineers (ASNE) and the Society of Naval Architects and Engineering (SNAME).

Other colleges and universities included in the NEEC Consortium include Virginia Polytechnic Institute, Massachusetts Institute of Technology, Pennsylvania State University, Georgia Institute of Technology, Webb Institute, Florida State University, Florida Atlantic University, Old Dominion University, Tennessee State University, Stevens Institute of Technology, University of New Orleans, University of Iowa, University of Texas-San Antonio, and University of Washington. U.S. Navy Center for Innovation in Ship Design, located at the Naval Surface Warfare Center Carderock Division, will support the NEEC.

The NEEC Consortium will increase the number of students who graduate with an accredited degree; provide faculty specialized in naval engineering; coordinate employee development opportunities to retain naval engineering talent for the Navy; and increase the availability of naval engineering education programs and courses across universities and colleges.

A key part of the NEEC is using project-based education to provide naval engineering experience to students. NEEC project teams from the universities, along with a NAVSEA engineer or scientist assigned to the team, will tackle current and future technical challenges, including the use of alternative energy sources, energy conservation, total ownership cost reduction, use of unmanned vehicles, advanced ship design methods and maintenance reduction.

Through NAVSEA internships and at-sea opportunities on U.S. Navy ships, students will receive relevant, hands-on naval engineering experience.

build and support the outfitting of two 300 ft X 100 ft power barges. Each barge will have a single GE 7FA Gas Turbine and 171 MW generator. Upon completion of the barges Waller Marine will install and operate the units in Venezuela.

Northrop Grumman IBS for Stena Superferries

Northrop Grumman was selected to supply integrated bridge systems (IBS) for two new vehicle-passenger (RoPax) ferries being built for Stena Line at Wadan Yards in Wismar, Germany. The IBSs for the two ships will be based on Northrop Grumman Sperry Marine's VisionMaster FT navigation technology with TotalWatch multi-function workstations. The first of the two 787.4 ft 62,000 gross ton Superferries, Stena Hollandica III, will be delivered in May 2010, with the second ship, Stena Britannica III, to follow in October. The giant vessels will carry up to 300 trucks, 230 cars and 1,200 passengers.

Crowley's Corporate Office Achieves LEED Silver

Crowley Maritime Corporation Chairman, President and CEO Tom Crowley, elected area officials and business leaders gathered at the company's corporate headquarters in Jacksonville to commemorate the completion of Crowley's office building renovation project and its United States Green Building Council LEED (Leadership in Energy and Environmental Design) Silver Award Designation. The Crowley building is only the second building in Jacksonville to attain the LEED Silver award for commercial interiors.

With a total renovation and construction budget of $8.5m, Crowley's goal was to convert the five-story, 110,000 square-foot office building into an open office environment that would promote environmental sustainability, enhance teamwork and collaboration and reflect the company's brand and culture. To help with energy conservation, all existing T8 fluorescent light fixtures were replaced with energy efficient T5 fluorescent light fixtures. This single update equates to a 55 percent reduction in lighting energy consumption.

Lab, Veritainer Sign Agreement

Lawrence Livermore National Laboratory (LLNL) and VeriTainer Corporation have entered into a Cooperative Research and Development Agreement (CRADA). The CRADA will be used to refine and enhance VeriTainer's patented crane mounted scanning (CMS) technology. The CRADA will be in place for three-and-a-half years and require approximately $4 million in funding. LLNL will work in cooperation with VeriTainer's scientists and engineers to enhance both gamma and neutron detection sensitivity, while maintaining the capabilities of VeriTainer's CMS. The system has been operated for the past four years in field tests run at 3 ports and in 5 different terminals.

New Antifouling Biocides

Technical Service Center

Arch Chemicals opened its new Asia Pacific Marine Laboratory in Osaka, Japan. The facility, which is close to key Japanese marine paint customers, has been established to maximize technical expertise in the ongoing development of antifouling paint technology and will include work with self-polishing polymers and net coatings for aquaculture applications. Concurrently, the Arch Osaka sales office will relocate to the same facility as the new Marine Laboratory.

Colle Maritime Wins 20-Year Contract

Colle Maritime Company of Pascagoula Mississippi, a joint venture between Signet Maritime Corporation and Colle Towing Company, has been awarded a 20-year contract to provide marine services to Angola LNG Supply Services LLC (ALSS) in the Port of Pascagoula, Miss. The agreement, to commence third quarter 2011, includes options to extend for up to ten additional years. The JV will construct two highly specialized terminal support/escort tugs that will each provide 80 metric tons of bollard pull. Designed by Robert Allan Ltd., these RAstar 3100 class tugs were designed and engineered to offer superior ship-handling, escort, and sea-keeping performance in comparison to any more conventional style of tug. Construction will commence immediately at Trinity Offshore in Gulfport, Mississippi. Both tugs will be built to American Bureau of Shipping Maltese Cross A1 Towing & Escort Service, Fire Fighting Vessel Class 1 (Fi-Fi 1), and Maltese Cross AMS standards. Additional tugs from the existing Signet and Colle fleets will complement these primary tugs.

ABS: Notation for Specialized Wind Turbine Installation Units

With the emergence of mobile offshore units primarily intended for the installation, maintenance and repair of wind turbines, leading offshore classification society ABS announced during the Offshore Technology Conference in Houston this week that it has issued a new notation for these specialized units, Wind IMR.

Wind turbine installation, maintenance and repair (IMR) units are a distinct type of offshore unit for the renewable energy sector combining existing technologies in novel ways. These units typically include large accommodations, a heli-deck, dynamic positioning (DPS-2) and are fitted with large high capacity cranes. The work decks are constructed to support and stow large wind turbine components for transport.

U.S. Navy Ship-to-Shore Connector Team Forms

Marinette Marine Corporation and the Boeing announced the strengthening of the MMC/Boeing Ship to Shore Connector (SSC) Team with the addition of Oceaneering International Inc. in its bid to capture the U.S. Navy's SSC program. With more than five years of Landing Craft Air Cushion (LCAC) in-service repair experience and FY 08-09 Service Life Extension Program (SLEP) contracts; Oceaneering brings significant hands-on LCAC expertise to the MMC/Boeing SSC Team. The U.S. Navy plans to replace the LCAC SLEP craft with the new SSC, a priority to support the joint operations warfighter.

IRS Opens Singapore Office

International Register of Shipping (IRS) has opened an office in Singapore. The office will be designated as a regional centre for the classification society and will offer a wide range of services.

New Strathclyde Marine Institute, Glasgow

A new institute dedicated to pioneering research and technology for the marine sector has been launched at the University of Strathclyde in Glasgow. Scotland's Chief Scientific Adviser, Professor Anne Glover, met with researchers from the institute, which aims to contribute to the UK's marine economy by providing industry and government with cutting-edge research into marine energy, the environment and transport. Research and development at the institute will be based around the key themes of energy, environment and transport.

- Energy related R&D will focus on key areas of performance improvement and cost reduction of offshore wind, marine and tidal devices, as well as the improvement of performance of offshore oil and gas platforms. Researchers will also look at alternative fuels and power supply systems, and energy demand reduction in shipping.
- Environmental research will improve our under-

Virtual Marine Technology

World's First Survival Craft Operation Simulator

Virtual Marine Technology (VMT) announced that its lifeboat simulator, SurvivalQuest, has been approved as a Class "S" Simulator by Det Norske Veritas (DNV).

SurvivalQuest is a training simulator designed to allow lifeboat coxswains to practice a variety of emergency launch conditions in a safe, focused learning environment.

2010 will be the year that regulatory recognition of lifeboat simulation becomes reality. VMT recently completed a collaborative initiative with Transport Canada to develop a model course for lifeboat simulation training. In addition, a Canadian amendment to the International Maritime Organization's (IMO) Standards of Training, Certification and Watchkeeping (STCW) to permit Flag States to accept lifeboat simulation training was ratified in January at SCTW 41. Final acceptance of the new STCW Convention is expected at the IMO diplomatic conference in Manila, Philippines in June.

A key contributor to the development of lifeboat simulation training has been Memorial University's Marine Institute (MI).

Bludworth Cook, Taisei Engineering Sign ATB Pact

Taisei Engineering of Tokyo Japan and Bludworth Cook Marine of Houston, Texas have partnered to provide sales, service and support in the U.S. for the ATB systems manufactured by Taisei Engineering of Japan. Since 1972 Taisei Engineering has sold 245 ATB units worldwide. Their ATB systems are divided into two series – two-pin supporting articulate connection Articouple, similar to those manufactured in the U.S., and three-pin supporting rigid connection Triofix --- and, though the latter series Triofix is not found in the U.S. for the moment, this series, combined with a special hull-design technique developed by Yamaguchi of Taisei, can realize much higher speed with smaller engine power with less emission. Articouple and Trioflex ATB systems are now available with full service support in the USA by Richard Bludworth and John Cook and their respective organizations Bludworth Marine LLC and Bludworth Cook Marine Inc.

standing of the impact of human activity on the ocean and seas on marine resources. Research groups will be engaged in areas including modelling the ecological population, the impact of industrial pollutants, shipbuilding and shipping.

Transport research groups will develop research and innovation crucial to the further development of the high-technology industry. The Institute aims to help industry develop safer, greener and more competitive marine transport systems.

In addition, researchers will investigate themes including food, aquaculture and fisheries; socio economic sciences and humanities; tourism and coastal zone development; and marine biotechnology.

www.strath.ac.uk/marine

UAE Maritime Education: Pushing Forward

Captain Jaafar bin Sidin, Director of EIMA, with Professor Ehsan Mesbahi from Newcastle University.

Emirates International Maritime Academy (EIMA) recently signed its first Agreement of Collaboration with Newcastle University, a world-class research-intensive university with a global reputation for academic excellence, signaling the beginning of the availability of high quality and specialized maritime studies and education in the UAE and the MENA region at large.

Under the agreement an MSc in Marine Technology will be the launch program. The program enables graduate professionals working in the marine industry to gain the necessary skills in advance marine technologies, management, and business operations. The program is especially characterized by its dynamic set up and flexibility, both aim at responding swiftly to the current and developing challenges and demands of the global maritime sector.

MPS Launches New Maritime Blog

Maritime Protective Services (MPS) announced the launch of Maritime Transportation Security News and Views (www.mpsblog.org), a blog dedicated to delivering information that encompasses a broad spectrum of security issues that affect the maritime industry, while also delivering up-to-date information and addressing concerns involving the Maritime Transportation Security Act (MTSA), the International Ship and Port Facility Security (ISPS) Code, port security, maritime terrorism and sea piracy.

Crowley Scholarships for Williams-Mystic Students

Four students from very diverse backgrounds each got a chance to attend the Maritime Studies Program of Williams College and Mystic Seaport, thanks in part to Thomas B. Crowley Sr. scholarships. Crowley Maritime Corporation awarded scholarships to Virginia Steiner, Morgan Wilson, Hannah Holland and Caroline Crowell during the 2009-2010 academic year. In the fall of 2009, Crowley expanded the scholarship program with the Maritime Studies Program of Williams College and Mystic Seaport, increasing its donation from $10,000 to $20,000 a year for deserving and need-based students in the program. This has allowed four students, two in the fall and two in the spring semester, to take part in the program, instead of one student per semester.

ABS NS Secures Several Orders

ABS Nautical Systems signed 30 new orders in the first quarter of 2010 with companies including MISC, BG Group, SMIT Rebras and Seaarland Shipmanagement (Hamburg) GmbH & CO., KG.

MISC will implement ABS Nautical Systems' Hull Inspection module and Web-based Drawings management tool on eight existing tankers and four ABS-classed newbuilds that will receive the software for free as part of the ABS Newbuild Initiative. BG LNG Services, LLC, signed up for ABS Nautical System's Hull Inspection module, which will be used on 10 LNG vessels. SMIT Rebras, a joint venture between SMIT (Holland) and Rebras Rebocadores do Brasil, has acquired licenses for the Maintenance & Repair module, Web-based Drawings management tool and the Quality & Compliance module which will be implemented on 30 ABS-classed tug boats. Seaarland Shipmanagement (Hamburg) will integrate ABS Nautical Systems' Hull Inspection module and Web-based Drawings management tool on 36 of its vessels.

ACE Winches Opens Norway Base

ACE Winches has formally created a new company in Norway. ACE Winches Norge AS is focused upon maintaining and enhancing ACE's Scandinavian business activities. Operating from a base at Dusavik, Stavanger, the division offers spooling and hire fleet services and will also be providing vessel bollard pull testing. It will also act as a local showcase, and comprises a 500 sqm workshop and 1,000 sqm yard facility.

Rolls-Royce: Big Order for Brazil

Rolls-Royce received orders worth approximately $21.5m to supply propulsion and control systems for seven offshore vessels being built in Brazil. Four have been ordered by CBO (Companhia Brasileira de Offshore) and will be built at Alianca S/A, while the remaining three will be built at STX Promar. Two of these will be delivered to Siem Consub while the last vessel will go to Deep Sea Supply. The orders consist of AZP thrusters and transverse thrusters to all seven vessels, as well as control and automation systems for dynamic positioning for the CBO vessels. Delivery will take place from the second half of 2010.

Bourbon: 13 Vessels for Petrobras

Bourbon Offshore Maritima, formerly Delba Maritima Navegação, the Bourbon subsidiary in Brazil, signed contracts with Petrobras for 13 new vessels. The contracts cover:

- One Bourbon Liberty 200, an 80-ton traction AHTS (Anchor Handling Tug Supply vessel), for three years from May 2010;
- Seven Bourbon Liberty 100, a PSV (Platform Supply Vessel), for four years. These vessels will be put into service between June and October 2010;
- Five 59-ft. passenger transport crew boats, for eight years. These vessels will join other vessels of the same type that have already been working for Petrobras in Brazil for two years and have given full satisfaction.

ABS Establishes Brazil Offshore Technology Center

ABS announced the establishment of the ABS Brazil Offshore Technology Center in partnership with the Federal University of Rio de Janeiro (COPPE/UFRJ). The focus of the center will be on research intended to support the development of new technologies for offshore facilities. It is expected that the research and development facility will become an established fixture on the COPPE/UFRJ campus. ABS Senior Vice President of Technology Peter Tang-Jensen said the first research project to be undertaken by the center will be a study on torpedo piles, an innovative mooring anchor system that has been developed by Petrobras. The study is expected to result in the development of a rational approach for the class review and approval of torpedo piles.

Dyneema Announces New Fiber

DSM Dyneema unveied its latest development, Dyneema XBO, at OTC in Houston last month. Dyneema XBO is intended as a direct replacement for steel in lines used in deep-sea installations. Ropes made with the new fiber provide the same load-bearing capability as steel wire ropes that weigh seven times as much. The weight of the steel wire can consume up to 50% of the winch capacity in ultra deep water installations. By substituting steel with ropes made with Dyneema XBO, systems can carry higher loads, or they can be downsized while retaining their deepwater installation capacity, freeing up vital deck space.

Jorn Boesten is DSM Dyneema's Segment Manager for offshore applications. "Latest installations in very deep water put greater stresses on operators' lifting equipment," he said. "Dyneema XBO was developed to be used in ropes that can perform under extreme conditions, such as in heave compensated systems that handle severe bending loads."

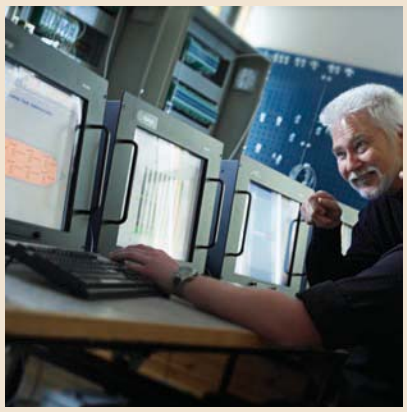
Wilhelmsen Ships Service opens Stavanger office

Wilhelmsen Ships Service established a branch office in Stavanger. As well as reinforcing network coverage in the region the new office will focus especially on service provision to customers in the offshore sector. Wilhelmsen Ships Service supplies Unitor marine products, technical services, ships agency services and maritime logistics.

SENER Completes Takeover of Mexican Firm

In 2007, SENER President, Jorge Sendagorta, signed with III General Manager, Eduardo Bosque, the purchase agreement of the 40% of III, with the compromise of acquiring 100% of the Mexican engineering company in 2010. Since then, SENER and III have been consolidating their relationship until they have culminated this operation with the constitution of the new company III Grupo SENER. The purchase of the 100% of III by the Spanish engineering company SENER closes a process that began in March 2005, when both companies signed a strategic alliance. By virtue of this alliance, SENER entered the Mexican market with one of the country's main engineering companies, while also promoting III's capacity to contract turnkey projects.

SMARTLink



Bjørge Marine Automation (BMA) launched a service module for its SMARTChief II Alarm & Control System with a direct link to shore-based service engineers. SMARTLink empowers the service engineers or the operator of the vessel to remotely and real-time interface with the alarm system for system status, support the vessel's engineers remotely as well as assess the vessels overall condition. In order to enable remotely performed service, a SMARTLinkcomputer is added and integrated with the SMARTChief II system with a redundant network connection, but with an extra network connection to the ship's network as well. This means that the engineer is able to connect to the onboard SMARTChief II system, typically with a Remote Desktop connection from the office, enabling access to the same screens and information as those onboard the ship.

Email: john.egil.gilje@bjorge.no

OP Products Inc.

OP Products offers a next-generation marine sanitation treatment: Pure Power Marine, a concentrated biological formula built upon the proprietary BioBlastPlus odor control technology. It is designed to clean and deodorize toilets, sinks, showers, drains, and floor surfaces while adding billions of beneficial microbes to the plumbing and sewage treatment systems on board vessels of all types.

Email: sales@opprofessional.com

Inclinometer

The Columbia Model DI-10-DFD-IR Inclinometer System is useful in shipbuilding. It is a unique differential tilt measuring device which allows matching the slope of two remotely located surfaces. The readout can be set to indicate the absolute tilt of either sensor or the differential angle between them. The Sensors provided with this system feature aluminum case material and weigh 12 oz. (340 gm).

Email: sales@columbiaresearchlab.com

Lalizas Cables

The new Lalizas cables are appropriate for all necessary jobs on a boat. They are suitable for interior and exterior use. The cables are available in small and medium-sized loads depending on the use you need them for. All wires are tinned and insulated with rubber. They are coming out in different sizes from 1,5 mm to 70mm and they are very resistant to sea water and high temperatures.

www.lalizas.com

ProFlex 500 Receivers

Ashtech ProFlex 500 GNSS receivers are helping guide the operations of the self-propelled jack- up vessel Bard Wind Lift I, a construction vessel designed for installing offshore wind turbines, to build the first commercial wind farm in the German North Sea. The Ashtech GNSS receivers are used for every maneuver of Wind Lift I, including precisely positioning the vessel, assisting it to accurately jack itself up from the seabed on 71 meter long legs, and installing the foundation piles for the wind turbines.

www.ashtech.com

LT Series Watermakers

Cut 7935 (LT Watermakers).pdf

Racor Division of Parker Hannifin offers a new series of watermakers: the LT Series desalinators, which offer fresh water independence. The LT Series is designed for end-users and fleet operators who require reliable fresh water production from a simple to operate watermaker system. The LT Series is available in various models with capacities from 400-1800 GPD.

www.parker.com

OCTOPUS Onboard

Hoegh LNG asked Amarcon to extend the OCTOPUS-Onboard Monitoring & Routing System with weather windows for Dynamic Positioning and sloshing decision support for the LNG Carrier Suez Neptune. LNG SRV's are exposed to waves, wind and current. One of the critical phenomena during offloading is sloshing. Therefore a heading control scenario will be implemented based on the use of weather forecasts info within a customized version of OCTOPUS-Onboard.

www.amarcon.com

New Datrex Lifebuoy Lights

Datrex of Kinder, La., announced its entry into the marine safety market of the new super compact "L" series LED lifebuoy lights that consist of four lights that meet SOLAS/MED/USCG/ATEX/IECEx. All lights come complete with bracket, lanyard and are totally maintenance free and approved for high drops up to 76m.

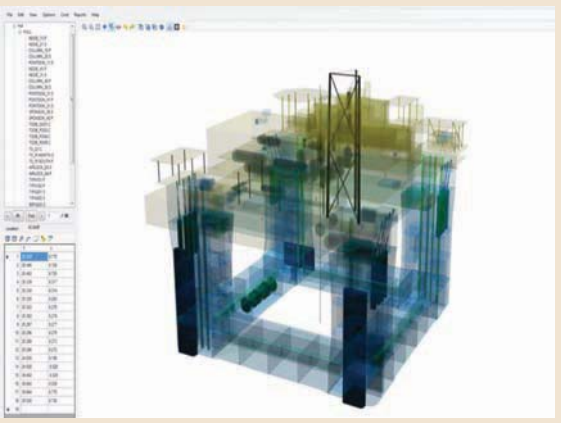
Email: datrex@datrex.com

New Cargo Hold Coating

International Paint introduced Intershield803Plus, a cargo hold coating designed to address the issue of impact damage from the loading of dry bulk cargoes. This is particularly prevalent from the loading of coal by high speed belt conveyor systems, leading to the phenomenon of 'shooting' damage in cargo holds. This may occur when loaders project coal at right angles to the bulkhead.

www.international-marine.com/intershield803plus

Autoship



Autoship Systems Corporation (ASC) of Vancouver, Canada launched its next-generation of Autoship marine design software. The flagship surface modeling program, Autoship, features improved usability and ease-of-use due to a rewrite of the surface-to-surface intersection function, the removal of the need to worry about tolerances plus a host of additions to what the Navigator can do. Many of the user-input dialogues have been streamlined in order to simplify control of the program. The Pro version of the program will allow import of IGES entities 141 and 143, further broadening designers' capabilities.

Also, a completely new, configurable report tool is in the works and it is designed to shorten the time needed to create customized reports.

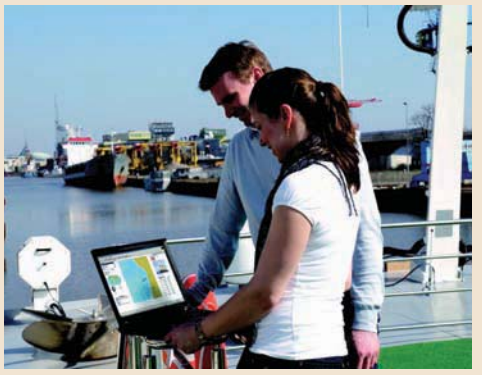
Email: sales@autoship.com

GreenShield Emissions Control Product Line

Brian Kahl, Universal Emission Technologies' Vice President –Emissions, announced the creation of a complete line of emission control products for stationary engines, to be marketed under the brand name GreenShield. The GreenShield product line controls emissions created by diesel engines, natural gas lean burn and natural gas rich burn engines and turbines.

www.universalAET.com

SAM ConnectNet



SAM ConnectNet is a new communication system designed to transform ship-to-shore communications from SAM Electronics, an L-3 company. The system merges vessel communication systems into complete enterprise-wide IT networks, optimizing supply chains and providing online reporting capabilities for monitoring purposes. Suitable for both new vessels and retrofits, it is designed to provide economical and efficient solutions for communications between land and sea. SAM ConnectNet meets the full spectrum of maritime industry communication requirements by seamlessly combining wireless LANs, 2G/3G mobile networks and satellite services such as Inmarsat, Iridium and VSAT into one transparent and secure system. Integrated capabilities include telephony, e-mail and messaging services in addition to file and data synchronisation; others are audio, video and information demand services, including chart updates, telemedicine and remote IT management.

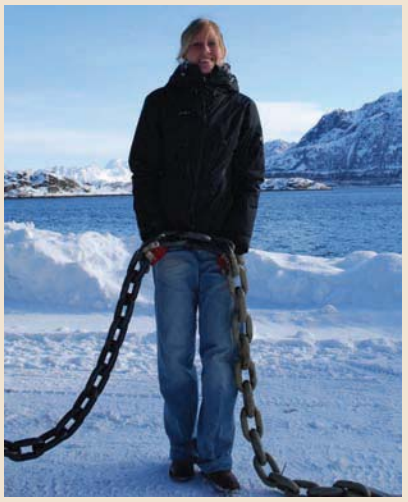
www.sam-electronics.de

Liner Diameter Measurement Instrument

Chris-Marine AB launched a new Liner Diameter Measurement Instrument (LDM) in order to quickly investigate the condition in cylinder liners for two-stroke engines. The advantage: the cylinder head or exhaust valve housing does not need to be removed. By replacing the traditional internal micrometer, the LDM is inserted in the liner through the scavenging ports. The LDM can be preset with engine data for most of today's existing 2-stroke engines, weighs 3.6 kg and is suitable for 2-stroke liners with a bore between 500 – 980 mm. Up to 12 measured diameters can be obtained on each level in the cylinder liner. The system accuracy is better than 0.03 mm and the total time to measure is approximately 1 hour per liner for measurement of 4 diameters on 9 heights (of which the setup time is about 20 minutes).

www.chris-marine.com

Light Weight, High Strength Chain



Miko Marine reports that progress with the European Ship Arrestor Project has been boosted following the development of a lightweight chain. The project aims to introduce a technique that will enable a tow line and sea anchor to be attached to an unmanned vessel with engine failure. The problem: the weight of conventional steel chain was too great for helicopter deployment. The solution: a project partners had access to steel compositions developed in the former Soviet Union for space and defense purposes. These were subsequently used to produce a stud-less 24 mm chain weighing 11 kg per m, with a tested minimum breaking load of 1250kN. This is far superior to the breaking load of 1308kN for a conventional R4 quality 34mm stud link anchor chain that weighs 27 kg/m.

www.miko.no

Bolting Made Simple

Superbolt Multi-Jackbolt Tensioners is designed to eliminate common bolting problems. A new video 'The Simple Solution to Bolting Problems', from Superbolt, details its unique bolting technology. Multi-Jackbolt Tensioners (MJTs) make large diameter bolting safer for workers, reduces installation and removal times and is easy – only hand/air tools are required for any diameter nut or bolt.

www.superbolt.com

OCTOPUS-Portable Surveyor Box

Amarcon's OCTOPUS-Portable Surveyor Box (OCTOPUS-PSB) a standalone OCTOPUS-Onboard lease system that can be used for motion monitoring, response prediction, route evaluation and heavy-weather decision support.

OCTOPUS-PSB comprehends a complete OCTOPUS-Onboard system, packed in an unbreakable suitcase. The system has its own GPS, Iridium satellite communication and UPS. Amarcon is able to provide immediate monitoring and controlling support by logging in to OCTOPUS-PSB from the office.

http://www.amarcon.com/index.php?id=25.

Vessel Motion Monitoring Solution

Kongsberg Seatex offers the VMM 200, a new vessel motion monitoring solution. The VMM 200 takes input from Kongsberg Seatex's own Motion Reference Units (MRU) and Seapath. It also integrates data from existing navigation and weather sensors. The VMM 200 presents real time vessel motion data in addition to real time statistical analysis and includes data recording functionality.

www.km.kongsberg.com/seatex

Digital Force Gages

Omega's DFG41 series features user selectable units of measure and selectable display languages along with advanced operating modes with statistical calculations. This gage is designed for basic and complex applications for automotive, lab, R & D testing and is also ideal for handheld or test stand applications. The DFG41 may be equipped with integral load cells or smart remote sensors for load or torque measurement.

www.omegadyne.com

USN Trials Mobilarm

U.S. Navy submariners are to begin sea trials and evaluation of a new VHF Personal Locator Beacon (PLB) being developed by Mobilarm. The contract with Mobilarm is for the provision of a modified version of the company's VHF Personal Locator Beacon, the Mobilarm V100, for testing and associated engineering services. The initial contract is valued at up to $400,000.

www.mobilarm.com

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2010 Editorial Calendar

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Feature: Ship Repair & Conversion: Tips & Techniques to keep vessels shipshape and profitable.
Market: Emerging Shipbuilding Markets for 2010 India, Mexico, Turkey, Spain, Russia, Vietnam
Technical: Marine Propulsion Products
Product / Directory: Maritime Fuels, Lubricants and Additives

BONUS DISTRIBUTION:
Pacific International Maritime Conference -January 27-29

February — Ad Closing : January 15

Feature: Cruise Ship, Megayacht & Passenger Vessel Annual
Market: Satellite Communications
Technical: Vessel Emissions: Technologies to keep Sea and Air Clean
Product / Directory: Coatings & Corrosion Control

BONUS DISTRIBUTION: Ship Tech - March 9-10,
NACE Corrosion Conference & Expo - March 14-18
Seatrade Cruise Shipping - March 15-18
Marintech / VietShip - March 16-19

March — Ad Closing : February 12

Feature: International Naval Technology
Market: Maritime Security: Fighting Piracy – Technology vs. Technique
Technical: The Integrated Bridge
Product / Directory: Marine Electronics Buyer's Guide

BONUS DISTRIBUTION:
CMA Shipping 2010 - March 22-24
Offshore Europe - SPE Intelligent Energy March 23-25
Asia Pacific Maritime - March 24-26
ASNE Day - April 8-9

April — Ad Closing : March 12

Feature: Offshore Annual
Market: Heavy Lifting: Deck Machinery & Ropes
Technical: Pump, Valve and Valve Actuation Technology
Product / Directory: Software Solutions

BONUS DISTRIBUTION:
OTC Offshore Technology Conference - May 3-6
RoRo - May 18-20

May — Ad Closing : April 16

Feature: Training & Education Edition
Market: Marine Environmental
Technical: Ship Management & IT
Product / Directory: Posidonia 2010 Edition: New Technology on Display in Athens

BONUS DISTRIBUTION:
Posidonia - June 7-11 / MACC June 1-3

June — Ad Closing : May 14

Feature: Annual World Yearbook -The Definitive Source for annual reports & statistics reaching the world's largest audited marine circulation
Market: U.S. West Coast Report
Technical: Salvage & Recovery
Product / Directory: Training & Education Facilities

July — Ad Closing : June 11

Feature: Satellite Communication Edition
Market: Canada
Technical: Offshore Energy: Oil, Gas, Wind, Wave & Tidal Power
Product / Directory: Diesel Engine Technical Guide

August — Ad Closing : July 16

Feature: The Electric Ship: From the Bridge to the engine room, technologies to optimize power onboard
Market: SMM 2010 Edition: The world maritime industry meets in Hamburg
Technical: Ship Repair & Conversion
Product / Directory: Maritime Tools: Welding, Cutting & Machine Tools

BONUS DISTRIBUTION:
Offshore Northern Seas - Aug 24-27
SMM September 7-10

September — Ad Closing : August 13

Feature: Marine Propulsion Edition
Market: RIBS & Tenders: New Boats & Technologies
Technical: Marine Coatings
Product / Directory: Insulation, Pipes, Pumps & Valves

October — Ad Closing : September 10

Feature: Marine Design Annual
Market: Arctic Ops: Designing Ships & Offshore Structures
Technical: Maritime Security: U.S. Coast Guard Annual
Product / Directory: CAD/CAM & other Software Solutions

BONUS DISTRIBUTION:
SNAME November 4-6

November — Ad Closing : October 15

Feature: Workboat Annual
Market: Training & Education: Keeping in Compliance
Technical: Dynamic Positioning: Harnessing the Power
Product / Directory: Deck Machinery & Cargo Handling Equipment

BONUS DISTRIBUTION:
Int'l Workboat Show Dec 1-3 / INMEX December 8-10

December — Ad Closing : November 12

Feature: Great Ships of 2010
Market: Coatings & Corrosion Control
Technical: The Green Ship: Technologies to keep vessel ops clean
Product / Directory: Maritime Fire & Safety Products

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

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

BARGE FABRICATION

Signal International LLC, 1011 S.Hwy 6, Ste 108, Houston, TX 77077, USA

BOAT BUILDING AND DESIGN

Rivolta Group, 1765 Ringling Blvd. Suite 300, Sarasota, FL , tel:941 954-0355, fax:941 954-0111, Rrivolta@rivolta.com contact: Renzo Rivolta, www.rivolta.com

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

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

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

BULKHEADS/MJ DOORS

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

CHARGE AIR COOLERS

3 Star Atlantic Radiator Ultra Sonic Cleaning Division, 4358 N.Dixie Highway, Oakland Park, FL 78634, USA , tel:954 566-7403, fax:954 561-5946, MCross9241@aol.com

CONTROL SYSTEM-MONITORING/STEERING

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

Baier Marine, 1914 N 34th Street Suite 502, Seattle, WA , tel:206 709-1500 ext. 223, fax:206 632-2441, sales@baiermarine.com contact: Alex Smith, www.baiermarine.com

DECK MACHINERY- CARGO HANDLING EQUIPMENT

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

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

ELECTRIC MOTORS AND CONTROLS

Ward Leonard, 401 Watertown Road, Thomaston, CT

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

PMI Industries, Inc, 5300 St. Clair Avenue, Cleveland, OH

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

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

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

HATCHES & DOORS

Baier Marine, 1914 N 34th Street Suite 502, Seattle, WA , tel:206 709-1500 ext. 223, fax:206 632-2441, sales@baiermarine.com contact: Alex Smith, www.baiermarine.com

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

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

ExxonMobil Marine Lubricants, 3225 Gallows Rd, Fairfax, VA , www.exxonmobilmarinelubes.com

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

MARINE & OFFSHORE SIGNAGE

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

METEOROLOGICAL INSTRUMENTS

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

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

PASSIVE FIRE PROTECTION

Microtherm, 3269 Regal Drive, Alcoa, TN , tel:865 681-0155, fax:865-681-0016, ABostrom@microtherm.us contact: Alyssia Bostrom, www.microtherm.us

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

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

PROPULSION EQUIPMENT AND SERVICES

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

SATELLITE COMMUNICATIONS

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

SURFACE PREP TOOLS

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

TANK GAUGING AND SENSORS

Electronic Marine Systems, 800 Ferndale Pl., Rahway, NJ 07065, USA , tel:732 382-4344, fax:732 388-5111, emsmarcon@aol.com contact: Tom Priola, 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

WASTE WATER TREATMENT

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

WINCHES & FAIRLEADS

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

Employment/Recruitment • wwwMaritimeJobs.com

Port Engineer
Job Location: USA, Los Angeles/Long Beach Harbor

JOB TITLE: Port Engineer
LOCATION: Los Angeles / Long Beach Harbor

GENERAL JOB DESCRIPTION:
Schedule, coordinate, and perform vessel repair & maintenance, coordinate purchasing of parts and repair services and supplies, schedule routine maintenance requirements for tugs and barges. Perform inspections of vessels for
repair & maintenance standards and procedures. Keep Tugs and Barges in compliance with all regulatory agencies. Keep accurate records of all maintenance preformed using company program.

REPRESENTATIVE DUTIES:
Schedule, coordinate, and perform flow of work based on customer orders, establish priorities and availability of personnel, equipment, and resources. Keep records of maintenance preformed, hours used, fuel burned, and report to different funding agencies. Schedule routine maintenance of tugs and barges. Manage oil analysis program. Coordinate the purchasing of parts and services for repair and maintenance projects. Perform inspections of vessels for repair & maintenance standards, regulatory Compliance and AWO RCP program. Perform emergency repairs
on vessels as required.

SKILLS AND ABILITIES:
Computer skills: Word and Excel
Knowledge of oil transportation and marine industry.
Knowledge of tugs and barge maintenance systems and equipment.
Ability to repair marine equipment on site under adverse conditions.
Ability to deal with others using courtesy, tact, and good judgment.
Maintain the confidentiality of all sensitive communications.
Ability to understand and execute complex oral and written instructions.
Ability to work independently with minimal or no guidance.
Ability to get along with office staff and vessel crewmembers.
Must be physically fit enough to board barges and tugs at sea and in port.

KNOWLEDGE OF:
Must be able to read, speak, write, type, and understand English in person and over the telephone.
Must be thoroughly familiar with tank barge operations, ship operations, and terminal/refinery operations.

EQUIPMENT AND MACHINERY USED:
Required to work aboard boats and barges using pike poles, heavy lines, winches, mechanical tools for repairs.
Computer
Copier
Fax Machine

WORK EXPERIENCE:
Experience maintaining tugs and barges.
3 years at sea on tankers or oil barges or equivalent military experience.
3 years of increasingly responsible port engineering experience in the maritime industry.

EDUCATION / TRAINING:
Four year college education in Maritime field or related studies or equivalent experience.
U.S. Coast Guard license or U.S. Coast Guard Tankerman endorsement on a Merchant Mariner's Document.
HAZWOPER (including Incident Command System) training within 90 days of being hired.
First Aid training.
CPR training.

OTHER DUTIES:
Perform related duties as assigned.
Perform in the company Spill Management team as assigned.

Human Resources
Harley Marine Services
910 SW Spokane Street
WA 98134
Fax: 206-428-7194
Email: jobs@harleymarine.com
Web: http://harleymarine.com/jobs.html

Director of Quality, Safety & Environmental
Job Location: USA, Seattle

JOB TITLE: Director of Quality, Safety & Environmental
LOCATION: Puget Sound / Columbia River, L.A. / Long Beach Harbor, San Francisco, New York Harbor

GENERAL JOB DESCRIPTION:
Ensuring company quality, safety and environmental policies and procedures are developed and maintained in accordance with all applicable codes, standards, regulations and Company procedures.

Compliance with regulatory agencies

Providing Management oversight for:

Company safety;
Vessel inspections;
Emergency preparedness;
Investigation of incidents and near misses when applicable and other significant safety and environmental management issues.
Coordinating and maintaining HMS safety and regulatory training programs

Initiating the reporting of claims

Monitoring the return to work status of lost time employees and keeping stakeholders apprised as necessary

Organizing and maintaining the Company Incident Command System
Participating in the HMS Quality and Oversight Group

Overseeing, functionality and control of QS systems and processes

Document oversight and control

Record oversight and control

Schedule and conduct internal/external audits

Arranging, coordinating and participating in QS Management Review meetings

Facilitating and participating in Safety training and meetings

SKILLS AND ABILITIES:
Extensive knowledge of the oil transportation and maritime industry.
Ability to deal with others using courtesy, tact, and good judgment.
Maintain the confidentiality of all sensitive communications.
Ability to understand and execute complex oral and written instructions.
Ability to work independently with minimal or no guidance.
Ability to get along with office staff and vessel crewmembers.
Must be physically fit enough to board barges and tugs.
Must be able to read, speak, write, type, and understand English in person and over the telephone.
Must possess a valid state drivers' license.
Must pass a pre-employment drug & alcohol screening.

EQUIPMENT AND MACHINERY USED:
Required to board tugs and barges.

JOB CONDITIONS AND ENVIRONMENT:
Frequently required to board tugs, barges, and ships, at dock or at anchor at all hours.
Perform related duties as assigned by the VP of QSE

WORK EXPERIENCE:
Experience in maintaining tugs and barges a plus.

EDUCATION / TRAINING:
Merchant Mariner's Document/Credential TWIC card

HAZWOPER training.
First Aid and CPR training.

Human Resources
Harley Marine Services
910 SW Spokane Street
Seattle WA 98134 USA
Fax: 206-428-7194
Email: jobs@harleymarine.com
Web: http://harleymarine.com/jobs.html

Project Manager - New Ship Build
Job Location: USA, Houma

RiverHawk Fast Sea Frames, LLC
Project Manager - New Ship Build

The Company

RiverHawk Fast Sea Frames, LLC (RHFSF) is a Small Business headquartered in Tampa, Florida, with shipbuilding activities in Florida, Georgia and Louisiana. RHFSF was established to respond to U.S. and international demands for modern, medium-to-high speed vessels for critical maritime security missions. The Company is distinguished by 1) the depth of technical and operational experience of its leadership team, and by 2) its unique approach to shipbuilding, which leverages these industry patents, proprietary processes and commercial technologies to reduce lifecycle costs and improve performance.

RHFSF is registered with the Department of State, the Small Business Administration, and is listed with Dunn and Bradstreet. It holds numerous marketing licenses for overseas clients.

RHFSF is currently under contract with the U.S. Navy Sea Systems Command to provide 90 Meter Offshore Support Vessels to the Government of Iraq. This contract is valued in excess of $70 Million. RHFSF also has a 145' Offshore Patrol Vessel under construction.

RHFSF is seeking a Project Manager for our dynamic team!

The Position

The Project Manager (PM) is responsible for all facets of project management and execution of the construction of (2) OSV's for NAVSEA to be provided to the Government of Iraqi. In this key leadership position, the PM will be the primary liaison between RHFSF, NAVSEA, building yards, vendors and suppliers requiring a proactive work environment while overseeing vessel construction.

This position will have direct reports and will be based in Houma, LA.

Essential Job Functions

•Primary role in contract negotiations for shipyard and vendors.

•Manage, lead and oversee all aspects of daily operations and all facets of project execution including maintaining quality standards, cost effectiveness and time management ensuring project is on time and within budget.

•Analyze and validates project estimates.

•Conduct formal and informal assessments and evaluations of project performance through the independent analysis and interpretation of objective and subjective evidence using various techniques. Prepare and present project performance reports to management.

•Analyze variances and recommend appropriate corrective action to management. Track progress and exercise judgment in determining matters of significance and scale appropriately.

•Responsible for facilitating interface between Supships and Shipyard.

•Participate in the logistics requirements of project.

•Accountable for adherence to company policies and procedures, contractual requirements and expectations.

•Develop and maintain good relationships with all project stakeholders.

•Review and interpret designs, drawings & specifications. Recommend changes to the plans and specifications to meet actual vessel conditions; consults with all stakeholders as necessary.

•Implement and manage to acceptable construction practices.

•Utilize best practices for inspecting and testing materials used in vessel construction projects.

•As requested review vessel project proposals; analyze outlining parameters of a project; review all planning data; prepare cost estimates, evaluate scheduling and practical engineering feasibility.

•Apply knowledge of marine engineering principles as applicable to the design and construction of ships and ship systems.

•Assess/Manage project risks and opportunities.

The Candidate

Required Knowledge, Skills, Experience and Education

•Degree in Mechanical/Marine Engineering/Shipbuilding and Offshore Engineering or Naval Architecture

•Minimum 10 years relevant experience in project management in shipbuilding or marine industry is a must

•Proven competencies in project management

•Ability to review and interpret designs, drawings & specifications

•Must have leadership & hands on experience in new ship construction

•Knowledge of Navsea and SUPSHIP processes

•Experience with ABS and shipyard processes

•Working knowledge of Microsoft Project

•Excellent communication skills

•Excellent problem solving ability and decision making skills

•Ability to build a strong team

To Apply

Please send a resume, cover letter and SALARY REQUIREMENTS (REQUIRED or application will not be considered), with "Project Manager" in subject line and email to Jeanette.Anderson@RHFSF.com as soon as possible but no later than May 7, 2010. NO PHONE CALLS PLEASE.

Competitive compensation and benefits.

RiverHawk Fast Sea Frames, LLC is committed to diversity in their workforce and is operating under an Affirmative Action Program (AAP) that provides equal opportunities to qualified employees and prospective employees without regard to age, race, color, religion, pregnancy, sex, national origin, veteran status, uniformed status, physical or mental disability, or other protected characteristics.

Jeanette Anderson
RiverHawk Fast Sea Frames

Houma LA
Email: jeanette.anderson@rhfsf.com

Dispersant Operations and Logistics Supervisor
Job Location: USA, Herndon

The Dispersant Manager is responsible for overall technical, operational and financial oversight of the Dispersant Program. Essential elements of the position include: Familiarization and understanding of MSRC customer relationships and requirements as they pertain to dispersants; meeting with MSRC's major dispersant customers is essential. Familiarization and understanding of all current and future aerial dispersant and other air service contracts, to include knowledge of applicable FAA requirements. Familiarization and understanding of aerial and shipboard dispersant operations, including time and dispersant quantity requirements, location of dispersant stockpiles and over-the-road and aerial transportation contractors and their capabilities. Experience with Federal and State requirements, regarding dispersant application and implementing when called out. Learning and upkeep of the MPA/MSRC dispersant budget. Preparing future annual budgets, with up to 5 years projections. Participating on-scene for all customer call-outs and exercises. Knowledge of proposed USCG Dispersant regulations and transitioning to meet these requirements once the regulations are implemented. Development and management of other dispersant related items as directed by the Technical Services Manager.

This position requires a Bachelor's degree in Engineering or an Environmental field or equivalent, and at least 8 years of experience in environmental protection or industrial hygiene in industry or government

positions.

The range of responsibilities of this position demands proven leadership and interpersonal skills. Knowledge of shipboard and aerial application and operations and spill response equipment is required. Familiarity with regulatory agencies associated with the inspection, certification and application of shipboard and aerial dispersants is highly desired. Demonstrated ability to represent MSRC with the public, maritime and response industry, and other appropriate Federal, State and municipal agencies is also required. This position will require on-call availability and immediate travel, as necessary.

Please apply online at www.msrc.org.

Rebecca
MSRC
220 Spring Street, Suite 500
Herndon VA 20170 USA

Email: elsen@msrc.org
Web: http://www.mrcr.org

Ship Surveyor
Job Location: USA, New Orleans

International Classification Society, New Orleans Office, is seeking a degreed Marine Surveyor (NA, MrnE, MchE). Salary commensurate with experience.
Send resume to: nl@classnk.or.jp

C.R. Riemer
ClassNK
433 Metairie Road
Suite 219
Metairie LA 70005 USA
Phone: 504-834-8440
Fax: 504-834-8585
Email: nl@classnk.or.jp
Web: http://www.classnk.or.jp

Dock Master
Job Location: USA, New York

Ideal candidates will be responsible for supervising all docking and undocking operations of vessels in an efficient manner while ensuring the safety of all personnel and equipment. Responsibilities will include interfacing with Operations Management to schedule the docking and undocking of vessels. Must be able to clearly read and interpret docking plans/arrangements, develop blocking plans with safe blocking loads based upon sound calculations, and capable of layout/safe arrangement of blocks for docking. Execute safe dry-docking evolutions and vessel launching, analyze tide and wind conditions, and maintain weight logs and docking plans. This position requires extensive knowledge of New York Harbor, a minimum of 10 years working in a shipyard, and experience as a dock master working with large graving docks. Bachelor degree in Naval Architecture or Marine Engineering preferred; or equivalent combination of education, training and experience that enables performance of all aspects of the position. Salary commensurate with experience. For consideration, please e-mail r sum 's to jobs@bayonnedrydock.com.

Human Resources
Bayonne Drydock & Repair Corp.
Military Ocean Terminal Bayonne
P.O. Box 240
Bayonne NJ 07002 USA
Email: jobs@bayonnedrydock.com
Web: http://www.bayonnedrydock.com

Tug Mate
Job Location: USA, New York

Bouchard Transportation Co., Inc. has immediate openings for Tug Mates in the Northeast. All applicants must have a valid USCG license with towing endorsement, STCW, TWIC, passport and Northeast recency. GMDSS and ARPA a plus. Please download an application and send it in with copies of your documents for immediate consideration.

Laurie Lawrence
Bouchard Transportation Co., Inc.
58 South Service Road
Suite 150
Melville NY 11747 USA
Phone: 631-390-4900
Fax: 631-390-4966
Email: llawrence@bouchardtransport.com
Web: http://www.bouchardtransport.com

Technical Operations Manager
Job Location: USA, MA, Beverly

About the Job:
CSL International is currently looking for a Technical Operations Manager to join our Technical Operations Department at our office in Beverly, Massachusetts.

Location:
Beverly, MA 01915

Job Type:
Full Time Employee

Relevant Work Experience:
5 – 7 years

Education Level:
Bachelor's Degree - Mechanical Engineering, Naval Architecture or Marine Engineering

Certification/Technical:
Professional Engineer

The Company:

CSL International, a Subsidiary of The CSL Group Inc.
The CSL Group Inc. ("CSL") is a private Canadian based company headquartered in Montreal, Quebec with offices in Canada, Australia, Singapore and the United States. The company is a global provider of marine transportation and dry bulk cargo handling services that specializes in self-unloading vessels with inland, coastal and deep sea trading capabilities.
CSL is the largest commercial operator of self-unloading vessels in the world, managing a fleet of 54 vessels with a total dead weight of approximately 2.5 million tonnes and handling approximately 75 million tonnes of dry bulk cargo annually for some of the world's leading industrial and agricultural companies.
Founded in 1845, CSL now employs approximately 1,000 people globally.

CSL International:
During the late 1980's and into the 1990's, CSL began expanding its international operations and formed a new business unit, CSL International, based in the Boston, Massachusetts area. Over the years, CSL International has expanded its operations into the East and West Coasts of North America, the Caribbean, South America, the Far East and Australia.
CSL International also specializes in the marine transportation and handling of dry bulk cargo, and has been the growth engine for the Group in recent years. The company serves clients in industries ranging from steel to agriculture and operates the largest fleet of self-unloading vessels in the world.

Duties & Responsibilities:

Assist Director of Technical Operations with:

• Monitoring day to day fleet operational efficiency and performance with Ship Management Companies.

• Reviewing and monitoring vessels costs and budget variances with Ship Management Companies

• Review and comment on CSLI annual operating budget

• Reviewing quarterly ship inspection reports, monthly, manager's reports, and safety audit reports and follow up with appropriate recommendations

• Advising on technical issues for fleet operations

• Carry out audits of ship management companies' office and ship-board audits

• Review and comment on technical specification, detailed engineering, contracting for drydocks, new and special new and special projects

As required, provide technical support to the VP Business development and Transhipment in the analysis of future acquisitions and potential new projects.

Requirements:

• Knowledge of vessel operations and fleet management experience

• Project management experience
• International (overseas) shipyards/projects experience
• Flexibility to adapt to changing schedules and priorities

• Able to build relationship and foster teamwork

• Strong communication and organizational skills

This is a full time, salaried position. CSL International offers a competitive salary, profit sharing and a comprehensive benefits package.
We thank all applicants for their interest; however only those selected for an interview will be contacted. No phone calls or agencies please.

Moira Cleary
CSL International, Inc.
152 Conant Street
Beverly MA 01915 USA
Email: mcleary@cslbos.com

Harbor Supervisor
Job Location: USA, Powhatan Point, Ohio

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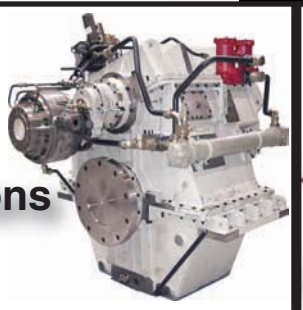

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