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Marine News

MARCH 2011
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On the Cover

Z-Drive Training

Captain Jeff Slesinger, trainer and author, put MarineNews managing editor Raina Clark through the paces of Z-Drive training on PMI's simulator.
See full story starting on page 28.

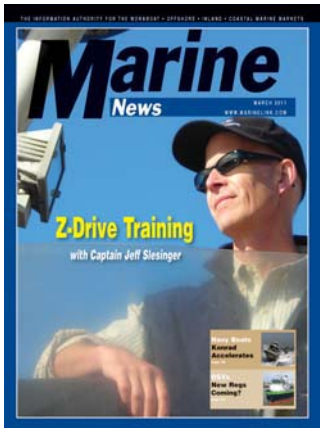

Photo courtesy Jeff Slesinger

EDITOR'S NOTE

rainaclark@marinelink.com

My favorite part of this job is getting the opportunity to experience hands-on what people do in the commercial maritime field everyday. From the crew aboard a towboat on the inland waterways to the welders and business managers in boatbuilding yards, people in the industry have been very generous and patient, showing me what an average day in their world of work looks like. A couple months ago I was given the opportunity to train under an accomplished tug boat captain in a state-of-the-art Z-drive tug boat simulator at the Pacific Maritime Institute (PMI) in Seattle, Wash. Jeff Slesinger, author of a new book that just came out, ASD Tugs: Thrust and Azimuth, Learning to Drive a Z-drive, took me under his wing for a few hours last January and showed me how to bring a harbor assist tug up alongside a tanker. And I did. Virtually, anyway, and as well as one can after just one evening at the controls. I'm grateful to both Jeff and to the staff at PMI for hosting me and digging through their schedule to find a time when the simulator would not be used by official students. Jeff is also teaching a new course at PMI, Principles & Practice of Docking Barges, a two–day simulator course. PMI has two tug simulators and a barge simulator and all three can be tied together or operated independently.

Changing Coast Guard regulations are a constant driver in the maritime training and education market. Recently, schools like the Mid-Atlantic Maritime Academy (MAMA) have started to address STCW changes to engineering license requirements proposed during the 2010 Manila Conference. MAMA now offers one week courses in Engine Resource Management, Vessel Resource Management, Rating Forming Part of an Engineering Watch (RFPEW), as well as Designated Duty Engineer (DDE), QMED FOWT and Oiler training. But it's not the lack of resources that is the problem, but rather knowing which resources you need to use. Anyone can be forgiven for being confused about training requirements. I have a friend who is retiring from the Coast Guard and looking to enter the civilian world as an engineer for small, coastal and inland vessels. Coast Guard regulations are in flux for engineer license requirements and even my friend, with 20 years in the very agency in charge of these regulations, is unsure about what route to take.

Raina Clark, Managing Editor, rainaclark@marinelink.com

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Zyvex Technologies claims that its Piranha USV (unmanned surface vessel) is the largest boat of its kind built from nano-enhanced materials. Constructed entirely of Arovex, a nanotube-reinforced carbon fiber, the 54-ft boat weighs less than 9,000 lbs and can carry up to 15,000 lbs over 2,500 miles or more. The Piranha USV is equipped with one M7000A Seakeeper Gyro in order to stabilize the vessel. "Stability is especially important on a vessel intended for unmanned operations," said Zyvex director of defense applications Mike Nemeth. "The Piranha is so lightweight that the Seakeeper's impact on the stability is amplified. Since we were able to develop the Piranha from a clean sheet design perspective, we had the opportunity to incorporate the latest systems without compromising other requirements."

The Piranha USV is designed to perform a wide range of applications, such as surface surveillance, antipiracy, search and rescue, submarine warfare, mine countermeasures and harbor patrol. "The Seakeeper has exceeded expectations during the initial sea trials," said Nemeth.

Piranha USV Specifications:

Length	53.4 ft
Width	10.5 ft
Empty weight	<8000 lbs
Full load displacement	<23,000 lbs
Draft	2 ft
Fuel capacity	1400 gal
Fuel type	Diesel
Maximum speed	45+ knots
Cruise speed	25 knots
Range @ cruise speed	2800+ nm
Cruise endurance	96+ hrs
On station endurance	40+ days
Silent loiter ability	120+ hrs
Payload capacity	15,000+ lbs

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- RGM-84 Harpoon Missiles
- AGM-114 Hellfire Missiles
- 7.62 Stabilized Machine Gun
- MCM Towing Capability
- Internal Active/Passive SONAR

The Piranha USV in sea trials
Inset Left The M7000A Seakeeper Gyro.

President & COO, ABS Nautical Systems

Karen Hughey

MarineNews *spoke with Karen Hughey, President and COO of ABS Nautical Systems, about the market for fleet management software. Prior to joining ABS Nautical Systems, Hughey served as Vice President of Application Development for ABS.*

Photo courtesy ABS Nautical Systems

How did you get involved in the maritime industry?

I had worked in IT management across multiple industries when I decided to join ABS' innovative IT department. I was never truly inspired by any one industry until I became involved in this industry — a truly dynamic field. Since 1997, I have been with ABS — and now ABS Nautical Systems. One factor in my decision to join ABS was the company's history and proven stability. It has been around for nearly 150 years.

What is the outlook for your market?

Our market outlook is currently very strong. ABS Nautical Systems has a well-balanced client base within the main four maritime sectors: marine, government, offshore and energy and work boat. We've grown tremendously and are continuing to open new offices globally and expand our client base with some of the top companies in these sectors.

Part of our growth is due to our new offerings within the NS5 software suite and part is a result of timing. When the maritime industry was at its peak, vessel owners didn't have the time or capacity to implement a fleet management system. As a result of these economic conditions, this is the perfect time for many vessel owners to optimize their overall business processes, which includes implementing systems like NS5 or the Newbuild Program. The time and bandwidth is available within their organizations, and fortunately minimal upfront investment is required for implementation.

Photo courtesy ABS Nautical Systems

ABS Nautical Systems client Hornbeck Offshore Services has implemented the NS5 software suite for its fleet management.

How is your company investing for the future?

A significant portion of our revenues are reinvested back into customer-driven research and product development. We're consistently enhancing our software suite and putting more stability into it. This spring we will introduce

our latest version of the NS5 software suite, NS5 Enterprise, which will offer highly developed usability, reporting, speed and overall performance. Our other focus for investment is our people. We're hiring new talent and expanding our reach globally to meet the needs of our customers worldwide.

ABS Nautical Systems' NS5

What are the most important changes in the industry?

Historically, the marine industry has been slow in terms of adopting IT management systems as compared to many land-based industries. However, this is shifting tremendously because vessel owners are seeing the numerous benefits that result from implementing a system like our software suite. Companies want efficient operations and smarter information management in areas such as finance, inventory, staff and compliance, which IT solutions such as the NS5 software suite can streamline.

With increased regulation and the obligation of industry standards, more companies are also more focused on integrating compliance requirements and on-board IT management. A management system is certainly an effective way to capture necessary information to demonstrate compliance.

EPS Corp. Launches First

EPS M10 Hovercraft

The EPS M10 Hovercraft, built at the company's facilities in Titusville, Fla., was launched in late 2010 and was shipped to its final destination in early January 2011. According to EPS, this is the first vessel of its kind to be built in America and launched in its waters. The EPS M10 is constructed of non-corrosive, fiber-reinforced advanced composites which are environmentally friendly and provide significant reduction in operating, maintenance and through-life costs. The EPS M10 Hovercraft is a fully amphibious, air-cushioned vessel that can operate effectively at sea, in shallow waters and over any land surface. It is powered by two 1,000hp diesel engines which provide lift and operate its propellers, giving speeds in excess of 40 knots. EPS builds these crafts under a license from ABS Hovercraft Ltd. Existing vessels are in operation with various military and commercial customers.

Environmental features include:

- No hot exhaust gas discharge into the water
- No propellers, jets, shafts or exhausts in the water; marine flora and fauna remain undisturbed
- Virtually no wake produced, thereby eliminating beach and coastal erosion
- Extremely low pressure contact with sea or land; a fully loaded vessel creates a downward pressure of less than 20% of a man's footprint
- Polluting anti-fouling paint is not required as the hull remains above the surface.

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Hull construction	Single Skin FRP
Deck and superstructure construction	FRP Sandwich
Length (operational)	68 ft
Length (skirt deflated)	64.6 ft
Beam (operational)	35 ft
Beam (skirt deflated)	24.5 ft
Cushion height	3.3 ft
Off cushion draft	1.6 ft
Maximum calm water speed (lightship)	50 knots
Maximum calm water speed (fully laden)	40 knots
Range (calm water)	Up to 500 nm
Engines	2x MAN water cooled D2842 LE211
Propellers	2x 4 bladed controllable pitch air propellers
Disposable load	10,000 Kg
Crew	Minimum of 2
Bow ramp	2+ meter clear opening

Photo courtesy EPS Corporation

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Salvage

Informed Marine Casualty Response

By Jim Shirley

Some years ago, an article in a maritime trade publication described the boon a significant marine casualty can bring to the economy of the location where it occurs. The local hotels and restaurants will be filled with those responding, surplus local labor will be given opportunities for gainful employment, and local retailers will be called upon to rent or sell equipment and hardware, as well as to sell work clothes, gloves, boots, and much more to the "invading" and local responders. The air fields, train stations, taxi services, gasoline stations, truck and car rental services, and others involved in the transport of persons and equipment will likely have to call in additional resources to supplement their standard inventories.

Those responders will have different roles and responsibilities. They will, of course, include salvors and their subcontractors, and pollution response contractors if there is an oil or chemical spill or the risk of such. They will include representatives of the owner(s) of the vessel(s) involved and the cargoes on the vessel(s), marine surveyors representing most of those interests, and others representing the several insurers with interests in the casualty. The responders will include governmental authorities. In the United States, those will include the U.S. Coast Guard (USCG) to ensure that proper measures are taken to remedy situations that pose a threat to the public welfare, to investigate the causes of the casualty, and to identify and punish any wrongdoing. The governmental responders may also include representatives of the National Transportation Safety Board (NTSB) who will endeavor to identify problems that may be avoided in the future to minimize the risk of such a casualty being repeated. Representatives of the affected state and local governments will be present to protect local interests and to provide local environmental knowledge to the other responders. Inevitably, there will be lawyers representing some of the above interests, advising and protecting their clients while investigating the casualty in preparation for addressing issues of civil or criminal fault. Of course, there will be the press, along with the public relations personnel sent by some of the interests to keep the press informed. Sometimes there will be politicians.

It is helpful in such situations for all responders to understand the roles and responsibilities of all the other responders. It is also helpful for each to have some fair understanding of how the others may be expected to carry out their missions, and the tools and techniques they will employ in doing so. That is in part a function of the Incident Command System (ICS) employed in the U.S., but the more knowledgeable the participants are in these respects when first responding to the casualty, the easier communications will flow within the ICS, and that will likely lead to a smoother response and to a better and earlier resolution of all the problems the casualty presents.

The roles of all responders are important, but often the centerpiece of the response will be in the role of the salvors, whose work will be looked to for a successful outcome. However, experience has shown that some responders do not sufficiently understand the methodical planning of salvors, or its importance in bringing about success in a timely fashion. Perhaps the most obvious example may be seen in those cases in which government prosecutors consider "criminalizing" some of the conduct of a vessel's owner or crew. When prosecutors show up on scene, vessel owners and crew, and perhaps others, must retain criminal defense lawyers, whose advice likely will interfere with the amount of information those persons will convey to the salvors about how the casualty occurred, what equipment on the ship works or does not work, and other information that the salvors will need in order to develop and execute a salvage plan. If persons seized with that information cannot convey it to the salvors, it may take them hours, or even days, to discover what might have been told to them in minutes. Less obvious examples may include disconnects in the communications among members of the ICS or delays in the salvors obtaining approval for the use of certain resources. These situations may result in delays, inefficiencies, and greater damage to vessels, cargoes, and the environment.

The leading marine salvage companies in the U.S. have long recognized the importance of working with federal and state authorities in their geographical areas of opera-

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tions on a day to day basis. This has enabled development of mutual trust, and has provided for a two way or three or more way educational stream to flow between or among the participants. National Preparedness for Response Program (PREP) Drills overseen by the U.S. Coast Guard have aided this process, and broadened it by bringing in other categories of participants. The American Salvage Association (ASA) has taken this mutual education and training process to a new level.

The ASA has, almost from its outset, conducted biennial three-day Maritime Salvage Conferences at which speakers and panelists address salvage and other marine casualty response topics. Some speakers and panelists come from the professional salvage community, while others represent the spill responders, the legal community, the commercial shipping industry, the marine insurers and P & I Clubs, and the USCG, NOAA, and other government entities. The speakers and panelists provide much information to the attendees that is necessary for them to understand the roles of others involved in casualty situations. Importantly, the attendees themselves represent a broad spectrum of the maritime community, and their remarks and questions help to inform everyone else about their roles. Given the typical attendance of 250 or more persons, this cross flow of information benefits many responders and prospective responders.

The information conveyed in the Maritime Salvage Conference setting is, of necessity, very general. In order to provide more in-depth coverage of specific issues, the ASA runs smaller two-day and three-day sessions dedicated to specific governmental and non-governmental groups of about 20 to 30 persons. These are conducted by the ASA Training Committee, the members of which come from the ranks of the ASA membership. The sessions enable ASA professionals to convey details to persons who are in or aspire to jobs that may require them to respond to marine casualties. The information provided to any particular group will likely include both technical and operational data on salvage response, and also address commercial considerations such as salvage contracting. Training modules have been developed to address assessment and survey of casualties, and responses to ship strandings, capsizings, sinkings, and shipboard fires. Other modules address towing operations, emergency lightering, underwater oil removal, and Arctic salvage. Attendees may include USCG and other federal and state first responders, and courses may be specifically designed for commercial and other interests. Emphasis in the program will shift depending on the nature of the attendees, e.g. as between USCG Strike Team members on the one hand, and prospective Federal On-Scene Commanders on the other. These programs provide a good general overview with some hands-on training, but they are not designed to make salvors of the attendees. Although the physical sciences, engineering, and seamanship that are applied in marine salvage operations may be learned in classrooms, development of the skills required for their application requires years of on the job training and experience. Toward this end, the ASA is in the process of forming an "Education Committee," one function of which will be to attract persons who may be interested in working in marine salvage by informing them about the industry, educational and training opportunities, mentoring programs, and prospective employment opportunities.

That is not the end of the ASA's efforts at educating people in marine casualty response and related issues. It works with the North American Marine Environmental Pollution Association (NAMEPA) as a sponsor of the Wrecks of the World (WOW) Conferences, a program that addresses the many wrecked vessels that litter the seafloor, some of which contain large amounts of fuel oil, cargo oil, or other hydrocarbons or chemicals and pose threats to the marine environment everywhere. The June 2011 Conference (WOW II) will also address abandoned and shut down oil wells. At a more fundamental level, the ASA has taken a strong interest in assisting the Maritime Industries Academy, a part of the Baltimore public school system dedicated to educating Baltimore center city youngsters to prepare them for the jobs that may be available to the best of them in the broader maritime industry. They are not being trained for marine casualty response, but if all goes well, some day some of them may be prepared to receive that training.

Jim Shirley is a Master Mariner, a former salvage master and retired maritime lawyer who specializes in maritime casualty and salvage matters, and now serves as legal counsel to the American Salvage Association and as Principal Consultant in JTS Marine LLC. Contact him at Email: jtsmarine@verizon.net or (609) 883-3522.

More Uptime, Lower Costs Via

Regular Maintenance

By Bill Mossey

Modern marine diesel engines are more complex and require more maintenance than in the past, but they also deliver superior performance, better fuel economy, low emissions and higher reliability. It has been a good trade-off. Uptime, as it turns out, is more critical today than ever before, because downtime can be very costly to an operator who faces income losses or performance penalties when his boat is unavailable. An unscheduled repair is no longer merely an inconvenience, it is now a financial liability. This emergence of downtime as a financial risk has required a change from the "fix-as-fail" philosophy of the past to the "maintain-to-avoid-failure" mentality that is required today.

Optimizing maintenance with trending analysis

Engine manufacturers tend to recommend maintenance schedules based on typical or average duty cycles or patterns of use. However, duty cycles may vary widely from "average" depending on the type of boat and the application, and this can affect maintenance. For example, ferries tend to operate at high power for extended periods, followed by periods of idling during loading and unloading. Tugs pushing barges upriver operate for extended periods at high power, while harbor tugs tend to have more intermittent duty cycles. Each pattern of use can increase or decrease the amount of maintenance needed compared with the recommended amount. The ideal way to gauge how to adjust maintenance schedules to match usage is through trending analysis. Trending analysis involves sampling, testing and record-keeping in order to forecast when certain maintenance activities should be performed. It's a way of optimizing costly maintenance procedures to save money, save time and accurately predict when more expensive repairs may be conveniently scheduled. Marine diesel maintenance procedures can be grouped into nine broad categories described below.

Lubrication maintenance

Regular lubricating oil changes are perhaps the most important factor in engine durability and the cost of doing them can add up. Most marine engine operators are looking for ways to extend oil change intervals in order to reduce costs of material and labor and eliminate downtime. A typical large ferry with twin 65-liter engines will require 100 gallons of lubricating oil at about $15 a gallon every 250 hours of operation. If the ferry operates 10 hours per day using standard, Type-1 oil, it will require an oil change every 25 days at a cost of $1,500 just for oil. Filters and labor would be extra. Some manufacturers are able to increase oil change intervals to 500 hours with Type-1 oil by installing a larger oil sump, but that tends to increase oil disposal costs. The same thing can be accomplished by switching to higher-quality Type-2 oil, cutting materials, labor and disposal costs almost in half.

Images courtesy MTU

Oil and filter change intervals can be extended by using high-grade oils, centrifugal oil filters and doing regular oil analysis.

Some marine diesel engines come equipped with centrifugal oil filters, which can extend oil change intervals to 1,500 hours when using Type-3 oil, cutting the cost of materials and labor by approximately 70 to 80 percent. By extending oil change intervals, operators also greatly reduce the hassle and disposal costs associated with waste oil and used filters.

Oil change intervals may be extended even further with the help of regular oil sampling and trending analysis. Oil samples can be taken regularly and sent to a lab for testing and analysis. The oil will be analyzed for contaminants such as water, soot, coolant and metals. Over time, these samples will reveal a trend as to how quickly the oil is aging or the engine is wearing. If the trend shows that the

oil and engine are wearing faster than normal for that application, then the oil change interval can be shortened to minimize engine wear. Conversely, if the trending shows less than normal wear, the oil change interval may be extended without undue risk, thereby reducing costs further. Services that analyze lube oil samples are inexpensive compared to oil changes and usually pay for themselves in savings. (As a general caveat, it is best to always follow the engine manufacturer's recommended oil change intervals to avoid invalidating the warranty.)

Fuel system maintenance

Beyond simply changing fuel filters when they get plugged, most vessel owners are unaccustomed to having to do fuel system maintenance on modern marine diesel engines with common rail fuel injection systems. In general, fuel injectors are usually designed to last for the life of the engine. However, there are several reasons why fuel systems now need regular attention.

In order to increase performance and reduce exhaust emissions in modern diesel engines, there have been significant changes to both the fuel and the fuel delivery systems that affect maintenance. For example, to reduce exhaust emissions and prevent contamination of any catalytic aftertreatment systems, the sulfur content of diesel fuel has been drastically reduced from 500 parts per million for on-highway low-sulfur diesel (LSD) to 15 parts per million in ultra-low-sulfur diesel fuel (ULSD) now mandated in many jurisdictions. While lowering the sulfur content of the fuel is good for the air, it significantly reduces the lubricating properties that are inherent in higher-sulfur diesel fuel. As a consequence, fuel pumps, fuel injectors and valves may be subjected to higher rates of wear when using ULSD. To compensate for the missing sulfur, most ULSD now contains a lubricating additive. Vessel operators should always inquire about the quality of the fuel they are receiving.

In addition to the fuel being more abrasive, fuel injection pressures are higher than ever before in order to improve combustion efficiency and reduce emissions in the exhaust. Injection pressures have increased from 1,000 bar (14,500 pounds per square inch) to about 1,800 bar (26,100 pounds per square inch). This puts higher stresses on the injectors and makes them subject to higher wear.

Since the injectors on the latest engines play such a critical role in combustion efficiency and emissions reduction, manufacturers are recommending that the injectors be changed out after 4,500 to 12,000 hours of operation, depending on the engine rating and application. This is because manufacturers of the most advanced engines need to certify that the engine will meet EPA emissions requirements for a certain period of time. The only real way to insure emissions compliance, therefore, is to recommend that the injectors be changed out sooner than in the past.

Cooling system

Cooling systems have always been a critical issue for marine engines, but they have become even more important with the advent of modern clean diesels. Today it's not just a matter of checking the coolant level; the coolant itself needs to be chemically monitored and analyzed to make sure it is functioning efficiently. Proper operation of the cooling system is needed to ensure long engine life, fuel economy and low exhaust emissions.

Changes to the combustion process to control exhaust emissions can increase the amount of heat rejection in modern diesels, and this may create greater temperature differentials across the heat exchanger. The high differentials caused by 45 degree F sea water and 180 degree F coolant can cause silicates to drop out of the coolant and

deposit on internal surfaces, reducing heat transfer and degrading the lubricating and cooling properties of the coolant.

Other stresses to the coolant come from the exotic metals that are used in today's modern engines, such as iron, aluminum, titanium and copper-nickel. Dissimilar metals increase galvanic corrosion opportunities unless the coolant is maintained at the right pH with the right blend of inhibitors. The same issues are present in the charge-air coolers that are used to cool the pressurized air from the turbochargers and densify the oxygen that improves combustion. Here, temperature differentials are even higher, with charge-air temperatures upwards of 300 degrees F going across the charge-air cooler.

To make sure that the coolant is operating at top efficiency, it needs to be properly tested annually. Coolant samples should be sent to a laboratory to check the pH, identify any metals or salts that are present, and to evaluate the condition of the lubricants and corrosion inhibitors. Testing kits are readily available from your engine manufacturer.

Images courtesy MTU

High reliability, low fuel consumption and long engine life are all results of regular marine engine maintenance.

Air intake system

To ensure the best possible fuel efficiency, always replace air filters at the manufacturer's recommended intervals. Frequent inspection of the condition of the filters between changes is also important to make sure they are not being contaminated by oil mist from a leaky crankcase or soot from leaks in the exhaust system feeding back into the engine compartment.

Turbochargers are another part of the air intake system

and it is always best to follow the manufacturer's recommendations for inspection, repair or replacement. Turbochargers typically last to mid-life on marine engines — about 15,000 hours — but this varies with each engine and application. In engines with closed crankcase breather systems, watch for possible oil and soot contamination of the compressor blades or the charge-air cooler. Buildup on the compressor turbocharger's blades can slow it down and restrict airflow to the engine, resulting in reduced power and increased fuel consumption. When turbochargers do wear out, they are usually replaced rather than rebuilt because rebuilding requires the vessel to be out of service longer.

Exhaust system

During initial engine installation, make sure that the routing of the exhaust system prevents the exhaust from re-entering the engine compartment during operation. If not properly routed, soot can build up on engine room surfaces and clog air filters prematurely. On a regular basis, check for cracks, leaks or corrosion in the entire exhaust system and make necessary repairs.

Valves and heads

Valves need adjusting periodically to compensate for the wear that occurs in the valve train. In new engines, the amount of adjustment necessary will be higher until the valves seat in. Traditionally, the valve lash has been adjusted based on a go, no-go test using a feeler gauge. If a valve clearance was found to be out of compliance, the valve lash was adjusted without ever knowing what the exact amount of wear had been.

Again, here is where trending can help reduce maintenance costs. With today's high costs of labor and downtime, the recommended method is to test early in an engine's life and actually measure the amount of wear on each lifter and record it. Over time, the operator will accumulate a record of how each valve is wearing, allowing a very accurate prediction to be made as to when valves will need to be adjusted in the future.

Trending can also be used to determine wear in cylinder heads. For example, remove a few heads just prior to the recommended change interval to identify any abnormalities and to measure and record the distance the valve head has receded into the cylinder heads. Note whether this is more or less than anticipated. By measuring and recording cylinder-head wear, the operator will be able to predict the rate of head wear in that engine and more accurately schedule future maintenance when it is most convenient.

Emissions systems

For most marine applications, the emissions system that requires attention is the crankcase ventilation system. More common on work boats, engines with open crankcase systems all pass some lube oil and combustion gasses into the engine room space, potentially resulting in the plugging of the engine's air filters. Dirty air filters will lead to higher fuel consumption, higher operating temperatures and shorter engine life.

The most advanced marine engines today have closed crankcase ventilation systems that prevent contamination of the engine compartment by capturing oil mist and combustion products from the crankcase. While these closed systems require some maintenance to change filters, they eliminate spills and avoid pollution fines, and result in a much cleaner engine compartment.

Mechanical systems

In every vessel, the force generated by the engines propelling the boat forward must be ultimately borne by the engine mounts — the connection between the engine and the boat's hull. These engine mounts are either solid or resilient and are under intense strain and vibration. Each type should be inspected annually for deterioration of the rubber, loose fasteners or cracks in the castings or studs and replaced if necessary.

Another mechanical system that needs attention is the torsional coupling. These devices are mounted between the marine transmission and the engine's flywheel and help dissipate mechanical shock and stress in the form of heat. Some are fluid couplings and some just rely on resilient components. During operation, these devices are subjected to heat, fluids and vibration. Since none of these devices age consistently, it is important to inspect them frequently for wear, cracks or deterioration.

Bill Mossey is Manager of MTU Sales Engineering with Pacific Power Products Company LLC in Seattle, Wash., a large MTU distributor. Mossey has 34 years of experience in the marine propulsion, diesel engine and diesel power generation industry including field service, application support, training and sales.

Starting Your Own Business

Rocking Your Dreamboat

By Richard J. Paine, Sr.

It seems that the longer marine jobs remain scarce, the more folks feel the need to try to make it on their own. As layoffs continue and new jobs fail to appear, many un- or underemployed, yet highly-qualified marine professionals are now looking to self-employment as their next career step. It's better than waiting for unemployment to run out. I know how this works. When the banking industry melted down a few years ago, I opened my marine finance consulting practice because I could not get work in banking.

Believe me, it is one tough job to be self-employed. But it is not impossible. There is good news and there is bad news.

First the bad news. I receive two or three phone calls a month now from well-intentioned, well-qualified folks from the marine industry looking to start their own businesses. Some are feeling the effects of the pullback in corporate entertaining as their dinner boat and excursion jobs evaporate along with the bubbly. Others have lost their jobs due to economic conditions in ports around the country, some because of ill-conceived moratoriums in the Gulf of Mexico, some because the ports are slow. Others are simply not getting enough work to make ends meet. All have something in common, they want to buy a boat, get financed and make some money.

I've spoken with captains, mates, chefs and dishwashers with dreams of owning their own vessels and getting a bank to finance it for them. Without a real plan, it's just a nice dream. I can and have offered the following sobering advice:

- For a start-up business, securing operating capital or vessel financing from a bank or other lender is nearly impossible in today's lending market. Either you start with a big pile of money of your own or find someone who has some. Regardless of your business model, you are going to need real money, not debt. If you don't have the cash to fund the startup and buy a vessel, a bank is going to be of very little help. What you actually need is venture capital. And for that you have to get in line, a very long line.
- Currently, even large, well-established commercial marine companies with significant market share and strong banking relationships are having trouble finding a steady source of financing. As the financial statements of marine businesses continue to show declining revenues or losses, finance sources are limiting their exposure to the industry. Occasionally, opportunistic lenders will cherry pick the best credits with the enticement of cheap money, then walk away from the industry when their bellies are full. With the lack of qualified, dedicated lenders and underwriters who understand this business, even the big guys have had to turn over rocks to find financing. As a start-up with no track record, what chance do you really have?
- With rare exceptions, lenders do not really lend money on the vessel you want to buy. They lend money on your cashflow and your ability to pay them back with interest. While they'll take security in the vessel, your last three or four years financial performance is all they really care about. If you don't have a track record for them to review, you really don't have any indication of what or who you are financially. Remember, banks and finance companies are in the money business, not the boat business. They don't want to own your boat if you have a good probability of being unable to meet your obligations and default. Risk is out and caution is king. Think about it, when was the last time you saw a banker in a three piece suit at the helm of a harbor tug?
- If you've found a boat, and you think that it's really worth twice as much as the asking price, remember: fair market value for the boat is what you pay for it. There is no built-in equity simply because you are buying it cheap. The days of paper equity are gone, be prepared to put down a lot of money if you want the bank to be your lender.

But all is not as bleak as it seems, if you have a plan, you can end up as your own boss. In this market, there are some real opportunities to get your own piece of the pie.

And that's where the good news comes in.

- Take some time today to plan for tomorrow. Look around for a small company in your desired market and make a deal to buy it. Maybe you'll find one in financial distress. Buy it cheap and turn it around. Maybe you can find an owner looking to retire, make a deal to build sweat equity. Maybe rent a boat, hit the spot market or get a contract or two and demonstrate that you can pay your bills.

I had a client a couple of years ago who had a long term bareboat charter agreement with a shipowner. The monthly rent for the vessel was really stiff. My client wanted to build a new boat and needed financing. He didn't have a lot of cash to put down, nor did he have other vessels to cross-collateralize the loan ... but he did have a strong financial statement after three years of renting and operating the chartered boat. We were able to find financing easily by demonstrating that the cost for a new boat would be considerably less than the rent he was paying. And a new boat, with a lower monthly cost, would make him into an even better credit.

- Over the next three years, invest in and build your business to be profitable. Build your revenues to be at least two to three times higher than your anticipated debt. Don't saddle yourself with loans or high overhead. Defer distributions until you really are profitable. Forget the Caddy and the Rolex, they come later.
- Finally, secure a long term, "Hell or Highwater," "Take or Pay" charter with a major company (i.e. an oil company, utility, etc.) or other financially sound charterer. Your charterer's credit quality will be the underlying credit in the transaction and your lender can "back to back" the loan or lease terms with the charter.

Remember, banks only want to loan money to those few who don't need it. Make yourself one of the few.

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Honda Marine Debuts Concept BF250 Outboard

Image courtesy Honda Marine

Honda Marine added an outboard engine model to its lineup, the concept BF250 available in late 2011. The concept BF250 engine is based upon a 3.6 liter engine platform designed to deliver best-in-class fuel economy and outstanding performance. The engine will incorporate a host of Honda exclusive features, including BLAST, VTEC, and Lean Burn Control. The model also will carry National Marine Electronics Association (NMEA) 2000 certification. With models ranging from 2 to 225 horsepower, Honda Marine's line of current production models meets rigorous California Air Resources Board (CARB) 3-Star standards, ensuring their availability and regulatory compliance in all 50 states. In 2010, Honda Marine introduced its redesigned, fuel-efficient BF115. Prior to that, 2009 brought the unveiling of the BF60, with many of the performance and efficiency hallmarks of the Honda 75 and 90 horsepower siblings. In 2008, the company launched a 105 Jet, as well as the fuel-injected BF40 and BF50 models.

EMI Strategic Partnerships

EMI ESTABLISHED 1975
ENGINE MONITOR, INC.

EMI has partnered with Veth Propulsion out of The Netherlands to distribute service and support for a full line of Z-drives, bow thrusters and tunnel thrusters. Veth Propulsion invented the Veth Jet Bow Thruster which gives 360 degrees of thrust in shallow draught conditions. With the help of a horizontally mounted propeller, the water is drawn up from underneath the vessel. Through a 360 degree rotating drum the water is guided into one to four channels proving maneuverability and propulsion in up to four directions. The Veth-Z-Drive provides high thrust and maximum maneuverability and an efficient low-noise propulsion option. The power is distributed over two counter rotating propellers which results in better performance. EMI has also partnered with NORR Systems out of Singapore. NORR Systems provides a full line of tank management, valve remote control, fire and gas detection systems. EMI is working closely with NORR Systems in developing a dynamic positioning system that meets the requirements for DPS-2 and DPS-3. While EMI already has a DPS-1 system, this partnership allows EMI in conjunction with NORR Systems to meet the new market demands for more advanced system redundancies. In addition, EMI has partnered with Rio Marine out of Houston, Texas. Rio Marine has experience in all types of marine electrical repairs, new installation and preventative maintenance that can reduce costly failures. A partnership with Rio Marine allows EMI to extend its service support to customers as Rio Marine has office located all along the Gulf Coast with over 100 service personnel. Along with these strategic partnerships, EMI is a solution providers for both Siemens and WAGO automation, a dealer for Simrad and a provider of integrated bridge solutions including radars, gyrocompasses, DGPS to autopilots and AIS systems.

Photo courtesy Jeff Slesinger

Captain Jeff Slesinger, trainer and author.

By Raina Clark

I asked a friend at Seattle's Pacific Maritime Institute (PMI) if she thought someone like me could successfully complete just one maneuvering task in their tug simulator after a couple hours of training. Ten years ago I'd run a cutter aground in San Francisco Bay when my Officer Candidate class was let loose in the Coast Guard Academy's simulator, but that was the extent of my shiphandling experience, real or virtual. As a testament to her optimism, my friend scheduled me in PMI's Z-drive tug simulator last January under the instruction of Captain Jeff Slesinger, author of ASD Tugs: Thrust and Azimuth, Learning to Drive a Z-drive. Since, no one was counting on me to actually pass a test, it didn't matter how I did, I told myself. But when I walked into Jeff's classroom, after official classes were over for the day, he commented on the performance anxiety I was obviously carrying with me.

"That's what the simulator is for. It's a safe place to make mistakes," he told me. "If you're not making mistakes in there, you're not learning."

Thirty-One Years in the Business

Jeff has been in the tug industry for thirty-one years and has worked at Western Towboat for the past 25. He has published two books on tug handling, owns his own business and does training at PMI.

"I first started to learn how to sail when I was seven. I was bitten by the bug right then and wanted to make my living running boats. I was involved with the sailing industry, teaching sailing and delivering sail boats." But

Training on Z-Drives with Jeff Slesinger

early on Jeff realized he wanted to run tugs. "In my early 20s I started accumulating sea time in order to get my license." He started gathering time on fishing vessels. "Once I got enough I sat for my license and got my first official tug boat job in 1980."

"When I came into the towing industry I'd already operated other vessels as a captain, although not any towing vessels. I spent about the first couple months as the mate. Then the captain I was with needed to go ashore to take care of his family. We had developed a very close relationship and he thought I had what it took to be a captain, so he recommended me and I slid into his job in relatively short order."

"I was a full-time captain from 1980 through about 1998 and at that point I started to transition and assume more duties ashore, training people, managing day to day operations and that sort of thing."

"I ended up training some of the captains here at Western Towboat as well as some captains and mates outside of Western Towboat. Early in 2005 I began an association with the Pacific Maritime Institute which has been very good for me and I hope very good for them. I've been doing some customized training projects for them specifically oriented to operating tugs."

"Delphi Maritime is my own company. Its basic focus is two things. One is the training side of things, developing onboard and shore-side training programs for tugs, and the other is a marine surveying and audit business. The training is very specific to boat handling, barge handling and watchstanding on tugs."

Photo courtesy Raina Clark

Raina's instructor for the day, Captain Jeff Slesinger, in the PMI tug simulator in Seattle, Wash.

Photo courtesy Raina Clark

Raina Clark behind the controls of a simulated Z-drive tug at PMI in Seattle, Wash.

A Changing Industry: From Barge Jockeys to Administrative Managers

Jeff gave me a basic primer on Z-drives in his empty classroom and told me my final task for the evening would be to bring a Z-drive tug alongside a tanker moving at about seven knots in the simulated waters outside a virtual Port of Seattle. Then I would aspire to make contact with the ship without causing any damage. It all sounded very impressive and I can understand why tug handling has an almost obsessive appeal. However, as Jeff explained later on, those who are attracted to the business because of this kind of action may get a reality check when they find out that driving the boat is actually a small part of being a tug captain.

His own infatuation with the business goes way back. "The guys and gals who handle tugboats, they held their boat handling art to a high level. To use not only the horsepower in the engine room, but the horsepower in the wheelhouse; I was just very smitten with that challenge and I'm still trying to figure out a way to perfect it." The people who are attracted to the industry, he said, "want to drive the boat, everybody on there, whether it's a deck hand, a mate or a captain. The truth of it is, now that piece of the job has really diminished. For many reasons and many of them are good reasons."

The challenge that attracted many people to towing is the ability to manage risk in their jobs he said. "It's not that we're dare devils or that we seek to be reckless. But we like to be presented with a situation, like you were, coming alongside that ship," Jeff told me. "There's risk involved with that. When you were doing your exercise in the simulator, if that had been real-life, if you had made just one or two mistakes, you would have plowed into that ship, possibly causing damage. There have been cases with that maneuver you did, where people whack into the ship, maybe they bust something up, and then they can't maneuver and they slide back down the hull and go underneath the stern of the ship. That kind of stuff has happened. That risk is always there."

Fortunately, Jeff said, "the difference between 30 years ago and today is that we have more powerful tugs, better trained people and more consistent quality equipment, and that has built in an extra margin of safety. We've moved away from the edge."

Along with the margin of safety, boat culture and the captain's job description have also changed. "You know, when I first started out, we operated as independent units. It was very much a silo approach. When you went on a boat, especially as a captain, that was your tug and you had relatively limited communications back to shore. You basically went out and did your job and came back. As long as you did it successfully and didn't have any problems, that's all people expected and that's all they really knew."

"It was very boat-centric," Jeff said. "There was no cohesiveness as an industry. You were out there doing your thing."

But equipment improved and was more consistently maintained. Then procedures became more standardized within the industry as a whole. "That's when you saw the development of safety management systems being implemented by towing companies."

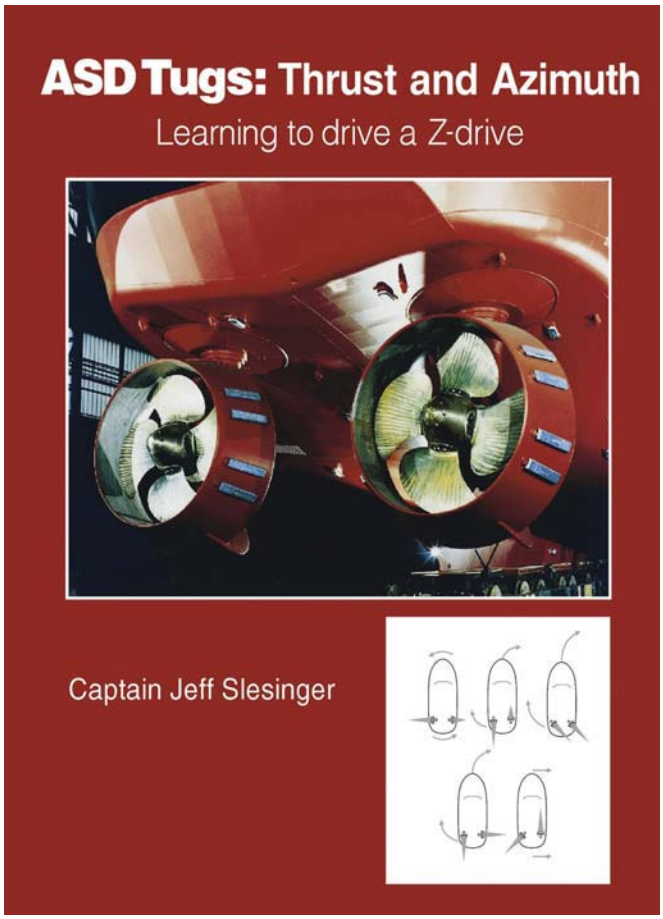
First task, learn to drive between the buoys: the PMI tug simulator in Seattle, Wash.

Photo courtesy Raina Clark

"It started to add an administrative aspect to being a tugboat captain. When I first started there wasn't any administrative aspect. You were supposed to be a good barge jockey, a good boat handler and that was it. But as things progressed and the industry started to evolve there was more of an administrative aspect that started to creep into the job."

Next the industry wanted to be more consistent in the way people were trained. "That training element then started to come aboard, which also became part of what a captain on a tug has to do these days. At first we just attempted to do this by throwing out topics which we knew people should know about: how to land a barge, how to handle a tug, how to land down river in fair tide, things like that. But we didn't really give captains the tools to be good teachers or good trainers."

"So that was the next phase." The industry began to recognize that a lot was being asked of these captains. "They're just not driving the boat any more. They're actually business managers on board. They're personnel managers.



Cover of Slesinger's latest book.

They head an administrative department and, oh by the way, now we'd also like them to lead the onboard training department. They were adding more and more layers of responsibilities, especially to captains."

"So the difference between now and 30 years ago; nowadays the boat handling aspect is probably 10 percent of what a captain does."

Tug Handling: A Practical Application

Before we stepped into the simulator, Jeff told me one of the first concepts I had to wrap my head around — driving the boat from the stern. Which way the back end should swing in a turn was my first consideration, he told me. Inside the simulator he had me do serpentines through a line of buoys, using a couple different methods to maneuver the tug with the thrusters. We started in my happy place with both thrusters pointed perpendicular, away from the boat, effectively creating an anchor of churning water underneath the tug.

"You can always come back here if you need to," Jeff assured me.

With one thruster continuing to stabilize the boat this way, I used the other to gently push my stern to port or starboard, threading the boat in between the buoys. I sometimes had to hold my free hand in front of my face and move the heel of my palm to visualize which way the thruster needed to push the stern of the boat. Next Jeff showed me the feathering technique using both hands on the thrusters. From my happy place I moved both thrusters in slightly, toward parallel, and the boat moved forward. Move one thruster in farther than the other and the back end began to swing. The closer to parallel I moved the thrusters, the faster the scenery went by.

In the simulator, Jeff gave me just a few of the tricks of the trade which he said represented a gap in the nautical literature out there. "You can find lots of books written on the historical aspects of the marine industry, the theoretical aspects — the physics of how ships or tugs move and how they're propelled, with very scientific definitions." Jeff said both the books he's written are intended to bridge the gap between the theoretical and how you actually apply that knowledge when you're on the job.

His first book, Shiphandling with Tugs, "was almost a complete re-write of a book by George H. Reid. George Reid was a pioneer of this type of book for towing vessels. He wrote Primer of Towing. That was the first book for the towing industry that said 'if you want to go alongside a barge, here's how you do it, here's how you play the wind, here's how you put the rudder over,' all that stuff. I was very grateful to be asked to re-write his book."

Jeff's most recent book, ASD Tugs: Thrust and Azimuth, Learning to Drive a Z-drive, focuses specifically on this modern type of tug. "It is the prevalent towing vessel produced in the world today. There's really no book out there, that I've found, that serves as a guide to the learning process to be able to drive one of these things." The book covers the basic elements of maneuvering an ASD tug, through steering, speed, turning, stopping, hovering and lateral movement and has 120 drawings of maneuvering principles.

"Again, I go back to the simulation that you did when you came alongside the ship. There are tons of books written that say when you come alongside a ship, certain hydrodynamic things are going to happen. When you come up to the bow of the ship you're going to get pushed away. When you go to the stern of the ship you're going to get sucked in. They'll go through long diagrams and for-

mulas to show you how all these hydrodynamics work. That's an important piece of knowledge to have, there's no doubt about it. But if I had just told you that as you were trying to come alongside that ship, it wouldn't have helped you much. The next piece is to tell you little tricks that I have learned and others have learned about how to incorporate that knowledge into a practical application. So when I told you, pick a spot on the ship and look to the side and use that as your visual reference for whether you're creeping up on the ship or back down on the ship; Now you've got this little reference point so you can automatically react to it. That's the kind of thing that the two books I've written try to communicate."

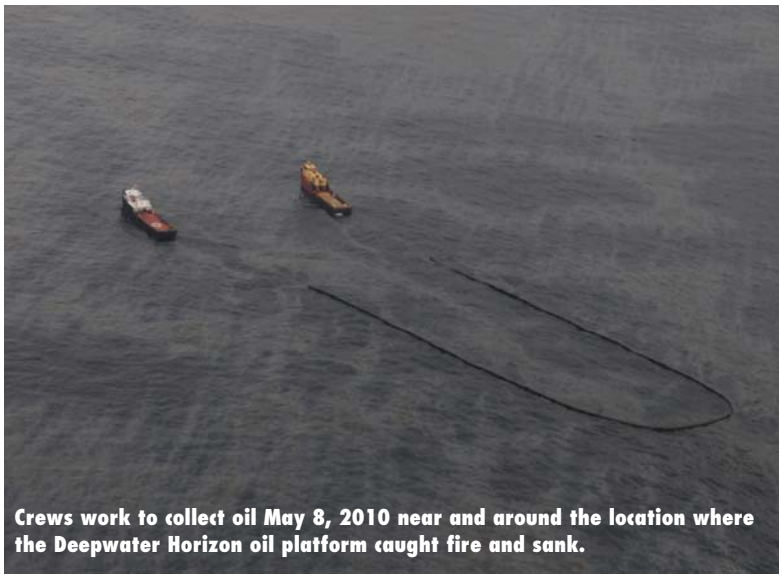
Virtual Success

In the simulator I used the feathering technique Jeff taught me to maneuver the tug as a big red Canadian Steamship tanker appeared in my starboard windows. I tried to pace the tanker as Jeff instructed, picking the first S in "Steamship" as my point of reference. I started moving up too fast, so I feathered the thrusters back. Now we were too far behind. I tried to inch forward, more slowly this time, but passed my mark again. At this point I was too close to the tanker, so I angled away from the ship and started the dance all over.

"You're doing well," Jeff told me. "Of course the pilot is up on the tanker deck getting impatient," he added, probably wanting to get home to family and out of the cold. That's what the Association gets for hiring a magazine editor to pick up their pilot, I thought. In another few minutes I finally made gentle contact with the tanker hull and Jeff called it a success, since no one actually said anything about a time limit on the exercise.

New Rules Likely for OSVs in the

Gulf Spill Aftermath



Crews work to collect oil May 8, 2010 near and around the location where the Deepwater Horizon oil platform caught fire and sank.

U. S. Coast Guard photo by Petty Officer 3rd Class Casey J. Ranel.

By Susan Buchanan

A few recommendations for vessels, along with many more for rigs, are expected when the Deepwater Horizon Joint Investigation team — which includes the U.S. Coast Guard and the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) — issues a final report after hearings end, observers say. In a series of hearings that kicked off last May, investigators have gathered information to help prevent future spills, and they plan to issue a final report to the public.

One more set of hearings is scheduled for the week of April 4. Hearings have been held under procedures for a Coast Guard Marine Board of Investigation — the highest level of domestic inquiry after a maritime casualty — and have been open to the public, with testimony taken from sworn-in witnesses only. Comments can be submitted through the Joint Investigation website. To date, no conclusions have been presented during the hearings. The USCG and BOEMRE plan to issue a joint release about the investigation by mid-April, and after two extensions a final report is now due in late July.

Meanwhile, President Obama's Oil Spill Commission report, released in January, "did not reveal fundamental issues in Coast Guard regulatory regimes related to response that warrant attention on an expedited time line," according to Christoper O'Neil, U.S. Coast Guard Lieutenant Commander in Washington, DC.

As maritime industry members wait for the Deepwater Horizon Joint Investigation report, they wonder what kinds of regulatory changes are coming.

A New Safety Standby-Vessel Rule Is Possible

Cliffe F. Laborde, managing member at Laborde Marine Management, LLC, in New Orleans, La., said "I haven't seen any new safety rules for offshore support vessels since the Macondo well accident. But I have heard discussions about new regulations requiring safety standby vessels in the Gulf of Mexico, like those implemented after the Piper Alpha platform exploded in the North Sea" in 1988. As a result of Piper Alpha, all North Sea platforms are required to have at least one safety standby vessel within five miles of every oil installation to accommodate all platform personnel.

"It was a fortunate coincidence that the supply vessel Damon B. Bankston was near the BP well when it exploded and was able to save so many lives," Laborde said. "A requirement to have a full-time safety support vessel near each rig in the Gulf is a possibility and a good idea." The Damon B. Bankston is owned by Tidewater Marine in Houston. "We could also see new rules for fire-fighting capabilities and equipment on offshore vessels," Laborde said. "As it is, owners of private vessels that sprayed water on the burning Deepwater Horizon well have been sued."

Last July, commercial fishermen, waterfront property owners and oil workers who lost jobs because of the spill sued 17 companies who owned fire boats that responded to the Deepwater Horizon explosion. That suit, which alleges that the BP rig sank because of water used to fight flames, was filed in U.S. District Court in New Orleans.

Nonetheless, "most of the new regulations will apply directly to drilling operations." not vessels, Laborde said. New regulations for oil transport vessels were implemented after the Exxon Valdez spill involving a tanker, but "the Macondo well accident was a completely different scenario, since it involved a blowout on an offshore oil rig. So

it would be surprising to see any, major new rules for marine support vessels after this accident," he said.

Laborde Marine's business covers two segments — crewboats and supply boats. After the spill, most of the company's available, local crewboats were chartered by BP and others responding to the incident.

Any New Regs Should Be Based On Reality

In Morgan City, La., David Barousse, business development director at Fleet Operators, Inc., worries about change for the sake of change. He said "if a safety support vessel requirement for every drilling rig and/or production platform in the Gulf of Mexico would prove to have a direct impact on saving lives and the environment, I would be behind it. However, I would not like to see the requirement forced on the industry by regulators just for the sake of saying that it exists — even though it may result in more work for our vessels."Fleet Operators owns and charters supply vessels for the offshore oil and gas industry. Barousse said no one is more concerned about safety than his company's customers, who are mostly oil-and-gas exploration, production and service companies in the Gulf. "We often see the use of safety support vessels in situations where the customer feels that additional vessel support is needed, even though it may not be required."

U.S. Coast Guard photo by Petty Officer 2nd Class Prentike Danner.

Capt. Hung Nguyen, co-chair of the Deepwater Horizon joint investigation. The Coast Guard and the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) are co-chairing the fact-finding investigation launched to determine the cause of the initial incident and fire aboard the mobile offshore drilling unit (MODU) Deepwater Horizon.

Photo courtesy Laborde Marine

Laborde Marine's support vessel Hilda.

Photo courtesy Fleet Operator, Inc.

M/V Madeline, Fleet Operators, Inc.'s 110-ft utility vessel.

Recently, for example, "two different customers have chartered one of our U.S. Coast Guard-endorsed Offshore Supply Vessels to perform 24-hour, safety standby service," Barousse said. "The first was for a deepwater drillship preforming drilling operations, and the other was for a situation in which a non-producing well was potentially leaking natural gas."

Coast Guard's Regulatory Projects Predate Spill

According to the Coast Guard, any, future regulatory changes will be aimed at preventing another big spill. O'Neil of the Coast Guard, said "the board's focus is on the conduct of a thorough and objective collection of data and analysis of that data to fully understand the causal and enabling factors that led to the accident." He said "the Coast Guard has a number of regulatory projects that began before the Deepwater Horizon incident, including the rewriting of Title 33, Subchapter N, and those projects will now be influenced by the accident in terms of timing and content." Title 33 is a portion of the Code of Federal Regulations governing U.S. navigation and navigable waters. Subchapter N deals with deepwater ports. O'Neil said "however, the Coast Guard will await the outcome of the joint Coast Guard and BOEMRE investigation to address specific, causal factors of the Deepwater Horizon accident, so that any regulatory changes reflect safety measures that will best help prevent recurrence." He also said "with regard to regulations for preparedness and response, there are a number of related initiatives in which the Coast Guard is in the early stages of examining."

Seeking New Standard For Oil Skimmers

Before the spill, work had begun in the U.S. on a voluntary, draft standard for Oil Spill Response Vessels or

OSRVs, requested by the Coast Guard last March. Following the BP accident, the federal government admitted last June that the nation's specialized skimmers were inadequate to deal with the volume of oil gushing in the Gulf, and decided to accept offers of skimmers from other countries.

Meanwhile, the proposed OSRV standard remains in the development phase within the ASTM Committee F25 on Ships and Marine Technology, according to Robert Morgan, technical committee operations director at ASTM International in Pennsylvania. ASTM International, formerly known as the American Society for Testing and Materials, develops voluntary standards to improve product quality and enhance safety.

The proposed standard will define designs, engineering systems and onboard, spill-cleanup equipment for OSRVs of varying sizes, and can be incorporated by companies or implemented by regulators, he said. "ASTM standards are developed by stakeholders from industry, and because of their technical credibility are often cited in regulations," Morgan said.

ASTM International's Committee F25 on Ships and Marine Technology includes the U.S. Coast Guard, U.S. Navy, and shipbuilders, equipment manufacturers and environmental engineers from a number of countries. The new OSRV standard, when it's released, will beinternational.

The USCG has adopted a number of ASTM standards, Morgan said. The U.S. government uses private sector standards because the National Technology Transfer Act requires them by law. In addition, "government agencies recognize the technical expertise in the private sector, and leverage that for their standards needs," he said. Anyone interested in the OSRV standard can contact ASTM, he said.

Members of the Gulf maritime industry said they expect to attend a March 15 public workshop held by BOEMRE in New Orleans to discuss new safety and environmental-management-system requirements for offshore oil-and-gas companies. New regulations for vessels are coming, but because of the nature of the BP accident, they won't be as dramatic as the phase-in of double-hulled tankers after the Exxon Valdez spill.

Small Town Manufacturer

with a Worldwide Reach

Hudson, Wisc., on the border of Minn., with a population just over 12,000, is home to Konrad Marine, a manufacturer of stern drives for commercial applications such as patrol boats, fishing vessels and water taxis. "We do the design right here in Hudson," owner and founder Ken Konrad said. "I'm a mechanical engineer myself. I'm the key person in designing the drive originally and also, at this time, of all our new products coming out."

Konrad, a local to the area, saw some of the world before returning to his stomping grounds to build his business. "After graduating from high school I went to college for a little while and dropped out. Then I became a machinist and went to a two-year trade school" in Minneapolis, Minn. After trade school Konrad went into the Navy. "I was originally stationed on an ammunition ship in the Mediterranean and Caribbean. Then I volunteered for Vietnam. I got on a tender that took care of patrol boats in Vietnam. We took care of swift boats and other patrol boats in the area. We were stationed in a little town called An-Thoy [on the southern tip of Vietnam]." Konrad said

U.S. Navy small craft with Konrad Marine stern drives.

Hong Kong Police Interceptor with Konrad Marine stern drives.

the term "town" was stretching it. An-Thoy was only a village of a few hundred people. He was stationed there from 1966 to 1967. "I think you've heard of swift boats because John Kerry, who ran for president, was also on swift boats. He was actually at the same base I was two years after me."

Konrad spent two years in the Navy before getting out and returning home. "I started the business back in 1967 and after a few years I wanted to do something more than just being a machinist. So I went back to the University of Minnesota under the GI bill and got a degree in Mechanical Engineering."

After graduating from the University in 1973, he worked for a Minneapolis company as a manufacturing engineer. During this time he continued his own business on the side. "I still had some of my machinery from prior college and I picked up some work from steel mills and I developed the company out further doing steel mill parts."

The Beginnings of Konrad Stern Drives

"In middle of 1976 I went full-time in my own company. I actually went from wearing a jacket and tie everyday back to wearing a set of coveralls. I did everything from janitorial to machining to sales and paying the bills. It was a year before we got our first employee and we've grown ever since then. Presently we're about 45 employees."

Konrad had his sites on more than steel mill parts. "It was about 1990," Konrad said, "and I wanted to start something else. I wanted to get another company going and I really wanted to have a product. We started out making parts for Mercury Alpha drives and we displayed our product at the boat shows. At the Miami Boat Show several diesel manufacturers approached me about producing a heavier stern drive to go with the diesel engine. I said 'sure, we can do that.'"

As a result, Konrad developed his own stern drive. "I think it was about 1997/98 when we came out with the 520 stern drive and we've been selling to the diesel commercial market ever since. Once we came out with our own drive we stopped making parts for the Mercury Alpha drives," he said. "In the mid-90s when we were first designing the drive we looked at all the drives on the market" up to that time. Konrad said he put in the largest gears and bearings and heaviest castings he could. "Our drive is heavier than any other product on the market. Most stern drives on the market had a design life of about 400 hours back then. Some drives today are probably good to 800 to 1,000." But Kondrad said when the 520 stern drive came out, it was designed for a minimum life of 3,000 hours. "So we were almost 10 times over what products were on the market."

In U.S. Navy applications, Konrad said, "We have had some drives last in excess of 10,000 hours. I asked them 'why did you run this drive so long?' They said it was the only drive that could keep going, so they had to use the boat all the time."

"But that's the gist of it. We made a heavier drive with the idea of longer life and one of the design requirements was to take the tork and the impulse load that comes from a diesel engine."

More Konrad Stern Drives

"The 520 stern drive took up to a 20-inch diameter prop. Since then we've added the 540 stern drive which is

Konrad Marine's 520 stern drive.

a smaller unit for higher speed, which accepts the maximum of a 16-inch diameter propeller. We've also come out with the 560 for counter rotating, dual prop, maximum 16-inch diameter propellers."

"Very shortly we're going to release our 680 which is a dual prop, 20-inch diameter unit. We've increased the upper gears now from four-inch diameter all the way up to eight-inch diameter. So we've not only increased the horsepower capacity of the drive, we've increased the life. The force on the gear tooth is dropping because of the larger diameter of the gears. Where the torpedo is we're limited on diameter, but with the dual, counter-rotating propellers, we split the load over two gears rather than just one so we get double the life. Also for the high-performance market, we came out with the Ace drive, a 540/560 drive in which we had a standoff box and we placed the transmission in the standoff box so they don't have to move the engine. The present drive requires a reversing transmission. It does not shift, and we preferred that because of our commercial application."

U.S. Navy, Hong Kong Police

Today Konrad has dealers and repair centers around the world including locations in Australia, The Netherlands, Chile, Venezuela and Europe. "As we start to get concentrations of drives we typically move into the area then develop a repair facility," Konrad said. "Most of the time we do send an individual out to train local people on how to service the drives."

As for Konrad Marine's headquarters, "we used to be located in a small building in St. Paul, Minnesota and in 1987 we built this facility here in Hudson, Wis. I believe we had about 16 or 17 employees at that time and just gradually kept growing up. We're in about 30,000 square feet right now and very packed in. We need to build a new building here shortly. We could probably easily use another 30,000 square feet. But due to the economy, we're trying to be careful and not extend our neck out too far."

Konrad said his company experienced major growth when the U.S. Navy became one of its largest customers, and this was spurred by the attack on the USS Cole. "At that point the Navy started to realize they had to do something to protect their ships when they were in port. A destroyer or frigate is a great ship at sea, but once it comes into port it's only going one or two knots and is basically a defenseless ship. So the Navy had some small boats on the ships and they were mostly equipped with a stern drive that is not produced anymore. Those boats very seldom saw much over 100 hours use a year." Suddenly the Navy wanted to launch those small boats every time a ship was close to shore, in order to guard against small approaching crafts. "They found immediately that the drives they had [on the small boats] were insufficient for the job and would not stand up at all. So we retrofitted a few boats and it just kind of exploded from there. For about a year there, after 2001, the U.S. Navy took almost everything we produced. They converted all their RIB boats to our drives. They were really happy because they got such tremendous service out of it. One of our biggest customers even today is still the U.S. Navy."

Another major customer has been the Hong Kong Police. Konrad explained that the Hong Kong police has five small boats built in The Netherlands, all with triple drives. "The boats were all aluminum, about 50-ft long. And they were required to intercept smugglers that were stealing Lexus and Mercedes and trying to smuggle them into mainland China."

The drive and engines had failed on the boats. "The company that produced those drives did not stand behind the warranty. The builder out of The Netherlands said they were looking at losing $20 million in business. So they took the boats and bought different engines and they retrofitted the boats with our stern drives."

Konrad said the vessels had to operate under very demanding conditions, at high speeds and also had to manage a lot of debris in Hong Kong Harbor. "The boats had to do a minimum of 45 mph cruising in six-ft waves and an intercept speed of 70 mph. We converted those in about 2002 and all five of those boats are still running and they're still performing they're job."

The Hann 50 Military/Patrol

Photo courtesy Hann Powerboats

Hann Powerboats offers the Hann 50 as a fast interceptor, offshore/inshore patrol boat, or fast attack craft. All Hann Powerboats are on the GSA Schedule and available to local, state and federal government agencies. The standard configuration of Yanmar 480hp diesel motors coupled to Arneson Surface drives yields a 50 knot cruise speed while only burning 35 gallons of diesel per hour. Top end is 56 to 58 knots while burning 46 gph. With the standard fuel capacity of 300 gallons, this efficiency allows for a range of more than 400 nautical miles (460 miles) at 50 knots. The Hann 50 is available as either an open patrol boat or with a pilothouse for additional protection of crew and passengers. Hann delivered four Hann 50s in the 2010 model year to the U.S. Navy for use as Fast Attack Craft Target Boats. The low profile provides for a low radar signature while the 50-ft offshore deep V hull delivers a ride that reduces fatigue and mitigates shock.

Specifications: Hann 50

Length, o.a.	50 ft
Beam	9.2 ft
Weight, dry	13,000 lbs
Water capacity	35 gal
Fuel capacity	300 gal
Bridge clearance	8 ft
Draft with drives down	28 inches
Draft with drives up	17 inches
Recommended power	315 Triple Yanmar Turbo Diesels
Speed	60 mph
Cruise (fuel) at 45-50 mph	1.6 to 2.0 mpg
Max cruising range	432 miles at 90% capacity
Hull warranty	10 years

M/V Capt. Kirby Dupuis

Horizon Shipbuilding, Inc., Bayou La Batre, Ala., has delivered the M/V Capt. Kirby Dupuis to Florida Marine Transporters of Mandeville, La. She joins her sister ship, the M/V Capt. W. D. Nunley in pushing cargoes throughout the inland waterways of the United States. The M/V Capt. Kirby Dupuis, designed by John Gilbert, is a 120 ft long by 35 ft wide, 10-ft draft, towboat vessel that is four-decked and is outfitted for service in areas restricted to overhead clearances and draft limitations. She is powered by two 2,000 hp 3512C Caterpillar engines, provided by Louisiana Machinery, coupled to Twin Disc MG5600 reduction gears with a 5.04:1 ratio, supplied by Sewart Supply. They turn 100-inch

Photo courtesy Horizon Shipbuilding

five-blade, stainless steel wheels made by Sound Propeller, on ten-inch shafts. Auxiliary power is supplied by two 175 kW Caterpillar C9 generators. The M/V Kirby Dupuis is an open-wheel boat that holds 58,000 gallons of fuel.

The next vessel in the 120-ft series will be a 5,000 hp boat with Kort nozzles.

Gladding-Hearn Delivers to USN

After delivering its first vessel for the U.S. Navy 18 months ago, Gladding-Hearn Shipbuilding, Duclos Corporation, has delivered the last of 12, 64-ft screening escort vessels, operated by the U.S. Coast Guard, with the mission of securing high-value Naval assets in domestic ports. The all-aluminum boat, like its sisters, features a C. Raymond-Hunt-designed deep-V hull, with a CPI Marine fender system and is powered by twin MTU diesel engines and connected to Hamilton water-jets. Top speed is over 30 knots. The pilothouse on a flush deck, with forward-leaning front windows, leads to the forecastle, equipped with a head, galley, berths and lockers. Recessed rescue wells are located port and starboard at the vessel's mid-ship. On the foredeck is a mount for a remotely-operated weapon system. The interior is outfitted with Shockwave heavy-duty suspension seats, shock-mitigating floor matting and a heating and air-conditioning system. Equipment includes integrated navigation systems and wireless crew communications and thermal imaging systems.

New Seine Skiffs

Photo courtesy Husky Boats

Tyler Boats launched its second 22-ft by 11-ft Seine Skiff powered by a John Deere 6081, 375hp engine. Helped by a 32-inch nozzle steering these skiffs have a pull measurement over 9,500 lbs. This pulling power is harnessed within a stable designed platform for the operator. Tyler is also launching its 32 x 15-ft Bristol Bay gillnetter, setnet skiffs, inner water crabbers/gillnet/geoduck boats and a sport fisherman boat.

SeaArk Pilot Boat to Colombia

Photo courtesy SeaArk

SeaArk Marine, Inc. recently delivered Isla Tesoro, a 55-ft Dauntless RAM Pilot boat to the Armada Nacional De Colombia. The vessel is assigned to DIMAR at the Port of Cartagena. It is powered by twin MAN R6-800 diesel engines rated at 800hp (588 kW) at 2,300 rpm each coupled to twin Ultra Dynamics UltraJet 410 waterjets with JetMaster joystick controls, via a ZF360 reduction gearboxes. During sea trials this pilot boat achieved a top speed of 28.6 knots with a comfortable cruise of 23 knots. The SeaArk Dauntless Class vessel is based on a hull designed by C. Raymond Hunt & Associates and is constructed of all-welded marine grade aluminium. The vessel features a deep V variable deadrise hull that produces a smooth, dry and stable ride. All enclosed cabin spaces are fully climate controlled. The pilothouse includes hydraulic/suspension seating for a crew of three, with additional seating for six passengers. The electronic suite includes extensive communications equipment, fully integrated radar with GPS, plotter, AIS and SAT NAV equipment. Wide side decks and generous safety rails provide ease of walk around and pilot deployment/recovery.

Burger Boat Contract for Steel Passenger Vessel

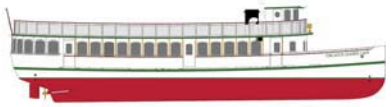


Image courtesy Burger Boat

Burger Boat Company has received a contract for the construction of Chicago's Leading Lady, a 98-ft steel passenger vessel, for Chicago's First Lady Cruises, Chicago, Ill. Chicago's Leading Lady is styled after the 1920s luxury cruising yachts such as the former Presidential yacht Sequoia. Chicago's First Lady Cruises will use the vessel for upscale private parties, wedding rehearsal dinners and corporate events, as well as, serve as an official vessel for the Chicago Architecture Foundation River Cruise. The vessel was designed by Seacraft Design LLC, Sturgeon Bay, Wis. and will be built at Burger Boat Company's Manitowoc, Wis. shipyard located on the western shore of Lake Michigan between Milwaukee and Green Bay.

Chicago's Leading Lady will be powered by two Caterpillar C12 main engines w/ZF gearboxes and will have two Caterpillar C4.4 generators. This vessel is designed to carry a maximum of 350 passengers and will be certified USCG Subchapter K. The interior spaces are climate controlled via a central chiller with remote air handler units and are decorated in mahogany toned paneling and brass accents. Comfortable upholstered chairs at round tables are positioned by large arched windows, providing all passengers with a view.


Wiernicki


Miller


Martin, Congressman Rogers, Calhoun


Hornbeck


Habib

Wiernicki to Become CEO of ABS

ABS President and Chief Operating Officer Christopher J. Wiernicki will assume the duties of Chief Executive Officer of ABS following the classification society's annual meeting in April 2011.

Robert D. Somerville, currently Chairman and CEO of ABS, will relinquish the CEO responsibilities while remaining Chairman of both ABS and the ABS Group of Companies. Wiernicki, a member of the Board of Directors of ABS, has been working closely with Somerville for the last four years in his position as President and COO. The role of CEO will be in addition to Wiernicki's existing responsibilities.

Miller Named Great Lakes Legislator of the Year

A commitment to ending the dredging crisis on the Great Lakes earned Congresswoman Candice Miller (R-MI) an award as 2011 Great Lakes Legislator of the Year from the Great Lakes Maritime Task Force. Miller represents Michigan's 10th District in the House of Representatives. She sits on two of key maritime committees — Homeland Security and Transportation and Infrastructure and is chairwoman of Homeland Security's subcommittee on Border and Maritime Security.

WCI Leadership Service Award to Congressman Rogers

The Waterways Council, Inc. (WCI) presented Congressman Hal Rogers (R-KY), Chairman of the House Appropriations Committee (center) with its 10th Annual Leadership Service Award for his work championing ports and waterways issues. Cornel Martin, WCI President and CEO (left) and Rick Calhoun, WCI Chairman of the Board (right) presented the award.

OMSA New Leadership: Hornbeck, Adams

The Offshore Marine Service Association (OMSA) announced a rotation of the association's officers.

Todd Hornbeck, CEO Hornbeck Offshore Operators, Inc., will succeed Otto Candies III as chairman of the Board; Robert Clemons, Vice President and General Manager of the Americas Division SEACOR Marine, LLC, will advance to Vice Chairman; and Ben Bordelon, Executive Vice President of Repair Bollinger Shipyards, Inc., will serve as Secretary and Treasurer. Jim Adams, who had been working in his interim position since August, was named as the association's President and CEO.

Capt. Habib Appointed Titan VP

Rich Habib has been appointed vice president of Titan Salvage. Habib is a 1977 graduate of the U.S. Coast Guard Academy. He commanded a patrol boat and rescue station and exchanged to the U.S. Navy where he served a tour aboard a frigate. After leaving the Coast Guard in 1984, he worked in the oil field aboard supply boats and later specialized in the international tramp heavy lift trade aboard Dock Express and Van Ommeren vessels.

Int'l Ship Masters' Association 2011 Convention

The 121st annual convention of International Ship Masters' Association (ISMA), held in Detroit, Mich., concluded on Feb. 12. Newly-elected officers were installed. Elected were Grand President, Thomas McMullen, of Livonia, Mich.; Grand 1st Vice President, Seann O'Donoughue, of Owen Sound, Ontario; Grand 2nd Vice President, Rebecca Hancock, of Traverse City, Mich.; Grand Secretary-Treasurer, George R. Skuggen, of Avon Lake, Ohio.

Harley Joins SI-TEX Sales Team

SI-TEX announced that Chris Harley has joined its team of sales professionals. Harley's list of past and present clients include Furuno USA (whom he represented for 16 years), Aqualuma Underwater Lights, Comrod Antennas, GMPCS Satellite Communications, OceanView Technologies Thermal Cameras and VEI Marine Displays.

ISMA 2011 New officers.

Harley

Marine Travelift Promotes Johnson

Jason Johnson was promoted to North American Sales Manager for Marine Travelift, Inc. in Sturgeon Bay. Johnson holds a Bachelor of Science Degree in Marina Management from the Maine Maritime Academy and serves on the International Marina Institute Advisory Committee.

PortVision Appoints Perduto

PortVision appointed James Perduto as Director of Transportation and Government Business Development. Perduto earned a Bachelor of Science in Marine Transportation Management and a Master of Science in International Transportation Management from New York Maritime College.

ZF Marine Personnel Changes

ZF Marine announced the following personnel changes to their North American distribution organization: Roland "Bubba" Benoit – Account Manager, Commercial Craft; Jay Denckla – Account Manager, West Coast; Josh Foster – Technical Representative; David Gonzalez – Account Manager, Southeast US and CMC (Caribbean, Mexico and Central America); Arjen Hoogendijk – Project Manager, Commercial Craft; Jonathan Lucco – Account Manager, Propulsion; David Santos - Segment Manager, Commercial Craft; Keith Stanley – Account Manager, Mid-Atlantic; Gary White - Sales & Applications Manager, ZF Marine Electronics LLC.

Gladding-Hearn Gets Order for Fire Island Ferry

Gladding-Hearn Shipbuilding, Duclos Corporation, has received an order for a new high-speed ferry from Fire Island Ferries, Inc., on the south shore of Long Island in New York. The vessel's delivery is scheduled for June 2011. The new 387-passenger, all-aluminum mono-hull ferry is a further refinement of a vessel

Coast Guard Awards Response Boat Replacement Contracts

Coast Guard crew aboard a 25-ft response boat. U.S. Coast Guard photo/Petty Officer 3rd Class Mark Jones

On Feb. 4, the U.S. Coast Guard awarded two fixed price Indefinite Delivery Indefinite Quantity (IDIQ) contracts to begin replacement of the current Response Boat-Small (RB-S) fleet, which is nearing the end of its ten-year service life. The contracts were awarded to Metal Shark Aluminum Boats of Jeanerette, La., and SAFE Boats International of Port Orchard, Wash. Under the terms of the contract, each builder will produce a minimum of one boat, based on a proven hull design, to be delivered in June of this year.The Coast Guard will test and validate each boat this summer. Based on the results of the down-select process, the Coast Guard will select one boat that provides the best overall value to the government and order additional boats from the builder of the selected design.

The maximum potential value of the contract awarded to Metal Shark Aluminum Boats is $193.1m, with a ceiling for ordering up to 500 boats. The maximum potential value of the contract awarded to SAFE Boats International is $180.1m, also with a ceiling for ordering up to 500 boats. The company not selected for additional RB-S production will only receive payment for the boat submitted for validation under this award.

Of the 500 boats expected to be procured, up to 470 will be delivered to shore units throughout the Coast Guard to perform port and waterway security, search and rescue, drug and migrant interdiction, environmental and other law enforcement missions. Up to 20 boats may be ordered by Customs and Border Protection, and ten by the U.S. Navy. The RB-S replacement is one of the largest boat buys of its type for the Coast Guard.

The latest iteration of the RB-S will have an approximate length of 25 ft, be capable of at least 40 knots, a minimum range of 150-nautical miles and a crew of four.

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EXTENDED ABSTRACTS DUE:MARCH 1, 2011
ABSTRACTS ACCEPTED: JUNE 1, 2011
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design concept optimized by Fire Island Ferries since the early 1970s to operate on the 20-minute crossing on the shallow Great South Bay. With an emphasis on economy, efficiency and quick turn-around, there are large mid-ship passenger doors on the main deck. There is indoor seating for 204 passengers on the main deck and outdoor seating on the upper deck for another 183 passengers. The vessel will be powered by three MTU Series 60 diesel engines, delivering a total of 1,800 Bhp at 2,100 rpm and connected to ZF550 gear boxes, each turning NiBrAl propellers. Top speed will be 21 knots.

Resolve Salvage & Fire CG Approved for OPA90

Resolve Salvage & Fire (Americas), the emergency response division of international maritime emergency services contractor Resolve Marine Group, announced that the U.S. Coast Guard has approved Resolve to help oil tanker vessel owners comply with new OPA90 requirements. The USCG has already begun issuing Interim Operating Authorizations (IOA) for tank vessels that cite Resolve in their OPA90 Vessel Response Plans. With an IOA in hand, Resolve client vessels will be permitted to continue carrying petroleum cargoes in U.S. waters as the new, more stringent OPA90 regulations have come into effect. Resolve has pre-positioned equipment and personnel in many Captain of the Port Zones, to rapidly deploy for any tank vessel fire or other marine casualty event, anywhere in U.S. waters. Resolve's Salvage and Marine Firefighting coverage is available to tank vessel owners at no charge through 2011.

Resolve Marine/PENCO: Emergency Response in Hawaii

On Feb. 2, a team of emergency responders from Resolve Marine Group and Pacific Environmental Corporation (dba PENCO)/American Marine Corporation, demonstrated their marine fire fighting capabilities in Honolulu Harbor. The trained crew of locally and internationally recognized professionals conducted an equipment deployment exercise, utilizing pumps and fire fighting monitors stored at the PENCO/American Marine facilities on pier 13, and operated from the deck of the M/V American Islander.

The exercise was part of a vetting process, whereby the U.S. Coast Guard in Washington DC and in Honolulu approved Resolve and PENCO/American Marine as the only providers of OPA90 Salvage and Marine Fire Fighting services (SMFF) in the 14th Coast Guard District. Together, Resolve Marine Group and PENCO/America Marine meet or exceed the criteria for SMFF providers enumerated in the new regulations.

Harley Marine Expands Service into Gulf

Harley Marine Services has expanded its service to the American Gulf by acquiring the former MGI of Houston, Texas.

This business will be operated under Harley Marine Gulf. Formed in 1976, MGI has eight boats on long term charter that operate twelve double hull barges in all. Four of the barges transfer product between terminals and eight are bunker barges that work in the Houston, Galveston and Lake Charles areas with two stationed in New Orleans.

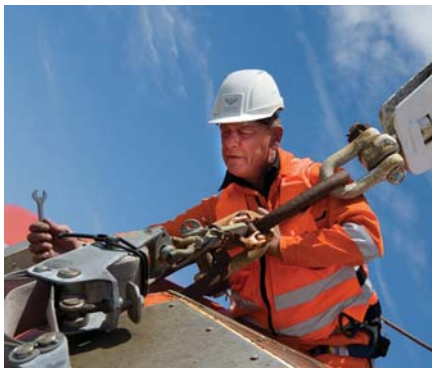
Konrad Marine's 20th Anniversary, Business of the Year

2011 marks Konrad Marine's 20th anniversary of bringing stern drive technology to the commercial, recreational and military marine marketplaces. The company recorded the highest sales volume in their 20-year history at the close of 2010. In addition, Konrad Marine was recently named Business of the Year 2010, by the Hudson Area Chamber of Commerce. Konrad Marine was selected for this award based upon innovation in their industry, quality of service, involvement and support in their community.

Cargotec Cement Handling Systems for Malaysian Barges

At the end of January, Cargotec received an order for MacGregor cement self-loading/unloading systems to be installed on two 7,000 dwt barges being built by Shin Yang Shipyard in Miri, Malaysia. Delivery to Shin Yang Shipping is scheduled for Sept. 2011 and the barges will trade on Malaysian routes between Kuching and Sibu, and between Kuching and Miri. The cargo owner is CMS Cement Sdn Bhd, a cement manufacturer in Sarawak. The pneumatic systems will have rated capacities of 300 t/h for loading and 250 t/h for unloading.

E.R. Schiffahrt Goes Global with Viking



Viking Life-Saving Equipment and E.R. Schiffahrt have teamed up to design a fully customized, global servicing arrangement based on Viking's Shipowner Agreements. The contract covers liferafts, lifeboats, immersion suits, lifejackets and marine fire systems and equipment such as fire extinguishers on more than 30 vessels of the shipowner's fleet.The plan is for Viking to manage not just service notifications, but also the coordination of all servicing. While lifeboats and marine fire equipment will be covered under a fixed-price servicing arrangement, E.R. Schiffahrt saw advantages in replacing other brand liferafts with Viking products. Together with the immersion suits, these new liferafts will be serviced via fixed-price exchange, which sees products simply being swapped out as their certificates expire.

MarineCFO Announces Enterprise Version 3.0

MarineCFO Inc. announced the release of Enterprise Version 3.0. which provides a configurable software solution that can grow and change with the business. MarineCFO Enterprise v3.0 is based on the MarineCFO Business Framework, the toolset used to develop and enhance all of the MarineCFO products. This allows for controlled development and consistency across the interfaces and coding methodologies. With a strong Microsoft relationship, all products are built with mainstream Microsoft technologies. This includes the .NET framework, SQL Server, the Windows Communication Foundation and Microsoft Office for productivity, analysis and heavy data entry tasks.

EPA, USCG Cooperate on VGP Enforcement

The U.S. Environmental Protection Agency (EPA) and U.S. Coast Guard (USCG) signed a Memorandum of Understanding (MOU) outlining steps the agencies will take to better coordinate efforts to prevent illegal discharges of pollutants from more than 61,000 commercial ships based in the U.S. and more than 8,000 foreign ships operating in U.S. waters. This MOU creates a framework for improving EPA and USCG cooperation on data tracking, training, monitoring, verifying compliance and industry outreach. Under the MOU, the Coast Guard has agreed to incorporate components of EPA's vessel general permit (VGP) program into its existing inspection protocols and procedures to help the United States

address vessel pollution in U.S. waters. The agencies have also agreed to improve existing data requirements so that information on potential violations observed during inspections can be sent to EPA for evaluation and follow-up.

The vessel permit program applies to owners and operators of non-recreational vessels at least 79 ft long, such as cruise ships or oil and cargo tankers operating in U.S. waters. The vessel permit covers 26 types of discharges such as deck run-off from rain, ballast water used to stabilize ships and wastewater from showers, sinks and laundry machines.

Department of Navy Announces FY12 Budget

Deputy Assistant Secretary of the Navy for Budget, Rear Adm. Joe Mulloy, briefed the Fiscal Year 2012 Department of the Navy budget rollout at the Pentagon, Feb. 14. President Barack Obama's budget for Fiscal Year 2012 was submitted to Congress Feb. 14, with an overall request for the DoN of $161.4b, which is an increase of $1b over last year's baseline appropriations.

Mulloy also pointed out that even with the streamlining of the DoN budget and through captured efficiencies, the Navy will still be able to purchase five more ships than planned. The total DoN efficiencies will save $35b over five years.

Defense Secretary Robert Gates announced Jan. 6, a series of efficiencies decisions designed to save the Department of Defense more than $178b during the next five years, primarily by reducing overhead costs, improving business practices and culling excess or troubled programs.

President's FY 2012 Budget: $358.4M for BOEMRE

The President requested $358.4m to fund BOEMRE in FY 2012. This represents a $119.3m, or 50% increase above the 2010 enacted level.

The additional resources requested would be used to complete the reorganization of BOEMRE; hire new oil and gas inspectors, engineers, scientists and other key staff to oversee industry operations; conduct detailed engineering reviews of offshore drilling and production safety systems, and develop new risk-based inspections and safety oversight strategies, including the establishment of real-time monitoring of key drilling activities; and implement more aggressive reviews of company oil spill response plans.

DIRECTORY: COATINGS & CORROSION CONTROL

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

BioCoatings LLC
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www.biocoatings.org
tel: 866-201-2877
email: info@biocoatings.org
Descr: BioCoatings is a marketer of environmentally friendly VOC compliant “green” products - primers, paints, coatings and sealers for concrete, wood and rubber.

Blastech Mobile LLC
12400 Highway 43 North, Axis, AL 36505
www.blastech.com
tel: 519-754-3722
email: trevorn@blastech.com
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Blue Water Marine Paint
1999 Elizabeth St., North Brunswick, 08902
www.bluewatermarinepaint.com
tel: 800-628-8422
email: pmarzocca@gmail.com
Products: Marine AF 45, Marine AC 70

Calico Coatings
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email: info@calicocoatings.com
Descr: Calico Coatings customizes coating solutions that reduce friction and wear, save fuel and increase performance for their clients

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www.cotelind.com
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Washington, DC 20003
www.columbiagroup.com
tel: 202-608-8443
email: jdeller@columbiagroup.com
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www.comcortech.com
tel: 302-644-14535
email: cmoore@comcortech.com
Products: Provider of tank cleaning of all types, water blasting, slurry blasting, high solid paint application

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802 Proctor Ave.
Ogdensburg, NY 13669
www.defelsko.com
Terry LaRue
tel: 315-393-4450
email: techsale@defelsko.com
Products: PosiTector, PosiTest, PosiPen

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www.eagleie.com
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email: rick@eagleie.com
Descr: Supplier of coatings & corrosion control equipment and application of coating services

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email: roland@rootintl.com
Descr: Distributor of corrosion control products

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email: pault@elzly.com
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Descr: International Paint has over 800 qualified technical staff around the world; Backed up by 16 manufacturing plants, operations in 60 countries, 13 specialist marine laboratories and over 500 delivery points worldwide

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

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

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

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www.xiom-corp.com
tel: 631-643-4400
email: jeff@xiom-corp.com
Products: Marine vessel hull protective coating, chemical protection coating, polyethylenes, polyesters, nylons, thermal spray equipment

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Contact: James Foster
818-362-8391

EM1068 Official # 534891 - 1021 net/Gross Tons - Built 1928 in Oakland CA. LOA 258.5' - Beam 38' - Depth 12'. Flat Deck Barge, riveted steel construction, raked bow and stern. 6" asphalt wear deck with 3' steel fenced sides running port and starboard. Barge is also outfitted with 2 Clyde two drum waterfall winches. **$300,000.00.**

EM1163 - 125' x 34' x 9' Flat Deck Barge s/n 1065170 c/w 12 hatches, 4 bitts, 6 kevels, 25 degree raked bow/stern, stern w/skaggs. **$125,000.00.**

Jan. 4 - May 10, 2011

www.maritimephotographs.com

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

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Hempel AS introduced Hempasil X3, a copper and biocide free fouling release coating system based on hydrogel silicone. Hempel offers a fuel saving guarantee to back up the product. Hempasil X3 is designed for vessel speeds down to eight knots and an activity level down to 50% giving a greater flexibility for shipowners that want to convert to fouling release. Fuel savings of above eight percent are confirmed from a number of different ship types with significant differences in hull shapes, wetted area and operation.

www.hempel.com

Sherwin-Williams Protects Brazilian Oil Tanker

Shipbuilder Atlântico Sul launched Brazil's first ship in 14 years, João Candido, under the Brazilian government's Program for Modernization and Expansion of the Fleet (PROMEF). It is the first of a series of 22 ships that are already on the shipyard's order book, along with the hull of the P-55 platform of Brazilian oil giant Petrobras. Sherwin-Williams' Euronavy ES301 coating system is protecting the new ship's ballast tanks. Using the ES301 coating technology, Atlântico Sul has been able to double its productivity in terms of square meters of surface prepared. Construction of João Candido occurred while the shipyard itself was being completed.

http://protective.sherwin-williams.com

Interlux Fiberglass Bottomkote Aqua

Interlux announced its partnership with Brunswick Boat Group, where Fiberglass Bottomkote Aqua has been selected as the premier product in all Sea Ray, Meridian and Bayliner production. Fiberglass Bottomkote Aqua is a durable, smooth finish with stable colors. The low odor formulation has extremely low Volatile Organic Compound (VOC) content, making it highly suitable for a manufacturing environment with minimum disruption and reduced stack emissions. **www.yachtpaint.com**

Water Cannon Presents Wet Sandblasting System

Water Cannon, Inc.'s new wet sandblasting system, when attached to Water Cannon's Honda powered 5,000 psi pressure washer, removes contaminants like rust, scales, loose paint, barnacles and debris from surfaces, metals and concrete. The wet sandblast system quick connects to most pressure washer's wands. The washer then draws sand (or other natural or synthetic material) automatically through a 26-ft reinforced lightweight feed hose by way of a self-venting pickup tube. Venturi siphon technology eliminates the need for an air feed system or any additional heavy, bulky equipment. **www.watercannon.com**

CounterAct's Hybrid Electronic Corrosion Control

CounterAct's Hybrid Electronic Corrosion Control System combines a traditional impressed current cathodic protection system (ICCP) for corrosion protection below the waterline with CounterAct's patented and proprietary electrostatic anti-corrosion technology to protect above the waterline in one package. In addition to reducing corrosion and rust, CounterAct's technology has been shown to reduce undercutting of chips and scratches in paint by over 80%, making paint jobs last considerably longer. **www.counteractrust.com**

Interlux

Hempel

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PRODUCTS

Fibergrate Composite Structures Aqua Grate

Aqua Grate T1210 and T1215 pultruded pedestrian grating is specifically engineered to withstand the corrosive conditions associated with marine applications and to meet ADA guidelines. Aqua Grate's combination of corrosion resistance and light weight provides easy, inexpensive installation in marinas and piers. Aqua Grate's sugargrit surface provides a high level of slip resistance, yet at the same time offers a comfortable barefoot walking surface. Protection against long-term UV exposure is provided by a synthetic surfacing veil and UV inhibitors in the resin formulation.

www.fibergrate.com

Aluminum Props Resist Corrosion, Improve Performance

Turning Point's Hustler Series aluminum propellers are designed to maximize overall performance of lower-horsepower outboards. Compatible with outboards from Evinrude/Johnson, Force, Honda, Mercury & Mariner, Yamaha, Nissan & Tohatsu, Suzuki and other manufacturers, the Hustler Series is engineered to provide stainless performance at aluminum prices. Squeeze-cast for added strength, the Hustler propellers are protected from corrosion by a five-step powder-coat process. Tuned rake angles compact the vortex produced by the prop, lifting the boat and boosting overall performance. A high-flow, through-barrel exhaust system ensures minimum exhaust back pressure for increased horsepower.

www.tpprops.com

Livorsi Introduces Industrial Series Gauges

Livorsi introduced its industrial series gauges which are easy to install with the use of plug-in Deutch connectors that significantly decrease rigging time. The plug-in connectors are waterproof and resist salt corrosion and dust intrusion. Gauges are encased in non-ferrous hardware and high contrast graphics make them easy to read at a glance. As a standard Livorsi gauges include red LED backlighting for high visibility in low-light conditions. They also feature fade resistant powder coated pointers and SAE rims in a powder coat finish or in polished stainless steel. These finishes protect the rims and make them extremely resilient in harsh weather environments.

www.livorsi.com

Fluoropolymer Foul Release Hull Coating

A report from Professor James Corbett s Energy and Environmental Research Associates, has proven that the eco-efficiency benefits of Fluoropolymer Foul Release Technology, manufactured by International Paint, when applied to tanker, bulk cargo and other vessel types can reduce GHG (greenhouse gas) and other emissions by an average of nine percent. Over 400 vessels in the commercial fleet currently use Fluoropolymer Foul Release technology for marine applications, patented by International Paint. Significantly, the report showed that reductions in CO2 are achieved at a negative cost, whereby the avoided emissions are coupled with economic benefits to the ship owner.

www.international-marine.com

Aqua Grate

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Fluoropolymer Foul Release

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www.seawork.com

Offshore Rig Fleet by Region

Region	%	No.
Africa – West	80.0%	(44/55)
Asia – SouthEast	69.4%	(68/98)
Europe - North Sea	81.1% (	60/74)
Mediterranean	69.6%	(16/23)
MidEast - Persian Gulf	77.4%	(72/93)
N. America – Mexico	68.0%	(17/25)
N. America - US GOM	63.1%	(53/84)
S. America – Brazil	87.5%	(56/64)

Source: **Rigzone**

Offshore Rig Utilization by Type

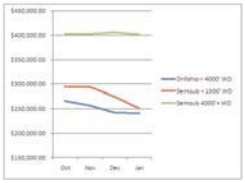
Type	%	No.
Drill Barge	80.0%	(8/10)
Drillship	70.7%	(41/58)
Jackup	73.1%	(266/364)
Semisub	80.2%	(138/172)
Tender	72.4%	(21/29)

Source: **Rigzone**

Offshore Rig Day Rates

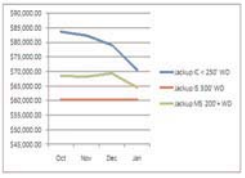
Floating Rigs

Rig Type	Rigs Working	Total Rig Fleet	Average Day Rate
Drillship < 4000' WD	6 rigs	8 rigs	$241,200.00
Drillship 4000'+ WD	37 rigs	52 rigs	$450,068.71
Semisub < 1500' WD	10 rigs	18 rigs	$250,992.86
Semisub 1500'+ WD	63 rigs	86 rigs	$304,172.55
Semisub 4000'+ WD	73 rigs	95 rigs	$401,865.38



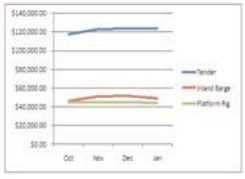
Jackup Rigs

Rig Type	Rigs Working	Total Rig Fleet	Average Day Rate
Jackup IC < 250' WD	29 rigs	54 rigs	$70,500.00
Jackup IC 250' WD	42 rigs	65 rigs	$94,121.43
Jackup IC 300' WD	82 rigs	126 rigs	$99,303.64
Jackup IC 300'+ WD	111 rigs	149 rigs	$136,484.20
Jackup IS < 250' WD	5 rigs	7 rigs	—
Jackup IS 250' WD	8 rigs	10 rigs	$137,000.00
Jackup IS 300' WD	2 rigs	5 rigs	$60,300.00
Jackup IS 300'+ WD	1 rigs	3 rigs	$55,000.00
Jackup MC < 200' WD	1 rigs	16 rigs	$36,000.00
Jackup MC 200'+ WD	12 rigs	28 rigs	$44,208.33
Jackup MS < 200' WD	2 rigs	2 rigs	—
Jackup MS 200'+ WD	6 rigs	19 rigs	$64,360.00



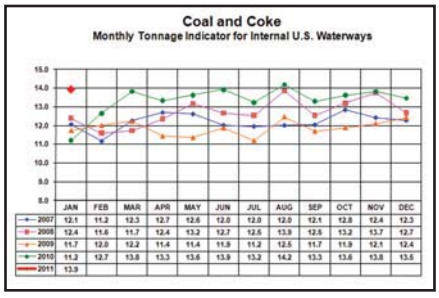
Other Offshore Rigs

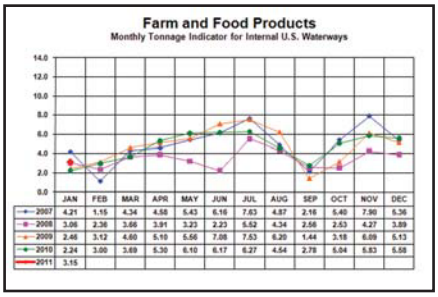
Rig Type	Rigs Working	Total Rig Fleet	Average Day Rate
Drill Barge < 150' WD	18 rigs	39 rigs	—
Drill Barge 150'+ WD	6 rigs	9 rigs	—
Inland Barge	35 rigs	74 rigs	$49,075.00
Platform Rig	143 rigs	250 rigs	$44,034.62
Submersible	0 rigs	6 rigs	—
Tender	21 rigs	32 rigs	$123,897.00

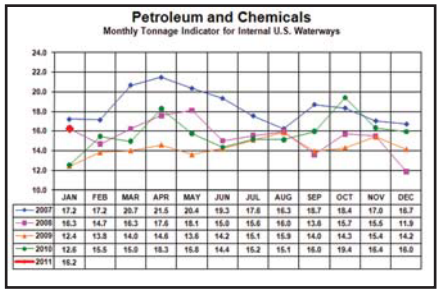


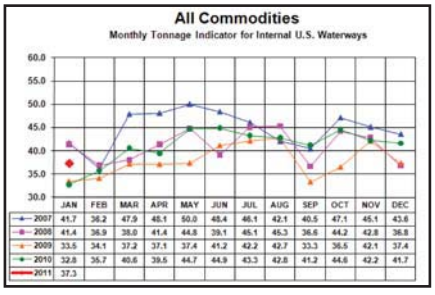
Source: **Rigzone**

Source: Charts courtesy of Waterborne Commerce Statistics Center, New Orleans, La. (http://www.iwr.usace.army.mil/ndc/wcsc/wcsc.htm)









TSA Surcharge

West Coast

Date	$/MT	ch/$	ch/%
Feb 21	608.50	+4.50	+0.7
Feb 14	604.00	+2.00	+0.3
Feb 7	602.00	+40.50	+7.2
Jan 31	561.50	+10.50	+1.9
Jan 24	551.00	+0.50	+0.1
Jan 17	550.50	+19.00	+3.6
Jan 10	531.50	-10.00	-1.8
Jan 3	541.50	+5.50	+1.0
Dec 27	536.00	+6.50	+1.2
Dec 20	529.50	+8.50	+1.6
Dec 13	521.00	-2.00	-0.4
Dec 6	523.00	+21.00	+4.2

East Coast

Date	$/MT	ch/$	ch/%
Feb 21	603.00	+4.00	+0.7
Feb 14	599.00	+21.00	+3.6
Feb 7	578.00	+28.00	+5.1
Jan 31	550.00	+15.50	+2.9
Jan 24	534.50	-0.5	-0.1
Jan 17	535.00	+11.00	+2.1
Jan 10	524.00	+4.00	+0.8
Jan 3	520.00	+6.50	+1.3
Dec 27	513.50	+1.00	+0.2
Dec 20	512.50	+5.00	+1.0
Dec 13	507.50	-6.50	-1.3
Dec 6	514.00	+19.00	+3.8

Source: Bunkerworld.com
http://www.bunkerworld.com/markets/surcharges/tsa#

Indicative World Steel Prices

Indicative prices		Change
SBB HRC world price $/t	816.581	+44
SBB Rebar world price $/t	761.033	+20
SBB World Price Tracker	282.523	+18

Source: Steel Business Briefing
http://www.steelbb.com/steelprices/

Bunker Fuel

Port	IFO 380	IFO 180	MGO	Del. Date
Houston	632.00	662.00	955.00	W 2011-02-25

Source: BunkerIndex.com - http://www.bunkerworld.com/markets/prices

Port	IFO380	IFO180	MGO	MDO	Barge	Updated
New York	635.50	647.50	950.00	982.50	$7.50	Feb 25
Houston	633.00	669.00	935.00	941.50	$7.00	Feb 25
Los Angeles	638.50	658.50	Pending	862.50	$5.80	Feb 25

Source: Bunkerworld.com - http://www.bunkerworld.com/markets/surcharges/tsa#

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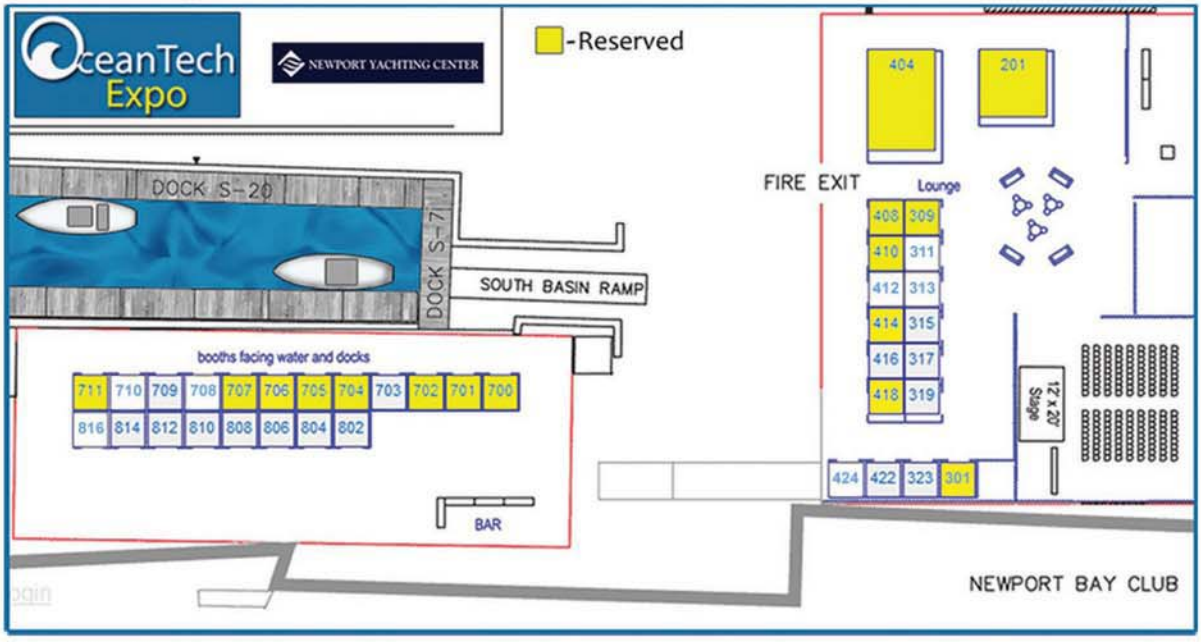

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