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Features

ON THE COVER

The robust MSRC Responder Fleet in the Gulf of Mexico circa 2010. This month's INSIGHTS entry features MSRC President & CEO Steve Benz. *The story begins on page 12.*
(Photo courtesy MSRC)

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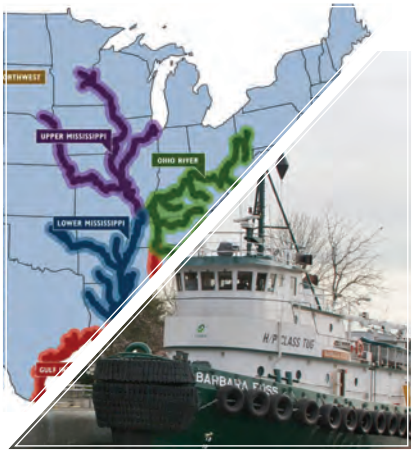

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As we close out yet another year, I am constantly amazed at how much things change on the waterfront and the boats that ply the adjacent waters. Similarly, I like to tell people that it was five years ago when, within a narrow six-month window, I purchased my first 'smart phone,' a vehicle with global positioning and took out my first satellite radio subscription. I now wonder how I got along without any of it.

Separately, the businesses of SATCOM and software are also combining to efficiently enable workboat operators and seafarers to better manage their businesses. To be sure, the inland and offshore support sectors were, in comparison to their blue water cousins, arguably late to the technology game. This month, we detail two different options for workboat operators to move their operational game to a higher level. Both efforts involve the use of different off-the-shelf, customizable software products. Each also relies on ship-to-shore communications to transfer that data back and forth. Workboat operators are catching up (and changing) quickly. Those who don't run the risk of being left behind. Turn the page and find out why.

An ounce of prevention is worth a pound of cure. Yes: I think I have heard that said, once or twice. That adage is especially true when it comes to marine casualties. As part of the headliner for this edition, 'response' is just as important, if not more so, than the best salvage that money can buy. That's because response doesn't just mean 'spill' response or picking up the pieces after the damage has been done. It can and should involve preventative measures, robust assets to make that happen, and speedy arrival on-scene at a potential disaster to avert something even worse.

As the world of salvage and response continues to evolve, the lines between salvors and responders continue to blur. Not too long ago, the so-called Fi-Fi rules further defined the responsibilities of those who find themselves in peril and the people and businesses tasked with trying to solve their problems. The salvage community itself had a big part in moving those rules forward. Salvors the world over continue to up their game, and standardize what was at one time a business that few trusted and nobody really understood. That's also changing quickly.

No one wants to see any casualty. That said; the reality of both response and salvage is that each specialty – for some, it is one in the same – involves high overhead and expensive assets that sometimes can lay idle for weeks or months at a time. What to do with those assets during slow times is sometimes the difference between business failure and a healthy bottom line. In this edition, we bring you not one but two completely different versions of how response providers can operate in today's complicated operating environment. That, combined with savvy advice from senior salvage stakeholders, puts the exclamation point on this edition on our final edition of 2014. See if you don't agree.

Joseph Keefe, Editor, keefe@marinelink.com

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The Economic Impacts of Infrastructure Investment

A recently released study entitled ***INLAND NAVIGATION IN THE UNITED STATES*** evaluates the economic impacts and the potential effects of infrastructure investment on our economy. The comprehensive, 98-page document was prepared by the University of Kentucky and the University of Tennessee in November 2014. Sponsored by the National Waterways Foundation (NWF), the voluminous text describes an effort that has spanned more than two years during which time the authors produced a conservative evaluation of commercial navigation's system-wide economic impact, both as this system is currently configured, and as it might be through a course of renewed infrastructure investment. To say it may be the most well-written and fully researched effort on this topic would not fully describe the depth of the information that the report contains. Moreover, the report shows that there are simply no better ways to move, store, and otherwise manage freight than what is afforded by inland navigation. If there were, shippers would choose them. This simple reality forms the basis for the work that follows.

Because, the report begins, "Inland navigation has traditionally played a vital role in what is a uniquely American transportation landscape," its history is long and storied. Nevertheless, the waterways' future function as a freight resource is still unclear because of the pressing need for infrastructure investments that may or may not come. Also according to the report, "These investments will require fiscal resources to be marshaled and combined into a national policy that capitalizes on the comparative efficiencies of all freight transport modes." Eventually, the document goes on to spell out the consequences o either eventuality.

The goal of this current research is to partially address this information shortfall, done via two elements: the evaluation of the total economic importance of commercial inland navigation to the country in navigation's present form and assume only sufficient investment to maintain current system performance. This is followed by a scenario that considers the economy-wide impacts of proposed improvements to navigation system capacity and performance under traffic demands that are similar to current freight flows.

As we head into the New Year – one which heralds the new WRRDA bill as the hope for an inland rejuvenation – the nation's inland navigation system can be summarized by the numbers below.

The report also outlines current economic transportation value of the commercial inland navigation system, but also notes that it has undergone continued use for decades beyond its original design life. Thus, many navigation-related infrastructure assets could be modernized to yield greater capacity and improved reliability. Hence, the report also considers the broader economic benefits of investment in navigation infrastructure modernization. The results suggest that, beyond yielding generations of new freight capacity, it would also lead to the creation of immediate jobs and income, as well as long-term benefits. Somewhat ironically, it is a system *abandonment* scenario that provides perhaps the basis for evaluating the economic impacts of the inland navigation system. The study process first considers the impact of the sudden and complete elimination of navigation as a freight alternative. Not surprisingly, this would result in profound economic losses and displacements in terms of jobs, incomes, and aggregate economic activity. Indeed, the initial job losses alone would total more than one-half million full-time positions. Given the resilience of the U.S. economy and the functioning of markets, a portion of the sustained damage would be "repaired" through the relocation of economic activity and a rebalancing of productive inputs. However, even in the long-run, economic adjustments could only restore about 40% of the initial losses, so that the permanent, unrecoverable loss of jobs would still approach 350,000. These jobs and their associated incomes represent benchmarks against which navigation's future economic impacts can reasonably be compared.

12,000 miles – of navigable waterways	450 miles – average distance traveled by a ton of freight
38 states – touched by the waterway(s)	350,000 job-years – long term employment created by modernization
565 million – tons of annual freight	$14 billion – long term income from modernization
$214 billion – inland freight annual value	12,000 - full-time, immediate jobs from modernization
11,000 – barge movements considered	$500 million – Value of immediate salaries from modernization

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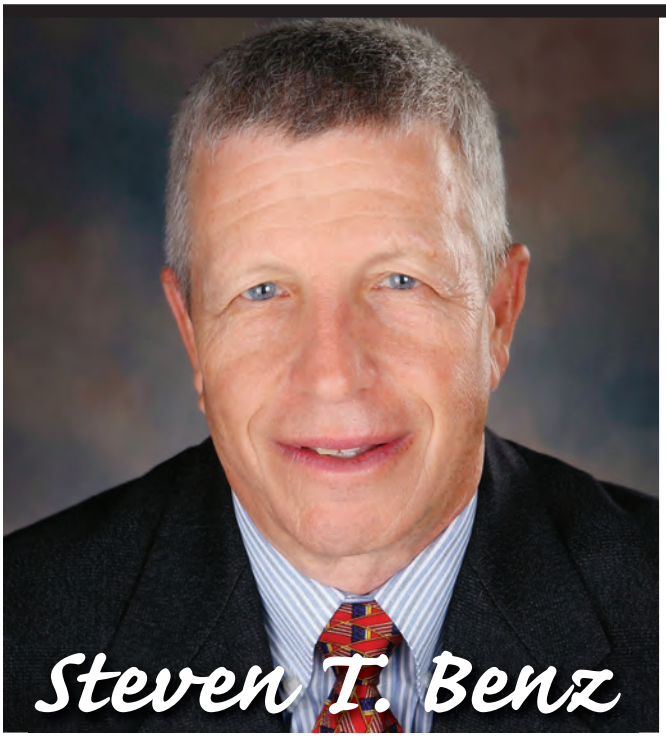

Steven I. Benz

President and CEO,

Marine Spill Response Corporation (MSRC)

As President and CEO of MSRC, Steve Benz presides over the largest oil spill response company in the United States (and worldwide). In that position since January 1996, he has during that tenure, overseen several critical phases in the Company's evolution. These include a major restructuring in the late 1990s to make it more competitive; growth throughout the 2000-2009 period, including acquisition of several companies; leadership in overseeing MSRC's role in responding to the 2010 BP spill in the Gulf of Mexico; and most recently the large expansion of MSRC's resource base and customer growth in the aftermath of the Gulf spill. Prior to joining MSRC, Benz spent 16 years (1979-1995) working for British Petroleum (BP), notably serving as Director of Corporate Planning for BP America. From 1991-1995, he was President, BP Shipping US and Corporate Vice President of Alaska Trading and Transportation. He graduated from Case Western Reserve University with a degree in Chemical Engineering and also earned a Masters Degree in Management Science from Stanford University Business School as a Sloan Fellow. The words MSRC are most often connected to the world of oil spill response, but what Benz and his not-for-profit firm do on a daily basis, encompass much, much more. Listen in this month as he defines the current state of 'response' operations in this hemisphere, looks back at what came before, and then ahead to what might come about next.

The Marine Spill Response Corporation (MSRC) is a not-for-profit organization dedicated to oil spill response. How does that work exactly? Lead the readers through your legal and membership structure.

The MSRC business model is structured on the premise that two key related but distinguishable services are offered to our customer base. First, we provide the resource capacity to be listed in customer response plans required by regulations, whether it is the U.S. Coast Guard or by other agencies, such as the Bureau of Safety and Environmental Enforcement (BSEE), which oversees the drilling and production of oil offshore in the Gulf of Mexico, Alaska and California. This is a compliance service. The second service to customers is providing readiness and response in the event of a real incident or discharge. I distinguish between these two services because one is based on some type of baseline scenario planning (compliance) and the other is based on unpredictable and often uncontrollable factors that enter into play when a real spill occurs. While the first service and its potential revenue base is relatively definable in terms of number and size of the different segments of the developing, processing, and transporting of crude oil, the second service – actual spills are obviously not predictable and therefore not very conducive to business modeling in the classic commercial sense. It is for this reason that MSRC is set up as a not-for-profit organization that is not dependent on spill revenues to provide a return to shareholders. We work with our customer base to establish a resource level which not only meets their compliance requirements, but their recognition that it take more than just a "compliance check in the box" to respond to actual discharges. This makes our business model sustainable and does not depend on spill events. Contrast that with for-

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profit organizations, which must generate spill revenues to provide market-based returns to their shareholders. In the absence of such revenues on a sustainable and predictable basis, they must manage their returns through other means such as a capacity-based cost structure at the edge of compliance or by diversifying (or I would argue diluting) their focus through other non-spill response related services and activities. These types of organizations certainly have a role to play in response activities as supplemental resources, and we use many of them as part of our supplemental Spill Team Area Responders or STARs. As to organizational structure, we operate as part of a two-tier structure in which the Marine Preservation Association (MPA), also a not-for profit entity provides funding to MSRC for all its annual operating and capital investment requirements to meet both services described above. MPA consists of operators within the various oil drilling, development, processing, and transportation business as well and non-oil carrying vessels that carry substantial fuel that could be at risk during a mishap. This two-tier structure was established back in the early 1990's to separate the responsibilities and legal liabilities that result from oil spill responses from those companies that provide funding to the response organization. To ensure this separation, MPA provides long-range strategic direction and funding for a robust spill response program, but does not get involved in the governance or operations of MSRC. As such, MPA and MSRC have separate Boards that oversee their respective role and responsibilities.

MSRC went through, in your words, "a major restructuring in the late 1990's to make it more competitive." Who does a not-for-profit spill response company compete with?

This is a question I have been asked many times over the years. When MSRC was originally conceived, it was established to provide co-op type services, similar to local and regional co-ops but on a national basis, especially for large-scale discharge events. It was anticipated that MSRC would provide both compliance planning resources as well as response services to all operators that required Worst Case Discharge Services through an agreed upon cost sharing formula according to volumes processed or moved on the water. However what evolved over the first few years of MSRC's existence was a dichotomy among various operators as to what resources would be required for compliance planning purposes versus what may be necessary to respond to actual spills versus table-top exercises. This was exacerbated by what many viewed as an excessive overhead cost structure that evolved within MSRC at the time. The combination of these phenomena created business opportunities for the for-profits to meet the different philosophies of the various operators requiring compliance planning obligations. Therefore, MSRC needed to re-calibrate its operating structure to meet the needs of the operators that wanted both services (plan compliance and response), but in a more commercially minded approach. This was the value proposition that I was recruited to bring to MSRC in the mid-1990s, having come from executive assignments in a major oil company with an understanding of how to balance the goals of our major funding customers. Over the years we have grown our customer base substantially with this commercially minded approach.

Talk about the companies you've acquired over the last decade or so – what did they add to your toolbox to make MSRC a better organization? Is it complicated to absorb 'for profit' firms into a not-for-profit structure?

MSRC did not acquire companies but rather merged operations with several regional co-ops that were also not-for-profit entities. These entities had existed for many years before MSRC was established and were largely funded by the same operators that were members of MPA. Each of the mergers, three on the West Coast and one on the East Coast, allowed common funders to benefit primarily from a one-call turnkey response rather than having each organization out there responding in parallel. It also had the benefits of a common investment strategy going forward and synergies in overheads.

The new so-called 'fi-fi' rules finally promulgated by the Coast Guard have arguably blurred the lines between salvage and the response communities. For salvors and vessel operators, it more clearly defines relationships and required capabilities in times of emergency and how people prepare for that. What has it changed (if anything) for your shop?

Overall it has had little impact on us since the regulations on oil spill response have been in effect since the implementation of OPA-90 in 1993.

Responder immunity is a big deal for salvors – what about spill response folks? Do you face the same sort of scrutiny and liabilities? If so, what are you doing about it?

Responder immunity is a very big deal for spill response companies. In the aftermath of the 2010 Gulf of Mexico oil spill, we along with many other responders found

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ourselves named in various lawsuits. Aggressive plaintiff's attorneys have sought to take advantage of various gaps in the strict language of federal responder immunity provisions in OPA-90. MSRC is part of a consortium of all types of responders and salvors seeking to plug such gaps in responder immunity provisions of the laws.

What's the biggest issue on your plate today in terms of your business model and the regulatory environment that you toil in?

I believe the biggest challenges we face are operating in an environment of regulatory uncertainty. We are nearly four and a half years since the 2010 Gulf of Mexico spill and still awaiting its impact both on offshore operations (BSEE) and its knock-on effect on shipping operations (USCG). It is important that regulators take a measured and thoroughly assessed view before developing new regulations, but with that thoughtful approach comes a window of challenge by response organizations such as MSRC as to appropriate investments to make. MSRC has in fact made a number of major investments in enhanced spill response capability despite not having clearer regulatory certainty. This again is a result of our dual approach of both meeting compliance as well as response to actual events.

Salvors (increasingly) tend to make their equipment multi-missioned. In other words, they take a capital-intensive asset that might otherwise be idle for large periods, and use it for multiple missions – and generate multiple income streams. That – I would imagine – is a little harder for you to do within the structure that you operate. How do you balance the books in a year when there are no spills and other environmental disasters?

As I pointed out at the beginning of our discussion, our not-for-profit structure recognizes the challenges of unpredictability of oil spill events. In fact, it is a very successful year when/if there are no spills among our customers, as it does not impact our basic ability to continue to receive funding from MPA.

MSRC's role in responding to the 2010 BP spill in the Gulf of Mexico was monumental. Tell us about that event. What went well and what could be done better (lessons learned) next time?

MSRC was the largest company by any yardstick that performed surface response cleanup (as opposed to sub-sea response activities). Some of the metrics that demonstrate our involvement include: largest single offshore response vessel fleet with 12 of our 15 industry-unique Responder Class vessels; over 11,000 man days of offshore activity from direct MSRC employees; supervised over 4,000 contractor employees; led the largest overall operations of the aerial dispersant program; and provided key personnel for the precedent setting in-situ burns. We were commended numerous times by BP and other parties, including the Coast Guard for our role in the response. As with any event of this magnitude, there are many lessons learned from such an event. To ensure that we could take advantage of the experience we gained on the event we conducted our own internal review by spending many months assessing our experiences after our activity was complete. In total we interviewed all personnel that were involved in off shore response activities, with the objective to understand at the field level what went well, what could have been improved, what equipment challenges existed, what workarounds were necessary, what human elements went well, and finally what human elements need enhancement. We have spent time reviewing with our customer base and regulators such as BSEE and the USCG our general findings. While it would take a lengthy time to go into such details, some of the most important observations from our experience include: the need for better remote sensing to ensure that resources are most efficiently used by being in the thickest oil; the response "tool box" must have multiple options and equipment and tactical methods since conditions vary almost daily (e.g. sea states, debris, weathering of oil, among many other variables); and sustainability over an extended period (in this case over six months) must be built into any response capability -- especially the human element.

How many full time employees does MSRC have and in what regions do you operate?

MSRC has about 425 direct employees and we have four operating regions covering the Atlantic coast (including the Caribbean), Gulf of Mexico, California, and the Pacific Northwest (including Hawaii).

The future direction of response capabilities, at least in the US, may involve remote sensing capabilities. Flesh this out a little for the readers.

As I indicated in your question on lessons learned, using remote sensing to enhance the ability to have response resources in the optimal locations at the right time can have a profound impact on enhancing spill response. MSRC has spent the last few years since the 2010 Gulf of Mexico event searching out technologies to improve the traditional methods of aerial surveillance with the human eye. I am

very proud of the new tools we have developed with several leading remote sensing companies that now allow us to do things we were not able to do back in 2010. This includes remote sensing capability from aircraft, tethered balloons, and ships.

Other technologies are being developed and used to increase the ability to recover oil from the water once MSRC is on site. Tell us about just a few of these breakthroughs.

As I again indicated in the question on lessons learned from the Gulf spill, MSRC has focused on a number of strategic and tactical options to ensure that we can make the best "game day and game time" decisions for the challenges that vary daily in oil spill response. As such, we have developed dual options for recovery from our Responder Class vessels, using both the traditional methods of collecting and offloading oil with our Transrec skimming systems while also having the ability to go into what we call Buster mode, using a Norwegian developed oil collection and recovery system that can operate at higher advancing speeds under the appropriate circumstances. We have also added a number of newer skimming systems designed to recover more oil and less water.

MSRC was formed as a U.S. Coast Guard Classified Oil Spill Removal Organization (OSRO) in 1990 to offer oil spill response services and mitigate damage to the environment. This came, presumably, in the wake of the EXXON VALDEZ and the Oil Pollution Act of 1990. What's changed since then in the world of spill response? Pick out just one defining event, development or regulatory change that has impacted all stakeholders.

The Exxon Valdez catalyzed the passage of OPA-90 and even today it remains the most influential event since it impacted the regulations governing all operators who process and move crude oil. While the regulatory impact of the 2010 Gulf of Mexico spill has to date influenced operations offshore in the Exploration and Production business, I believe it ultimately will impact other oil operations and shipping as the promulgation of offshore regulations is taken into account by the Coast Guard and the Environmental Protection Agency.

The Importance of the Lloyd's Open Form Salvage Contract

By John A. Witte Jr., Executive Vice President at Donjon Marine Co., Inc.

The importance of shipping to world trade hardly needs stating, carrying as it does more than 9 billion tons of cargo each year in some 4,500,000 vessel movements. And while there have been major improvements in ship and operational safety over the past decades, casualties do still occur and will continue to do so. Engine breakdowns, fire, bad weather and, of course, the human element can cause serious incidents putting a vessel, its crew, cargo and the environment at risk. Marine salvage is the business of providing services to casualty vessels with the objective of saving life, protecting the environment and saving property.

The salvage industry has evolved over the centuries and one of its underlying principles is that salvors should be encouraged by the prospect of a fair reward to go voluntarily to the aid of a casualty vessel. The principle of "no cure, no pay" is long established and widely accepted: the salvor will only receive an award if the job is successful. The award is largely based on the nature of the services provided, the conditions and the value of the property saved from peril.

Marine salvage is governed by the 1989 Salvage Convention and can be conducted under a variety of contracts in many jurisdictions. The most commonly-used contract is the Lloyd's Open Form (LOF) salvage contract, which has been in existence for more than 100 years. It was developed by the London insurance market, Lloyd's, and continues to be administered by the Lloyd's Salvage Arbitration Branch reflecting the important role Lloyd's retains in the insurance of ships and cargo. The contract has evolved to keep pace with changes in shipping and the current edition was published in 2011.

The key feature of LOF is that it enables salvage services to be provided quickly without the need to negotiate terms. The salvor undertakes to use his "best endeavors" to save the ship and cargo and prevent pollution and parties agree to settle the award after conclusion of the services, based on the value of the property saved and taking account of several factors including the degree of risk to property, the time taken and the skill of the salvor.

Most awards are agreed to amicably but if there is a dispute a defined process of arbitration, managed by Lloyd's, allows for an independent arbitrator to decide what is a fair award for the services provided and there is an appeal procedure. There is a trusted process for the deposit of financial guarantees.

ISU, as the unified, global voice of marine salvors supports and promotes the use of LOF because it believes that it has great benefits for all parties including the owners and insurers: LOF is a clear and simple contract and enables rapid intervention in an evolving casualty situation. There is no need to negotiate terms "upfront." The contract can be quickly agreed with a verbal agreement that is legally binding. It can be signed at a later stage.

The integrity of the contract is assured by Lloyd's, a world scale insurance market with considerable resources. There is a defined process and resources to administer use of LOF and it is a fair contract and has a clear dispute resolution process using Lloyd's Arbitrators.

For owners and insurers, one key benefit is that the risk of the salvage operation is carried by the salvor alone. Salvors are adept at managing such risk and yet other forms of contract used in a casualty situation can mean that the owner and insurers bear some of the risk of the operation.

Despite these benefits it is well recognized that there is a decline in the use of LOF that goes beyond the overall decline in all salvage operations due to improved ship and operational safety. In recent years, there have been some 50 LOFs annually, down from 200 LOFs each year 20 years ago. There are various theories about the disproportionate decline in the use of LOF such as the idea that shipowners and their insurers think the contract is costly to use and it is too generous to salvors. There may also be a lack of understanding in the insurance community about the contract and its benefits. Additionally, it is possible that excess capacity among salvage contractors means they are more prepared to work on daily hire rates and on other commercial terms. ISU believes it is important to improve levels of understanding of this important contract especially among the younger element of the underwriting community.

LOF is not perfect; not least because it is chiefly structured to reward the saving of property. That may well have been right when the order of priority was saving life; then saving property then protecting the environment, whereas today the order is saving life; protecting the environment then saving property. Many salvors therefore believe that LOF does not adequately reward them for the benefit their work confers on the environment.

ISU recognises there are a variety of other salvage contacts which have their place in global salvage and it supports competitive global provision of salvage with its members free to agree whatever terms they wish when providing salvage services. But the time has come for LOF users and supporters to once again become active in promoting its benefits.

Making Stop Work Authority Work

By (Captain) Katharine Sweeney, CEO, Compliance Maritime

It is one thing to have a policy posted. It is another to review and explain such a policy to a new crew during their orientation or when they first sign on a vessel. And, finally, it is still another to claim the policy has been effectively implemented.

Defining Stop Work Authority

A number of recent maritime incidents have led to 'Stop Work Authority' (SWA) becoming a federally mandated part of a safety management system (SMS) for vessels operating in certain areas and industries. Other sectors, while not federally mandated with respect to this requirement, adopted and implemented SWA years ago, on their own. SWA, far from a new concept, is one that recognizes the importance attached to encouraging any employee on board a vessel (whether licensed, unlicensed, veteran, or greenhorn) to speak up and express concern should they fail to understand any operation being undertaken, feel any operation or sailing condition unsafe, or believe any operation is being undertaken incorrectly.

"Operation" is not defined specifically. Rather, an "operation" encompasses any part of a company's or vessel's commercial or sailing activities. SWA, in effect, places authority and responsibly directly on each and every member of a vessel's crew.

Bridge Resource Management (BRM) is a work concept which originated in the airline industry during the early 1970's, embodying the idea of the vessel being navigated as a team. Although one individual has the 'Conn' on the vessel, the team supports this person through managing the workload and providing the conning officer with pertinent information, but also through the ability – the responsibility, actually – to raise questions concerning the actions (or inactions) of the conning officer.

Implementing SWA

Implementation rarely occurs within a vacuum. For either BRM or SWA to work, encouragement of the "team approach"—one involving no fear of reproach or repercussion—must be effectively communicated to all involved. Merely posting the policy on a bulkhead does not constitute its effective implementation. Rather, the concept must be actively encouraged through active practice, if not drills.

A good starting point might be recalling an accident or incident where someone could have spoken up and stopped an operation when it was clear to him or her that things were unfolding adversely. Think of what it would have looked like if someone had stopped the operation. At what points could they have stopped it and how much damage would have been mitigated?

For example, sea stories are one way to start the ball rolling. As a third mate, I participated in a rescue of a life raft full of crew members forced to abandon their overladen log ship in a storm. Long before the days of SARTS (Search and Rescue Transponders), we arrived at the scene at dusk. Like looking for a needle in a haystack, finding the life raft at the scene was very difficult; however, once dark enough, we saw a strobe light. The strobe was coming from the EPIRB (Emergency Position Indication Radio Beacon) tethered to the life raft, but floating outside it. Following the rescue, the ship's captain informed us that the chief cook (probably the lowest person on the totem pole) had absolutely insisted that the EPIRB be placed outside of the life raft. It was this chief cook's insistence and the captain's willingness to follow his advice that had saved the crew.

What empowered the Filipino cook to challenge the Japanese captain? I understand there are no atheists in foxholes, and I don't think there are any in deployed life rafts or lifeboats as well.

Practice your "All Stop." Consider adding it to the list of (rotating) topics for fire and boat drills. Incorporate it by having it set up in advance. See who will stop the operation; or have the person contemplating the unsafe act stop him or herself and explain why as part of the drill. Then review this in *'the debrief'* after the drill is completed, even acknowledging it was all a "set up" to determine who would or would not stop the unsafe action.

A successfully implemented "All Stop" can also be demonstrated during a tool box meeting or a Job Safety/Job Hazard Analysis. Imminent danger is not a requirement for "All Stop" to be practiced. Similarly, "Near Miss" or "Near Loss" reports should be part of any effective management system. Sharing these with your fleet of vessels is an excellent means of introducing the topic and to start crew members talking. It also makes your fleet a fleet, not just a series of vessels floating independently, like little islands.

Consider doing the same with "All Stop." Have vessels' crews report when "All Stop" has been used and why. Prime the pump and send out a few to get the conversation and thought patterns going. Utilizing "All Stop" as another tool in your safety management system can reduce your company's exposure to accidents, incidents, and injuries as well as empower your crew members with the authority and the responsibly for their safety as well as the safety of others. Posting company policies aboard a vessel are indications that a company does, in fact, have such a policy. But implementing these policies, again, does not happen in a vacuum.

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U.S. Response Model for Salvage and Firefighting

An International Perspective

By Todd Schauer

As the dust settles on the 2014 implementation of the non-tank vessel response plan (VRP) regulations, the effective result is that all tank and non-tank vessels over 400 gross tons operating in US waters must meet the requirements of OPA 90, including the recently enacted Salvage and Marine Firefighting (SMFF) regulations. The SMFF regulations are the most prescriptive and stringent of their kind in the world and while only applicable in the U.S., the regulations are certain to have reaching international implications.

There are five primary SMFF service providers (the "Core 5") that have been vetted by the US Coast Guard for providing SMFF coverage in all US ports. The majority of the world-wide operating emergency response salvage companies have representation among the Core 5 Providers. The implementation of these regulations attracted global players to the US market that previously had little to no presence.

Preparation for the implementation of the regulations demanded significant investments by Core 5 Providers in personnel and equipment and the continued maintenance of the required response posture for this regulatory compliance is substantial. Additionally, the stakes are raised for primary providers from a responsibility standpoint; the Core 5 Providers have a contractual obligation to respond to client emergencies.

Given the significant investments made and the increased level of commitment, most businesses would expect to realize a corresponding annual return. Many believed initially that this return would be in the form of annual retainer income charged to vessel owners to offset the increased cost and responsibility. Ironically, the opposite has happened. The draw of additional players into the U.S. market and the drive to capture market share has created a price war and has resulted in a significant reduction in overall retainer fees charged compared to pre-SMFF regulation levels. Currently, no retainer fees are being charged by Core 5 Providers for non-tank vessels. This is quite a remarkable outcome, especially considering that the number of U.S. salvage emergencies, the traditional source of revenue for salvors, continues to decline.

What is the reason for this tremendous inconsistency between investment and return? The simple answer is that the U.S. response market is very important to the world response market and service providers recognize this. For now at least, many providers are actually willing to subsidize their stake in the U.S. market for the greater potential of the global market. There is an emerging trend for vessel owners and operators to contract with response partners on a global basis, and the U.S. SMFF model with its pre-arranged contracts and funding agreements is gaining traction as a viable arrangement outside the United States. In order to have competitive access to this emerging global market, a Provider must be active in the US market.

It is inevitable that the future will see increasing implementation of SMFF-type regulations among other developed nations. As with the original OPA 90 regulations for spill response that set a world-wide precedent and triggered similar regulation processes in numerous other countries, it can also be expected that a similar tightening of SMFF regulations will occur in other nations. Serious salvors in the world market do not want to be left behind when this happens.

There are notable lessons learned from the SMFF implementation process. The bar for U.S. SMFF response provider capability has been raised to a high level. 'Core 5' Providers have leveraged this increased capability and profile to achieve direct success internationally. The American salvors are now routinely securing contracts for the largest salvage and wreck removal contracts around the world.

The American Salvage Association (ASA) has been the common voice for the salvage industry throughout the tenuous process of enacting the SMFF regulations. The ASA has gained tremendous insight throughout the entire development and implementation process of the SMFF regulations, and has also earned credibility and respect among all stakeholders including the U.S. Coast Guard. As the influence of the US response model grows internationally, the ASA is in a unique position to expand its horizons and provide guidance and insight on these processes in other countries. For example, recent activities of the ASA have included joint training sessions with the Panama Canal Authority and the Canadian Coast Guard. The American

The SMFF regulations are the most prescriptive and stringent of their kind in the world ... certain to have international implications.

Salvage Association stands ready to share their guidance and insight on an international level. The simplest way to access that knowledge is as an active member of the ASA.

All stakeholders must recognize that the world is developing and times are changing. In the United States, the model has changed from opportunistic salvage to a fully developed response system. There should be no hesitation to utilize the SMFF capability during vessel emergencies. Not only is it the law, but as discussed above, this response capability is currently self-subsidized and needs to be exercised. VRP's should be activated without delay and professional SMFF providers called to the scene when emergency assistance is required. It only makes sense to engage the pre-contracted and U.S. Coast Guard approved experts during a casualty, but somehow this simple process continues to be met with resistance, or at least reluctance, from various segments of the industry and government. The Responsible Party is obligated to follow the approved VRP and the U.S. Coast Guard is obligated to enforce the activation of the VRP.

While the recent SMFF changes have occurred in the United States, all eyes are on the world market. Like it or not, the US response model will have influence internationally and salvors are positioning themselves for this inevitability. In this regard, the ASA will continue to serve an important role for its members as the salvage response model evolves globally.

AMERICAN SALVAGE ASSOCIATION

Todd Schauer *is VP of Operations for Resolve Marine Group, a global salvage, wreck removal and marine firefighting services company. He manages Resolve's field operations teams and supports the development of Resolve's rapidly expanding global business. He is also Vice President of the American Salvage Association.*

Photo courtesy: NORLED

Zero Emission Vessels – The tide is turning

Battery based energy storage systems for marine applications are finally moving, cleanly along the global waterfront at full speed.

By Grant Brown

The UN Report on climate change on November 2, 2014, stated that the unregulated use of carbon based fuels must cease by the end of the century. While people can debate the causes of global climate change, this type of strong statement is increasingly familiar. The shipping industry is one of the largest consumers of carbon-based fuel, and as such, has great reason to be concerned. That said; from the ferries that transport people and fuel across rivers, to Offshore Support Vessels (OSVs), and a dozen other types of workboat hulls, commercial vessels are vital to the economy and security of the world.

For decades, marine architects and operations managers have made great increases in efficiency to reduce fuel consumption costs. A vessel built today is far more efficient than one that was built 20 years ago. Advances in computer modeling of hull shapes have lowered resistance in the water and composite materials or lightweight aluminum are being used where possible to reduce weight. Even the anti-fouling paint used on the hull, and the impact on a vessel's performance, is taken into consideration.

In the engine room, newer engines run more efficiently and burn less fuel, due to advanced computer controls. Propellers are tuned for maximum efficiency, scrubbers are being used to further reduce pollution and LNG is being touted as the next big clean idea in marine fuel. But they all use carbon based fuel that, according to the UN, will soon be phased out. We do not currently have a "Flux Capacitor" like the one imagined in the movie *Back to the Future*, and until we do, we will be stuck with what we know. Or will we?

Lower Emission Electric Hybrids

Vancouver, Canada based Corvus Energy Ltd., a global supplier of battery-based energy storage systems for marine use, has engineered the world's only purpose built, industrial quality lithium battery suitable for use in large commercial vessels. In fact, Corvus, founded in 2009, has a number of firsts under its belt: the world's first hybrid Offshore supply vessel, the world's first full electric passenger and car ferry, Europe's first hybrid tugboat, and the world's largest hybrid vessel ever. In 2015, Corvus will commission the world's first LNG powered hybrid ferry.

We all know hybrids right? Aren't they the weakling, underpowered cars you find outside coffee shops in Seattle? Not anymore. In fact, Corvus claims their batteries can outperform large diesel generators in bursts, they do not require ramping up to put out the power which is available any time it's needed.

It is this instant, always on power: that's what makes it so attractive to ferry operators such as Denmark-based Scandlines. They installed a 2.7MWh Corvus Energy Storage System (ESS) on board one of their 466 foot, 1,200 passenger ferries, Prinsesse Benedikte. They use the battery to provide spinning reserve, allowing them to remove one gen-set completely. This, combined with the ability to load level on the remaining generators, provided them with a 25% reduction in fuel consumption. The fuel bill for their first vessel is lower now than when they built her in 1994, and the vessel requires about 30% less maintenance due to the engines operating in their correct load range. And, Scandlines has converted another three sister vessels to Corvus hybrid and now has the largest hybrid ferry fleet in the world.

Another first from Northern Europe was the offshore supply vessel Viking Lady. Originally launched in 2009, she has been outfitted with various propulsion technologies in an effort to reduce fuel consumption and pollution. But, the vessel is a working OSV in the North Sea, so safety and reliability come first. Arguably the model for green power and technology, she is powered by dual fuel LNG diesel engines and uses a Corvus Energy ESS to provide the huge power bursts required to hold position while performing stationkeeping duties. Lightweight and modular in design, the Corvus system sits on the foredeck housed in a DNV-certified container and feeds into the vessel's electrical system as needed. This allows the vessel to reduce the overall power output required by its generators and reduces the fluctuation of generator output/rpm in response to load.

The modular design of the system allows for expansion of the energy storage component as required. If the vessel changes duty and is used in a different operational capacity, the ESS component may be expanded or reduced as required. Moreover, from a system design perspective, a single propulsion system design may be used on a variety of different vessels to meet different needs. In the case of large fleet operators, the modular system could be deployed as needed and reassigned to a different vessel if the duty cycle warrants it.

Hybrid Propulsion – not just Noise

Hybrid propulsion technology is quietly making waves in other places, as well. Greener operations, fuel savings and/or the elimination of emissions are not the only reasons to go 'hybrid.' For example, maritime engineering consultant and frequent ***MarineNews*** contributor Bob Kunkel and his firm, Amtech, were recently employed to develop a lithium battery hybrid propulsion research vessel. The propulsion system developed by Northern Lights, BAE Hybrid Systems and Corvus Energy was introduced due to a request to reduce emissions and fuel consumption along with providing a quieter platform for collecting data and teaching. Built at Robert E. Derecktor shipyard in Mamaroneck, New York, the Spirit of the Sound hybrid application is being used as a platform for offshore wind farm maintenance where emissions at the farms will be an

2.7MWh Corvus lithium battery system aboard Prinsesse Benedikte.

Courtesy of Corvus Energy

issue during construction. The research vessel is used to collect water samples and track marine life in Long Island Sound and the actual "noise" benefit of the silent propulsion system was not realized until sea trials were conducted and schools of fish and other marine life surrounded the vessel during its movements in and out of the harbor, without machinery noise or wake.

Zero Emissions Full Electric Power

While current battery technology is not capable of providing enough capacity for an extended trip, many of the commercial vessels being used today have short durations of run time followed by predictable periods of inactivity. A short run ferry is an ideal candidate for full electric propulsion; many ferries run for 20-30 minutes and are followed by a 10-15 minute offloading/loading phase. Indeed, the 2014 ship of the year, announced at SMM in Hamburg in September is such a vessel. Norled Ampere, built by Fjellstrand of Norway, is powered by a Corvus Energy ESS. Fully battery electric powered, she has no generator on board. The solution is, in a word, elegant in its simplicity.

Due to issues in the local grid where the vessel was operating, there was not enough power available to 'quick charge' the batteries after each crossing. Upgrading the local utility grid was deemed time consuming, disruptive and very costly. The engineers at Corvus realized that a battery-to-battery transfer of energy would be far more efficient. In this way, the system would be separated in three parts: an ESS on the vessel, and a shore station on each side. The shore stations are used to fast charge the vessel. When the vessel leaves the dock, the battery then slowly recharges from the grid. With the 30 minute crossing, 15 minute unloading and loading, then another 30 minutes return trip, the battery has ample time to recharge at a slower rate, which is easily handled by the existing grid infrastructure.

With a shore station on each side, the vessel battery is fully recharged after each crossing and maintains reserve for additional crossings. Should a power failure occur on either side it is possible for Ampere to recharge on one side only and maintain service without disruption. The Ampere replaces an existing steel monohull design, using diesel mechanical drives with the new Zerocat design. As the name implies, the Zerocat is a catamaran, 260 feet long and is built from aluminum. The owners expect to earn a rapid return on investment from the vessel due to the fact that their operating costs for fuel are now zero. The vessel she replaces burned more than 260,000 gallons of fuel per year and, due to its age, was considered a high polluter. The propulsion system now requires no mainte-

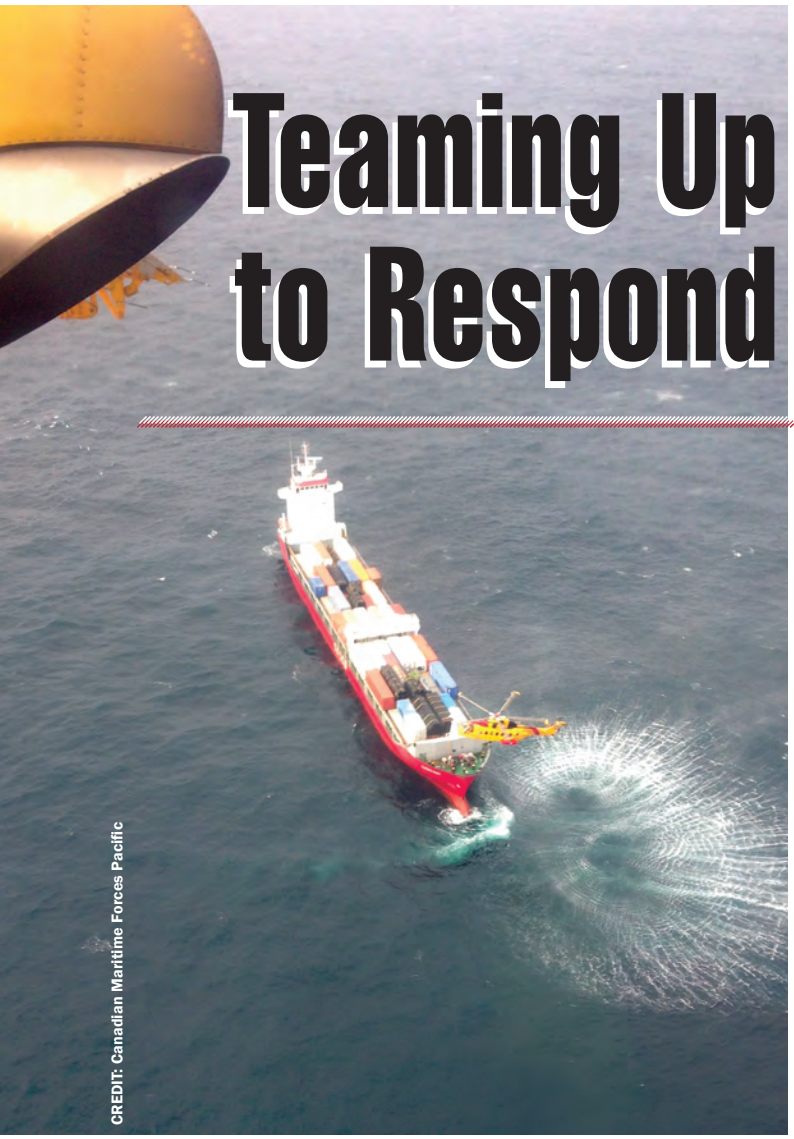
View from the helm of Viking Lady at work in the North Sea

Courtesy of Corvus Energy

nance as the battery pack and other components are fully computerized, maintenance-free units, providing further advantages to the owner.

Building better, faster, more efficient vessels is not new. It has been happening since the first vessels were launched thousands of years ago by our ancestors. The application of diesel electric motors to vessels is not new either; it's been widespread for more than 20 years. Adding a lithium battery IS new, and while it is still early days for the use of battery hybrids in commercial marine, the trend is certainly growing. Where else can you find an innovation that reduces costs, increases safety and reliability and also reduces emissions to zero?

Grant Brown *is a Vancouver-based freelance writer. Grant can be reached by email at* ***sinktip@gmail.com****.*



CREDIT: Canadian Maritime Forces Pacific

Teaming Up to Respond *for the Greater Good*

Canadian, U.S. Coast Guards and Foss Maritime coordinate a textbook response operation. Robust response trumps the need for later salvage.

By Sarah McCoy

In the early hours of Friday, October 17, the crew of the Russian cargo ship Simushir attempted to repair a broken oil heater. On its way to Pevek in the Russian Far East, the vessel suddenly lost propulsion and began drifting toward the nearest land, which in this case was the archipeligo Haida Gwaii. Just off the coast of northern British Columbia, about 30 miles south of the border with Alaska and 447 miles north of Vancouver, Simushir was carrying 50 tons of diesel and 400 tons of bunker oil, plus chemicals for mining.

As the scenario unfolded, the vessel's situation was now particularly worrisome. Seas were five feet and winds were 13.5 knots gusting to 17.5 knots blowing the freighter northeast. Environment Canada had issued a gale warning. With Simushir dead in the water, rescue ships hours away and an onshore wind blowing, residents of Haida Gwaii held emergency, preparatory meetings and hoped for the best. That's because the islands are home to an $83 million fishery, a marine reserve, the Gwaii Haanas National Park Reserve and Haida Heritage Site. The environmentally-sensitive archipeligo, informally known as the Queen Charlottes, are sometimes called the "Galapagos of the North." And, the Simushir was heading straight for the park on the south end.

Eventually, however, the close coordination between the Canadian Coast Guard, U.S. Coast Guard and Foss Maritime turned a potential shipwreck and possible salvage operation into a study of close coordination. A situation seemingly headed for an apparent casualty became the basis for a textbook response operation. How it came together was certainly no accident.

Simushir's Slippery SITREP

The Simushir, a 1998-built 441-foot-long general cargo vessel had picked up 298 containers of mining equipment at the Port of Everett, WA, just a few days before. On Tuesday night, October 14, the crew of 11 loaded heavy bunker fuel in Port Angeles and set off for Pevek. As the engine casualty became clearer, it was unclear whether the Simushir called the Canadian Coast Guard (CCG) or the other way around. Nevertheless, the CCG immediately began to mobilize for an emergency. The agent the Russian shipowner, the Sakhalin Shipping Company, or SASCO, got a call from the Canadian Coast Guard and began making arrangements for an emergency tow.

Eventually, all stakeholders – the CCG, the U.S. Coast Guard, SASCO and Seattle-based Foss Maritime began mobilizing resources. In this case, the biggest obstacle to a happy ending was Simushir's location west of Haida Gwaii. The nearest international port is on the British Columbia mainland at Prince Rupert. In good weather, the ferry from Prince Rupert on the mainland to the town of Skidegate on the eastern side of Haida Gwaii takes eight hours to cross the 93 nautical miles of Hecate Strait. *Simushir* was on the opposite side of the island.

Foss Maritime's sister company, Totem Ocean Trailer Express, was first on the scene after its Ro/Ro cargo ship, *North Star*, got word in the early hours of Friday morning and diverted course to be on hand if needed and to monitor the situation until the Canadian Coast Guard could arrive. It was never used. Later that evening, the situation worsened. With the Simushir rolling and pitching in the prevailing sea and swell, the Russian captain was injured, reportedly breaking his nose and several fingers falling on the bridge.

By early morning, U.S. and Canadian helicopters stood by on Haida Gwaii and ships were underway to help, but the Simushir was still adrift. Before the incident was over, Simushir would drift for 20 hours, to within nine miles of the coastline.

Coordinated Response

On Friday, the Canadian Coast Guard used a Cormorant helicopter to evacuate the Russian captain to medical care on Haida Gwaii. He was later airlifted to the hospital in Prince Rupert on the mainland. By some accounts, once the captain was no longer aboard the Simushir, the CCG had trouble communicating with the crew in English. CCG ships had not yet arrived. In the meantime, however, SASCO's local agent had arranged with Foss to divert the *Barbara Foss* from her regular route to safely tow the Simushir to port for repairs.

It turns out that Foss tug crews are no stranger to the world of emergency response and oil spill prevention. In fact, the Washington State rescue tug contract has often belonged to Foss and, for the first few years, the vessel employed was the *Barbara Foss* herself. Fortunately, the Foss asset had arrived in the port of Prince Rupert on Friday morning as part of the tug's regular work, towing a cargo barge between Prince Rupert and Whittier, AK. The 126-foot, twin screw, oceangoing tug with Captain Marcel Ion in command, began making its way toward the Simushir, but heavy weather in Hecate Strait west Prince Rupert prevented the vessel from proceeding at full speed. Separately, two rescue helicopters and a surveillance aircraft stood by in case the 10 remaining crew members on the stricken vessel would have to be evacuated.

By 1830 hours, the 164-foot CCG patrol ship *Gordon Reid* had arrived and managed to get the freighter under tow. Even then, the operation moved by fits and starts. Though the seas had calmed somewhat, the tow line broke three times. Nevertheless, the stricken vessel was towed westward at 1.5 knots, and by Saturday, the ship had moved about 25 miles away from shore. By this time, the *Simushir* had drifted a total of about 20 hours. Meanwhile, the light 272-foot light icebreaker CCGS Sir Wilfrid Laurier and the USCG vessel Spar, based in the Aleutians, had time to arrive on the scene. SASCO America representative Ralf Bremsner was generous in his praise of the response effort. "I think the Canadian Coast Guard did a great job," he said.

Responding the Foss Way

It was Saturday, October 18 before the *Barbara Foss* was able to reach the *Simushir*. When it did, Foss did not use the tow line between the *Gordon Reid* and the helpless vessel, instead, their towing specialists sent a messenger line across the bow of the *Simushir*. The Russian crew used the

Barbara Foss and Simushir

Barbara Foss

messenger line to hoist a synthetic emergency towline and chafing gear onboard. The Simushir crew made that fast on their bow and then the Barbara Foss connected her surge gear and towline into the other end of the synthetic emergency towline. In this case, they did not use an Orville hook, an emergency tow retrieval device. Coordinating with the CCG and Simushir's crew, the Barbara Foss began its rescue journey using the Outside route around the North Side of Haidi Gwaii so as to sail with the prevailing weather.

By Sunday, Gary Faber, Senior Vice President of Foss Maritime, was able to report, "We've been working very closely with the Canadian Coast Guard and the Joint Rescue Coordination Center to successfully manage this situation. At this point, the ship is riding well behind the tug, and the weather and sea conditions are not posing concerns. We expect a steady and uneventful voyage to Prince Rupert." And, he was right. It took a more than a day to tow the crippled freighter to Prince Rupert but the two vessels arrived there on Monday, October 20.

Response Trumps Salvage: experience counts

The Simushir incident was far from the first time that the Barbara Foss and Foss Maritime have found a solution to a tricky problem. Arguably – and especially in this region – it would be hard to find a private company better suited to saving the day. Foss resources, particularly in the Pacific Northwest, are substantial, with 200 multi-missioned tugs and barges. Saltchuk Resources, Foss's marine holding and support company, also based in the Pacific Northwest, has $2 billion in assets in several business groups, including deep water shipping logistics; ship management; tug and barge operations; fuel distribution; trucking and air cargo.

Foss tug crews also have plenty of experience preventing oil spills. The Washington State rescue tug contract was once fulfilled by the *Barbara Foss* itself. The state of Washington requires that vessel to be capable of, "rapidly assisting vessels with propulsion and steering failures, structural casualties, fires and other problems. It can also escort high risk vessels, provide a lifesaving and spill response deployment platform during major casualties, and assist dur-

"We know the state and we know its waters. Alaska is poised to grow as major new resource developments come on line, particularly on the North Slope. Foss is positioning itself to grow with Alaska."

– Gary Faber, Senior vice President of Foss Maritime

ing salvage operations." In other words, the perfect asset match for this particular casualty

A quick count from the state's list of ship rescues shows 23 incidents where either *Barbara Foss*, the *Lauren Foss,* or the *Jeffrey Foss* prevented disaster. The rescue tug has deployed to stand by or directly assist 49 vessels since 1999. But, emergency towing is just one of a broad range of services that Foss and Saltchuk offer. Preventing an oil spill fits in with the high standards for safety and environmental innovation Foss has set for itself. "Foss' corporate color is green, which is symbolic because I believe it represents this organization's thinking from top to bottom on the environment," Geraldine Knatz, Ph.D., Executive Director for the Port of Los Angeles, said in 2007, after Foss built the world's first hybrid tug, the Green Assist Dolphin, which relies on batteries and an active power management system to minimize engine use. Foss has also built a second hybrid tug, which is old hat compared to its latest groundbreaking project, one that would begin to eventually eliminate the need for petroleum bunkers: hydrogen fuel cells.

"At Foss we innovate," says Gary Faber, the company's president of global services. As such, Foss's first Arctic Class tug will launch in December, 2014, followed by two more in future years. They will have low-emission Caterpillar engines and incorporate several environmentally-focused designs and structural and technological upgrades, including reinforced hulls that will allow them to sail safely through ice.

"We know the state and we know its waters," Faber says. "Alaska is poised to grow as major new resource developments come on line, particularly on the North Slope. Foss is positioning itself to grow with Alaska." All of that underscores the firm's commitment to the environment, but also the need for robust response capabilities – in all domestic maritime regions. In this case, Foss was in position to obviate the need for what could have been a substantial salvage operation. An ounce of prevention really is worth a pound of cure.

***Sarah McCoy** is a journalist based in Seattle, WA. She has written articles for the Cleveland Plain Dealer and Business Ethics, among others. She enjoys living in the maritime neighborhood of Ballard on Puget Sound and sailing out of Shilshole Bay Marina."*

Expanding Operations Demand Robust Fleet Management Solution

As technology needs penetrate the growing offshore sector, Harvey Gulf will depend on Advanced Logistics' software to support its expanding fleet deployments.

By Joseph Keefe

When offshore heavyweight Harvey Gulf International Marine deployed Advanced Logistics' marine management system, SAMM, and preventative maintenance module, Preventer, on its fleet of marine transportation vessels, it signaled a firm commitment from one of the fastest growing – and highly regarded – U.S.-flag marine operators to ramp up its IT profile. Louisiana-based Advanced Logistics LLC, a provider of offshore marine and logistics management software, caters largely to the oil & gas sectors.

With a business strategy of building state-of-the-art software to allow marine operators to manage their fleets remotely on a near real time basis, Advanced Logistics arguably represents the ideal match for the forward-thinking Harvey Gulf International organization.

With the credo of "making every vessel an office down the hall," for corporate fleet operators, Advanced Logistics also touts ability to allow its marine customers to likewise be "an office down the hall" for their customers. And, for SATCOM-savvy Harvey Gulf, the software that allows a vessel to generate numerous operational reports on board and transmit the data to shore in a real time environment, is just the ticket for one of the most modern offshore fleets on the planet.

Advanced Logistics 101

According to privately held Advanced Logistics, the newly installed technology includes electronic logs, safety and crew management, commodity tracking, fuel and lube management, GPS mapping, preventative maintenance and much more coupled with an interactive web based interface for easy access to data. For Harvey Gulf's executive vice president and chief administrative officer Barry Autin, it's full steam ahead with the new effort. "We realize the importance of technology in our business and value the efficiencies it provides to our operations and clients," he said in November.

Because Advance Logistics also caters to 'offshore oil & gas exploration and production' – Harvey Gulf's primary client base – the business decision will probably have immediate and positive impact for the offshore giant. Jeffery Svendson, President and CEO of Advanced Logistics LLC says the reasons why are obvious. "Advanced Logistics has an application called 'Premier' that an offshore operator can subscribe to that allows them to assign charge codes to the vessels activities for allocation purposes. It also provides fuel, commodity and subsistence information, as well as GPS mapping. The application helps bridge the gap between the accounting and logistics departments of an offshore operator."

SAMM provides:

Fuel and & Lube Management	Electronic Logs	Subsistence Reports	Commodity Tracking
Voice & Email Communications	Engine Hours	Utilization Reports	Vessel Status Report
Customer Charge Code App	Vessel Activities	Passenger Reports	Electronic Signatures
GPS Mapping – Shore Side App	Safety Reporting	Crew Management	Interactive Shore App

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– Jeffery Svendson, President and CEO of Advanced Logistics LLC

Advanced Logistics is in its tenth year of providing a suite of advanced applications to streamline logistical operations. Their applications are offered under a software/web subscription agreement. The web subscription is provided on a monthly billing cycle which includes the vessel's software and web interface. The service includes data hosting, monthly software updates and enhancements, new version releases, 24/7 Technical (telephone) support and unlimited users.

A typical laptop or desktop computer with an operating system of Windows 7, Office 2010, Sequel Express is sufficient to support the software. Advanced Logistics counts among its many (23) fleet wide implementations such marine customers as industry mainstays Seacor Marine, Laborde Marine, Graham Gulf, Delta Marine, KG Marine and others. Both SAMM and Preventer are customizable to some degree to meet the customer's needs and for vessel specifications. In the case of the Harvey Gulf implementation, the Advanced Logistics suite notably took the place of not one, but two other software applications.

Preventer provides:

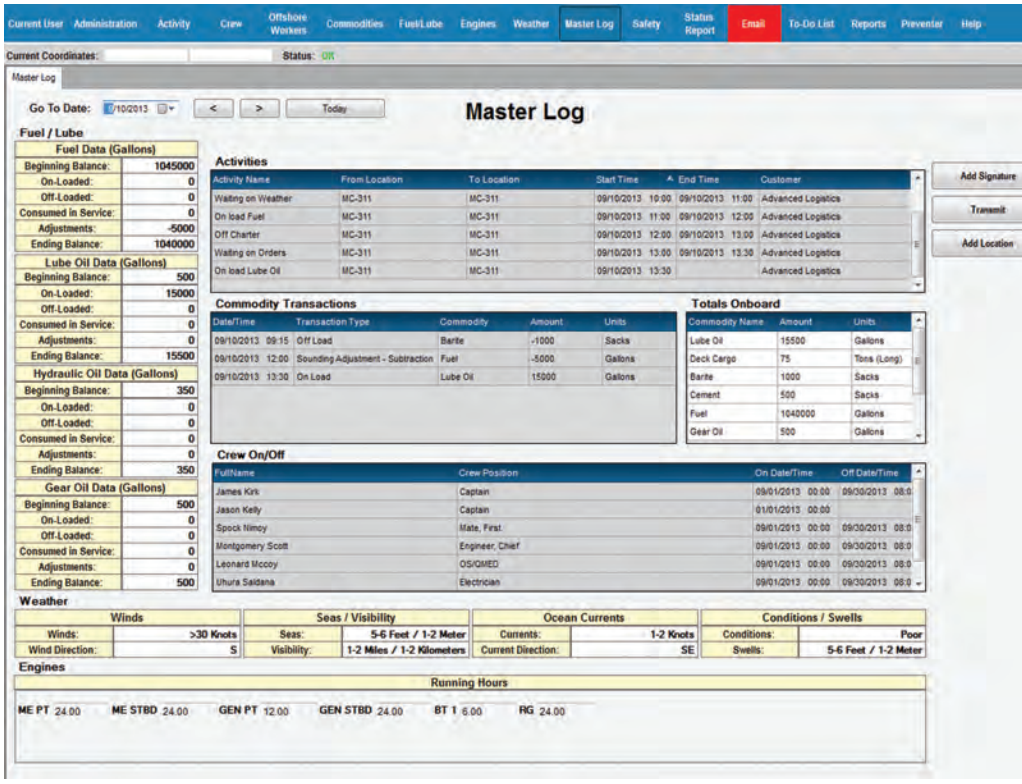
Calendar & Hourly Based Actions	Calendar, hourly based preventive maintenance
Field Requisitions	Certificate of inspections
Work Orders	Linked to equipment for search ability
Request for quote	Assists with NPDES compliance
Vessel Maintenance Alert	Two approval levels: Operations & Purchasing

Up and Running

For Harvey Gulf, there were many reasons to migrate to the robust Advanced Logistics solution, among them access to quality, real-time data. Other attractive features of the software, according to Harvey Gulf's Barry Autin, included a SQL database that allows for the query of information over a date range (which saves time and money), a collaborative work environment for all stakeholders from and to Harvey Gulf's corporate offices, and an intuitive and easy to use interface. Autin adds, "Multiple Reports including logs for billing, subsistence, vessel utilization, vessel activities, fuel, commodities, crew and safety and preventive maintenance can all be generated, accessed and transmitted over Harvey Gulf's satellite service provider." Harvey Gulf uses well-known KVH, but that said; the

"Multiple Reports including logs for billing, subsistence, vessel utilization, vessel activities, fuel, commodities, crew and safety and preventive maintenance can all be generated, accessed and transmitted over Harvey Gulf's satellite service provider."

– Barry Autin, Vice President and Chief Administrative Officer, Harvey Gulf



SAMM APP screenshot

software application(s) are SATCOM agnostic and will work with a wide range of providers.

The entire package can be synchronized with accounting packages such as Oracle Financial and Navision to complete a seamless package for the operator. And, as Harvey Gulf continues to grow, the subscriptions are easily expanded as needed. Known for its 'Cadillac' approach to its vessels, operations, commitment to safety and customer service, Harvey Gulf's selection of Advanced Logistics software is arguably one of the better endorsements the relatively young software provider could ask for.

Already the Gulf of Mexico leader in pioneering cutting-edge LNG propulsion and boasting one of the youngest offshore service fleets on the water, Harvey Gulf doesn't do anything halfway. No doubt they are also hoping that, with the help of the new software, a high-tech marine management system will take them the rest of the way.

Advanced Logistics on the web: **www.al-llc.com**

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Making Money with Marine Monitoring

The myriad benefits of gplink are well documented. What you do with it is literally 'your business.'

By Joseph Keefe

Remote Monitoring and Tracking company gplink bills itself as the most capable remote diagnostic tool available for high horsepower systems. In a nutshell, gplink monitors commercial vessels and equipment, allowing users to detect anomalies before they turn into problems. Remotely monitoring, tracking and troubleshooting expensive and far flung assets is now a mature concept, reaching all marine markets. Without a doubt, gplink is in the thick of it.

Easily configured to monitor the data points that matter most to you, there are literally dozens of applications that can be safely covered. Nevertheless, potential users still hesitate to take the technology plunge, typically because of unanswered questions about price and logistics, or uncertainties about communications and data management. Current users, on the other hand, are effusive in their praise of the device. One such customer is Simon Axcell, Chief Engineer with UK-based Ostensjo Rederi AS/Solent Towage Ltd.

Why gplink?

"Prior to installing the first gplink package, we had never intended on approaching such a company, explains Axcell, adding, "As operators and fleet managers we were aware that such systems existed and had a brief understanding of their benefits but the idea of installing such a package was never considered." That position changed early in 2013 with the delivery of Solent Towage's latest vessel, "Lomax". The Caterpillar 3516C powered 28m Robert Allen designed escort class tug built to ABS rules was deployed to fulfill contractual obligations to an Oil Major as well as for some 'spot-market' towing work. Axcell says, "Almost immediately, we encountered a problem agreeing on a mutually acceptable means to prove fuel consumption during 'off Hire' periods when Lomax was released for outside work. The vessel itself was only fitted with sight glass level gauges and sounding pipes on all bunker tanks meaning a time consuming cargo survey by an independent authority

prior to and after every outside job." Obviously, a solution needed to be found.

Following the advice of a local OEM service provider, Solent Towage committed to its first GP Link system in December 2013 and had it up and running on board in January. And, following a two month trial with the gplink running in parallel with cargo surveys, the client – in this case, Exxon – officially adopted it as the agreed means to prove fuel consumption. Since then, Solent has never looked back.

Notably and following the success of the installation aboard *Lomax*, the client pushed for gplink to be installed on the other three Solent vessels involved in the contract. Axcell adds, "We have been working closely with gplink to develop a system to suit these vessels. We are also currently working with gplink to develop a more in-depth package to accurately monitor vessel movements and work patterns, something we hope to have up and running shortly."

More than Engine Monitoring

Beyond the success enjoyed by customers like Solent Towage, the gplink system boasts multiple applications for marine users. For example, pleasure craft customers use the data as a tool to monitor the health and wellness of their engines. When there is an engine issue, they share the reported codes with their technician which reduces repair costs. Some, like Solent Towage, use the engine logs to keep an eye on fuel consumption and find sweet spots. The use of 'geofences' to identify when and where boats are operating, and the RF monitoring system to alert owners in the event of high water or smoke aboard the vessel, are also popular features.

Commercial customers use the data for everything from making sure their ferry boats leave the docks on time, to offshore delivery vessels who are using touchscreen tracking and downloading of precise fuel consumption which is then used for invoicing. Still others hone in on details to assist with trouble spots. For example, a customer had workboats that were speeding in no wake zones and, as a result, they now receive real time text alerts with the boat name and speed when a vessel exceeds set parameters. Another operator whose ferry captains were pushing docks (instead of shutting engines down) was creating headaches for the front office. In response, gplink created an alert which sends a text message and e-mail to supervisors when a vessel is at a dock with rpm's over 1500 and speeds of less than 1 knot.

Solent Towage, says Axcell, started using gplink for one function, but ended up taking advantage of several others. "Although we monitor basic engine data such as oil pressure, boost pressure and JCW temp, the main interest has always been to trend fuel consumptions. All engine parameters are fully backed-up by a third party monitoring system fitted from build so data collection was an added bonus but not the driving force behind the decision, he said, adding, "We do however use the gplink Geofence facility which has proved quite useful in automatically alert-

What Can You Monitor & Archive with gplink?

Latitude	Alert tripped time/date	Time in alert state	Speed
Longitude	Alert cleared time/date	Engine hours	Heading
Alert type	Alert logs archive (7 years)	Coolant temp	Engine RPM
Battery strength	Fuel usage (any interval)	Intake manifold temps	Oil Pressure
Oil temp	Fuel burn rate (by engine)	Compressor inlet temp	Total fuel used
Engine load	Average fuel burn rate	Geofence history	Alert history

Source: gplink (this list only a sample of what can be tracked)

ing myself and the general manager of Lomax's departure for outside work."

For inland waterways users, the system can pay for itself quickly. In one case, an inland tug company was paying taxes based on fuel burned inside of certain states. Dan Webb, gplink's Manager, told ***MarineNews*** in November, "Their accounting department was inaccurately, manually calculating these fees based on educated guesses. gplink created a downloadable report that began calculating fuel burn when their vessel(s) crossed into the state, and stopped when they exited. The gplink system quickly demonstrated that, not only was the tug company overpaying, they were spending 50 hours a month creating reports that could be made available with three clicks."

Communicating the Good News

gplink uses data services on the AT&T GSM Cellular network and/or its GSM roaming partners as the primary channel and defaults to Iridium if GSM is not available. Through these connections, it is possible to provide near real-time reporting of a vessels GPS position, speed and heading, engine metrics and monitoring, sensor monitoring, and on-board geofencing. The system also employs a least cost routing algorithm to insure that each packet is transmitted over the most cost effective network.

The gplink MTU (Mobile Transmitting Unit – Transceiver) uses the Short Burst Data (SBD) services on the Iridium satellite network as the secondary mode. The Irid-

"We are moving into more and more engine types, and we can hook up our units on engines where we are able to get a J1939 or J1587 connection. We currently have units installed in Caterpillar, Cummins, MTU, and are planning installs in Wärtsilä, Rolls Royce, and more."

– Dan Webb, gplink Manager

ium constellation consists of 66 low-earth orbiting (LEO), cross-linked satellites plus 10 in-orbit backup satellites. The constellation operates as a fully meshed network, is the largest commercial satellite constellation in the world and is the only Satellite network providing worldwide coverage.

Data compression and proprietary messaging formats keep data bandwidth requirements/byte counts low and cost effective over Satellite networks. Normally reporting 8 to 10 engine parameters/engine at a user selected time period to the web tier, the system can provide for engine data capture and recording for many more engine functions. This data is captured and stored at no cost but can be supplied when higher resolution data is required. The system can store up to 60,000 position reports and engine data at a polling rate of up to one report per second. This stored data can be requested and reported to the webpage (for any date, time period, or all data).

Over time, the need to send data can evolve, says Axcell, explaining, "For Solent Towage, the decision to install gplink was originally taken in order to provide a solution to a localized problem concerning only one of our vessels. Since then, however, we have grown to appreciate gplink as a useful management tool, used primarily from a remote office location. That said; the Chief Engineers on-board have full password access to the website and also use the system to aid in reducing fuel consumption during specific operating conditions."

OEM Agnostic, Workboat Friendly

The system provides utility over a wide range of engines. gplink's Webb says, "We are moving into more and more engine types, and we can hook up our units on engines where we are able to get a J1939 or J1587 connection. We currently have units installed in Caterpillar, Cummins, MTU, and are planning installs in Wärtsilä, Rolls Royce, and more." Beyond this, gplink is also proving its value as the regulatory noose gets tighter. Webb explains, "We are also able to assist our customers with emerging challenges. For example, our dealer in the United Kingdom came to us last summer and detailed the new requirements for all commercial vessels for SEEMP reporting. This requires year over year fuel and footprint improvements. In the span of 60 days we were able to work with our UK customers to provide the reporting needs. This is just one example of how we are able to morph the system to serve our customer needs."

With a customer base as wide as their OEM penetration, gplink is poised for real growth as the advantages of remote monitoring become more transparent. Webb reports, "Commercial brown water applications can be found on everything from several New York ferry fleets, numerous Push/Tug boats running barges up and down the Mississippi (and other inland waterways), Great Lakes ferries and workboats, and even Amazon River boats operating in the jungles of Peru." Also according to Webb, gplink's current business load is split between pleasure craft/charter vessels (55%), commercial tugs (40%), and the rest primarily being used by land based generator operators.

Looking Ahead

The possibilities presented by remote monitoring are literally endless. For Simon Axcell, the question now is probably not 'what can it do for us,' but instead, 'when can we get it set it up?' "Time and cost saving from tedious cargo surveys was the obvious immediate gain following the installation," he insists, but added, "Since then, however we have used to system to pin-point inefficient operating conditions and have adjusted our procedures to

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– Simon Axcell, Chief Engineer with UK-based Ostensjo Rederi AS/ Solent Towage Ltd.

suit. For example, by examining fuel consumption figures during certain operating conditions, we are gaining a better understanding of how the consumption figures change in relation to the nature of the work the vessel is performing. This obviously allows us to better consider proposed charter rates based on a more accurate understanding of predicted fuel consumption."

Axcell declined to go into specifics, but nevertheless touched upon ongoing arrangements with gplink to produce a dedicated module which would deal primarily with Solent's mandatory Ship Energy Efficiency Management Plan (SEEMP) requirements. He added, for emphasis, "Solent Towage, being part of Ostensjo Rederi AS, takes a very proactive view on environmental issues and considers any system which can help reduce emissions, fuel consumption and environmental impact as highly important. In order to better protect the environment we must first better understand the impact we have on it. We hope that by using the gplink system we can better highlight our energy consumption during various operating conditions. Once we have a more accurate picture of how each vessel is performing, we can make procedural and design changes accordingly."

You get the idea that Simon Axcell and Solent towage are not yet finished with their quest to see what else gplink can do. Others, just getting started in the remote monitoring game, are only now realizing the potential power of such a tool. And, for those still on the sidelines, the competition may soon be disappearing over the horizon.

FMT Embraces Electronic Records Management

After Testing Records Technology Waters, Tug and Barge Company Jumps In.

By Tim Wacker

Shortly after Florida Marine Transporters CIO Don Carlton installed an electronic records management system for Kimberly Hidalgo, the tow service company's head of Compliance, he suspected there might be other department heads interested in the new software. But, when Hidalgo's department cut dozens of hours every week from staff time spent pulling paperwork from rooms full of filing cabinets while also automating complex administrative operations with the new system, Carlton knew all department heads would be interested.

"So, we decided to go big with Laserfiche ECM," Carlton said, referring to the new system. "I didn't appreciate where this technology could ultimately take the company, but now that we see the way it is unfolding, we're not thinking about where it can be deployed next, but when."

Twelve months ago, when Florida Marine purchased RIO – the most comprehensive system Laserfiche offers – it originally opened it to just 25 of its 1,000 employees. Today more than 200 employees are logging on in the company's three largest departments: Compliance, Dry Cargo and Fluid Cargo. With another 75 employees expected to be up-and-running by the end of the year, Carlton is now pushing to have the system working companywide as fast as possible.

FMT Embraces ECM

Florida Marine's decision to move into electronic records technology was in part prompted by the sheer volume faced by Hidalgo's Compliance Department. With Florida Marine's 80 tugs and 200 barges pulling or pushing petroleum products through the country's most challenging rivers and channels, Compliance responds to a flood of records requests from client auditors and government regulators. It was expected that converting those rooms full of paper records into electronic images would be an enormous time saver because those images could then be instantly accessed from anywhere from a centralized computer server.

However, the system also came with added software features that Carlton was eyeing when originally negotiating the RIO contract with national Laserfiche reseller Complete Paperless Solutions. For example, the system's Workflow module offered the company the capacity to automatically forward all those Compliance Department records to auditors and regulators upon request. No more pulling, copying, scanning, emailing or snail-mailing paper files for Compliance Department staff. "We had no idea that we could so reliably automate multi-step administrative functions," Hidalgo said. "It gave us a whole new prospective on what this technology can do for Florida Marine."

That perspective can best be summed up as the difference between electronic records management, the technology Florida Marine was originally looking to adopt, and enterprise content management, the technology now being rolled out throughout the entire company. It's the latter concept that Complete Paperless Solutions, (CPS) introduced to Florida Marine, Carlton says.

Instead of just turning paper records into electronic images for increased ease of access, enterprise content management uses software to move those digitized documents throughout an organization, turning the manual passing of paperwork from person to person to the computerized flow of information from decision-maker to decision-maker. It not only allows for email alerts for those decision makers, it has security features that can be automated to accommodate changing access requirements, automated indexing for ease of filing when those electronic images are archived, and automated document destruction schedules at the end of the required lifespan of those archives.

Beyond Compliance: logistics & operations

As the new system successfully navigated the channels in Hidalgo's Compliance Department, it was expanded next into the company's Fluid Cargo Department. Florida Marine specializes in transporting oil and gas industry-related cargo, so nearly every moving part and flowing fluid on each of the barges and tugs it operates is monitored around-the-clock. As those tugs and barges pass through the most crowded shipping lanes in the country, their movements are also closely monitored. Inspection reports on all aspects of those operations are a daily routine that is now increasingly being automated at Florida Marine. "If you do inspections on boats now, they automatically get routed to the appropriate people without someone having to make the decision of who gets what," Carlton says. "We're no long relying on somebody physically routing these records, the system does all the routing and filing for us."

Taking advantage of other software modules in the new system, all the forms those inspections fill are now available on tablets carried by ship staff or port captains, eliminating another enormous source of paper from Florida Marine's operations. This is opening the door to taking the nation's third largest in-land tug and barge services company completely paperless, in what is one of the world most paper-laden industries, Carlton says. "We used to have cabinets and cabinets full of paper. We were killing trees by the thousands," he says. "Now we have all the forms electronically, weather on computer or mobile device. They are all right there. No more printing them out and carrying them around."

That's why Carlton wants the system installed companywide as soon as possible. Florida Marine's training department and its vessel maintenance yards are being sized up for the system, as are accounts payable and personnel. Deck hands, tankermen, and captains are all expected to make use of the system. The speed of the roll out has been greater than either Carlton or Hidalgo expected, and training has been training required for officers and staff in each of the departments. Carlton credits Complete Paperless Solutions with its ability to get department heads comfortable enough with the new system to move their staff onto it and start building workflows of their own.

CPS credits Florida Marine with understanding early the potential of the system and being aggressive in rolling it out once they felt comfortable using it. "It's unusual to see a project move so fast, but they are pretty doggone good over at Florida Marine," says CPS president Tom Ziencina. "Caution is important when making a move like this but when Florida Marine got the hang of it, they had the institutional knowledge to rapidly expand it throughout the company getting a much quicker return on their

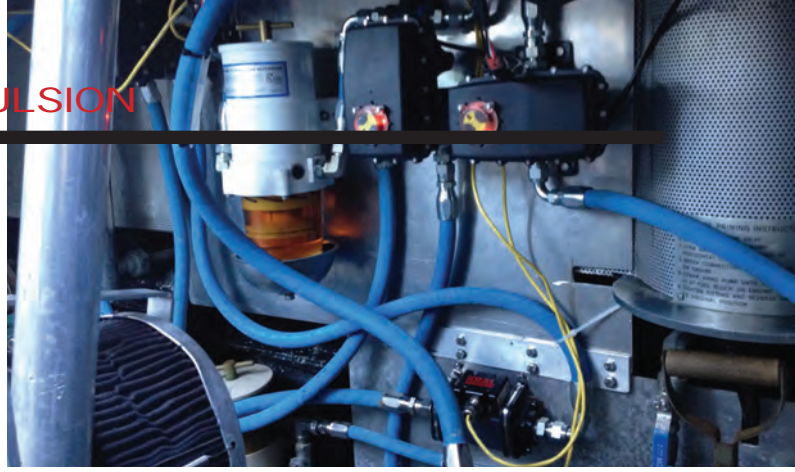
investment in the process."

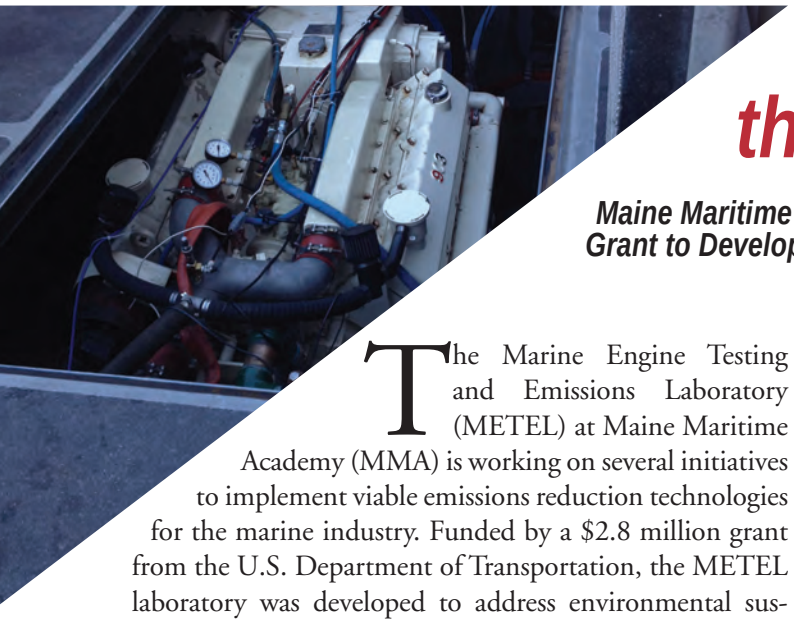
Carlton says being willing to delegate and get staff directly involved in the process has been a big part of that. Weekly training sessions with CPS have enabled staff in Human Resources to build their own workflows involved in the new-hire on-boarding process. Hidalgo estimates Florida Marine has about 40 workflows in place now and there does not appear to be any facet of operations that can't, in some way, be streamlined through the new system. Still, Carlton says, the company is taking it step-by-step.

"We're taking very fast steps," he says. "There's so much that we can do, now it's just a matter of making sure that we get the maximum benefit available from the system from each department before we move onto the next department." That includes the boats. Five of Florida Marine's vessels have Laserfiche installed into on-board computers allowing them to share with land-based operations real-time information on the activities of each. However, the vessels still rely on cellular communications networks to transmit ship-board data and in some of the farther reaches of the Mississippi watershed, service can be spotty. That has Florida Marine considering prospects of one-day using ship-board satellite communications, but that may not be coming as quickly, as so many other aspects of Florida Marine's operations are being lined up for conversion to the new system.

Real Utility, Real Savings

"We started out saving hundreds of staff hours every month and we might now be saving that every week," Hidalgo says. "It's been transformational for us, and while it's been just a year, we're starting to wonder how we ever got along under the old paper-based system." The transformation has not escaped the attention of the family-owned business which has expanded almost as rapidly as the new Laserfiche system. Last year alone, Florida Marine commissioned four new tugs and one of those vessels, the M/V Kimberly Hidalgo, is scheduled to be christened in December. No doubt, when it is delivered, it will be that much more efficient, with the help the Laserfiche ECM system.





Glycerin Powers into *the Propulsion Picture*

Maine Maritime Academy Receives a $1.4 Million U.S. DOT Research Grant to Develop a Marine Engine Testing and Emissions Laboratory.

By Joseph Keefe

The Marine Engine Testing and Emissions Laboratory (METEL) at Maine Maritime Academy (MMA) is working on several initiatives to implement viable emissions reduction technologies for the marine industry. Funded by a $2.8 million grant from the U.S. Department of Transportation, the METEL laboratory was developed to address environmental sustainability needs in transportation. Working with a Maine startup company, Sea Change Group LLC (SCG), the METEL team is helping to develop and implement a fuel that combines glycerin with diesel fuel to lower both operating cost and emissions for marine diesel engines.

In November, MMA announced that it had been awarded another University Transportation Center (UTC) grant from the U.S. Department of Transportation for $1,414,100 to further develop the Laboratory. The DOT/UTC research grant is the largest received to date by Maine Maritime Academy and marks the first opportunity for the college to serve as lead research institution. The new laboratory will be housed in the ABS Center for Engineering, Science and Research, a state-of-the-art facility to be built in the spring of 2014 on the Maine Maritime Academy campus.

According to Maine Maritime officials, METEL will concentrate efforts on a number of DOT strategic goals, including the advancement of environmentally sustainable policies and investments that reduce carbon and other harmful emissions from transportation sources. Eventually, METEL will integrate its efforts with the existing marine transportation education programs at the Academy, including marine systems engineering, marine transportation and international business and logistics.

Shepherding the project forward is Dr. Richard Kimball, a Professor of Engineering at Maine Maritime Academy (MMA) and a Lecturer in Ocean Engineering at Massachusetts Institute of Technology. He has considerable experience in the area of testing marine propulsion, propellers and turbines. Additionally, he is the director of the Marine Engine Testing and Emissions Laboratory at MMA, the DOT University Transportation Center focused on the evaluation and development of practical emissions reduction systems and engine performance improvement technologies. Notably, Kimball holds a Ph.D. in Ocean Engineering from Massachusetts Institute of Technology.

Kimball told *MarineNews* in November, "With our academic collaborator, the University of Maine at Orono (UMaine), and commercial partners Sea Change Group LLC, Global Marine Solutions, and Thermoelectric Power Systems LLC, we are working to implement marine diesel engine performance and emissions-reduction improvements which are commercially viable and cost-effective."

Glycerin: a Closer Look

The fuel is called Eco-Hybrid fuel and is patented by SCG. Glycerin is a low-cost feed-stock byproduct of the biodiesel industry which contains no sulfur and reduces sulfur emissions by dilution. In addition, testing has shown approximately 25% reduction in NOx emissions and roughly 25% reduction in particulate matter emissions in marine diesel engines under at-sea conditions. This can significantly reduce the load on engine emissions systems such as Selective Calalyst Reduction systems and

"Exact pricing is fluid, but in our economic analysis based on current pricing of diesel fuel and crude glycerin processed into a glycerin-diesel mix would reduce fuel cost by between 3-10% in operator fuel cost for equivalent energy output."

– Dr. Richard Kimball, Professor of Engineering at Maine Maritime Academy

diesel particulate filters, which can reduce maintenance and operating costs of these devices. Beyond this, and because sulfur is not present in glycerin, it doesn't create SOx.

Glycerin is a viable low-cost fuel which reduces emissions in the same manner as water emulsions, but it can provide net power input. Glycerin also can have favorable characteristics for lubricating the injection system. The diesel/glycerin emulsion fuel is a blend. The diesel component is required so that the fuel can run as a drop-in fuel in diesel engines without engine modifications.

When blended with diesel, the cost of the Eco-Hybrid fuel is expected to significantly reduce the operating fuel cost of users. Since glycerin's heat content is lower than that of diesel, more volume of fuel is needed for a given energy output, but the cost per unit of energy is lower. The heat content of glycerin is about half that of diesel, but the cost per ton is about 1/3 of the cost of Ultra-low-sulfur diesel (USLD).

Because bunker volume is critical when – for example – it impacts space or cargo carrying capacity, especially in space-limited smaller workboats, the volumetric differences are important. Due to the lower energy content per gallon, the glycerin emulsion fuel will require more volume per energy content. For a 30% mix of glycerin with diesel, this translates to about a 15% increase in fuel volume for the same energy content. To be fair, and for a given workboat mission set, that could be important.

According to Dr. Kimball, Glycerin is generally available wherever biodiesel is produced, and in the US this would concentrate it in the Mississippi River Valley where there is a substantial amount of marine traffic that could utilize the fuel directly. Kimball adds, "Exact pricing is fluid, but in our economic analysis based on current pricing of diesel fuel and crude glycerin processed into a glycerin-diesel mix would reduce fuel cost by between 3-10% in operator fuel cost for equivalent energy output."

Testing Ongoing, Results in Sight

Testing at the METEL lab has shown that the Eco-Hybrid fuel has shown no measurable change in engine efficiency under typical operating conditions. METEL is currently working with Sea Change Group to validate the fuel and ensure that it maintains all benefits in a real marine environment under at-sea conditions, including performance and maintenance issues such as filtration, separators, lubricity, wear, and all things important to a mariner in a fuel.

The fuel has been proven to run well in marine diesels with no modification to the engine (e.g. injectors, fuel pumps, etc.) and slight modification to the fuel system (recirculating agitator pump). Dr. Kimball insists, "We've seen no indication of accelerated engine wear using this fuel, and in fact, because of the lubricity properties of glycerin, we expect that wear properties will be improved, however, laboratory tests will need to be conducted to validate."

Testing is currently being conducted on a standard workboat based on a USCG 41-foot fast response vessel, the R/V *Quickwater*. Quickwater is fitted with twin VT903 Cummins V8 Common Rail injection, high speed diesel engines. And, Kimball adds, "We are currently working with Caterpillar and other diesel OEMs."

The vessel is instrumented with full fuel transfer and flow-rate capability, engine power output, and high-end marinized lab-grade emissions measurement equipment, making it a unique vessel in our industry. The testing at METEL is leading toward early adopter testing starting in spring/summer 2015. The early adopter phase will address supply chain and logistics issues as well as mariner handling protocols.

With the greater goal of developing research that will address pressing needs of the marine industry pertaining to the International Convention for the Prevention of Pollution from Ships (MARPOL) emissions regulations adopted for the maritime industry, the new laboratory comes at just the right time for industry – and the Academy itself. For workboat operators, their work will be especially important. "These regulations, especially in coastal and inland waterways, are difficult to meet with existing marine engines," said Captain Robert Peacock II, Chair of the Maine Maritime Academy Board of Trustees. That task, just maybe, got a little easier last month.

The OBA ShipCheck Fluids Analyzer

Automated Technology Provides Lab-Quality Fluids Analysis On Board and In Minutes

Privately held, American-based On-Site Analysis, Inc. (OSA), a manufacturer of high-tech, on-premise, automated fluids analysis equipment, has now expanded into the maritime industry with the introduction of the OBA ShipCheck, an on-board analyzer. With a physical footprint of just four square feet and weighing only 95 pounds, and using the same ASTM methods as outside labs, the OBA ShipCheck conducts diagnostic fluids analysis for marine engine lubricants, marine grease and gear lubricants, generators, hydraulics, air compressors, scrape down oils and many more fluids. The device allows engine room staff to perform comprehensive fluids testing on board and in just minutes to identify needed repairs – eliminating the need to send samples to onshore laboratories.

The proprietary technology utilizes advanced analytical components including a built-in dual temperature viscometer and particle counter. The OBA ShipCheck conducts lab quality diagnostic analysis of all lubricants, hydraulics, gear boxes, transmissions, generator lubes, etc. Automatically identifying the presence and/or levels of 20 metals and contaminants like glycol, fuel, % water, Nitration, Oxidation, Dual Temperature Viscosity (40 & 100c), it also identifies the fluid's Total Base Number (TBN). The OBA ShipCheck's special software has been customized to marine application rules, with an extensive database reflecting the industry's concentration in hydraulics and gearboxes. This information is then used to identify if fluids have been over extended, still have physical properties, or if component has a needed repair.

Designed to allow engineers to do their own analysis, OBA ShipCheck does not require expert staffing. As a start, the device eliminates the need – at just 25 percent of the cost – to send fluid samples to onshore laboratories. As the centerpiece of an effective condition-based maintenance system, the OBA ShipCheck connects directly to the LubeTrak web-based data analysis system, allowing corporate fleet maintenance management to track the condition of their entire fleet on a real time basis and receive email "Alerts" when emerging problems are identified. According to Jim Greer, President of On-Site Analysis, the equipment is robust and dependable. He explains, "For years, mining and ocean oil-rig operators in remote locations have used it to test all of their lubricants." Will Willis, Jr., Chairman & CEO, adds, "We can virtually eliminate 100% of the unscheduled repairs brought on by not monitoring the internal conditions of components and fluids. By conducting on-board analysis, maintenance people can identify hidden or emerging problems before they become catastrophic. Additionally, they would not do unnecessary fluids changes or maintenance because our analyzer will tell them when something needs to be done. Shipboard personnel would benefit by implementing a condition-based maintenance protocol and avoid of the lost time and money associated with breakdowns."

Will Willis, Jr., OSA Chairman & CEO

OSA claims that personnel can be trained to be certified OBA ShipCheck operators in less than one day. Beyond this, a fully loaded OSA ShipCheck, with LifeTime remote technical support, Installation & training, Spare parts and tools kits, consumables for 200 tests, printer, wireless card, back up battery and unlimited access to a web-based data mining, trending, and monitoring system will cost less than $100,000 – or somewhat less than what a main engine failure at the wrong time and place might do to your bottom line.

Every unit downloads to LubeTrak, a web based, password protected sample monitoring, trending, and management system, so someone at corporate can monitor every ship in the fleet. E-mail 'Alerts' are sent if anything abnormal is discovered. As easy to use as an ATM, ShipCheck provides results in minutes where you need it most; on board.

www.on-siteanalysis.com

Eastern Shipbuilding Doubles Up for Hornbeck

Eastern Shipbuilding Group has performed the christening and subsequent launching of the HOS BRIARWOOD (Hull 210) the tenth HOSMAX launch in twenty months, followed with the same day delivery of the HOS BLACK WATCH (Hull 208), both for Hornbeck Offshore Services, LLC. The launch event was held at Eastern's Allanton facility with hundreds of Eastern Employees and Guests in attendance with an afternoon of perfect weather and launch conditions. Bill Krewsky, Hornbeck's Director of Engineering and Project Management spoke at length about the long term commitment, partnership and future of the two companies. And, he noted the on-budget and dependable deliveries of the seven Eastern HOSMAX Vessels in operations today. The HOS BLACK WATCH was delivered twenty-five (25) days early, on-budget and was Eastern's eighth delivery of a ten offshore support vessel contract and the fourth vessel designated as the HOSMAX 310 series by Hornbeck Offshore. Each HOSMAX 310 vessel is a Diesel-Electric powered, twin Z-drive propelled OSV. These high-tech vessels feature four Caterpillar 3516C 16-cylinder turbo-charged Tier III diesel generator engines each rated at 1,825 kW at 1,800 rpm. Main propulsion power is provided by two GE Energy furnished Hyundai 2,500 kW 690VAC electric motors driving two Schottel SRP 2020 FP Z-Drives with nozzles rated at 2,500 kW at 1,025 rpm each for a total of 6,704 Hp.

The HOSMAX 310 Offshore Support Vessels at a Glance:

Dimensions: 302'x 64'x 26'	**Drill Water/Ballast Capacity: 609,227 USG**	**Total Fuel Oil Capacity: 285**
Deadweight Tonnage: 6,144 LT	**Liquid Mud Capacity: 21,509 bbl. (10) Tanks**	**Potable Water Capacity: 62**
Fuel Oil Day-tanks 23,752 USG	**Methanol Capacity 2,212 bbl. (2) Tanks**	**Dry-bulk Mud: 14**

Kvichak Marine Awarded
US Navy Rapid Response Skimmer Contract

Kvichak Marine Industries has been awarded a U.S. Navy contract for twelve (12) 30' Rapid Response Skimmers (RRS) for delivery over the next 18 months, with options for up to thirty (30) additional skimmers to be delivered through 2019. The Kvichak RRS is Navy's tier one response asset, and these craft will supplement the Navy's current fleet of over 85 units in operation in Navy ports worldwide since 1994. The Kvichak RRS is a well proven technology with an exceptional record for safety, performance and durability. The rapid-response, shallow-water capable craft is ideally suited for use on oil spills in waterways, bays and harbors. This all-aluminum vessel is 30'-3" long, with a beam of 9'-8", a draft of 2'-6", and is easily trailerable. Powered by twin 90hp outboards, the RRS has a response speed of up to 17 knots and features an enclosed two person pilothouse for operator comfort. Adaptable to a variety of marine spill scenarios, this highly specialized vessel works well in many recovery configurations, from

free skimming through towed-boom applications, and is able to recover a very wide range of spills from light sheens to very viscous weathered oil products. The skimmer's oil recovery system has a recovered oil capacity of over 1,200 gallons. The recovered oil tank configuration allows segregation of small volume spills to simplify post-spill decontamination. Onboard hydraulic power is supplied by an under-deck diesel HPU.

Willard Marine to Supply SOLAS Fast Rescue Boats for NOAA

Willard Marine, Inc. has been awarded contracts to develop two new sizes of Safety of Life At Sea (SOLAS) Fast Rescue Boats (FRBs) for the National Oceanic and Atmospheric Association (NOAA). An inboard-powered 5.9-meter SOLAS rescue boat with waterjet propulsion will be built for the NOAA ship Nancy Foster and a 5.4-meter outboard-powered SOLAS rescue boat is contracted for the Hi'ialakia in Hawaii. The SOLAS self-bailing fiberglass-hull RIBs are gel-coated international orange. Willard Marine will acquire the necessary U.S. Coast Guard SOLAS certification for both vessels. Both NOAA ships require SOLAS FRBs per the International Maritime Organization's life-saving appliance code to facilitate NOAA's research-and-survey missions. Willard Marine has developed more than 20 types of watercraft for the U.S. Navy, Coast Guard, Army and Department of Homeland Security, as well as NOAA, foreign governments, and federal and local law enforcement agencies. It has been a RIB supplier to the U.S. Navy for more than 25 years.

Marad Chips in for AEP Green Modifications

The U.S. Department of Transportation's Maritime Administration (MARAD) has announced a $450,000 grant to AEP Rivers Operations of St. Louis, Missouri, to modify the Motor Vessel (M/V) Christopher Parsonage, into a fuel-efficient hybrid vessel that conserves fuel and reduces harmful vessel emissions. The modification will provide the180-ft tug boat, which operates along the lower Mississippi River, with a hybrid generator set attached to the main engine that will provide auxiliary power, which would normally be produced from the diesel generator. MARAD will use the test results from this project to support further work related to vessel air emissions, energy conservation, and efficiency. The study is expected to be completed by 2017.

Tug CAPT. KENNETH Christened

Smith Brothers, Inc., a Chesapeake Bay-based barge and marine equipment charter company, recently added the tug CAPT. KENNETH to their fleet of inland and truckable tugs. With the 99-year-old namesake looking on alongside his son, Jeffrey Smith, company president, Eleanor Smith christened the vessel after her grandfather, Kenneth. The CAPT. KENNETH is 50' x 19' x 7.5" with an operating draft of 6'. The shallow draft enables the boat to move barges anywhere in the Chesapeake and its tributaries. The model bow with push knees designed by Oliver Bryant gives the boat the flexibility of traveling on the open waters of the bay in most sea conditions. Powered by twin John Deere 6125 engines rated at 341 hp at 1800 rpm, the Capt. Kenneth will have additional thrust provided by 40" CFN Kort nozzles.


Hawn


Doyle


Dugas


Capuco


Evans


Lara

Robert Hawn has joined the West Gulf Maritime Association as Director of Maritime Affairs. Hawn is a veteran of the maritime industry and brings extensive knowledge and a wealth of management experience from within the agency sector. Mr. Hawn is currently the General Manager at Inchcape Shipping Services in Houston. Hawn will replace the recently retired Niels Lyngso.

Margaret Kaigh Doyle of the United State Maritime Research Center (USMRC) has been named the U.S. vice chairperson of the Training and Competency Working Group for the Society for Gas as a Marine Fuel (SGMF). The organization, whose mission is to promote safety and industry best practices in the use of gas as a marine fuel, is expanding its scope into the United States. The working group will focus on developing a training and competency framework designed to satisfy both IMO and U.S. Coast Guard regulations. Doyle is also a member of the U.S. Coast Guard Chemical Transportation Advisory Committee (CTAC).

Bobby Dugas has been named general service manager at Laborde Products. Dugas has more than 25 years of experience in the engine service business. Most recently, he held the position of general manager of aftermarket services at Reagan Power & Compression. Dugas will be responsible for service support operations at all three Laborde locations, as well as the company's network of over 90 service dealers.

Benedict P. Capuco has been appointed Chief Naval Architect at Gibbs & Cox. In this role, Capuco will provide corporate leadership to the company's naval architecture and marine engineering capabilities and solutions across the Gibbs & Cox global portfolio. Prior to this appointment, Capuco served as Vice President and Group Manager of the Platform Solutions Group of Gibbs & Cox. Capuco holds a bachelor's of science in Naval Architecture and Marine Engineering from the University of Michigan and a master's of science in Civil and Ocean Engineering from Johns Hopkins University.

Goltens Worldwide has opened a new full service facility in Houston, TX. Leading the operation as General Manager for Goltens is industry veteran **Mark Evans**. Evans is a seasoned maritime executive with over 20 years of experience supporting the marine services industry, working in progressively higher technical management and executive positions within Wärtsilä and most recently Rolls-Royce Marine.

Maurice Lara has joined the Florida offices of Glander International Bunkering as Bunker & Lubricant Broker/Trader. Maurice Lara brings 8 years of bunkering experience to Glander International Bunkering. He is specialized in supplying throughout the Americas, including the USA, Canada, Central and South America and the Caribbean. Lara holds a Bachelor of Science in Business Administration, a minor in Philosophy, is proficient in English, Spanish and has a good understanding of Portuguese.

Chad Appleby has been named Vice President, Tax for The Safariland Group. Appleby will lead the global tax strategy and tax operations of the Company. Appleby is a certified public accountant with more than 15 years of experience working on a wide range of domestic and international tax matters. Appleby joins the Company after spending the last nine years leading the tax department as the Senior Director, Income Tax at PSS World Medical, Inc. Appleby received his BBA in Accounting from the University of Wisconsin and his Masters in Taxation from the University of Denver Graduate Tax Program.

The Chamber of Marine Commerce has named RADM **Michael Parks,** USCG (Ret.), as Special Advisor. In his new role, RADM Parks will work with the Chamber to promote the distinct economic, environmental and safety advantages of the bi-national Great Lakes-St. Lawrence shipping in-


Appleby


Parks


Marion


Kerins


Barker


Venegas

dustry, in addition to increasing awareness and advising on the industry's maritime-related policy and issues. Formerly, Parks was the Commander of the Ninth Coast Guard District, which spans the five Great Lakes, St. Lawrence Seaway and parts of the surrounding states. He is a 1982 graduate of the U.S. Coast Guard Academy and has earned a Master of Public Administration degree from George Washington University.

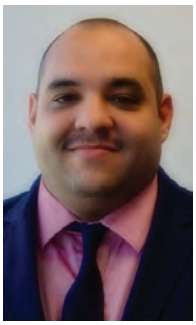
Michael Marion and **Cormac Kerins** have been appointed to positions with Atlas Copco Portable Energy Canada, effective immediately. Marion has been appointed national business development manager and Kerins is now the product and business development manager. Marion has over 20 years of business with extensive background in industrial engines. Kerins has worked in the compressor industry the past three years as quality assurance engineer at Atlas Copco's main airpower product company in Antwerp, Belgium. He earned a bachelor's degree in engineering from the University of Ireland.

Louisiana Governor Bobby Jindal has announced the appointment of **Ray Barker** to the Louisiana Workforce Investment Council. The Louisiana Workforce Investment Council serves to develop a strategic plan to coordinate and integrate a work-


Morgan


Garner


Anzelone


Ramirez


Smith


Tarabochia

force development delivery system to ensure efficiency and cooperation between public and private entities by advising the governor on the needs of Louisiana's employers and its workforce. Barker is the Director of Human Resources at Bollinger Shipyards, Inc. Barker will serve as an at-large member, as required by statute.

Santos Venegas, general manager, and **Keith Morgan**, senior sales engineer, have joined the MTN Oil & Gas Business Unit from Harris CapRock. **Ty Garner,** business development executive, has joined from Telemar. MTN Communications (MTN) is building a business development and technical team in Houston in response to 20 percent year-over-year growth in Oil & Gas vessels served. MTN provides communications and content services for remote locations around the world, including Oil & Gas, Cruise, Ferries, Yachts, Commercial Shipping and Government.

Brendan Anzelone, Rafael Ramirez and **Gregory Smith** are among eight new hires for Faststream, a global provider of oil & gas and maritime recruiting and staffing services. Faststream's newest hires include ex-seafarers, shipbrokers, executive staffing specialists, energy staffing experts and former United States Coast Guard members. Their previous experience allows them to assess employer and employee needs from both the recruiting and technical sides.

Peter Tarabochia has been named Vice President, Chief Financial Officer at Elliott Bay Design Group. Tarabochia, formerly of Vigor Industrial, brings more than a decade of experience to his new role. Throughout his career, he has played a vital role as an experienced financial leader for a number of fortune 500 enterprises. Tarabochia is a graduate of the University of Washington, Seattle. He holds Bachelor's Degree in Business Administration and a Master's Degree in Professional Accounting.

The Society of Naval Architects and Marine Engineers (SNAME) awarded its highest technical honor, the David W. Taylor Medal for notable achievement in naval architecture or marine engineering, to **Howard Fireman,** ABS Senior Vice President, Asset Performance Management (APM). The Taylor Medal is considered by many to be the crowning professional achievement for a Naval Architect and Marine Engineer. After serving 35 years in the US Navy, Fireman joined ABS in 2013, taking responsibility for the ABS APM group, which helps the marine and offshore industries meet environmental regulatory requirements and assess the operational performance, energy efficiency and fuel consumption of new and existing vessel designs.

Ralph Bell is Kelvin Hughes' new Regional Sales Manager in North America. Operating from the company's Washington office, Ralph will be responsible for the Kelvin Hughes range of Naval, Coastal and Security systems. With over 20 years' business development experience gained with Northrop Grumman, Motorola Solutions and General Dynamics, Ralph has an in-depth knowledge of detection systems for situational awareness applications.

Tucker West has been named Kadey-Krogen Yachts' new vice president of sales. West has more than 20 years in the marine industry to take on the responsibility of leading the Kadey-Krogen sales force. For the last nine years, West led the North American Sales and Dealers Network for Grand Banks Yachts. In addition to sales, his work at Kadey-Krogen will contribute to product development and sales marketing. West graduated from Plymouth State College in New Hampshire with a degree in business management. He began his career at Sunsail Yacht Charters, booking sailing vacations and selling boats into Sunsail's charter fleet.


Fireman


Bell


West


Hanssen


Doucet


Whitley

Sioux corporation has named **Jesse Hanssen** Sales and Marketing Manager. Jesse graduated with a Bachelors of Science degree in Mechanical Engineering from the University of Notre Dame and a Masters of Business Administration from University of St. Thomas in St. Paul MN. Jesse has over seven years of experience as an application engineer and product manager in the equipment manufacturing industry.

Drilling Services of America (DSA) has added **Dwayne Doucet** as health, safety and environmental (HSE) director and **Todd Whitley** as senior technical advisor. Doucet will be responsible for the continuous development and implementation of HSE policies and procedures. He graduated from Louisiana Technical College and currently serves as the president elect of the South Louisiana S.T.E.P.S. Network in Lafayette and is a member of the American Society of Safety Engineers (ASSE). As senior technical advisor, Whitley's responsibilities will include proposal preparations, drafting procedures, technical input during spud meetings along with prejob planning and additional technical support. He is a member of the Society of Petroleum Engineers (SPE).

Ron Tucker, Local 333 & Don Marcus, MM&P

Crowley Maritime Corp.

St. Lawrence Seaway

NY Watermen to Join MM&P

New York-area watermen who operate tugboats, dredges, tourist boats and ferries, members of Staten Island-based Local 333, have voted to support a merger between Local 333 and the Maryland-based International Organization of Masters, Mates and Pilots (MM&P). By a more than 2 to 1 margin, 1,300 New York and New Jersey mariners voted to affiliate with the larger national union of deck officers who serve on ocean-going ships, and which also represents captains and crews on inland waterways beyond New York Harbor. Don Marcus, MM&P President said, "We are grateful for the confidence that the membership of Local 333 has placed in our union."

Crowley Receives CSA Safety Awards

Eighty-nine Crowley Maritime Corp.-owned and operated vessels were honored with Certificates of Environmental Achievement for years of safe operations during the eleventh-annual Chamber of Shipping of America (CSA) awards ceremony last month. Crowley received an award for each vessel that worked at least two consecutive years without an environmental incident. The 89 vessels have logged a combined 968 years of service without incident, a testament to Crowley's commitment to keeping harbors and oceans clean. Forty-seven of Crowley's vessels have gone without incident for 10 or more consecutive years.

Crowley Expedites Panama Canal Expansion

Crowley Maritime Corp.'s heavy lift barge 455 4 last month successfully delivered the first in a series of new gates for the ongoing Panama Canal expansion. Crowley is scheduled to help transport all eight of the gates involved in the Pacific side lock expansion of the Canal – a project that when coupled with the Atlantic side expansion will create a new lane of vessel traffic and double the waterway's capacity. The 105-foot wide barge, currently the largest capable of transiting the Canal, was towed by Panama Canal Authority (ACP) tugs and made the transit in only one day. Jensen Maritime, Crowley's Seattle-based marine engineering and naval architecture firm, performed a professional peer review of strength and stability calculations related to the barge and voyage.

Seaway Crucial for Vital Cargo Ahead of Winter

Shipments through the St. Lawrence Seaway remained strong in October as North American manufacturers and cities stockpiled vital materials in advance of the coming winter and farmers relied on the waterway to export the new harvest. According to the St. Lawrence Seaway, total cargo tonnage from March 25 to October 31 reached 29.6 million metric tons, up 4.5 per cent over the same period last year. Robust grain and steel shipments have more than offset a drop in iron ore shipments through the Seaway.

NOAA's new Lake Level Viewer aids Great Lakes Planning

A new NOAA online visualization and mapping tool, the Lake Level Viewer, will help communities along the U.S. Great Lakes plan for, and adapt to, climate change and changes in lake water levels. The easy-to-use, interactive tool was developed by the National Ocean Service's Office for Coastal Management as part of its Digital Coast initiative. The viewer uses high-resolution elevation data, enabling users to display and visualize water levels associated with different lake level scenarios with a high degree of accuracy—ranging from zero to six feet above and below average lake level.

U.S.-Flag October Great Lakes Cargo Up 15 PCT

U.S.-flag Great Lakes freighters (lakers) moved 11.3 million tons of dry-bulk cargo in October, an increase of 14.7 percent compared to a year ago. The October float was also 19.6 percent above the month's long-term average. The industry continues to benefit from high water levels. Several ore cargos topped 69,000 tons. Nonetheless, if the Great Lakes Navigation System was dredged to project dimensions, loads could have topped

Lake Level Viewer

Great Lakes

Training Ship (TS) Kennedy

72,000 tons. The industry is working with Congress to ensure dredging nationally is funded in FY15 at the level called for in the Water Resources Reform and Development Act: $1.166 billion. Year-to-date, U.S.-flag cargo movement stands at 71.3 million tons, a decrease of 2.8 percent compared to the same point in 2013.

MARAD Tests Alternative Power for Vessels

The Maritime Administration (MARAD) is testing state-of-the-art, environmentally efficient technology onboard the Training Ship (TS) Kennedy. The National Defense Reserve Fleet vessel was provided to the Massachusetts Maritime Academy by MARAD for Cadet training. This one-year undertaking is part of a MARAD initiative to test fuel cells as a source of power for shipboard electrical systems. Researchers will evaluate the performance of the fuel cell technology and how low sulfur marine diesel fuel can be used to efficiently power a fuel cell to produce auxiliary power. Unlike using low sulfur fuel in diesel engine generators to provide electrical power, the system produces no harmful air emissions.

Bouchard Transportation Accepts 2014 AMS Safety Award

Bouchard Transportation Co., Inc., the nation's largest independently-owned ocean-going petroleum barge company, was honored by American Maritime Safety, Inc. (AMS) with the 2014 AMS Tug & Barge Safety Award on Thursday, October 23, 2014. The award, accepted by Morty Bouchard IV, Vice President of Operations & Sales, recognizes the implementation of outstanding compliance programs that serve to enhance crewmember efficiency and the safe operation of tug and barge vessels in the U.S. coastal waters. AMS is a non-profit maritime trade association, which facilitates the maritime industry's compliance with international shipping protocols and U.S. Coast Guard regulations. The AMS consortium is comprised of more than 400 vessel owners and operators.

LNG America, Buffalo Marine Sign Cooperation Agreement

LNG America and Buffalo Marine Service, Inc. (Buffalo Marine) will cooperate on the design of an LNG bunker fuel network for the U.S. Gulf Coast region. LNG America is developing a hub-and-spoke delivery system for LNG as fuel for the marine market and other high horsepower applications. Ultimately, LNG America intends to establish a delivery infrastructure to ensure the secure and safe delivery of LNG as fuel in major US ports. Buffalo Marine is a Gulf of Mexico bunkering company with over 50 vessels dedicated to bunkering. The agreement incorporates Buffalo Marine's logistical, commercial, and administrative expertise with LNG America's experience with LNG as fuel for high horsepower applications. "Combining the bunkering experience of Buffalo Marine with our LNG experience and our progress towards building the infrastructure necessary to support LNG bunkering will help us to provide the best possible service to the emerging LNG fueled marine customers while using the best safety practices available from both industries," said Keith Meyer, President and CEO of LNG America.

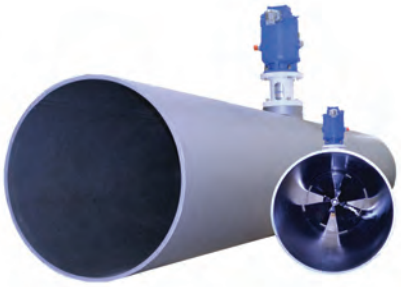
LaGrange Cites Double-Digit Cargo Growth

Economic development wins, new services and expanded agreements have resulted in record operating revenues and strong, double-digit cargo growth in 2014, Port President and CEO Gary LaGrange said during the annual State of the Port Address hosted by the International Freight Forwarders and Customs Brokers Association of New Orleans last month. LaGrange cited the return of Chiquita to New Orleans after a 40-year absence, as an historic win for the maritime community. For the first eight months of 2014, total general cargo was up 25 percent compared to a year ago, totaling 5.89 million tons, compared to 4.7 million tons for the same period a year ago.

WESMAR Delivers Fire Boat Thruster

Western Marine Electronics has delivered its powerful bow thruster systems to a Fire Boat for the City of San Francisco. Per specifications her ability to maneuver in tight situations and hold steady during firefighting operations will be facilitated by WESMAR's Model V2-20 NS 100 HP stainless steel, dual prop, counter-rotating bow thruster system. WESMAR thruster systems carry ABS Class Certification (PDA).

www.wesmar.com



Portable Power from Southwest Electronic Energy

Southwest Electronic Energy's POW-R Tote is a rugged 12V/117Ah portable power system providing compact-convenient energy when standard power sources are unavailable. POW-R Tote is available for marine use. Compact and weighing only 23lbs, the eco-friendly POW-R Tote uses safe, powerful Lithium-Ion battery technology to deliver 2X longer run time and power when compared to typical 12V lead acid batteries.

www.swe.com

ISP's AIS Man OverBoard Lifejackets

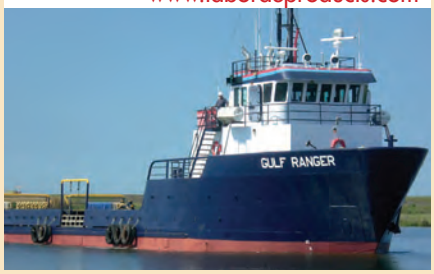
International Safety Products has partnered with electronic engineering and maritime communications specialist Ocean Signal to integrate the rescueME MOB1 device into three models of lifejackets. The rescueME MOB1 activates automatically when a lifejacket is inflated, communicating with vessels within a five-mile radius and also linking to a rescue satellite network. AIS has been built into the ISP lifejacket as a standard design.

ispl.co.uk

Mitsubishi Repower for Offshore Vessel

Laborde's Mitsubishi engine lineup is ideal for upgrading older small utility boats. Gulf Ranger, a 150' supply vessel was brought the vessel into compliance with Tier 3. Twin Mitsubishi S6R2-Y3MPTAW engines, rated 803 hp at 1400 rpm, ensure dependability, performance and fuel efficiency. The first supply boat repower for Laborde, Gulf Ranger is also the first such Mitsubishi Tier 3-compliant, mechanical-powered OSV on the Gulf Coast.

www.labordeproducts.com



Volvo Penta Next-Generation Marine Gasoline Engines

Volvo Penta has introduced two models of its next-generation sterndrive marine gasoline engines. The new 4.3-liter catalyzed V6 engines, rated at 200 and 240 horsepower, will supplement Volvo Penta's current V6 product line. The engines also come with constant RPM in turns as a standard feature. The new engines are supported by Volvo Penta's industry-leading 2+3 factory warranty and extended coverage programs.

www.volvo.com

Furuno Wireless Radar Provides Freedom to Explore

Furuno's 1st Watch Radar is completely controlled using wireless iOS devices, like the iPad and iPhone. The DRS4W Wireless Radar is the first step in a new direction of portable marine electronics. Boaters have the freedom to do things that were previously impossible with conventional Radars. The display is untethered, freeing mariners to roam, while maintaining full situational awareness of surroundings.

www.FurunoUSA.com

RSC BIO Solutions EnviroLogic Hydraulic Fluids

RSC Bio Solutions' EnviroLogic Environmentally Acceptable Lubricants (EALs), including hydraulic, stern tube and thruster oils, and SAFECARE cleaners and their constituent components have been evaluated by independent laboratories to meet the U.S. Environmental Protection Agency (EPA) definitions of biodegradable, minimally toxic and not bioaccumulative. RSC Bio Solutions, therefore, certifies its hydraulic fluids and cleaner products as 2014 sVGP compliant.

www.rscbio.com

Cummins Inboard Joystick

The Cummins Inboard Joystick is a docking system designed for use with traditional inboard engines and transmissions. Used with a new class of DC thrusters, it brings mariners a new level of confidence in close quarters. Cummins backs up every component in the inboard joystick system with the same warranty and global service and support network as the Cummins engines.

www.cumminsengines.com

Iridium SBD Transceivers Priced Right

Iridium Communications has reduced the pricing of its 9602 and 9603 Short Burst Data (SBD) transceivers by up to 50 percent. Ideally suited for Machine-to-Machine (M2M) applications including asset tracking, monitoring, fleet management and remote communications in areas lacking cellular coverage, the Iridium 9603 is the smallest commercial satellite two-way transceiver available. The Iridium 9602 is designed OEM integration for complete wireless solutions.

www.iridium.com

Rolls-Royce MTU SERIES 2000 Yacht Engine

Rolls-Royce's new generation MTU Series 2000 M96 yacht engine is EPA Tier 3-compliant and offers enhanced acceleration and low fuel consumption in 12-cylinder ratings from 1700 to 1920 bhp and 16-cylinder ratings from 2185 to 2600 bhp of power. During recent sea trials, the new generation 16V 2000 M96L impressed with faster acceleration and outstanding maneuverability.

www.rolls-royce.com

Northern Lights Launches New Web Site

Northern Lights has launched its new web site, formatted for easy navigation on desktop, tablet and handheld devices with many new features, including Searchable content, Northern Lights TV, Enhanced video content, product service, and feature and benefit information in a brief, informative presentation style. Tech support and product literature, drawings and manuals, are all available for instant download.

www.northern-lights.com

Shell Launches Naturelle S4 Stern Tube Fluid

Shell has launched a range of Environmentally Acceptable Lubricants (EALs), including Shell Naturelle S4 Stern Tube Fluid 100. The Shell Naturelle range of products enables ships entering US waters to comply with the revised 2013 Vessel General Permit (VGP) and boasts a wide range of approvals it has received from stern tube OEMs, like Aegir-Marine, Blohm & Voss (SKF), Kemel and Wärtsilä.

www.shell.com

Shell
NATURELLE

PRODUCTS

ESAB Introduces Portable Wire Feeder

ESAB Welding & Cutting Products' new MobileFeed 201AVS features powerful feeding mechanisms to provide even and secure wire feeding for reliability and smooth operation in a range of industrial welding applications. Small in size and extremely lightweight, ESAB's newest wire feed unit weighs less than 30 lbs. and is designed for use with any CV or CC welding power supply.

www.esabna.com

Beneath Waterfalls, Sea-Fire Protects

When it was time to retire the iconic Maid of the Mist tour boats, Hornblower Niagara Cruises knew their replacements needed to raise the standard of forward-thinking performance, without sacrificing safety. It turned to Sea-Fire for the USCG approved and BV certified, the Sea-Fire H-Series system. Custom engineered for each project, it protects a wide range of areas, from 1,500 to 17,500 cubic feet.

www.sea-fire.com

Commercial Marine Grade Diesel Pressure Cleaner

Transportable, diesel fueled and designed to preparing surfaces under the toughest conditions, Water Cannon's hot water Kohler engine powered pressure washer is a resilient piece of high pressure power equipment. With a flow rate of up to 4.0 GPM and pressure up to 3,200 PSI, this powerful diesel powered pressure washer can be customized and/or upgraded to a Cat Pumps driven model.

www.watercannon.com

Phoenix EcoMod 450 Floodlight

Phoenix Products Company has introduced the EcoMod 450 Series of LED floodlights. With an output of up to 41,250 lumens, the EcoMod 450 replaces up to 1500W HID floodlights and retrofits to existing Phoenix installations. The EcoMod Series uses up to 70% less energy than equivalent HID floodlights The EcoMod 450 is manufactured in the U.S.A. and offers a five year limited warranty.

www.phoenixlighting.com

Explosion Protected Crane Systems

J D Neuhaus crane systems can be supplied with Atex classifications EX II 2 GD IIA T4 / EX II 3 GD IIB T4, with increased spark protection also available for explosion level II C. Typical applications include oil and gas production offshore. This eliminates the potential hazards and dangers associated with electrically powered equipment when operating within areas of high dust or humidity.

www.jdngroup.com

New Versatile Hyster Tire Handlers Help Maximize Uptime

Hyster Company has introduced a new series of tire handling trucks for demanding applications in the ports and intermodal industries. The Hyster tire handlers provide fast and effective "total tire handling solutions" that help maximize uptime while promoting operational safety. These versatile solutions are designed to handle tire diameters up to 164 inches, with flexible transition between forklift and tire handler modes.

www.hyster.com

WMTC15

WORLD MARITIME TECHNOLOGY CONFERENCE

WMTC'15 will be incorporated with the

SNAME MARITIME CONVENTION

Save the Date

November 3-7, 2015

Providence, RI - Rhode Island Convention Center

For more information: www.sname.org/2015WMTC

Abstract Submission – Now Open

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or copy this link into a browser: https://mc.manuscriptcentral.com/wmtc2015

Queries regarding the technical program should be directed to the Technical Program Co-Chairs:
Roger Basu – **roger.i.basu@gmail.com** and Krish Thiagarajan – **krish.thiagarajan@maine.edu**

For general inquiries, please contact:
Alana Anderson, Director of Events, SNAME – **aanderson@sname.org/** +1 703-997-6705

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- STCW
- TWIC

Tug Mate
Qualifications:
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POSITIONS AVAILABLE

Professional Maritime Faculty (2 positions available)
Tenure-track Engineering Faculty (2 positions available)
Tenure-track Marine Transportation Faculty (2 positions available)
Engineering Lab Tech

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

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

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

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23	Aurand Manufacturing	www.aurand.net	(513) 541-7200
1	Citgo Petroleum-Clarion	www.clarionlubricants.com	1-855-MY-CLARION
5	Cobham Seatel	www.cobham.com	Please visit our website
17	Don Jon Marine Co., Inc.	www.donjon.com	(908) 964-8812
3	Engines Inc	www.enginespower.com	(870) 268-3700
7	GE Transportation	www.ge.com	(814) 875-5710
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2015 Editorial Calendar

Marine News

ISSUE	EDITORIAL	BONUS DISTRIBUTION
JANUARY **Ad Close:** Dec 12	**Passenger Vessels & Ferries** Market: Training & Education Technical: Arctic / Cold Weather Operations Product: Winches, Ropes & Cranes	**PVA/Maritrends** Jan. 31 - Feb 3, Long Beach, CA REGIONAL FOCUS: West Coast
FEBRUARY **Ad Close:** Jan 15	**Dredging & Marine Construction** Market: U.S. Coast Guard Technical: Naval Architecture Product: Fire & Safety Equipment	**ASNE Day** March 4 - 5, Crystal City, VA
MARCH **Ad Close:** Feb 14	**Fleet Optimization** Market: Management Software Technical: SATCOM for Workboats Product: Water Treatment & Technology	**CMA Shipping 2015** March 23 - 25, Stamford, CT REGIONAL FOCUS: US East Coast
APRIL **Ad Close:** March 14	**Shipyard Report: Construction & Repair** Market: Push Boats & Barges Technical: Marine Coatings/Corrosion Control Product: Interior Outfitting / Design / HVAC	**Sea-Air-Space** April 13 - 15, National Harbor, MD
MAY **Ad Close:** April 14	**Offshore Annual** Market: OSV and Offshore Vessel Trends Technical: Safety & Prevention Product: Oil Pollution: Prevention & Response	**OTC Houston** May 4 - 7, Houston, TX
JUNE **Ad Close:** May 14	**Combat & Patrol Craft Annual** Technical: Shortsea Shipping / Bulk Transport Technical: Lubricants, Fuels & Additives Product: Inland Boat Builders	**Inland Marine Expo** June 15 - 17, St. Louis, MO **MACC** June, Virgina Beach, VA **Seawork** June 16- - 18, Southampton, UK REGIONAL FOCUS: Inland Rivers
JULY **Ad Close:** June 15	**Propulsion Technology** Market: ATBs – Expanding Roles & Types Technical: Deck Machinery Product: Safety & Prevention	
AUGUST **Ad Close:** July 15	**MN 100 Market Leaders** Market: Workboat Boatbuilding & Repair Technical: Marine Operators Product: E-Solutions & Technology	***Marine News*** **25th Anniversary Edition**
SEPTEMBER **Ad Close:** Aug 15	**Inland Waterways** Market: Navigation, E-Solutions & Software Technical: Training/Regulatory Compliance Product: Cordage, Wire Ropes & Rigging	**ShippingInsight** Stamford, CT REGIONAL FOCUS: Great Lakes
OCTOBER **Ad Close:** Sept 15	**Salvage & Spill Response** Market: Maritime Security Workboats Technical: Emissions Control/Management Product: Deck Machinery/Cargo Equipment	**SNAME** Nov. 4 - 6, Providence, RI **CleanGulf** Nov. 10 - 12, New Orleans, LA
NOVEMBER **Ad Close:** Oct 16	**Workboat Annual** Market: Outfitting the Modern Workboat Technical: Pumps, Pipes & Valves Product: Marine Propulsion	**International Workboat Show** Dec. 2 - 4, New Orleans, LA REGIONAL FOCUS: Gulf Coast
DECEMBER **Ad Close:** Nov 15	**Innovative Products & Boats of 2015** Market: Fire, Patrol & Escort Craft Technical: Onboard / Wireless Comms Product: CAD/CAM Software	

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