

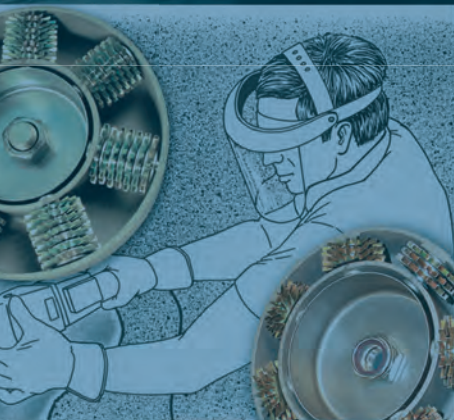
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AUGUST 2017

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ON THE COVER

Painting the cover of this month's edition, a collage of colors and different business sectors provides just a hint of the diversity present in this year's group of MN100 companies. It also turns out that diversity is the key to thriving in a challenging market.



Features

44 Boatbuilding: Alive and Well on the Gulf Coast

The diverse backlog of four Gulf Coast builders is carrying the day in an otherwise lackluster market.

By Susan Buchanan

50 Rolling on the River

Three companies demonstrate every day what it takes to survive and thrive as they integrate new equipment, confront difficult and shifting markets and, literally, weather tough operational environments.

By Tom Ewing

58 Triple Threat: You've got (North American) options

Two longtime stakeholders and a new entry to the ballast water treatment battles all move towards U.S. Coast Guard approvals. The three U.S.-based OEM's all employ different approaches to the same problem.

By Joseph Keefe

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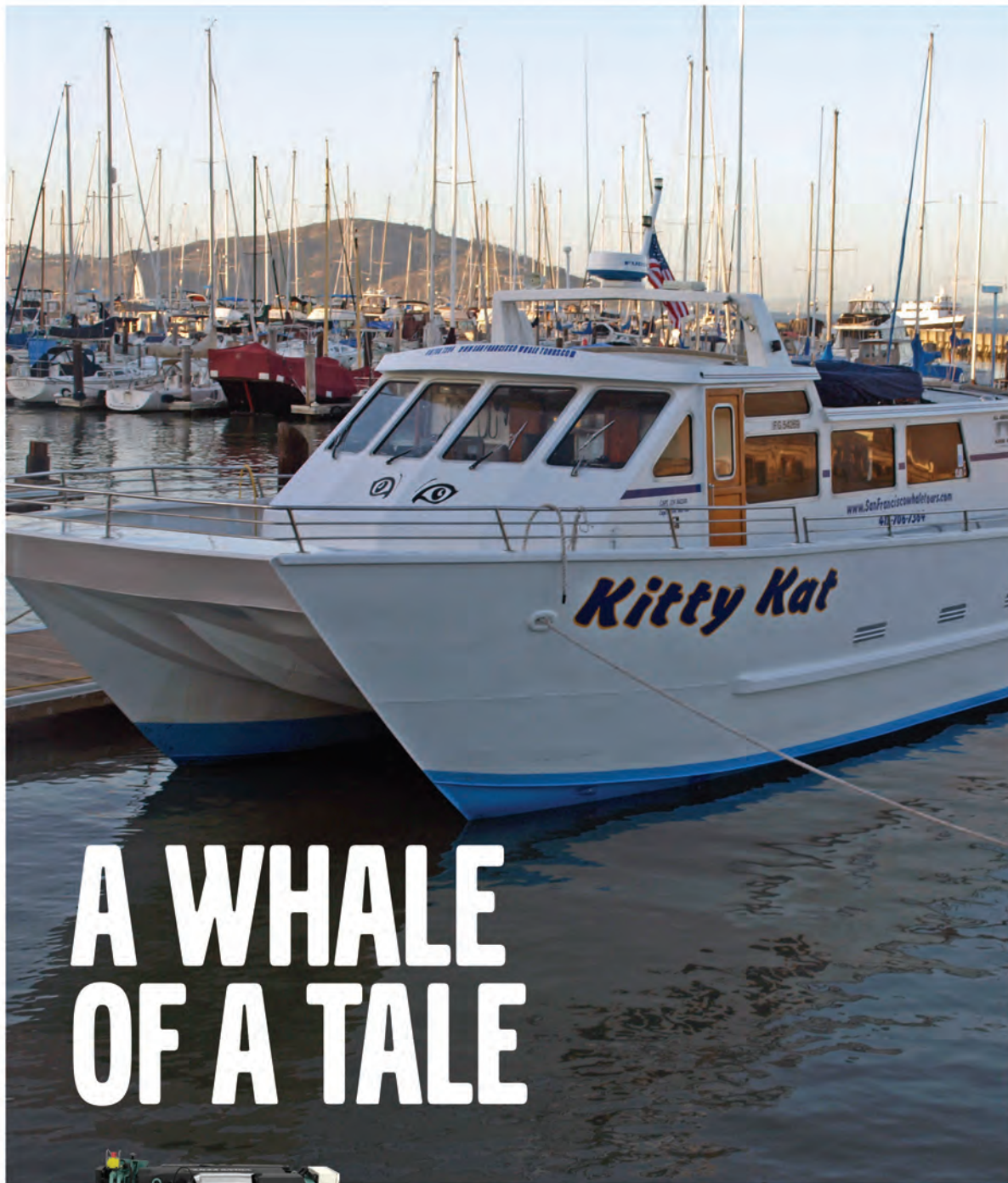
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A WHALE OF A TALE



On the tourist packed San Francisco Fisherman's Wharf, an inoperable sightseeing boat isn't an option. When the time came for San Francisco Whale Tours to repower their flagship boat, *Kitty Kat*, they chose a pair of Volvo Penta D11-625's for reliability and passenger comfort.

"Our customers could tell the difference right away. With no fumes on deck, we're getting fewer cases of seasickness in the open ocean," reports Capt. Joe Nazar. Repowering with Volvo Penta has also bolstered profitability: "I don't go to the fuel dock as often, and that goes straight to the bottom-line."

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The annual edition of *MN100*, our review of the most compelling companies serving the workboat, brown water, inland and coastal markets, always comes in August. This much we know. What we don't know – until we actually sit down to put it all together – is who will make the cut in any given year. To that end, the 'buck' always stops at my desk. Every year, culling out the 100 best firms in this workboat sector is one of my most difficult tasks. At the same time, believe it or not, it is also one of the most valuable editorial efforts that I make time for. All that said; *if you didn't apply, then you couldn't be considered.*

Looking back over the twelve months since we last looked at the 'best of the best,' it is no secret that it has been an up-and-down year. Offshore energy continues to see challenges, while the ferry-building boom has, during the same period, been nothing short of spectacular. Those boatbuilders with a wider portfolio have weathered the storm nicely, some boasting some of the better backlogs that they've experienced in some time. Our feature focus on four of those Gulf Coast-based shipyards starts on page 44.

Separately, it is also true that there is no need for shipyards if operators don't put those boats in the water. Spotlighting the inland markets, *MarineNews* contributor Tom Ewing gives his slant on why three of these firms are prospering in brown water. Each has a unique business plan, unusual operating conditions, and recent business deals that collectively position them for what comes next. **Spoiler Alert:** no one is sitting on their hands, even when times can and do get tough.

"*Diversify, diversify, diversify ... always,*" is the way that Sean Fernstrum neatly summarizes the challenge of running an efficient business to and through the many up and down cycles. In the November 2016 edition of *Maritime Reporter and Engineering News*, he says it best, insisting, "*You have to be in different markets. You try to ride an even line (with diversification). We rode the oil wave for a number of years, but you always have to have other pieces in place for when a market drops off.*" It should be no surprise then, that Fernstrum holds a very prominent spot (page 62) in this year's *MN100* edition.

This annual exercise is a valuable effort, immersing me still deeper into the industry that I already serve. It requires collation of, poring over and ultimately ranking scores of entries from every corner of the collective waterfront. Where some might find it tedious, I instead find it instructive; something which can provide better understanding of the markets and, at the same time, provide that course correction that allows me to provide more cogent analysis for our market-leading BPA audited readership. **Sure:** some might view the North American brown water, workboat market as a narrow niche. It is anything but. And that market diversity is where we at *MarineNews* draw our strength.





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Joseph Keefe, Editor, keefe@marinelink.com

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THE COMPANY:

ABS offers support during initial concept design, design approval, construction and throughout the life of the vessel. The company provides independent and uncompromised perspective on classification and statutory-critical items. ABS is a recognized leader in the development and assessment of new technology, serving as a trusted technical advisor to the industry. ABS presently operates in 70 countries, and across North America, the company maintains 40 offices. The firm's commitment to North America has seen expanded operations in Canada, and the development of services and software specifically geared toward helping workboat owners to gain Subchapter M compliance.

PRIMARY PRODUCT / SERVICE:

Classification is at the core of every product and service provided by ABS, where a commitment to safety and environmental protection is in our DNA. The drive for innovation has seen ABS redefine the role of class and help the maritime industry to solve its most pressing safety, regulatory and environmental challenges. Beyond traditional classification, ABS offers a suite of technical services that allow designers, builders, owners, and operators to leverage the latest technologies and best practices when developing their projects. These services include:

- *Energy Efficiency*
- *Vessel Performance*
- *BWM Technology Evaluations*
- *Techno-economic Analysis*
- *EU MRV Compliance*

To help asset owners tackle the growing risks of maritime cyber-security, ABS has launched the industry's first risk-based management program to help owners and operators apply best practice. The ABS CyberSafety program can be applied to a single component or to a multi-system suite of assets and can be used in tandem with industry regulatory mechanisms to achieve secure, sustainable and measurable asset conditions.

ABS Nautical Systems, the ABS enterprise fleet management software suite, has launched a new mobile application, NS Workboat. It was developed to help workboat operators gain compliance with the pending Subchapter M regulations for towing vessels. The 'app' is a mobile solution that is purpose-built for the workboat and inland-shipping sectors, where ease of use is of paramount importance. Another module, NS Voyage Manager, was purpose built for the marine sector to capture all the data required to meet emerging MRV regulations and other environmental requirements. Both products help to improve the accuracy of reporting, are Cloud-based with no additional IT infrastructure required and can be operated with limited training.

THE CASE:

ABS classed the first workboats to venture into the Gulf of Mexico. Today, it classes one-third of the world's offshore support vessels. ABS is a recognized Third Party Verification Organization for Subchapter M plans. Advances in technology are opening new opportunities for workboat owners, so ABS recognizes the importance of continually updating and expanding guidance to support a safer and more efficient fleet.



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THE COMPANY:

All American Marine is proud to celebrate 30 years of business building custom aluminum boats. Like all great companies, AAM can trace their roots back to a start-up in a backyard shed. While AAM's first boats were built specifically for fishing in Alaska, over time the AAM difference

was soon established and vessel operators from all over the country started seeking a custom built boat in Bellingham. Many of AAM's boats feature hydrofoil-assist technology and include hulls that have been specifically optimized for performance characteristics. Today, All American Marine has become the exclusive builder of Teknicraft Design catamarans in North America and constructs vessels ranging from 40' to over 200'. Teknicraft designed hulls have been recorded as producing one of the lowest levels of wake wash energy within their vessel class. A Teknicraft Design catamaran offers advantages unlike any other. AAM's market segments cover work boats, cruise boats, and passenger vessels. Currently AAM is experiencing a full workload and healthy backlog consisting of several ferries, hybrid powered vessels, low wake vessels, and whale watch vessels.

THE CASE:

From the Northwest to the Northeast and all the shorelines in between, All American Marine has become a highly sought after builder of aluminum vessels. AAM is the largest builder of aluminum catamarans over 45' in the U.S. and is known for hybrid propulsion technology and high performance applications.

THE COMPANY:

The American Equity Underwriters, Inc. is the program administrator of the American Longshore Mutual Association Ltd., a group self-insurance fund authorized by the U.S. Department of Labor to provide USL&H coverage for the liabilities of its members under the United States Longshore & Harbor Workers' Compensation Act. AEU works with insurance brokers to provide USL&H coverage to employers who are members of ALMA, including shipbuilders, ship repairers, marine terminal operators, stevedores, marine contractors and other waterfront businesses. With a history rooted in maritime, AEU is keenly aware of the challenges faced by waterfront employers and has carefully built services and teams to directly meet those needs. Members can rest assured their unique exposures are being managed by experts in longshore. The firm is the largest provider of USL&H coverage by member count and nearly 1,000 waterfront employers entrust AEU with their USL&H needs. These members generate \$3 billion+ in total payroll and account for \$150 million+ in total premium contributions. The American Equity Underwriters enjoy a 98% member retention rate.



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THE CASE:

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THE COMPANY:

Advanced Logistics understands technology in logistics management is one of the fastest growing segments in the oil & gas industry. As E&P companies and production operators seek more cost effective solutions to logistics challenges in marine transportation, those armed with knowledge and real time information will have the advantage. Real time technology enables clients to translate acquired data into useful information then transform that information into useful knowledge for improved efficiency, productivity and decision making ... anytime, anywhere.

THE CASE:

Advanced Logistics has provided Marine and Oil & Gas software solutions for almost 14 years. They have created strategic partnerships and are currently active with Harvey Gulf, Seacor, Fieldwood Energy, BPTT, & Talos Energy. Working hard to continue providing service beyond the current downturn to new clients, the firm reports that over the past 9 years, over 200 vessels operated by over 35 vessel companies world-wide have deployed our technology to help manage their fleet.

Ahead Sanitation Systems



AT-12T

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Website: www.aheadsantiationsystems.com
CEO/President: Winton "Boo Boo" Rebouche

THE COMPANY:

Ahead Sanitation Systems is recognized as a Premier Designer, Manufacturer and Distributor of New Generation Sanitation Systems, Products and Supplies for the Marine and Recreation Industry. The Ahead Tank is a Type II Marine Sanitation Device and certified in accordance with the USCG and IMO standards. The firm provides and services Type II Marine Sanitation Devices and Sewage Treatment Plants that are IMO and USCG certified, self-contained Macerator Pump Toilets, and Pre-Assembly Lift Pump Station LUS-75 Camp Units.

THE CASE:

Since 2005, Ahead Sanitation Systems has been providing Marine Sanitation Devices to the Marine and Recreation Industry. Their mission is to provide our customers across the globe with quality products at reasonable prices, while dedicating a level of unparalleled excellence in Customer Service and Satisfaction.

Alps Wire Rope Corp.



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THE COMPANY:

From its corporate headquarters in St. Charles, IL and 3 other branch locations around the United States, Alps Wire Rope Corporation provides innovative products from the best mills in the world. Our long history providing globally sourced wire rope products, gives us access to technical support from the engineering staffs of the manufacturing mills, who have an intimate understanding of the various international standards applicable to this market. Alps Wire Rope Corporation is a full wire rope provider, inventorying only the finest quality materials.

THE CASE:

Alps Wire Rope has been providing the highest quality stainless steel strand, wire rope and coated cables (lifelines) to the Marine Industry for 49 years. The quality of their wire rope is what distinguishes Alps from the rest. Alps provides the luster you are looking for with the quality engineering to boost longevity and resistance to corrosion on the high waters.

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 Website: www.asvglobal.com
 CEO/President: Thomas Chance

THE COMPANY:

Having delivered over 80 autonomous systems to more than 40 customers in 10 countries, ASV has established itself at the forefront of the continually evolving Autonomous Surface Vehicle industry. ASV has built a world-class team with specialist expertise and experience in ASV concept design, build and commissioning, operation and maintenance, control system development and advanced autonomy research and development. ASV Global vehicles and control systems are designed, built, fitted and tested from the company's facilities in Louisiana, USA as well as in Portsmouth, UK. ASV Global maintains an active role

in industry working closely alongside relevant authorities and maritime institutions to develop and promote responsible autonomous operations at sea. Notably, ASV Global technology has been used to compliment traditional methods of working at sea instead of replacing them. As part of a mission for survey company, TerraSond, the ASV Global 'C-Worker 5' autonomous vessel was used for seabed mapping in the Bering Sea off Alaska. Using the C-Worker 5 in parallel to the traditional survey vessel doubled the overall survey coverage resulting in a saving of 25 days at sea – a huge cost saving. In total, the C-Worker 5 completed 2275 nautical miles of unmanned hydrographic survey lines over 36 days. This mission marked an industry first for unmanned hydrographic survey.

THE CASE:

ASV Global maintains a leading position in the growing market for Autonomous Surface Vessel technology. The company's expertise combining platform manufacturing and control system development brings the very latest in maritime autonomous technology to market. ASV Global platforms are in operation across the globe within a variety of industries.

THE COMPANY:

Using technology evolved from over 20 years of investment in aircraft controls and power systems, BAE Systems' Power & Propulsion Solutions business area delivers propulsion and power management performance with innovative electrification products and solutions that advance vehicle mobility, efficiency and capability. With more than 170 patents in power management technology including hybrid & electric technology PPS serves a diversified market footprint. Systems development and integration is BAE's core competency, making the difference between average performance and class-leading. Delivering innovative and cost-effective electrification solutions for transit, military and marine markets, the firm is able to offer electric and hybrid solutions including power and propulsion for vessels. As the need for environmentally sound and fuel efficient propulsion ramps up, BAE Systems' Power & Propulsion Solutions deliver both to the workboat and the domestic waterfront.

THE CASE:

BAE Systems' Power & Propulsion Solutions business area has more 7,000 hybrid & electric bus systems around the world and is using proven, production hardware to de-



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liver hybrid and electric marine technology to watercraft. Our solutions range from accessory power to propulsion and include aftermarket support. Recent significant deliveries and contracts include Red & White fleet, a San Francisco passenger ferry contract, Kitsap Ferry CUNY hybrid ferry delivery, and notably, the Harbor Harvest hybrid ferry contract, an ACBL Inland tow boat delivery and Norwalk Aquarium's "Spirit of the Sound" – hybrid ferry delivery.



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THE COMPANY:

BoucharD Transportation Co., Inc. has made significant investments over the past five years in a major fleet expansion plan, which recently produced the most impressive and modern ATB units currently in the industry; the M/V Kim M. BoucharD & B. No. 270 and M/V Donna J. BoucharD & B. No. 272. The expansion also included two new ATB tugs; the M/V Frederick E. BoucharD and M/V Morton S. BoucharD Jr., as well as the conversion of two barges to Intercon. The recent investments made to expand BoucharD's fleet have increased fuel-efficiency, capacity, speed, and has expanded their ATB fleet to twenty (20), thus resulting in an operation that continues to perform well above industry standards. Safety also continues to be BoucharD's top priority, and it is showcased within the design of all new vessels, as well as within BoucharD's routine maintenance policies and Safety Management System (SMS). The technological advancements consistently made to BoucharD's fleet allows for an efficient operation that limits risk by providing environmental protection, a safe work environment for the crew, and a reliable service for customers. As BoucharD nears a milestone anniversary of 100 years in 2018, it is important to note that their corporate philosophy has remained the same. BoucharD is dedicated and committed to their customers and the safety of their operation, which is driven by investing profits in new, modern equipment in

order to service their customers in the most efficient and environmentally safe manner possible.

PRIMARY PRODUCT / SERVICE:

BoucharD Transportation Co., Inc. is the nation's largest independently-owned ocean-going petroleum barge company. BoucharD's fleet includes 26 double-hulled barges and 25 tugs which feature state-of-the-art equipment and fuel-efficient technologies that exceed industry standards. BoucharD features one of the youngest fleets on the water.

THE CASE:

The recent investments BoucharD has made to expand their fleet have increased fuel-efficiency, capacity, and speed. Additionally, the technological advancements consistently being made to their fleet allows for an operation that limits risk by providing environmental protection, a safe work environment for the crew, and a reliable service for customers. In the early 1990s, BoucharD was the first Jones Act company to build double-hull ocean-going ATB barges with Intercon, and added hot oil systems to its barges to reduce downtime and product loss while increasing efficiency. Beyond this, BoucharD is a tireless supporter of the domestic waterfront and the firm has made many contributions to mariner training, increased safety on the water and many other important initiatives.



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Brian D'Isernia
Founder/Owner & CEO



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AME Solutions



217 SW 28th St
Fort Lauderdale, FL 33315
Tel: (954) 764-2678
E-mail: teresa@amesolutions.com
Website: amesolutions.com
CEO/President: Richard Merhige

THE COMPANY:

AME specializes in Predictive, Preventative and Corrective Maintenance for rotating and reciprocating machinery. Since 1992, AME has pioneered the use of the most cutting-edge technologies, and state-of-the-art equipment to the diagnostics, maintenance, and repair of rotating machinery, particularly for private and commercial vessels. AME's 24-hour worldwide services include computerized laser alignment, optical alignment, vibration analysis, balancing, infrared thermography, balancing, welding, fabrication, machining and oil analysis. Comprising the AME Team are Certified Vibration Analysts, Field Service Engineers, Technicians, Mechanics, Welders and Machinists who have over 100 years of combined experience with running gear diagnostics and service work.

THE CASE:

AME is a leading comprehensive marine and industrial engineering services company. AME finds solutions for complex rotating and reciprocating machinery issues. As authorized distributors for Windrock equipment and Wartsila seals and bearings, AME has also recently been selected as Florida's authorized distributor for Pruftechnik laser alignment and condition monitoring equipment. In May, AME celebrated 25 years of success.

Appleton Marine, Inc.



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Appleton, WI USA 54911
Tel: (920) 738-5432
E-mail: shea.nimocks@appletonmarine.com
Website: www.appletonmarine.com
CEO/President: Frank P. Pierri

THE COMPANY:

Appleton Marine designs and manufactures a wide range of custom marine offshore and shipboard products – also providing handling solutions for commercial marine, offshore oil and government applications. Appleton Marine has continued to supply custom marine deck machinery including cranes, winches, windlasses, capstans, hose reels and special systems for military and commercial shipbuilding since 1971. All machinery is proudly made in the USA.

THE CASE:

Appleton Marine stands out from the competition because the firm participates in multiple market segments (both domestic and worldwide); it is a turnkey package provider (cranes and other deck equipment); maintains a staff of long-tenured employees and most importantly, is capable of providing technologically-advanced, heavily-engineered products. 2017 marks 30 years of Appleton Marine being an employee-owned company.

Aspin Kemp & Associates (AKA)



23 Brook Street
Montague, PE COA IRO Canada
Tel: (519) 270-5840
E-mail: bobpatrick@aka-group.com
Website: www.aka-group.com
CEO/President: Jason Aspin

THE COMPANY:

AKA manufactures power plants, hybrid propulsion and hybrid power systems for all classes of marine vessels. AKA's XeroPoint hybrid propulsion system significantly reduces vessel fuel consumption and emissions. On a hybrid design, AKA's patented drive train has a greater impact than the addition of energy storage devices for reducing harmful emissions. AKA developed the world's first Hybrid Tugboat (Carolyn Dorothy 2009) – with Foss Maritime Company, Europe's First Hybrid Tugboat (Adriaan 2012) with Kotug, and an industry first DP3 Closed Bus Operation (Deepwater Conqueror 2016) - with Transocean.

THE CASE:

The firm improves reliability, increases availability, and reduces operating costs. Central to the Aspin Kemp & Associates (AKA) approach on all engineering projects is ensuring the integrity of associated data. This is achieved through the utilization of specialized technical engineering tools that are designed to streamline and manage projects from inception to delivery and throughout the full life cycle of the installation.



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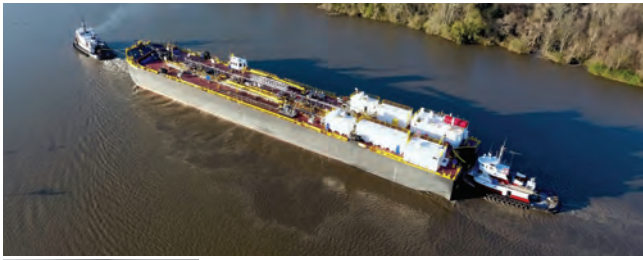
At **Parker Hannifin** we aim to **delight our customers** by **partnering** with them and **responding to their needs**. We know our **success** is only possible through increasing our **customers' productivity** and **profitability**, thus **ensuring their success** as well. We are **committed to serving** our **customers** through **innovation, value creation, and the highest quality system solutions**.

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BRISTOL HARBOR GROUP

99 Poppasquash Rd. Unit H
 Bristol, RI 02809
 Tel: (401) 253-4318
 Email: gbeers@bristolharbargroup.com
 Website: bristolharbargroup.com
 CEO/President: Greg Beers, P.E.

THE COMPANY:

Bristol Harbor Group, Inc. (BHGI) is a full service naval architecture and marine engineering firm located on the harbor in Bristol, Rhode Island. In business for more than twenty years, BHGI has produced more than 75 unique designs to which more than 100 vessels have been built. BHGI specializes in commercial vessel design and consulting and have experience with tugs, barges, ATB's, passenger vessels, dredges and yachts. Through BHGI's second IDIQ contract with the U.S. Army Corps of Engineers,

BHGI was tasked to develop a detail level design for the Quad Cities Crane Barge. This project was completed in the 4th quarter of 2016. BHGI recently completed the design of a USACE wicket lifting vessel for operation at Olmsted Lock & Dam on the Ohio River. Currently under construction, the vessel is expected to be delivered in the 3rd quarter of 2017. BHGI will continue to provide design and engineering support to the USACE for the NASA barge PEGASUS. In 2015, BHGI was contracted by Conrad Shipyard in Amelia, LA to develop the design of an 80k BBL ATB oil barge unit for Vane Brothers Company. The lead vessel is expected to be delivered in 3rd quarter 2017 with two follow on units at six month intervals. Numerous other contracts and commercial work is ongoing within the firm's considerable backlog.

THE CASE:

Bristol Harbor Group, Inc. (BHGI) is one of the leading naval architecture and marine engineering firms in the country. Constantly innovating and pushing work product to the limits, BHGI has years of experience providing naval architecture, marine engineering, and project consulting services to the marine industry.

THE COMPANY:

BRP is a global leader in the design, development, manufacturing, distribution and marketing of powersports vehicles and propulsion systems. Its portfolio includes Ski-Doo and Lynx snowmobiles, Sea-Doo watercraft, Can-Am all-terrain and side-by-side vehicles, Can-Am Spyder roadsters, Evinrude and Rotax marine propulsion systems as well as Rotax engines for karts, motorcycles and recreational aircraft. That lineup also includes a robust presence in the commercial workboat markets. BRP supports its line of products with a dedicated parts, accessories and clothing business. With annual sales of over CA\$3.8 billion from over 100 countries, the Company employs approximately 7,900 people worldwide. Combining thrilling performance with the most intelligent design and the cleanest outboard engine combustion technology available, the Evinrude E-TEC G2 outboard engines deliver up to 30% more torque, up to 15% better fuel efficiency, and up to 75% fewer total regulated emissions compared to leading four-stroke outboard engines. Available at BRP dealers, the E-TEC G2 engines also feature a distinctive, customizable look that allows consumers to perfectly match their boat. BRP's Evinrude engine line up, from 3.5 to 300 HP, offers customers superior value across a full range of applications.



BRP – EVINRUDE

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Email: Evinrude.Consumers@brp.com
 Website: www.evinrude.com

Director of Global Marketing & Strategic Planning: Olivier Pierini

THE CASE:

Evinrude has made a significant investment in new fuel emissions research resulting in the breakthrough invention of the Evinrude E-TEC G2 outboard engine. Released in 2014, the G2 is the cleanest combustion outboard engine in the world today. These direct-inject two-stroke engines deliver up to 20 percent more torque, up to 15 percent better fuel efficiency and up to 75 percent fewer total regulated emissions than leading competitive four-stroke engines.

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Ballast Water Management Technology

A CALGON CARBON COMPANY

BSRM – SeaHoss Marine Products



691 Cornwallis Drive
Mount Laurel, NJ 08054
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E-mail: brotkowitz@bsrminc.com
Website: bsrminc.com
CEO/President: Bruce Rotkowitz

THE COMPANY:

BSRM Inc. is a New Jersey-Based, family owned company that manufactures with recycled tire crumb rubber materials. The company has two main marine areas (among others) of concentration, namely (INSOPAD) for HVAC, Machinery Equipment, and (SEAHOSS Marine Pads) for deck tiles, anti-chafing pads, loading dock bumpers, and boat bumpers. Started in 2009, BSRM's main goal was to improve the environment by creating new and innovative products from recycled material.

THE CASE:

BSRM's deck tiles (patent pending) replace the old asphalt tiles that crack in cold and melt in heat. The HossPad Marine modular boat and loading dock bumpers and anti-chafing pads are made with recycled tire crumb rubber. They are formulated to withstand the elements of commercial marine use. They are unique as they are modular and can be changed on site to fit the specific need. The bumpers can be mounted with solid road or cable which is unique and patents are applied.

Chesapeake Marine Training Institute



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Hayes, VA 23072
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E-mail: information@chesapeakemarineinst.com
Website: www.chesapeakemarineinst.com
CEO/President: Amanda L. Symonds

THE COMPANY:

Chesapeake Marine Training Institute was founded in 1992. CMTI offers over 50 Coast Guard approved courses. The school takes pride in presenting professional seamanship skills and knowledge for mariners seeking Coast Guard credentials. CMTI also has full time license consultants to assist mariners through the Coast Guard application process. CMTI is a one-stop shop when it comes to applications, physical exams and drug screens, saving time and ensuring that your credential is issued in the most efficient way. In addition to standard curriculum, CMTI develops and tailor courses to meet the needs of the company or mariner.

THE CASE:

CMTI, a proven industry leader providing quality maritime training to thousands of mariners over the last 25 years, is widely respected for its service to the workboat community throughout the mid-Atlantic region. CMTI takes the time to ensure each mariner has the knowledge and skills needed in today's competitive environment.

DA West



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Friday Harbor, WA 98250
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E-mail: info@dawest.com
Website: www.dawest.com
CEO/President: Chris Raichlen

THE COMPANY:

Diesel America West (DA West) is a USA manufacturing and distributing company of high quality diesel powered solutions to a variety of industries in all locales. This 40 plus year old company is a woman owned family run business built on trust and the core value of 'doing it right the first time'. The firm sets itself apart by customizing orders, stocking parts, and providing top notch customer service. DA West offers Portable Diesel Powered equipment such as but not limited to Air Compressors, Fire/Pressure Pumps, Dewatering/Trash Pumps, Sludge Pumps, Fuel Transfer/Chemical Pumps, Pressure Washers, Hydraulic Power Packs, and Generators.

THE CASE:

Loadstar by DA WEST is at the forefront of emergency portable diesel equipment for the maritime industry. Manufactured in the USA using the highest quality components, these units meet regulations such as Subchapter M. Manufacturing over 30 products, the firm provides solutions for myriad maritime applications.

DASCOM Americas



34 Lakeview Court
Verona, VA 24482
Tel: (540) 904-0391

E-mail: kbryant@dascom.com
Website: www.sonarayled.com
CEO/President: Ron Acorn

THE COMPANY:

SONARAY LED lighting leads the way to a greener and cleaner tomorrow with exceptional lighting for the industrial, commercial, and maritime marketplace. SONARAY's mission is to create and contribute to a more intelligent and sustainable planet and better human condition by offering innovative LED lighting solutions. With a broad array of research, development, test and production capabilities and facilities, their experienced team is dedicated to producing only the highest quality LED lights. The OCEANRAY line of maritime flood lights are designed to provide safe, efficient, and long-life even under the most challenging and adverse conditions. A variety of beam angles, rugged design, anti-corrosive treating, and exceptional return on investment make SONARAY an excellent choice in brown or blue water applications.

THE CASE:

SONARAY LED Flood Lighting is rugged, durable, and offers a number of beam angles that are perfectly designed for marine applications. In ports, shipyards, and vessels, SONARAY lights the way for safe, bright, and cost-effective operation.

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NEW ENGLAND

Warwick, RI | rcarnahan@hilbgroup.com | hilbgroupne.com



THE COMPANY:

Eastern's original shipyard was established in 1976 for the purpose of constructing commercial fishing boats for the company's founder and President, Brian R. D'Isernia. As the owner of a fleet of commercial fishing vessels, Mr. D'Isernia ventured into the world of shipbuilding after learning first hand that the only way to get the type of vessels he wanted was to design the vessels, write the specifications, and build them himself. As he built and developed his own personal fleet of vessels, other professionals in the industry took notice and also began desiring their own custom built vessels. Soon customers in areas including New England, the Pacific Northwest, and Alaska were contacting Eastern with requests for customized fishing vessels. By 1980, 26 commercial fishing vessels had been constructed and delivered. Today's Eastern Shipbuilding can fulfill any type of custom vessel request, large or small. The sizable fleet of quality built Eastern vessels can be found from coast to coast and around the world.

PRIMARY PRODUCT / SERVICE:

In 1981, Eastern's diversification began with the delivery of its first Offshore Supply Vessels. Today, Eastern's history includes a portfolio of over 350 vessels and Eastern is one of the most diverse vessel construction companies as a result of its state of the art production line and fabrication

process. Eastern has built everything from Offshore Supply Vessels to Tugs, ATB's, Inland Towboats, a SWATH Vessel, Passenger Vessels, Ro-Ro/Passenger Ferries, Inland Transport Vessels, Barges, Fireboats, Research Vessels, Offshore Construction Vessels, Dredges, High Speed Passenger Vessels, Fishing Vessels, Steel Hull Sailing Vessels and more.

On September 15, 2016 Eastern Shipbuilding Group was selected to finalize its design and construct the first series of nine Offshore Patrol Cutters to replace the Medium Endurance Cutters currently in service. The Coast Guard program goal is to build 25 Offshore Patrol Cutters having a potential total contract value in excess of Ten billion dollars. Initially, Eastern has been awarded the detail design effort with a value of approximately \$110 million dollars. Construction of the first vessel is expected to commence in 2018.

THE CASE:

Eastern Shipbuilding Group was established in 1976 by CEO Brian R. D'Isernia and remains today a family owned business. Since 1981, Eastern's diversification is its success. Today, Eastern's portfolio of over 350 vessels making Eastern one of the most diverse vessel construction companies in the United States. Eastern has built from Offshore Supply Vessels to Tugs, Inland Towboats, RO-RO/Passenger Ferries, Dredges, Barges, Fireboats, Research Vessels, Offshore Construction Vessels, Fishing/Processing Vessels and more.



ESG's Steel Processing Building

Eastern Shipbuilding Group, Inc. - Allenton Facility is a 300 acre capable site for new construction. (2016)



YANMAR



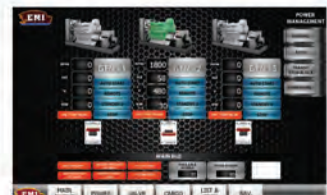
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Brunswick Commercial & Government Products

420 Megan Z
Edgewater, FL 32132
Tel: (386) 423-2900
Email: bcgpinfo@whaler.com
Website: www.brunswickcgp.com
CEO/President: Nick Stickler

THE COMPANY:

Tough missions call for tough boats. That's why boats from Brunswick Commercial & Government Products (BCGP) are designed specifically for the rigors of high-stress, high-speed and dangerous applications. Choose from the Boston Whaler lineup, Impact RHIB family or the Sentry aluminum fleet, all with thousands of customized options. Custom-build your boat with heavy-duty laminate schedules and stainless steel deck fixtures, along with a wide variety of hull lengths and horsepower. BCGP designs boats to be labor-saving and ergonomic, putting crucial controls right at hand. Unsinkable Boston Whalers

patrol offshore in big water or can dart in and out of tight inland shallows. A favorite of law enforcement and first responders, the stable and forgiving Brunswick Impact RHIB diminishes damage and wear with repeated boarding of other boats. The durable Sentry aluminum models with enclosed helms keep rough weather from slowing down the rescue – or the chase. BCGP was recently awarded a multi-year, multi-unit contract for the United States Southern Command. The single-award, indefinite-delivery/indefinite-quantity contract is for both 32-foot and 37-foot Boston Whaler Justice boats and will include spare parts, maintenance and training support for The United States Southern Command (SOUTHCOM) area of responsibility, which includes Central America, South America and Caribbean nations.

THE CASE:

Later this year, the company will be celebrating 60 years of Boston Whaler boats. Commercially built Boston Whaler boats have served in every major U.S. Military conflict since the Vietnam War. Today, the company continues that legacy by building the toughest boats on the water for militaries around the world.

THE COMPANY:

Since 1947, Carboline has expanded to over 25 manufacturing locations and numerous distribution centers strategically located around the world. Carboline has one of the most advanced global research and development facilities strictly dedicated to high-performance coatings, linings and fireproofing materials. The state-of-the-art facility, located in St. Louis, includes world-class development, testing and applications areas. Carboline has focused on innovation with many breakthrough product developments. In the early 1950s, Carboline developed and patented Carbozinc 11, which revolutionized painting for steel fabrication and it is still the premier zinc primer in the industry. Pyrocrete 241, a breakthrough cementitious fireproofing product with outstanding durability, was developed in 1978. Recent innovations include Carbotherm 551, an insulative epoxy coating that is extremely durable and protects against hot surfaces. Carbotherm 551 has found some unique uses since it was developed, including protecting asphalt barge decks from the hot temperatures that rise, allowing workers to walk the deck safely and preventing valuable energy from escaping. In 2016, Carboline released Phenoline Tank Shield, an expansion of its comprehensive tank lining product family. The Plasite and Phenoline families of



CARBOLINE

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Website: carboline.com
CEO/President: Chris Tiernay

tank linings are well-respected brands with decades of history and testing in hundreds of commodities.

THE CASE:

2017 marks the 70th anniversary for Carboline, a global leader in coatings, linings, and fireproofing. Carboline was founded by Stanley Lopata in St. Louis, Missouri, in 1947 and has grown into a global organization. Carboline's cutting-edge research and development center as a reflection of their commitment to remaining at the forefront of the protective coatings industry.



MEET THE HARVEST

Vigor was honored to build Savage Marine's new ATB tank barge, the most significant refrigerated liquefied gas carrier to be built in America in decades. The ATB will transport raw materials for The Mosaic Company, the world's leading integrated producer and marketer of concentrated phosphate and potash.

VIGOR.NET **MARINESALES@VIGOR.NET**



EDITORIAL CALENDAR 2017



JANUARY

Ad Close: Dec 15

Passenger Vessels & Ferries

Market: Training & Education

Technical: Thrusters & Inland Propulsion

Product: Interior Design & HVAC

SPECIAL REPORT:

Ballast Water Treatment

REGIONAL FOCUS: US WEST COAST

PVA Maritrends,
Jan. 29-Feb. 1, Seattle, WA
ASNE DAY, Feb 14-16, Crystal City, VA

FEBRUARY

Ad Close: Jan 17

Dredging & Marine Construction

Market: U.S. Coast Guard

Technical: Naval Architecture

Product: Fire & Safety Equipment

SPECIAL REPORT: VGP Compliance

Inland Waterways Conference,
March 7-8, Cincinnati

MARCH

Ad Close: Feb 16

Pushboats, Tugs & Assist Vessels

Market: Management & Navigation Software

Technical: Marine Coatings/Corrosion Control

Product: Workboat Engines

SPECIAL REPORT: Hybrid Workboat Propulsion

CMA Shipping 2017,
Mar 20-22, Stamford, CT
NACE Corrosion,
Mar 26-30, New Orleans, LA
Commercial Marine Expo,
Apr 26-27, New Bedford, MA

APRIL

Ad Close: Mar 16

Boatbuilding: Construction & Repair

Market: Cranes & Deck Machinery

Technical: Workboat Communications

Product: Electronics & Navigation Equipment

SPECIAL REPORT: Inland Port Development

Inland Marine Expo, May 22-24, St. Louis, MO
Tugology, May 23-24, Rotterdam
OTC, May 2-5, Houston, TX
Electric & Hybrid Marine World Expo
June 6-8, Amsterdam, NL

MAY

Ad Close: Apr 14

Inland Waterways

Market: Barge Building & Outfitting

Technical: OSV & Offshore Trends

Product: Cordage, Wire ropes & Rigging

SPECIAL REPORT: Subchapter M Towboat Rules

SeaWork,
June 13-15, Southampton, UK
MegaRust, June

JUNE

Ad Close: May 18

Combat & Patrol Craft Annual

Market: Shortsea Shipping

Technical: Lubricants, Fuels & Additives

Product: Pollution Prevention & Response

SPECIAL REPORT: Shipyard Exports

JULY

Ad Close: Jun 16

Propulsion Technology

Market: ATB's

Technical: Safety & Fire Prevention

Product: Shafts, Seals & Bearings

SPECIAL REPORT: Workboat Repair

AUGUST

Ad Close: Jul 14

MN 100 Market Leaders

Market: Boatbuilders

Technical: Marine Operators

Product: Water Treatment & Technology

SEPTEMBER

Ad Close: Aug 17

Offshore Annual

Market: Cargo Handling Equipment

Technical: Push Boats & Barges

Product: Deck Machinery & Cranes

SPECIAL REPORT: Regulatory Outlook

SNAME Convention
Oct 23-28, Houston, TX

Clean Gulf
Nov, Houston, TX

OCTOBER

Ad Close: Sep 15

Salvage & Spill Response

Market: Multi-Mission Workboats

Technical: Arctic Operations

Product: CAD/CAM Software

SPECIAL REPORT: Simulation Tech & Trends

NOVEMBER

Ad Close: Oct 16

Workboat Annual

Market: Outfitting Today's Workboat

Technical: Pumps, Pipes & Valves

Product: Deck Machinery

SPECIAL REPORT: The Marine Fuel Debate

Workboat Show
Nov, New Orleans, LA

DECEMBER

Ad Close: Nov 17

Innovative Products & Boats – 2017

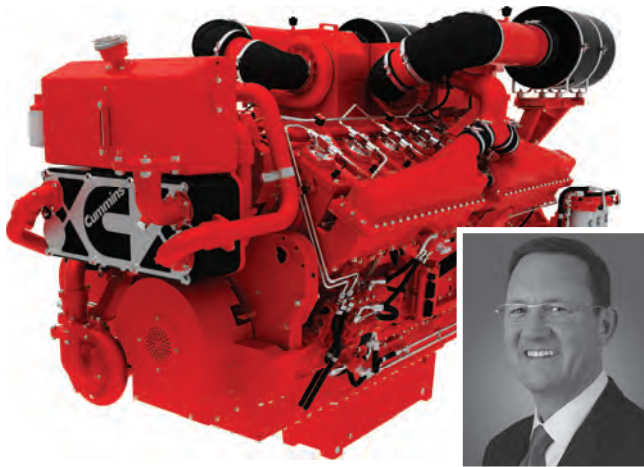
Market: Fire, Patrol & Escort Craft

Technical: Emissions Compliance

Product: Pumps, Pipes & Valves

SPECIAL REPORT: Top 10 Stories for 2017

The publisher reserves the right to update this editorial calendar. All planned features are subject to change in light of industry developments.



CUMMINS

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Executive Director Marine and Oil & Gas Segments: Jim Schacht

THE COMPANY:

Cummins Inc. is a global power leader, is a corporation of complementary business units that design, manufac-

ture, distribute and service diesel and natural gas engines and related technologies, including fuel systems, controls, air handling, filtration, emissions solutions and electrical power generation systems. Headquartered in Columbus, Indiana (USA), Cummins currently employs approximately 55,000 people worldwide, and serves customers in approximately 190 countries and territories through a network of approximately 600 company-owned and independent distributor locations and more than 7,200 dealer locations. Cummins earned \$1.4 billion on sales of \$19.1 billion in 2015. Cummins Inc. recently delivered the first four QSK95 engines for a marine application to longtime Cummins partner SEACOR Marine Holdings Inc. for installation into a 57-meter catamaran crewboat designed by Incat Crowther.

THE CASE:

For almost 100 years, Cummins has been providing reliable, durable diesels to the marine market with a broad range of power from 6.7 liters to 95 liters, including factory ReCon engines, marine generators, and a broad range of related technologies. Cummins also offers a global support network to ensure our customers success.

THE COMPANY:

Dellner Brakes runs its US operation from Charlotte, NC. The company is part of the 700-employee global Dellner Group, enabling them to utilize production, sales and service offices around the world. They are one of the world's leading suppliers of stopping, turning and locking systems and components. Dellner's brakes can be found in marine vessels of all sizes across the world, including ferries, workboats, and luxury yachts. Dellner Brakes AB is ISO 9001:2008 certified and their commitment to cutting edge design, robust assembly and precision testing means you can count on reliable products of the highest quality, every time. Dellner Brakes products come in a range of standard sizes and can also be custom built to meet specific needs. The unique design also contributes to lower fuel consumption, reduces load on the propulsion systems, reduces sea growth on the propeller and allows for easy, safe maintenance. Through its innovative modular design, Dellner can also provide larger systems, combining several brake assemblies or customized housings with several pistons, to deliver even more braking power, tailored specifically for customers' needs.



DELLNER BRAKES AB

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Website: www.dellner-brakes.com
CEO/President: Marcus Aberg

THE CASE:

Dellner Brakes is one of the world's leading suppliers of stopping, turning and locking systems and components. Their strong focus on innovation stretches back 50 years and their flexible, customer oriented approach allows them to continually adapt their products to meet customers' specific needs and changing market requirements.

Desmond-Stephan Mfg. Co.



P.O. Box 30
Urbana, OH 43078
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E-mail: Julia_DesmondMfg@yahoo.com
Website: www.SwirlOff.com
CEO/President: Robert McConnell

THE COMPANY:

Desmond Stephan Mfg. produces high quality and long lasting tools. With over 100 years of experience manufacturing Grinding Wheel Dressers. Desmond Stephan provides the longest and highest quality line of products, including the only complete line of dressers from the star tooth cutter type to precision dressers. The firm also carries a wide range of scarifying cutters to suit the many needs of cleaning applications for oil refineries, painters, river and harbor engineers, construction equipment, and the marine industry.

THE CASE:

The efficient Swirl-Off scarifier tool, from Desmond-Stephan Mfg., rapidly removes paint, rust, scale, barnacles, and other hard coatings from metal and concrete surfaces without heavy pressure. Using pneumatic tools, it removes tough marine growth underwater. It works easier, faster, and safer than scraping, sandblasting, or chemicals. Choose from three models with interchangeable cutters. The Desmond-Stephan Mfg. Company is over 100 years old and family owned. Their products are sold in 17 foreign countries and 100% made in USA and purchased in USA.

www.marinelink.com

Dometic



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Website: www.dometic.com
President: Scott Nelson

THE COMPANY:

Dometic's Durasea Air-cooled Systems are the solution to the problem of sand and mud being sucked up into the condenser. Instead of utilizing water cooled condensers in areas of extremely low depths, such as in shallow draft hull boats, the Durasea Air-cooled Systems can be utilized. The systems use the ambient air to cool the condensers and can be mounted on the deck or roof of the vessel, allowing workboats to operate in very shallow waters without affecting the air conditioning systems. The Durasea Air-cooled units are designed for exterior installation and engineered for exceptional resistance to harsh marine environments.

THE CASE:

Dometic leads the industry in smart solutions, reliable products with outstanding design. With various award-winning marine products, life on the water continues to improve for mariners everywhere.



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THE COMPANY:

Bernard P. McDonough created the company in 1945 by leasing barges from his construction company into the marketplace. Through a series of new and used barge additions, McDonough forged his company, expanding from the Ohio River to the Gulf of Mexico and eventually to the East Coast. His company was modeled around his fundamental philosophy of surrounding good equipment with very talented people. This recipe has yielded more than seven decades of dedicated service to its valued customers' marine transportation requirements. After 72 years, McDonough Marine Service continues Mr. McDonough's legacy as a talented, family owned organization, serving exceptional clients with one of the largest fleets of inland and ocean spud, shale, hopper, and cargo barges in the United States. McDonough Marine Service's core services are barge bareboat chartering, tugboat time charters, lump sum Project Cargo movements, and logistics management. These services are carried out by a modern fleet of 600 barges and four tugboats, dispatched from 14 fleet locations. The firm has offices in New Orleans, Houston, and Norfolk and has 46 employees.

PRIMARY PRODUCT / SERVICE:

Owning the largest fleet of deck barges available for charter on the market today, McDonough Marine Service offers the flexibility our customers need to secure the right barge for their marine transport and construction projects. Their extensive fleet of inland and ocean barges includes deck barges, spud and power spud barges, hopper barges and shale barges. The firm's barge rental solutions supply intermittent barge needs while removing the fleet costs

and compliance responsibility associated with barge ownership. These cost-effective barge solutions allow customers to focus on their projects and dedicate their capital to projects that benefit their business.

McDonough's deck barges provide advantages with open deck space for over-sized cargo, as well as shallow port access. These barges are built to the requirements set by the U.S. Coast Guard and the American Bureau of Shipping (ABS). McDonough Marine's Project Cargo service is dedicated to the planning, coordination, and management of the marine transport of your cargo throughout the lifecycle of customer's projects. Utilizing an extensive and diverse fleet of barges, availability and control of high-level boats, and specialized equipment, the McDonough project cargo team offers both flexibility and rapid response time as a single source provider for resources and management of your project cargo moves. With McDonough's barges, boats, and logistics experts dedicated to each job, the firm is able to provide the consistency in care, crew, and the control to reduce risks associated with damage and delay of your cargo. Because every rented barge needs a tow, McDonough Marine Service has invested in inland push boats, high eye level tugs, and strong industry relationships to supply customers with towing services they can rely on.

THE CASE:

McDonough Marine Service has been the leader in the deck, spud, and material barge chartering market in the United States for 72 years. The firm operates a fleet of more than 600 barges with 14 fleet locations within Gulf of Mexico, Upper Rivers and East Coast.



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For more information:
<http://bit.ly/TasmanSeaT2>

THE COMPANY:

Delta T Systems is the pioneer and world leader in modern marine engine room ventilation systems and equipment. Each system is custom engineered based on the parameters and requirements of a vessel's engine room and its engines and generators. These fans, dampers, moisture eliminators and control systems in the world are manufactured in order to fulfill those requirements. Delta T Systems strives to maintain an environment of continuous improvement and is on a life-long mission to improve and expand their products and service offerings with one to two new products each year. Recent highlights for the firm include the culmination of a three and a half year endeavor to design and gain U.S. Coast Guard approval for the new Slimline series of A60 rated marine fire dampers. Another highlight emanates from Delta T Systems' partnership with the prominent dry modular exhaust system manufacturers, Dinak of Spain. The partnership kicked off with a sixteen boat order for both dry stack exhaust systems and engine room ventilation systems for the Hornblower New York City Ferries contract.

THE CASE:

Delta T Systems' significance in the marine industry



DELTA T SYSTEMS

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Email: info@deltatsystems.com
Website: www.deltatsystems.com
CEO/President: Lynn Oien

hinges on the fact that they are the pioneers of the engineered marine engine room ventilation system, which they have developed and refined over the past twenty-five years. Delta T Systems' equipment has enhanced the performance and reliability of more than 15,000 vessels of all types around the world.

Eltorque



3921 SW47th Avenue
 Davie, FL 33314
 Tel: (954) 790-4635
 E-mail: elida.calero@eltorque.com
 Website: eltorque.com
 CEO/President: Arnstein Kjesbu

THE COMPANY:

Since the start in 1996, the company has developed a wide range of high performance actuators. Today, more than 75,000 Eltorque actuators have been installed on board over 500 Fishing and OSV vessels. The backbone of the Eltorque valve control solution is found in the actuators, which are based on permanent magnet motor technology. The actuators are highly intelligent units with no need for maintenance, designed to last the lifetime of the vessel. The end-users are provided with a cost-effective solution securing carefree remote control of valves.

THE CASE:

Eltorque is an Eco and user friendly unit that offers ease of big data collection while maintaining the smallest footprint on the market today. Eltorque offers full customized flow control solutions and is simple install. A hybrid cable houses both the power and CANbus cable in one line, allowing the system to be installed on a loop instead of the standard installation, saving time and money.

Fairbanks Morse Engine



an EnPro Industries company

3566 George Washington Memorial Hwy
 Hayes, VA 23072
 Tel: (804) 642-0123

E-mail: information@chesapeakemarineinst.com
 Website: www.chesapeakemarineinst.com
 CEO/President: Amanda L. Symonds

THE COMPANY:

Fairbanks Morse is the critical power solutions expert – a strategic partner and a trusted source for application-specific, fuel- flexible power systems that deliver optimal performance in mission critical applications. These applications include power generation – base load and standby power plants, and emergency back-up power for nuclear plants; and ship propulsion and shipboard power for the United States Navy and Coast Guard and commercial vessels. Fairbanks Morse reliable engine drive solutions also can be found in a wide range of municipal, institutional and industrial applications.

THE CASE:

Fairbanks Morse will be celebrating 125 years in business in 2018.

FCI Watermakers



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West Valley, UT 84120
Tel: (801) 906-8840
E-mail: info@fcewatermakers.com
Website: www.fcewatermakers.com
CEO/President: Scott McGuire

THE COMPANY:

FCI Watermakers is a family owned company that specializes in Reverse Osmosis Watermakers for marine use. For over 30 years FCI have engineered and built all products in-house, allowing FCI to produce a high quality product while keeping costs low for the end user. FCI's philosophy is to continuously implement new technologies into the design of its systems, making FCI watermakers the most reliable and efficient equipment available. FCI Watermakers design, engineer and build Reverse Osmosis watermakers from 1-1000m³ for a wide range of applications. Units are available for the pleasure, commercial, oil/gas, military and land based applications. All products are made in USA.

THE CASE:

FCI Watermakers is the leader in innovation when it comes to Reverse Osmosis watermakers. A technology forward company, FCI was the first to implement the Automatic Fresh Water Flush years ago and the first

and only company to offer fully automatic watermakers with digital electronics certified for marine use with

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Website: www.fptindustrial.com
CEO/President: Annalisa Stupenengo

THE COMPANY:

FPT has a strong commitment to partnership, providing customer focused tailored solutions. The firm offers engines ranging from 120-810hp. FPT has 7 R&D centers and 1,000 engineers dedicated to the development of industry-leading technology. The Cursor C90, available in 380, 620, and 650hp, provides 8.7 liters, with a six cylinder in-line configuration. It uses the latest generation electronically controlled Common Rail fuel injection system, with the rail integrated in the head cover. These features result in high efficiency and low noise, and reduced fuel consumption. The C90 is certified EPA Tier 3, IMO Marpol Tier 2, RCD Stage II, and meets the most stringent international emissions regulation.

THE CASE:

Building upon more than a century of experience in high-power Diesel engines and marine operation, FPT Industrial offers a complete range of products characterized by high quality, superb features, and broad application versatility – that guarantee maximum performance and efficiency even in the most demanding conditions.

Gnostech



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Tel: (215) 443-8660

E-mail: theresa.desantis@gnostech.com
Website: www.gnostech.com
CEO/President: James Espino

THE COMPANY:

Gnostech is an applied engineering and consulting company supporting the maritime industry, Department of Defense (DoD), Department of Homeland Security (DHS), and other government agencies. Gnostech offers maritime organizations a holistic and tailorable approach to secure operational systems by using state-of-the-market technologies, developing a comprehensive maintenance and sustainment program, and implementing automated solutions to eliminate vulnerabilities without disrupting maritime operations. A one size fits all cybersecurity solution is not sufficient for maritime organizations. As diverse as the maritime industry, so are Gnostech's offerings under the SafeHarbor products and services line. Gnostech is headquartered in the Philadelphia, PA metro area with an office in San Diego, CA.

THE CASE:

Cybersecurity is a growing issue for the maritime industry. Cyber threats pose significant security, safety and financial risks to shipping and offshore operations. Gnostech can safeguard both the integrity of maritime systems, assets, and facilities based on advance knowledge and expertise in the U.S. naval and maritime domains.



DAVID CLARK COMPANY

360 Franklin Street
 Worcester, MA 01604
 Tel: (508) 751-5800
 Email: sales@davidclark.com
 Website: www.davidclark.com
 CEO/President: Rich Urella

THE COMPANY:

David Clark specializes in providing communication solutions for high-noise environments. The firm's noise-attenuating headset systems are used worldwide in applications where clear communication is critical. An ISO9001 quality assurance system is designed to meet the most stringent testing standards to ensure product excellence. David Clark Marine Intercom Systems are installed on all manner of workboats – at work on patrol boats and military craft, off-shore service vessels, tug and tow boats, fire/rescue boats, and more. These systems are designed to withstand the rigors of the harsh marine environment with marine-grade components that resist salt, spray, shock and vibration at sea. The Series 9100 Digital Intercom System is fast becoming the communication system of choice for workboat and patrol boat crews. The Series 9100 provides clear headset communication for an un-

limited numbers of users, radios and other devices, with each user being afforded 4 mode selections to program to their unique job criteria. As an IP-based system, it can also accommodate a number of existing network ancillaries as well, resulting in a simple, cost-effective solution for all marine-based critical communications.

THE CASE:

David Clark Company has a proven track record of providing Wired, Wireless and Digital marine communication system solutions for more than 15 years. David Clark Marine Intercom Systems are currently being installed for crew communications on Coastal Interceptor Vessels (CIV) for the U.S. Department of Homeland Security, U.S. Customs and Border patrol, as well as the Cutter Boat-Over-The-Horizon (OTH) and Special Purpose Craft-Law Enforcement (SPC-LE) for the U.S. Coast Guard.



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HS Marine Propulsion



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 Ocean Springs, MS 39564
 Tel: (228) 875-6611
 E-mail: jake@hsmarineprops.com
 Website: hsmarineprops.com
 CEO/President: Peter Cheng

THE COMPANY:

As a distributor for Hung Shen propellers in the Americas, and equipped with sophisticated analytical tools, the HS Marine vision is to meet the challenges of operating in harsh environments. Whether trouble-shooting a vessel with vibration problems or developing custom designs for new construction, HS Marines tools, know-how and manufacturing capability delivers every time for conventional shaft-line vessels. The firm provides propellers cast in Manganese Bronze, Nickel-Aluminum-Bronze or CF-3 Stainless Steel up to 150 inches in diameter. In addition, they provide engineering consulting services in marine engineering and hydrodynamics. If it's underwater, they can analyze it.

THE CASE:

HS Marine Propulsion is an industry leader in engineered propellers for America's workboats. With engineering and manufacturing experience dating back to 1975, customers can trust that their propulsion system has been optimized for performance and durability. One recent highlight for HS Marine was a contract with Master Boat Builders to provide six pair of 120-inch Advantage Series propellers for six new Kirby ATBs.

HydraTech Engineered Products



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 E-mail: mike.fox@hydrattechllc.com
 Website: www.hydrattechllc.com
 CEO/President: Peter Blais

THE COMPANY:

HydraTech Engineered Products, LLC provides repair and rehabilitation products and services for various markets including power generation; municipal; maritime, petrochemical, oil and gas; and general industrial. HydraTech is a manufacture of epoxy and polyurea coatings, fiber reinforced composite repairs systems and internal mechanical pipe joint seals. Since 2009, HydraTech has been providing cost effective leak repair and trenchless repairs to various piping systems and the rehabilitation and protection of civil infrastructure and operating assets using custom engineered products and coatings.

THE CASE:

HydraTech manufactures products designed to repair, rehabilitate, and protect marine vessels and maritime structures to increase operating efficiency and reduce costly expenditures related to replacing aging utilities and assets. HydraTech offers various protective coatings to combat aggressive marine applications including ABS approved carbon fiber composite systems for structural repair of piping and similar apparatus.

HYDROCOMP, Inc.
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 Email: info@hydrocompinc.com
 Website: www.hydrocompinc.com
 CEO/President: Jill Aaron

THE COMPANY:

HydroComp was formed in 1984 and today is known worldwide for its software and services. HydroComp introduced the first version of the NavCad software in 1987. NavCad is still HydroComp's flagship product, with users in all corners of the world from design to construction to academia. In addition to NavCad, HydroComp's software products grew to include PropExpert, PropCad, PropElements, SwiftCraft, and SwiftTrial – programs for propeller sizing & analysis, propeller CAD, resistance and powering, and sea-trial & analysis. The firm serves customers in 60 countries. Many of the world's propulsion equipment manufacturers and research institutions count themselves among HydroComp's clients.

THE CASE:

Hydrocomp specializes in cost-effective R&D solutions, development of specialized tools, and solving ap-

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plied hydrodynamic problems. Their products and services are used by designers and builders, owners & operators, academics, propulsion equipment suppliers, governments, and militaries worldwide. Jill Aaron (and HydroComp) were awarded the Small Business Association New Hampshire Exporter of the Year for 2017.

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THE COMPANY:

OT&BE Corp. is an American naval architecture and marine engineering firm that specializes in the AT/B, or full oceans, and coastwise service articulated tug/barge design field. The firm has designed AT/B's for services as diverse as petroleum products service, to crude oil to chemicals, to gas carriers, to container carriers to PSV configurations, to Ro/Ro services and others. Robert (Bob) Hill of Ocean Tug & Barge Engineering Corp., of Milford, MA has specialized in the design of AT/B's for many years. Hill's name – in most maritime circles – is synonymous with the words “articulated tug/barge systems.” As probably the world's most experienced designer of large articulated tug/barge (AT/B) systems, Hill's success comes, in part, from a willingness to innovate. Ocean Tug & Barge Engineering Corporation and Robert Hill are the co-inventors of the Intercon Connection System. Currently, the firm is involved in the design of AT/B gas carriers, container carriers, clean product and crude carriers, and their attending tugs. Beyond this, the firm created the FacetTug concept, and has building to its design, gas carrier barges, petroleum carrier barges, and 13 AT/B tugs from 4 to 8000 hp.

Recent deliveries of OT & BE designs include SeaOne Maritime CGL Carrier AT/B's FEED Design, a Reinauer Transportation 150,000 BBL Ocean Class AT/B, a Savage Marine 20,000 Ton At/B Ammonia Carrier, three AT/B tugs for Moran Towing, two AT/B tugs for Kirby Trans-

port and another contract design for an AT/B Gas Carrier for an undisclosed operator. Beyond this, a 950 TEU High Speed Container Carrier Concept Design for Minyan Marine was provided as well as one FacetTug At/B tug delivered for Reinauer Transportation.

PRIMARY PRODUCT / SERVICE:

Naval Architecture and Marine Engineering services covering all aspects of AT/B design including concept design, contract and FEED design, production design, novel concepts, Finite Element Analysis of connection system support structures, lines development, model testing, CFD studies, piping, electrical, and machinery systems, structural design and 3d modeling, regulatory compliance, machinery selection, propulsion analysis - with over 23 years experience for the company itself and over 37 years AT/B design experience for the Principal.

THE CASE:

This firm has been a leader in the development of AT/B's in the United States since 1994. Hill's firm has had a hand in over 70% of the operational AT/B's in service in America – including, 80% of those built or converted since 1994. In large part due to Bob Hill's efforts, the AT/B is now a familiar standard in the U.S. flag fleet for coastal, Jones Act and some inland applications.





INLAND MARINE SERVICE

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Hebron, KY 41048

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Email: dhammond@inlandmarineservice.com

Website: www.inlandmarineservice.com

CEO/President: Cathy Hammond / David Hammond

THE COMPANY:

Inland Marine Service (IMS) offers services to keep vessels crewed with seasoned, highly skilled mariners. With over 500 employees and 30 years of experience on the river, dedicated safety practices, and highly trained crews, IMS is committed to providing customers with reliable, timely and cost effective solutions. IMS also offers insurance coverage, wherein IMS assumes all liabilities associated with daily operations of vessels. As an AWO approved marine management company, the company's services include vessel management, planned maintenance, compliance management, harbor services, liquid operations and shore-side tankering services, as well as river cruise line operations. IMS meets all compliance standards of Sub-M, TMSA2 and RCP. Notably, the firm recently engaged Campbell Transportation Company as a client.

THE CASE:

Inland Marine offers small and mid-sized maritime companies instant

Sub-M, SIRE/TMSA2 compliance. This provides a savings of \$300,000 to \$600,000 in the first year. IMS offers a cost effective solution to small and mid-sized companies that face significant Sub M compliance costs.



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Email: lhenning@elastec.com
Website: elastec.com
CEO/President: Jeff Cantrell

THE COMPANY:

Elastec began with the invention of the Smooth Drum Skimmer. The design was based on a five-gallon bucket that was accidentally tossed into an oil pit. The spinning bucket picked up more oil than water, and the oleophilic drum skimmer was born. Today, Elastec is the largest manufacturer of oil spill response equipment in North America and has products in 155 countries. Elastec won the X Prize Foundation's Wendy Schmidt Oil Cleanup X CHALLENGE with its patented grooved disc oil skimming technology. The company was also instrumental in managing the controlled burn operation during the 2010 Deepwater

Horizon incident in the Gulf of Mexico. Elastec Hydro-Fire Boom and American Fire Boom systems removed the most oil among all systems deployed in the Gulf earning the title for the "Longest Continuous Burn of Oil Spill at Sea." Elastec's skimmers are independently tested by Ohmsett to ASTM standards to verify performance claims. Elastec also manufactures a full line of oil containment boom, BoomVane deployment system, dispersant application systems, work boats, turbidity curtains for protecting waterways during dredging and construction; debris and trash containment for intakes and beaches; lagoon baffles for wastewater treatment plants and barriers for marinas, swim areas and fish protection.

THE CASE:

In 1990, Elastec began manufacturing oil spill response equipment. This year, American Marine (a division of Elastec) celebrates 50 years of manufacturing booms, barriers and turbidity curtains. Oil spills, trash, silt, aquatic weeds – they all flow downstream. Driven by the Clean Water Act and a passion for protecting waterways, Elastec's overarching mission is to develop simple, affordable solutions to keep water clean and marine life healthy.

THE COMPANY:

Euro Marine Ltd. has re-defined a hull-form concept that was originally conceived in the early 1950s. That original concept, had the potential for incorporating advantages of the other popular hull shapes, but eliminated the disadvantages. As the single engine propeller operation of the EML "Hydro-Multi-Lift" hull form does not push against the keel of the vessel, the vessel steering is not effected as in Deep V hull forms, thus the water entering the propeller area is clear of turbulent backwash from the keel. The EML "Hydro-Multi-Lift" hull design is on plane quickly and efficiently, conserving fuel for longer range and extended cone of interdiction coverage. The PI-65 is a tactically sized Coastal and Offshore Craft, designed to be a highly reliable combatant craft capable of operating from land or maritime platforms. As the role of the 600-foot warship becomes less effective in these times of piracy, terrorism and other growing security threats, envision a future where a new Naval concept emerges using a large number of small high-speed vessels capable of speeds of 50 knots. Upon orders to deploy for interdiction, PI-65 gas turbine powered boats can switch from electric APU fuel conservation auxiliary power to main turbines running at 75% power bringing the craft



EURO MARINE LTD.

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Email: info@pi-65.com
Website: www.euromarinepatrolboats.com/site
CEO/President: Bill Rigby

on plane to 50 Knots for the high intercept speed and to set course set course for simultaneous interdiction.

THE CASE:

Euro Marine Ltd. answers the call for small, Long-range offshore High-Speed Patrol, Interdiction and Surveillance Vessels, capable of operating in severe sea and weather conditions. Vessels can easily be equipped for law enforcement, coast guard and military might.

Jessup Manufacturing Company



J JESSUP
Adhesive Coated Films

2815 West Route 120
McHenry, IL 60051
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E-mail: azepp@jessupmfg.com
Website: www.jessupmfg.com
CEO/President: Rob Jessup

THE COMPANY:

Jessup Manufacturing Company is a global manufacturer of adhesive coated and laminated films, non-slip tapes, photo luminescent materials, and specialty graphics media. Jessup makes bulk materials and uses slitting, sheeting, laser cutting, die-cutting, printing and a wide range of other converting capabilities to create finished parts. Jessup also offers labeling, packaging, supply chain management, and logistics to seamlessly integrate with customers' work processes. Jessup is an innovative source for custom coating and converting. Jessup develops engineered solutions for a wide range of industrial and commercial applications, including those that require solvent-based adhesives and client-supplied materials. Jessup analyzes product requirements and designs a solution.

THE CASE:

Jessup Manufacturing supplies peel-and-stick, non-slip safety tapes and treads for traction on slippery decks and photo luminescent egress path markings for low location lighting. Jessup's served markets include commercial shipping, shipbuilding, offshore energy, and public safety. Products include NAVSEA approved Safety Track 3800, which meets MIL-PRF-24667C Type XI.

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Boatbuilding: Alive and Well on the Gulf Coast

The diverse backlog of four Gulf Coast builders is carrying the day in an otherwise lackluster market.

By Susan Buchanan

A host of diversified Gulf of Mexico shipyards have managed to keep their heads above water during 2-1/2 years of low oil prices that have hurt demand for vessels. They've done it by building ferries and inland barges, along with boats under the Foreign Military Sales (FMS) program. Demand for ferries and barges have grown, in part, because of government efforts to reduce pollution and cut congestion on the nation's roads, subways and buses.

Separately, shipyards are clinching orders under the Department of Defense's Foreign Military Sales program, which shrank in FY 2016 from a peak of \$46.6 billion in FY 2015, but could grow again with President Trump's plans to expand military spending. In addition, boat repairs are keeping some Gulf yards busy as owners of inspected tow vessels try to comply with new U.S. Coast Guard Subchapter M regulations.

Though boats serving Gulf oil production are stacked along the coast, demand for new ones hasn't disappeared completely. As drilling and development move further offshore, larger vessels are needed for deepwater operations. This month, *MarineNews* looks at four adaptable companies that have stayed alive – and thrived – during the weakness in oil prices.

Horizon Stays Hot in the GoM Sun

Horizon Shipbuilding in Bayou La Batre, Alabama, is a full-service yard, manufacturing boats using aluminum, steel and fiberglass. "Our current project for NYC Ferry is our most ambitious so far, with ten vessels to be delivered in less than a year and five delivered to date," Lance Lemcool, Horizon's Vice President of West Yard Operations, said last month. "Building these ferries uses many of our resources now,

Horizon Shipbuilding



Swiftships



FEATURE: SHIPYARDS

but all of our projects are important,” he said. “We turn out a range of vessels for any and all marine-market segments worldwide.” Horizon employs 350 builders and managers.

Under contract with Hornblower in San Francisco, Horizon and Louisiana-based Metal Shark are building a total of 19 aluminum ferries for New York City’s Economic Development Corporation. “Hornblower and NYC Ferry needed quality boats fast, and that’s what we’re providing,” Lemcool said. Hornblower runs NYC Ferry’s operations.

“We’ve developed a high-intensity production line, filled with these ferries and other aluminum projects,” he said. “Ferry construction for Hornblower has opened many doors for us and is good for our future aluminum-vessel production.”

Meanwhile, “we’ve made great progress in the production of two 100’ drive, AST tugs for McAllister Towing and Transportation—their first tier-4 engine installations,” Lemcool said. McAllister is based in New York. “We’ll deliver the first tug to McAllister shortly, launch the second one in a couple of months, and we’ve begun work on a third optional vessel,” he said. In addition to its Hornblower and McAllister projects, Horizon is building an 88’ bunker boat, and the shipyard is busy repairing and refurbishing vessels.

“We’re a forward-thinking company and see innovation as the way to stay competitive,” Lemcool said. “Our proprietary Gordhead Management Software has kept us on the cutting edge of shipbuilding management.” Gordhead software was developed by Horizon’s owner, Travis Short. Since Horizon began using it in 2015, “we’ve significantly reduced rework, and improved schedule performance, while reducing labor hours,” Lemcool said. With this software, the shipbuilding team can see a real-time, on-screen production schedule, with completed and unfinished tasks

and the project’s expected end date.

Gordhead Management Software won the 2016 Outstanding Achievement in Innovative Manufacturing Award from Alabama’s Economic Development Partnership.

Horizon stays up to date. “We use Ship Constructor 3D modeling software to build the boat on paper, reducing production issues,” Lemcool said. ShipConstructor Software Inc. is based in Canada. “And we use innovative, magnetic tools to cut the need for pad-eyes, reducing scars and burrs,” he said. “We consistently look for ways to produce vessels better, faster and less expensively, whether it’s with software, engineering or production techniques.”

Horizon prides itself on solid relationships with clients. “We build the boats our customers need when they need them,” Lemcool said. “Our customers are loyal because we treat them right, giving them good boats at good prices and without lots of change orders.”

Metal Shark Keeps Pace

With two production facilities, Metal Shark in Jeanerette, La. is a diverse, high-volume builder. Its Jeanerette yard turns out vessels weekly, building U.S. Coast Guard response boats; small and medium U.S. Navy Force protection boats; and U.S. Navy High Speed Maneuverable Surface Target vessels. Under the FMS program, Metal Shark has delivered nearly 200 boats in the past three years, out of its production of over 500 vessels in that span, to more than two dozen nations in Latin America and the Caribbean, Africa, Asia and the Middle East.

The company’s waterfront Franklin yard is expanding, with a new 200’ x 80’ vessel-assembly building and a 8,000 SF office building for its growing engineering and project-



www.marinelink.com

Conrad Shipyards



MIN 45



“Our propriety Gordhead Management Software has kept us on the cutting edge of shipbuilding management. We’ve significantly reduced rework, and improved schedule performance, while reducing labor hours.”

– Lance Lemcool,
Horizon’s Vice President of West Yard Operations

Images courtesy of Horizon

management teams. The Franklin yard delivered six New York City ferries from April to June; is working on a four-vessel, 150-passenger ferry order now for the Potomac Riverboat Company division of Entertainment Cruises; and will build two 105’ 150-passenger ferries for the New Orleans Regional Transit Authority. Work’s progressing on an 18-boat FMS 45’ patrol-boat contract for Vietnam, with the first six delivered this year. The yard is building 52’ Fast Attack Craft for the U.S. Navy, and this spring was awarded a Navy contract to build up to 13 Near Coastal Patrol Vessel cutters, to be based on a Stan Patrol design by Damen Shipyards.

In July 2016, Metal Shark was contracted by Hornblower’s HNY Ferry Fleet LLC to build 88’ Incat-Crowther designed, 150-passenger high-speed ferries for New York City. All six ferries were delivered on or ahead of schedule, between this April and June. In May, the company’s HB 102 ferry carried a load of riders on an inaugural NYC revenue trip.

“By incorporating the same, serialized building processes and project management tools that we developed to support our high-volume, military fleet builds, we built and delivered our six-vessel NYC Ferry order in what must be record time,” Chris Allard, Metal Shark’s president, said. “We did it six times at a rate of two per month.”

This January, Metal Shark was contracted to build four 88’ 150-passenger vessels for the Potomac Riverboat Company division of Entertainment Cruises. The first two are in production now at Franklin. Also in January, Metal Shark was hired to build two 105’ 150-passenger ferries for the New Orleans Regional Transit Authority for delivery next year.

In the past year, Metal Shark has announced some, but not all of its FMS contracts. In January, the firm delivered the first three 36’ “Fearless” high-performance, stepped-bottom aluminum center-console catamaran patrol boats to Puerto Rico’s Police Department. Additional PRPD boats are being produced in Jeanerette now. “We announced delivery of a 33’ “Relentless” collared center-console patrol boat to the Colombian National Police; the award of a 12-boat order for 38’ Defiant pilothouse patrol boats to the Dutch Caribbean Coast Guard; the delivery of the first six of an 18-unit fleet of 45’ Defiant patrol boats to Vietnam’s Coast Guard; and most recently, the award of a U.S. Navy FMS contract to produce up to 13 Near Coastal Patrol Vessels for Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras and other U.S. partner nations,” Metal Shark spokesman Josh Stickle said last month.

A growing player in the fire rescue market, Metal Shark in first-half 2017 delivered custom boats to fire departments in Miami Beach, West Manatee and Greater Naples, Florida, and to the Harrod’s Creek Fire Department in Kentucky.

Allard discussed the company’s new stock-boat program. “Leveraging economies of scale, we’re building stock hulls and re-purposing in-process production slots on a rotational scheduling basis,” he said. “As a result, we’ve been able to reduce vessel lead times on our most popular models dramatically.” Metal Shark’s in-house team of over 35 naval architects and marine engineers continually drives product development, Allard said. The ‘stock-boat’ program is just one more arrow in their quiver.

**Swiftships:
Exporting Quality, Bringing Back Profits**

Swiftships, LLC in Morgan City, La., builds small-to-medium-sized watercraft from steel, aluminum and fiberglass. Renamed in 1969, the company dates back to Sewart Machine Works, founded in 1942. For more than 70 years, this Gulf Coast firm has produced military and defense vessels, along with crew, supply and towboats, totaling over 630 hulls to clients in 52 nations. With more than 425 employees in the United States and overseas, Swiftships serves governments and companies in North and South America, the Middle East, Africa and Asia.

In 2008, Swiftships' co-production work with foreign governments grew when it signed a contract with Egypt. At this juncture, "Swiftships is co-producing eleven coastal patrol craft here in the United States for the Egyptian Navy," CEO Shehrazee Shah said last month.

To date, Swiftships has built dozens of vessels for Egypt, including steel and aluminum patrol boats, survey vessels and mine hunters. A year ago, the company won a U.S. government contract to produce four 28-meter-long Coastal Patrol Vessel kits for assembly at the Egyptian Ship Building and Repairs Company in Alexandria. Last year, eleven additional vessels were contracted for co-production in Egypt.

"In the past 12 months, our big successes have been the expansion of our footprint in shipbuilding and co-production with foreign navies, along with providing follow-on-technical support or FOTS to the Iraqi Naval Fleet and service life-extension planning or SLEP here at home," Shah said. FOTS programs are mostly outside the continental United States, while SLEP programs are domestic – with the U.S. Army, Navy and Coast Guard. SLEP programs are designed to lengthen a crafts' life beyond its initial 15 to 20 years.

Swiftships in 2009 was awarded an FMS contract by the U.S. Navy on behalf of the Iraqi Navy. The contract included establishing a ship repair facility in Umm Qasr. Since then, the company has delivered to Iraq 15 35m patrol boats, built in Morgan City. With a 2017 extension on this contract, Swiftships will continue providing maintenance to the Iraqi Navy and Coastal Defense Fleet. Together with the U.S. Navy, this program allows Swiftships to support a U.S. ally, Shah said.

Later this year in Morgan City, Swiftships plans to build two 75m Corvettes for Pakistan's Navy, with an option to produce two more in 2020. Corvettes are combat vessels with anti-submarine warfare and high-seas patrol capabilities. "Swiftships has partnered with Lockheed Martin to offer these 1,500- to 2,000-ton ships to the client," Shah said. "These vessels will provide cutting-edge capabilities to Pakistan during their Combined Task Force 150/151 mission in the Horn of Africa." Task Force 151 is a counter-piracy effort off of Somalia's coast.

"Swiftships has joined Lockheed Martin to offer Lockheed's Combat Management System on our 75m Corvette, which will integrate all fire-control technology," Shah said. "The vessel will be built and classed in accordance with ABS High Speed Naval Craft rules." The multi-mission Corvette is especially suited for anti-surface and anti-air operations, maritime security, day-and-night helicopter activities, combat search and rescue, and surveillance and



"By incorporating the same, serialized building processes and project management tools that we developed to support our high-volume, military fleet builds, we built and delivered our six-vessel NYC Ferry order in what must be record time."

– Chris Allard, Metal Shark's President

Images courtesy of Metal Shark

intelligence gathering, he said.

Conrad Shipyard: Investing in Ops

With five yards in south Louisiana and Texas, the nearly 70-year-old Conrad Shipyard in Morgan City, La. builds an array of vessels and does repair-and-conversion work. The company designs, builds and overhauls tugboats, ferries, liftboats, barges, offshore supply vessels and other steel-and-aluminum products for commercial and government clients.

In the past five years, Conrad has invested \$61.9 million in capital improvements to its five shipyards. These upgrades include new buildings for manufacturing, an automated panel line, installation of Computer Numerical Control manufacturing or CNC equipment, and development of the company's Deepwater South shipyard in Amelia, La.

"Our improvements have resulted in streamlined manufacturing, lower costs to customers and quality unmatched in the industry," Johnny Conrad, President and CEO, said last month. With the expansion of the Deepwater South yard, the firm can build multiple, large oceangoing vessels simultaneously. "Our new automated panel line lets us manufacture components more quickly and with extraordinary accuracy," Conrad said. "Adding more computer-aided manufacturing



"In the past 12 months, our big successes have been the expansion of our footprint in shipbuilding and co-production with foreign navies, along with providing follow-on-technical support or FOTS to the Iraqi Naval Fleet and service life-extension planning or SLEP here at home."

– Shehrazee Shah, Swiftships CEO

Images courtesy of Swiftships



Image courtesy of Swiftships



Metal Shark



equipment allows us to produce ships in serial production. With these innovations, we can offer completely tailored solutions to complex shipbuilding challenges. These innovations are an investment in our company's future."

Conrad has weathered the depressed offshore situation. "We've been fortunate during this down market to have added new orders to a significant backlog of repair and new-construction projects for government and commercial customers," Conrad's Senior Vice President and Director Dan Conrad said. "We delivered the Double Skin 510A, a 55,000-bbl capacity asphalt barge in mid-March, and will deliver three 80,000-bbl capacity barges in the fourth quarter of this year." The Double Skin went to Vane Brothers Co. in Baltimore; clients for the 80,000 bbl barges are proprietary. "We're building four Damen Stan 3711 tugs in serial production for Young Brothers, Ltd. of Honolulu, and we produced a fully compliant Subchapter M towboat, on spec, that underwent sea trials in late June and is ready for sale," Conrad said.

Under Subchapter M, which dates to the Coast Guard Act of 2004, the USCG has developed rules for the inspection of towing vessels.

Boats under construction at Conrad now include ten tugs ranging from 110' to 120'; four offshore tank barges of up to 80,000 barrels; six inland deck barges from 120' to 300'; two U.S. Army Corps' crane barges from 110'



"Our improvements have resulted in streamlined manufacturing, lower costs to customers and quality unmatched in the industry. Our new automated panel line lets us manufacture components more quickly and with extraordinary accuracy."

– Johnny Conrad,
President and CEO Conrad Shipyards

Images courtesy of Conrad Shipyards

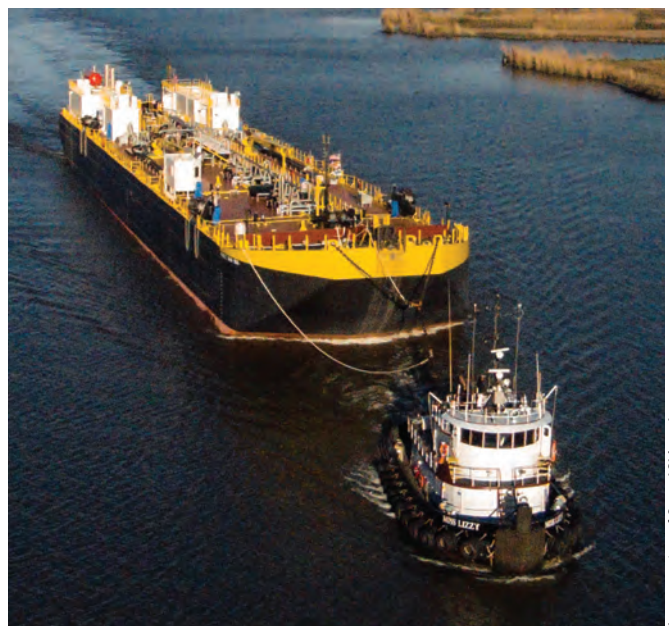


Image courtesy of Conrad Shipyards

to 300'; two 260' offshore deck barges; one LNG bunker barge; and various smaller barges.

Conrad's repair-and-conversion services include electrical, mechanical and propulsion work and hull repairs, along with large-scale conversions of ships and barges. Repair-and-conversion capabilities range from 100-ton inland tugs to 12,000-ton offshore dredging and construction vessels. "We employ a seasoned and motivated workforce of about 900, including an experienced multi-disciplined engineering team," Johnny Conrad said. "Conrad is deeply committed to employee safety, well-being and growth; to protecting the environment; and to giving back to the communities where we live and work."

Diversified Companies Buoy Gulf Communities

Flexible yards along the Gulf have withstood oil-price pressures by providing a variety of vessels to domestic and foreign customers. Boat builders who rely mainly on offshore oil-and-gas customers, however, have laid off thousands of workers in the last year or so. Diversified builders, using advanced manufacturing techniques and producing to high standards, have been able to compete with lower-cost, foreign yards and have created jobs that keep small, Gulf Coast communities afloat.

Susan Buchanan is a New Orleans-based business writer, specializing in energy, maritime matters, agriculture, the environment and construction. She holds a master's degree from Cornell University in agricultural economics and an undergraduate degree from the University of Pennsylvania.



Rolling on the River

This year's *Marine News 100* presents profiles of three inland waterways operators:

- Tidewater Transportation & Terminals, headquartered in Vancouver, WA;
- Carlisle & Bray Enterprises, based in Covington, KY; and,
- Campbell Transportation Company headquartered in Houston, PA.

The three companies demonstrate every day what it takes to survive and thrive as they integrate new equipment, confront difficult and shifting markets and, literally, weather tough operational environments.

By Tom Ewing

Tidewater tug Captain Bob and barges



Credit: Stephen Cridland Crown Point

TIDEWATER TRANSPORTATION & TERMINALS

Over 46 million tons of international trade arrives annually at the deep draft channel of the Columbia River. That deep draft becomes the inland Columbia-Snake River (CSR) navigation channel, heading east, transporting more than 12 million tons of freight to ports in Oregon, Washington and, eventually, 465 miles away to Lewiston, ID. Tidewater, established in 1932, is the largest barge transportation company on the CSR system. The company owns and operates a fleet of 16 towboats, 150 barges and four terminals providing liquids and solids terminaling and transloading.

This northwest passage presents numerous operational challenges. Elevation increases almost 750 feet from the Pacific coast to Lewiston. The John Day lock, for example, lifts 105 feet. "The waterway is also fairly shallow, only 14

feet," explains CEO & President Bob Curcio. "There are times that the river is running very low, so we could get groundings if we don't operate exactly in the channel area."

Wind is a challenge. The largest CSR reservoir is 76 miles long, giving rise to wind speeds of 40 mph and higher. "You can get up to 70 or 80 mph through the gorge," says Port Captain Brian Fletcher, "in that 76-mile pool, it's not unheard of to have 10-foot rollers."

Marc Schwartz, Maintenance & Engineering Manager, works with Tidewater's boat captains and other experts to develop customized vessels. These tugs "are not designed for use on the Mississippi," Curcio explains. "They can't be used on blue water." In fact, the specialty tugs are so different from ocean and river-going vessels that Tidewater struggles to retrain ocean and river tug captains new to CSR operations.

Campbell Transportation Company

Granite Point is Tidewater's newest boat. It is double-hulled, powered by Caterpillar 3516C Tier 3 engines, 102 by 38 feet, with a depth at full load of 11 feet, designed by Maine-based CT Marine and built by Portland's Vigor Industrial. Crown Point started operating in the summer, 2015. Ryan Point starts service in 2017. "By buying three new tugboats and retiring three, we'll be able to average a fleet that is less than 21 years old, which is a big change," says Curcio. "It's a major investment for a company and speaks to the fact that we're going to be around for a while."

The new vessels will comply with Subchapter M, and additionally, they can turn on a dime. "When you're going with the flow of a river, it's really difficult to do tight space maneuvering because you really don't want to go any faster than the river goes, but you still have to be able to turn the vessel," says Schwartz. "We're really fortunate that we got a rudder system and a steering system that handles the tow in all conditions."

CSR lock-and-dam maintenance is a challenge for Tide-

water and other operators. The Army Corp typically schedules annual maintenance for two weeks in March. Tidewater plans on that time for crew training. Unfortunately, the waterway infrastructure is so old that companies cannot depend on all the work being finished within two weeks. "It's a big disruption," says Curcio.

Tidewater's team includes several multi-generational families, people whose fathers and uncles started working for the company as far back as the 1950s. Curcio remarks that many people on his team "choose to be on the river because it's in their blood. We're culturally a Pacific Northwest company," he comments. "We care a lot about the employees, and it's resulted in generations working for the company and guys really enjoying what they do."

CAMPBELL TRANSPORTATION COMPANY

Campbell Transportation Company, Inc., is a fully integrated, privately owned, marine service company headquartered in the Pittsburgh suburb of Houston, PA.

“We’re moving more and more tank barges up and down the Ohio River for major petroleum companies. We’re focusing on that for the future ... We asked ourselves, what do we invest in? We knew we were going to be subject to a difficult market. We worked to develop a platform, a solid base for future growth.”

**- Peter Stephaich,
Campbell’s Chairman and CEO**



Campbell knows the Ohio River and its tributaries well – it’s been working those rivers for over 80 years. The company, with close to 500 employees, owns facilities in 15 communities along the Monongahela and Ohio Rivers, locations that provide harbor services, cranes, construction, barge services and new construction. Campbell’s transport service is much bigger, extending throughout the inland river system from Pittsburgh to Cairo, Minneapolis and Chicago to New Orleans, Paducah, KY to Mobile, AL.

The upper Ohio River has been important for Campbell’s success. That muscular, industrial region burned and exported a lot of coal. The bulk of that was moved by barge. For coal markets, times have changed, to put it mildly. Campbell executives, looking down from the bridge, so to speak, seek a far-sighted perspective for their company, a long view to position for opportunities that will include coal, but beyond coal also.

“2016 coal markets were tough,” explained Peter Stephaich, Campbell’s Chairman and CEO, “people were getting coal that they didn’t need.” It’s taken a year for inventories to shrink. 2017 is better and Campbell’s coal shipments have been up recently. “But not anywhere near where we used to be,” Stephaich added. Metallurgic coal (met coal) is more of a bright spot, compared to steam coal, for electric utilities. Campbell’s view is that coal is important and the company will keep working in that sector, particularly with met coal, serving steel producers. But overall, coal is a declining market sector and growth will come from other investments.

Another drag on rates and margins is too many barges.

Over capacity, for example, affected the grain market. “A lot of grain is moving,” Stephaich said, “but I don’t think that anyone is making any money.” He predicts it will take 3-5 years to correct this over capacity.

There’s no little irony in the fact that regional coal has been supplanted by regional, cleaner-burning natural gas. The upper Ohio region is at the forefront of huge natural gas plays, newly recoverable by hydraulic fracturing (fracking). This energy development is the main reason that Royal Dutch Shell is constructing a multi-billion dollar ethane cracker plant on the Ohio in Monaca, PA, 25 miles north of Pittsburgh. It’s expected to start-up in 2020. Development officials predict extensive economic benefits.

To be sure, energy and petrochemicals are on Campbell’s radar. They have delivered equipment and construction supplies for energy projects. “We’re moving more and more tank barges up and down the Ohio River for major petroleum companies,” Stephaich said. “We’re focusing on that for the future.”

Uncertain times gave Campbell’s team the space to review its internal “infrastructure,” Stephaich’s term, part of a deep-look evaluation and planning process. “We asked ourselves, what do we invest in? We knew we were going to be subject to a difficult market. We worked to develop a platform, a solid base for future growth.”

This introspection resulted in new and substantive investments including new software, IT servers, accounting systems, and, critically, personnel. The company now tracks all its boats in real-time, getting positioning updates



every 15 minutes.

Additionally, Campbell retains core, important old-school strengths: limited debt, access to capital, low overhead, and, importantly, its “deck hand school,” a career-pathway apprenticeship program. Because of its relatively small size, Campbell can be nimble, as situations warrant. “If we can find a contract for 50 barges,” Stephaich commented, “that’s good for us.”

Rebuilding is always critical. “We did a lot of upfront work in preparation for an opportunity when it came along,” Stephaich explained.

Indeed, opportunity came along in a big way this year when Campbell announced in May that it signed an agree-

ment with American Commercial Barge Line LLC to acquire certain affreightment contracts, four towboats and 155 barges for its Ohio River operations (the deal was completed June 30). Campbell now owns and/or manages 50 towboats and over 1,100 barges. “We wouldn’t have been able to do this if we hadn’t started the preparatory moves taken during our rebuilding,” Stephaich said. The new equipment positions Campbell to expand in new and targeted markets, in addition to coal.

Planning is important but the ability to move on those plans is even more important – that’s the work that secures the future. For Campbell, that’s likely another 80 years, at least!



“The merger just made sense,” Bill Bray commented. “Our utility customers asked us to do various things that we didn’t or couldn’t do, such as dredging and construction work. The Carlises were already helping us do a lot of those things.”

– William Bray,
CEO of Carlisle & Bray

CARLISLE & BRAY ENTERPRISES

In current form, Carlisle and Bray (C&B) Enterprises has been around just since 2011. But the company, which provides a full range of inland marine services, has an extensive Ohio River history. The Carlisle side of the enterprise started in 1966. Bray Marine in 1997. For years, the two companies worked side-by-side in the Ohio River market. Over the years, Rob Carlisle and Bill Bray realized their companies were increasingly working as a team. Consequently, in 2010, they started merger talks.

“The merger just made sense,” Bill Bray commented. “Our utility customers asked us to do various things that we didn’t or couldn’t do, such as dredging and construction work. The Carlises were already helping us do a lot of those things.”

C&B includes three maritime operations: C&B Marine, C&B Energy Services, and C&B Repair and Maintenance. Customers include power plants, manufacturers, coal and petroleum companies, the aggregate sector and agricultural operations. Robert W. Carlisle is C&B’s President. William Bray is CEO.

The company has 217 employees, 19 towing vessels and 100 barges. Its operating base extends from Pittsburgh, PA, to Cairo, IL, although it’s not unusual for work to extend beyond the 983 miles of the Ohio River, all the way to New Orleans. C&B moves over 1000 barges a month. (One of the company’s first assignments was rather unusual: an emergency call to recover a floating restaurant that had bro-

ken its mooring and was careening down the Ohio.)

In 2017, the company opened a new 160 foot, 1600 ton drydock in Hebron, KY, a move “that completes us,” Carlisle says, in reference to C&B’s range of services. C&B is working to integrate new vessels into its fleet operations. In 2014, the company ordered construction of three vessels, delivered this year: the Enterprise, 90 feet long, and 34 feet wide, 2600 HP and the Atlantis and the Discovery, each 60’ X 25’ with 1320 HP.

On inland waterways, new vessels, at about \$6 million each, are not casual investments. When taking receipt of the Discovery, Carlisle heard comments from fellow waterways operators who said that the Discovery was the first entirely new fleet boat to start operations on the Ohio at Cincinnati in 100 years.

The new vessels promise great benefits for C&B. For one thing, they are fast. On a break-in trip, with one open hopper barge, the Enterprise went downriver pool stage at 15.2 mph. It returned at 12.6 mph. Plus, the new vessels are efficient. Enterprise recently used 28 gal/hour of fuel with the river at pool stage pushing 15 loads. That’s less than a third of the fuel consumed by C&B’s older vessels which average 90 gal/hour. Upriver, the new vessel used 64 gal/hr. The round-trip average was just over 46 gal/hr.

Just as important, C&B’s team is carefully evaluating how to best integrate new vessel capabilities into overall operations. With dedicated daily service, for example, unusual or unexpected conditions can change predictable

Tidewater tug Challenger heading upriver with tow



“By buying three new tugboats and retiring three, we’ll be able to average a fleet that is less than 21 years old, which is a big change. It’s a major investment for a company and speaks to the fact that we’re going to be around for a while.”

– Bob Curcio, Tidewater CEO & President

operations, and the equipment required. The ability to respond with varying equipment sets can keep a project on schedule and on budget, and, of course, provide additional safety for crews.

C&B’s team is using their new vessel capabilities to com-

plement and augment the dynamic conditions that, really, define marine operations. This approach seeks to avoid interrupting or redirecting the dedicated, baseline operations of older craft, keeping those vessels on task. C&B’s managers can add value, selectively, to cover a range of

FEATURE: VESSEL OPERATORS



Credit: Tidewater Transportation & Terminals



projects and project sites, maximizing C&B's equipment and personnel. "We're increasingly getting better at getting the right mix of horsepower to meet customers' needs," Carlisle explained.

Like all responsible waterways operators, workplace safety is a core principle. C&B is an AWO member and RCP (Responsible Carrier Program) compliant for over 8 years. C&B has 5 SIRE boats, adding another level of security for customers. (SIRE is the Ship Inspection Report Program, an international safety and compliance database that includes tankers and barges, part of a tracking and reporting system within the Oil Companies International Marine Forum.)

For crews, C&B sets daily digital safety quizzes. Workdays start with safety meetings to review loads and operations. Crew members have "stop signs," allowing each

person to shut down a process or otherwise withdraw from dangerous conditions. Crews are expected to adopt a "buddy process" mentality: "You are at fault if you saw someone at risk and you didn't do anything about it."

For Rob Carlisle and Bill Bray, the 2011 merger is indeed an outcome greater than the sum of its parts. "From the time we put it together, we experienced an extreme amount of growth," Rob Carlisle said. "We continue in growth mode." With experienced leadership, new equipment and operational know-how, growth is no accident.

VEIXING VARIABLES: NO PROBLEM AT ALL ...

Unusually tough weather and river conditions? Persistent and challenging market conditions? The search for synergy and just the right mix of business decisions? No problem at all for this trio of inland river professionals. At a time when many operating variables are decidedly negative, in many different ways, segments and geographical locations, Campbell, Carlisle & Bray and Tidewater all keep rolling – on the river. And, that's a model that all of industry can emulate.



Tom Ewing is a freelance writer specializing in energy and environmental issues.

Triple Threat:

You've got (North American) options

Two longtime stakeholders and a new entry to the ballast water treatment battles all move towards U.S. Coast Guard approvals. The three U.S.-based OEM's all employ different approaches to the same problem.

By Joseph Keefe

The ratification of the IMO ballast water convention has been followed in short order by the U.S. Coast Guard's approval of not one, but four OEM BWT systems. More are in the pipeline. Earlier this year, ABS Regional VP Michael Michaud told listeners at a January BWT conference in Long Beach, CA that it is possible if not very likely that as many as 12 BWT systems in total could be approved by the end of the year. Looking at current numbers at this point in time, that estimate might be a little optimistic, but no doubt additional approvals are in the pipeline now.

Racing to the finish line are three U.S.-based manufacturers, all already in the testing process, and expecting approvals in the near future. Ballast water treatment systems must first get through a vigorous testing regime in order to obtain USCG type approval, including function, environmental, land-based and shipboard testing. Longtime ballast water treatment manufacturers Hyde Marine, Ecochlor and a new, but well-positioned entry, Envirocleanse, are poised to offer the estimated 60,000 vessels that may need ballast water treatment systems, a viable route to the Promised Land of compliance.

Looking at the American marine markets alone, it is true that a majority of the approximate 40,000 hulls won't need ballast water treatment systems. Those that do can look right here at home for that solution – no matter where they decide to install it. A quick look at all three provides encouragement to vessel operators worried about options, the availability of equipment, and sufficient numbers of approved systems.

HYDE MARINE

Hyde Marine is a U.S.-based manufacturer of UV ballast water treatment systems. As a U.S. manufacturer competing on the world market, Hyde Marine has been able to maintain a technical and operational advantage while matching market pricing and achieving regulatory requirements. Offering what Hyde self-describes as the smallest footprint on the market, the firm continues to provide leadership as Entry Into Force of the IMO Ballast Water Convention drives demand. And, it is likely that few other firms have been in the game longer.

Chris Todd, Executive Director, Calgon Carbon UV Technologies LLC (Hyde Marine) told *MarineNews* in July, "The Hyde GUARDIAN BWTS utilizes well-proven technology with filtration and UV-disinfection. The system was designed by ship engineers for ship engineers to be simple to operate and to withstand the rigors of a shipboard environment. With several hundred installations in service, we have a tremendous amount of field experience that has guided refinements of the system over the past two decades, and we are well positioned to service a wide variety of vessel types."

Hyde Marine has more than 30 years experience in diverse water treatment solutions and UV technology. Through its Hyde GUARDIAN BWTS, Hyde Marine was one of the first suppliers with a chemical free UV disinfection solution, receiving IMO Type Approval in 2009. Before that, Hyde Marine was one of the first to receive Alternative Management System (AMS) approval from the U.S. Coast Guard (USCG). Additionally, the company installed one of the first BWTS aboard a ship (M/S Coral Princess).

FEATURE: WATER TREATMENT

“The Hyde GUARDIAN BWTS utilizes well-proven technology with filtration and UV-disinfection. The system was designed by ship engineers for ship engineers to be simple to operate and to withstand the rigors of a shipboard environment. With several hundred installations in service, we have a tremendous amount of field experience that has guided refinements of the system over the past two decades, and we are well positioned to service a wide variety of vessel types.”

– Chris Todd, Executive Director, Calgon Carbon UV Technologies LLC (Hyde Marine)



Launched in 2014, the Hyde GUARDIAN Gold BWTS has a small footprint, an optimized operator interface and is updated to meet current regulatory requirements.

The Hyde GUARDIAN Gold BWTS allows for reduced ballast time, continuous and increased flow to ballast tanks and reduction in peak power requirements. Hyde Marine also boasts an impressive record of over 80 retrofit units installed and more than 470 systems sold, proof enough that the Hyde GUARDIAN BWTS is suitable for a broad range of treatment requirements, types of vessels, and new builds or retrofit installations. Today, Hyde Marine continues to build global relationships with reliable and proven authorized engineering and installation partners. Its strong presence, reputation, and experience in the BWTS market is proof of Hyde Marine’s combined expertise and commitment to excellence.

Hyde GUARDIAN Gold BWTS, offered in flow rates from 60 through 6000 cubic meters per hour, provides a good range output for small and large vessels alike. The Hyde GUARDIAN Gold is a medium pressure UV disinfection stage coupled with a fine mesh mechanical filter. According to Hyde, the firm has commenced testing for U.S. Coast Guard Type Approval under the DNV-GL Independent Laboratory. Testing will be done at the DHI Singapore laboratory, building on the experience and data gained through previous testing at the DHI Denmark laboratory.

ECOCHLOR

According to Ecochlor, the firm is on track to become the first U.S.-based BWTS manufacturer to receive U.S. Coast Guard Type Approval. Ecochlor also touts their

system as the first BWTS that will offer shipowners an alternative to UV or Electrochlorination, as well as being the only system that does not require treatment on discharge or neutralization. An impressive trio of ‘firsts,’ if those claims hold true. Like Hyde Marine, Ecochlor has been around for many years and is an experienced player in this sector.

According to Ecochlor, and due to Ecochlor’s patents, Ecochlor holds a unique position in the shipping industry as the only company utilizing chlorine dioxide (ClO₂) treatment technology for ballast water. The BWTS uses a two-step process to treat ballast water – filtration followed by disinfection with the well-known biocide, chlorine dioxide. The system’s effectiveness is not impaired by variations in salinity, temperature, turbidity, organics, and vibration, which can impact other treatment options. The rugged, scalable, modular system offers many installation and operational advantages. There are design options for hazardous area installations and the system has superior economic scale-up performance over other BWTS manufacturers.

The automated system is crew-friendly, easy to operate and is highly energy efficient and engineered for long life. Furthermore, the small size, low power, and low maintenance characteristics of the Ecochlor system make it ideally suited for installation on mid-sized vessels – such as the now iconic ATB’s that are so familiar to the U.S. coastwise trades – and then, all the way up to the world’s largest ships. Along with supplying highly effective technology, it has been Ecochlor’s long-standing goal to be committed to



“The Ecochlor Ballast Water Treatment System (BWTS) has no treatment or neutralization requirements during discharge. Furthermore, in a typical Ecochlor retrofit, only a single treatment system is required, with up to three chemical injection points connected to the vessel ballast lines. This allows for the treatment of water both, in the main ballast line, as well as the fire main. The Ecochlor System’s low power requirement is another attractive option for owners of bulk carriers.”

**– Tom Perlich,
President and Founder of Ecochlor**

the pursuit of regulatory approvals. With its Coast Guard Type Approval in final review, Ecochlor is positioned as a leader in the BWTS industry – offering a unique, patented technology that provides shipowners an alternative to UV and electrochlorination technologies.

Tom Perlich, president and founder of Ecochlor, told *MarineNews* in July, “The Ecochlor Ballast Water Treatment System (BWTS) has no treatment or neutralization requirements during discharge. Furthermore, in a typical Ecochlor retrofit, only a single treatment system is required, with up to three chemical injection points connected to the vessel ballast lines. This allows for the treatment of water both, in the main ballast line, as well as the fire main. The Ecochlor System’s low power requirement is another attractive option for owners of bulk carriers.”

Ecochlor’s BWTS systems can be designed to treat vessels with flow rates between 400 up to 16,200 cubic meters per hour. Recently, Minerva Marine selected Ecochlor for up to 30 vessels. Beyond that, and during this past year alone, the Ecochlor Ballast Water Treatment System (BWTS) has been installed on 12 tankers with ballast water flow rates ranging from 1,500 to 4,000 cubic meters per hour, at shipyards in China, Croatia, Portugal and Turkey. The firm reports eight additional installations have been scheduled for 2017, and Ecochlor has signed Purchase Option Agreements that have brought their total order book to around 80 vessels.

ENVIROCLEANSE

If loading ballast at maximum capacity – unimpeded by an in-line BWT System – sounds good to you, then maybe Envirocleanse, one of the newest entries in the BWTS sweepstakes, is the system for you. That’s because on the way to your next port, the tanks are treated, and then neutralized in transit – while employing real time monitoring to optimize dosing. The Envirocleanse inTank BWTS utilizes salt water and Electrochemical Activation (ECA) to generate Hypochlorite as the active substance to achieve ballast water discharge standards. The dosing module mixes one tank at a time where ballast water quality is assessed and the generated disinfectant is applied until the target Total Residual Oxidant (TRO) level is reached.

The circulated ballast water is returned through the patented in-tank nozzle mixing system that ensures even chemical distribution. After an initial hold time, the dosing module rechecks the TRO in each tank, applying more disinfectant if required. Prior to arrival in port, the dosing module checks the remaining TRO in the ballast tanks and applies Sodium Thiosulfate to neutralize any remaining active substance and the ballast water is ready for discharge.

The inTank BWTS does not filter the ballast water on uptake, which is different than most in-line systems. Importantly then, your cargo operations will never be impeded by ballast water treatment operations. To ensure consistent and effective kill of target organisms and



"We have admittedly been fortunate with much of our timing for market entry, some by design and some by luck. Several requirements have changed, even over just the last year. Being currently in the middle of our Type Approval testing however, we are able to incorporate the new G8 testing requirements, as well as all current guidance from The US Coast Guard and the EPA."

**– Matt Hughes P.E.,
Envirocleanse Executive VP of Marketing & Sales**

pathogens, the Concentration-Time (CT) treatment approach is utilized. The recirculation capacity enables monitoring and re-dosing to meet the target combination of oxidant dose and hold time. The ability to dose in-tank and re-dose ensures effective treatment regardless of organic and inorganic loads in the ballast water. And, while those advantages translate into real operational gains – and profits – the Envirocleanse BWTS delivers in many more ways, as well.

Envirocleanse LLC is a division of Charter Brokerage LLC, a Berkshire Hathaway company. Berkshire Hathaway, through their ownership of Marmon Water Technologies, also knows water treatment. The Envirocleanse entry into the market was anything but late. Matt Hughes, Envirocleanse Senior VP of Sales and Marketing told *Marine-News*, "We have admittedly been fortunate with much of our timing for market entry, some by design and some by luck. Several requirements have changed, even over just the last year. Being currently in the middle of our Type Approval testing however, we are able to incorporate the new G8 testing requirements, as well as all current guidance from The US Coast Guard and the EPA."

The inTank approach, with no filtration, has a very small amount of work required in crowded pumprooms or machinery spaces. What this means is that the installation team can install the piping and equipment so as to remove any bottle necks. This reduces the total time for in-

stallation (compared to inline treatment systems), making refit within a 10 day period practical. The (comparatively) small footprint, with no pumproom installation necessary, makes Envirocleanse ideal for a workboat on which space will always remain at a premium.

Envirocleanse expects U.S. Coast Guard regulatory approvals to occur in the first quarter of 2018. Already commissioned on the Golden Bear testing facility in California and having been through pilot testing, the system has already passed the first couple of tests.

As the Envirocleanse BWTS entry marches quickly towards regulatory approvals, vessel owners suddenly have a new option – one which costs less to install, less to operate and one which doesn't impact cargo or ballast operations. If that sounds like the full package you've been waiting for, then perhaps there is a 'silver bullet' for BWTS compliance.

LOOKING AHEAD

The global ballast water treatment regulatory labyrinth is finally coming to a head, more than 15 years after the issue came to light. Three U.S. firms find themselves in the thick of that process, all looking ahead to U.S. Coast Guard approvals in the near term. That's good news for North American workboats and blue water traffic alike. And, it is in part why this trio came to be a part of this year's MN100 lineup.



THE COMPANY:

R.W. Fernstrum & Company set the standard in marine heat exchangers over 65 years ago, building a reputation focused on innovation. Today, its commitment is to continual improvement, ensuring that customers have quality, reliability, and the latest in cooling technologies on your side. Over the years, R.W. Fernstrum has grown into a worldwide organization with more than two dozen representatives across 6 continents. Focusing exclusively on marine cooling, this third-generation, family-owned business has built a respected reputation throughout the industry for exceptional quality and service.

2016 was a busy year for the firm. Before that, R.W. Fernstrum completed its office expansion in 2015. Recent notable projects include the Citywide Ferries (operator Hornblower; built by Metal Shark and Horizon); SCF Marine Push Boats (operator Marquette Transportation; built by C & C Marine and Repair); Harvey Gulf Construction Vessels (built by Eastern Shipbuilding); Edison Chouest Ocean Tugs; Expansion of Florida Marine Towboat Fleet (built by Eastern Shipbuilding); Washington State Olympic Class Ferries (built by Vigor); Western Towboat Tugs; Foss Arctic Class Tugs; and the Louis Dreyfus Shallow Draft Pushers (Brazil).

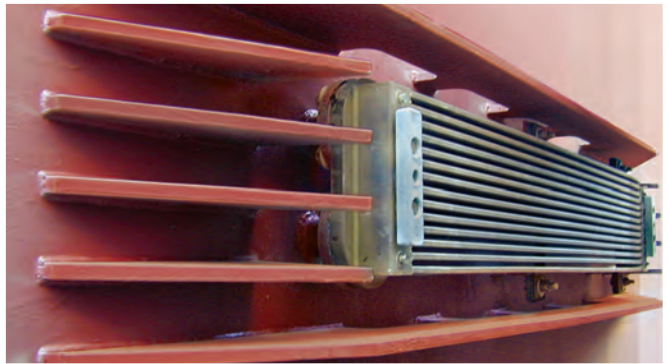
PRIMARY PRODUCT / SERVICE:

R.W. Fernstrum & Company, a global leader in engineering and manufacturing keel cooling technologies, came to fruition in 1945 when Robert W. Fernstrum patented the first rectangular tube keel cooler with an angled header for the United States Army and Navy. During World War II, the U.S. Navy encountered engine cooling problems with their landing craft and required a new closed circuit cooling system. After intense

research, Mr. Fernstrum developed the basic keel cooler design that is still used today. The GRIDCOOLER Keel Cooler has evolved over the years into a line of keel coolers that offers nearly limitless variations to fit a particular application. R.W. Fernstrum today has more keel cooling related patents than any other company. In the workboat and brown water sector, Fernstrum applications and solutions can be found on a myriad of platforms, including ATB's, Barges, Dredges, Escort/Specialty Tugs, Inland River Boats, Landing Craft, OSV's, Passenger Vessels & Ferries, Pilot Boats, Push Boats and many other hull forms. Fernstrum is also active in repower and wind/tidal energy projects.

THE CASE:

Founded by Robert W. Fernstrum 67 years ago, R.W. Fernstrum & Company is currently run by its third generation of Fernstrum. This long-tenured maritime staple has seen its fair share of maritime cycles, and in today's challenging market it is not standing still. The company is digging for, and finding, business in all four corners of the world. The company has recently expanded its headquarters with modern front office facilities, and the main workshop includes a number of new machines to keep manufacturing efficient. This investment has manifested itself also in a broadening of the traditional Gridcooler Keel Cooler line. Whether the cooling challenge is WWII landing craft or an EPA Tier 4 engine, R.W. Fernstrum stays focused on the mission at hand. Their strength is heat exchange. Whether it's cooling or heating, it is heat exchange. That's R.W. Fernstrum's core strength. Now serving that market with a number of different product lines, the firm can bring those together and provide a packaged solution.



JonRie InterTech LLC



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CEO/President: Brandon Durar

THE COMPANY:

JonRie InterTech is a leader in the Design, Manufacture and Start Up of Marine Winch Systems. JonRie has over the years provided reliable systems to the tugboat & dredging Industries as well as to the Military. JonRie service its equipment as well as existing systems and maintains parts support to serve the Industry. Whether you need to upgrade existing equipment, build new equipment or modify your controls, JonRie can fulfill most any task. From New Fabricated Marine Winches to Electrical Control panels to Custom Hydraulic Power Units, no Job is too big or small.

THE CASE:

JonRie for the last 18 years (38 years for the principle) has been designing and building innovative deck equipment for the tug and barge industry. JonRie has also been supporting the Dredging industry and US Navy with high tech and reliable equipment. Quite simply, JonRie is a leader in the design and fabrication of high tech deck equipment.

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 Email: klarson@fireboy-xintex.com
 Website: www.fireboy-xintex.com
 CEO/President: Larry Akins

THE COMPANY:

Fireboy-Xintex, Inc. has been a leader in clean agent fixed fire suppression systems for over forty years. This company supplies clean agent systems using HFC-227ea (FM-200) and 3M Novec 1230 in several configurations. CG/MA se-

ries are pre-engineered systems capable of protecting up to 1,800 cu. ft. (51 m3). GA series are larger pre-engineered systems that protect spaces up to 4,000 cu. ft. (113.2 m3). FES Engineered systems are available for spaces up to 17,500 cu. ft. (500 m3). Fireboy-Zintex is also a leading supplier of Gas (Gasoline, LPG, CNG and LNG) and Carbon Monoxide Detectors and alarms, in addition to liquid level monitoring. Xintex detectors have been protecting boats and other vehicles for over thirty years. Elite CPM and RSM Fire detection systems are also available for larger yachts and commercial watercraft. Fireboy-Xintex also manufactures Aetna Engineering precision digital tachometers to the marine and other industries.

THE CASE:

Fireboy-Zintex is a leader in fire suppression and fire detection systems. New systems use 3M Novec 1230 fire protection fluid with a lower global warming potential. Their Elite RSM detection system is a reasonably priced USCG approved system for most tug and workboats and the new CMD5-M CO Alarms are also an industry first using the latest sensor technology. The firm has also received recent Innovation Awards for extinguishers with 3M Novec 1230.

THE COMPANY:

For more than 60 years, Gladding-Hearn Shipbuilding has built steel and aluminum commercial vessels. Located on 7 acres on the deepwater Taunton River in Somerset, Mass., the family-owned and operated shipyard counts more than 425 vessels built as proof of its longevity and vessel reliability. A total of 40 customers own 125 Gladding-Hearn vessels. With in-house naval architecture and engineering capabilities and a cross-trained workforce, Gladding-Hearn is well-known for applying some of the most advanced shipbuilding techniques that rival many bigger yards, while still providing the personal customer service of a smaller yard.

THE CASE:

Since 1955, Gladding-Hearn has been synonymous with pilot boats, having built more launches operating in the United States than any other shipyard. In 1978, the yard joined forces with designer C. Raymond Hunt to build the first launch with a deep-V hull, soon to become the industry standard. In 1977, the shipyard delivered America's first Z-drive tractor tug. An Incat Crowther licensee since 1987, Gladding-Hearn became the second shipyard in the



GLADDING-HEARN SHIPBUILDING, DUCLOS CORPORATION

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 Website: www.gladding-hearn.com
 CEO/President: Peter Duclos & John Duclos, co-President

country to build high-speed passenger catamarans and has built the majority of East Coast and Great Lakes fast ferries. In 2014, the shipyard built the first pilot boat application of Volvo Penta's IPS drives in the United States. For more than a decade, Gladding-Hearn has maintained a healthy backlog of orders even during the industry's most austere times. Nearly 90 percent of Gladding-Hearn's business is from repeat customers. Recent high profile deliveries include the 5th 165'/599 passenger, mono-hull sightseeing vessel to Circle Line Sightseeing Cruises, New York City.

Karl Senner, LLC



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CEO/President: Ralph Senner / Karl Senner

THE COMPANY:

Karl Senner, LLC provides the maritime community with the highest quality marine propulsion equipment. Premium products, backed by superior service allow Karl Senner's customers to optimize vessel performance, safety, and operating hours. Karl Senner, LLC is the exclusive sales and service representative for Reintjes Marine Transmissions, Steerprop Azimuth Thrusters, and EPD Marine Electrical Systems throughout North America.

THE CASE:

2017 marks the 50th anniversary from the first Reintjes Gearbox sold in the United States. In 1967, Karl H Senner sold the very first Reintjes Gearbox to Dickie Gonsolin of Lebeouf Towing. Since that time Karl Senner, LLC has grown to become one of the largest suppliers of Marine Gearboxes in North America.

Laborde Products, Inc.



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Website: www.labordeproducts.com
CEO/President: Brian Laborde

THE COMPANY:

Laborde Products goal is to provide engine solutions that eliminate unscheduled downtime. Focused on the commercial marine and industrial markets, Laborde specializes in the introduction and development of foreign engine brands in the US market, providing sales, service and support for their engine brands through their facilities in Covington, LA and Houston, TX and through an extensive dealer network throughout their territories. Recently, Laborde Products performed a 'Start-Up' on the first of four new vessels for Waterfront Services and CGB. These vessels will support the Waterfront Services fleet operations in Cairo, Illinois.

THE CASE:

In 2001, Laborde Products sold the first Mitsubishi Marine Engine into the U.S. commercial marine market. Since then, Laborde and Mitsubishi have worked closely with the marine industry to provide engine solutions designed to simplify operations and deliver reliable engine performance to our customers. Mitsubishi is the only EPA certified simple mechanical commercial marine engine in the market today.

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 Website: www.glosten.com
 CEO/President: John A. Springer III, PE



THE COMPANY:

Glosten is an employee-owned full-service consulting firm of naval architects, marine engineers, electrical engineers, and ocean engineers. Founded by Larry Glosten in 1958, the firm's design experience includes research vessels, passenger/car ferries, tugs, barges, dredges, and special purpose platforms. Glosten has developed specialized expertise in hydrodynamic analysis, climatology, and risk analysis to serve vessel operators, marine civil engineers, and contractors performing challenging in-water projects. The Glosten team consistently provides innovative, cutting-edge engineering and design solutions guided by broad-based practical marine experience. Many of Glosten's engineers have had seagoing experience, and six staff members have US Coast Guard operating licenses. Glosten's Massachusetts-based subsidiary, Noise Control Engineering, LLC,

is a premiere acoustical and structural engineering consultancy specializing in noise and vibration measurement and control for marine applications.

Glosten recently delivered the final design and specifications package for the replacement of Alaska Marine Highway System's aging M/V Tustumena. The 250 passenger / 60 vehicle / 330' Ro-Ro passenger ferry will be longer, wider, faster, and offer more passenger and vehicle capacity than its predecessor. The design incorporates the latest hull form development technologies, resulting in a 20% reduction in resistance and significantly lower fuel consumption and operating costs. The vessel's design meets the new EPA air and water emission standards and offers Alaskans a cost effective, state-of-the-art ferry to traverse the demanding conditions of the state's marine highways.

THE CASE:

Glosten has a depth and breadth of experience that spans every sector of the marine industry. From developing ballast module retrofit programs to the contract design of a 70' hybrid catamaran passenger ferry, their team brings a deep commitment to partnership and a demand for excellence – every project, every time.

THE COMPANY:

Using dual band technology with both GSM and Iridium satellite networks, GPLink is an invaluable tool designed to help keep the world's commercial boats on the water longer and increase their bottom lines. GPLink's remote monitoring, support & notification system maximizes productivity. Commercial vessel and fleet owners can generate customizable reports for fuel consumption and engine operation helping to comply with SEEMP guidelines. The GPLink system and monitoring service can easily pay for itself in the first year through fuel savings and early detection of engine abnormalities. Customers receive instant notification of alarm conditions or unauthorized movement and technicians can view and respond to alarm conditions remotely, in near real-time. GPLink's Remote Tracking, Monitoring and Diagnostic Solutions for high horsepower vessels remotely plots asset locations while also monitoring fuel consumption, idle time, engine hours, speed, engine load and more. Comprehensive reporting allows vessel managers to identify abnormal or wasteful behavior patterns. GPLink's partnership with Wheelhouse Technologies creates a comprehensive perspective on vessel upkeep through seamless integration to the Wheelhouse marine maintenance system. With



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 Website: www.gplink.com
 CEO/President: Dan Webb

the breadth of information captured by GPLink and the robust infrastructure of Wheelhouse's Marine Maintenance Systems; commercial vessels can enjoy the benefits of real-time vessel monitoring, tracking and support. The easy-to-use interface charts the course to proper vessel maintenance, spare parts management and document tracking.

THE CASE:

GPLink is a capable remote diagnostic tool available for high horsepower systems. Globally, GPLink helps vessel owners and fleet managers by remotely plotting asset locations while also monitoring engines & critical systems. GPLink also helps to secure & protect high horsepower assets.

Lincoln Electric Canada



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CEO/President: Adel Mir

THE COMPANY:

Lincoln Electric Canada is a global manufacturer and the market leader of the highest quality welding, cutting and joining products. The firm's enduring passion for the development and application of its technologies allows them to create complete solutions that make customers more productive and successful. The firm distinguishes itself through an unwavering commitment to its employees and a relentless drive to maximize shareholder value.

THE CASE:

Lincoln Electric Canada is both a leader and innovator in creating complete welding solutions for the marine manufacturing industry, specifically to aluminum manufacturing. From consumables to machines to R&D and technical services, the firm always looks at finding ways to help and partner with customers in finding the most efficient solutions. In a nutshell, the firm provides the highest quality welding, cutting and joining products and technical service.

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*Sizing of units are based on sewage factors.

Lloyd's Register (LR)



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Website: www.lr.org

Marine & Offshore Director: Nick Brown

THE COMPANY:

Lloyd's Register (LR) is a global engineering, technical and business services organization, operating across many industry sectors, with some 8,000 employees in 78 countries. With over 120 marine auditors and surveyors in North America alone, LR is ready to help the industry further its commitment to a culture of safety through the Responsible Carrier Program and Subchapter M regulations. As a U.S. Coast Guard Recognized Organization (RO) and approved by the American Waterways Operators (AWO) as a Responsible Carrier Program (RCP) third-party organization, LR can help to seamlessly integrate multiple standards and services, including: TMSA, SERS, ISM and Training.

THE CASE:

Despite not always being covered by international regulations, the small and specialized ship segment should not be ignored by class societies. LR is a leader in this segment, providing services to some of the biggest tug operators in the world and specializing in delivering tailored solutions to clients giving peace of mind that operational risks have been mitigated.

MarineCFO



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Website: www.marinecfo.com

CEO/President: David Hanowski

THE COMPANY:

Marine CFO delivers Cloud, hybrid and mobile solutions tailored for the Workboat Industry. The Vessel 365 application was specially designed to also help operators with safety, compliance and other recordkeeping needs under Subchapter M/RCP and ISM. Crew members can easily create and record eLogs, Safety Assessments, Planned Maintenance, Notifications, and Documents. The system is supported by a smart vessel/shore replication system. MarineCFO has remained dedicated to developing its people, solutions, strengthening services, and building trusting relationships with clients and industry.

THE CASE:

Delivering innovative and cutting edge solutions powered by the cloud, and designed to address the needs of the U.S. tugboat, towboat and barge industry, MarineCFO's mission is to provide the most comprehensive suite of software, cloud, hybrid and mobile applications available for the marine transportation industry. Lloyd's Register North America and MarineCFO recently teamed up to offer one simple and comprehensive solution for vessel compliance, including Subchapter M, ISM, Alternative Service Delivery (ASD), and the Responsible Carrier Program (RCP).

Massachusetts Maritime Academy



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President: RADM Fran McDonald

THE ACADEMY:

Massachusetts Maritime Academy offers seven undergraduate Bachelor of Science degrees and two graduate Masters of Science programs. The regiment of cadets is comprised of students from around the globe. The academy operates a training vessel used to acquire sea service for the cadets. Two tugs (Alert and Hercules) and a barge support the Mate of Towing program. The Academy has a vast array of simulators used for undergraduate and professional mariner training. The engineering program has a live steam plant with a condensing turbine used for training along with multiple live and static machinery including diesel, gas turbine and steam turbines.

THE CASE:

Massachusetts Maritime Academy has been training deck and engine licensed seafarers since it opened 125 years ago. The academy now brings in a class of 500 cadets of which fully one-half are USCG license track students. Massachusetts Maritime Academy also offers professional seafarer training through a variety of 22 USCG approved courses offered under the Division of Continuing Education.

HERBERT ENGINEERING CORP.

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CEO/President: Spencer Schilling



THE COMPANY:

Herbert Engineering Corp. (HEC) is an employee owned corporation founded in 1963 with offices in the United States (Alameda, CA and Annapolis, MD) and several locations overseas. HEC is actively involved in the design of ships, marine transportation systems, and offshore structures. HEC's primary clients include shipowners, operators, charterers, shipyards, and government agencies. HEC's primary area of expertise is in the conceptual, preliminary, and contract design of commercial vessels and selective offshore vessels. HEC has extensive experience in newbuildings and conversions of bulk carriers, ATB's, Ro-Ro's, LNG carriers, tankers, and FPSO's. HEC has been fortunate to have relationships with clients looking for innovative and cost effective solutions, and who are willing to venture beyond "current practice." HEC services include general naval architecture and marine engineering support services, such as detailed structural design and analysis, mechanical system design

and analysis, construction/repair inspection, vessel performance assessment and optimization, cargo securing optimization, 3D laser scanning, and analysis in support of class and flag/port state requirements. Notably, HEC is joint owner with ABS of a leading stability software company, Herbert-ABS Software Solutions. Recent significant contracts in the workboat sector include concept designs for LNG fuel systems, evaluation of LNG propulsion options and preparation of advisories for LNG bunkering, along with concept de-

signs for ATB bulk carriers.

THE CASE:

HEC is a leading naval architecture and marine engineering consultant firm with many years of experience with both ocean going and coastwise vessels for both domestic and international service. Areas of expertise include new vessel design, modifications, major repairs and performance improvement. Clients include many of the major U.S. vessel operators and the U.S. government.



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THE COMPANY:

Robert Allan Ltd. is Canada's most senior consulting Naval Architectural firm, established in Vancouver, B.C. in 1930. The company has earned an international reputation for innovative, successful designs of a wide range of cost-efficient vessels for service in the marine transportation industry. The firm's experience includes designs for hundreds of vessels of almost all types, from small fishing boats to ocean-going ferries. Robert Allan Ltd. provides independent professional marine consulting and design services to a worldwide client base, supported by the latest in computer-aided design technology.

The firm recently designed a new fleet of Pusher Tugs and Barges for Louis Dreyfus Company in Brazil. The vessels will transport bulk grain products on the Amazon River system, with an expected delivery in 2017. This shallow-draft fleet includes as many as 71 vessels including 64 jumbo hopper barges. The first of Robert Allan Ltd.'s RAStar 4000-DF Class Dual Fuel Extreme Escort Tugs was delivered to Østensjø Rederi AS. The 40.20 meter vessel is the first of a three boat order from Østensjø for severe weather operations at Statoil's Melkøya LNG Gas terminal at Hammerfest in the extreme north of Norway. These escort tugs will conduct approximately 300 LNG ship escorts annually, assist with berthing operations and will be maintained in readiness for emergency services such as long line towing, fire-fighting, and oil spill response.

PRIMARY PRODUCT / SERVICE:

With a legacy of more than eight decades of design experience, including a large number of shallow draft designs for northern Canadian and South American Rivers, the scope of services offered ranges from concept studies through complete design documentation for contract bidding and Classification Society approval, to production working drawings and procurement support. Use of the latest in CADD technologies expedites and improves the accuracy of every aspect of the ship design process. The engineering staff is supported by a network of professional associates in specialized disciplines, and by extensive in-house computing facilities. Robert Allan's expertise covers a wide range of topics, including alternative fuels analysis, electrical systems evaluation, machinery life cycle cost analysis, machinery systems evaluation and selection, noise and vibration control, propeller design and performance prediction, propulsion control and automation systems and shafting system design and dynamic analysis.

THE CASE:

Robert Allan Ltd. is a world leader in innovative Naval Architecture and Marine Engineering, with a particular focus on both the seagoing and shallow draft tug sector as well as fireboats for major world ports. Robert Allan Ltd. has won many awards for their design work from a variety of publications and other sources.



THE COMPANY:

Schoellhorn-Albrecht is an industry leader in the design and manufacture of Mooring Equipment and Systems, including Capstans, Anchor Windlasses, Deck Fittings and Vessel Access Systems. In addition to a standard product line, the firm specializes in designing and manufacturing castings, fabrications and specialized machinery. A complete pattern, machine and fabrication shop allows the manufacture of custom items as well as repair, recondition or modify existing equipment. Products can be designed and certified to ABS, ISO, OCIMF, NAVSEA, JIS, IMO, ASTM, Lloyd's (LR), NORSOK, NVR and other specifications as required. This year's highlights include deliveries of Swing Gate Winches for New Orleans, Vertical Anchor Windlasses and Thru-the-Deck Capstans for [2] Alaska Day Class Boats and a new 50 HP two speed Vertical Anchor Windlass. Schoellhorn-Albrecht has engineered and implemented a Programmable Control System for mooring and positioning into dry docks. The system can be applied to existing Capstans or Winch control systems. On the Deck Fitting Side, the company continues to develop Roller Fairleads and Panama Chocks that work in conjunction with synthetic mooring lines. Schoellhorn-Albrecht performs full operational tests on these units in their St. Louis, MO



SCHOELLHORN-ALBRECHT MACHINE Co.

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 Email: sales@schoellhorn-albrecht.com
 Website: www.schoellhorn-albrecht.com
 CEO/President: Brian Pavlisin

facility often with ABS inspections prior to shipment.

THE CASE:

With 130 years of experience, Schoellhorn-Albrecht Machine Company continues to provide excellence to the Marine shipbuilding industry. Since 1887, the firm has designed and manufactured Marine Deck Equipment. Schoellhorn-Albrecht provides tailored Deck Equipment designed to meet the most stringent requirements. In addition to the Inland River Industry, Schoellhorn-Albrecht is a trusted supplier to the Military and Commercial Marine market worldwide.

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Metal Trades



4194 Highway 165, PO Box 129
 Hollywood, SC 29449
 Tel: (843) 714-0196
 E-mail: mdean@metaltrades.com
 Website: www.metaltrades.com
 CEO/President: Shaun Flynn

THE COMPANY:

Metal Trades, Inc. (MTI) is a family owned business with deep water access on the Intracoastal Waterway. The firm specializes in vessel repair, modifications, and retrofits. Metal Trades is a fully certified Master Ship Repair Contractor for the U.S. Government and currently holds an ABR with NAVSEA. For over 25 years, MTI has maintained U.S. Army watercraft, including repair and overhaul of Landing Craft Units (LCU), Landing Craft Mechanisms (LCM), Warping Tugs (SLWT and MWT) and tugs (ST). MTI is also currently building a second option barge for the Staten Island Ferry Division of NYC DOT, and already delivered the first of two in January of this year.

THE CASE:

Metal Trades has serviced both the government and commercial markets for 55 years. Specializing in Heavy Steel Fabrication, Barge Construction, and Ship Repair, they recently delivered a new construction push boat representing their first self-powered vessel. This year Metal Trades will deliver the largest barge that they've ever built – 370' LOA by 72' beam.

Nabrico



NABRICO

1250 Gateway Drive
 Gallatin, TN 37066
 Tel: (615) 442-1300
 E-mail: nabrico@trin.net
 Website: nabrico-marine.com
 CEO/President: Neal Langdon

THE COMPANY:

NABRICO developed its first piece of floating equipment for the USACE in 1915. NABRICO's products include a new patent-pending FASST Winder, which is fast and results in lower compressive forces and less stress on the body when tightening winches. The company also offers barge-moving, hand, electric and hydraulic winches, and a robust selection of hydraulic and electric capstans with up to 80,000 pounds of bollard pull. Other products include a line of mild steel, aluminum and stainless hatches; castings; watertight quick-acting and manual dog doors; and tank barge fittings.

THE CASE:

NABRICO has been a recognized innovator in the marine supply industry. With the introduction of the FASST Winder, Hi-Cap capstan and stainless steel chocks for synthetic ropes, that tradition continues. More than 11 decades of experience, engineering and nautical expertise go into every piece of equipment, giving NABRICO the capability to meet practically any customer need.



SCIENCO/FAST, A SUBSIDIARY OF BIO-MICROBICS, INC.

12977 Maurer Industrial Drive
Sunset Hills, MO 63127
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Email: jcisneros@biomicrobics.com
Website: www.sciencofast.com
CEO/President: Robert J Rebori

THE COMPANY:

Scienco/FAST represents a genuine improvement in Marine Sanitation Devices and Sewage Treatment Systems. Installed on some of the 'greenest' ships in the world, these MSDs treat wastewater from the facilities, help lessen the environmental impact of contaminants, and keeps the vessel in compliance through changing regulations, including graywater discharges from commercial vessels. Since the first installation in 1969 on board the M/V Missouri Tugboat, these MarineFAST Sewage Treatment Systems are installed on some of the 'greenest' boats in the world to provide to-

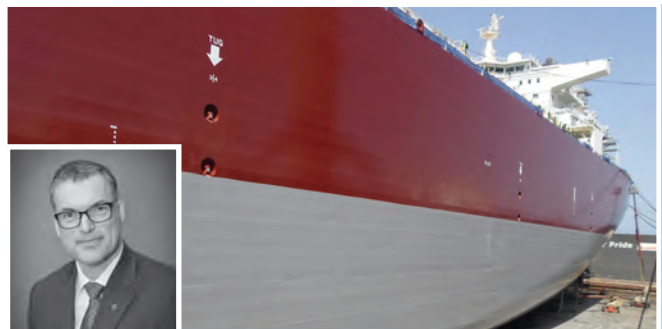
tal sewage treatment, pretreatment, and (in some cases) water reuse opportunities. These marine sewage devices, and other industrial water management technologies complete lifecycle solutions to help keep your vessel or property in compliance with long term performance. Scienco/FAST's MarineFAST is a fixed-film integrated wastewater treatment technology unique in its patented process and the result of many years (40+) of research, and continuous service. This technology accepts and treats any combination of sewage, including: conventional and vacuum toilets, laundry, garbage disposals and showers. The smallest FAST systems are fitted on harbor tugs and single homes.

THE CASE:

Recent certifications, evaluations, and other supporting documents have awarded Scienco/FAST for environmental technology advancements. The oldest Scienco/FAST unit, still in operation, a MarineFAST installation aboard M/V American Beauty, currently operated by American River Transportation (ARTCO). The unit is a Model 15D S/N 1242 and purchased in 1975. This team of marine engineers and field experts brings creative and diverse perspectives for marine sanitation solutions.

THE COMPANY:

For over 135 years, the firm has successfully delivered marine coatings technologies to address the global marine industry's constantly evolving needs. The brand's long standing purpose lies in bringing peace of mind to ship owners by protecting their assets and minimizing their total operating cost through sustainable solutions. With its U.S. headquarters in Houston and the global headquarters in Singapore, International Paint has more than 1800 employees and over 250 distributors across 60 countries. With 7 laboratories and a portfolio of over 900 patents, our coatings are manufactured in 17 factories which are strategically located across the six continents. International Paint's innovations include Intersleek, the first biocide free foul release coating; Intercept, the first linear polishing antifouling; Interline 9001 a bimodal epoxy cargo tank coating for chemical and product carriers with enhanced cargo resistance and zero absorption for many cargos; Intertrac Vision, shipping industry's first big data consultancy tool and the shipping industry's first carbon credit program. 2017 Marks the 21st year since the launch of the Intersleek biocide free foul release technology. Since 1996, it now has more than 5,500 applications and has helped save over \$3 billion in fuel costs.



INTERNATIONAL PAINT LLC

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Website: www.international-marine.com
CEO/President: Ton Buechner

THE CASE:

Owned by AkzoNobel, International Paint is among the world's largest coatings suppliers. International Paint holds a leading share in the marine coatings market, servicing both global and local customers from shipyards, contractors, vessel owners and vessel operators in both blue water and brown water markets.

NETSCo



11700 Station Road, PO Box 659
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 Website: www.netsco.us
 CEO/President: Rich Mueller

THE COMPANY:

Northeast Technical Services Co., Inc. (NETSCo) was formed in 1984 to provide marine engineering, design and consulting services. Today, NETSCo is one of the most respected maritime engineering firms in the United States. Our specialists offer an array of innovative designs including advanced technology and construction of complete ship, tug, and barge designs of all types. From concept through actual construction and warranty support, NETSCo strives to be a leader in offering end-to-end solutions to complex maritime problems by delivering value without compromising on performance, safety or the environment.

THE CASE:

Dedicated to clean oceans, many NETSCo projects have reduced emissions on existing vessels. The firm has also assisted in more than 50 BWMS feasibility studies and retrofits. NETSCo is making a difference to inspire today's youth in maritime engineering through the SNAME "Student Design Competition," through which as many as 180 students participate each yearly.

Northern Lights



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 Website: www.northern-lights.com
 CEO/President: Sam Hill

THE COMPANY:

Northern Lights is a leading manufacturer of industry-best marine systems, including Northern Lights marine generator sets and Technicold air conditioning. Reliable, durable and simple to use, Northern Lights and Technicold products are designed for the unforgiving nature of the marine environment. An ISO 9001 Certified company, Northern Lights has a worldwide dealer network of over 300 strong. Notably, the firm recently introduced a US EPA Tier III 30 kW and 38 kW marine generator.

THE CASE:

Northern Lights has been innovating industry best products for over 50 years, working hard to build a reputation of simple, durable, reliable products. Northern Lights engineers consistently design products that the firm can confidently sell because they have engineered out extra parts. The firm's philosophy is if it isn't there it can't fail. Northern Lights wants every marine experience to be worry free, depending on products that deliver on that guarantee.

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and Port of Providence.



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JMS NAVAL ARCHITECTS

70 Essex Street
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Email: RICKF@JMSNET.COM

Website: www.JMSnet.com

CEO/President: T. Blake Powell

THE COMPANY:

JMS Naval Architects is a specialty maritime engineering firm providing naval architecture, marine engineering, marine surveying, and marine casualty response services to assist ship owners in the management of their fleets. With a unique combination of high-end analytical engineering expertise and practical deck plate experience, JMS delivers innovative and cost-effective solutions to complex problems. JMS Naval Architects provides design and engineering services for complete vessel design package development; from concept design to detail, structure, and

systems design, and complete shipyard bid package development. Recent highlights include a complete engineering and design package for a North American client to modify an existing deck barge and allow it to be used as a submersible platform for constructing concrete caissons. JMS provided engineering support throughout the modification of the platform. Separately, the Virginia Institute of Marine Science awarded a contract to Meridien Maritime Reparation of Matane, Quebec to construct a 93-foot research vessel. JMS Naval Architects designed the research vessel to replace VIMS's current vessel, the R/V Bay Eagle.

THE CASE:

JMS Naval Architects will soon be celebrating its 30th anniversary. JMS is widely considered the foremost designer of fast aluminum coastal oceanographic research vessels in the United States. With JMS's extensive experience related to all aspects of research vessel design and research vessel operations, and having conducted over 150 surveys and inspections of research vessels located around the world, this technical knowledge-base supports their research vessel design expertise with practical and empirical engineering and performance data.

THE COMPANY:

Klüber Lubrication is one of the world's leading manufacturers of specialty lubricants, offering high-end tribological solutions to virtually all industries and markets worldwide. Most products are developed and made to specific customer requirements. Klüber Lubrication holds all common industrial certifications and operates a test bay hardly rivaled in the lubricants industry. Klüber Lubrication's portfolio of specialty lubricants can improve performance in many areas of vessel and port operations. Whether for open gears on the deck of an anchor handling vessel, or enclosed gear boxes in a ship to shore gantry crane, or any one of hundreds of other mechanical operations, Klüber Lubrication can select from its over 2,000 specialty products to help achieve operational objectives. For example: Klüberbio EG 2-68, 2-100 and 2-150 gear oils were developed for the lubrication of ship gearboxes, particularly for thrusters and rudder propellers. They have been approved for use by more major thruster manufacturers than any other environmentally acceptable lubricant on the market. Klüberbio BM 32-142 provides a high performing general purpose biodegradable bearing grease for deck applications. Additional new products for specific marine applications will be introduced in 2017/2018.



KLÜBER LUBRICATION NA LP

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Email: ben.bryant@us.kluber.com

Website: klubersolutions.com

CEO/President: Ralf Kraemer

THE CASE:

Klüber Lubrication develops efficiency-boosting marine lubricants to help vessel operators achieve organizational objectives in cost reduction, improved safety, improved environmental compliance and increased operational uptime. These lubrication solutions maintain their performance characteristics in the demanding marine environment while significantly extending maintenance intervals and the service life of components.

OceanMedix



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 Jackson, WY 83002
 Tel: (307) 200-4203
 E-mail: dennyemory@oceanmedix.com
 Website: www.OceanMedix.com
 CEO/President: Denny Emory, Director of Operations

THE COMPANY:

OceanMedix was launched in 2006 to provide a line of First Aid and Prescription Medical Kits and Prescription Medical Products specifically designed to be carried on board vessels engaged in extended coastal or ocean voyages. In 2014, OceanMedix expanded its focus to meet the needs of the Fishing, Commercial and Industrial Marine, Law Enforcement, Search and Rescue, and Military Communities with a comprehensive offering of premium products. OceanMedix kits are available in both coastal and offshore configurations and various sizes. For commercial towing vessels, kits are configured to exceed the requirements of 46CFR and/or Subchapter M. OceanMedix can also make arrangements for AED Training and Certification.

THE CASE:

OceanMedix is the preferred source for Medical, Emergency and Safety Equipment. Through its proprietary offering of first aid, medical and defibrillator kits, and an extensive network of manufacturers and distributors, the firm provides direct access to a broad range of products.

Pacific Power Group



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 E-mail: pacificpowergroup@pacificpowergroup.com
 Website: www.pacificpowergroup.com/marine
 CEO/President: Tim Price

THE COMPANY:

Established in 1958, Pacific Power Group has been a trusted partner for the marine power needs of the Western U.S. for more than 50 years. Pacific Power Group (PPG) is known for providing propulsion and engineering services to some of the U.S.'s most notable boat building projects including the new San Francisco WETA ferries, U.S. Coast Guard, Harley Marine barges, National Geographic tour vessels and more. Today, PPG holistically supports customers from design all the way through post-launch operation, and the company's core mission has shifted to be focused on partnership and collaboration with builders, architects and vessel operators.

THE CASE:

PPG continues to redefine the engine distributor model through a solutions oriented approach to propulsion design. In the last 12 months, PPG became the world's first Rolls-Royce Waterjet distributor, was awarded sole provider for the USCG's \$39 million V396 overhaul contract, and continues to power the industry's most well-known vessels.



MARKEY MACHINERY COMPANY, INC.

Scott Kreis /VP of Sales
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Website: www.markeymachinery.com
CEO/President: Blaine Dempke

THE COMPANY:

Founded in 1907, Markey Machinery is recognized for providing reliable advanced equipment for workboat, scientific and dockside applications. Included in the product mix are towing, ship-assist, and escort winches, as well as single, multi-drum and traction-style deep sea research winches, capstans, anchor windlasses and other high performance machines. Markey deck machinery has long been known for robust design and manufacture, and Markey equipment continues to be “cross-decked” from one retiring vessel to the replacement, still fully functional. Modern design capabilities and materials have allowed our engineers to reduce overall size and mass without sacrificing those qualities.

Along with hydraulic and diesel-driven equipment, Markey has devoted two decades designing and manufacturing marine winches utilizing highly-efficient electric Variable Frequency Drive systems, particularly for applications requiring high-response active heave compensation and line control. Class I “Basic” Hawser Winches feature moderate pull, high speed, high hold capacity static brakes, true free-wheel and hawser tension monitoring, allowing operators to work more effectively. Class II Markey “Render/Recover” Winches include Markey-pioneered automatic tension line control for tethered operations. Class “II+” Hawser Winches integrate electric motors, multi-disc clutches, and high hold dynamic slip brakes for fingertip control of the winch. Class III “ARR” Hawser Winches are ultra-high performance soft line winches for indirect towing in extreme sea ways.

THE CASE:

Markey Machinery has developed marine winches utilizing highly-efficient electric Variable Frequency Drive technology for over two decades, particularly for applications requiring high-response active heave compensation and line control. Markey Render/Recover and Markey Asymmetric Render/Recover winches are considered the “Best Available Technology” for this application and are used worldwide.

THE COMPANY:

Moose Boats builds the highest-quality aluminum catamaran and monohull vessels in the industry. These boats are designed to meet a variety of mission-specific applications for military, law enforcement, emergency response, fire fighting and security patrol purposes. Moose Boats is currently building an M1 patrol boat for the New York City Police Department, an M2 fire boat for Newport, RI, and a M2 fire rescue boat for Memphis, TN. And Moose will soon be laying the keel for a 75’ catamaran crew boat for Westar Marine Services in San Francisco.

THE CASE:

In 2016 Moose Boats moved to Vallejo, CA, on the site of the old Mare Island Naval Shipyard. With expanded facilities and easy access to deep water, Moose Boats has expanded its capabilities and are now under contract to build a 75’ catamaran crew boat, their biggest undertaking to date. Moose Boats builds the highest quality aluminum catamarans in the industry. These boats are designed to meet a variety of mission specific applications for law enforcement, emergency response, and security patrol pur-



MOOSE BOATS

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Website: www.mooseboats.com
CEO/President: Christian Lind

poses. Widely known for their durability, sensible design, and unparalleled attention to detail, Moose Boats are simply the finest aluminum boats on the market. Each boat is custom built to the needs of the customer, with every detail geared towards the boat’s final mission.



THE COMPANY:

North River Boats, an employee owned company, has been building heavy gauge aluminum boats since 1974. The company is located in Roseburg, OR and is one of the only boat builders with a complete line of recreational products as well as commercial / government output. Recreational boats are sold through an independent dealer network and comprise approximately 250 boats annually. Commercial / government boats are sold direct through the factory and comprise approximately 65 boats annually. Today, the firm has a substantial backlog with deliveries currently booking well into 2018. North River Boats is well known for building one-off, high quality, custom aluminum boats. Their goal is to work directly with end users to ensure that they are providing the best boat to meet each customer's requirements.

PRIMARY PRODUCT / SERVICE:

North River Boats offers many different commercial hull designs, including the Valor & Liberty models which are popular for law enforcement and military applications. North River also offers the U.S. Navy FP Large purpose-built boat as well as other similar craft built to exact specifications by various law enforcement and military customers. Another popular model is North River's Fire Boat. The company offers several versions of Fire Boats, including the Sounder hull design. These boats are generally twin outboard propulsion with pumping capabilities of 500 GPM up to 2000 GPM. Others include twin diesel jets with pumping capabilities of 2100 GPM up to 3000 GPM. North River's newest model is the Freedom series which will be a small landing craft style work boat with twin engines and pumping capabilities of 500 GPM up to 2000 GPM. North River Boats builds Pilot and Crew

Transport boats for many customers both nationally and internationally. North River's most popular and diverse model is the North River Sounder. The company has built thousands of these boats over the past 25 years with some of the first models still in operation today.

At home and abroad, North River has been busy in the past year. They recently delivered a 58' Crew Transfer Vessel to the Trinidad Pilots Association in Trinidad & Tobago. This was a keel up design with many features based off of their last 52' Crew Transfer Vessel which delivered in 2015. This boat was powered with twin Scania Di16 800 hp marine diesel engines with Hamilton HJ403 jets. It holds 24 passengers with 3 crew and runs approximately 37 knots fully loaded. This was the 13th boat that North River has delivered to the Trinidad Pilots Association. Beyond this, North River was also awarded a 5-year BPA to provide the U.S. Navy up to 8 Surface Force Assistance Craft – Large boats. Separately, the firm is introducing a new model this year, a 32' Bristol Bay Gillnetter. North River has teamed with legendary Bristol Bay boat maker, Dick Smitha, to provide the best gillnetter design on the market. North River will offer two propulsion options and three cabin designs. All boats will include the latest refrigerated RSW systems to meet the new requirements starting in 2018. We anticipate building up to 5 of these per year.

THE CASE:

North River Boats is a manufacturer of heavy gauge aluminum boats ranging in length from 17' to 60'. With over 130 employees, North River builds approximately 315 boats annually. North River serves diverse markets including: Commercial, Domestic, Government, Military, International and Recreational.



THE COMPANY:

ReconCraft knows, first-hand, how important it is to have the right vessel to complete the mission during high-risk operations and get home safely. As former military vessel operators, shipboard engineers, and fleet program managers, the firm uses its experience and the latest advances in design and manufacturing to provide vessels that enhance operational capabilities, reduce maintenance costs, and keep crews safe. ReconCraft combines extensive military and law enforcement experience with world-class design and manufacturing processes to build vessels that support with existing infrastructure; doctrine, mission requirements, maintenance capabilities, and budget. ReconCraft was recently selected to provide to provide U.S. Department of State with (2) highly-specialized 42' Fast Interceptor vessels for foreign-country support. During April 2017, ReconCraft was recognized with the Department of Homeland Security Small Business Achievement Award for their work on the Riverine Shallow Draft Vessel program for U.S. Customs and Border Protection (USCBP).

THE CASE:

ReconCraft, a veteran-owned boat builder with offices in Oregon and Massachusetts, was recently recognized



RECONCRAFT

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Email: info@reconcraft.com

Website: www.reconcraft.com

CEO/President: Joe Silkowski / Jon Hoflich

with the Department of Homeland Security Small Business Achievement Award for their work on the Riverine Shallow Draft Vessel program for U.S. Customs and Border Protection (USCBP). The citation hailed the ReconCraft/USCBP team as “a shining example of how industry and government can and should work together.”



RIBCRAFT USA

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Website: www.ribcraftusa.com

CEO/President: Brian Gray

THE COMPANY:

RIBCRAFT designs and builds safe, durable, performance oriented rigid inflatable boats (RIBs) that fulfill the most demanding military and professional applications. With over twenty-five years of experience, RIBCRAFT provides the highest quality professional grade RIBs and inflatables for military agencies, law enforcement, safety professionals, tour operators, private industry, and other marine professionals. As an American owned RIB manufacturer, RIBCRAFT has delivered thousands of RIBs worldwide. Dedicated to building dependable and durable professional grade RIBs, RIBCRAFT maintains its position as a leader in building USCG Sub Chapter T Certified Passenger

for-hire boats having recently delivered three RIBCRAFT 9.0's to operators in Hawaii, New York and Florida with several additional tour boat deliveries scheduled this year, including an all-new 41' RIBCRAFT 12.5. Separately, RIBCRAFT continues to fulfill its five-year contract with the United States Navy to provide 7-meter rigid inflatable boats (RIBs) that will serve as deployable ready service lifeboats for search and rescue missions onboard US Naval ships around the world. RIBCRAFT has on-going deliveries to first responders throughout the country including rescue RIBs, dive boats, and patrol and enforcement craft. RIBCRAFT is committed to safety and law enforcement professionals delivering RIBs that are durable, safe, and reliable.

THE CASE:

For over twenty-five years, RIBCRAFT boats have become synonymous with safety, quality, durability and performance. Built to order in the United States, RIBCRAFT is the only manufacturer who specializes exclusively in building professional grade rigid inflatable boats (RIBs). Serving all commercial markets from military agencies, safety professionals, state and local governments, and private industry, RIBCRAFT has developed one of the most reliable and recognized brands in the RIB market.

PileMedic by QuakeWrap



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E-mail: sdelgado@quakewrap.com
Website: pilemedic.com
CEO/President: Dr. Mo Ehsani

THE COMPANY:

PileMedic by QuakeWrap, Inc. are developers of advanced construction technologies utilizing fiber reinforced polymer (FRP) systems as innovative, effective solutions for marine pile and seawall repair and strengthening. Developed by FRP pioneer and civil engineering professor Mo Ehsani, PileMedic by QuakeWrap represents an innovative approach to solving inland infrastructure repair and renewal challenges. QuakeWrap's other patented FRP products and solutions – including PipeMedic and the award-winning StifPipe – are all field-proven for long term rehabilitation of infrastructures worldwide, with award-winning results. Among other recent contracts, the firm was this year selected by the U.S. Army Corp of Engineers for an assignment involving rapid repair and strengthening of piles.

THE CASE:

PileMedic by QuakeWrap, the marine pile repair system, and SPiRe, the engineered FRP repair system for seawalls and sheet piles, represent modern, innovative approaches for inland infrastructure repair and renewal. The fiber reinforced polymer systems have a solid, continuous track record of successful inland repairs all over the globe.

Seakeeper



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E-mail: sales@seakeeper.com
Website: www.seakeeper.com
CEO/President: Shep McKenney

THE COMPANY:

Founded in 2003, Seakeeper is a global leader in marine stabilization. Seakeeper's innovative technology changes the boating experience by eliminating the rocking motion that causes seasickness, fatigue and anxiety. Since selling its first gyro in 2008, Seakeeper has developed a growing catalog of models for an expanding range of boat sizes. Based in California, Maryland, USA, the company has over 125 employees globally, based in the U.S., U.K., Italy, Germany, Dubai and Singapore.

THE CASE:

As the global leader in marine stabilization, Seakeeper's innovative technology changes the boating experience by eliminating up to 95 percent of all boat roll. The technology works in all sea conditions, both at rest and underway. Completely self-contained, the Seakeeper produces no drag and has no risk of damage from an impact or snag. By reducing up to 95% of boat roll, each Seakeeper HD gyroscope improves crew members' safety and helps increase profitability by enabling vessels to work in rougher conditions for longer periods of time.



SAN JACINTO COLLEGE MARITIME TECHNOLOGY AND TRAINING CENTER

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 Email: John.Stauffer@sjcd.edu
 Website: www.sanjac.edu/maritime
 CEO/President: Dr. Brenda Hellyer

THE COMPANY:

Surrounded by monuments of history, industries and maritime enterprises of today, and the space age of tomorrow, San Jacinto College has been serving the citizens of East Harris County, Texas, since 1961. The San Jacinto College Maritime Program, just outside of Houston, Texas offers United States Coast Guard (USCG) (NMC)-approved and internationally-recognized Standards for Training, Certification and Watchkeeping (STCW) maritime training and deck-level coursework for all professional mariners from the entry-level

deckhand on an inland towboat to Unlimited Tonnage Masters on the world's largest ships and everything in between. Engineering courses are available from engine room fundamentals to Qualified Member of the Engineering Department (QMED), Designated Duty engineer (DDE), to Chief Engineer. When the new, waterfront, multiple simulator Maritime Education Complex is complete, a total of over 80 USCG and STCW approved courses are planned. The school's assets include a 3,748 square-foot suite for three full mission ship bridge simulators and much more. A dock was recently built at the Center for industry crew changes and student training, thanks to a partnership with G & H Towing. Curriculum is guided by maritime industry leaders, invited by the College to training needed specifically for their working mariners and to recruit more mariners into the industry.

THE CASE:

This year is the first anniversary of the San Jacinto College Maritime Technology and Training Center on the Maritime Campus in La Porte, Texas. This Center was built by San Jacinto College to meet the training needs of mariners in the Gulf Coast region, providing them with USCG-approved courses. It also houses Texas' first associate degree program in maritime.

THE COMPANY:

Incorporated in 2006 Tampa Manufacturing LLC (TYM) has seen consistent sales growth each and every year, starting with multiple International contracts and continuing today. TYM employs high-tech composite construction using advanced carbon and aramid fabrics with vacuum and resin infused hybrid polyester and epoxy polymers. All of TYM's vessels are designed, engineered and custom crafted to be "mission specific." TYM offers a line of high performance craft from 7 – 27 meters, engineered to provide economical and highly effective operations near shore and over the horizon. All TYM craft are engineered and built to IACS certification providing, robust, high-performance vessels well suited for interception, interdiction and take-down. TYM craft are available with ballistic protection, fixed and remote operated weapons platforms, custom configured C4ISR and/or customer specified electronics suits and sensor suites, as well as COTS electronics. TYM 'surge team' craft are capable of operating in littoral waters, and delivering troops to remote areas of operation at high speed through shallows, or offshore in elevated sea-state operations. TYM focuses on custom configured multi-mission solutions of each customer's unique requirements, budget constraints and long term cost of ownership. By combin-



TAMPA DEFENSE USA

9103 Cypress Keep Lane
 Odessa, FL 33556
 Tel: (813) 926-4255

Email: robert.stevens@tampa-yacht.com
 Website: www.tampa-yacht.com
 CEO/President: Robert L. Stevens

ing high quality, robust construction, best value and price, success in international markets has been ensured. Recent highlights include a \$40,000,000 contract to a Middle East Government for High Speed Interceptors.

THE CASE:

Tampa Defense has focused on International Military Contracts for High Performance Interceptor and Patrol Craft. In the nearly 9 years since its inception, Tampa Defense has generated close to \$100m in foreign sales bringing employment from overseas to the US and revenue to the US economy.

The Shearer Group



3118 Harrisburg Boulevard, Suite 100
Houston, TX 77003
Tel: (281) 532-2080
E-mail: jsebastian@shearer-group.com
Website: shearer-group.com
CEO/President: Greg Beers, P.E.

THE COMPANY:

The Shearer Group, Inc. (TSGI), is a global leader for the design of inland towboats and barges. TSGI's commercial vessel designs include towboats, inland barges, and passenger vessels. Recent company highlights include design and engineering services for a 55', 1,200 HP twin screw conventional towboat for Gateway Dredging. Separately, the SCF VISION was delivered to SCF Marine (SEACOR division). The largest Z Drive towboat on the inland rivers with a rated horsepower of 6,600 HP using triple Z drives, Computational Fluid Dynamics (CFD) analyses was used in the design to provide increased efficiency for the entire barge train.

THE CASE:

The Shearer Group, Inc. (TSGI) is a premier naval architecture firm with focus on the inland marine industry. TSGI has led the industry with several significant z-drive towboat designs as well as LNG based projects. TSGI is participating in several innovative projects from LNG fueled vessel designs to new pressure barges.

Shock Mitigation Ltd



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Christchurch, Dorset BH23 2RN UK
Tel: +44 7813 208222
E-mail: info@shockmitigation.com
Website: www.shockmitigation.com
CEO/President: John Haynes

THE COMPANY:

The company provides marine organizations, boat builders and equipment manufacturers with expertise plus an independent overview of how the marine sector is changing. The company runs a program of specialist one day NEXT GENERATION workshops. Topics include Man Overboard Prevention & Recovery, Systems & Safety, High Speed Craft, Shock Mitigation Solutions, Hybrid Marine Power, and Innovative Power & Propulsion. For boatbuilders and equipment manufacturers, Shock Mitigation addresses product development requirements for high speed craft, marine and special projects. Shock Mitigation's RIB & High Speed Craft Directory is an online resource that brings together equipment and new technology.

THE CASE:

Shock Mitigation has demonstrated the ability to combine next generation innovation with the delivery of practical solutions across various maritime sectors around the world. Specialist knowledge gained in government and professional sectors is utilized to create viable working practices that improve efficiency and reduce costs in the commercial sector.

SILVA NON SKID SOLUTIONS LLC

449B Ash Street
Manawa, WI 54949
Tel: (941) 320-9780
Email: chuck@silvanonskidsolutions.com
Website: www.silvanonskidsolutions.com
CEO/President: Charles Ligon



THE COMPANY:

Silva Non Skid Solutions was originally founded to provide high speed long boarders with a more durable nonskid for their boards. The Navy learned of the product and was looking for a more durable peel and stick nonskid for ship decks. The company's strategy today is to be a leader in nonskid solutions by providing innovative solutions. The firm's primary product is an aluminum ceramic peel and stick nonskid. The Surface Engineered Grip offers 10 plus years expected life cycle – reduced cost with Long Life Cycle. It is corrosion and UV proof, oil and chemical resistant, water proof and resistant to wear. Silvagrip comes with a 10 year warranty.

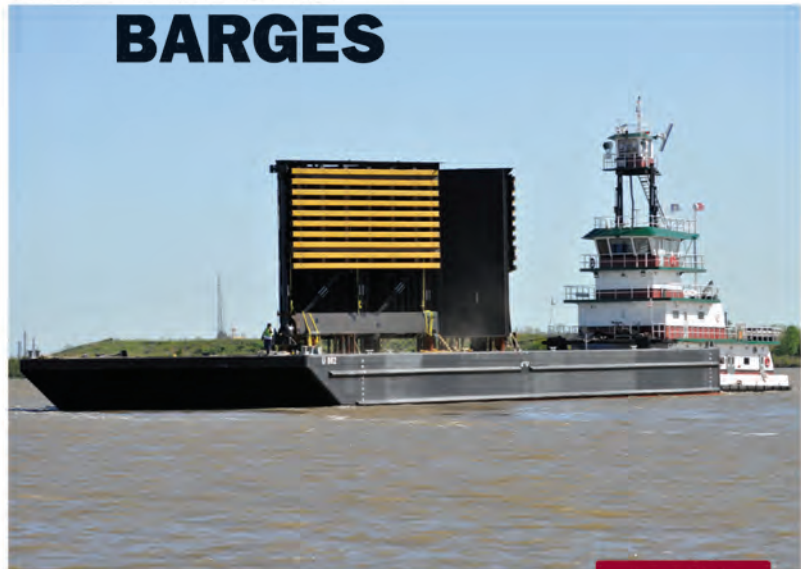
THE CASE:

Silva Non-Skid was granted a patent in March 2017. Silvagrip non-skid peel and stick is applied on Navy and USCG ships. The U.S. Navy is developing new milspec for more durable PS because of Silvagrip.



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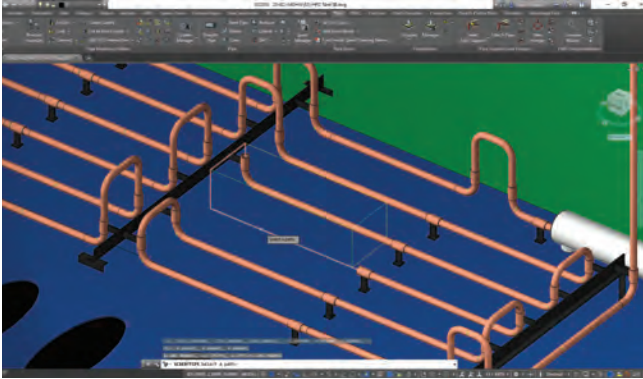
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SSI



SSI
 400-401 Garbally Road
 Victoria, BC V8T 5M3
 Tel: (250) 479-3638
 E-mail: info@ssi-corporate.com
 Website: www.ssi-corporate.com
 CEO/President: Darren Larkins

THE COMPANY:

SSI develops Autodesk based solutions for the shipbuilding and offshore industry including: ShipConstructor software, an AutoCAD based CAD/CAM product line; and EnterprisePlatform, a tool for sharing product data model information. Shipbuilders, naval architects and marine engineers trust SSI solutions on a broad range of projects. SSI solutions are flexible enough to handle the largest and most complex engineering challenges but can also be scaled down to be cost effective in any budget. On the cutting edge, Bollinger has used the SSI EnterprisePlatform for Computer-Assisted Robotic Welding using robots from Wolf Robotics.

THE CASE:

More workboats are built for more companies using SSI's ShipConstructor software than any other shipbuilding software. The majority of the U.S. Navy's future fleet is being modeled using SSI software. All U.S. Coast Guard ships under construction are modeled using ShipConstructor. SSI's Director of U.S. Operations Pat Roberts as Vice Chair of the new National Shipbuilding Research Program Business Technologies Panel. Separately, SSI made the largest sale in its history to Ingalls Shipyard (Huntington Ingalls Industries).

Thrustmaster of Texas



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 Houston, TX 77041
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 E-mail: adam.jost@thrustmastertexas.com
 Website: www.thrustmaster.net
 CEO/President: Joe Bekker

THE COMPANY:

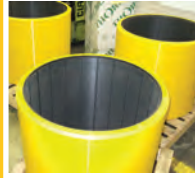
For more than 30 years, Thrustmaster of Texas has been designing and manufacturing high quality marine propulsion equipment for vessels of all types. A leading supplier of thrusters ranging from 75 kW to 8 MW, serving customers all over the world, the firm's Houston headquarters doubles as the largest thruster and waterjet manufacturing factory in the world, with complete fabrication, machining, assembly and testing carried out at the facility. All thrusters are designed in-house by a complete engineering department for mechanical, hydraulic, electrical and electronic design.

THE CASE:

Thrustmaster of Texas is the only large thruster and waterjet manufacturer in the United States. Thrustmaster of Texas has been in designing and manufacturing thrusters and waterjets in Houston, Texas for 34 years; providing industry leading applications for offshore, inland waters, cable lay, pipe lay, wind turbine installation, and government military vessels.

THE COMPANY:

Thordon Bearings Inc. was incorporated in 1990. Since then, the company has grown to become the global leader in the design and manufacture of high performance, non-metallic journal bearing solutions for marine, pump, hydro-turbine, offshore oil and other markets. Simply stated, the company provides innovative non-polluting bearing solutions that exceed the technical and environmental requirements of ship and boat owners. Thordon engineered polymer bearing solutions can provide long bearing wear life; eliminate oil or grease; operate in dirty, abrasive environments; withstand high shock loads and edge loading. Thordon Bearing's RiverTough and TG100 bearing/seal combination has established itself as the leading tail shaft arrangement in the North American workboat sector, extending bearing wear life and reducing maintenance and operational costs. This system can tolerate abrasive waters while traditional bearings remain susceptible to damage. After almost ten years of operation on an Inland Barge Service's vessel operating on the abrasive Yukon River, water lubricated bearings emerged unscathed showing no signs of wear and tear. Notably, 15 tug/tow boats operated by Impala Terminals have been earmarked for conversion, while McAsphalt Marine Transportation installed the system to an articulated



THORDON BEARINGS

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Website: www.thordonbearings.com
CEO/President: Terry MacGowan



push barge operating in the Great Lakes. The list of Thordon brown water success stories continues to grow.

THE CASE:

With workboat operational costs and marine environmental sustainability at the forefront of every aspect of Thordon Bearings' business mode, it is no surprise that its environmentally safe RiverTough bearings and TG100 seals have become the tail shaft system of choice for vessels operating in the abrasive rivers and waterways of the U.S and Canada.



THE VANE BROTHERS COMPANY

2100 Frankfurst Avenue
Baltimore, MD 21226
Tel: (410) 735-8140
Email: bwillig@vanebrothers.com
Website: vanebrothers.com
CEO/President: C. Duff Hughes

THE COMPANY:

Established in 1898, Vane Brothers offers a range of maritime services along the U.S. Eastern Seaboard. The family-run business has 130 tugboats, barges, AT/Bs, and launches working out of seven locations: Baltimore, New York, Philadelphia, Norfolk, Charleston, Savannah and Jacksonville. Service extends from New England to the Gulf of Mexico. Along with well-trained crews and a sophisticated operations center, Vane utilizes a fleet of safe and efficient vessels to maximize customer satisfaction. Vane President C. Duff

Hughes says: "Our New Vessel Construction Program is a commitment we keep to our customers and staff to invest in a safe, modern and standardized fleet as we work to set the standard of excellence in the maritime industry." Vane focuses on quality, safety and environmental responsibility while preserving a close-knit, family environment that rewards dedication and loyalty. Vane Brothers has pursued an aggressive New Vessel Construction program that began at the turn of the 21st century. Just in 2016, Vane put into service two 50,000-barrel double-skin tank barges and two 30,000-barrel double-skin tank barges from Conrad Shipyard, as well as four 4,200-hp tugboats from St. Johns Ship Building and a pair of 3,000-hp tugboats from Chesapeake Shipbuilding. Several more vessels have been delivered in early 2017.

THE CASE:

Few companies in the marine transportation industry have grown their fleet as rapidly and effectively as Vane Brothers. In the last decade, the company's New Vessel Construction Program has added dozens of powerful tugboats that prioritize safety, service, environmental responsibility, and crew comfort while being matched with robust, double-skin barges.



THE COMPANY:

Volvo Penta, with approximately 3,500 dealers in over 130 countries, is a world-leading and global manufacturer of engines and complete power systems for boats, vessels and industrial applications. The engine program comprises diesel and gasoline engines with power outputs of between 10 and 900 hp. Volvo Penta is part of the Volvo Group, one of the world's leading manufacturers of heavy trucks, buses and construction equipment. Volvo Penta engines are type approved by major classification societies and comply with all applicable national and international emission regulations.

It has been a busy year for Volvo Penta. Recent commercial marine clients include the South Carolina Department of Natural Resources, where Volvo Penta repowered the fisheries research vessel R/V Palmetto with a pair of new Volvo Penta D16 MH 600s with electronic controls.

Other recent projects were as follows:

- *Magann W. F. Corp – Repowered the steel tug Miss Anne in Hampton Roads with two D16 650 hp diesels with electronic controls.*
- *FV Highlander New 44-ft. gill netter powered by twin Volvo Penta D11 625 hp engines in the Pacific Northwest.*
- *Washington State Ferry - Three D13 keel-cooled ship-service generators plus radiator-cooled emergency gensets for two new vessels.*
- *Smithsonian Tropical Research Institution - Repowered research vessel Morpho in Panama with three Volvo Penta D6 330-hp Aquamatic engines with DPH Duoprop drives.*
- *West Coast Launch Ltd. Two 750-horsepower engines for a new passenger-vehicle transport vessel built for operation in British Columbia.*
- *Shoreline Sightseeing - Two D13 400-hp Volvo Penta engines for the Chicago-based vessel, MV Skyview.*
- *Hampton Roads Transit - Outfitting two new passenger*

ferries for Norfolk, Va.-based with twin Volvo Penta 13-liter 400 hp diesel engines.

- *Kitty Kat - Repowered the 64-ft. whale-watching catamaran, in San Francisco, with a pair of Volvo Penta D11 625 diesel engines.*
- *Adventure Bound Alaska - Repowered tour vessel MV Ocean Endeavor with two Volvo Penta D11-510 hp engines.*
- *Numerous repowering projects for the New England and Nova Scotia lobster boat fleets.*

PRIMARY PRODUCT / SERVICE:

Volvo Penta's commercial marine business has grown rapidly over the last four years. The company's extensive product line includes 3-16 liter Tier 3 diesel engines, gensets, sterndrives and IPS pod drives, developed for a broad range of commercial marine applications, including Coast Guard and patrol boats, short-sea and river transport, supply vessels, passenger ferries and sightseeing vessels, workboats, tugs and fishing boats. Volvo Penta's new-generation marine diesel engines provide higher torque out of the hole, better performance at all rpm ranges and the lowest costs of ownership – lower fuel consumption, longer service life and less downtime on the job. Volvo Penta continues to expand its network of Power Centers across North America to provide world-class customer support in all regions.

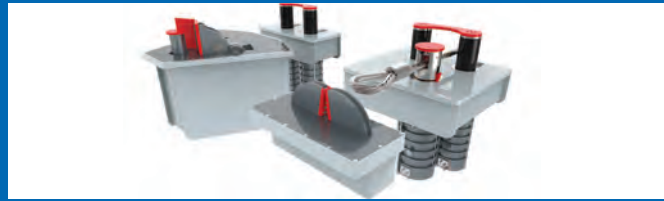
THE CASE:

For over 100 years Volvo Penta has led the marine industry in developing new engine innovations that boost performance, reduce fuel consumption and emissions, extend service life and minimize downtime. As a part of the Volvo Group, Volvo Penta draws on the R&D and engineering resources of one of the world's largest engine manufacturers. 2017 marks the company's 25th year at its location in Chesapeake, Va.



TUGPINS B.V.

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Website: www.tugpins.com/nl/
CEO/President: Marco Beukers



THE COMPANY:

TUGPINS designs, engineers and produces towing pins, shark jaws, stoppers and towing hooks. A young and ambitious firm with passionate engineers and technicians – professionals who have earned their stripes in this business and in the shipping sector in general – these are people who consistently work towards a single common goal: “To supply the best and nothing less.”

THE CASE:

As a specialist in the design and production of towing pins, shark jaws and stoppers, Tugpins knows the industry, its requirements and the challenges it faces. The firm is committed to innovation. In its product design, finding new and better solutions for anchor handling and towing on tugboats, multipurpose vessels and fishing boats is the key. Tugpins aims to further improve deck safety, increase the uptime of clients' vessels and maximize the profitability of their operations.

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West Kentucky Community Technical College



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Paducah, KY 42001
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E-mail: stanley.wallace@kctcs.edu
Website: logisticsandmarine.org
CEO/President: Dr. Anton Reece

THE SCHOOL:

West Kentucky Community and Technical College is a SACSCOC accredited college with an annual enrollment of more than 6,500 traditional and more than 2,000 online, long distance students that has received the Aspen Prize for Community College Excellence Award four times. The College offers an online Associate in Applied Science degree in Marine Technology and in Logistics and Operation Managements. Industry certificates are also available in four tracks. They are Marine Culinary Management, Marine Engineering, Marine Logistics Operations, and Wheelhouse Management.

THE CASE:

WKCTC's Marine Technology and Logistics programs are designed to be taught in an innovative environment. This provides opportunities to working adults who haven't the ability or time to juggle job, family, and trips to a traditional campus classroom—the classic definition of today's inland mariner. A new satellite location houses the "Inland Logistics and Marine Institute" for the Marine Technology and Logistics programs.

XL Catlin



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E-mail: annemarie.elder@xlcatalin.com
Website: xlcatalin.com/insurance/industry-insurance/marine-insurance
CEO/President: Michael McGavick

THE COMPANY:

XL Catlin specializes in Property and Casualty (non-Life) insurance and reinsurance. From large corporations to specialized businesses, XL Group can serve clients in more than 215 countries. You'll find the same qualities in all XL Catlin offices: underwriting excellence, prompt service and transparent pricing. XL Catlin has a broad international mix with a consistent global approach. Its companies have strong relationships with the world's leading global, regional and independent brokers. The firm is also one of the world's leading reinsurers. From Aerospace to Marine, XL Catlin's capabilities help insurers move the world forward.

THE CASE:

XL Catlin understands the marine business. It's specialized. And there are risks that are unique to the industry. Safe transport, precise handling and storage are just a few of them. The firm combines local expertise, industry insights and personalized service to create Marine insurance solutions that are based on each client's needs. Coverage include Ocean Cargo; Blue Water Hull; Brown Water; Hull/P&I; Marine Liability; and Inland Marine.



VICTAULIC
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Email: cait.rebollido@victaulic.com
Website: www.victaulic.com
CEO/President: John Malloy



THE COMPANY:

Victaulic is the originator and has been the world's leading producer of mechanical pipe-joining solutions since 1919. In the maritime industry, Victaulic grooved piping products are used on a wide range of vessels, including tugs and workboats. Victaulic systems offer a number of advantages for newbuilds, retrofit and repair services, as they reduce system downtime and time out of service. Grooved systems reduce time in dry dock, eliminate the need for marine chemists or fire watches and, unlike flanged systems, only have 4 nuts and bolts to assemble. Of interest to those workboat opera-

tors who will need to install ballast water treatment systems, Victaulic connections ease the complications of pumproom installations with 360o rotating flanges and the elimination of hotwork in a CapEx item which can cost as much as 1.5 million per vessel. Shipyards that have used grooved couplings in place of flanges on selected systems have recorded weight savings of 12 tons on OSV tonnage. The benefits of grooved technology can translate into more deadweight capacity, additional passenger load and/or less fuel consumption. It goes without saying that lighter assemblies are easier handle during installation and/or maintenance.

THE CASE:

Victaulic products are Type Approved by IACS members and USCG recognized. Victaulic does not require hot work permits. Grooved mechanical systems reduce installation time required for piping projects by a minimum of 30 percent. These valve assemblies are 58 percent lighter, with a smaller profile than flanged components and allow 360 degrees of rotation. This makes installation and maintenance in tight spaces quick and easy.

THE COMPANY:

Viega started in Germany in 1899, founded by Franz-Anselm Viegener, who created an innovative new design for a brass beer tap. By 1901, the Viega German company began to manufacture home plumbing products, growing and expanding internationally as the authority in press technology during the last century. In 1999, through the purchase of an interest in a U.S. company, Viega expanded its product offering to North America. Today, the innovative products of the Viega group of companies are produced at six international locations and distributed worldwide. Viega LLC, a privately held subsidiary, is the expert in the manufacture and distribution of plumbing, heating and pipe joining systems for customers in shipbuilding, industrial, commercial and plumbing markets throughout North America. Viega LLC offers more than 3,000 products in North America. Viega ProPress, Viega MegaPress and Viega SeaPress can be used in a variety of applications from potable water to fuel to fire mains. The Viega MegaPress and MegaPressG system recently received approvals from the American Bureau of Shipping and the United States Coast Guard that enables them to be specified throughout the entire vessel.



VIEGA, LLC

12303 Airport Way, Suite 395
Broomfield, CO 80021
(800) 976-9819
Email: insidesales@viega.us
Website: viega.us
CEO/President: Dave Garlow

THE CASE:

Only Viega offers press fitting systems in multiple materials such as Viega MegaPress for black iron, Viega ProPress for copper and stainless and Viega SeaPress for copper-nickel. With the widest range of options and maritime industry approvals, Viega can be installed in many applications including potable water, fuel and fire sprinklers.



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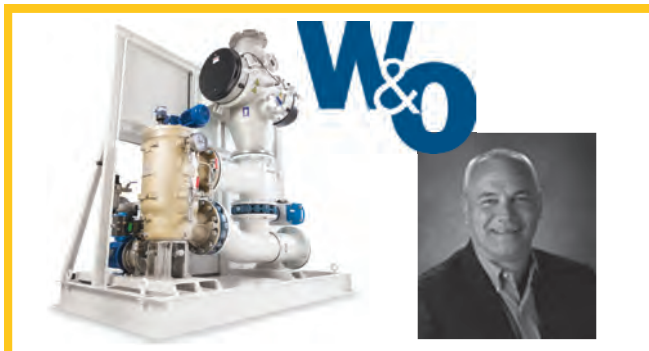
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THE COMPANY:

For over 40 years, W&O has been the leading source for special alloy pipe, valves, and fittings with over \$50+ million in stock. Over time, W&O has broadened its offerings to include value added engineered solutions including pumps, actuation expertise and assembly, consultancy, and project-management organization. The marine industry works 24/7, and so does W&O. W&O focuses solely on the maritime industry, representing the most recognizable brands in the industry and offering more products at more locations than any other marine products distributor in the United States. Serving all segments, W&O understands the unique needs of shipbuilding and repair industry. Through strategic partnerships with global manufacturers specializing in the marine industry, W&O ensures successful installation and excellent operational results. Leading companies such as Hyde Marine, Tranberg, Perma-Pipe, as well as SeaCor by Georg Fischer Piping Systems work closely with W&O in developing state-of-the-art solutions for the global marine industry. With the recent acquisition of EMI, W&O has expanded its portfolio of products and capabilities to include steering and propulsion control systems, alarm and monitoring systems, tank level gauging systems, valve control systems, PA/GA systems, and custom fabricated consoles.



W&O SUPPLY

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Email: jwolf@daltonagency.com
Website: www.wosupply.com
CEO/President: Michael Hume

THE CASE:

W&O, a leader in the marine industry for more than 40 years, operates 18 strategically located branches throughout the world with more than 330 maritime professionals. From supplying pipe, valves and fittings to offering advanced technical solutions to the marine, offshore and cruise industries, W&O is a leader in technology, service and quality products and solutions.



YANMAR

YANMAR AMERICA

101 International Parkway
Adairsville, GA 30103
Tel: (770) 877-9894

Email: highspeedcommercial-ya@yanmar.com
Website: www.yanmar.com/us
CEO/President: Tim Fernandez

THE COMPANY:

YANMAR America is a recognized designer and manufacturer of advanced performance diesel engine and diesel-powered equipment for a multitude of market segments including marine and industrial engines. In 1933, YANMAR became the world's first manufacturer to develop a practical small diesel engine, and over the last 80 years, YANMAR has become a world-renowned diesel engine manufacturer for a wide range of applications. YANMAR America offers

two series of EPA Tier III compliant high-speed commercial marine engines. The first series is the 6AYAM-ET, which is rated at 744 hp and 1900 RPM. This 20.38 liter engine uses a fully mechanical control system for easy servicing and reliable performance. The second series includes the 6AYEM-ST and 6AYEM-ET engines, which are rated at 650 and 803 hp at 1900 RPM. Torque characteristics allow for stable cruising with the least amount of speed reduction even with sudden load changes. They also offer low fuel consumption, a long service interval, easy maintenance, low noise and a compact profile. All YANMAR commercial engines are approved by leading Marine Class Societies. In addition to engines, YANMAR also supplies original marine gears that can be adapted to a wide range of applications for better performance and easier maintenance.

THE CASE:

YANMAR has been providing quality diesel engine propulsion packages and auxiliary generator sets for more than 60 years. YANMAR America is a subsidiary of YANMAR Co., Ltd., which celebrated its 100th year of operation in 2012. YANMAR America's Commercial Marine Division recently announced three new additions to its distribution network, Mack Boring & Parts Co., W.W. Williams and Antilles Power.

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Contact:

Email: afernandez@Tropical.com

Work Phone : 561 840-2903

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REQUIREMENTS:

Minimum HS Diploma or other technical certification for Heavy Industrial Machinery, preferably in the maritime industry with 5+ years' experience on large commercial vessels with diesel engines. Previous shore

side experience and knowledge of the marine industry for the Repair and Maintenance of vessels is highly preferred. Valid driver's license and valid passport with a willingness to travel internationally as needed.

COMPENSATION & BENEFITS:

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vacations, paid holidays, and incentive bonus. The ideal candidates will have excellent scope for career development as well as exposure to the Maritime environment.

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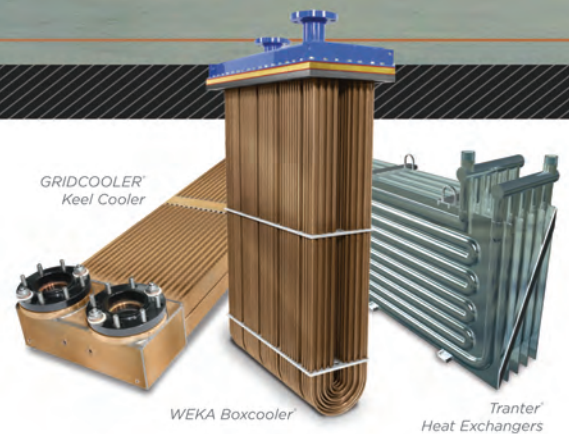
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