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Volume 31 • Number 6

JUNE 2020

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Wing Group

U.S. Navy photo by RJ Stratchko

David Clark

On the Cover

David Clark's 9100 Digital System, in its first few years on the market, has been chosen for hundreds of installations on board patrol boats and other high-speed craft.

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Marine News

(ISSN#1087-3864) (USPS#013-952)
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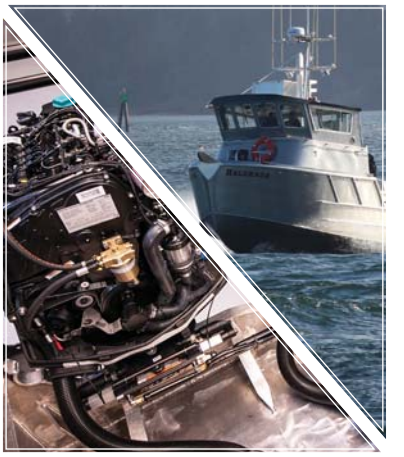

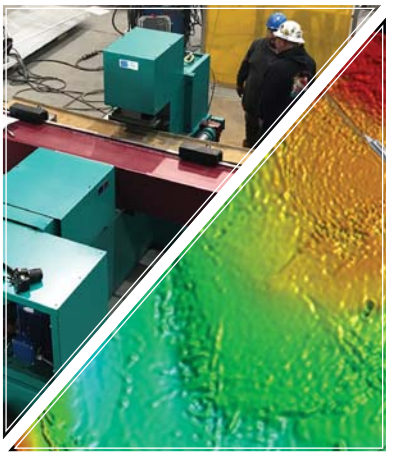

Marine News (ISSN# 1087-3864) is published monthly (twelve issues) by Maritime Activity Reports Inc. 118 E 25th St. New York, NY 10010-1062. Periodicals Postage Paid at New York, NY and additional mailing offices. POSTMASTER: Send all UAA to CFS. NON-POSTAL AND MILITARY FACILITIES send address corrections to Marine News 850 Montauk Hwy, #867 Bayport, NY 11705.

Series 9100 Digital Communication System installed on the new 13M ZH-1300 OB Interceptor demo boat from Zodiac Hurricane

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Jeanne Metayer
Technical Project Manager,
Zodiac Hurricane Technologies

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EDITOR'S NOTE

The world is a very big place. And 70% of it is ocean, leaving a large, wide-open space for threats to roam.

Journalist Ian Urbina wrote in his 2015 series for *The New York Times* and 2019 book *The Outlaw Ocean* of the various traffickers, smugglers, pirates, illegal fisherman and other criminals operating, often with impunity, on the high seas. While there may be no shortage of laws governing the oceans, Urbina's coverage describes a world where enforcement is clearly lacking, if not totally absent.

Maritime security has become a major concern in places such as the South China Sea, the Arabian Gulf and off the coast of East Africa, yet the story is very different closer to home here in the U.S. Nathan Ryder, an intelligence analyst for maritime security risk management firm Dryad Global, makes this clear in his op/ed starting on page 14. Of the several thousand maritime crime incidents reported over the last decade, only nine have occurred in North America, he says. But that doesn't mean maritime operators and agencies should allow preparation and vigilance to fall by the wayside. Judging by the dollar amounts being spent at the federal and local levels to protect our ports, waterways and territorial waters, it's clear that they haven't.

The continued delivery of Fast Response Cutters being built by Bollinger Shipyards (page 51) as well as the new Offshore Patrol Cutters being built by Eastern Shipbuilding (page 50), for example, will only add to the success being reported by the U.S. Coast Guard in its maritime security missions, including the seizure of criminals trafficking weapons, drugs and people at sea.

Lately, a larger portion of the national expenditure has been going toward a fleet of smaller, faster, more agile combat and patrol vessels being delivered government and commercial customers across the country. While these boat building projects ultimately are intended to keep our shores safe, they also keep U.S. shipyards and their suppliers humming. This issue, our annual combat and patrol craft edition, includes several of these success stories.

Eric Haun, Editor, haun@marinelink.com

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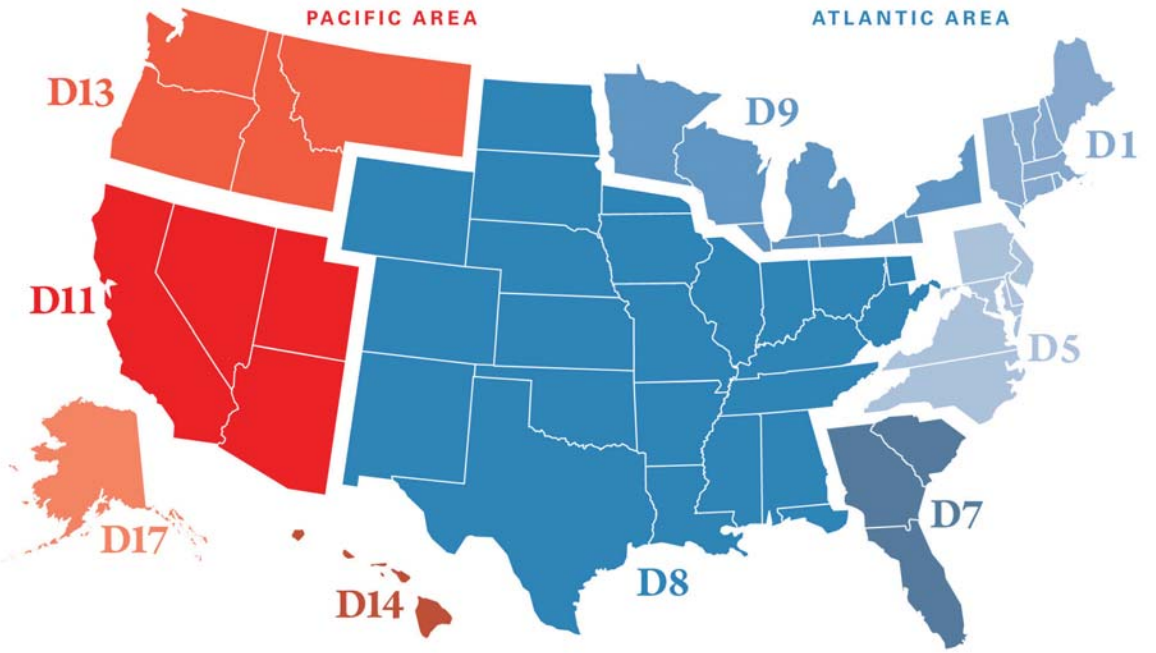
2019 U.S. Port State Control

The U.S. Coast Guard's Office of Commercial Vessel Compliance in April released the U.S. Port State Control Annual Report for 2019.

The annual report aims to provide the global maritime industry key statistics and compliance trends in relation to compliance with U.S. and international regulations, such as the Safety of Life at Sea (SOLAS), International Convention for the Prevention of Pollution from Ships (MARPOL), and the International Ship and Port Facility Security Code (ISPS).

In 2019, a total of 10,394 individual vessels, from 84 different flag administrations, made 83,231 port calls to the U.S. The Coast Guard conducted 8,622 SOLAS safety exams and 8,619 ISPS exams on these vessels. These exam numbers are down a bit from the 2018 totals of 9,025 (SOLAS) and 8,819 (ISPS). The total number of ships detained in 2019 for environmental protection and safety related deficiencies decreased from 103 to 97 with merit appeals undergoing the review process. The total number of ships detained in 2019 for security related deficiencies decreased from eight to seven. Overall, the annual detention rate of 1.12% is a slight decrease over last year, though the three-year rolling average detention ratio increased slightly from 1.06% to 1.08%.



2019 Port Stat Control Statistics by Region

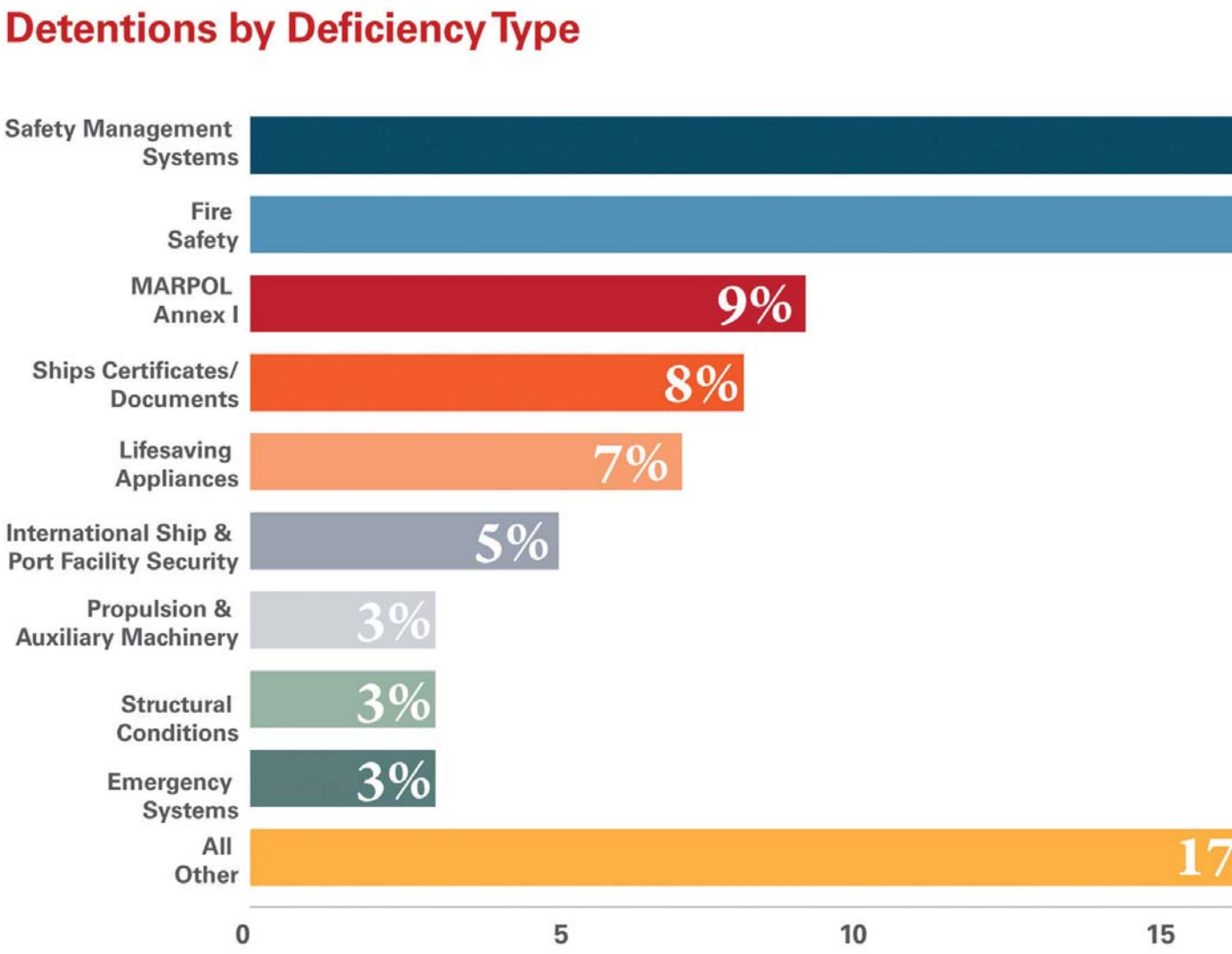
District	Ship Visits	Safety Examinations Conducted	Safety Detentions	Security Examinations Conducted	Security Major Control Actions
1st	7,415	908	8	848	0
5th	7,374	972	17	1,004	0
7th	24,226	1,465	23	1,382	5
8th	25,350	3,138	25	3,219	1
9th	3,582	168	0	122	0
11th	8,176	848	7	937	0
13th	4,116	776	14	810	1
14th	1,421	230	3	204	0
17th	1,571	119	0	93	0
Total	83,231	8,622	97	8,619	7

Detainable Deficiencies

The following is an overview of a small fraction of the detainable deficiencies discovered during PSC examinations in 2019.

Safety Management Systems (SMS) deficiencies evidenced by multiple uncorrected material and/or operational deficiencies were, once again, the most cited. Additionally, instances where the crew failed to implement the SMS as it relates to the maintenance of the ship and equipment lead all stand-a-lone SMS related deficiencies. In one case, the PSCO found a severely corroded liferaft embarkation ladder along with an improperly installed hydrostatic release at the same location. The Chief Officer admitted that required inspections of these arrangements were not taking place though he had been signing the monthly checklist to the contrary. Several SMS-related detentions resulted from failure to properly report non-conformities and take corrective actions. During one exam, the PSCO identified a dead battery in the rescue boat, numerous lube oil leaks throughout the engine room, several soft patches on fuel lines, missing firefighting equipment, and inoperable smoke detectors with no reports of non-conformities made to the company.

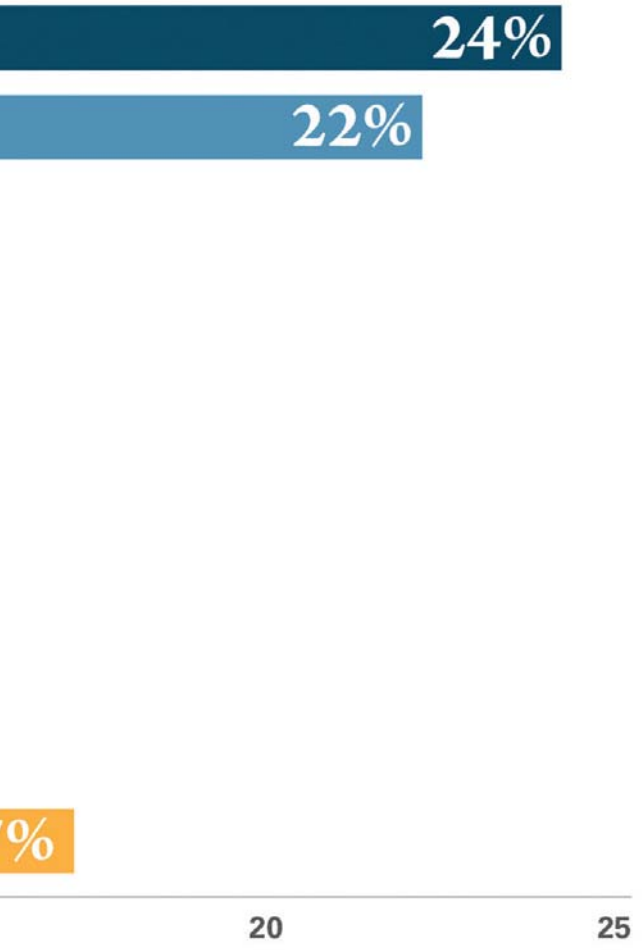
Data this year shows the number of detentions related to fire safety remained similar to the past few years. Deficiencies related to the accumulation of oil in the engine room stood out this year with 16 detainable deficiencies identified. Fuel leaks, oil soaked lagging, and excessive amounts of oil in the bilges were common observations identified by PSCOs. During one exam, the PSCO found over five gallons of lube oil pooled around the ship's service diesel engines. Keeping firefighting equipment maintained and readily available should be a priority. However, on one ship PSCOs discovered 11 portable fire extinguishers with little to no pressure in the cylinders. Eight of those extinguishers were located in the engine room. PSCOs found fewer inoperable smoke detectors during their exams this year, but several detentions



resulted when the crew tried to test heat detectors with an open flame or heat gun.

Overall, detainable deficiencies related to lifesaving systems have remained steady over the last three years accounting for less than 10% of the total. Deficiencies related to rescue boats and lifeboats lead the category this year, mostly due to not being ready for immediate use. In some cases, the engines could not be started and in others, there were problems related to the davits and falls. For 2019, the Coast Guard recorded two detainable deficiencies related to personal lifesaving equipment. One was for a ship having only 14 lifejackets on board for a crew of 21 and the other was when the PSCO discovered zippers separated from over half of the ships immersion suits.

MARPOL Annex I deficiencies increased over last year's totals. Yet, for 2019, only 9% of detainable deficiencies were MARPOL Annex I related. Deficiencies related to oil filtering equipment accounted for over 30% of the total Annex I deficiencies. In most cases, the deficiencies were related to the oily water separators not being able to produce an effluent below 15ppm. However, during one exam, the PSC team discovered unapproved modifications to the oily water separator piping system. Specifically, a ball valve was installed to bypass the oil content meter photo eye. This allowed effluent greater than 15ppm to be discharged directly overboard. If PSCOs discover cases of bypassed OWS equipment or instances of falsified oil record books, criminal prosecution of the vessel and its crew by the U.S. Department of Justice may result.



Flag Administration Safety and Security Performance

Flag administration safety performance for 2019 remained steady with the overall annual detention rate slightly decreasing from 1.14% to 1.12%. However, the three-year rolling detention ratio increased slightly from 1.06% to 1.08%. The flag administrations of Cyprus, India, and Turkey were removed from the Coast Guard's Targeted Flag List for 2019. Flag administration security performance for 2019 increased slightly resulting in the annual Control Action Ratio (CAR) decreasing from 0.09% to 0.08%. The three-year rolling average CAR held steady at 0.08%. Additionally, for the fourth straight year, there were no flag administrations listed on our ISPS/MTSA targeted matrix.

Detention and Association Appeals

In 2019, the Coast Guard received a total of 39 appeals. Twenty-three appeals were submitted challenging the overall merits of the detention. For those merit appeals that have been finalized, six were granted and 10 were denied. There are currently seven merit appeals still under consideration.

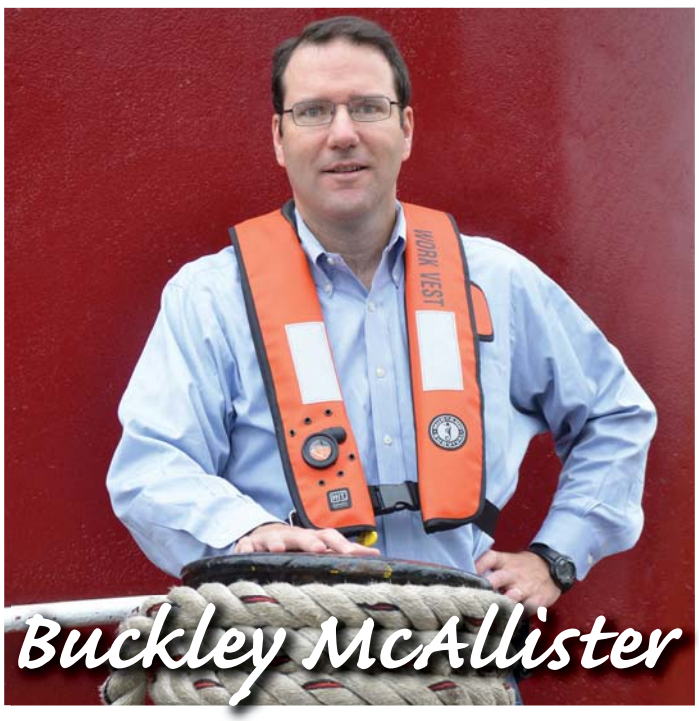
In addition to receiving appeals contesting the overall merits of a detention, the Coast Guard also received 16 appeals requesting the removal of a party's association with a detention. Of those 16, six were denied and eight were granted. Two are still under consideration.

QUALSHIP 21 and E-Zero Programs

The QUALSHIP 21 (QS21) program ended calendar year 2019 with 2,936 vessels enrolled. In 2018, nine additional flag administrations were welcomed into the program with only one losing its QS21 eligibility. For 2019, despite the decrease in total detentions, four flag administrations lost their eligibility while two additional flags became eligible.

The E-Zero program focuses on environmental stewardship and worldwide compliance with international environmental conventions. By the end of 2019, 51 ships received the E-Zero designation.

David Rider



Buckley McAllister

President, McAllister Towing & Transportation

McAllister Towing is a long and storied organization based in New York, the original U.S. COVID-19 hotspot. Describe the view from your perspective.

All McAllister administrative personnel who can work from home are doing so. The crazy thing about lower Manhattan these days is being able to park on the street. Of course, boats cannot run themselves. The Port of New York and New Jersey is blessed with great teamwork and real professionals. Everyone had had plenty of opportunities to work together in difficult times. U.S. Coast Guard Sector New York, Customs and Border Patrol and the Maritime Administration (MARAD) have done great jobs holding stakeholder meetings and escalating issues that arise in order to keep the ports operational. The big issue going forward is simply the economic recession that the entire world is facing.

From your vantage point, put in perspective how this global virus has impacted the maritime market as a whole.

We have only been able to confirm four coronavirus cases among our employees, each of which has turned out to be an

McAllister Towing

McAllister Towing recently took delivery of the 34th tractor tug in its fleet, built by Washburn & Doughty in Maine. The newly built 6,770-horsepower shipdocking tug, Eileen McAllister, slated to enter service in Port Everglades, Fla.

isolated case so far. The most impactful aspect of the crisis for the maritime sector has been the economic impacts on trade. Hardest hit have been cruise ships, passenger ferries and commuter services. Cruise ship operators have completely shut down. The Passenger Vessel Association estimates that ferry operations have lost 90% of their business and may lose $3 billion dollars in 2020.

How, specifically, has it impacted your company?

It is not good. Every business in the maritime transportation system is experiencing a drop in revenue. The reduction in the volume of our work is requiring us to defer development projects and focus on maintaining core business lines. There have been numerous public announcements about ocean carriers cutting back on capacity. Unfortunately, our intermediate and long-term planning needs to focus on how to address a drop in overall trade.

One silver lining of the coronavirus pandemic has been the opportunity to be part of the team supporting our home communities. Our tugs assisted the USNS Comfort into Manhattan. The ship received great fanfare. The Comfort has departed to return to her home berth, and while its role in the response was a little more muted than anticipated, hundreds of people were treated on the ship and it no doubt saved lives.

As a transport sector, maritime has never really gotten its due, but this event highlights the importance of maritime as an enabler of commerce. What is the one takeaway on maritime you hope that legislators or the general public understand?

Airlines and small businesses have had their own government assistance programs. Many of the programs put in place have been aimed at assisting small businesses to keep personnel employed. These programs are not of much help to organizations whose costs are largely building, maintaining and fueling the critical maritime infrastructure that moves 90% of everything.

How were you best prepared for this event?

I have the benefit of working with some of the finest professionals in the maritime industry. Our crews have consistently risen to the occasion of any crisis, from hurricanes to 9/11. Our personnel have delivered unsurpassed service to our customers throughout the pandemic. We maintain close communications with the U.S. Coast Guard and other agencies. Our partners in government were quick to recommend protocols for protecting mariners from exposure to the virus, and we were quick to adopt protocols through our quality and safety management System. For the most part, government agencies have also been committed to maintaining a fully operational posture for the marine transportation system to support our communities. Issues that arose were rapidly escalated, with the help of groups like the Maritime Association of the Port of New York and New Jersey, American Waterways Operators, the Passenger Vessel Association and the Offshore Marine Service Association.

When the smoke clears and there is a return to normalcy, what areas will you strengthen to prepare for the next event of this magnitude?

I think that the most important thing that we can do is to take care of our people. With reductions in work, we have had to furlough personnel, both on vessels and ashore. We have done our best to keep people on health care benefits and make sure that they keep their licenses and certifications. Our employees are critical to keeping maritime commerce moving safely and securely.

Failing to Prepare is Preparing to Fail

By Nathan Ryder, Dryad Global intelligence analyst


Ryder

North America is historically one of the world's safest regions for maritime transit and operations. Our data shows that of the 2,915 reported global maritime crime incidents that have occurred in the last decade, only nine of them took place in North America. This figure comes from a range of threats against both commercial, and pleasure craft vessels, primarily, attempted, or successful: attacks, suspicious approaches, illegal boardings, hijackings, kidnappings, robberies and exchanges of gunfire. This is what many of us boil down to the eye-catching buzzword "piracy". One of these incidents took place in a port in Louisiana in 2015, involving an exchange of gunfire.

However, there are areas we should focus our concern within North America. A recent trend widely noted in the maritime industry concerns the Gulf of Mexico. In 2019 and into 2020, there has been a surge in pirate attacks, primarily targeting oil platforms and supply vessels. These incidents took place between Ciudad del Carmen and Paraiso, in Mexico's Bay of Campeche, along the southern rim of the Gulf of Mexico. These incidents constitute the remaining eight incidents previously mentioned, from 2016 to as recent as April of 2020.

Despite these increased incidents, I do not think we should rush to hire armed guards for transits in the Gulf of Mexico. Additionally, there is little evidence to suggest that the current security situation in the Gulf of Mexico, or the Caribbean for that matter, will "spill over" into other areas closer to, say, the coasts of Texas, Louisiana or Florida. We will, however, have to monitor the physical and economic impact of COVID-19 in vulnerable areas.

Under regular circumstances, there is a range of socio-economic factors, beyond unemployment, regarding risk climates for piracy. Large scale income inequality, multidimensional poverty, violence, underdevelopment, pollution, government corruption and poor governance all contribute to a climate where piracy can thrive. Piracy can be an attractive alternative in regions where local marine industry, such as fishing, decimates, in conjunction with a lack of other sustainable opportunities for that community. When local waters have a high volume of traffic, largely unguarded by a naval force, it opens opportunity for attack. This is why it is more prevalent for commercial and pleasure craft vessels transiting global hot spots like the Gulf of Guinea off the coast of West Africa, or Gulf of Aden (Yemen) to have armed guards, or additional enhanced security measures.

COVID-19 caused unemployment to skyrocket across the world because businesses have been forced to shut down and whole economies placed in cold-storage.

While COVID-19 could be a factor in the global rise in piracy seen in 2020, some of the increases in incidents we witness predate the pandemic. We see this in the Strait of Malacca in Southeast Asia for example. We need to remember that most of the world has only been dealing with this for four months (though it has surely felt longer), with every country addressing it their own way. At this time, no one can reasonably draw a direct line between COVID-19's economic impact and piracy until enough time has passed, and we see how respective countries adapt to their new normal.

In North America, lockdown restrictions are beginning to loosen in both the U.S. and Mexico, shifting the focus of our fears from the consequences of unemployment, to fears about a rising second wave of cases. From a maritime security perspective, a major concern for operators is ensuring that vessel crews are prepared for the infection risks on land, where they anchor. At this time, mariners need to take extra precautions, and take stock. Does your crew have enough personal protective equipment (PPE) for your journey? Who in your crew is more vulnerable to the symptoms, do you have the capacity to quarantine, and what is the risk ashore

for your destination? While most commercial ports continue to operate, many are operating under new quarantine protocols. To minimize the risk of infection, many ports are not allowing crew transfers, and have made it difficult for arriving crews to relieve previous ones. How does that factor into your timeline? We need to keep these questions in mind as we navigate a pandemic.

While governments, ports and private industry spend millions on physical security, cyber-attacks on vessels are an overlooked emerging threat. For commercial vessels especially, this manifests in email scams impersonating trade partners or coworkers. Be aware of these threats, practice due diligence. This is as simple as double checking the email address and spelling of a sender before opening links. Scammers often have addresses that do not match up with who they are impersonating. Ensure that you have standard reliable cyber defense software and onboard WIFI networks are password protected.

Transiting anywhere in the world, vessels should always have a security plan. Best Management Practices 5 (BMP5) is the industry standard guide for keeping crews safe from maritime crime. In it you can find a spectrum of solutions for safeguarding your vessel. Understand the risks associated with your route. Consider consulting with a maritime risk management firm, like Dryad Global. Among our services, we provide transit and port risk assessments, drawing from decades of combined experience in government, private and military intelligence, giving you objective, data led assessments. On your end, continue to report anything suspicious to the appropriate reporting centers. When it comes to risk, always remember that failing to prepare is preparing to fail.

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THE WING GROUP:

Greater Than the Sum of Its Parts

Wing Group

By Eric Haun

Decades of innovation has earned Wing Inflatables its place among top manufacturers of sponsons, tubes, collars and rubber craft. While the company maintains this reputation today, the Wing Group has also grown beyond it after an ownership switch set in motion a number of major changes that have helped to both expand the company and alter its DNA.

In past decades, under the leadership of founder and now-former owner Bill Wing, the California company and its polyurethane rafts and air-holding tubes, and later air/foam hybrid collar, had revolutionized the rigid inflatable industry. Along the way, its customer base grew to include some of the world's most demanding commercial and military vessel operators. Then in 2013 the group that forms today's ownership at Wing Group took over with the goal to add another level of energy and professionalism to the company, says current president Andrew Branagh.

"Wing had always stood for market leading innovation and quality. In fact, they always pushed the envelope and invested pretty far ahead of the return on investment curve," Branagh says. "Current ownership saw this and believed that additional capital to get ahead of the curve would yield success. Our immediate goals were to stabilize the investment cycle and then be able to be less reactive and more strategic because the organization would be able take a longer view."

Geared for growth

Wing embarked on its expansion trajectory by first dialing in on ways to improve its business from within. "The company that manufactures the best product is not necessarily the best company," Branagh says. "We have worked to every day deliver a more holistic view of what it means to be the best. Certainly, we need the best physical product, but it also needs to supported with terrific education, top notch customer service, a best in class customer service experience, a dynamic supply chain driving out waste, insightful and clear accounting and personal commitments from the team members to take that extra step."

The approach enabled the company to start the next part of its journey, one that would grow its revenues tenfold from 2013 to today on the back of several strategic business acquisitions. Today, Wing Inflatables still ranks among top collar, sponson and raft manufacturers, but that's only part of the group's wider offering. With the addition of Henshaw, FabTek, The Patten Companies, and, most recently, Mustang Survival, the Wing Group also supplies aviation life rafts, vessel doors, windows and hatches, as well as lifesaving solutions such as flotation devices, dry suits and other protective apparel.

"Using the original Wing platform as a stepping stone, we looked for organizations that were already known for best-in-class quality products but maybe not yet knows for holistic greatness. Combing that search criteria with our fundamental desire to be a solution provider, became a gating metric that framed our view of acquisitions," Branagh says.

Wing had already established a strong North American market share building for customers such as the U.S. Army, Coast Guard, Navy and SEALS, even NOAA and NASA, among others, so it went oversees to reach another market by acquiring complimentary company Henshaw in 2016. Wing and Henshaw offer products that are complementary; "similar but different," Branagh says. As more of a commercial industrial military builder, Wing's tubes are welded and made using polyurethane fabric, while Henshaw uses a glued house using CSM/Hypalon popular in Europe's recreational markets (though both manufacturers build for each of the market segments).

The group's next acquisition, Patten, brought Wing's fabric welding capabilities to a largely historical gluing life raft facility in Lake Worth, Fla., Branagh says. "Moreover, again, Patten's primary customers were the same as the Wing organization's."

Wing continued its expansion with the acquisition of a Washington-based manufacturer that shares many of its existing boat building customers. "FabTek was actually brought to our attention by our OEM base where they said, 'Please take a look at this little company. We need them to flourish as they matter in our boat construction.'" FabTek builds doors, hatches and windows for commercial/military vessels and high-end superyachts and recreational boats.

Wing expanded significantly with its most recent addition, Mustang Survival, acquired from the Safariland Group in June 2019. Mustang, a 50-plus-year-old company and developer of the world's first floater coat, supplies equipment such as inflatable and foam PFDs, dry suits, immersion suits and a number of other pieces of safety and lifesaving equipment used by operators on vessels that the Wing Group has supplied parts for. Mustang has three facilities: Vancouver, B.C. for manufacturing and sales, more manufacturing in Jacksonville, Fla. and a repair and distribution center in Spencer, W. Va.

The company is significantly larger today than it was before new ownership came in, growing from a few dozen staff in 2013, to nearly 500 employees working at 11 group locations sprawled across the globe in the US, Canada, UK and Sweden. Growing sales across the


Mustang Survival

group are nearly even split between domestic and international, with UK and Canada serving as top non-US markets followed by the Middle East.

The acquisitions have also made for a more well-rounded company delivering an expanded scope of related products to a similar yet larger customer base. "Potentially, one could board a boat that has a Wing collar, a Patten life raft, a Fabtek door, hatch or window, a Henshaw/Wing supplied self-righting bag, while wearing a Mustang dry suit, PFD and super cool baseball cap. Moreover, all of the organizations have deep solution-oriented relationships with our military professionals."

In Wing's case, the sum is greater than its parts. "We thrive and grow as an organization because of or unique ability to work together as a team, recognizing and embracing each other strengths and supporting areas of weakness."

"The future is bright at the Wing Group, and there is a palpable sense of excitement in the limitless opportunities our businesses have to work together and to innovate," Branagh says. "Just recently Mustang Survival was approached by a large Canadian hospital service to make medical isolation gowns to protect against COVID-19. Similar materials, similar construction as our dry suits. Within weeks we were shipping top quality, high-end gowns to hospital systems throughout Canada. Mustang even trained Patten on the new designs, and we're now shipping to U.S. healthcare and emergency responders customers.

"Similar collaborative innovations are happening in boat and raft design.

"The common themes in our businesses might be high-end textiles, seam sealing, and highly engineered protective and tactical products. But our joint opportunities are simply endless."

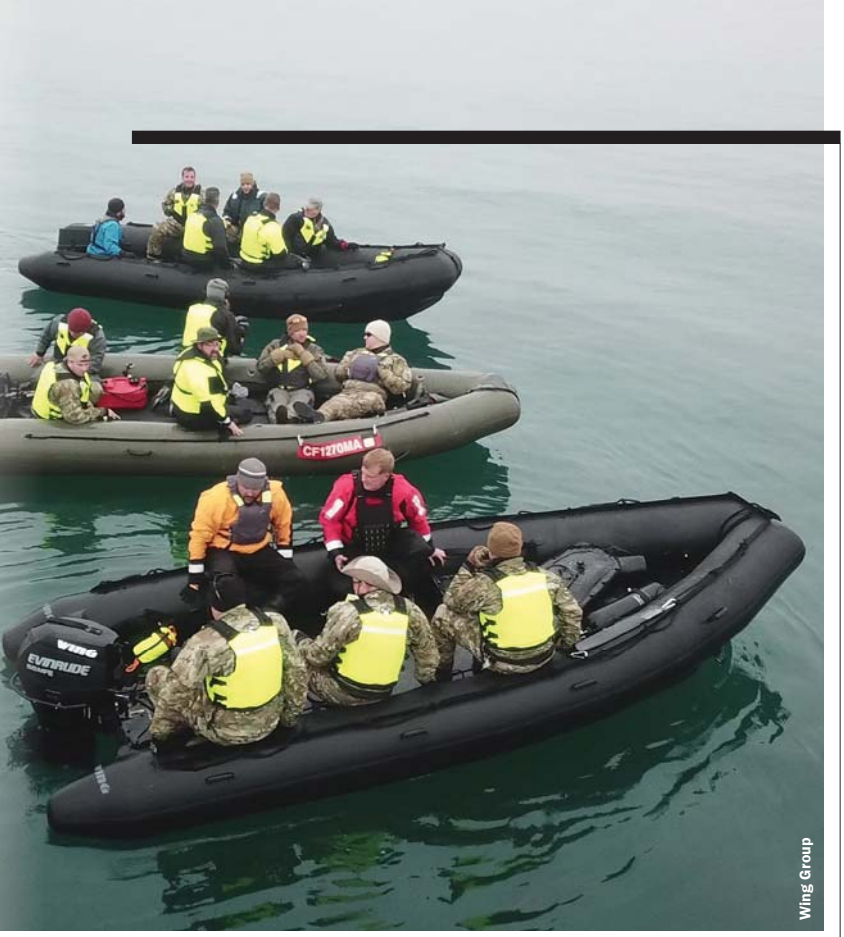
Finding solutions

For the Wing Group, it's not enough to simply add new products to its lineup. "The Wing Group philosophy is to provide solutions. Sure, we provide products. But, all of our products exist in order to provide solutions for a specific or general set of needs," Branagh says. "We are at our best when we are asking our customers and partners the right questions: What problem are you solving for?"

According to Branagh, the approach allows the company to both follow and lead the market. "As the market sees problems or needs, we are constantly finding solutions," he says.

Each year the company increases its spending toward engineering and design, with 25 full-time employees currently in its engineering/design departments. "Our engineering team continue to stretch the boundaries of how to design and build, finding new techniques both in production and front-end engineering. We work very closely with our partners and customers to really understand their need and, as the solution provider, design and build a product that will fulfill their need and exceed their expectation. We invest in technology and the best people, and the results show. This is true across all of our product lines: commercial, military and recreational."

Looking at the military segment in particular, Branagh



Wing Group

points out that people are the greatest asset. "Any technologies that can further leverage the combat effectiveness of the operators will continue to be at the forefront of the development curve," he says. "Something as simple as Wing's CRRC (combat rubber raiding craft – small black inflatable boats that are so important to the special forces community), need to be evolved. Wing has introduced innovations to that product line each year for the last five years culminating in a complete revamp of the platform for this year. We brought a large number of users together to share a host of different concepts that were all designed to reduce operator stress."

New fabrics are also being developed across the group. "We are looking to unveil a fifth-generation polyurethane fabric that is twice as durable, lighter and even more UV resistant. Our dropstitch fabric design innovations are bringing completely new boating designs to light. We have a fully inflatable boat design that reduces operator body G force by over 50%. Our Patten company is using fabric and construction technology to dramatically reduce both the weight and footprint of our rafts by 35%."

Among other ongoing innovations, while Mustang is developing pilot flight suits that enhance comfort and effectiveness, Henshaw has brought reduced radar cross section concepts to the marketplace and our Fabtek is examining ways to improve quality across all applications.

"We are constantly finding that our growth comes from technical solutions," Branagh says.


Briartek Man-Overboard
Indicator (MOBI)
Whelen R
Blue Patro
.50 Cal Aft Mount
Ullman Dynamics
Echelon Sportback
Willard Marine
Sea Force 1100 MK3
Hamilton Jet
HJ292 Waterjet
Livorsi Hydraulic
Trim Tabs
Shipboard Tie Downs
Rated @ 5,600 lbs
Military-Spec
Fiberglass Hull
Inboard and Outboard
Lifelines

Outfitting the Modern RHIB

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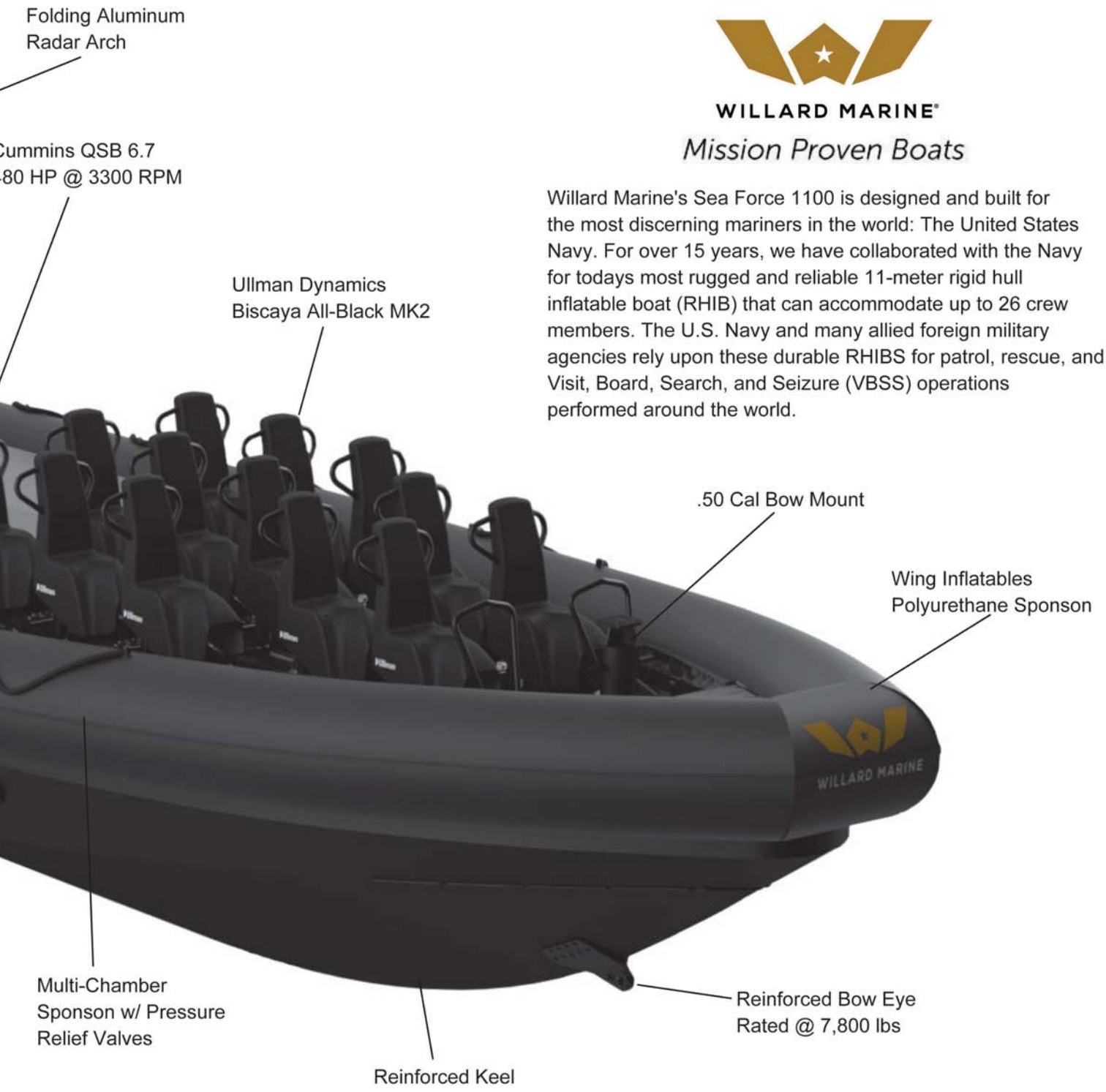
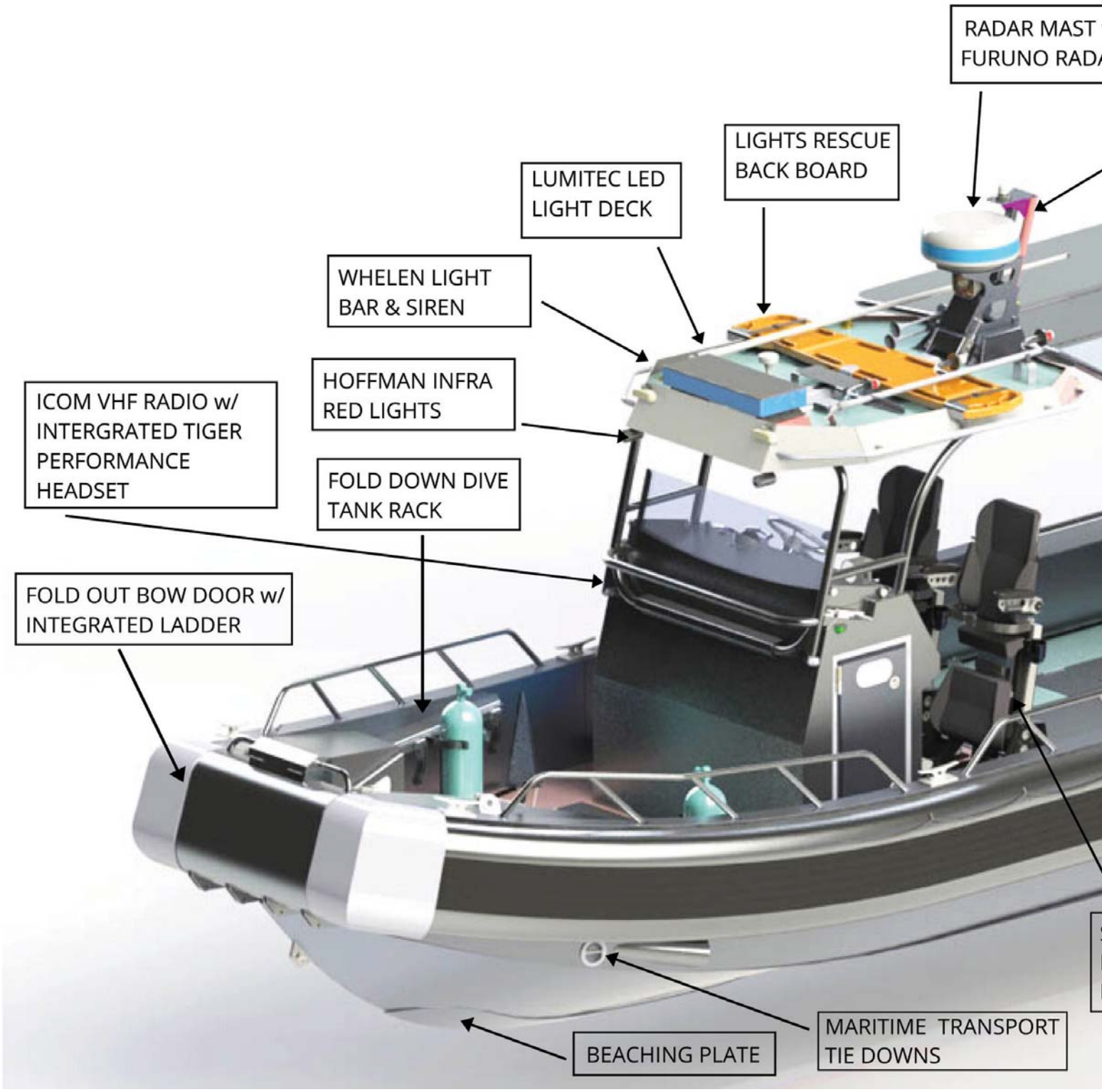


WILLARD MARINE®

Mission Proven Boats

Willard Marine's Sea Force 1100 is designed and built for the most discerning mariners in the world: The United States Navy. For over 15 years, we have collaborated with the Navy for todays most rugged and reliable 11-meter rigid hull inflatable boat (RHIB) that can accommodate up to 26 crew members. The U.S. Navy and many allied foreign military agencies rely upon these durable RHIBS for patrol, rescue, and Visit, Board, Search, and Seizure (VBSS) operations performed around the world.

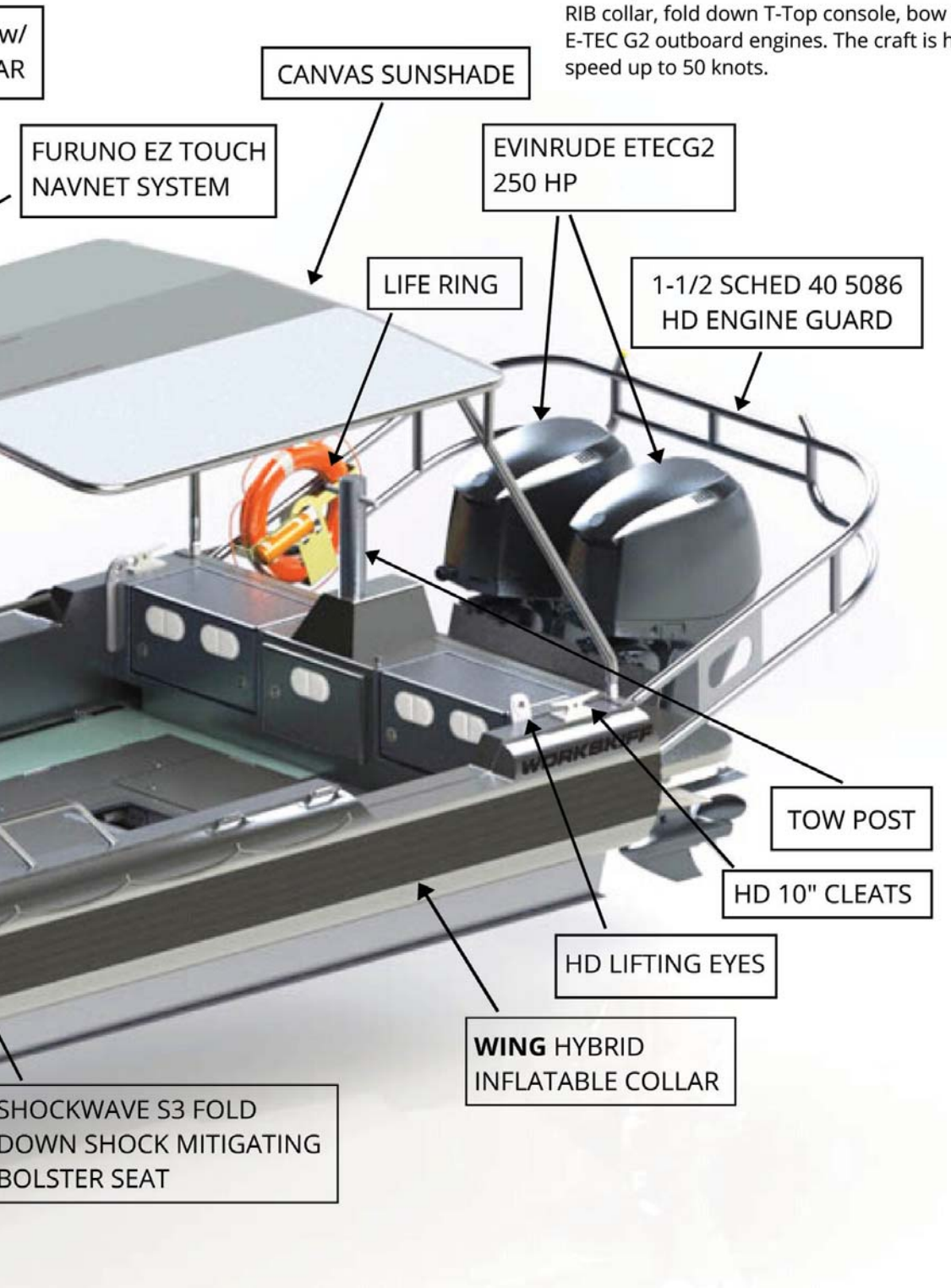
Outfitting the Modern Support Craft



WORKSKIFF
ENGINEERED FOR WORK | BUILT TO LAST

8M SURFACE SUPPORT CRAFT
NAVAL SPECIAL WARFARE

Workskiff's Surface Support Craft was designed and built for US Navy Special Warfare Navy Seals diving operations as part of a 44 boat delivery. It is based on an 8M X 3M aluminum hull with Wing Inflatable hybrid RIB collar, fold down T-Top console, bow dive door and twin Evinrude 250 HP E-TEC G2 outboard engines. The craft is highly maneuverable and capable of speed up to 50 knots.



U.S. Army photo by Christopher Prows

USMI's Family Recipe

By Eric Haun

Barry Dreyfus Jr., CEO of United States Marine Inc. (USMI), doesn't keep the recipe to his company's success a secret. In fact, it's displayed plainly for all to see on the homepage of USMI's website: family, integrity and quality. These have been cornerstones of the 36-year-old firm, today regarded as one of the nation's premier military small craft builders.

Headquartered in Gulfport, Miss., with a maintenance/repair facility in Chesapeake, Va., USMI is a fully integrated manufacturer of military, patrol and special warfare boats available in lengths from 21 feet to 90 feet. The company is capable of designing, building, and testing all of its vessels in house.

USMI has been delivering to U.S. Department of Defense (DoD) and government/military customers from more than three decades with a track record that speaks for itself. "Quality is defined by the customer, and in the DoD world that is defined by a specification, scope of work and CDRLs [contract data requirements list]," Dreyfus says. "Our documented history of zero defects at the start and end of acceptance trials gives the government assurance we can deliver upon our obligations." That's quality.

The shipbuilder, whose main Gulfport facility has a certified ISO 9001:2015 Quality Management System for the Design and Fabrication of Watercraft for Military Applications, recently secured a $108 million, five-year, indefinite-delivery, indefinite-quantity contact to build Combatant Craft Assault (CCA) vessels to support U.S. Special Operations Command (USSOCOM) missions globally.

"The CCA is the success of collaboration of industry and government to form a truly innovative design for the battle space. The CCA can operate across the full spectrum of the military maritime environment including Visit Board Search and Seizure (VBSS) and maritime interdiction in hostile environments. The CCA takes advantage of USMI's experience in advanced military composite construction techniques to create an unfair advantage for our customers," Dreyfus says.

The CCA is also the fourth USMI-designed craft to be awarded the David Packard Excellence in Acquisition Award (including two from USSOCOM) over the last 25 years, Dreyfus says. The award recognizes organizations, groups and teams that have demonstrated exemplary innovation using best acquisition practices that achieve acquisition excellence in DoD.

"USMI has over 32 years of experience with DoD maritime

Special Warfare Combatant-craft Crewmen conduct a Maritime External Air Transportation System training evolution in Moses Lake, Wash.

operations. Agreeing on expectations by using this knowledge is essential. We know attention to the contract specifications, drawings, statement of work and incorporated FAR [Federal Acquisition Regulation], DFAR [Defense Federal Acquisition Regulation Supplement] and special clauses prior to production commencing will allow everyone to be on the same page. This is very important as the program progresses, especially as complex as the craft are now.

"Bottom line, the collaboration between USMI and its customers reduces risk in many areas including cost," Dreyfus says. "USMI is proud of the fact that our contracts rarely if ever experience cost growth for firm fixed price production craft. We would rather lose a contract competition than low ball it and request addition funding later on in the program." That's integrity.

"Integrity means doing right is more important than being right, as in should an issue arise in a program it is important to bring it to customer's attention as soon as noticed, even if the fault lies in our court."

Asked about recent trends in the construction of patrol and combat craft, Dreyfus says customers are putting more importance on the total ownership cost including fuel cost, maintainability, supportability and reliability. "Advances in technology are increasing the reliability and efficiencies of the systems on the vessels and allowing builders like USMI, who are capable of leveraging the capabilities of a wide variety of materials, to build a composite boat, and offer a product that is far superior."

Boat building has come a long way in the past 40 years, and aluminum is no

longer the only answer to building a high-speed mission capable craft, he says. "USMI uses what materials are best suited for the application, whether that is carbon fiber, aluminum, stainless steel or titanium. We leverage them all to provide a lower total ownership cost."

FAMILY

Perhaps the strongest of USMI's core values is family. United States Marine Inc. was started by Barry's father in 1984, and today the privately held company is majority-owned by current management (each with more than 25 years in the business). But Dreyfus takes the term "family business" to another level. "Our customers are part of our family, and we make sure our relationships are strong," he says. "In our market, DoD, we have built upon our previous successful contract performances. We feel the best way to keep a customer is make sure we support them from start to finish. There are many businesses that say it, USMI does it."

USMI also counts its employees as family, as evidenced by its response to COVID-19. "Because of the hard work of our congressional delegation in helping retain the work force, we gave out an extra pay check to all employees for their efforts and sacrifices," Dreyfus says.

Like many of America's shipbuilders, USMI is deemed essential to national security and has been able to remain in full production throughout the coronavirus pandemic. And again, like most, the shipyard had no set playbook to handle what would unfold. But that doesn't mean USMI wasn't ready. With diligent preparation and a family-like team effort mentality, the company has been able to successfully react to dynamic situations as they occurred.

In early February the company secured the necessary personal protective equipment (PPE) for its staff, and in March it started in-depth tracking employee health, monitoring legislation and holding daily leadership meetings.

USMI also holds weekly meetings to solicit employees' input for improvements. "Together, USMI has been able to generate actions and alter those as needed during this crisis. We started screening entrance check points because of employee suggestions weeks before they became standard processes for most businesses. All work stations have sanitization available in abundant quantities, bathrooms are cleaned three times a day, doors are propped open so a person does not have to touch the handle, tools are disinfected and the list goes on and on."

"Make no mistake, this event is a challenge for everyone. We are planning a long game strategy for the virus, but hoping it will end sooner," Dreyfus says. "As my father, Tom Dreyfus, once said, 'It is fourth down and you cannot punt.'

U.S. Navy photo by RJ Stratchko

Special Warfare Combatant-craft Crewmen conduct live-fire drills at the riverine training range at the John C. Stennis Space Center.

While these are tough times, USMI, like the United States of America, is resilient. In our 36-year history, we have been tested many times. USMI and our country will move forward, there is just no alternative."

The current market for defense and other government boatbuilders is generally healthy, and Dreyfus says there are plenty of opportunities for growth at USMI. For example, the recent USSOCOM contract may lead to the creation of new jobs at the builder's Gulfport site. In addition, the company is expanding its operations at its in Chesapeake facility, having recently added both engineering and outfitting personnel. Growth is on the agenda at USMI, "but not so much it will affect our ability to deliver a quality product on time and within budget to our customers," Dreyfus says.

"USMI's greatest opportunities in the future will depend on our performance today...We concentrate on delivering on our commitments. We see growth in foreign military sales, as the DOD continues to push for commonality of weapon systems amongst our allies." Dreyfus says. "Our strategic relationships on the West Coast and overseas continue to benefit our existing customer base."

"As of today, with the hard work of the last few years, USMI has achieved a level of backlog that is sufficient to keep our family together for years to come."

Navy SEALs make their way to a cargo ship to practice maritime visit, board, search, and seizure operations off the coast of San Diego.

U.S. Navy photo by Kristopher Kirsop

30' Fire Boat built for Baytown, Texas Fire Department

Shipyard Profile:

North River Boats

By Eric Haun

One of the United States' largest and most productive heavy-gauge aluminum boat builders has been humming along at its recently expanded manufacturing facility in Roseburg, Ore.

Last spring, North River Boats added a new 33,750 square foot manufacturing building to house all commercial and large boat recreational fabrication. Additional remodeling of the existing factory was completed shortly after to expand small boat fabrication. The yard relocation of its canvas/upholstery shop and received new paint preparation bays, a new 65-foot down draft paint booth, expanded outfitting bays, and solar panels installed on both the new building and existing factory.

The upgrades have helped North River Boats set pace to build just over 300 vessels this year for a combination of commercial, government and recreational customers. Its current orderbook includes a mix of vessels ranging from fire, pilot and patrol boats to charter fishing vessels. "North River Boats has a very diverse strategy that includes offering several different boat models to many different market segments," says Mike Blocker, the builder's sales director.

"We are also a very customer-oriented company with the ability and the willingness to build very custom vessels to exactly meet our customer's needs. Over 15% of the commercial boats we build annually are highly customized to the point of being totally new builds each and every time," Blocher says.

Much of the company's current vessels in production and on order fit into a specific part of the marine market. "Demand for patrol/mulitmission workboats seems to be hold-

A 27' Alaska Fish & Game patrol boat

Two 32 x 15' 6" Bristol Bay Gillnet boats built this year. One features a Scania 750 hp engine and HI 500 waterjets, and the other is equipped with a MAN 730 hp engine with conventional prop shaft.

All images: North River Boats

ing steady from year's past," Blocher says. "A lot of it really depends on what [FEMA's] Port Security Grant Program does from year to year and what agencies receive the grants. There is definitely a trend upward on the multimission style boats where they are used jointly by both fire and police."

With a number of these builds underway or lined up, Blocher says North River Boats has been able to keep its shop running throughout the coronavirus pandemic, with office personnel working from home where possible. "We took very appropriate steps early to protect the safety of our employees and our customers," he says. "Douglas County, Ore. has seen very few cases and we are now in the beginning stages of reopening."

Over the past six months, and despite COVID-19, North River Boats delivered a handful of commercial and government boats including five patrol boats ranging from 21 to 27 feet, two charter fishing boats, two research vessels, several rigid aluminum inflatable vessels (RAIV), a pair of gillnetters and a few multisession vessels such as a 33-foot survey/patrol boat and a 30-foot fire boat/landing craft, among others.

North River Boats currently has a healthy backlog that includes an array of commercial and government vessels under construction or waiting to enter production this year. These include a number of fire, pilot and patrol boats and other multimission vessels, as well as an assortment of charter fishing vessels.

Looking ahead to potential long-term market impacts from the coronavirus, Blocher says, "It is too early to determine how much of an effect this will have overall, but we are optimistic that the impacts will be minimized as much as possible."

All images: David Clark

Selecting a Crew Communication System for Patrol Boats and HSC

Headset communications on board workboats in harsh marine environments are subject to a variety of challenges: background noise from loud engines and high wind turbulence around the microphone and the highly corrosive salt and spray in marine environments. On board rigid hull inflatable boats (RHIB) and high-speed craft (HSC) that pound through rough waters at 60 knots – including a variety of patrol boats and interceptor/interdiction vessels – critical communication can be rendered all but impossible. Crew members attempting to communicate are often reduced to shouting, creating situations where messages are subject to interpretation errors that may compromise safety and even the mission itself.

Chris Toller, Project Manager, Patrol and Military Crafts from MetalCraft Marine US Inc., and a David Clark customer, puts it this way, "Crew communication is paramount for effective missions and crew safety. The operator needs to know that the crew is OK and secure, can receive navigational and situational awareness input, and provide feedback with confidence that the messages are being received."

David Clark Company has nearly two decades of experience in providing the RHIB/HSC sector with wired and wireless headset communication systems for the most demanding

marine applications. "With our inhouse state-of-the-art design and engineering resources, we have developed a high level of expertise in producing systems that are built to overcome the obstacles to effective communication at sea," said Bob Daigle, Systems Product Manager at David Clark Company.

The company has identified three overarching considerations – scalability, versatility and simplicity – that impact the selection, installation, configuration and use of communication systems designed for this demanding market segment. These issues are addressed most effectively by the David Clark Series 9100 Digital Marine Communication System. The system provides clear, headset communication for an unlimited number of users, radios and other devices, with each user being afforded up to four mode selections to program to their unique job criteria.

Scalability for future-proof communication solutions

Scalable digital architecture supports a virtually unlimited number of users. The heart of the 9100 Digital System is the Master Station. All wired and wireless user interfaces and communication headsets are connected through this unit. The Master Station features four card slots for connectivity to Headset Stations, Wireless Gateways, mobile radios, loud hailers and other devices. The Switch Card and Radio/Aux Card Modules enhance system flexibility and scalability to provide an unlimited number of crew members with individualized, streamlined control over a suite of audio and communication devices.

System versatility meets ever-changing mission protocols

The 9100 Digital System provides high performance Ethernet/IP versatility and offers a modular approach to system interface connectivity to two-way radios and other common ancillaries. As the mission profiles of military and first responders on board HSC continually evolve, this architecture provides digital processing of both input and output signals and immense control over communications routing to meet a wider variety of complex command and control requirements.

One of the unique capabilities of the 9100 Digital System that enhance communication versatility and flexibility is the ability to seamlessly integrate wireless headset technology. The integration of wireless technology with the 9100 Digital System provides a hybrid communication solution, combining the reliability and dependability of a wired system with the added freedom and mobility that wireless technology provides. With a myriad of tasks that deck crew must perform on high-speed craft, the ability to communicate with the operator and other crew members untethered and hands-free greatly increases safety, situational awareness and efficiency.

Communication via wireless headsets and belt stations is also critical during visit, board, search, seizure (VBSS) operations, allowing crew members to board a suspect craft, while maintaining communication with their vessel.

System simplicity is critical

System simplicity, encompassing all facets of installation, configuration and operation, is a key factor in the selection of a crew communication system for vessels in the RHIB/HSC sector. System simplicity played an important role in the selection of the 9100 Digital System for installation on the Multi-Mission Interceptor (MMI) demo boat, manufactured by SAFE boats International. "The David Clark [digital communication] system is comfortable, reliable, easy to use and it works...That's critical for our operators that are out using this equipment," said Rob Goley, Business Development Director for Federal Programs, SAFE Boats International.

Both hardware and software for the system is built for ease of configuration. Because the system operates on power-over-Ethernet (PoE), all cabling, except for the radio interfacing, is Cat5e. This common communications cabling simplifies installation configuration for boat manufacturers and system installers. Additionally, the system uses a web browser type graphic user interface for programming the system. Configuration of the system can be accomplished by any technician with a laptop and an Ethernet cord. This is especially important for in-field service and system updates.

Operation is simplified with intuitive user interfaces and comfortable, yet durable, noise-attenuating communication headsets. Headset stations and wireless gateways feature a simple control array with pushbutton talk-group selection switches, LED indicators and centrally located PTT switch for fast, effortless access to system functions. Communication headsets feature a PTT switch, conveniently located on the microphone bracket. This intuitively located PTT switch is easy to find and utilize under stressful conditions on board the vessel, while affording simultaneous mic adjustment and transmit capability.

The 9100 Digital System is purpose-built to withstand the harshest marine environments. System components feature marine-grade, water-tight design – including corrosion resistance, wide-ranging temperature tolerance, high performance shock/vibration absorption, and superior dust and water ingress protection – to ensure reliable communications.

The David Clark's 9100 Digital System, in its first few years on the market, has been chosen for hundreds of installations for the U.S. Department of Homeland Security and U.S. Customs and Border Patrol interceptors, as well as on many U.S. Coast Guard small boat programs and international police, SAR and security vessels in the EU, Middle East and Asia Pacific regions.

OXE Marine

Making a Case for Diesel Outboards

By Eric Haun

Now more than ever, professional operators are opting to run outboard engines on a various small military craft, patrol boats, multi-mission workboats and other vessels that have traditionally been powered by small to midsized inboard engines.

Using engines that can be mounted on the outside of a vessel instead of those requiring placement inside the hull presents a number of advantages, including space savings on board, easier access for maintenance as well as simpler, quicker replacement, to name a few.

And when it comes to outboards, there's been a lot of buzz around diesel, which offers a number of its own advantages.

"Probably the simplest is the safety of the fuel," says Luke San Antonio, Commercial Product Specialist, Mack Boring & Parts Co., the U.S. Northeast distributor for Sweden-based diesel outboard engine manufacturer OXE Marine.

Compared to gasoline, diesel is a less flammable fuel and therefore much safer to work with in all working environments. In addition, with diesel engines the combustion of fuel takes place due to the heat generated by the compression of fuel and air inside the cylinder. Compression ignition is safer than petroleum being ignited by a spark plug, or any other spark.

Myron Mahendra, CEO of OXE Marine, adds, "Many vessels are hindered by regulations to carry petrol onboard if fire safe containment is not provided. The use of petrol is, therefore, a challenge for any vessel with tenders."

And then there's the NATO single fuel concept, which aims to maximize equipment interoperability through the use of a single fuel. U.K.-based Cox Powertrain, manufacturer of the 300-horsepower CXO300 diesel outboard, like OXE, cites this as a key driver behind the development of its product.

Naval, military and rescue vessels equipped with diesel outboards are able to use fuel supplied from the tanks of mother ships, eliminating the need to carry or handle hazardous petrol completely, Mahendra says.

OXE Marine noted in in its 2019 fourth quarter report that it has delivered production units for government services in the U.S., Australia and Bangladesh, and the company is working to line up long-term sales for other governmental projects. According to San Antonio, both the U.S. Navy and U.S. Coast Guard have been using or testing diesel outboards on different platforms.

Another benefit associated with diesel is efficiency. Both Cox and OXE point to significant fuel savings compared to gas. Cox claims its 300-horsepower CXO300 offers roughly 30% fuel savings compared to its gasoline equivalent, while Mahendra says

Cox Powertrain

the 300-horsepower OXE 300, due to enter production shortly, uses up to 42% less fuel than a comparable gasoline outboard.

And with better efficiency typically comes longer endurance. Mahendra says the OXE diesel offers a 70% increase in operational range compared to gas outboards. "Not only will you see a lower fuel bill if you are putting high hours but you can stay offshore longer," San Antonio says.

Joel Reid, Cox Powetrain's Global Sales Director, says diesel outboards appeal to "those who need the outboards for their tenders on the mother ship because they carry diesel and they do not want to carry gas and those that burn high volumes of gas and therefore want to bring down their burn rate or increase their range."

When asked about the CXO300's advantages compared to other propulsion configurations, Reid says "We don't advocate operators to use diesel over gas or outboards over inboards; everything has its place in the market. It's normally the case that [the customer] wants diesel and they want outboards, and therefore it's a natural fit."

He says operators that come from a diesel inboard often seeking the simplicity of installation and the ease of service/repair of an outboard. "It reduces their risk of downtime so they almost see it as an insurance policy," he explains.

Mahendra says diesel outboards combine the endurance, torque and fuel use of inboard stern drives with the flexibility and replicability of outboards, making them a great fit for commercial and government operators. A wide range of vessels, from barges or slow platforms built for harbor work all the way up to interceptor applications for coast guard or search and rescue applications are running OXE diesels, he says.

"All OXE Diesel models are designed and built for the commercial user according to commercial user demands. They have been designed to combine the reliability and endurance of marine inboards with the flexibility and agility of marine outboard engines," he says.

Eying strong prospects in the United States, OXE Marine recently signed a deal with Outdoor Network Manufacturing to produce OXE diesel outboard motors in 125-200 horsepower in the U.S., with plans to add the 300-horsepower engine production for availability from January 2021. The process for selecting the final manufacture site in either Florida or Georgia is ongoing. In addition to Mack Boring & Parts on the East Coast, OXE diesels are sold by Laborde Products in the Southeast and Diesel Outboards in the West.

While the OXE diesel is offered in several power options from 125 to 300 horsepower (its 300-horsepower model is scheduled to enter production later this year), Cox's CXO300 is currently only offered at 300 horsepower. "When we began the development of CXO300 that was the most common horsepower rating used among the big outboards. As time has passed the

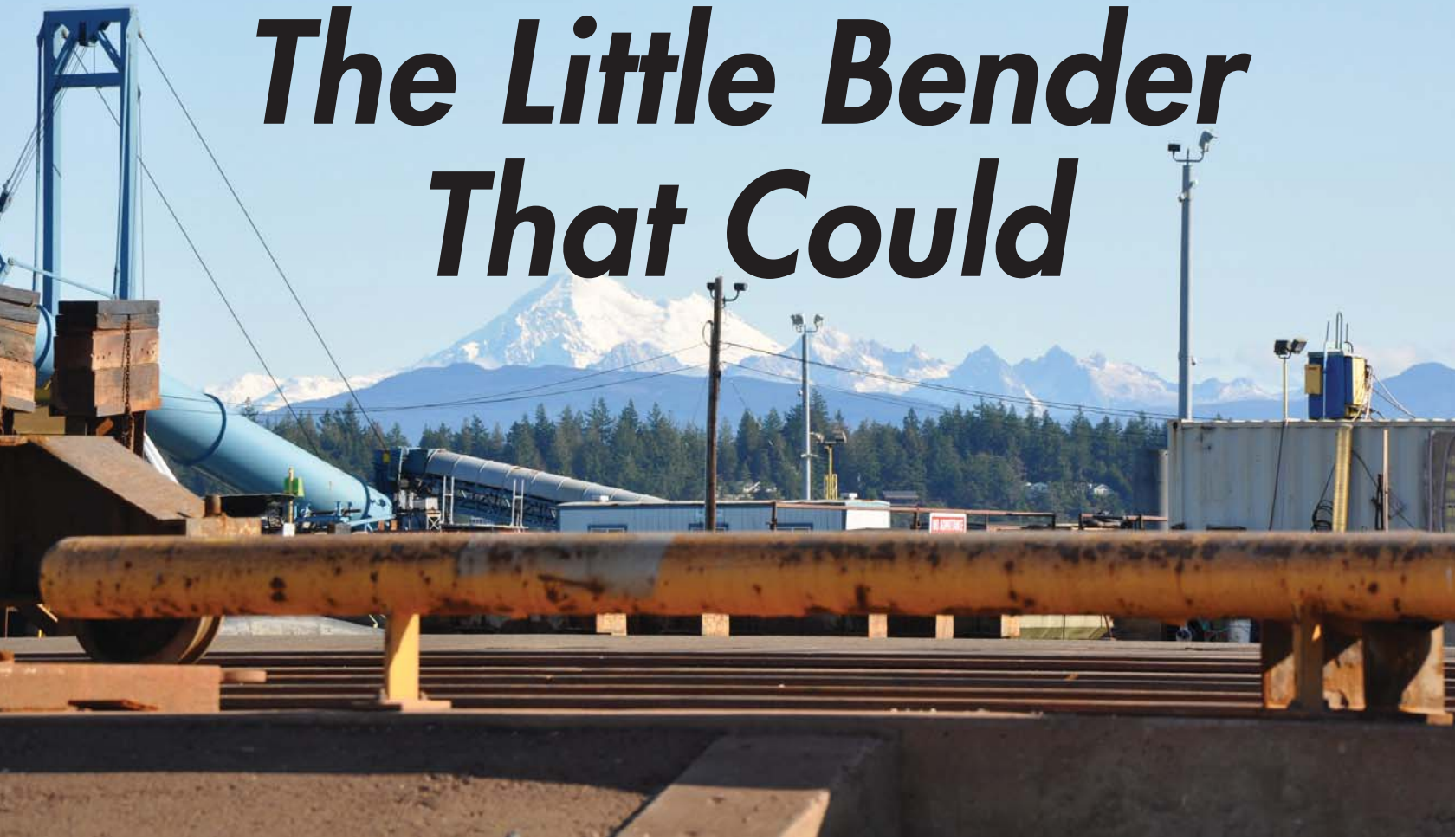
OXE Marine

power rating has increased, hence why we will be launching higher power diesel variations in the near future," says Reid. "We are already working on new models and we hope to be able to share more information toward the end of the year in preparation for a 2021 launch."

Cox began producing its CXO300 in May, in Shoreham-by-Sea, U.K. for deliveries later this year. Its distributors in the U.S. include Boatswain's Locker on the West Coast, Texas Diesel Outboard, Innovative Diesel Technology and Ring Power splitting up the South and middle America, and Power Products in the Northeast.

Both OXE and Cox diesel outboards are pricy compared to their gasoline equivalents, in some cases costing up to twice as much to purchase. But the many benefits for commercial and government customers – including better fuel efficiency, increased durability and lifespan, and improved safety (which is priceless) – may provide enough savings over time to make up the difference, and then some.

The Little Bender That Could



All images: Boschert USA

Okay, it's not that little – it can bend up to 240 tons.

But in the larger scheme of the U.S. economy, security and infrastructure; or of the country's maritime competitiveness; or even the financial health of the Dakota Creek Industries shipyard and its 300 production jobs; this little bender has the potential to make a mighty big difference.

Dakota Creek recently installed the Stierli-Bieger 2200 SE CNC horizontal ram bender in its Anacortes, Wash. shipyard. It is the first of its kind in the U.S., and it adds a steel fabrication capability that was previously only available in Europe. The Stierli bender is an important link in the shipyard's – and the country's – production process. It gives Dakota Creek the ability to craft complex opposing port and starboard hull rib frames that shift in angle and radius from bow to stern. The shipyard will use it initially to form bulb profile hull stiffeners for the tugs, fishing boats, barges, research vessels and oil recovery ships that it produces for fleets on the Pacific, Gulf and Atlantic Coasts.

The addition of the Stierli bender will dramatically increase productivity for Dakota Creek. According to Mike Nelson, Dakota Creek owner and vice president, "The Stierli will allow us to expand our daily production from around three sets of hull frames (six total port and starboard) for three people to 12 sets (24 total frames) using only one or two people and, as we get our team's familiarity and skills up to speed on the new machine even greater productivity will be possible. It will also allow us to bid jobs more competitively – because it will take us fewer manhours to do the same work. Where we once might have been priced out of a job, we will have a better shot at winning the bids."

The Stierli bender's CNC controls will also help automate parts of the process and make production of these complex designs even more efficient. The maximum bending capacity on the Stierli 2200 is HP300 bulb profiles.

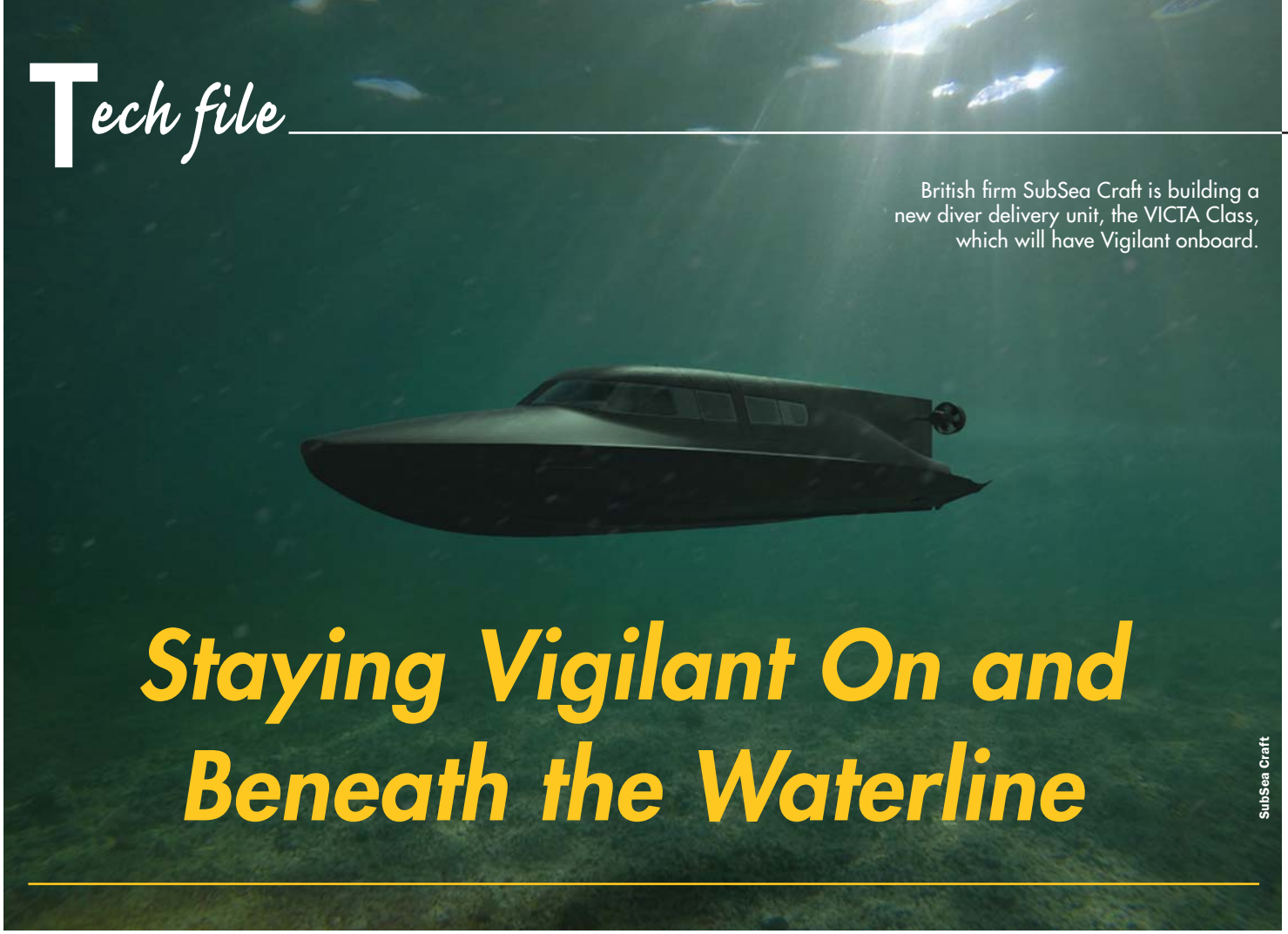
With the bender in place, Dakota Creek also raises its ability to do more sophisticated hull forms. "The complexity of new

ship hull designs has only increased," Nelson says. "As ship designers work to make hulls more hydrodynamic and energy efficient and make the factories or workspace on the boats more effective, hull designs are becoming more challenging. Now we can more efficiently take on these challenges here in Anacortes.

The Dakota Creek purchase of the Stierli bender was made possible by a 2017 grant from the U.S. Department of Transportation's Maritime Administration (MARAD). It was part of $9.8 million in grants designed to strengthen U.S. shipyard competitiveness. The MARAD grants invested in 18 small U.S. shipyards through its Small Shipyard Grant Program, supporting industrial modernizations that increase productivity and allow these shipyards to compete effectively in the global marketplace. Stierli-Bieger is represented in the U.S. by Boschert USA.

Nelson sees great potential for applying the new bender to future projects – both newbuilds and repairs. "We have a number of projects in the queue where we see the Stierli bender being a great addition to our process."

The installation of the machine on the floor of the Dakota Creek manufacturing facility caused something of a stir. It attracted a crowd of ten or so operators to see how it worked and what it was capable of bending. Under the guidance of Stierli-Bieger's Felix Meier, who set up the bender and trained the Dakota Creek staff, the operators began to realize the real capabilities of the machine. "Now that we are seeing how it functions and how easily it can be adapted, we are only starting to realize what other tasks we can perform with it, says Nelson. "It is great to see the enthusiasm of our team as they explore and discover the Stierli's capabilities. It is that kind of interest and excitement in doing great work that makes Dakota Creek successful."



British firm SubSea Craft is building a new diver delivery unit, the VICTA Class, which will have Vigilant onboard.

SubSea Craft

Staying Vigilant On and Beneath the Waterline

The ocean is a very large and increasingly congested place. More and more shipping and industry is using it. But the risks hidden below the waterline, that established navigational tools don't always detect, remain.

But what if the trend for new surface-based sensor technology, the likes of which enable cars to detect potential collision hazards, could be available for shipping to detect underwater obstacles?

That's just what Sonardyne International Ltd. has developed with its new Vigilant forward looking sonar (FLS). Instead of a visual parking aid, which shows you the view behind your car as you reverse, Vigilant builds a live, easy to interpret 3D terrain map of the seabed and the water column ahead, out to 600 meters and down to 100 meters water depth. That de-risks navigating in unknown, dynamic or congested waters. It even makes finding an anchorage easier and, as the data is also stored, backing out of a confined area is made easier.

Vigilant also sends automated warnings when a submerged or semi-submerged object or obstacle – which could be otherwise hidden from sight, radar or Lidar – is detected in the water column, out to 1.5 kilometers ahead, which provides ample time to take avoidance action. Automated warnings can also be set for water depth, for those unexpected sand banks, reefs or even wrecks.

Derek Lynch, Global Business Manager for Marine Vessel Systems at Sonardyne, says, "It's a powerful tool, taking the risk out of day-to-day operations as well as the more 'off-chart' navigation by the adventurous mariners among us. It's also a marine autonomy enabler. All the outputs from Vigilant can be used by third party integrators and unmanned surface vessel (USV) operators, straight out of the box, providing these systems with that additional level of situational awareness."

A lot of focused work has gone into both Vigilant's hardware and how the sonar works to make it as compact as possible, explains Pete Tomlinson, Engineering Manager at Sonardyne. At 30 centimeters wide and weighing only 14 kilograms in air, it's easier to fit, not just in newbuilds, where it's relatively easy to design in a hull-mounted sensor, but also retrofits, from private yachts to military vessels, tankers and even cruise ships.

Vigilant works by transmitting acoustic energy into the water, through a 90-degree azimuth and through a vertical plane down to 100 meters water depth – deeper than any other system in the market. It then listens for the sonar returns.

These are used to power two principal operational modes, Depth mode and Sonar mode. Depth mode produces the detailed 3D color coded bathymetry, out to 600 meters and down to 100 meters water depth, using a proprietary Altitude Confidence Filter (ACF), which results in very stable, high integrity imagery. Sonar mode processes the intensity of the

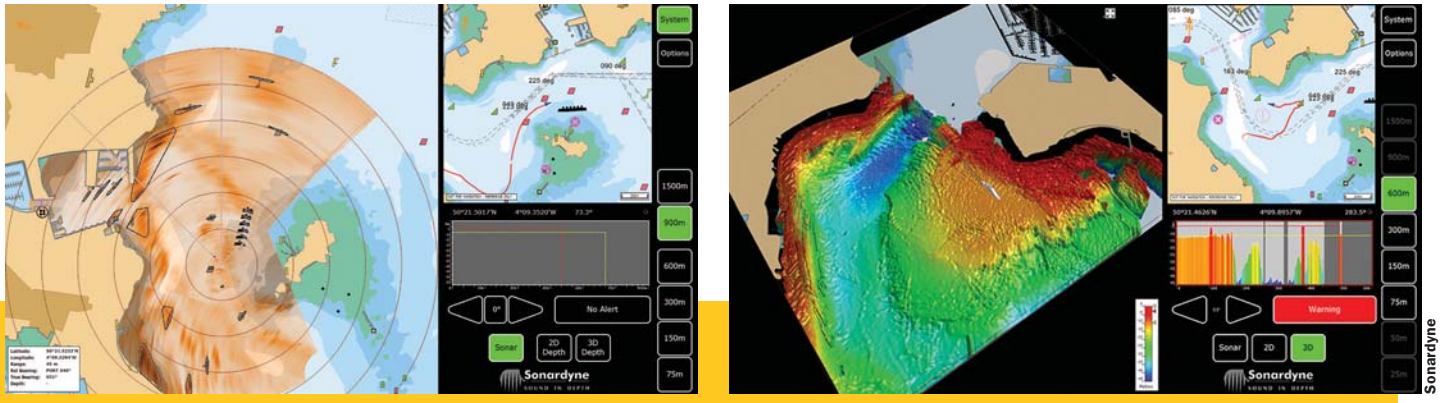
acoustic data to extract long-range positional data out to 1.5 kilometers and over a 90-degree field of view. In this mode, the sonar returns are used to generate computer aided detection (CAD) markers, which alert the operator (or a third-party artificial intelligence based processor) to the presence of navigationally relevant obstacles, such as coral reefs, rocks, containers or even small ice bergs.

"Multi-beam echo sounders (MBES) are a common type of sonar which seek to map the water column and seabed topography with a fan of beams projected directly beneath the host platform," explains Rob Crook, Research Director at sister company Wavefront Systems Ltd., which developed much of the intelligence built into Vigilant. "In terms of the nature of the resulting imagery – maps of the seafloor and water column objects – this seems rather similar to what we have designed Vigilant to deliver. However, whereas MBES has the luxury of mapping directly beneath the host platform, achieving the fundamental operational requirement of an FLS means delivering the same type of information many hundreds of meters ahead of the host platform, often in shallow water. We need to 'forward look' and still provide navigationally relevant terrain and object detection data. That's not easy.

Sonardyne

Vigilant installed on a ship's bridge provides marines with obstacle avoidance and underwater awareness in dynamic or uncharted environments.

"It means imaging both the surface and the seafloor and anything in-between (two highly reflective surfaces). It means handling high levels of multipath interference caused by multiple reflections off these two interfaces. We have to deal with increased levels of ray-bending, associated with propagation



Sonardyne

Vigilant graphic user interfaces, in 3D mode and Sonar mode.

through a predominantly horizontal sound channel. We also need to process and select for real-time display a single meaningful cut through the dense 3D data point cloud of returns. Finally, the imagery has to be electronically stabilized against significant platform motion. With Vigilant, we've overcome these challenges and built the most capable (longest range, highest area coverage, highest resolution), commercially available forward looking sonar on the market."

During testing, throughout last year, Vigilant was put through some pretty rough and hostile acoustic conditions. It still picked out marker buoys, at more than 1 kilometers away, in Sonar mode. In 3D mode, it produced fantastic images in quite enclosed harbors; a space that's about as challenging as you can get for sonar, says Tomlinson.

For the user, there's a simple to interpret graphical user interface (GUI) with easy to use automatic obstacle detection and classification. The Vigilant displays have been designed to be clear and informative without the need for advanced sonar interpretation skills, and if required, users can also view the raw profile data showing the entire water column, so they can see how deep an object is. If it's something shallow, for example, navy divers in a swimmer delivery vehicle, using Vigilant, would know they could pass beneath it.

It's an ideal tool for those working in busy coastal waters, adds Tomlinson, where groundings are all too common. Offshore energy and commercial fishing operations, which often take place in busy and frequently shallow waters, would benefit too, as would vessels called upon for disaster relief operations, where they can be going in literally blind following a tsunami, earthquake or hurricane that has dramatically changed what may have previously been well charted seabed. "For naval operations, with Vigilant, operatives can be prepared for the unexpected, whether they're in a swimmer delivery vehicle (SDV), or on a coastal patrol vessel or cruiser," he says.

Keep It Steady

All images: Humphree

By Eric Haun

Gothenberg, Sweden based Humphree was founded in 2002 by a team of engineers that sought to leverage their expertise in high-speed marine propulsion – or more specifically, hydrodynamics, electronics and digital controls – to create vessel stabilization packages that would be easy to install and use. And thus, Humphree's interceptors were created.

The compact and robust transom-mounted units feature an adjustable blade that activates vertically into the water stream beneath the hull to create a lift force. "Deployment speeds are virtually instantaneous with none of the delays of traditional horizontal trim tabs," says Sean Berrie, CEO of Humphree's U.S. arm, established in 2012 to provide sales and service for a growing customer base in the Americas.

Today, Humphree's interceptors are offered in several different models and sizes for vessels from 8 to 150 meters in length, including monohull and multihull configurations, and can be found on thousands of vessels, from utilitarian pilot and patrol boats to ultraluxurious superyachts. Mot models can even be custom shaped to fit the hull exactly.

In addition to interceptors, Humphree's product lineup includes fins and computerized controls – all electric powered with no hydraulics and constructed of corrosion-free composites. "We have also recently expanded our line of course stability solutions to provide an integrated package specifically designed for waterjets, including electric rudders, fixed fins and interceptor steering," Berrie says.

"Humphree's fins provide complete active stabilization for roll and pitch, and are especially effective at slow speeds, or when riding at anchor or station-keeping. We also offer fixed fins for improved course stability," Berrie says. "A combination of interceptors and fins can be installed together to provide a comprehensive stabilization solution at all speeds from zero to wide-open throttle."

Humphree's computerized functionality has expanded to include options for automatic trim, list and heeling control, as well as coordinated turns, made possible by technical advances in electronics, digitization and software algorithms developed in-house over the last decade. "At the top of the line is our Active Ride Control, which uses a digital controller with adaptive control algorithms and an advanced sensor package consisting of GPS, three electronic gyros and an electronic accelerometer in each direction of movement to measure 3D rate of turn and accelerations and counter hull motions in real time," Berries says. "The result is fully automatic roll and pitch damping, and trim and list adjustment at planing and semi-planing speeds."

Berries says the proportion of installations with computerized control functions is rising. "Active Ride Control provides fully

"A smoother stable ride translates into lower fuel costs, improved productivity, fewer injuries to passengers and crew – not to mention less seasickness – higher safety margins and reduced downtime."

– Sean Berrie, CEO of Humphree USA

automatic adjustment of the stabilizers to optimize trim and reduce rolling and pitching motions without constant operator adjustments. The savings in fuel consumption alone provide a relatively rapid return on investment. By reducing resistance, the vessel can run at any given speed at a lower engine RPM, minimizing engine load, prolonging engine life and reducing emissions. It also reduces crew and passenger fatigue and enables operations in more diverse and adverse sea conditions."

Among Humphree's top commercial market segments are ferries, passenger excursion vessels, pilot launches, patrol boats and – more recently – wind supply vessels, Berrie says. "The reasons are obvious," he explains. "A smoother stable ride translates into lower fuel costs, improved productivity, fewer injuries to passengers and crew – not to mention less seasickness – higher safety margins and reduced downtime."

The majority of new pilot boats being built in the U.S. are equipped with Humphree interceptors, and an increasing percentage of them with Active Ride Control, Berrie says. Recent projects include newbuilds for the Brazos Pilots, the Southwest Alaska Pilots, the Lake Charles Pilots in Louisiana and the Tampa Bay Pilots. Under construction currently are boats for the Virginia Pilots, Seaway Pilots and Long Beach Pilots.

Southwest Alaska Pilot Boat

Seastreak commuter ferry – showing interceptors on transom of each hull

Humphree also supplied stabilization systems for New York City's entire fleet of 30 ferries and the 600-passenger Seastreak Commodore running between Sandy Hook and Manhattan, as well as the new ferries from Dakota Creek and Mavrik Marine for the San Francisco Bay Ferry fleet, and three whale watching vessels in New England and Alaska.

Patrol craft are another major focus area for Humphree, whose interceptors are standard fit on the new class of patrol boats being built by Metal Shark for the U.S. Navy's Coastal Riverine Forces.

Berrie says Humphree's interceptors have been specified for the new wind farm support vessels under construction at Senesco and Blount shipyards. "We see [offshore wind] as a significant growth market for the U.S. workboat industry and for our stabilization systems, which provide a comfortable ride for crew and passengers in all sea states and maximum maneuverability for operating safely alongside wind turbine towers."

While most of Humphree's installations in the commercial market are for newbuild vessels, about 25% are refits. "It's fairly easy to add interceptors with minimal disruption of the boat's operational schedule," Berrie says.

Recent retrofit projects include the MV New York and MV New Jersey for Seastreak and pilot vessels for Delaware Pilots, Long Beach Pilots and Federal Pilots. Humphree is currently refitting Bar Harbor's AtlantiCat with ride control interceptors and steering assist interceptors, and Berrie says commercial fisheries present a lively retrofit business.

i911: Tapping Cellphone Location Data to Save Lives

By Lt. Anne Newton, Project Manager,
C5I Branch, USCG Research and Development Center

In recent years the U.S. Coast Guard has identified an increasing trend in the use of cellular phones by the maritime public when communicating distress. In 2018, leadership in the Office of Search and Rescue (SAR) at Coast Guard Headquarters asked the Research and Development Center (RDC) to investigate available technologies that could assist Coast Guard responders in adapting to this trend by leveraging the cellphone's internal GPS. The RDC, located in New London, Conn., has been serving the Coast Guard for nearly 50 years through research, testing and evaluation of various technologies across all 11 missions. During market research for this project in 2019, the RDC investigated an emerging technology called i911 created by Chris Bennett, the founder of Callyo.

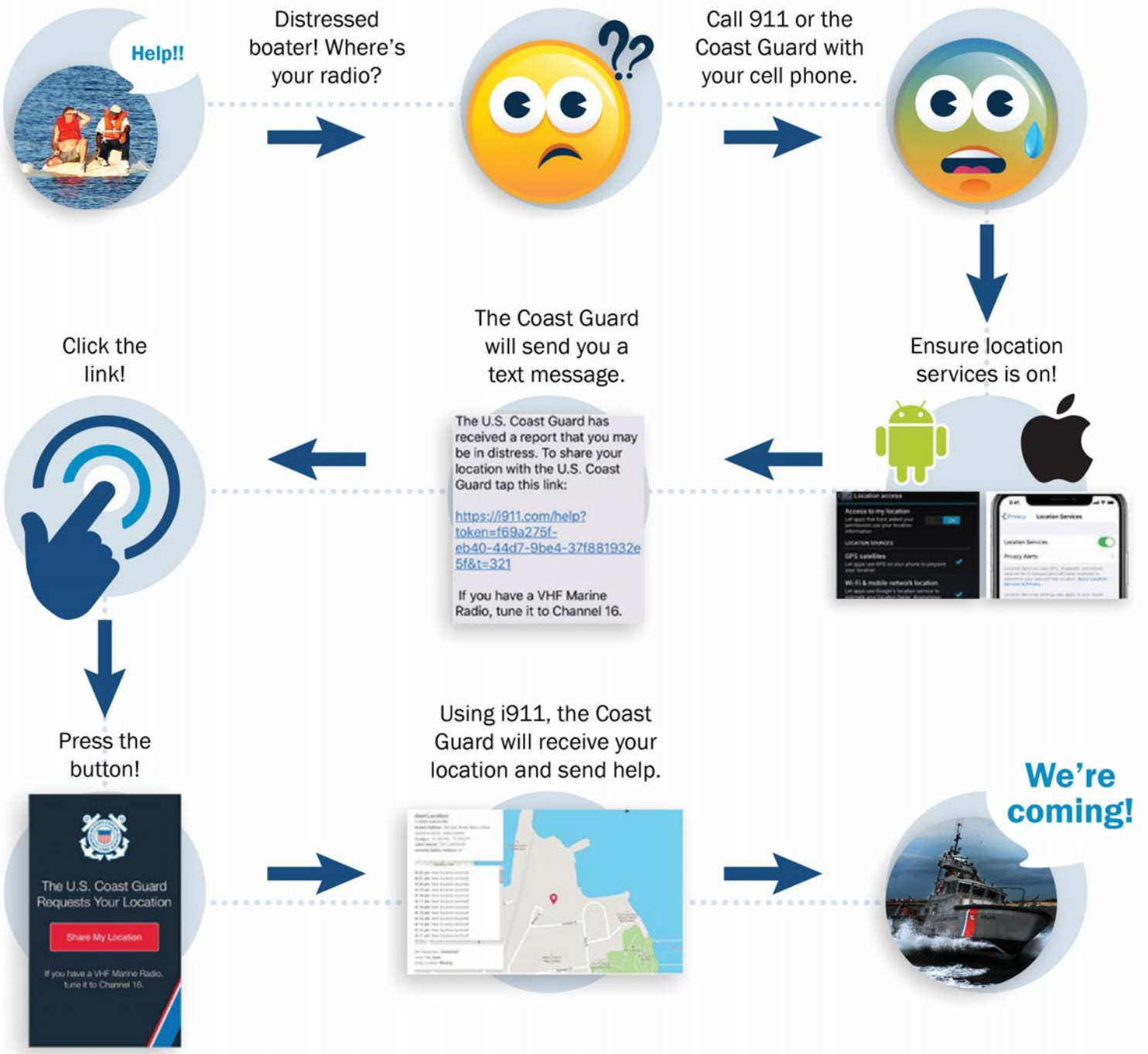
i911 is offered as a free service to first responders and provides fast, accurate cellphone location information. It pairs consumer smartphone technology with a simple web-based interface to locate mariners for search and rescue mission controllers in Coast Guard Command Centers. The distressed boater does not need to download a mobile application or be registered to enable this locator capability. However, this tool only works with more modern cellphones that are equipped with an internal GPS, and may not work on all cellphone types. i911 has been optimized to work in areas where there is very limited cellphone coverage and in most cases gives position data accurate within a few meters every few seconds. Depending on cellphone service i911 can determine locations of distressed mariners up to 15-20 nautical miles offshore.

A recent study by the RDC looked at search and rescue cases in the United States over the past five years and found that nearly 90% of all cases were no more than 20 nautical miles offshore.

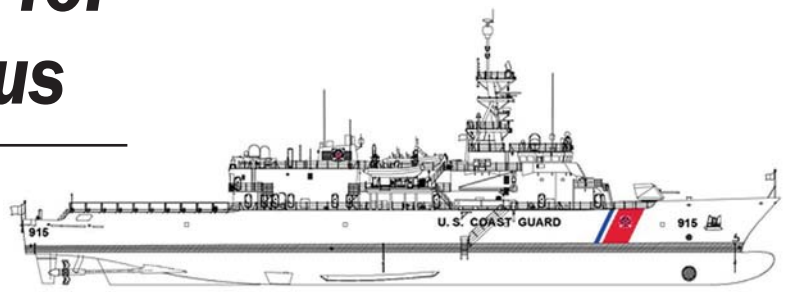
Recognizing the possibilities for i911 to support Coast Guard SAR missions, the RDC entered a Cooperative Research and Development Agreement (CRADA) with Callyo in summer 2019. As part of the CRADA, the RDC and Callyo worked together to customize some of the features of i911 to optimize use by the watchstanders in the Coast Guard Command Centers. The RDC led an i911 pilot test throughout the Coast Guard's First District, which covers the northeastern U.S. from Northern New Jersey to Maine. The pilot lasted six months and was an instant success. Within a few days of having i911, Sector Long Island Sound in New Haven, Conn., used it on a search and rescue case involving three people on a 12-foot inflatable dinghy that was blown out to sea by a storm. Using i911, the command center received the dinghy's position within seconds, and the location proved to be accurate to within a few meters. Rescue crews were able to get to the distressed mariners much faster than they would have without use of the technology.

The research went operational March 26, 2020, when the Coast Guard authorized all command centers across the United States to use i911 to help determine the location of distressed mariners. Command center watch standers expressed excitement at how easy it was to use and, even more importantly, how accurate it was. Lt. Cmdr. Adriana Gaenzle, chief of the command center at Sector Anchorage, said, "It's awesome to see innovative ways to incorporate new technology into our abilities to prosecute SAR." This Coast Guard roll-out came just in time for the upcoming 2020 summer boating season. Boaters are reminded that the Coast Guard recommends using the VHF radio if possible as this is still considered the most reliable means of communication for mariners in distress.

i911, helping the Coast Guard save lives



Eastern Lays Keel for OPC USCGC Argus



Eastern Shipbuilding Group

Eastern Shipbuilding Group reports that the keel laying ceremony for the U.S. Coast Guard's first-of-class Offshore Patrol Cutter (OPC) Argus (WMSM-915) was held on April 28, 2020 at Eastern's Nelson Street facility in Panama City, Fla. USCGC Argus is scheduled to be delivered in 2022.

The ceremony was performed and recorded without audience to comply with CDC guidelines to combat the spread of COVID-19.

The keel laying represents the ceremonial start of a ship's life by commemorating the assembly of the initial modular construction units. Historically, to attest that the keel was properly laid and of excellent quality, the shipbuilder would carve their initials into the keel. This practice is commemorated by welding the ship's sponsor's initials into the keel authentication plate.

The ship's sponsor is Capt. Beverly Kelley, USCG (Ret.). Capt. Kelley was the first woman to command a U.S. military vessel as the Commanding Officer of the 95-foot patrol boat, USCGC Cape Newagen in 1979. Throughout her distinguished career, she became the first woman to command both a medium endurance cutter and a high endurance cutter in USCGC Northland and USCGC Boutwell respectively.

Eastern's President Joey D'Isernia said, "Eastern Shipbuilding Group is humbled and proud to have been chosen to build this next generation ship for the world's best Coast Guard, and we think today represents a milestone that all those involved in the program can be proud of.

"The steel joined here today is unlike any you or I have seen before. This steel has been ravaged by 162 mph winds, generated by the third most powerful hurricane to make landfall in this country's history. This steel has borne witness to a Pandemic that has caused fear and shaken our core.

"But through all this, it remains sturdy, it remains resilient, and today it will join with other steel to become stronger, more defined, and more resolute. Today is representative of how we build, and of unwavering resolve in the face of adversity for a Coast Guard and a nation that deserves nothing less."

Joey D'Isernia was accompanied on the podium by Capt. Andrew Meverden, representing the USCG, and Bradley Remick, the expert welder charged with welding the sponsor's initials onto the ceremonial keel authentication plate.

The 360-foot OPC is designed to conduct multiple missions in support of the nation's maritime security and border protection. The OPC will provide a capability bridge between the national security cutter, which patrols the open ocean in the most demanding maritime environments, and the fast response cutter, which serves closer to shore. The OPC design includes the capability of carrying an MH-60R or MH-65 helicopter and three operational Over The-Horizon small boats. The vessel is also equipped with a highly sophisticated combat system and C4ISR suite that will enhance capabilities to execute the service's missions.

U.S. Coast Guard Commandant Adm. Karl Schultz said in his most recent State of the Coast Guard Address that the new OPC "will become the backbone of [the Coast Guard's] modernized fleet."

"The first in its class, Cutter Argus, is already under construction and will be delivered in 2022. The Offshore Patrol Cutter program is set to deliver 25 hulls and that fleet will ultimately comprise almost 70% of our offshore presence." Adm. Schultz said in February.

On September 15, 2016, the U.S. Coast Guard exercised the option for Detail Design on Eastern Shipbuilding Group's OPC contract. Eastern Shipbuilding Group will construct the Offshore Patrol Cutters to replace the Medium Endurance Cutters currently in service. The contract includes the production of up to four vessels.

In April, the U.S. Coast Guard executed a modification to the contract for Eastern to build the second OPC and Long Lead Time Materials for the third, following completion of a Production Readiness Review (PRR) in February 2020.

Steel cutting for the second OPC, Coast Guard Cutter Chase (WMSM-916) commenced on April 27.

In support of OPC construction, ESG has made improvements to the Nelson Street facility. In conjunction with the state of Florida and Triumph Gulf Coast, Inc., ESG has commenced construction on additional warehousing, a state-of-the-art C4ISR Production Facility, improved building and launch ways, among numerous other improvements. This wave of facility improvements positions ESG to continue OPC production as efficiently as possible.

Bollinger Delivers USCGC Myrtle Hazard

Bollinger Shipyards

USCGC Myrtle Hazard is the 162nd vessel delivered by Bollinger Shipyards to the U.S. Coast Guard over a 35-year period and the 39th Fast Response Cutter (FRC) delivered under the current program. It is the first of three FRCs to be home-ported in Apra Harbor, Guam, increasing the presence for the U.S. Coast Guard in the Indo-Pacific. Additionally, later in 2020, Bollinger will deliver the first of six FRCs that will be home-ported in Manama, Bahrain, which will replace the Island Class Patrol Boats supporting the Patrol Forces Southwest Asia.

"Our latest delivery of the USCGC Myrtle Hazard is an important milestone in the FRC program as it is the first of several vessels that will expand and support the Coast Guard's operational presence and enhance the U.S.'s mission in the Indo-Pacific region – a focal point emphasized by both President Trump and Admiral Shultz," said Bollinger President & CEO, Ben Bordelon.

The homeporting of three FRCs in Guam is part of the U.S. Coast Guard's "doubling down on Oceania," allowing more frequent and longer patrols in an area where the U.S. Coast Guard has increased its presence over the past 18 months and is aligned with the priorities set in the 2018 National Defense Strategy on countering strategic competitors. USCG Commandant Adm. Karl Schultzs said, "We're on a trajectory where the geostrategic importance of the Oceania region has not been higher here in decades, and it's a place that the Coast Guard's looking to be part of the whole-of-government solution set."

MetalCraft Delivers Patrol Boat to Port of LA

MetalCraft

MetalCraft Marine delivered a new patrol boat to the Port of Los Angeles. The new vessel is one of a new breed of chemical, biological, radiological and nuclear (CBRN) detection patrol boats.

According to the builder, the bow entry is the critical design feature. Its high-speed rough water performance allows the operators to go offshore to inspect incoming ships before they enter the port for nuclear and chemical hazardous contaminants. The vessel's structure is designed to ISO 12215 and stability to ISO 12217 Category B, meaning the vessel can work safely in 13-17-foot waves.

It has exceptional visibility meeting ABYC sight lines. Its spotter windows are designed to clearly see the ship's upper superstructures and sheerline. In a hard overturn the side spotter windows give the operator an unobstructed view to either port or its while at 45 degrees heel.

The propulsion system includes Cummins 6.7-liter engines at 480 horsepower and Konrad heavy duty 680 duo-prop outdrives.

The boat is fitted with an aft deck helm, which allows an operator to be part of a boarding exercise or water rescue and provide additional support. The boat has a portable 900-pound davit for body recovery. The wide body version of the Interceptor line provides comfortable seating for three officers and extra seating for a boarding party or mass rescue. The boat has overwide side decks with cabin access from near normal size sliding doors. These large doors provide good ingress/egress and for use with side arms.

The vessel has a high-speed stainless deck windlass for when the boat is at anchor and surveilling the harbor and its entrance. It can bring up the anchor at a rapid rate safely with no chance of fouling to let the crew get underway immediately. Onboard electronics include a Furuno Timezero navigation system, with 16" displays at the helm and a 24" screen at the command/navigation station. A four-way split screen permits navigation information, CCTV cams and infrared cam info simultaneously.

Gulf Island to Build Another Two Vessels for the US Navy

U.S. Navy

The U.S. Navy has exercised its options to order the fourth and fifth towing, salvage and rescue ships (T-ATS) from Houma, La. shipbuilder Gulf Island Fabrication. The Navy has remaining options for three additional vessels.

The Navajo-class vessels will provide oceangoing tug, salvage and rescue capabilities to support fleet operations, replacing three T-ATF 166 and two T-ARS 50 class ships, which reach the end of their expected service lives starting in 2020.

A detail design and construction contract was awarded to Gulf Island in March 2018 based on the Wärtsilä VS 4612 anchor handling tug supply (AHTS) vessel design. Navajo-class ships will be capable of towing U.S. Navy ships and will have 6,000 square feet of deck space for embarked systems. The platform will be 263 feet long, have a beam of 59 feet, and can carry a load of 1,796 tons.

The builder held a keel laying ceremony for the first ship in the series, the future USNS Navajo (T-ATS 6), in October 2019. The lead vessel is expected to be completed in March 2021.

"We are honored that the Navy has exercised the options for two additional vessels. This is great news for our employees in Houma, La. as it will provide additional stability during these uncertain times," said Richard Heo, Gulf Island's President and Chief Executive Officer. "These projects support our ongoing efforts to diversify our backlog beyond offshore oil and gas and provide valuable underpinning work for our Houma team into 2021 and 2022."

US Navy's Newest Yard Tug Launched

U.S. Navy

The U.S. Navy's first Yard Tug (YT) 808 class vessel was launched at Dakota Creek Industries' (DCI) shipyard on May 16. The Navy and DCI plan to conduct acceptance trials for the vessel in July, followed by planned delivery in August.

The new tug is the first in a series of six being built by the Anacortes, Wash. shipbuilder for scheduled delivery through early 2022.

The YT 808 vessels are designed by Robert Allan Ltd. after the Navy's existing YT 802 Valiant-class tugs to perform towing and ship-handling duties for carriers, surface ships, submarines and barges. Built to commercial ABS standards, the 90- by 38-foot tugs feature an updated deck house, EPA Tier IV CAT 3512E Main engines, Schottel 1012 Z-Drives and a new fendering system, and will have a top speed of approximately 11.7 knots and a bollard pull of approximately 40 metric tons.

The tugs are outfitted with a hydraulic hawser winch and staple on the forward deck for towing, and an "H" bitt installed on the aft deck with an adjacent hydraulic capstan for tightening lines. Similar to the previous 802 Class, the new YT 808 Class tugs will have an articulating hydraulic brow installed aft of the deckhouse to allow personnel transfers to and from alongside ships or submarines.

"This is an exciting milestone for this program as the YT 808 class tugs will replace the tugs built in 1964 through 1975," said Mike Kosar, program manager of Support Ships, Boats, and Craft Program Office, Program Executive Office Ships (PEO Ships). "With five more in the pipeline, we're excited to get these tugs underway and operational."

RIBCRAFT

Ribcraft

Having recently taken delivery of two new Ribcraft 5.85 rigid inflatable boats (RIB), the California Department of Fish and Wildlife awarded the Massacusetts-based builder another contract, to supply and deliver shipboard RIBs for its fleet of long-range fisheries patrol boats. The RIBs will be used by the agency's Southern District, which covers all of Santa Barbara, Ventura, Los Angeles and San Diego counties.

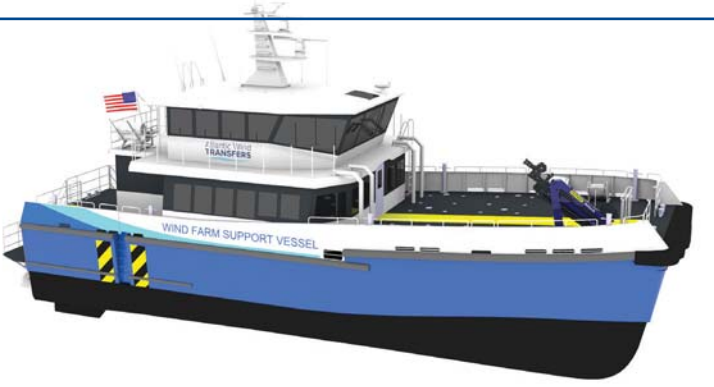
At just over 19', these RIBs can be trailered and launched while still delivering excellent open water performance, according to the builder.

The boats feature a forward positioned center console with front bench seat, two side by side Shockwave suspension seats, heavy duty T-top with windscreen, full length, stainless steel beaching shoe; heavy duty military grey 1670 dtx Hypalon tube with two rows of rubstrake reinforcing; electronics package complete with 12V outlet, handheld spot light, LED light bar, LED flood lights for 360^0 illumination, Whelen Hailer/Siren, Raymarine GPS and Radar, ICOM VHF with AIS, State Agency Radio, and EPIRB; and Boat Master trailer. The 19' RIB provides a comfortable platform for long patrols in both open and protected waters, while offering an open deck for officers and gear. Powered by a 115-horsepower Yamaha, this 5.85 will reach speeds in excess of 40 miles per hour.

The newly ordered RIBs will again utilize the 19' Ribcraft 5.85 design, but with a slightly modified layout for shipboard operations. These RIBs will be deployed for boarding and response operations up to 200 miles offshore.

Originally designed as a surf rescue craft, the Ribcraft 5.85 is small enough to maneuver in shallow waters and be easily deployed and operated, yet large enough to handle most sea conditions and carry ample crew and gear.

Atlantic Wind Transfers' CTV for Dominion's U.S. Offshore Wind Farm



Atlantic Wind Transfers

Atlantic Wind Transfers has secured its second long-term O&M crew transfer vessel contract in the U.S. The Quonset Point, R.I.-based firm will provide offshore marine support services for the Siemens Gamesa offshore wind turbines to be installed for the first offshore wind project in U.S. federal waters. The project is being developed by Richmond, Va.-based Dominion Energy.

The crew transfer vessel will be based out of Virginia's Hampton Roads region.

Atlantic Wind Transfers is the first CTV owner/operator in the U.S. operating the Atlantic Pioneer built in 2016 originally under a contract with Deepwater Wind for the installation and operations and maintenance of the five GE 6 megawatt turbines off Block Island, R.I.

The Atlantic Pioneer currently has a long-term contract with Ørsted providing offshore marine support services for the Block Island Wind Farm, transporting GE technicians/cargo along with Ørsted personnel performing maintenance year-round.

Charles A. Donadio, Jr., CEO of Atlantic Wind Transfers, said, "I am proud that my company was selected to provide CTV services for the first offshore wind farm in federal waters. We are looking forward to bringing our years of experience, reliability and safety standards to the table to make this offshore wind farm a huge success."

Donadio said he plans to launch and commission the new-build Chartwell 24 CTV directly into the long-term charter contract upon delivery from Blount Boats in Warren, R.I. later this year.

"This next-generation Jones Act compliant CTV design will set the bar to the highest standards meeting all U.S. Coast Guard Regulations and Certifications to operate up to 150 miles offshore. It's exciting to be involved and working on the first two offshore wind farms in the U.S."

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Callan Marine's New Dredge Enters Service

Dredging Contractors of America

Callan Marine's mighty new cutterhead suction dredge (CSD) General MacArthur and its accompanying idler barge have recently entered service in Texas.

General MacArthur is equipped with three CAT-MAK diesel electric engines that provide 24,000 horsepower. At 290 feet long, the dredger is the newest and largest in Callen Marine's fleet, representing the next generation of dredging technology and crew comfort, said Maxie McGuire, President of Callan Marine.

"The General MacArthur is a complete game-changer for the dredging industry," McGuire said. "Her size, capability, and 100% diesel-electric application make her efficiency and productivity among the best in the U.S. The state-of-the-art onboard facilities offer the ultimate in crew accommodations."

The dredge has a maximum swing radius of 530 feet. The beam is 72 feet, with a depth 16 feet and draft 8-11 feet. The digging depth is 97 feet with a suction diameter of 34 inches and a discharge diameter 32 inches.

General MacArthur was built in two shipyards. The hull and superstructure construction, housing and assembly took place at C&C Marine and Repair, while the SPI/Mobile Pulley Works shipyard provided the dredging equipment, including the cutter ladder, A-frame, suction and discharge pipeline, gate valves, submerged dredge pump, two onboard dredge pumps, a five- and a six-blade cutter, Christmas tree, anchor boom system and spud carrier installation. Mobile Pulley Works also provided ball joints and pontoon tanks for the submerged and floating discharge pipeline.

In April, Callan Marine launched its new idler barge built in Sterling Shipyard. Its spud-carriage equipment was then installed at Mobile Pulley Works.

Royal IHC to Build Its First Jones Act Dredger

Royal IHC

The Netherlands based Royal IHC said it has been awarded a contract to design and build a Jones Act compliant dredger for the North Carolina State Ports Authority (NCSPA) for deilvery in 2021.

The water injection dredger will be built at a partner shipyard in the U.S.

"The construction, procurement of the main components, assembly and testing will be performed in the United States (following the Jones Act regulations) and is being managed by the local IHC operations team based in Houston," said Projects & Services Director Rafael Vorcaro. "We consider this project as an important step to develop the local team and prepare the organization for future projects in the United States".

The vessel will perform maintenance in the main seaports of Wilmington and Morehead City in order to safeguard the depth of the ports. To do so, it will move sediment from the main channel (with the assistance of natural currents), while keeping the required material within the Cape Fear river system.

The dredger is designed to offer easy maintenance and a smooth operation, Royal IHC said, adding other key design factors include dredge depth, weight and cost. A modular approach helps to support the cost-effectiveness of the vessel and its maintenance, by allowing the easy removal and cleaning of the propulsion units, generator and jet water pump, the builder said.

The dredger will have a flow of 20,000 GPM (4,542m3/h), a dredging depth of 55ft (16.7m), a width jet beam of 27ft (8.2m) and a total installed power of 770 HP (566kW).

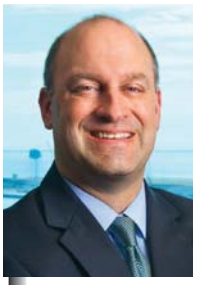
"This is IHC's first U.S. flagged vessel," says Sales Director America, Rafael Habib. "We are very proud to have achieved this important milestone for IHC, which is of key importance in continuing to develop the company's footprint in the U.S. dredging market."

The engineering phase is ongoing and the vessel is planned to be delivered in the beginning of 2021.


Bert


Bucher


Reeves

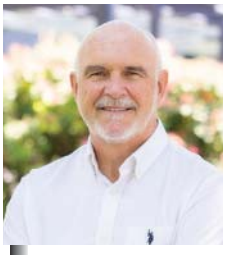

Daniels


Irelan


Mead


Smith


Carson


McMillan


Rabbitt


Friis Nilaus

Rear Adm. Bert Fills USCG's Top Legal Role

The U.S. Coast Guard announced Rear Adm. Melissa Bert has been invested as judge advocate general and chief counsel of the Coast Guard. Bert is the service's first woman to hold that office. As judge advocate general and chief counsel, Bert will lead a group of legal professionals who are responsible for the delivery of all legal services in support of the Coast Guard's missions, its units and its people. She is the Coast Guard's 20th chief counsel and seventh uniformed judge advocate general.

AWO Elects Mead as Chairman

Arthur F. Mead, Vice President and Chief Counsel at Crowley Maritime Corporation, has been elected Chairman of the American Waterways Operators (AWO), succeeding outgoing Chairman Scott Merritt, former Chief Operating Officer with Foss Maritime Company, LLC.

In addition to Mead's appointment, Del Wilkins, President of Illinois Marine Towing, Inc. was elected Vice Chairman; and Clark Todd, President & Chief Operating Officer of Blessey Marine Services, Inc. was elected Treasurer.

Smith Named CEO of Fincantieri Marine Systems NA

Chesapeake-based Fincantieri Marine Systems North America, as Ryan W. Smith assumed the position as CEO for the company. Smith brings over 15 years of experience in program management and engineering roles with Northrop Grumman and BAE Systems, as well as project management and lifecycle consulting services for major defense contractors and ship repair organizations focusing primarily on support of U.S. Navy programs, as well as over a decade of waterfront management experience at multiple ports.

New Leadership at Vard Marine

Naval architecture and marine engineering firm Vard Marine Inc. announced Thursday that Wade Carson will succeed Dave McMillan as president and CEO upon McMillan's retirement on May 31.

Carson has been with Vard for 18 years. For the past six years he has led the business's strategic direction as VP Business Development and most recently was on assignment as interim Managing Director of affiliate company Vard Electro Canada.

Following his 30-year tenure with Vard Marine, McMillan will pursue another chapter in the marine industry as a marketing/business development consultant.

Rabbitt to Join Hornblower as CEO

U.S.-based passenger vessel operator Hornblower Group announced it has appointed Kevin Rabbitt has CEO. A member of the Hornblower Board since 2018, Rabbitt is expected to take up the role in July, while founder, Chairman and current CEO Terry MacRae will continue as Executive Chairman.

Rand Completes ASC Acquisition

New Jersey-based Rand Logistics said Thursday it has completed its $260

Luttrell, Watson

Michaelis, Evans

Stoermer, Scott

Allan, Tiongson

million acquisition of rival Great Lakes shipping company American Steamship Company (ASC) from GATX Corporation. The combination of Rand and ASC moves almost 50 million tons annually of dry bulk commodities such as iron ore, coal and limestone on vessels ranging in size from 634 feet to over 1,000 feet, the company said.

Svitzer Appoints Nilaus as CEO

Towage operator Svitzer appointed Kasper Friis Nilaus, VP and current Managing Director (MD) of Svitzer Europe, to succeed Henriette Thygesen as global CEO of Svitzer A/S, effective June 15. Going forward, Nilaus will continue to report to Thygesen in her capacity as CEO of Maersk Fleet and Strategic Brands.

Victaulic Names Bucher President

Victaulic, manufacturer of mechanical pipe-joining systems, announced Rick Bucher has been appointed to the position of President and COO. Bucher will continue reporting to John F. Malloy who has served as Chairman, President & CEO for the past 16 years. Malloy will remain Chairman and CEO.

EBDG Promotes Reeves

Elliott Bay Design Group (EBDG) announced that Senior Engineer, John Reeves has been promoted to Director of Business Development to oversee business development, generate leads and provide leadership to the sales and marketing team.

AgTC Honors Dye

The Agriculture Transportation Coalition presented its Person of the Year award to Federal Maritime Commission (FMC) Commissioner Rebecca Dye. The trade group said it honored Commissioner Dye for her courage, her supply chain work, the teams she has convened, and the demurrage and detention guidance she drafted and championed.

Daniels to Lead Port Everglades

Jonathan Daniels will be the new Chief Executive & Port Director at Port Everglades. Daniels comes to Port Everglades from the Port of Gulfport, Miss. where he has been the executive director since 2013.

Gulf Copper Hires Irelan

Ship repair and marine services firm Gulf Copper & Manufacturing has hired Robert "Bob" Irelan as Director, Federal Business Development. Irelan will leverage his experience doing business with the federal government to head up Gulf Copper's government services business development, focusing primarily on the federal market.

USCG Command Changes

Rear Adm. Thomas G. Allan, Jr. relieved Rear Adm. Andrew J. Tiongson of his duty as commander of First Coast Guard District in a change of command ceremony at Coast Guard Base Boston.

Coast Guard Sector New Orleans held a change of command ceremony at Sector New Orleans in New Orleans. Capt. Kristi M. Luttrell transferred command of Sector New Orleans to Capt. Will E. Watson.

Coast Guard Sector Upper Mississippi held a change of command ceremony at Sector Upper Mississippi in St. Louis. Capt. Scott A. Stoermer transferred command of Sector Upper Mississippi to Capt. Richard M. Scott.

Barnes

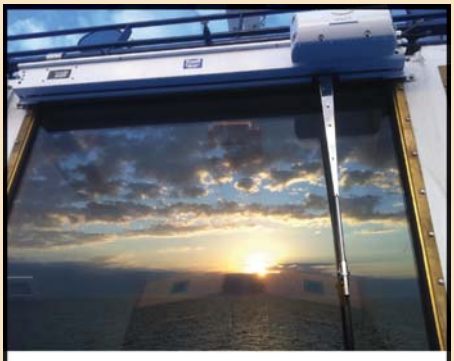
Capt. John Reed transferred command of Coast Guard Sector Charleston to Capt. John Cole. Reed is transferring to the Eighth Coast Guard District where he will hold the position of Chief of Staff.

Cmdr. Matthew A. Michaelis relieved Cmdr. Thomas C. Evans as commanding officer of Coast Guard Maritime Force Protection Unit Bangor during a change of command ceremony held at Naval Base Kitsap Bangor.

Bollinger Adds New Dry Dock

Bollinger Quick Repair, LLC, a Bollinger Shipyards LLC company, has taken delivery of a new 3,400 ton drydock. Built at Bollinger's Amelia, La. facility, the dock is now in service and measures 219'7" X 84', with a wing wall depth of 15', and is rated for 3,400 tons.

The dry dock is named in honor of long-time Bollinger employee Eddie Barnes, Jr., who joined Bollinger Shipyards in 1972 and during his tenure with the company has held various key production positions such as dockmaster, foreman and superintendent.



In-Mar Solutions: Wynn Marine Type C & Type D, Heavy Duty Straight Line Wipers

Wynn Type C (internal motor) and Type D (external motor) Straight Line Wipers offer the most advanced design of linear action window wiping systems for marine and other specialized applications. Optimum window coverage can be achieved and enhanced by utilizing a twin-bladed or dual-arm/blade design.

www.inmarsolutions.com

AgilePlans CaaS

AgilePlans Connectivity as a Service (CaaS) from KVH Industries, Inc. is now available as a subscription-based regional offering using KVH's ultra-compact, 37 cm TracPhone V3-HTS antenna. With data speeds as fast as 5 Mbps down/2 Mbps up, the TracPhone V3-HTS is designed to enable fishing vessels, workboats and smaller commercial vessels to leverage fast and reliable Internet connectivity. The service includes new rate plans with no overage charges.

Autohydro

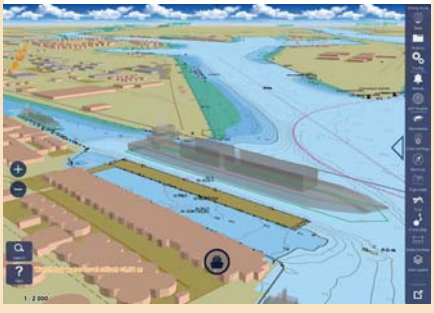
Autoship Systems Corporation updated its hydrostatics and stability software, Autohydro Pro. Version 6.10 features include MARPOL Regulation 23 – Accidental oil outflow performance, MARPOL Regulation 12A – Oil Fuel tank protection, second method added for intermediate steps during flooding calculations, enhanced report to create large .PDF documents - Dynamic limit definition. Autohydro 6.11 is in beta version and will be released soon. New features include second generation stability criteria (level 2) (Multiple RA evaluated in wave condition), dynamic limit definition, grain moment heeling moment calculation (produce grain heeling moment tables) and RA averaging calculation.

Seastema Autopilot

Naval automation and navigation systems supplier Seastema said its SEAS-PILOT HCS autopilot system has been certified with the MED/4.16 Type Approval Certificate of Conformity by DNV GL. The SEAS-PILOT HCS system will be used on the new naval units that Fincantieri will deliver to the Italian Navy within the Naval Act. The first installation will be operating on the Logistics Support Ship (LSS), followed by the naval units that Fincantieri is building for the Qatar Navy and the new yachts built by Benetti.

ORCA Pilot X Software

SevenCs, part of the ChartWorld Group, has released the ORCA Pilot X software offered as a free download on the Apple AppStore for iOS tablets. Originally designed as a primary navigation aid for Pilots, ORCA Pilot X is a tool for professional navigators, developed as the natural evolution from ORCA Pilot G2. ORCA Pilot X delivers a unique 3D Head-Up situational awareness mode, rapid installation of official ENCs and chart updates, bathymetric data, route planning, navigation, and docking modes.



Seatronx Digital Matrix SCC

The Seatronx Digital Matrix Switching Command Control system (SCC) allows operators to control individual or multiple displays including power on/off, input selection, brightening, dimming and night mode view. It is fully customizable with optional modules that let users incorporate KVM mouse, keyboard and touchscreen switching; vessel monitoring applications; NMEA data viewing; camera control; and environmental control such as lighting, shades or any other asset onboard. The Seatronx Digital Matrix SSC starts with a 7-inch digital touchscreen panel and compact blackbox processor that includes a built-in Powered over Ethernet (PoE) network to simplify installation and programming.

MyFleet

ChartWorld launched MyFleet, a free-of-charge cloud-based risk management tool to help onshore teams check and assess risk in a ship's for navigational data and voyage plans. In its basic form, MyFleet provides free of charge weather data, ChartWorld ENC data, the ship's position, the created voyage plan for each vessel of the owner's fleet, and the route in use on the ECDIS. Optionally, official ENCs or C-MAP charts, as well as the unique ChartWorld T&P updates and environmental areas service (CIO+), can be activated.

Digital Sextant

A new Digital Sextant has been engineered to provide back-up navigation in the event of failure or malicious adjustment of the GPS system, says manufacturer ScanjetPSM. The simple to use solution requires no special training, no manual calculations and is capable of delivering accurate readings within one second of sighting, without the need for additional charts or tools. It enables fast, accurate identification of position with longitude and latitude readings, minimizing the opportunity for operator error and providing and recording the location within seconds. Once readings have been taken, the position is immediately displayed. If the vessel is moving, the heading and speed can be entered.

Seakeeper 1

Marine stabilization specialist Seakeeper recently launched its newest, smallest and most radically different model yet, the Seakeeper 1. The Seakeeper 1 is designed to eliminate up to 95% of boat roll on vessel 23-30 feet (7-9 meters) or up to approx.. 5.5 tons. With a fresh, new look, the Seakeeper 1 includes unique features including flush mount installation, a viewing window, 12V DC power, faster spool-up time, a control keypad on the unit and single cylinder brake.

Off-Load Hooks

Cranston-Eagle Marine Off-Load Hooks from Delta "T" Systems not open under load, making them the safest devices to use when deploying rescue and life craft. The hooks lock securely while the boat is suspended. Only when the vessel is in the water and all weight removed will pulling the cable open the hook. Available in 2–12mt capacities, models are offered for davit, crane fall, boat roof and open boat configurations. They're built from 100% stainless steel for uncompromising reliability. The APR series of Cranston-Eagle Marine Off-Load Hooks is SOLAS certified and USCG approved.

GK Firestop

Cable and pipe transit specialist Roxtec introduced the GK Firestop sealing kit to ensure quick and easy certified fire protection above the waterline on rigs, platforms, ships and vessels. The kit combines different lightweight and halogen-free fire prevention materials, such as sealing strips and a cold smoke resistant fiberglass bag with integrated intumescent material. The intumescent material expands to close the void in case of fire or a rise in temperature to over 150°C. The kit has an A-class marine fire rating and is both RoHs and REACH compliant. It is certified for use with any type of bolted or welded sleeve and any marine grade fire sealant.

Seating Upgrade

The Royal National Lifeboat Institute (RNLI) has selected SHOXS suspension systems to refit and upgrade 44 17-meter Severn class lifeboats, the largest patrol craft in the fleet. The RNLI chose 4 SHOXS 4800-S seats for the coxswain, helmsman, mechanic and forward navigator; and three SHOXS 4800 seats for the crew, doctor and aft navigator. The 4800 and 4800-S models feature 254 mm and 356 mm of suspension travel respectively to protect occupants from injury caused by wave impacts.

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