The Information Authority for the Workboat • Offshore • Inland • Coastal Marine Markets

Volume 28 • Number 3

Marine News

MARCH 2017

www.marinelink.com

Pushboats, Tugs & Assist Vessels

New Regulations Drive the Boats

Management Software:
Partnerships for Turnkey Solutions

Coatings:
Evolving for the Better

Propulsion:
More than One Option

WE POWER YOUR BUSINESS

engines, inc.®

RELIABLE POWER FROM 40kW TO 250kW

When reliability is critical you need an engine you can depend on. That's why we use **John Deere PowerTech™** engines which are durable, fuel efficient, and easy to maintain. They are also backed by the support of one of the strongest engine and equipment companies in the world.

On the inland waterways, your generator set powers your business. When you choose a power generation package from **engines, inc.**, you can rest assured that you are getting the best engineered package available anywhere. You also get access to the most reliable 24/7 support structure in the business. Our skilled staff and our extensive dealer network will provide you with reliable service and support that you can count on.

24-HOUR SERVICE LINE
870-268-3799

With over 150 years of collective experience in our shop and over 75 years of partnership with John Deere, we are, without a doubt, your best choice for Generator Sets and Propulsion Engines on the inland waterways. Our experience distinguishes us and our integrity sets us apart. When everything is on the line you can count on us: **We Are Your Power Source.**

engines, inc.
Jonesboro, AR • 800-562-8049
Conroe, TX • 936-441-5592
www.enginespower.com
24-Hour Service Line
870-268-3799

JOHN DEERE
POWER

AUTHORIZED JOHN DEERE ENGINE DISTRIBUTOR

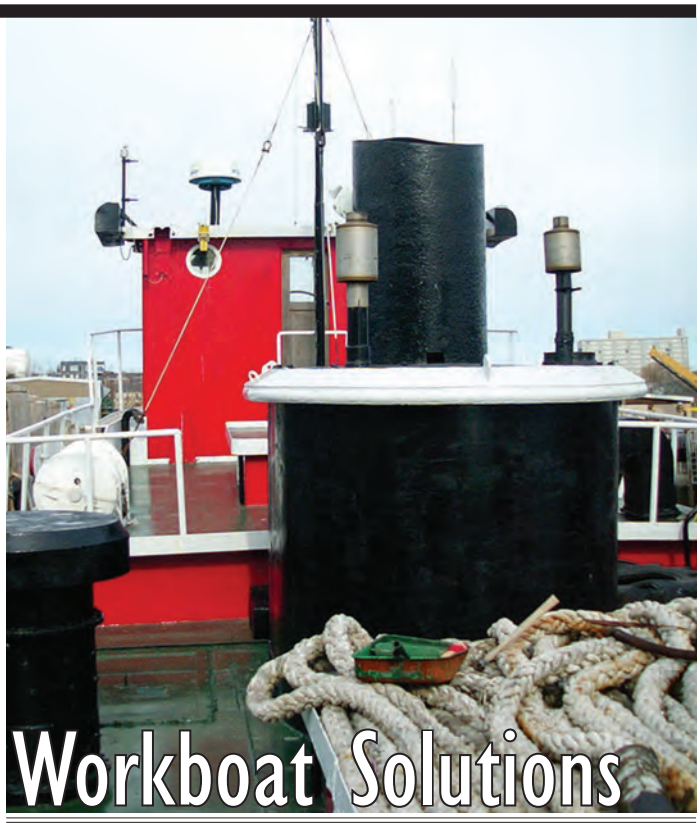
Serious Work depends on Serious Propulsion

and so can you...

Konrad®

Serious Stern Drive Solutions

1421 Hanley Road Hudson. WI 54016 U.S.A. • www.konradmarine.com • 715-386-4203



Credit: Pat Folan

ON THE COVER

The advent of the subchapter M towboat rules is a perfect example of how regulations are now, more than ever, 'driving the boat.' Industry is nevertheless responding to the challenge.

(Photo © DutchScenery / Adobe Stock)

Complete and Committed.

THE SCANIA MARINE SOLUTION.

Out there, confidence in performance, reliability and operating economy are the only things that count. With this in mind, we created the Scania marine solution: An array of flexible products paired with guidance and installation support from Scania. Whatever your specification, we will provide you with the optimal Scania marine solution.

Power at work, every inch of the way.

www.scaniausa.com

SCANIA
Scania U.S.A. Inc.

MarineNews

(ISSN#1087-3864) (USPS#013-952)
Florida: 215 NW 3rd St., Boynton Beach, FL 33435
tel: (561) 732-4368; fax: (561) 732-6984
New York: 118 E. 25th St., New York, NY 10010
tel: (212) 477-6700; fax: (212) 254-6271
www.marinelink.com

PUBLISHER
John C. O'Malley • *jomalley@marinelink.com*

Associate Publisher & Editorial Director
Greg Trauthwein • *trauthwein@marinelink.com*

Editor
Joseph Keefe • *keefe@marinelink.com*
Tel: 704-661-8475

Web Editor
Eric Haun • *haun@marinelink.com*

Contributing Writers
Susan Buchanan • Lawrence R. DeMarcay, III
Joe Hudspeth • Randy O'Neill

PRODUCTION
Production & Graphics Manager
Nicole Ventimiglia • *nicole@marinelink.com*

SALES
Vice President, Sales & Marketing
Rob Howard • *howard@marinelink.com*

Advertising Sales Managers
National Sales Manager
Terry Breese • ***breese@marinelink.com***
Tel: 561-732-1185 Fax: 561-732-8414

Lucia Annunziata • ***annunziata@marinelink.com***
Tel: 212-477-6700 **ext 6220** Fax: 212-254-6271
John Cagni • ***cagni@marinelink.com***
Tel: 631-472-2715 Fax: 561-732-8063
Frank Covella • ***covella@marinelink.com***
Tel: 561-732-1659 Fax: 561-732-8063
Mitch Engel • ***engel@marinelink.com***
Tel: 561-732-0312 Fax: 561-732-8063
Mike Kozlowski • ***kozlowski@marinelink.com***
Tel: 561-733-2477 Fax: 561-732-9670
Jean Vertucci • ***vertucci@marinelink.com***
Tel: 212-477-6700 **ext 6210** Fax: 212-254-6271

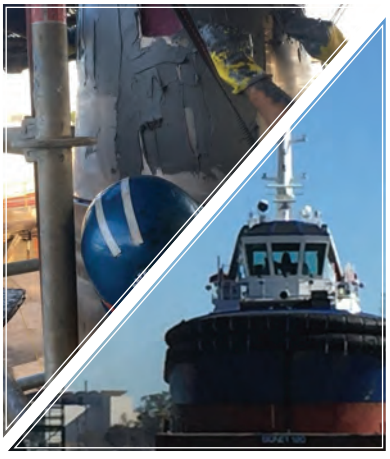
Managing Director, Intl. Sales
Paul Barrett • *ieaco@aol.com*
Tel: +44 1268 711560 Fax: +44 1268 711567
Uwe Riemeyer • *riemeyer@intermediapartners.de*
Tel: +49 202 27169 0 Fax: +49 202 27169 20

CORPORATE STAFF
Manager, Marketing
Mark O'Malley • *momalley@marinelink.com*
Accounting
Esther Rothenberger • *rothenberger@marinelink.com*
Tel: 212-477-6700 **ext 6810**
Manager, Info Tech Services
Vladimir Bibik • *bibik@marinelink.com*

CIRCULATION
Circulation Manager
Kathleen Hickey • *k.hickey@marinelink.com*
Tel: 212-477-6700 **ext 6320**

TO SUBSCRIBE:
Subscriptions to ***Marine News*** (12 issues per year) for one year are available for $60.00;
Two years (24 issues) for $95.00.
Send your check payable to:
MarineNews, 118 E. 25th St., New York, NY 10010.
For more information email Kathleen Hickey at:
k.hickey@marinelink.com

Departments & Analysis



MarineNews (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.

The publisher assumes no responsibility for any misprints or claims or actions taken by advertisers. The publisher reserves the right to refuse any advertising. Contents of the publication either in whole or part may not be produced without the express permission of the publisher.

Allemand Industries, Inc.
Harvey, LA
(504) 340-5581
Servicing: LA

Florida Detroit Diesel Allison
Fort Lauderdale, FL
(954) 327-4440
Servicing: Al, FL, MS, Bahamas

Helmut's Marine
San Rafael, CA
(415) 453-1001
Servicing: AZ, CA, HI, NV, UT, Guam

Johnson & Towers, Inc.
Egg Harbor Township, NJ
(609) 272-1415
Servicing: DE, MD, NJ, NY, Eastern PA, Bermuda

Pacific Power Group
Kent, WA
(253) 854-0505
Servicing: AK, ID, OR, WA

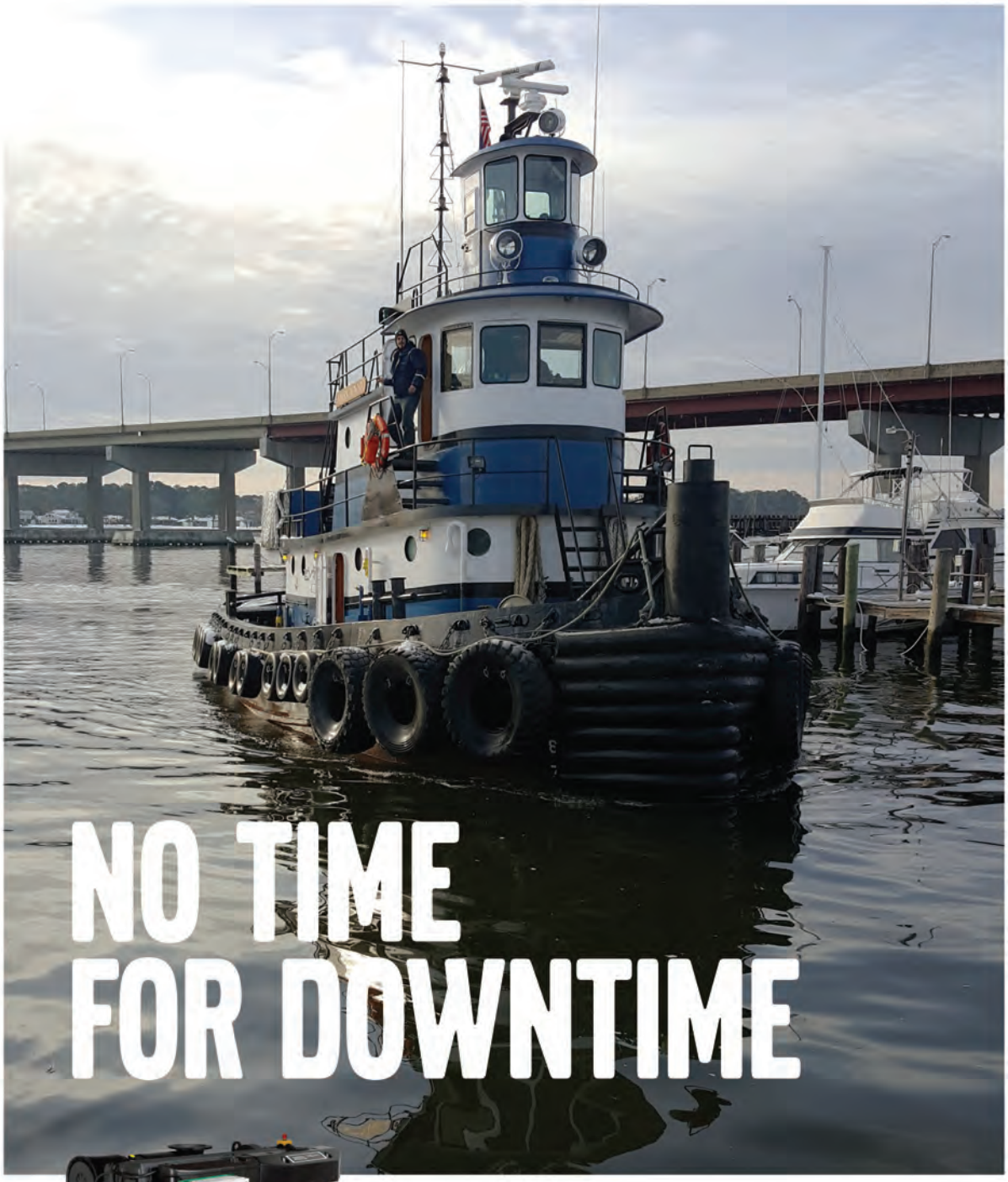
Power Products
Wakefield, MA
(781) 246-1811
Servicing: CT, MA, ME, NH, RI, VT

Superior Diesel, Inc.
North Charleston, SC
(843) 553-8331
Servicing: GA, Eastern KY, SC, Eastern TN

Volvo Penta Canada
Burnaby, BC
(604) 872-7511
Servicing: Western Canada

Wajax Power Systems
Ste. Foy, QC
(418) 651-5371
Servicing: Labrador, New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island, Quebec, St. Pierre et Miquelon

Western Branch Diesel
Portsmouth, VA
(757) 673-7000
Servicing: NC, OH, Western PA, VA, WV



NO TIME FOR DOWNTIME

When W.F. Magann Corp. needed to replace the old Series 60 engine in steel tug *Miss Anne*, they turned to the experts at Volvo Penta Power Center Western Branch Diesel. Key factors in their decision to switch to Volvo Penta were the robust service network and dependable parts availability. Now, *Miss Anne* is more responsive than ever and Volvo Penta is committed to keeping her fully operational.

Volvo Penta Power Centers
Contact one of our Power Centers for applications guidance and engine quotes.

VOLVO PENTA

keefe@marinelink.com

It wasn't too long ago that U.S. Coast Guard RADM Paul Thomas said, *"Regulation can provide the critical forcing function that drives innovation and encourages technological developments to meet the environmental challenges."* He was referencing the ballast water treatment quandary. At the time, I wasn't so sure he was right. But, when it comes to today's brown water industry, that's exactly what is happening. Regulations ***are*** driving business. Stakeholders can either get on board, or tie up their boats.

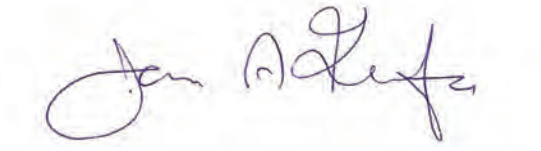
A perfect example of that manifests in the advent of the latest EPA Tier rule that presents operators with difficult questions and myriad choices. Deciding how and why one propulsion option might be more appealing than another has never been as challenging. As the price of hybrid systems moves closer to traditional diesel solutions, designers and engine OEM's have sharpened their pencils as they try to package more horsepower into an environmentally correct package at an affordable price. It isn't as easy as it looks, but it can be done. Turn the page to find out how, where and why.

Separately, inland fleets are coming to grips with the implications of the U.S. Coast Guard's new subchapter M towboat rules. The new rules are not nearly as onerous as they could have been. For many, the rollout has been largely a non-event. For others who hadn't previously adhered to one management and safety plan or another, that won't be the case. Nevertheless, operators of and mariners on board as many as 5,000 vessels now covered under this new regulatory scheme will all have to pay attention to what comes next. Fortunately, there is plenty of help for those who might otherwise struggle.

Arguably the brown water equivalent of Safety Management Systems (SMS) that have long been in place on deep draft vessels, subM carries with it different requirements intended for a different set of vessels. That's a good thing, because workboat operators in all sectors have long chafed at the regulatory practice of pushing down blue water rules onto brown water hulls in a "one size fits all" package. That won't work here. That said; ABS CTO Howard Fireman once told this writer, "A survey is a survey." But even he knows that what his IACS classification society provides to blue water clients doesn't fit into an inland pushboat. His remarks, starting on page 8 as our INSIGHTS feature, will therefore provide this sector with reassuring guidance.

The Coast Guard provides more than one way to get to the Promised Land as inland stakeholders gear up for audits and inspections. Separately, software providers who promise results also understand that there are many moving parts to the journey. As both groups gear up for what comes next, it shouldn't be surprising that partnerships and alliances evolve as one way to provide turnkey solutions. Emerging as a pattern, classification societies, surveyors and consultants and software providers are coming together to do just that. That story begins on page 32, but the journey to compliance has already started.

Maritime Global News
Marine TechNews
MP Maritime Professional
Download our Apps
iPhone & Android



Joseph Keefe, Editor, keefe@marinelink.com

Resources

SUBSCRIBE Subscribe to the print or electronic edition of *MarineNews* at www.marinelink.com/renewsubscr/Renew04/subscribe.html or e-mail mrcirc@marinelink.com

DAILY NEWS via E-MAIL Breaking news, twice every business day, delivered free directly to your e-mail. To subscribe visit maritimetoday.com/login.aspx

POST & SEARCH JOBS Post a position or keep abreast of new employment opportunities at www.maritimejobs.com

ADVERTISE To see MarineNews' editorial calendar and advertising rates, visit www.marinelink.com/advertising

The Reliability YOU Need

THE LOUISIANA CAT SOLUTION.

We're here to help you maintain a successful business — starting with your engine. Engine uptime is critical for you, your crew, your clients and your bottom line. Cat® engines ensure that you have an engine on board that will work as hard as you do.

Monitor your vessel anytime, anywhere with Louisiana Cat's Product Health Connect®. You'll have the assurance of being in touch with Louisiana Cat's team of experts through our new Energy & Transporation Product Health Center in New Iberia. Product Health Connect will help you maximize "up-time" and reduce owning and operating cost.

Get in touch with Louisiana Cat at 866-843-7440 or LouisianaCat.com to learn more!

PRODUCT HEALTH + CONNECT

Louisiana CAT

© 2017 Caterpillar. All Rights Reserved. CAT, CATERPILLAR, BUILT FOR IT, their respective logos, "Caterpillar Yellow," the "Power Edge" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

The State of U.S. Brown Water according to USACE, DOT

Both the U.S. Army Corps of engineers (USACE) and U.S. Department of Transportation's Bureau of Transportation Statistics (BTS) track key numbers when it comes to the nation's intermodal equation. What they report when it comes to our waterways is particularly fascinating – and telling. How are we doing on the waterfront? Keep reading to find out.

First, the bad news: As we wade into 2017, the average age of inland waterway navigation locks, adjusted for the date of the most recent rehabilitation, is more than 50 years. Maintenance dredging of navigation channels has, according to government figures, decreased by 22 percent in 2 years, which could result in operators having to reduce tonnage. Nearly all channels need periodic dredging to maintain the authorized depth. Most channel dredging occurs under the auspices of the U.S. Army Corps of Engineers. In 2014, the USACE's and contractor's dredges removed 186 million cubic yards of material, down from 197 million in 2013. Maintenance dredging accounted for 81.5 percent of the removed material; the average cost per cubic yard increased 20 percent to $5.33, bringing the 2-year increase in dredging cost up to 34.2 percent. This was the second consecutive year of decrease from the 238 million cubic yards dredged in 2012, representing a drop of 22 percent in just two years. *The new administration in Washington, DC has promised infrastructure spending and improvements. That's one promise everyone on the waterfront can get behind, regardless of political affiliations. The time to deliver is now.*

Dams and navigation locks are two of the principal infrastructure features of the U.S. domestic waterway transportation system. They enable shallow draft operations on most Mississippi River and the Missouri River, which are free-flowing but still require some types of hydrologic structures, such as large rock and concrete groins and revetments, to manage the flow of the river and preserve navigation. The U.S. Army Corps of Engineers (USACE) owns and operates 239 lock chambers at 193 sites, which account for most of the U.S. inland navigation locks. The Emsworth Lock on the Ohio River is one of the oldest structures in the system and is considered functionally obsolete. It has lock chambers designed for vessels of an earlier era and has lengthy out-of-service delays. The newer locks on the Ohio River, such as John T. Myers, are larger and have relatively low average tow delays and only short-duration service outages. Lock 52 on the Ohio River is the busiest and also one of the oldest with chambers that are 47 and 88 years old, respectively. It had one of the higher average tow delays in the entire inland waterway system in 2015, 7.7 hours per tow. *We can and should do better.*

U.S. flag vessels for the 2000 to 2014 period have collectively gotten a bit younger. That trend has continued in the past two years, as well. The percent of vessels younger than 16 years increased from 34 to 44 percent. Not surprisingly – and looking at our rapidly declining blue water fleets – inland waterway towboats and barges account for the largest share (85 percent) of U.S. vessels. Unfortunately, however, these towboats are the oldest vessels in this group; 66 percent are older than 25 years. In contrast, barges are among the youngest vessels due to a combination of retirement and replacement of older dry cargo barges and acquisition of new tank barges. This was largely in response to the Oil Pollution Act of 1990 that decreed tank barges and vessels must have double hulls by January 1, 2015. That said; the barge building boom that occurred over the course of the last five years has slowed considerably, much to the dismay of the yards that ply this sector for most of their work.

U.S. vessel totals remain remarkably constant over the years, with that number hovering just above or below 40,000 hulls for the past 25 years. Nevertheless, 2015 U.S. fleet totals are at their highest levels since 2000, with 40,555 hulls, up almost 500 vessels from 2014, even allowing for the last of 111 single hull barges that finally went away as the January 2015 deadline kicked in and, of course, the slow decline in blue water numbers. While the last couple of years haven't been the best for U.S. yards – largely owing to the ongoing slump in the GoM oil patch and the temporary (?) end to U.S. Coast Guard and Navy small boat programs – U.S. yards produced, in great numbers; barges, tugboats and ferries over the course of the past two years. And some yards – those positioned in the right niche markets or with diversified public/private/export portfolios – have done quite well indeed.

A snapshot of the domestic *Water Transportation System during the years 2000, 2010, 2013, and 2014* gives readers a real sense of the trends occurring on the water, and also underscores the inexorable decline of our blue water fleets:

Our Water Transportation System at a glance …	**2000**	**2010**	**2013**	**2014**
Privately Owned Merchant fleet (>1000 GT)	282	221	187	179
Recreational boats (millions	12.8	12.4	12.0	11.8
Lock chambers	276	239	239	239
Lock sites	230	193	193	193
Average Age of locks (years)	50.2	59.5	62.5	63.5

We're saving much more than fuel.

BAE Systems' HybriGen® electric power and propulsion system is saving fuel, emissions, engine hours, and marine life with its patented technology. HybriGen® variable speed gensets provide propulsion and auxiliary power on demand.

Ask us how to further improve fuel savings and reduce engine maintenance with HybriDrive® marine solutions.

HybriDrive® PROPULSION SYSTEMS

BAE SYSTEMS

INSPIRED WORK

CS-16-J03

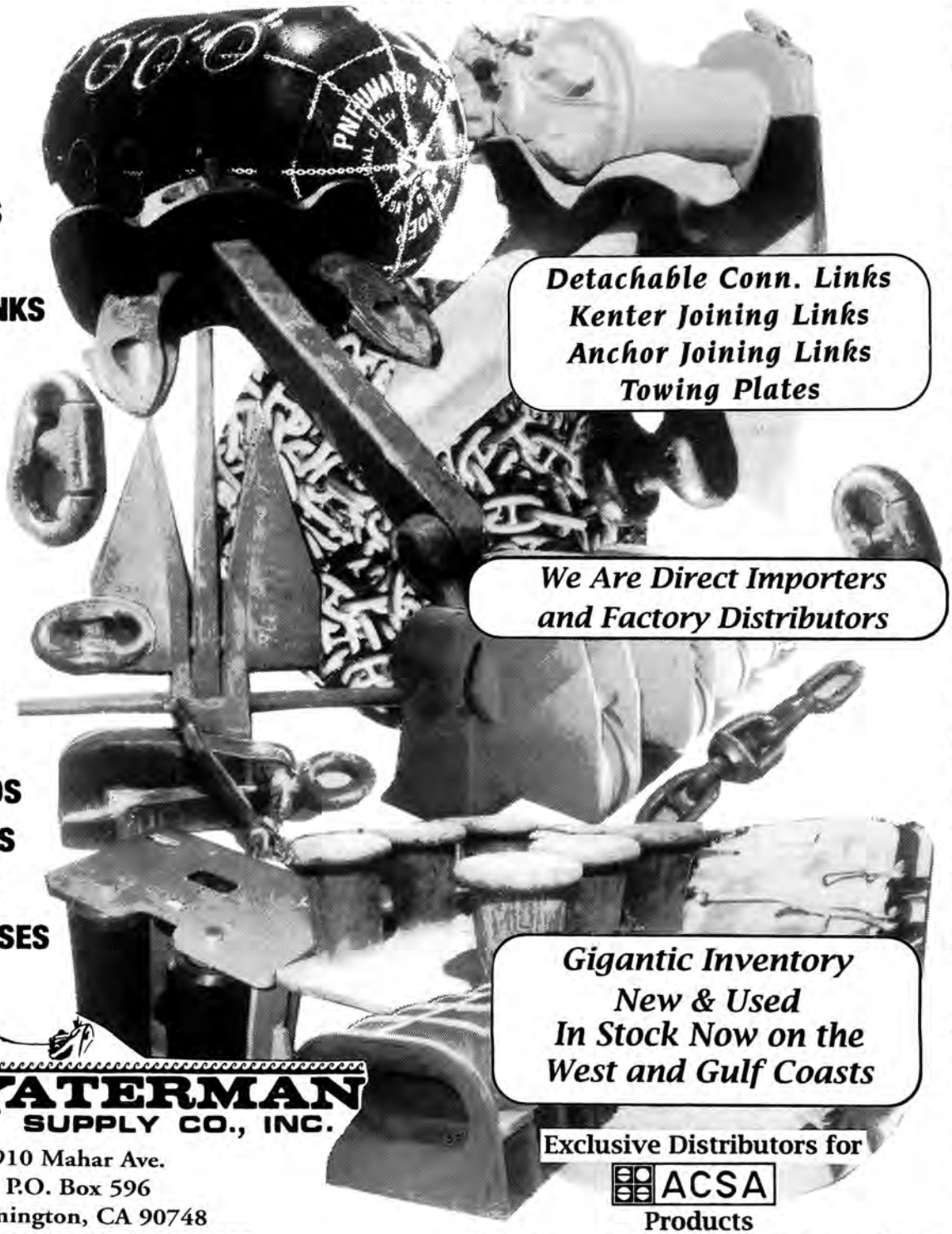
U.S. Flag (December 31 2014)		Age (years)					
Vessel Type	**Number**	**< = 5**	**6-10**	**11-15**	**16-20**	**21-25**	**>25**
Vessels (Total)	40,082	7,076	5,668	4,962	6,070	3,339	12,778
Self-Propelled	9,039	863	798	708	641	436	5,464
Dry Cargo	846	55	74	107	94	69	439
Tanker	61	17	15	7	5	2	15
Pushboat	3,058	368	220	171	137	87	2,072
Tugboat	2,418	198	232	157	136	70	1,624
Passenger	853	27	51	65	99	117	493
OSV	1,692	198	206	201	170	91	821
Barges (Total)	31,043	6,196	4,862	4,253	5,420	2,901	7,240
Dry Covered	10,243	1,736	1,379	1,811	2,761	809	1,746
Dry Open	8,545	822	1,643	1,139	1,706	1,411	1,808
Deck	7,173	2,173	939	775	500	384	2,255
Other Dry Cargo	212	18	18	18	24	11	118
Single Hull Tank	134	12	5	3	2	1	111
Double hull Tank	3,772	997	693	424	395	267	995
Other Tank	963	438	185	83	32	18	207

U.S. Flag (December 31 2015)		Age (years)					
Vessel Type	**Number**	**< = 5**	**6-10**	**11-15**	**16-20**	**21-25**	**>25**
Vessel (Total)	40,555	7,033	5,977	4,455	6,653	3,276	13,011
Self-Propelled	8,985	832	882	657	719	391	5,495
Dry Cargo	788	52	57	103	87	53	431
Tanker	62	11	19	9	6	3	14
Pushboat	3,170	386	285	169	172	75	2,082
Tugboat	2,422	166	249	134	165	65	1,641
Passenger	826	9	41	63	90	108	505
OSV	1,717	198	231	179	199	87	822
Barges (Total)	31,555	6,198	5,094	3,798	5,932	2,885	7,507
Dry Covered	10,665	1,748	1,452	1,714	2,995	1,028	1,727
Dry Open	8,354	789	1,475	920	1,878	1,182	2,095
Deck	7,337	2,209	1,188	597	550	337	2,333
Other Dry Cargo	194	17	16	14	23	13	109
Double hull Tank	3,998	1,083	733	461	437	311	973
Other Tank	1,007	352	230	92	49	14	270

US Army Corps of Engineers®

DOT's Statistics Annual Report: https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/TSAR_2016.pdf
The USACE annual Fact Card: http://www.navigationdatacenter.us/factcard/FactCard2016v.pdf

SERVING THE MARINE AND OIL INDUSTRY FOR OVER 50 YEARS



ANCHORS
CHAIN
CONN. LINKS

FENDERS
CHOCKS
BITTS

KEVELS
DOORS
HATCHES

FAIRLEADS
CAPSTANS
WINCHES
WINDLASSES

Detachable Conn. Links
Kenter Joining Links
Anchor Joining Links
Towing Plates

We Are Direct Importers and Factory Distributors

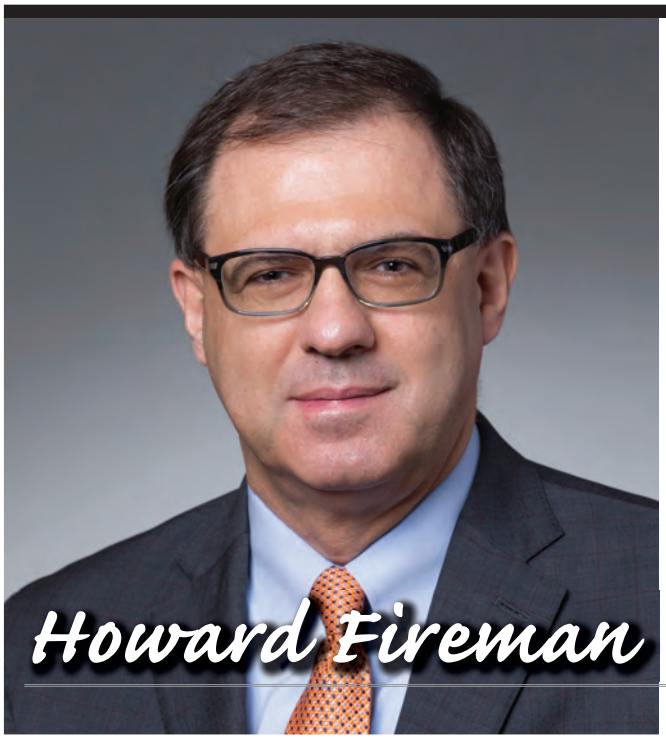
Gigantic Inventory
New & Used
In Stock Now on the West and Gulf Coasts

WATERMAN SUPPLY CO., INC.

910 Mahar Ave.
P.O. Box 596
Wilmington, CA 90748
800-322-3131 • (310) 522-9698
Fax: (310) 522-1043

Exclusive Distributors for
ACSA
Products
Anchors · Chain · Hardware · Fittings
www.watermansupply.com

Call Toll-Free
(800) 322-3131



Howard Fireman

Senior Vice President and Chief Technology Officer, American Bureau of Shipping (ABS)

Howard Fireman, Senior Vice President and Chief Technology Officer, joined the American Bureau of Shipping (ABS) in 2013. Fireman is responsible for leveraging the latest advancements in technology to drive the development of innovative products and services that promote safety and improve the delivery of class services in the marine and offshore industries. Since joining ABS, Fireman has also served as President of the ABS Nautical Systems Fleet Management Software product line where he has overseen significant advancements in the software and achieved growth in every sector. Fireman came to ABS from the U.S. Navy, where for over 35 years he was recognized as a distinguished leader in the areas of naval ship design, hull form optimization, total ownership cost, total ship systems engineering, design integration, research and development, and fleet operational support. Fireman holds a Bachelor's and Master's Degree in Naval Architecture and Marine Engineering from the University of Michigan. He also received a Master's Degree in Technical Management from Johns Hopkins University. He is also a recipient of many industry awards including the Society of Naval Architects and Marine Engineers Admiral Taylor Medal, American Society of Naval Engineers Gold Medal and University of Michigan College of Engineering Distinguished Alumni Award (Naval Architecture and Marine Engineering). Fireman's leadership, and track record with technological innovations now turn to the new Subchapter M towboat rules, where ABS, among other things, offers a turnkey service that spans class, software and boots on the ground when it comes to surveyors. Listen in this month as he weighs in on the nation's brow water sector, and the journey to compliance ahead.

What is the most important issue facing inland marine transportation providers – especially those impacted by subchapter M towboat rules – today? Why? What can they do about it?

One of the biggest challenges for some owners impacted by Subchapter M will be integrating safety risk management and safety assurance concepts into repeatable, practical systems because this approach to safety will be new to them. There is a learning curve to understand, develop, and implement a Safety Management System (SMS), and for many, there will be a large amount of additional data to be collected and reported on. This might seem overwhelming for some organizations. Figuring out how to do this is no small task, but using an IT system to integrate critical maintenance, crewing and HSQE activities will make complying with the new regulation straightforward. Brown water companies have an opportunity to consider fleet management systems to assist and minimize the regulatory burden. Our focus has been on delivering a solution that works the way the crew does on the vessel. The tool does not require any software on board, and because it is offered in the cloud, there is no IT infrastructure required. As a part ABS, we have the advantage of working closely with our internal compliance specialists to ensure accuracy in our solutions.

It's Your HEADQUARTERS
It's Your WAREHOUSE
It's Your COMMAND CENTER
...TO GO

Tidewater Can Refit These Vessels For Uses Including:

- Coastal Container & Cargo
- Short-Sea Shipping
- Fishing & Fish Processing
- General Cargo - Non-Oilfield
- Salvage Assist
- Dive Support
- Construction Assist
- Mobile Warehouse
- Mobile Command Center
- Expedition Boat
- Yacht Tenders and Shadow Vessels

BUILT TO ABS CLASS & USCG STANDARDS

TIDEWATER
A Tidewater Marine, LLC Product

For Information on Tidewater Refit Vessels
Austin Howell 504.568.1010
ahowell@tdw.com

Describe the ABS approach to the rapidly developing subchapter M compliance and solution game?

ABS is a Recognized Organization and an approved Third Party Organization (TPO) of the USCG; so ABS can provide a custom approach that supports Subchapter M compliance during plan review, construction and throughout service life. ABS is the best single resource providing engineering plan review services to cover all aspects of design review for compliance with Subchapter M, including Structural Arrangements, Machinery, Piping, Electrical Systems and Equipment, Fire Protection and Lifesaving Equipment. Choosing to utilize ABS Engineering services removes the need to send drawings to multiple individuals or entities based on scope/discipline of their engineering license.

Is the inland industry ready for a software approach to safety – that is to say is technology the answer, or can operators continue to us paper documents, etc?

Technology available today is making it possible to deliver solutions that meet regulatory requirements without overburdening crew. For example, the USCG recently accepted the use of electronic log books with Subchapter M. Good software design can begin to de-emphasize paper documents and bring the marine sector into the 21st century. Solutions should be designed to capture the data necessary to comply in the normal course of managing day-to-day operations, making compliance a byproduct of operations not an additional burden.

Subchapter M towboat rules: will it make industry safer or is it just another paper exercise (think ISM)?

If the approach to safety management and the software tools that is used to deliver it is embedded in the operational process and put into the hands of the crew in an accessible way, then safety culture will be strengthened on a company basis and across the industry. ABS has developed its entire application with that approach in mind.

Many consortiums have been formed to create so-called 'sub-M' solutions. These take the form of class societies aligning with software providers and sometimes, survey firms. ABS houses all of those capabilities in-house. Does that set you up in an advantageous spot?

ABS is uniquely qualified to meet our client's needs in this marketplace. We provide services from design through reporting of subchapter M compliance. Towing vessel operators serving US inland waterways, coasts and harbors can choose between annual USCG Guard inspections and

© DutchScenery / Adobe Stock

e-Navigation made easy

A total supplier and trendsetter of navigational products and services

NAVTOR is a company dedicated to making life easier and safer for navigators, operators and shipowners. By applying innovation and state-of-the-art technology we simplify tasks, increase efficiency and improve operations.

Learn more and get in touch at **www.navtor.com**

NAVTOR

YANMAR

YANMAR. Providing quality propulsion engine packages and auxiliary generator sets for over 70 years.

Purpose-Built Marine Engines
YANMAR Manufactured Marine Transmissions
Mechanical Simplicity
Class Leading Fuel Consumption
500-Hour Service Interval
EPA Tier 3 Emission Compliance

"We are proud to have been chosen to provide the complete power solution package for the Sherry L."

THE BRAND OF CHOICE AMONGST PROFESSIONAL OPERATORS

Learn more about our Commercial Marine career opportunities at yanmar.com/us

using a Towing Safety Management System (TSMS). For those choosing the TSMS option, ABS has a full suite of services and is already working with owners to develop baseline surveys to help them achieve compliance. The ABS Nautical Systems software was developed with a tight linkage to ABS objectives, leveraging our in-house experts, to help operators easily comply with Subchapter M requirements – regardless of the method they choose.

ABS-NS has recognized and proven e-solutions for clients. But, you are best known for your blue water solutions. Can that same product scale down to the needs of brown water stakeholders, especially when the latter demographic sometimes chafes at rules designed for blue water being pushed down to the inland rivers?

We believe our blue water experience offers us an advantage in this market. Many of the safety management requirements and concepts needed to comply with Subchapter M are already supported with our current application. The US inland/brown water market is a key focus area for us. We are customizing mobile and web solutions by market sector, reworking our current application with features that deliver only what is required for that market sector. We launched NS Core in 2016 as a lighter weight solution for workboat segment. NS Mobile is launching in the first half of 2017 as a crew-oriented task management solution. We believe this approach will greatly increase adoption with very little training.

What keeps you up at night – especially in terms of the e-business (clarification – cyber, automation) side of the equation? What can be done about it?

At ABS, we embrace technology and recognize it as the enabler to improve opex, but that brings new risks. That's why, in addition to tools and technologies that work to improve efficiency – such as enhancements to NS or data integration or management and other automation tools, we are very focused on issues related to Cyber enabled systems. We need to ensure we have the right tools in place to support timely and effective decisions for our clients but also need to deliver processes and systems that mitigate risks to operations. ABS is working to develop solutions. Our technology team works closely with specialists in data security, automation and cyber as well as our clients and industry to offer a complete portfolio of solutions to take advantage of these technologies while ensuring security.

"*Maritime Reporter* is our least expensive sales person."
- Doug Weidner, DMW Marine Group

For the last 75 years, industry executives have turned to the pages of *Maritime Reporter* for unparalleled news, editorial and information.

By advertising in *Maritime Reporter*, your ad will reach a 100% requested circulation of 34,576, audited by the BPA.

Contact us today to find out how we can help you grow your business.

Maritime Reporter & Engineering News
118 East 25th Street, New York, NY 10010
Tel: +1-212-477-6700 howard@marinelink.com
www.marinelink.com

COMMERCIAL MARINE EXPO

2017 | Providence, RI

Earn a living on the waterfront? Join us at the Atlantic Seaboard's Largest Commercial Marine Trade Show

Wednesday, March 15 & 16 2017

RHODE ISLAND CONVENTION CENTER

Register FREE at WWW.COMAREXPO.COM

USE CODE **MN0217** TO ENTER TO WIN
A $**100** AMAZON GIFT CARD!

President Obama's Arctic Decision Undercut His Own Legacy

By Randall Luthi

Luthi

On December 20, 2016, in an 11th hour unilateral action designed to cement his environmental legacy, President Obama withdrew 3.8 million acres in the north and mid-Atlantic Ocean and 115 million acres in the U.S. Arctic Ocean (including the entire Chukchi Sea and a significant portion of the Beaufort Sea) from future oil and gas leasing. Unlike the five year moratoria announced by Canada, President Obama touted these closures as "permanent." Not only does this short-sighted decision threaten the economic lifeline of Alaska, U.S. energy leadership and U.S. national security, it rejects many of the tenets he actively forwarded during his presidency. Instead of a transparent, thoughtful and science-based process, President Obama chose the politically expedient course, much to the delight of anti-fossil fuel, "keep it in the ground," environmental extremists. The withdrawals table thousands of potential jobs, billions of dollars of much needed government revenue and real opportunities for much needed economic investment in our nation's Arctic.

As 2016 drew to a close, and President Trump's election was reaffirmed (through recounts and the Electoral College), President Obama warned his successor of the dangers of excessive rulemaking through executive orders and extolled the need for Congressional involvement in major policy issues. Ironically, Obama then circumvented the letter and the spirit of the law by invoking Section 12(a) of the Outer Continental Shelf Lands Act (OCSLA) to withdraw the Atlantic and Arctic offshore areas (as he did to withdraw areas in the Bering Sea earlier in December). While Section 12(a) of the OCSLA allows the President to withdraw areas from oil and gas leasing, it is doubtful that Congress ceded the power to "permanently" withdraw offshore areas. In fact, a permanent withdrawal appears to contradict the stated purpose of the OCSLA; namely to make the OCS "available for expeditious and orderly development."

The Obama White House claimed the withdrawals were based in a "science-based approach to oil and gas," but that is simply not the case. The decision discounted the industry's remarkable real-world applications of science and technology. Not only were dozens of wells safely drilled in the Beaufort and Chukchi Seas back in the 1980s and 1990s using the technology of that era, Shell safely drilled a new well in the Chukchi Sea in the summer of 2015 using far more advanced modern day technology. As other Arctic nations are proving that safe offshore exploration and development can be done above the Arctic Circle, Obama benched the United States. Furthermore, President Obama based this decision on a willful ignorance of what resources are actually in the Alaska OCS. A thoughtful scientific approach would have allowed exploration of these areas first to determine if there were significant resources available before even contemplating such a broad unilateral ban.

Even more insulting, he claimed to be doing Alaskans a favor with the withdrawal. Nothing could be further from the truth. The inconvenient truth for Obama is that 76 percent of Alaska residents and 72 percent of Alaskan Natives support offshore development, and 90 percent of Alaska state revenues are generated by the oil and gas industry. Yet, Obama's Arctic withdrawals treat Alaska as nothing more than a snow globe to be shaken and placed on a shelf by the hand of Washington, DC – a political pawn sacrificed

© ggw / Adobe Stock

to appease environmentalists and anti-fossil fuel activists thousands of miles away from daily life in Alaska.

While the U.S. sits on the sidelines of the Arctic, energy demand will continue to increase in the coming decades, both here in the U.S. and around the world. Some estimates expect the global middle class to double within the next 15 years. This means more people will want to cool their homes, fuel their cars, charge their phones and power modern appliances. By 2040, global energy demand could surge by 41 percent. With an estimated 26 billion barrels of oil and 131 trillion cubic feet of natural gas offshore Alaska, the resources in the Beaufort and Chukchi Seas could fulfill a vital role in the world's energy future.

Fortunately, few federal policies are permanent, and regarding executive actions, history has shown that one president can undo another president's actions. In 2008, President George W. Bush used a simple presidential memorandum to remove previous Section 12(a) withdrawals. In addition, Congress has the authority to pass legislation explicitly allowing the President to reverse or revise Section 12(a) withdrawals. Either way, it will take time, energy and dedication to undo Obama's harmful withdrawals, especially as the extreme environmental community has vowed to fight any reversal of President Obama's unilateral decision at every step.

The same goes for undoing the myriad of harmful Obama administration regulatory actions imposed on the offshore oil and gas industry; there is no quick fix. However, even faced with these challenges, the outlook for our industry in 2017 is much brighter than it was in 2016. Both the Trump administration and the new Congress appear to understand the benefits of an all-of-the-above approach to energy policy, and President Trump himself has repeatedly spoken in support of offshore energy. NOIA looks forward to working with the new administration and with Congress to develop a truly balanced energy policy that creates a path forward for offshore growth and development and puts all our energy options back on the table.

***Randall Luthi** is President of the National Ocean Industries Association (NOIA).*

NOIA
America's Offshore Energy Industry

Effective Harassment Prevention Training

When is bad harassment prevention training worse than no training at all?

By Lee Seham, Esq.

Seham

When is bad harassment prevention training worse than no training at all? When it comes with a wagging finger shaming employees whose only sin is being a little rough around the edges. When it emboldens opportunistic employees to seek an advantage they do not deserve. When it causes managers to cravenly subordinate legitimate operational considerations to political correctness.

Defining the Law

Title VII of the Civil Rights Act of 1964 does not mandate a general civility code. Nor does it prohibit all verbal or physical harassment in the workplace. Title VII does not extend to harassment *per se*, but rather harassment that is *discriminatory* in nature.

Moreover, Title VII only prohibits discriminatory harassment when it reaches a level that is "severe or pervasive." This limitation arises from the fact that the term "harassment" appears nowhere in the statute's text. Rather, the key operative language provides that an employer may not discriminate against an individual with respect to his "compensation, terms, conditions, or privileges." The Supreme Court adopted the "severe or pervasive" standard in order to shoehorn the harassment concept into the "terms" or "conditions" language. Put another way, discriminatory harassment does not become actionable under Title VII unless its severity or pervasiveness is intense enough to effectively change the terms or conditions of the plaintiff's employment.

Harassment prompted by discriminatory animus cannot be successfully defended on the grounds

that hostile conditions are embedded in the prevailing workplace culture. There is no assumption-of-risk defense to charges of workplace discrimination. Consequently, the common taunt – "if you can't stand the heat, get out of the kitchen" – is a legally indefensible response to workplace harassment prohibited by Title VII.

But at the same time, there is no federal legal right to work in an environment free of brusqueness, vulgarity, or even profanity when the offensive behavior is devoid of discriminatory content or intent.

In Real Life

In *Gross v. Burggraf Construction Co.,* 53 F.3d 1531 (10th Cir. 1995), a construction supervisor, among other things: (1) described his female subordinate as "dumb," (2) yelled at her to get her "ass back in the truck and don't you get out until I tell you," and (3) stated to co-workers via radio "sometimes don't you just want to smash a woman in the face?"

In dismissing the action, the Tenth Circuit took into consideration the nature of the industry: "In the real world of construction work, profanity and vulgarity are not perceived as hostile or abusive. Indelicate forms of expression are accepted or endured as normal human behavior. Accordingly, we must evaluate Gross' claim of gender dis-

crimination in the context of a blue collar environment where crude language is commonly used by male and female employees. Speech that might be offensive or unacceptable in a prep school faculty meeting, or on the floor of Congress, is tolerated in other work environments."

In *Bolden v. PRC, Inc.,* 43 F.3d 545 (10th Cir. 1994), the plaintiff electrician was referred to by a broad spectrum of ugly epithets, including "d***head," "dumbs**t," "**shole," and "fool." The court made the unusual finding that the plaintiff was subject to intentional flatulence, accompanied by the remark from the gaseous offender that it was "a kiss for you."

Although the court acknowledged the "general ridicule" to which the plaintiff was subjected, it rejected the contention that a Title VII hostile work environment existed. Many of the workers harassed one another; many of the workers were the recipients of vulgar and profane jokes. However, the derisive environment in the workshop was universal. The only difference was that the plaintiff could not tolerate the taunting and did not share the crude and rude sensibilities of his coworkers.

In the recently decided case of *Russell v. City of Philadelphia*, 2016 U.S. Dist. LEXIS 113725 (E.D. Pa., Aug. 25, 2016), the plaintiff complained of gender-based harassment, which included repeated references to her as a "b**ch," inquiries as to what type of man she liked, and whether she preferred being "fixed." In granting summary judgment in favor of the defendants, the court observed that, while the comments were "certainly offensive," they were sporadic in nature. The court cited Second Circuit precedent holding that, for comments, slurs, and jokes to constitute a hostile work environment under Title VII, there must be a "steady barrage of opprobrious" discriminatory comments.

Harassment Prevention in Practice

There are, of course, excellent reasons to control profane and vulgar behavior – not to mention flatulence – in the workplace. Professional dress and demeanor frequently promote professional performance. Conversely, slovenly dress and a lack of discipline often contribute to the degradation of performance.

Employer harassment prevention policies invariably impose a more demanding standard of conduct than that required by federal law. Such an

approach is prudent and praiseworthy. Prudent, because nipping harassment in the bud is the best way to avoid liability. Praiseworthy, because any form of harassment can cause real harm to another man or woman. However, harassment prevention training should convey with clarity that company policy reflects the employer's higher aspirations rather than a replication of federal law. But, what does that mean?

- Title VII does not require us to walk on egg shells. And conveying the false impression that it does may breed resentment and damage morale.
- Title VII generally does not impose liability based on sporadic off-color comments. And conveying the false impression that it does may be a fast track to coercive threats and litigation by alleged victims.
- Title VII mandates that a worker be permitted to earn his or her bread in an environment free from severe or pervasive harassment based on his/her race, color, religion, sex, or national origin.

Let us boil this down to some homespun advice. When you conduct harassment prevention training, let your employees know that they are subject to two standards. The first derives from statute and imposes liability when harassment is severe or pervasive. From a plaintiff's perspective, this standard presents a high hurdle.

The second standard is the one embodied in the company's policy. This standard is far more demanding in that it prohibits harassment at any level. Whereas a violation of the company's more exacting standard will not give rise to liability, it may result in discipline up to and including termination.

The direct message is that the company welcomes employee complaints of harassment policy violations. The company will promptly conduct a full and fair investigation of each complaint and protect the complainant against any form of retaliation. Remedial action will be taken whenever warranted by the facts as determined by the company's investigation.

The subtext is that there is little to be accomplished by bee-lining to a lawyer or the EEOC when harassment is neither severe nor pervasive in nature. Rather, the most effective avenue of redress is via the company's internal complaint process.

Effective harassment prevention training should be based on the law as it is, not on what some may want it to be.

Lee Seham *is a partner in the labor/employment law firm of Seham, Seham, Meltz & Petersen and General Counsel of the non-profit drug testing consortium American Maritime Safety, Inc.*

Editor's Note

Mr. Seham's advice in this column is especially valuable in today's working environment; in the office to be sure, but also on board any vessel where, as he explains (as do the courts) the nature of the work environment enters into the discussion. The ongoing tussle over this very topic at the U.S. Merchant Marine Academy at Kings Point brings the issue into the hot, bright spotlight. More than 220,000 credentialed domestic mariners toil in this environment today, on board 40,000 workboats. There's a good chance many of these individuals are your employees.

JOHN DEERE

YOUR COMPLETE SOURCE FOR
ENGINE AND GENERATOR POWER

A CK Power Marine Generator can power auxiliary needs, such as lights, fans and winches, as well as your main on board power. Most important is John Deere's solid reputation for dependability. Keep your shipments – and your business – moving in the right direction with a CK Power marine generator that's a proven performer.

Available from

CK POWER

1-855-CKPOWER · ckpower.com

PHOENIX®
DURABILITY X DESIGN™

Your LED Lighting Solution.

MARINE SPECIFIC LIGHTS
ABS APPROVED
BUILT TO LAST

FEDERAL RESOURCES®

CRITICAL SOLUTIONS FOR THE MARITIME INDUSTRY

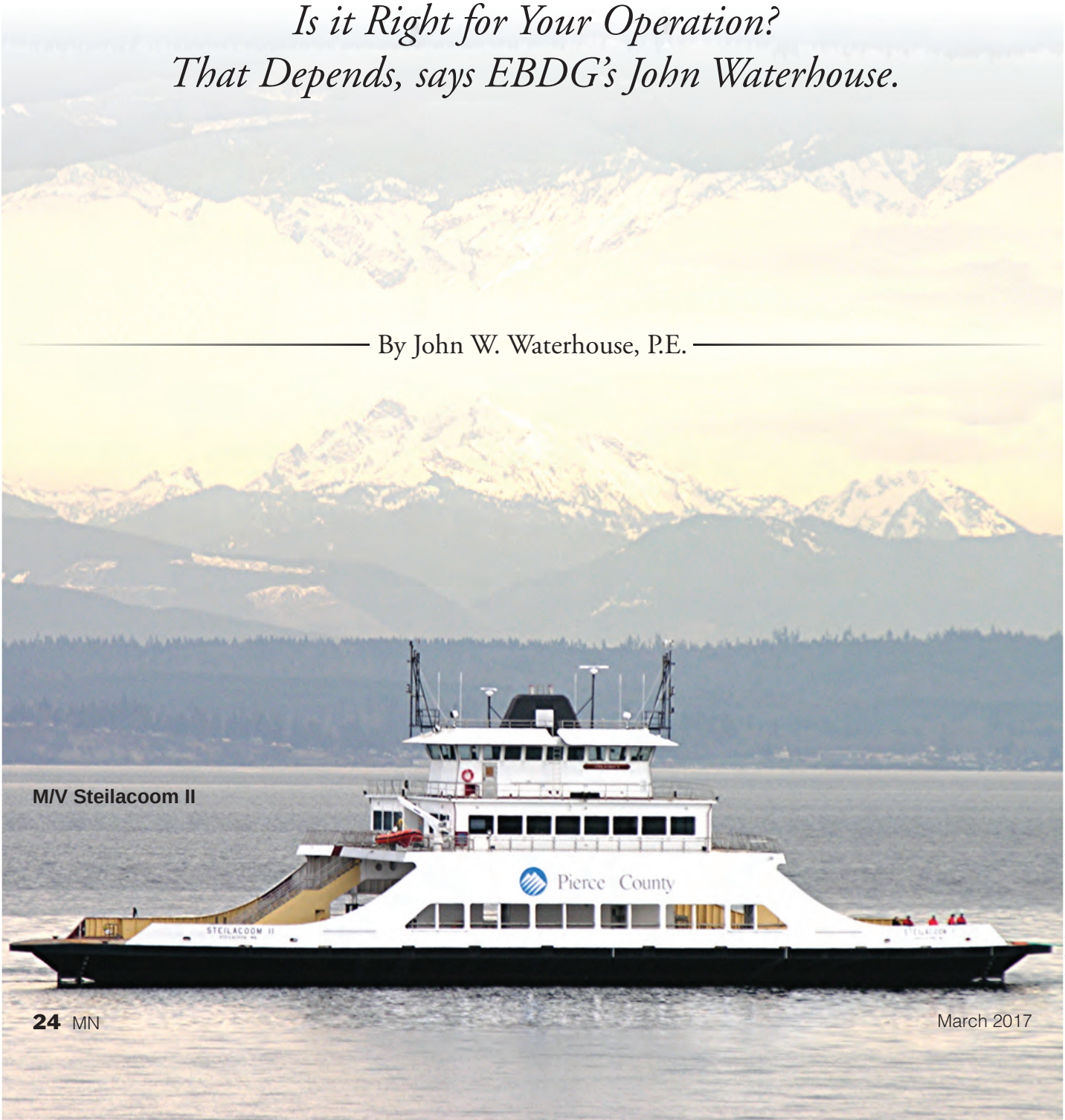
more info » **federalresources.com/marinenews**

800.892.1099 | maritime@federalresources.com

Ferry Propulsion Systems: *A Case Study*

Is it Right for Your Operation?
That Depends, says EBDG's John Waterhouse.

By John W. Waterhouse, P.E.



M/V Steilacoom II

Credit: Nichol Bros Boat Builders

Elliott Bay Design Group (EBDG) serves many ferry customers in North America. These clients read the trade publications and see various articles on new technologies such as hybrid propulsion, battery powered vessels, or zero emission vessels. After finishing such an article they ask themselves: *"What advantages would that technology bring to my operation and what will it cost"?* To that end, EBDG developed some tools to help answer those questions.

A case study to evaluate five different propulsion alternatives for a conventional ro-pax ferry was devised, using the following options:

- *Geared Diesel (Baseline)*
- *Diesel-Electric*
- *Diesel-Electric with 13.4 megawatt battery bank*
- *Diesel-electric with 26.8 megawatt battery bank*
- *Hydrogen Fuel Cell*

To calibrate the results, EBDG selected a long-term client, Pierce County, for whom the firm has previously designed and built two double-ended ferries. The County has published data on their operating costs so we can have confidence in using their information to evaluate how different technologies will impact both operating costs and capital costs using the geared diesel configuration as the baseline.

The key to any ferry operation is to understand the route. For Pierce County the ferry crosses between Anderson Island and the town of Steilacoom over a distance of approximately 3.5 nautical miles. With a service speed of 11.5 knots the vessel is underway for 21 minutes and in dock for 9 minutes for each half hour voyage. For the purpose of our study, an initial departure at 6 am every morning and a total of 13 round trips per day were all used as assumptions. Costs were based on the ferry operating 350 days per year. The characteristics of the ferry used for this study are shown in Table 1.

EBDG has developed a spreadsheet tool called *ShipCalc* to develop initial estimates of vessel weight, powering, electrical demand, etc. *ShipCalc* uses weight and cost parameters based on the U.S. Navy Ship Work Breakdown Structure (SWBS). Resistance for displacement vessels is

calculated using Holtrop and Mennen's regression analysis. Inputs to the tool include the following variables:

Physical Dimensions	Route Model
Weight Parameters	Construction Cost Parameters
Crew Number & Positions	Areas & Volumes
Electrical Loads	Operating Cost Parameters

Table 1

Item	English Units	Metric Units
Length Overall:	216 ft	65.8 m
Beam:	68 ft	20.7 m
Depth:	16.5 ft	5.0 m
Design Draft:	10.25 ft	3.1 m
Light Ship Weight:	733 LT	745 MT
Full Load Displacement:	996 LT	1012 MT
Car Capacity:	54 vehicles	54 vehicles
Passenger Capacity:	325	325
Crew Size:	5	5
Main Propulsion:	2 x 1050 hp	2 x 783 kW
Electrical Capacity:	2 x 110 eKW	

With the output values for the baseline vessel calibrated against actual cost number, EBDG proceeded to look at the propulsion alternatives. We assumed three 600 kW generator sets would take the place of two propulsion engines and two smaller generator sets. The SWBS parametric values for propulsion (SWBS 200) and electrical power and distribution (SWBS 300) were adjusted accordingly and all other SWBS parameters were kept the same. A 10% efficiency loss for the electrical power conversion was imposed, instead of a 2% factor that was used for the geared diesel arrangement. Fuel consumption rates (lbs/kW/hr) for the generator sets were also assumed the same as for the geared diesel arrangement.

After running the diesel-electric case, the firm also looked at the impact of adding batteries to the system which allows energy storage overnight using inexpensive electrical rates. We assumed the battery banks would be a buffer in the system and that the generator sets would start once the batteries fell below a set charge level. We assumed lithium ion chemistry for the batteries with a minimum state of charge at 20% which results in a battery life of 8,000 cycles. With one day of operation equating to one cycle, this gives a battery life of 22.8 years. We did not assume any shore charging during the day due to the short time at the terminal.

EBDG has also been working with Sandia National Laboratories on the feasibility of fuel cell propulsion for vessels. The fuel cells are existing commercial units that use hydrogen as a fuel and are packaged in cabinets, much like the battery racks, with an output of 120 kW per unit. We selected 10 units plus one standby unit, giving us a design capacity of 1,200 kW to drive the vessel. The fuel cells have an operating life of 10,000 hours at full load which equates to roughly 6 years life. Given

"EBDG has also been working with Sandia National Laboratories on the feasibility of fuel cell propulsion for vessels. The fuel cells are existing commercial units that use hydrogen as a fuel and are packaged in cabinets, much like the battery racks, with an output of 120 kW per unit."

The results were as follows:

Item	Propulsion Alternatives				
	Geared Diesel	Diesel-Electric	D-E (Small Batt)	D-E (Large Batt)	Fuel Cell
Light Ship Weight (LT)	733	745	740	753	774
Generators (kW)	2 x 110	3 x 595	3 x 313	3 x 275	11 x 120
Fuel Consumption (GPD)	526	576	521	450	2247
Fuel Capacity (gal.)	20,260	22,200	20,060	17,330	10,784
Annual Fuel Cost (US$)	$552,390	$605,270	$573,280	$472,570	1,475,990
Annual Electrical Cost (US$)	N/A	N/A	$24,540	$54,630	N/A
Capital Cost (US$ Million)	11.07	12.58	13.28	15.12	18.58

the relatively large amount of fuel required, we assumed the hydrogen would be stored as a liquid at a temperature of 20 degrees Kelvin, using a single cryogenic tank and a regasification system similar to Liquid Natural Gas (LNG).

We made one major change to the design ground rules for the fuel cell option. The baseline vessel has sufficient fuel for 35 days of operation. This is due to the client's need for reserves in the event of a major earthquake. The vessel actually refuels every two weeks but it carries the full weight of fuel. EBDG's modeling adjusts the size and weight of the fuel for the different scenarios based on fuel consumption and the 35-day capacity. The fuel cell version cannot carry large quantities of liquid hydrogen (LH2) since LH2 has much less energy density than diesel fuel. We sized the LH2 storage tank to suit a resupply every four days with a 20% margin from a standard tank truck with a capacity of 3,200 kg of LH2.

Bottom Line / Looking Ahead

It can therefore be concluded that hybrid propulsion needs to be evaluated on a case-by-case basis. Some takeaway thoughts are as follows:

- *Battery costs are coming down. Our model assumed $1,000 per kW-H of capacity while some vendors are now looking at prices closer to $800 per kW-H.*
- *Recharging during the day helps reduce the size and cost of batteries substantially.*
- *Electrical rates vary widely across the U.S. Our study assumed $0.0768 per kW-H. Many areas have price adjustments for transportation projects or environmental initiatives. Learn more about your local electrical utility!*
- *Battery life should be carefully evaluated. Given the rapid changes in battery technology, is a long battery life really the wisest decision?*
- *Fuel cell technology is real but the fuel is very expensive given the current sources of supply. As the hydrogen supply infrastructure develops, fuel cells will become increasingly attractive as an option, despite the complexities of cryogenic storage.*
- *Using solid data as input to the evaluation is essential to have confidence in the results. Work closely with your engineering service providers and the equipment vendors to ensure you are asking the right questions and getting valid results.*

John W. Waterhouse *is the Chief Concept Engineer and a founding partner of Elliott Bay Design Group. With more than 30 years of experience in naval architecture and marine engineering, he has made significant contributions to the industry through innovative design and engineering.*

Go East, Young Man, Go East

Scania's market reach grows with a key workboat contract. The reasons why are easy enough to see.

By Joseph Keefe

When Scania announced its recent deal with Potomac Riverboat Company, part of the Entertainment Cruises family, to deliver eight, EPA Tier 3, 500 HP DI13-liter engines in 2017 to power its high-speed, low-wake water taxis in Washington, DC, it marked the beginning of what is so far a good year for the San Antonio-based engine manufacturer. The 88-foot vessels will carry 149 passengers and will be built by Louisiana-based Metal Shark, to specifications from BMT Designers and Planners.

The deal not only represents a significant number of individual engines, but more importantly for Scania, it cements the firm's toehold in the red hot domestic ferry sector. Today, as much as 40 percent of Scania's North American marine engine sales are made into the fisheries markets. Those markets, like the ferry sector, are also seeing boom times. Alberto Alcalá, Scania's Sales Manager for Marine Products, told ***MarineNews*** in February, "A lot of people are making investments into new boats and repower jobs [in the fisheries sector]. Some estimates up in the northeast put the wait to build a hull now up to two years."

As for Scania's market penetration, Alcalá explained, "East Coast sales – we've had others but in the passenger vessel market, we've had a lot more success on the West Coast. What's important to us is this is new construction, not repowers. We love doing repowers but we've been trying to show off our ability to support the builders, the naval architects and the operators. We've had good success with our distributors and setting up dealers." As it turns out, that's exactly what tipped the scales for Scania on their latest sale.

Potomac Riverboat Company and Entertainment Cruises run a combined fleet of 38 boats in a wide range of cities, including New York, Chicago and Boston, offering dining cruises, sightseeing tours, private charters and water taxi services. "We chose Scania USA to provide the main propulsion package for the new water taxis for a variety of reasons," said Bob Lawler, Entertainment Cruises VP Marine Operations. "Scania is able to meet our size, horsepower and weight requirements in a very fuel efficient and affordable package, which combined with Scania's outstanding customer service we feel we have the perfect partner for this project."

Alcalá added for emphasis, "They did their due diligence, research and talked to a lot of builders, architects and operators to learn more about Scania. When they understood what we could and would provide in help to everyone in the chain, that's when they pulled the trigger."

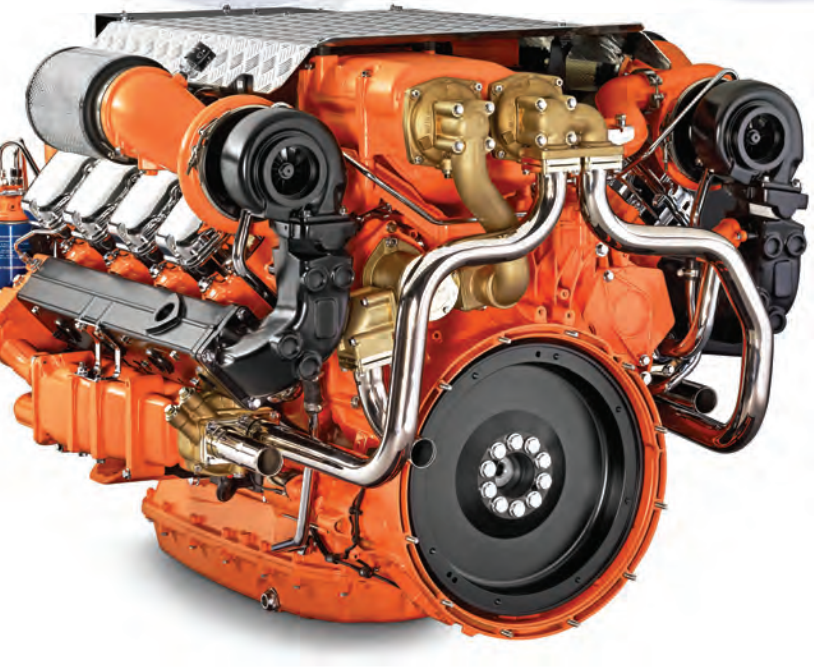
East Coast sales – we've had others but in the passenger vessel market, we've had a lot more success on the West Coast. What's important to us is this is new construction, not repowers. We love doing repowers but we've been trying to show off our ability to support the builders, the naval architects and the operators. We've had good success with our distributors and setting up dealers.

– Alberto Alcalá, Scania's Sales Manager for Marine Products

Why Scania

Scania's marine engine platform today includes a complete range of 9-, 13- and 16-liter benchmark engines for both propulsion and auxiliary applications. From propelling fast patrol craft to pushing heavy river barges upstream, there is a likely a Scania marine solution for any workboat application. Scania engines are available in EPA tier 3 ratings up to 900 hp, and the firm has also launched a range of IMO tier 3 engines for Canada.

According to Scania, marine engines must be compact, have easy-to-fit auxiliaries and be designed for easy servicing. But, for Scania's fishing customers, reliability is the key.



"... it is bulletproof, the design is simple, the marinization is fantastic. It's not an afterthought, as it might be with other engine brands. The displacement is the perfect size – we have 13 and 16 liter displacement. The power to weight ratio is phenomenal. The torque helps the guys get out of the water quickly and they are very, very fuel efficient."

– Alberto Alcalá, Scania's Sales Manager for Marine Products

Speaking to his fisheries clients, Alcalá says, "They think it is bulletproof, the design is simple, the marinization is fantastic. It's not an afterthought, as it might be with other engine brands. The displacement is the perfect size – we have 13 and 16 liter displacement. The power to weight ratio is phenomenal. The torque helps the guys get out of the water quickly and they are very, very fuel efficient."

Looking closer, that reliability stems from a simple design philosophy, one which employs a modular block design that – even over the breadth of three sizes – employs as much as 30% in parts commonality. And, because so many parts are common to each engine, that means Scania rarely is out of stock on any part, when the customers come knocking. Alcalá reported that a recent internal 'parts availability' survey revealed that more than 98% of their parts were always in stock. In a business where time is money and down time drains the bottom line, that's a key metric.

The modular commonality comes into play in other ways, as well. Because the Scania line is so similar, mechanics who are qualified to work on one engine will find that they can provide service to all; the 9, 13, and 16 liter versions. And with the "one hole for each head" design, each with just three bolts per valve cover, mechanics changing out one liner don't have to pull the entire head; an enormous time savings for operators. Any engine OEM will tell you that the fewer times the head has to be pulled and human hands inserted into the equation, the less chance there is for mechanical problems down the line.

Saving weight is the obvious way to reduce fuel consumption and increase performance of any planing vessel. Thanks to the superior power-to-weight ratio and compact dimensions of the Scania marine engines, boat designers have great opportunities to optimize operational efficiency and profitability. Alcalá adds, "Comparing us to our competitors in the 13 liter range, for example, our engine is a lot lighter for the same horsepower so just by definition, that's more power to weight." For operators, this advantage – several hundred pounds – translates into more passengers and/or cargo per voyage and/or the ability to carry a larger fuel load which in turn allows for greater endurance. In the

passenger vessel sector, and taking into account the Coast Guard's new and heftier passenger weight assumptions, this metric is especially important.

At a recent show in Canada, Scania showed its IMO Tier III solution, which uses SCR. Featuring documented reliability, fuel efficiency and operating economy, the new IMO Tier III engine range produces significantly reduced exhaust emissions with proven SCR emission control technology developed in-house. Compact design, unlimited adaptability and standard interfaces allow easy installation and seamless integration irrespective of application. Alcalá explains, "IMO Tier III is going to be our basis for US EPA Tier IV. Right now, now Tier IV isn't in effect until October 1 of this year for our HP ranges that we operate in (less than 1000 kW)."

Looking Ahead

As the year begins, Alberto Alcalá finds himself all over North America, touting the Scania brand. But, that's part of a well planned, concerted effort to boost that market awareness. That's not to say Scania hasn't been around this side of the pond for a while. They have. He explains, "I just last year was in Canada where an operator acquired a vessel that had 40-year old Scania engines on board. But, it's been in the last nine years that there's really been a more distributor and dealer focused plan to renew and strengthen our marine market presence. More recently, we just sold three engines into Canadian fishing boats. And, we had a dealer taking another engine for stock." He continues, "Fishing vessels are our strong point right now, but passenger vessels are not far behind. With the Entertainment Cruise / Metal Shark order, I think it won't be long before passenger vessels will rival our fishing boat sales."

As for the workboats markets, especially on the inland side, Alcalá concedes that he has his work cut out for him. That said, he adds, "The workboat market is slow – not just for us but for everybody. That said; we secured just recently an order for two engines in that market, which is a positive trend."

Scania today manufactures a wide range of truck, bus, marine and industrial engines. A true propulsion pioneer, the company employs approximately 42,000 employees with an annual turnover of $11 billion. Last year, it celebrated its 125th year in the business.

2017, says Alcalá, "has so far been a great year for Scania. It certainly has started out well." With a powerful, lightweight and fuel efficient line-up of modular marine engines, that's a good place to be. Already strong in at least two sectors and on the West Coast in general, the firm is looking to accomplish more. When they do, the compass is pointed east.

Partnerships Drive SubChapter M Solutions

Vendors, Consultants, Class Strive to Provide Turnkey Service.

By Patricia Keefe

Unless you've been lost at sea for the last few years, you know about Subchapter M. You know the June publication of the U.S. Coast Guard's regulations for ensuring minimum safety standards on tows and tugs, which will extend inspection requirements to the majority of these vessels for the first time, moved the long-awaited, and in some cases, dreaded program from the haze of eventually out into the cold light of day.

Nearly every story written about Subchapter M in the last two years has carried the warning that, "you know, you don't have as much time as you think to get your ducks in a row." And that is still true today, albeit more urgently so, as the proverbial clock is now ticking for real.

The deadline for meeting the USCG requirement for having a safety management system (SMS) in place and completed vessel surveys and external audits, may be July 20, 2018, but it's less a date you should be looking at meeting, as it is the date you should be counting backwards from. Which means that old saw "better late than never" is best turned on its head. Vessel operators should be approaching SubM compliance thinking "better sooner rather than later," when it comes to developing and vetting their compliance strategy.

According to Pat Folan, Tug & Barge Solutions (TBS) founder and vice president, at least 75% of the required paperwork has to be done in the quarter leading up to the audit. "That will get your TSMS certified in about a year. And you have til July 2018 to get your Certificate of Inspection (COI). We typically find no company can perform that well. When first implementing an SMS, 75% don't happen in the first six months. We're lucky to see mid 90 percents in a year."

"So we're talking about getting the plan built, approved and implemented by the beginning of 2018. They should be implementing an SMS NOW. 2018 isn't that far away," cautions Josh LaVire, ABS Inland Market Manager.

Of course vessels doing work in the oil patch, American Waterways Operator members or forward-looking companies long concerned about safety, are already familiar with much of what Subchapter M requires through their involvement with other safety management programs such as SIRE, the Responsible Carrier Program and International Standards Organization-based safety management systems (SMS), respectively.

But for as many as close to half of the 5,500 vessels owned by an estimated 1,100 companies that the Coast Guard says will be affected by Subchapter M, some of which are small operations with little to no computer experience and a captain and crew wearing multiple hats, compliance with the almost 800-page Subchapter M regulations can seem daunting.

One is THE Loneliest Number

Much as the similar International Safety Management (ISM) standard did for larger vessels, classification society ABS predicts Subchapter M will create a large business process and systems challenge for small boat operators. But they don't have to go it alone. There are a host of fleet management and maintenance compliance software developers, classification societies, independent auditors and surveyors,

as well as consultancies that do everything from helping companies craft custom SMS, to providing system and management audits, to overseeing internal audits, etc., lining up to grab a piece of this business.

Practicing what they'll be preaching, many of these players are also opting not to go it alone. From an industry perspective, the best way to either serve, or in some cases, break into, the inland and coastal brown water subchapter M market is to provide a turnkey solution – an approach that can not only simplify the issue for clients, but is also a tremendous help to the parties in these partnerships.

In some cases, these players have gone so far as to buy complementary companies, while others have signed deals to share resources and assign specific parts of the compliance work. A key goal in partnering for application vendors was the ability to provide clients with access to a network of experienced and widely dispersed auditors and surveyors. Hello classification societies!

Tug and tow boat owners and operators will need to make many decisions, not the least of which is whether to go with a TSMS or pick the so-called Coast Guard option, but first they'll need to decide whether they want help navigating the new regulations. If so, are they better off with a team approach or sticking with a single class society? And is a retrofit experienced blue water approach acceptable or would a built-from-the-ground-up brown water application be the better solution? The clock is ticking.

MarineCFO and Lloyd's Register

How about a solution that involves services, vetting and support from a wide range of industry players? MarineCFO, a developer of operational and business management applications, and Lloyd's Register, a U.S. Coast Guard-authorized third-party and 200-year-old worldwide classification society, teamed up in September to offer Subchapter M compliance services via LR Class Direct compliance and quality assurance services and MarineCFO's Vessel 365 scalable, user-friendly recordkeeping software.

"Lloyd's was looking to complete their portfolio with a top-notch provider of electronic record keeping, and we wanted to tap into a major class society with a lot of experience in the inland market," says Rogerio Vieira, MarineCFO vice president of sales.

Lloyd's also saw that Vessel365 was built from scratch for brown water and Subchapter M, and was not a dumbed down blue water application, adds Vieira. "It would be a hard fit – the language is not the same, the dynamic nature of how things are reported is not the same."

The brown water market is also more price-sensitive and less technologically engaged. "As Turbotax is to the U.S. tax code, Vessel 365 is to Subchapter M requirements," says Dean Shoultz, founder and chief technology officer of Marine CFO. "We realize significant portions of the operators impacted by SubM are small and extremely cost-sensitive, so we worked diligently to drive the cost down. We are cognizant also that for a lot of these guys, technology is not in their wheelhouse. So our goal was to keep it very simple and not intimidate them. We want to be the Walmart of our space."

The general lack of technology is one factor driving a marketwide mobile approach to SubM solutions. Another is the dynamic nature of the inland market, notes Vieira, with vessels in dispatch much of the time, picking up and dropping off all day amid sporadic or unreliable or expensive connectivity. The application had to be built defensively by taking a mobile approach.

"Lloyd's was looking to complete their portfolio with a top-notch provider of electronic record keeping, and we wanted to tap into a major class society with a lot of experience in the inland market,"

– Rogerio Vieira, MarineCFO vice president of sales

Along the way in developing Vessel 365, MarineCFO sought a vetting from "one of the most astute admiralty firms in the country," Walker & O'Neill, to make sure the system was okay from a liability perspective and that it complied with all regulations. "It was more of a behind the scenes partnership to make sure what we were doing was properly done," says Vieira. There were in fact a few places where the lawyers thought Vessel 365 was "too reckless," and were able to suggest changes that would legally protect the customer from doing things that they had seen in cases in court that had come back to haunt them, adds Shoultz. One fallout of that vetting was the development of a biometric signature for accident reports so the parties involved couldn't deny their testimony later.

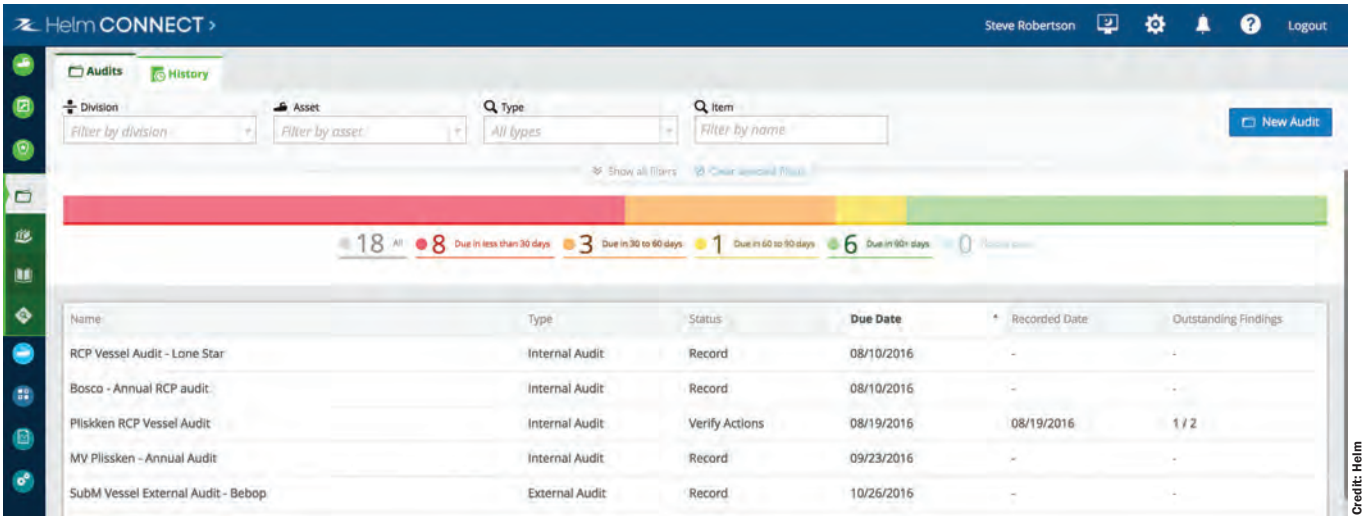
Covering all fronts, MarineCFO also created the "Shipmate Program," which it uses to partner with small organizations doing Subchapter M work. "It's a unique value proposition we are proposing to Third Party Organizations [TPOs]. We allow them access to our product, get them trained in our system, then they go out find a client using it. They can be much more comfortable guiding them in the best implementation of the TSMS and the usage of our solution.

Shoultz even considers feedback from customers a form of partnering, noting that it has led to changes that reflect the reality of the client's work, for example, dulling down too bright screen colors so users "can still see the river ahead of them."

Helm Operations, Class NK and SMS

Another option is the 1-2-3-4 punch provided by the relationship between maintenance and compliance software developer Helm Operations and its siblings and parent company. Helm integrates its Helm Connect Maintenance software with sister company Safety Management Systems LLC (SMS)'s consulting services, which provide expertise in a range of marine safety, environmental, quality and

Helm's Audit Dashboard provides an overview of when all audits are coming due and are filterable by 30, 60, 90 and 90+ days.



Credit: Helm

security management systems and audit support, as well as Subchapter M. Also in the mix is naval architects NAPA Group, which provide ship design and operation expertise with a focus on safety and eco-efficiency. The companies are owned by Japan-based ClassNK, one of the largest classification societies with over 9,000 commercial vessels under class and offices worldwide, including six in the U.S.

The grouping provides clients with a complete range of services, from new builds, to maintenance tracking and record keeping required under SubM, to consulting, training, auditing and surveying services.

"The biggest advantage we've had has been SMS, which has been quite integral in helping with the development of a solution. When we have a new release, it's been great to have an auditor's eye go through the software as we build it out," says Rodger Banister, vice president of marketing. SMS also helped Helm to position its software as the repository for an SMS, says Cooper Barry, product manager of maintenance and compliance. "We targeted the specific functionality required for a piece of software to manage an SMS."

As for ClassNK, "they are a great knowledge center for us with all the things happening with the regulations, and they are great interpreters of that regulation, so we can make sure our products meet the smell test. It's like working with experts in house – it's been fantastic with us," Banister enthuses.

On the flipside, Banister says ClassNK was attracted to its installed base in the towing market. "Maybe these customers might be willing to think about a different way to get an SMS set up or survey done. We give the market choice."

"We want to make great software [that is] as easy as possible for people to learn and use – the 'iPhone' for the market. Part of that process is working with partners, whether customers or actual partners – to influence the development of the software," he adds. If crews don't like software, they won't use it, so Banister says Helm tries to head off any issues by leveraging the expertise of its partners, to make sure everything down to the nomenclature is correct in its products.

"The biggest advantage we've had has been SMS, which has been quite integral in helping with the development of a solution. When we have a new release, it's been great to have an auditor's eye go through the software as we build it out,"

– Rodger Banister, Helm vice president of marketing

ABS

"Old guard" maybe, but there's plenty of life and expertise in the 155-year-old non-profit American Bureau of Shipping (ABS) classification society, which is leveraging the web and mobile technologies to develop more targeted and familiar solutions," says Stephen Schwarz, vice president and COO, ABS Nautical Systems. The ABS team of surveyors, engineers, researchers and regulatory specialists work in 200 office in 70 countries, and are split between ABS Group (SMS consulting) and ABS Bureau (reviews, audits and surveys).

Unlike Lloyd's, ClassNK and RINA, ABS sees itself as maintaining internally all the pieces its competitors seek to add through partnering, such as Subchapter M software, SMS consulting, audits and surveys. Hence ABS, while also touting a turnkey approach, is going it alone.

The ABS Nautical Systems (NS) fleet performance software family includes NS Core, a streamlined version of its core asset management and compliance application featuring NS Subchapter M. That module is cloud-based, user-friendly and offers dashboards and reporting capabilities to capture, manage and report on Subchapter M compliance requirements.

"Our clients are concerned that the crew on board is not used to working with IT. They need something they can use with minimal disruption to their regular activities and that requires very little training. Our mobile application will be delivered on a tablet with recognizable tasks, and a simple user interface, pre-configured to their Subchapter M requirement and everything is managed in the cloud," explains Schwarz.

ABS is also not shy about pointing to its blue water experience with safety management systems, which has informed its knowledge of the process, its understanding of what companies need to do, and how to get it done. But there's no mistaking blue water needs for brown water, nor any effort to revamp another form of SMS into a TSMS nor an attempt to apply class rules to non-class vessels.

"Subchapter M is a specific statute, and the scope of our activities is driven by that statute. We dove deep into the audit and surveying requirements to build our internal processes off the requirements of the regulation," says LaVire. "So we didn't say, 'okay, our ABS rules regarding this say X, so we'll have subM dry docking requirements say the same thing.'"

ABS also looked at the Coast Guard's Bridging Program and modeled the appearance of its process off that program. "So everything we've developed for Subchapter M is bespoke to Subchapter M," adds LaVire.

"We bring to the table the ability to have through a single point of contact, support for any asset of compliance of SubM that a company might need. We are very experienced

NS Core Dashboards give users a detailed view of different aspects of their HSQE program.

Credit: ABS

in statuary compliance, we have the biggest network of offices – over 30 port offices and certified 200 surveyors and auditors – our affiliated group can help with SMS development and a dedicated team of engineers in New Orleans can handle any new construction or review."

One advantage of the ABS network of port offices and manpower, says LaVire, is that it typically does not have to move people around to jobs, which cuts down on travel costs for clients.

Tug & Barge Solutions & RINA & SMS & Helm ....

TBS, as it is known, provides SMS consulting, survey and audit services for ISM, RCP and TSMS operators. Once clients decide on an SMS, TBS helps them put together a manual with a highly detailed table of contents to bring to an entity like class society RINA, which maintains a non-exclusive partnership with TBS.

"We create a map for certifying authorities," so they don't have to waste time digging around the manual to find what they are looking for, or even whether it's there, says founder Pat Folan. Chipping a few hours off the safety evaluation in turn offers clients a quicker turnaround and a little less cost, he adds.

Folan has found that building relationships with companies you think might be competitors can pay off in surprising ways. For example, after working with SMS on an audit, they came to the realization that while in the same business, they were targeting different markets and weren't competing. Which got them to talking.

"We try to figure out how we might partner, hash out ideas, educate each other. We got a good relationship out of it. They have a wealth of experience regulatory wise and opened the door for us to [sister company] Helm.

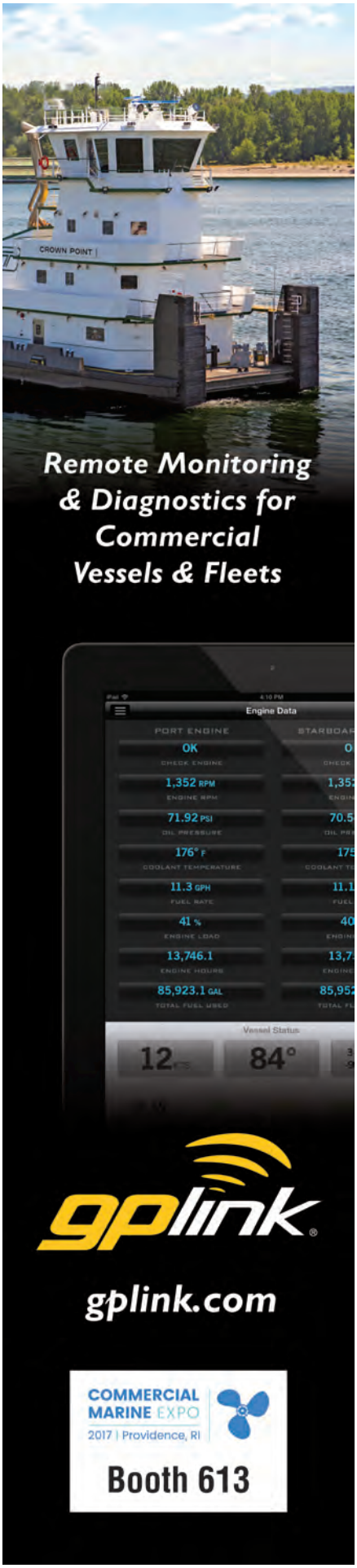
And that has been a boon. "Their software does exactly what we want to customize," Folan says. A client that wanted to move off paper and go digital, wanted to see the product in action first. Working with Helm, TBS was able to create a working demo that won over the captain, deckhands and anchormen. "They took to it like fish to water. Compliance with documentation shot up to 100% every day. Our way of tracking nonconformities was simplified. Their audit feature is phenomenal."

TBS also works with ClassNK, and acknowledges that working with two class societies doesn't necessarily please both of them. But, he says, he likes to keep doors open. When it comes to recommending TPOs, Folan likes to look for the outfits "that have experience with the field these guys are in," such as the Towing Vessel Inspection Bureau (TVIB), which he says almost exclusively looks at towing. He worries that class societies might not know how to interpret what they see when stepping onto a 50-ft. tug. "What we do with RINA is say, 'Here is what you will see in the field;' they ride along with us to get a feel."

Beyond the above partnerships and players are even more options, like Germany's Spectec, which claims to offer the only continuously working mobile application for subM today; TVIB, which is an approved TPO and provider of training for other TPOs; and companies like Wheelhouse Technologies, which are working on adapting their existing fleet management products to serve Subchapter M needs.

There's no shortage of help on the horizon, so jump in – the water will be fine.

Patricia Keefe is a veteran journalist, editor and commentator who writes about technology, business and maritime topics.



Surveys and Towing Vessels in a post-SubM World

The Ultimate Survey Primer

By Pat Folan, Tug & Barge Solutions

I ran tugs in the northeast for almost 20 years before I got the bright idea to go out on my own and start a tug company. Previously, I had worked around surveyors, performed a few rudimentary surveys on tugs and barges and then had to hire a surveyor when I found a tug I liked in New England. I quickly learned that words can kill your dream and a boat. I hired a competent surveyor from a respected firm. I had been through the tug, had an engineer help me with the mechanical parts and then brought the surveyor in. One sentence killed the deal: Engine wouldn't start.

It wouldn't start because the owner wasn't there to start it and it wasn't mine to start. The underwriters demanded a mechanical survey which was a lot more than I wanted to pay so I moved on to another tug. The survey lived on and the boat couldn't be sold without the mechanical survey. Eventually, she was scrapped. The surveyor did his best to rectify the situation as did his firm, but the horse was out of the barn.

Lessons Learned

That lesson stayed with me. As I started performing more surveys, grammatical correctness became as important as survey accuracy. The next boat I looked at was in Florida. A surveyor was recommended. He wrote a very detailed survey with 44 recommendations. Many of the details and most of the recommendations were irrelevant. They weren't terribly important for a tug – hot water heater has rust, bad housekeeping, rust on the bulwarks – or to me. The underwriters wanted all 44 taken care of before they would insure it. The surveyor was a yacht surveyor and probably a very good one, but he had no business surveying a tug. Spars and rigging shouldn't be part of the towing vessel survey.

Eventually, I found a boat and a tug surveyor and I went to work towing. Having worked on tugs, managed them, repaired them and finally owned one, I know what I want in a survey: descriptive, honest information that deals with the safety and reliability of the vessel. I want to know that she has good bones (or bad), that the equipment for towing and lifesaving are appropriate for the vessel and in good condition (more on definitions later) and that it will meet the regulatory requirements.

The Advent of SubM

Subchapter M will change surveying. It mandates what will be in a survey of your towing vessel. Parts 137, 140, 141, 142, 143 and 144 of 46 CFR Subchapter M tell you everything that the U.S. Coast Guard wants in a survey. Combine that with everything that you want and you'll have a great, useful look at your vessel. A robust audit and survey program will help you improve in ways that you never thought of before. With Sub M, you will get consistent, detailed reports for the life of your vessel. You will now know everything about your vessel and it should be in one report.

Be proactive with your survey program. Make sure that you have a checklist so that when the survey has been conducted, you can go through it and make sure that it meets (and hopefully exceeds) Sub M requirements. And have a Sub M survey done well before you need it for compliance. You have time to correct problems that a surveyor might find. Don't wait until the last minute as it could put you out of business.

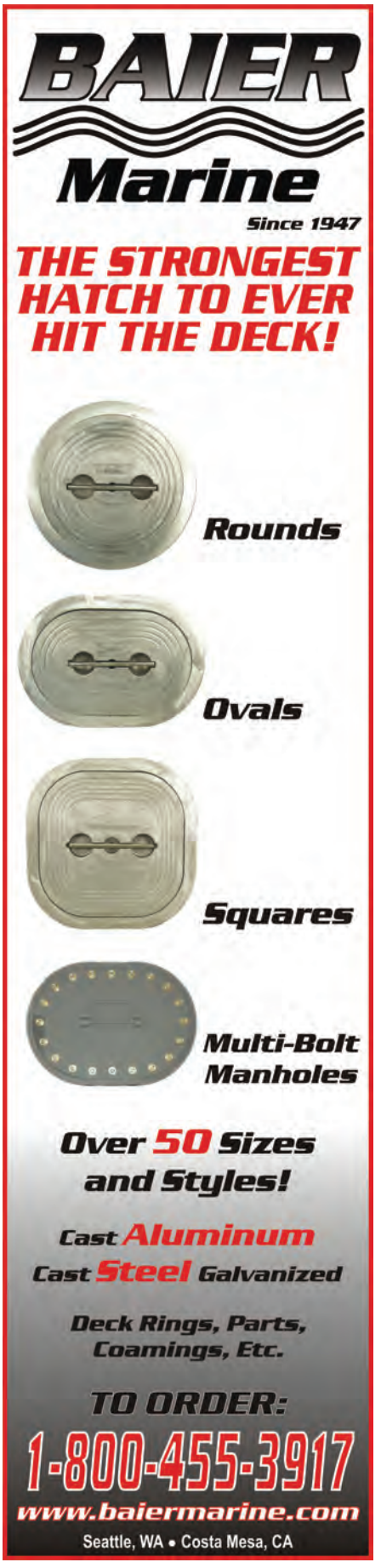
**All images courtesy of Pat Folan*

> *"Many established businesses have used the same surveyors for years. They have a good relationship with the surveyor and get a good report from him. If your surveyor is part of a company that has more than one surveyor, ask for someone else the next time. New eyes on your vessel will help."*

A Survey Primer

As you begin to survey your towing vessels for Sub M, these are some of the areas that you should be taking a harder look at:

- ***Plating:*** *What condition is your bottom plating in? How about the side shell? Bow plating or rake sheet? Stern horizontal plates? Tunnels? Is there excessive corrosion, chafing, buckling or other deterioration?*
- ***Gauging:*** *Have you done a gauging of the hull? Pay attention to suspect areas. What's the steel like under your generators? How are the stern tubes? Are there fractures? Have fractures been repaired in the past?*
- ***Doublers:*** *Are there any doublers on your hull? If so, where are they? Were you patching a hole, covering bad steel or putting them on as wear plates? What does the steel look like on the inside?*
- ***Set-Ins:*** *Are there any sharp set-ins (where the plate forms an angle of less than 135o (2.5" depth/1'span) in any direction or where internal attached framing is abruptly tripped? Are there any smooth set-ins (where the plate is set-in 1" deep/1' span, <4" max depth) where the internal framing is intact and connected? Do any of the set-ins exceed 25% of the beam in a transversely-framed bottom?*
- ***Structural Members:*** *Is there any bending, twisting, buckling, crushing or other distortion of shaped or flanged structural members (angles, channels, I-beams, etc.)? Is any distortion of structural members associated with wastage?*
- ***Coatings:*** *What is the overall condition of the exterior coatings? When was the vessel last bottom painted? What type of paint was used? Was the bottom paint approved for use in the US?*
- ***Anodes:*** *Do you have any? Are the ones there still effective? How long were the current ones there and will they be effective until you haul out again?*
- ***Propellers, Struts and Bearings:*** *How many propellers are there? What are the propellers made of? How many blades? What size? How is the propeller fitted to the shaft and what keeps it there? Are there stress fractures in the hub or on the blades? Are the blades damaged? How long have they been in service? Are the tail shafts and bearings*



in satisfactory condition? What do the struts look like? How about the welds? Is there any damage that would weaken them?

- ***Rudders:*** *How many rudders are there? What shape are they in? What is the condition of the tubes, shafts and bearings? Are the rudder bearing clearances within allowable clearances? What shape is the flange in? Is there excessive wear? Is the shaft bent or deformed?*
- ***Through Hull Fittings and Valves:*** *How many through hull fittings are on the vessel? Where are they? What shape are they in? Is there corrosion or deterioration around and within the fitting? Were the valves examined and tested? Were the bodies, guides, threads, seat stems, discs and bolts in satisfactory condition?*
- ***Internal Structural Examination:*** *Have you examined all the welds? Were there any problems? Is there any distortion of the framing or bulkheads? Are there signs of electrolysis? Did you gauge the structural members for material thickness?*
- ***Coolers:*** *Are there coolers on the bottom or sides? What type are they? What condition are they in? Are there anodes on them? Are there signs of corrosion or deterioration?*
- ***Wastage:*** *How much wastage is too much? Steel should be replaced when wastage exceeds 20% from the as required thickness for structural members and 25% for plating. These percentages stick with class rules and NVIC 7-68.*

That's a lot of questions. But that's the point. Begin looking at your vessels and/or fleet in ways that you never have before. And make sure that your marine surveyor does this as well. The game didn't just change for you; but for the surveyors as well. Pay attention to details.

Risk

Some insurance companies have begun to ask that surveyors to look at risk factors beyond the vessel. Today, in addition to detailing the structure and equipment on a boat, I am looking at your Safety Management System, Maintenance Program, Crew Competency and Vessel Operations. This will grow as Sub M requires the surveyors to perform some audit functions and your auditors are looking at your vessel and your crew.

As surveyors, we will want to know that your crew is competent, knowledgeable and reliable. Are they training? Are they conversant in your TSMS? Are they keeping detailed records on vessel activities and personnel? Are they drilling? A surveyor should observe them drilling and needs to see that they are competent.

A Word on Definitions – and Surveyors, too

What is "good?" What language does your surveyor use to describe the vessel and crew? It needs to be defined. Every survey I perform contains the definitions in the beginning so that when I say that something is good or the company is fair, you will know what I mean. And there will be no gray area. Travelers Insurance, for example, has a great set of definitions for the surveyor to rate both the operation and the equipment. These take the subjectivity out of the survey.

Many established businesses have used the same surveyors for years. They have a good relationship with the surveyor and get a good report from him. If your surveyor is part of a company that has more than one surveyor, ask for someone else the next time. New eyes on your vessel will

help. One of my employees has extensive U.S. Coast Guard experience and that's something that I lack. When we look at a boat, we see different things. My industry experience guides my surveys and audits. His inspection experience guides his. We both learn from each other and in turn, offer the customer a better product.

Make sure that your surveyor is as objective as humanly possible. You want an honest, critical report. You want to avoid injury, death and harm to the environment and a survey that glosses over or ignores the problems will come back to bite you. You may not initially like what you read, but your company and vessel will improve.

Vet your surveyor. If he or she is in SAMS or NAMS, find out what his or her specialty is. Ask for a sample survey or two. Read them over. Look at the pictures. Do the reports tell a story? If you were to turn one of them in to your underwriter, would they get a good feel for the boat? Would they know what was being written about? Are the photos composed so that they tell the story? Could you look at the pictures and know the boat? Could you see details?

Finally, do the reports pass the Sub M test? Do you know what Sub M is looking for? If not, then you won't be able to adequately judge the surveyor. And that could be costly. You want the best information possible so that you can perform the needed maintenance to maintain regulatory compliance and you also need it to be compliant. If the surveyor isn't capturing all the necessary information, it will eventually be detrimental to your COI application.

As an industry, we have largely left the surveying up to the surveyors, but it's time to take a more active role in the process. Learn more about their trade and Subchapter M and you'll learn more about your equipment.

WSF'S M/V KALEETAN ON BOARD WITH SHERWIN-WILLIAMS

A total of 5,300 gallons of Sherwin-Williams Protective & Marine Coatings ensures that one of Washington's most valuable assets will provide service for years to come.

With a longstanding history of ferry operation in the Puget Sound, Washington State Ferries (WSF) was in need of a coatings company with just as strong of a reputation when preserving the 3,634-ton M/V Kaleetan auto/passenger ferry in the summer of 2015. Built in 1967 in San Diego, California, the M/V Kaleetan – which means "arrow" in Chinook – first went into service in early 1968 and was rebuilt in 2005. In June 2015, all areas that could be accessed dockside were in need of coatings as part of a state preservation project.

Longtime Sherwin-Williams Protective & Marine Coatings customer Puglia Engineering, also known as Fairhaven Shipyard, was awarded the preservation contract. Located in the Fairhaven district of Bellingham, Washington, this was a great opportunity and undertaking for Fairhaven Shipyard. By working with the engineering group of WSF Department of Transportation (DOT), Sales Representative Ray Meador worked diligently to offer solutions, win the bid, and have Sherwin-Williams specified 100% for the Kaleetan project. As a result, over 5,300 gallons of Sherwin-Williams Protective & Marine Coatings products were applied on the M/V Kaleetan vessel.

The 90-day project included coating of the entire inside of the 382-foot vessel, along with both pilot houses and all vehicle and pedestrian decks. To complete the restorations, the Kaleetan was divided into 10 zones, in which blasting and painting took place simultaneously. The standard was SSPC-SP-6 Near-White Metal followed by one coat of Corothane I GalvaPac Zinc Primer, and then more than 2,000 gallons of SeaGuard 6000 marine epoxy on steel and 140 gallons of SeaGuard MP epoxy applied direct to aluminum. Crews applied an additional coat of SeaGuard 6000 epoxy with a stripe coat on edges and welds prior to applying 1,000 gallons of Hi-Solids Polyurethane.

Fairhaven purchased a new Graco XL 70 with multiple guns and hoses from Sherwin-Williams to complete the job. The shipyard ran up to four painters in multiple zones to meet the three-month project timeline, which was completed on September 24, 2015. The shipyard ran three crews seven days a week. Sherwin-Williams Marine Technical Service Representative Sam Schuetz provided support for the project, with assistance from Technical Service Rep Gordon Riffel.

"The polyurea application in the lifeboat area was extremely successful. This system impressed all inspectors and administrators with WSF, and along with the success of another past project, WSF is looking at other possibilities where polyurea can be used on its vessels."

– Sherwin-Williams Marine Technical Representative Sam Schuetz

Non-skid coatings were outsourced to loyal Sherwin-Williams contractor All-Star Cleaning & Preservation, as the company has an extensive history of applying non-skid coatings. All-Star applied American Safety Technologies MS-7CZ epoxy primer over Corothane I GalvaPac Zinc, followed by AS-250 Non-Skid. The stripping and safety areas were coated with AS-200 acrylic epoxy for the flexibility and ultraviolet protection needed.

In lifeboat areas, Fairhaven brought in contractor Calman Industries to apply the polyurethane and EnviroLastic Polyurea systems. They spray-applied EnviroLastic® AR520 SS Polyurea and EnviroLastic® AR250 Polyurea. "The polyurea application in the lifeboat area was extremely successful," said Schuetz. "This system impressed all inspectors and administrators with WSF, and along with the success of another past project, WSF is looking at other possibilities where polyurea can be used on its vessels."

All WSF Ferries are painted in a distinctive white and green trim paint scheme. They feature double-ended open vehicle decks and bridges at both ends of the ship, so the ferries do not need to turn around when loading and unloading passengers and cargo. According to Schuetz, the Kaleetan preservation project offered several opportunities, including a great amount of tech service assistance that was required and the possibility of getting Sherwin-Williams into more specifications for future WSF contracts.

"Puglia-Fairhaven Shipyard using Sherwin-Williams products on the Kaleetan project resulted in a very satisfied Washington State Ferries," said Schuetz. "Through the project, Washington State Ferries inspectors were impressed with the process of Fairhaven and the results of Sherwin-Williams products."

Part of the Washington State Department of Transportation, WSF runs 10 automobile and passenger ferry routes serving 20 terminals located in the Puget Sound and the San Juan Islands. Designated as part of the state highway system, the agency was the largest ferry operator in the United States and the fourth-largest ferry system in the world in 2014, maintaining the largest fleet of ferries. As of 2015, there are 24 ferries on Puget Sound operated by the state, and WSF is currently building more ferries to keep up with growing demand on the ferry system.

With a complete line of time-tested, high-performance products and some of the most innovative technologies in the coatings industry, along with 150 years of coatings industry experience and marine market expertise, Sherwin-Williams delivered for this project, on time and leaving nothing to chance – protecting and preserving the M/V Kaleetan and allowing it to return to service in the Puget Sound as scheduled.

Marine Coatings Evolve for the Better

Credit: Sherwin Williams

Credit: ENECON

Customers drive efficiency and performance, as coatings providers deliver with innovation and technology.

By Jim Romeo

Innovation and new technology continue to shape the marine coatings market. A narrowing field of global coatings manufacturers offer new products while improving existing ones to meet customer demand. Ultimately, customer demand, along with environmental compliance pressures are all driving the marine coatings industry as ship owners, operators and shipyards alike seek better products.

Driving Improvements

Customer demands are often related to cost and efficiency. Costs – and the list is a long one – include not just product cost, but cost of application, surface preparation, product lifespan, cost of inspection, cost of degraded substrate, cost of fuel consumption gained or lost from a coatings system, and the cost of compliance with environmental regulations. New technology and innovation helps to address the demands of cost and efficiency desired.

Innovation today includes unconventional use of technology to support marine coatings assessment. Ballast tanks and other confined spaces that would otherwise be cumbersome to inspect and require staging and labor, are being performed with drones. Akzo Nobel, for example, in partnership with oil and gas tanker operator Barrier Group and DroneOps joined forces to develop a drone capable of remotely inspecting enclosed spaces such as ballast water tanks. While the jury is still out on its adoption and effectiveness, the effort more than demonstrates that innovation is finding its way into the marine industry where cost, quality and time are of the essence.

Such innovation reigns at the vanguard of new technological advancements in the marine coatings themselves. Cure times, improvements in corrosion and abrasion resistance

Image above: High performance underwater hull coatings are always in demand, driven by continuous pressure to reduce operational fuel costs while staying environmentally compliant.

improvements, edge retention, surface tolerance, ease of mixing and application, and product traits and characteristics all translate to not only improved performance for the coating, but also improved operations and maintenance for the ship's stakeholders.

Coatings Application

Maintenance painting, for example, is typically conducted shipboard, mostly without outside assistance. Maintainers – often seafarers – prepare surfaces, and mix and apply the paint themselves. They seek products that are durable, tolerate different surface preparations and environmental conditions and are easily resealed without wasting much product.

Akzo Nobel's Intershield One-to-One product, for example, is a single coating solution that serves as a universal primer. It can be used for numerous applications for onboard maintenance painting. It reduces onboard paint stores because of its versatility and ability to use, then reseals the container for storage and later painting. It also avoids the problems that may arise with two-part primers that can be difficult to prepare and apply.

In addition to primers, topcoats and various epoxies, underwater hull, waterborne coatings are continuously introduced with better overall characteristics. After all, underwater hull coatings systems and antifouling coatings and their application are expensive. However, underwater hull painting systems can add tremendous value through extended service life between recoats, reduced drag, better fuel consumption, and environmental compliance, better reliability through its life.

High solids and ultra-high solids coatings are also becoming important in coating applications where corrosion, friction and abrasion as well as other severe service comes into play. This is true for coating hull fixtures such as rudder pintles, corrosion-prone tanks, and other applications requiring a most durable coating. With high performing high solids coatings maintenance costs are reduced and overall reliability of the ship is increased.

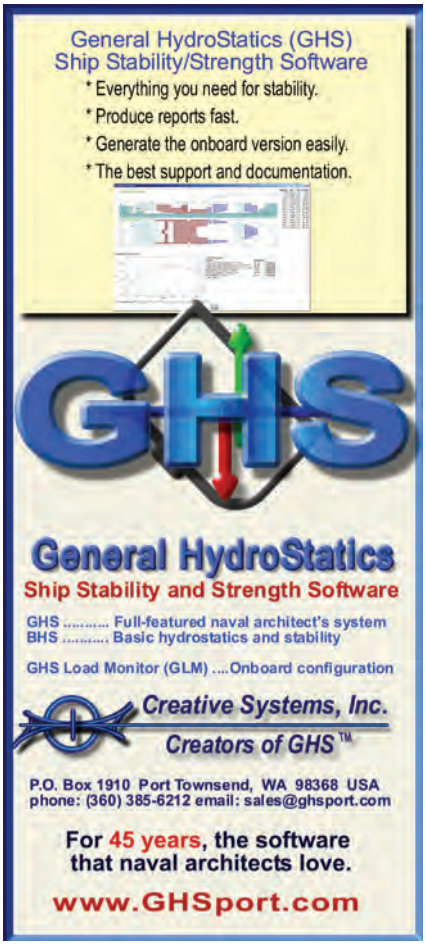
And, then, there are underwater hull coatings – anticorrosive coatings as well as antifouling coatings. Market research firm Technavio, in their research, reported that antifouling coatings are gaining a crescendo of attention and scrutiny when it comes to environmental concerns as well as an underwater coating systems' help in conserving fuel via reduced friction and drag. Niches within the marine industry are leading the emergence of product innovation.

"Offshore oil rigs are the key to exploration and extraction of oil and natural gas. Antifouling coatings are used in rigs to increase performance and durability. Expansion of the oil and gas industry due to increased exploration of oil and gas is expected to increase the demand for rigs, opening up immense opportunities in the market," said Chandrakumar Badala Jaganathan, of Technavio. In addition, to environmental and fuel consumption, the longevity of an underwater hull systems is key. Antifouling paint that may be applied with proper quality assurance, and remains intact and reliable adds value. And the longer it remains intact may allow owners to forego a complete recoat and operate without much costly maintenance between underwater hull coatings.

Competitive, Narrow Vendor Base

While innovation and the development of new and better products and coatings technology continues, the overall global supplier base for marine coatings remains narrow. The global waterborne coatings market consists of several key players, and operates in a highly competitive market. These include Akzo Nobel, Axalta Coating Systems, BASF, PPG Industries, RPM International, and Sherwin-Williams. While these vendors have a large global presence, there does exist a number of small regional vendors with respectable market share, offering proximity to their end users and customers. However, a narrower supplier base reduces competition and can strain prices and new technology for shipyards and subsequently ship owners and operators.

"While Akzo Nobel led the global paints and coatings market with a share of 16% in 2013, PPG Industries took the lead in the market in 2015 with a share of 17%. The vendors are focusing on increasing their market share through mergers and acquisitions," says Swapnil Tejveer Sharma, also from Technavio.



Credit: ENECON

Larger conglomerate companies dominate the marine coatings marketplace, with a contraction of suppliers through acquisitions. "We believe the contraction in the amount of suppliers in the U.S. and Canadian market has likely already occurred," offered Mike Vollman, Director of Sales for Marine Coatings at Sherwin Williams Protective and Marine Coatings. "However, we expect that we will see a little bit more globally. In regards to price, the competitive pressures that the vessel owners and operators are seeing trickles down to the same pressures that are seen throughout the suppliers."

Separately, Bob Marangiello, Regional Sales Manager for ENECON, said, "The supplier base seems to have shrunk considerably over the past several years with larger companies acquiring others to control and increase their market share." He adds, "Hard to say, it almost seems to be a deflationary pricing structure in effect, whereas you keep what you have and not chance losing a customer." ENECON offers a portfolio of coatings products, including high solids coatings for severe and durable service applications.

Environmentally Engaged

Coatings suppliers must not only produce competitive products, but also meet demand for environmentally compliant applications. This includes regulatory compliance as well as carbon credits and other considerations for manufacturers imposed by organizations such as U.S. EPA, IMO and other regulatory bodies.

"To differentiate their products and introduce eco-friendly solutions, manufacturers of antifouling coatings are developing new marine coating technologies. Vendors are investing heavily in the development of antifouling paints and coatings that do not contain harmful compounds such as organotin. Antifouling technology remains a key focus area for the marine industry, where savings on fuel can result in considerable reduction in operation costs," added Chandrakumar. Antifouling coatings are susceptible to environmental compliance and regulations as they are in direct contact with water and ocean environments everywhere in the world. World maritime fleets must use marine coatings with lower VOCs, higher solids, and less harmful biocides."

Environmental requirements drive coatings manufacturers to produce sustainable and eco-friendly antifouling coatings. Biocides contained within the coating prevent the development of growth, but their leaching into the marine ecosystem can be harmful. Hence, manufacturers continue to produce biocides which either adhere to the hull without ablating, or developing coatings that provide a sleek underwater hull that inhibits marine growth while improving laminar flow.

"Environmental regulations affect every aspect the maritime industry," says Sherwin Williams' Vollman. "We are constantly working toward gaining more traction, and most of the trends that we are looking at focus on doing more with less – less coats or less prep to help save. The effect may not be profound but will most definitely be felt."

In spite of new and innovative technologies, shipyards, maintenance facilities and vessel owners and operators are intent on maximizing their marine coatings purchase. Thrift, when it comes to marine coatings and their application, translates to cost savings, which has become a welcome note for vessel owners who seek to find any solutions they can to operate with strained budgets in an increasingly regulated environment.

More With Less

There is always a paradox between ship owners and main coatings manufacturers. Manufacturers produce better products to meet customer demand and make a profit. But, create a better product that lasts longer and you won't paint as often and will need less paint, less often. If priced according to value, supply will adequately meet demand.

"I suspect that growth will likely been seen in the 'do more with less' trend. The idea of getting the same coverage and protection out of two coats that would typically require three is appealing – eliminating a coat or eliminating prep to save time and money. Also, the ability to capture a wider variety of services with a product will likely grow with do-it-all types of coatings," says Vollman. "While portfolio expansion might not be top of mind, getting more out of what already exists is. This is something we do across markets, but not always within markets. Budgets are definitely driving the growth as time, expenses, and costs are all budgeted these days. If you save time, you save money. Limit preparation and you save money. The drive is definitely getting more with less."

***Jim Romeo** is a marine engineer and freelance writer based in Chesapeake, VA.*

Improve Your bottom Line with Condition Monitoring Systems

All operators worry about the same thing – the next outage that puts your vessel out of commission. Millions of dollars are invested every year into maintenance programs. State-of-the-art condition monitoring systems like the Windrock 6400 can predict and help prevent downtime and failures.

Performance monitoring can be described as the process of gathering data from machinery to assess the overall operating capacity of the system it is a part of. Data is compared either against an existing database (trending), or a model (model-based), to diagnose existing issues and show the beginning of wear and tear on mechanical components.

With a need to provide workboat operators with better forms of maintenance to forecast problems in an efficient and timely manner, engineering professionals have started to apply this technology to the maritime industry. The new 6400 by Windrock is portable, lightweight, and easy and efficient to set up. Data can be collected from reciprocating and rotating machinery to trend, vibration, ultrasonic, cylinder pressure, and temperature. In this capacity, the analyzer has been utilized to track vital pieces of equipment like pipeline compressors, trains, pumps, reciprocating engines, and down to specific components like cylinders, injectors, liners, bearings, valves, rings, and crankshafts.

The Model 6400 Portable Analyzer can be set up based on the vessel's machinery configuration in a short time frame with virtually no downtime. Once the software is set up in the analyzer, data collection can begin immediately, and, within only 15 minutes, it could produce readings that can be analyzed. The sensors are then positioned on the engines, gear boxes, frames, and cylinder heads for measurements.

Traditionally, scheduled maintenance programs have been the norm, whereas mechanical elements are periodically checked based on manufacturers' recommendations, similarly to how we take our cars to get oil changes at recommended intervals. With the newer technology emerging, such as these performance monitoring systems, traditional methods of maintenance are being replaced by predictive maintenance programs, thereby reducing budgets tremendously.

Class has also recognized the inherent value in condition based monitoring and has issued guidelines for implementing such programs. Another benefit – with the switch from diesel to dual fuel engines, enhanced monitoring will provide further information on the mechanical health of the engines and the condition of the control systems for the controlling of cylinder pressures. Balancing of cylinder firing pressures large diesel engines has been successfully used to control emissions, reduce fuel costs, and reduce the overall mechanical degradation of mechanical components due to imbalance.

Besides the economic benefits to maintenance budgets condition monitoring is also a cost effective way to be more "green," by increasing, and maintaining mechanical efficiency and optimization. This is becoming increasingly important to companies that own and operate these vessels.

What diesel engine condition monitoring boils down to, is working smarter, rather than harder. And, as this technology is quickly and continuously evolving, "smarter" is only going to get easier and more economical for operators. The Model 6400 Analyzer can be your one-stop shop when it comes to condition monitoring.

Gladding-Hearn Delivers for Michigan Pilots

The Lake Pilots Association in Port Huron, MI, has accepted delivery of a new Chesapeake Class pilot boat from Gladding-Hearn Shipbuilding, Duclos Corporation. The all-aluminum pilot boat features the C. Raymond Hunt-designed Deep V hull. It is powered by twin Cummins QSM11 diesel engines, each delivering 602 Bhp at 2300 rpm and a top speed of 25 knots. A Humphree interceptor, with automatic trim optimization, is installed at the transom. Diesel capacity is 690 gallons, which, shipyard officials say, will provide a range of at least 350 miles at an economical speed of about 20 knots. The wheelhouse, flush-mounted to the deck amidships and with forward-leaning front windows, is outfitted with Llebroc seats and a settee and is heated by two Heatercraft 40,000 Btu units. The forecastle also includes a 40,000 Btu heater, along with a settee, portable head, and built-in storage cabinets. Outside of the wheelhouse, the handrails and foredeck are heated by a 120,000 Btu diesel-fired heater. There are boarding platforms on the roof and port and starboard on the foredeck. At the transom are throttle and steering controls, and a winch-operated, rotating davit over a recessed platform for rescue operations.

The Chesapeake Class Pilot boat … at a Glance

Vessel Name: HURON SPIRIT	LOA: 52.5 feet	Gears: (2) Twin Disc MGX 5114A Quick Shift
Delivered: 13-Nov-16	Beam: 16.7 feet	Propellers: (2) Bruntons 30" 5-blade NiBrAl
Nav. Equipment: Furuno	Depth: 8.5 feet	Engine Controls: Twin Disc EC300 Quick Shift
Engines: (2) Cummins QSM11 Diesel	Draft: 4.8 feet	Steering: Seastar hydraulic; Humphree's Interceptor
Speed (loaded): 25 knots	Hull: monohull	Heating System: Espar 120,000 Btu Hydronic

Horizon, Hornblower Blowing and Going on Citywide Ferries

Horizon Shipbuilding has been awarded five (5) additional citywide ferries by HNY Ferry Fleet, LLC. The award brings the total ferries Horizon is building to thirteen (13) and completes the initial nineteen boat citywide ferry contract. Two of the five vessels will be delivered as part of the 2017 package, with the remaining three scheduled for delivery in 2018. Horizon has ten (10) hulls under production and the vessels are currently on schedule, with the first boat slated to be delivered in the spring of this year. According to Horizon, one of the primary reasons that the Citywide Ferries project remains on schedule is Horizon's award-winning GORDHEAD management software, which allows the shipyard and its clients to remain closely connected throughout the vessel building process. Designed by Incat Crowther, the option ferries are of the "River" class design and have an overall length of 85'-4" with a 26'-3" beam. The all-aluminum vessels will achieve a speed of 25 knots. Citywide Ferry, operated by Hornblower, is the newest way for New Yorkers and visitors to "Work Live and Play" when the system launches in Summer 2017. Expected to service over 4.6 million passenger trips per year, Citywide Ferry will provide critical transportation links for areas currently underserved by transit and connect them to job centers, tech hubs and schools in New York City.

Metal Shark Wins Two Passenger Vessel Contracts

Louisiana-based shipbuilder Metal Shark has been awarded two separate contracts to produce passenger vessels for the Potomac Riverboat Company division of Entertainment Cruises, and for the New Orleans Regional Transit Authority. For the Potomac Riverboat Company, Metal Shark will produce four 88', high speed/low wake, 149-passenger aluminum catamarans. The new passenger vessels will provide commuters in the Washington DC metro region. Potomac Riverboat Company parent Entertainment Cruises is the nation's largest dining and sightseeing cruise company, with a fleet of 30 ships operating in over a dozen major U.S. cities. For the New Orleans Regional Transit Authority (RTA), Metal Shark will produce two 105', high speed/low wake, 149-passenger aluminum catamaran ferries, which will bring vastly improved passenger comfort and convenience, operating economy, safety, and environmental friendliness to New Orleans ferry routes. Currently RTA operates two ferries built in 1977 and 1937 to transport New Orleans-area passengers across the Mississippi River between Algiers Point and Canal Street, and Lower Algiers and Chalmette. The vessels for both projects have been designed by BMT Designers and Planners, drawing from the company's extensive portfolio of proven low-wake, low-wash hull forms. Both vessels are USCG Subchapter T compliant and have been designed to combine passenger comfort with fuel efficiency and low environmental impact. Metal Shark will commence deliveries of vessels to Potomac Riverboat Company in 2017, and to RTA in 2018.

Pittsburgh Selects Lake Assault for Fireboat Newbuild

Lake Assault Boats has been chosen to construct a 34-foot fireboat by the Pittsburgh Bureau of Fire in Pittsburgh, Penn. The fireboat will respond to emergencies and help manage fires on waterways, waterfronts, rail lines, and marinas that lie along the Allegheny and Monongahela Rivers, which join together in Pittsburgh to form the Ohio River. The contract is valued at more than $540,000. The craft will be delivered in summer 2017. The 34-foot fireboat is a deep V-hull configuration, with an 11-foot overall beam. The boat will be powered by twin Yamaha F300 4.2L V-6 outboard motors, capable of a top speed greater than 40 mph. The firefighting system features a compact Hale 80FC pump flowing up to 3,000 gpm which is powered by a dedicated 6.6L Duramax V-8 diesel engine. The fire pump includes a 6-inch main discharge that feeds a number of outlets, including bow and stern mounted TFT Hurricane monitors, each capable of flowing 1250 gpm. The 11-foot long pilot master cabin features excellent outward visibility and includes a 15,000 BTU rooftop AC unit, an adjustable (and full suspension) operator's seat, additional bench seating, SCBA mounting brackets, a chart table with storage, and a cuddy cabin for general storage. Once delivered, Lake Assault will provide three days of onsite training with Pittsburgh Bureau of Fire personnel.

ESG Delivers Freezer Processor Factory Trawler

Eastern Shipbuilding Group has delivered a DNV-Classed Factory Processor Fishing Trawler, the Araho, to the O'Hara Corporation of Rockland, Maine. The first US Flag Freezer Processor Factory Trawler constructed in over 25 years, the ARAHO will be in service in the waters of Alaska. This is the sixth fishing vessel Eastern has built for the O'Hara family over the last 20 years. This factory processor fishing trawler is far more sophisticated than the prior five vessels. The F/T ARAHO is a ST-115 design furnished by Skipsteknisk, AS of Aalesund, Norway. The main processing equipment, in the enclosed factory will consist of various types of fish heading machines and factory systems, consisting of transport systems, fish grader, storage tanks, weighing graders, weighing system, packing tables, packing machine, automatic horizontal freezer system H1, block elevators, etc. The design intention of the process deck lay-out and selected equipment for transport and handling is to obtain a system with the largest amount of automation, assisting the employees working in the processing area. This arrangement is designed to achieve very high throughput with minimum fish damage, improve employee efficiency all in a clean and safe work area. O'Hara Corporation operates three catcher-processor vessels in the Bering Sea, Aleutian Islands and Gulf of Alaska.

Image courtesy of AAM

RED & WHITE TAPS AAM FOR HYBRID ELECTRIC U.S.-BUILT PASSENGER VESSEL

All American Marine (AAM) in February announced a deal for the construction of a new hybrid electric, 600 passenger aluminum monohull vessel to be delivered to the Red and White Fleet of San Francisco, CA. AM's latest contract follows an earlier announcement made by the company regarding a construction agreement for a 500 passenger aluminum monohull tour boat for Argosy Cruises of Seattle, WA. Both operators were originally pursuing construction contracts for steel monohulls, but AAM was successfully able to demonstrate considerable savings in construction and maintenance costs with an aluminum design, while ensuring delivery of a robust and solid hull structure. At the same time, AAM is celebrating its 30th anniversary and is in the process of moving into a brand new purpose-built ship building facility at nearby Squalicum Harbor. Argosy will take delivery of their vessel in the late fall and the Red and White Fleet will receive their new craft in the late spring of 2018.

The new vessel for Red and Fleet, to be christened, Enhydra, will be the first aluminum hulled, Lithium-Ion battery-electric hybrid vessel built from the keel up under US Coast Guard subchapter-K passenger vessel regulations and the latest guidelines for structural fire protection. The vessel is specifically designed for harbor tours of San Francisco Bay and the Golden Gate Bridge.

All American Marine partnered with BAE Systems to design and integrate the complete battery electric hybrid system. BAE Systems will supply their HybriDrive Propulsion System that includes a generator, control system, and AC electric traction motor. The generator will mount to a variable speed Cummins QSL9 410 mhp@2100 rpm diesel engine. The motor generator offers diesel-electric operation of the AC traction motor which is coupled directly to the propulsion shaft. With this configuration, torque is immediately available for the propeller and the speed can be precisely controlled without the need for a reduction gear.

The hybrid system will also utilize battery power from two 80 kWh Lithium-ion battery packs. The BAE HybridDrive system can automatically utilize full electric battery operation at slower speeds and when maneuvering in and out of the harbor. At higher speeds, the generator will automatically engage and augment the additional power demands of the traction motor. The battery system is sufficient to meet the entire demand of the vessel's hotel load while at the same time providing silent and emission-free operation of the propulsion system during an evening sunset cruise. Founded in 1892, the historic Red and White Fleet is committed to environmental sustainability and community education as one of the oldest businesses operating in the San Francisco Bay area.

The Enhydra at a glance ...

Type: Tour Boat	LOA: 128'	Propulsion: BAE Systems HybridDrive	Steering: Jastram
Designer: Teknicraft	Draft: ~6'	Gen: Cummins QSL9 Tier III	Nav. Electronics: Furuno
Cruising Speed: 13 KT	Breadth: 30'	Batteries: Corvus Lithium-Ion	Fuel: Diesel & Battery
Construction: Aluminum	PAX: 600	Openings: Diamond SeaGlaze	Hatches: Freeman Marine
Launch: Spring 2018	Crew: 6	Fuel Capacity: 2,200 gallons	Interior Seats: Beurteaux
Potable H2O: 1,000 gal.	Decks: 3	Propellers: Veem Star 4-blade	Exterior Seats: UES
Grid Cooler: Fernstrum	Hull: Monohull	USCG Type: Subchapter-K	Steering System: Jastram
ER Ventilation: Delta T	Paint: AwlGrip	Thruster: Wesmar V12-18	Head Type: Headhunter


Marler


Andrews


Galasso


Boyle


Stauber


Palabrica


Champagne


Willis

Marler Named CEO at Port of Vancouver USA

The Port of Vancouver USA Board of Commissioners recently voted to approve terms of employment for **Julianna Marler**, officially installing her as CEO/Executive Director. Marler is the first female CEO in the port's 105-year history and one of just a handful of female port CEOs in the U.S. She led the port in dual roles as CEO and CFAO before being selected for her current position.

Carboline Names Andrews as EVP of Sales USA

Carboline announced that **Darrin J. Andrews** has joined as Executive Vice President of Sales USA. Darrin has been in the protective and industrial coatings industry for over 27 years and is a NACE Certified Coatings Inspector and has been active in the Canadian protective coatings industry for 20 years.

Galasso Appointed US Sales Manager for Ocean Signal

Communication and safety at sea specialist Ocean Signal has announced the appointment of **Rich Galasso** as its new US Sales Manager. Bringing more than 20 years of experience in the marine industry to the role, Galasso joins Ocean Signal following a seven-year stint as regional distribution manager with satellite communications and tracking leader Globalstar/SPOT.

New appointments to Duluth Seaway Port Authority Board

The St. Louis County (SLC) Board has appointed two new commissioners to the Duluth Seaway Port Authority. **Patrick Boyle** was first elected to the SLC Board in a special election in January 2014 to fill out the term of the late Steve O'Neil. At the time, he was a member of the Duluth City Council. He was reelected last November for a four-year term. **Pete Stauber** retired from professional hockey and began his career in law enforcement with the Duluth Police Department in 1993, where he serves as a police lieutenant. Stauber served two terms as a Hermantown City Councilor before being elected to the SLC Board in 2012.

Pettit Adds Palabrica to Sales Team

Pettit Marine Paint announced the addition of **Tony Palabrica** as Technical Sales Representative. Palabrica, who joined the Pettit Team in 2016 as a Technical Sales Representative, has decades of experience in the marine market. Palabrica was also actively involved with a number of mega yacht builds and was an instructor on the proper application of marine paint for professional applicators at a training center in Cocoa Beach, Florida.

SAFE Boats Adds to Senior Management Team

SAFE Boats International announced that **Hartwell Champagne** has been appointed as the Senior Vice President of Operations. Hartwell joined SAFE Boats in 2013 and has been a key member of the company's executive team. Previously, Hartwell was the General Manager of the company's Large Craft Production facility where the US Navy's Mk VI Patrol Boats are manufactured. Separately, SAFE Boats also promoted **Janice Willis** to the position of Vice President Program Management. Janice joined SAFE Boats in December 2010 as a member of the Business Development team. In 2014 she became the Director of Program Management, leading the teams responsible for managing SBI's federal government program business, including the USCG CB-OTH and USCBP CIV Programs.

Johansen Joins EBDG

Erik Johansen has joined Elliott Bay Design Group's New Orleans office. Erik's expertise includes supporting offshore vessel operators with major modifications, conversions and oversight of electrical contractors. His portfolio of vessel types includes workboats, ferries, tugboats, platform support vessels, and chemical and petroleum carriers.

Global Appoints Coppes Director of Salvage & Wreck Removal

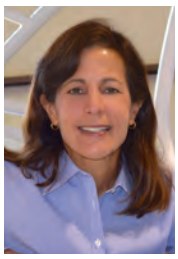
Bas Coppes has joined the senior management team at Global Diving & Salvage. Coppes brings two decades of salvage and offshore experience to the organization, having managed an extensive number of salvage, wreck removal, and offshore projects across the globe.


Johansen


Coppes


Chao


Grindle


Butera


Gianfalla

AMP Applauds Chao as Secretary of Transportation

The American Maritime Partnership (AMP) last month congratulated Secretary **Elaine Chao** for her nomination to be the U.S. Secretary of Transportation. AMP said in a prepared statement, "With vast experience across the maritime industry and prior service at the U.S. Department of Transportation, Maritime Administration, and Federal Maritime Commission, Secretary Chao understands the critical role our industry plays in advancing the nation's economic and national security."

Grindle named CEO at Hatteras Yachts

Hatteras/Cabo Yachts LLC has appointed **Kelly Todd Grindle** as the company's new Chief Executive Officer. Grindle served most recently as President of Outdoor Products at Vista Outdoor Inc., in Overland Park, Kansas, a $2.3 billion designer, manufacturer and marketer of consumer products in the outdoor sports and recreation markets. He brings to Hatteras Yachts his extensive experience in the recreational marine manufacturing sector.

EdgeWater Boats Names Butera President & CEO

EdgeWater Power Boats has named **Jennifer Butera** president and CEO. Butera comes to EdgeWater Power Boats after serving as general manager of Brunswick Commercial and Government Products Inc. (BCGP).

Gianfalla Named to DHS Security Committee

Daniel M. Gianfalla has been appointed to the National Maritime Security Advisory Committee by the Secretary of the Department of Homeland Security. A Master Mariner, he was also recently named Vice Chairman of United Metro Energy Corp., for Acquisitions and Government Affairs. The National Maritime Security Advisory Committee is tasked with advising the Secretary, the Commandant of the US Coast Guard, and the President of the United States on maritime security issues.

Smith Joins MarineMax

MarineMax announced that superyacht industry veteran, **William (Billy) Smith**, is joining as Vice President of their Super Yachts Division. His first position in the marine industry was with the family-owned companies T. Smith and Sons and Crescent Towing and Salvage. Smith later held a position at Trinity Yachts, LLC and became a shareholder and Vice President of Sales and Marketing. He graduated from Springhill College.

Glendinning joins Greystoke Team

David Glendinning has joined Vancouver-based Greystoke Marine Management. A Master Mariner with eighteen years at sea, as well as a career of onshore experience in many senior positions of ship management, commercial operations, business development and project management, David was appointed President of Teekay Gas Services business unit and served in that position until retiring from Teekay at the end of 2015.

Marine Exhaust Systems Hires Mark Brown

Marine Exhaust Systems has hired **Mark Brown** for technical sales. Brown brings to Marine Exhaust Systems a broad skill set, ranging from sales and marketing strategy to small business and entrepreneurship. He will work with owners, captains, boatyards and boat builders to develop complete exhaust systems and sell individual components.

Ponedel Joins Suzuki Repower by Mastry

Suzuki outboard expert **Jon Ponedel** has joined Suzuki RePower by Mastry. Ponedel will provide technical support to the company's service personnel, as well as the seven other Suzuki RePower Centers by Mastry throughout Florida. Before joining the Suzuki RePower team, Ponedel worked for Suzuki Marine for 15 years as a district service manager, technical instructor and application engineer.

IYBA Names 2017 BoD, Presents Annual Awards

The International Yacht Brokers Association (IYBA) recently welcomed three new members to its Board of Directors, and honored two of its outstanding members with its Broker of the Year and Charter Broker of the Year Awards. New IYBA Board of Directors Grant Henderson, Sales Executive, Sanlorenzo America; Andrew Miles, Westport Yacht Sales Broker, and Staley Weid-


Smith


Glendinning


Brown


Ponedel


Merrigan


D'Offay

man, CEO, The Catamaran Company will join the 2017 IYBA Board of Directors. At the same time, the 2016 IYBA Broker of the Year Award was presented to **Kevin Merrigan**, CEO of Northrop & Johnson. The 2016 IYBA Charter Broker of the Year Award was presented to **Daphne D'Offay**, Ocean Independence Senior Charter Manager.

NMMA Honors BRP's Lapointe

The National Marine Manufacturers Association (NMMA) in Canada announced that it has inducted **Denys Lapointe**, executive vice-president of BRP's Design & Innovation Center, into the NMMA Hall of Fame. Lapointe's career achievements and contribution to the recreational boating industry were recognized during the NMMA Canadian Recreational Boating Industry Session in January. The NMMA Hall of Fame is the Association's highest honor.

ISMA Elects 2017 Leadership Team, Awards Scholarships

At the International Ship Masters' Association (ISMA) 127th annual convention, a new leadership team was named. Elected as Grand President was **Capt. Lee Barnhill** of Alpena, tug captain for Durocher Marine. Also elected were Grand 1st Vice President **Capt. Harold Dusseau**, Grand 2nd Vice President **Capt. Mark Mather,** and Secretary-Treasurer **Capt. Brian Eickel**. ISMA offers annual scholarships to persons preparing for careers as officers aboard US and Canadian vessels. This year's awards were presented to **Donald Hicks**, a Navigation cadet enrolled at Great


Lapointe

ISMA Officers


Cropper


Barrett

Lakes International Marine Training and Research Centre at Georgian College; **Derek McMullen**, an Engineering cadet enrolled at Great Lakes Maritime Academy; and **Ian Brammall**, a Canadian mariner who is working toward obtaining an engineering license.

Coast Guard Foundation Names Cropper as NE Regional Director

The Coast Guard Foundation, a nonprofit organization committed to the education and welfare of all Coast Guard members and their families, announced that **Loralyn Cropper** joined its staff as regional director for the Northeast. Cropper will work closely with Coast Guard units in the area to identify and fulfill education, morale and family support needs for Coast Guard members. She replaces **Susan Ludwig** in this position, who was recently named president of the Coast Guard Foundation. Cropper has a bachelor's degree from Scripps College and a masters degree from Columbia University.

IMTRA Hires Two for Pacific Northwest Region

IMTRA announced the addition of **J. Mark Barrett** and **Eric MacDonald** to the outside sales team. J. Mark Barrett joins as recreational Pacific Northwest account representative. Most recently with West Marine Pro, Barrett has been working the Pacific Northwest marine market for over 25 years. MacDonald, who is already performing his duties at IMTRA in the newly created position of commercial Pacific Northwest account representative, has worked in the territory since 2014.

Ward Appointed as C-PORT's New Chairman

The Conference of Professional Operators for Response Towing (C-PORT) recently appointed **Captain John Ward**, of Sea Tow Destin, FL., as its new Chairman of the Board. C-PORT represents the marine assistance industry nationwide. Ward owns and operates Aquanaut Towing & Salvage/Sea Tow Pensacola, Destin, Lake Norman/Wylie and Lake Kerr/Gaston.

USMMA AAF Forms Accreditation Advisory Committee

The U.S. Merchant Marine Academy Alumni Association and Foundation (AAF) has announced the formation of an advisory committee composed of distinguished Kings Point graduates and education experts to assist the Maritime Administration and the Academy in protecting and preserving the school's imperiled accreditation. In June 2016, the Middle States Commission on Higher Education (MSCHE) reported that the U.S. Merchant Marine Academy (USMMA) underperformed in five of 14 areas including planning, leadership and governance, administrative staff qualifications, resource allocation and student services. USMMA is the first-ever Federal Service Academy to be placed on warning, and it must provide a progress report to MSCHE by March 1st on the Academy's implementation of the required changes outlined in the report. "If we don't fix the accreditation, then nothing else matters," said **Capt. James Tobin,** president of the AAF. "This is an existential threat to the institution and therefore a long-term threat to our national security."

ABS Accommodation Standards Improve Crew Safety

ABS has published the ABS Guide for Habitability of Industrial Personnel on Accommodation Vessels. This Guide establishes criteria for improving the living environment and ambient environment on board accommodation vessels. "People are the most important resource for any organization," says ABS Chairman, President and CEO **Christopher J. Wiernicki.** "This Guide recognizes the importance of personnel living offshore for extended periods of time, addressing design and engineering considerations that can improve safety, productivity and the overall wellbeing of crews working at sea." Applicable to existing and new construction accommodation vessels, the ABS Guide for addresses overall crew health, promoting reliable performance and safety.

OSVDPA Announces New Training Provider Accreditation

The Offshore Service Vessel Dynamic Positioning Authority, Inc. (OSVDPA) announced Kongsberg Maritime's (Kongsberg) center in Houston, Texas is accredited to conduct OSVDPA dynamic positioning operator (DPO) training courses and assessments. Kongsberg is the first Houston-area center to be accredited by the OSVDPA. OSVDPA Executive Director, **Aaron Smith**, said, "We are extremely excited to have Kongsberg seek


MacDonald


Ward


Tobin


Wiernicki


Smith

and secure OSVDPA Accreditation. Kongsberg's expertise and professionalism were very evident through our accreditation process. It is easy to see how Kongsberg has earned a second-to-none reputation throughout the DP and offshore industries, and we're excited to work with them in the near future." Under the OSVDPA certification system, those wanting to become DPOs must complete two classroom courses, one focused on the theoretical knowledge behind DP operation and the other gaining DP experience via the use of DP simulators. By securing accreditation, Kongsberg can now begin conducting these courses.

US Coast Guard Awards Navigation System Contract

The Coast Guard's Command, Control and Communications Engineering Center (C3CEN) awarded a contract to FLIR Maritime US, Inc. for the Scalable Integrated Navigation System, Two (SINS-2). The single award Firm Fixed Price Indefinite Delivery, Indefinite Quantity contract is valued at $50 million and consists of a five-year base with a five-year option. The total period of performance is 10 years. SINS-2 consists of a suite of commercially available electronic equipment and sensors consisting of low power Radar/Chart Plotter, Multi-Function Displays (MFD), Single Frequency Global Positioning System (GPS), and other required navigation components. This navigation system serves as the primary means of navigation on all Coast Guard small boats and as a back-up navigation system on its cutters.

Affordable Luxury When You're Anchored in Boston

The antiquity and charm of the original Mariners House has been updated to include all the modern amenities, featuring completely renovated private rooms, private baths, elegant common rooms and all the in-room necessities of modern life.

Starting at $65 per night including breakfast. Lunch and dinner also offered daily (Not included.) Guests must be active seafarers with proof of service.

MARINERS HOUSE

170 Years of Hospitality and Guidance to Professional Mariners

11 North Square, Boston, MA 02113
Voice (617) 227-3979 Fax (617) 227-4005
inn@marinershouse.org www.marinershouse.org

To Make a Reservation, call 1-877-SEA-9494

The Crew Launch

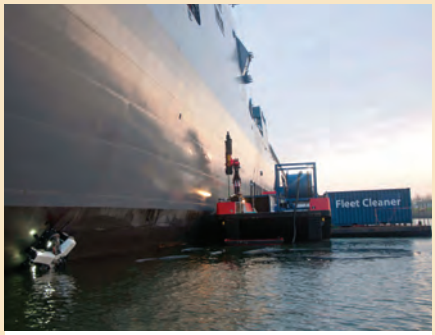
Transferring crew onto vessels, barges, beaches, or platforms is typically routine. Often the real challenges come at the transition points. Now crew can load and unload quickly and securely using integrated stairs and handrails, the bow first design avoids hazardous gaps frequently experienced during side by side docking. Beefy aluminum construction, overbuilt tie up and lashing points, the skiff is made for work.

www.snowboatbuilding.com

Strategic Materials Glass Abrasive for Surface Preparation

Strategic Materials air blast abrasive product, TruAbrasives, is made from 100% recycled glass. The crushed glass abrasive was developed through extensive blast and laboratory testing. Unlike commonly used abrasives such as silica sand or slags, crushed glass abrasives do not cause worker concern for free crystalline silica and toxic metal exposure. Along with innate health benefits, production improvements will allow for a cleaner, higher-performance product.

www.strategicmaterials.com



Fleet Cleaner Completes First Hull Cleaning

Fleet Cleaner has successfully completed its first hull cleaning trial, removing fouling of the vessel by using a hull cleaning ROV. Both under- and above water cleaning was performed by the robot. The use of controllable high pressure waterjets prevents coating damage during the process. All removed fouling is captured and filtered, resulting in an environmental friendly hull cleaning solution.

www.fleetcleaner.com

Marco's Spraymaster 60 Gallon Heated Coatings Tank

The Spraymaster 60 Gallon Heated Coatings Tank is used to hold, heat, and blend coatings, and the round tank design allows for even mixing and heating. The large capacity tank features an electric immersion heater that maintains a consistent temperature of a liquid solution which transfers heat to the coating material, allowing for improved blending by a pneumatically driven agitator.

www.marco.us

Carboline Celebrates 70 Years, Re-Opens Upgraded R&D Facility

Carboline's St.Louis-based Research & Development Facility recently went through several upgrades. The Re-Opening also kicks off a year-long series of celebrations for their 70th Anniversary. The event included a ribbon cutting, tours of the research and development facility, and a company luncheon. Carboline produces high quality performance coatings, linings and fireproofing products in more than 20 manufacturing facilities around the world.

www.carboline.com

New Literature Details Stronghold Coatings

Stronghold Coatings' full-color brochure details polymer and thermal spray solutions to repair, rebuild and improve the performance of mission critical components. This new 6-page brochure introduces Dichtol capillary sealers, MM 1018 on-site repair technology, PlasticMetal polymer-bound metal repair materials, and the RepaCoat family of repair products. Stronghold is the exclusive North American supplier of DIAMANT structural repair products for critical applications.

www.StrongholdOne.com

Polymer Inhibits Galvanic Corrosion

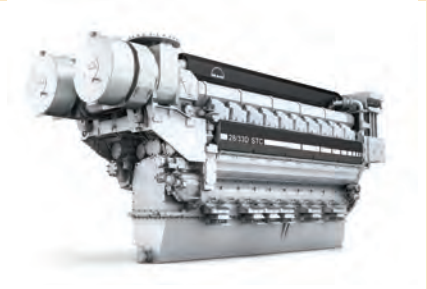
Vesconite is typically used as strut or rudder bearing material, but Jutson Marine Design has a unique application for it. Specifying the advanced polymer as a corrosion isolator on an aluminum Hysucat design, Jutson uses 3mm sheets of Vesconite as an interface between SAF 2205 stainless steel hydrofoils and the aluminum hulls they're bolted to. The isolator inhibits galvanic corrosion between the dissimilar metals.

www.vesconite.com

US Coast Guard, Cox Powertrain Ink CRADA

The US Coast Guard has entered into a Cooperative Research and Development Agreement (CRADA) with Cox Powertrain to evaluate and test performance, costs and other issues associated with diesel outboard engine technology. The Coast Guard will outfit the platform with instrumentation to monitor power, speed and fuel consumption. A Coast Guard field unit will operate the boat for performance testing over a six-month period.

www.coxmarine.com



ESG Selects MAN Engines for USCG's OPC

The US Coast Guard will have MAN's 28/33D STC engines as main propulsion for the Offshore Patrol Cutter. The program is the replacement platform for the 13 'Famous' class and 14 'Reliance' class cutter vessels, making it the largest procurement order in Coast Guard history. Each cutter will be powered by two MAN 16V28/33D STC engines, developing 7,280 kW each @ 1,000 rpm.

www.mandieselturbo.com

JDPS Marine Engines Meet Recreational Craft Directive II

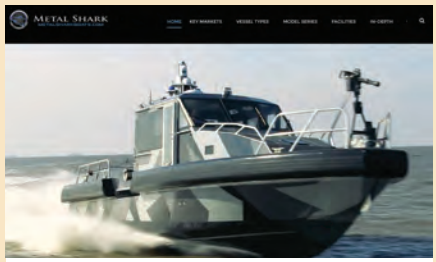
John Deere Power Systems (JDPS) has eight marine propulsion engines that meet the Recreational Craft Directive II (RCD II). With power ratings from 75 to 559 kW (100 to 750 hp) offer PowerTech marine engines' customers reliable and powerful engine options. The PowerTech propulsion engines that meet the requirements for RCD II will be European Conformity (CE) marked in accordance with the new directive.

www.JohnDeere.com

Marine Travelift's BFMII Mobile Boat Hoist

Marine Travelift's newest innovations in the BFMII series add a number of features designed to optimize operator throughput and maximize uptime. Marine Travelift's intelligent remote diagnostics allow for convenient remote communication with the intelligent system through smartphones, tablets, and computers upon operator access. This makes communication more efficient, allowing offsite technicians to view a machine while operating and troubleshoot issues.

www.marinetravelift.com



Metal Shark Launches New Website

Louisiana-based shipbuilder Metal Shark has launched a new website featuring an all new design boasting fresh content, increased functionality, and robust search tools that facilitate navigation within the company's vast product portfolio. From the homepage, numerous search options and a visual matrix help visitors drill down through over 125 pages of new content incorporating widespread use of high definition photos and video.

www.metalsharkboats.com

Is your Company an Industry Le

Tell us why, and we will publish your compa profile in the August 2017 *Marine News!*

ader?

ny

MN100

The August 2017 issue of Marine News will be the fourth annual Marine News 100 edition, featuring the leaders and innovators serving the North American shallow draft market.

Marine News, the leading voice in the North American workboat market, will once again profile 100 top companies, including workboat owners and operators, builders and repairers, and product and service providers.

ENROLL ONLINE AT:

http://mn100.maritimemagazine.com

Marine Marketplace

Powered by www.maritimejobs.com

Post Your Resume for Free • Energize Your Job Search @ MaritimeJobs.com

MaritimeJobs.com
where employers and job seekers connect
The Maritime Industry's Leading Employment Website. For more information contact: Jean Vertucci at vertucci@marinelink.com

EMPLOYMENT

MARITIME SCIENCE INSTRUCTOR
Salary: $ 49,352 , Full Time
Job Location: 1651 Lexington Ave Astoria, OR, 97103 USA
Contact:
Human Resources Assistant
Email: jbakke@clatsopcc.edu
Work Phone : 503.338.2406
1651 Lexington Ave Astoria, OR, 97103 USA

Required Education

• Bachelor's degree in Education, or a related field. (Three (3) years service as a deck officer in charge of a navigation watch may be substituted for the Bachelor's degree) or equivalent military experience (Deck Watch Officer).
• A 40-hour approved "Train the Trainer" course which meets STCW requirements OR complete an approved course within 60 days of hire (as a condition of continued employment).
• STCW Basic Safety Training.

Required Experience

• Seven years of maritime industry experience of which one-year is shipboard experience as the officer in charge of navigation watch or equivalent military experience (Deck Watch Officer).

Required Certification

• "Unlimited" Radar Observer endorsement.
• U.S. Coast Guard 100 ton Near Coastal Master's Credential
• Able-Bodied Seaman Credential (or, as a condition of continued employment, pursue and earn the credential within 1 year)

PREFERRED QUALIFICATIONS:

• Previous teaching experience at the post-secondary level.
• U.S. Coast Guard Master's License, 500 Gross Tons or more with Oceans endorsement.

VESSELS FOR SALE / BARGES FOR RENT

NEW PRODUCTS

WHITING

HONEYCOMB PANELS
ALUMINUM DOORS

Aluminum Honeycomb Joiner Doors
Type I - Type IV doors

Extruded Aluminum Joiner Doors
Type A - Type P Stile doors

Class C Approved Panels

Water Closet Partitions


Honeycomb Door


Aluminum honeycomb panel with melamime facings


Extruded Alum Door

WHITING CUSTOM LAMINATED PANELS

Phone: (716) 542-5427
Web: www.whitingdoor.com
Email: RayHackett@whitingdoor.com

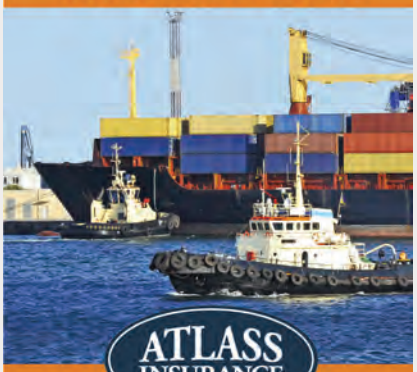
Industrial Grade Pressure Washers

WATER CANNON .com
1.800.333.9274

Apply for a 30 day terms account & financing is available

ATLASS INSURANCE
QUOTE LINE: 800-330-3370

TUGS | BARGES | RIGS
CREW | SIGHTSEEING
WORK & SUPPLY BOATS

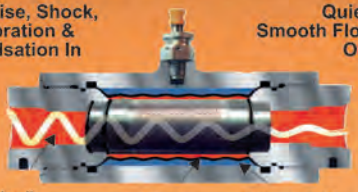


ATLASS INSURANCE
ESTABLISHED 1981

Contact Jim Okonski
jokonski@atlassinsurance.com
www.atlassinsurance.com

The Hydraulic Noise, Shock Vibration & Pulsation
SUPPRESSOR

Noise, Shock, Vibration & Pulsation In
Quiet, Smooth Flow Out



Oil (red) Bladder Nitrogen (blue)
Three Stage Noise & Pulsation Reduction Chamber

Pacific Marine Expo
Booth # 201
Thursday November 17th - Saturday November 19th

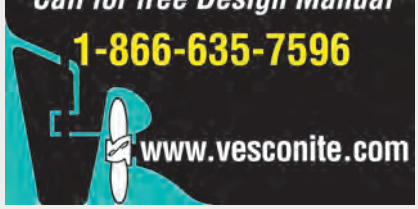
Wilkes & McLean, Ltd. 877-534-6445
600 Estes Ave
Schaumburg, IL 60193
Fax: 847-534-2016
www.wilkesandmclean.com
info@wilkesandmclean.com

Vesconite Hilube
Rudder and Stern Tube Bearings

- Use dry or underwater
- No grease needed
- Lowest friction
- Fit and forget

ABS

Call for free Design Manual
1-866-635-7596



www.vesconite.com

DOR-MOR®
Pyramid Mooring Anchors

SINCE 1988

Sizes 15 lbs. to the NEW 4,000 lbs.
Designed to dig into the bottom and achieve holding power 10 times its weight at 3:1 scope
To hold boats, docks, nav. aids, nets, cables, aquaculture pens. One lb. of Dor-Mor can replace 10 lbs. of concrete.

Dor-Mor, Inc.
P. O. Box 461, Claremont, NH 03743
PHONE/FAX 603-542-7696
www.Dor-Mor.com
info@Dor-Mor.Com

CRANSTON-EAGLE
Marine Off-Load Hooks
Delta T Systems

- Ratings From 2 to 12 Tons
- Deck and Cable Mounted Models
- All Welded Stainless Steel Frames
- Standard and USCG Certified Models

Sales • Service • Parts • Load Testing
(561) 204-1500 www.deltatsystems.com

The industry's leading news site.
Part of the world's largest maritime publishing network.

www.marinelink.com

Marine Marketplace

NEW PRODUCTS

REMOVE
paint, rust, scale & barnacles
from steel ships
attach to your grinder
www.swirloff.com
800.823.4670

We Build the Ship First.
Production Lofting
Detail Design
3D Modeling
St. John's, NL
Vancouver, BC
New Orleans, LA
709.368.0669 | 504.287.4310
www.genoadesign.com
genoa DESIGN INTERNATIONAL

USCG
License Software
Affordable - Merchant Marine Exam Training
http://hawsepipe.net
Freelance Software
39 Peckham Place
Bristol, RI 02809
(401) 556-1955 - sales@hawsepipe.net

RHO THETA USA
SEARCH RESCUE
• Radio Direction Finders
• Radio Location
• Search-and-Rescue
• Radio Monitoring
• COSPAS-SARSAT
435-578-1270 • www.rhothetausa.com

Tank Tender
THE ORIGINAL PRECISION TANK MEASURING SYSTEM!
Accurate tank soundings have never been easier when one TANK TENDER monitors up to ten fuel and water tanks. Reliable non-electric and easy to install.
HART SYSTEMS, INC. www.TheTankTender.com
(253) 858-8481 • FAX (253) 858-8486

Tri-State Coating & Machine
MARINE & DREDGE DIVISION
Leading The Way
Hard Coated Liner Sleeves • Marine Propulsion Shafts • Pump Rebuild Replacement Parts
Jockey Bar & Steering Linkage Pins
1-800-477-4460
www.TriStateCoating.com

Uni-Flex®
by JAGCO INDUSTRIES, INC.
Expansion Joints • Pump/Compressor Connectors
Exhaust Couplers • Connectors • Flanges
Stripwound Hose • Graphite Gaskets
5245 Old US Hwy 45, Paducah, KY 42003
Phone: 1.800.288.2626
www.jagco.net
jagco@jagco.comcastbiz.net

Maritime Today
E-News Service
In business, time is of the essence.
Stay up to date with the latest NEWS & INFORMATION...
...from the industry's leading source; providing you with daily updates on the subjects that pertain to your business.
www.marinelink.com

Marine Marketplace

NEW PRODUCTS

SIMPLE. RUGGED. RELIABLE.

KIENE Cylinder Pressure Indicators for measuring diesel engine firing pressures...

- Easy to use - simple and reliable
- Reduce maintenance costs.
- Improve engine availability.
- Use to balance cylinders.
- Pinpoint engine Problems.
- Optimize fuel consumption.
- Fits any standard indicator valve.
- Recommended and used by major engine builders
- Minimal investment to monitor engine condition.

Contact us now for more information.

KIENE DIESEL ACCESSORIES, INC.
Phone: 1-800-264-5950
Fax: 630-543-5953
www.kienediesel.com
E-mail: info@kienediesel.com

New! "Very Smart" Programmable Battery Chargers

with System Self Monitoring/Diagnosis and Onboard Serviceability via Modular Components

NEWMAR
DC Power Onboard
www.DCPowerOnboard.com
800-854-3906

Join the industry's #1 Linkedin group

THE MARITIME NETWORK
http://bit.do/MaritimeNetwork

PROFESSIONALS

US Coast Guard Approved

- STCW-95 Basic Safety Training
- 3-day STCW Refresher
- Proficiency in Survival Craft
- Advanced Firefighting
- Tankerman-Barge PIC
- Leadership and Teamwork
- Vessel Personnel with Designated Security Duties (VPDSD)

EL Camino College
Workplace Learning Resource Center
13430 Hawthorne Blvd. • Hawthorne, CA 90250
Ten (10) minutes from LAX • Twenty (20) minutes from LA Harbor
Call for Information & Registration (310) 973-3147
Receptionist: (310) 973-3176
businessassist.elcamino.edu/wplrc/coast.html

Marine advertising's strongest link

MarineLink.com

Connecting your business with the world's largest marine audience online.

ANIMATED AND STATIC BANNER ADVERTISING
NEWS PAGE BANNERS
CUSTOM EMAIL SERVICE
VIDEO & WEBINAR HOSTING
MARITIME TODAY E NEWSLETTER

GET LINKED!
Contact us for more information. www.marinelink.com

CAPTAINS LICENSE
OUPV – 6 Pack
$595
Includes Book, Exam & Equip. No hidden costs!
Coast Guard Approved
No testing w/Coast Guard
Towing Endorsement-$50 Master Upgrade-$200
Call or check website for exact locations and dates!
TOLL FREE 877-447-1950
www.adamsmarine.com
email: info@adamsmarine.com
ADAMS MARINE SEMINARS

MARITIME PROPULSION

Powering the Maritime Industry

Maritime Propulsion is the online database for marine power and propulsion equipment. Find product reports, engine specifications, suppliers, and auxiliary machinery.

www.maritimepropulsion.com

Designed for:
Heavy Duty

JMS NAVAL ARCHITECTS

JMS-Designed.
Stevedoring barge
300' x 72' · 6,000 psf deck
Built by Conrad Shipyard for the Rhode Island Commerce Corp. and Port of Providence

www.JMSnet.com
860.536.0009
Barges, Dry Docks, & Work Boat Design

ADVERTISER INDEX

Page	Company	Website	Phone#
43	Ahead Sanitation	www.aheadtank.com	(337) 330-4407
9	BAE Systems - HybriDrive Solutions	www.hybridrive.com	(607) 770-2083
39	Baier Marine	www.baiermarine.com	800-455-3917
41	Boll Filter Corporation	www.bollfilter.com	(284) 773-8200
25	Centa Corporation	www.centacorp.com	(630) 236-3500
23	CK Power	www.CKPower.com	(314) 569-8229
17	Commercial Marine Expo	www.comarexpo.com	Please visit our website
45	Creative Systems	www.ghsport.com	(360) 385-6212
21	David Clark Company	www.DavidClark.com/Marine	(800) 298-6235
41	DeFelsko	www.defelsko.com	(315) 393-4450
27	Detyens Shipyards Inc.	www.detyens.com	(843) 308-8000
43	Diesel America West, Inc. / LOADSTAR	www.dawest.com	(360) 378-4182
33	Dynamat, Inc.	www.dynamat.qc.ca	(450) 662-1803
29	Ebac Systems	www.ebacusa.com	(757) 873-6800
C2	Engines, Inc.	www.enginespower.com	(870) 268-3700
23	Federal Resources Maritime	www.federalresources.com	(410) 630-8458
37	GP Link	www.gplink.com	(252) 504-5113
1	Konrad Marine	www.konradmarine.com	(715) 386-4203
7	Louisiana Cat	www.LouisianaCat.com	(985) 536-1121
55	Mariner's House	www.marinershouse.org	(617) 227-3979
53	McDonough Marine Services	www.mcdonoughmarine.com	(504) 780-8100
35	Nautican	www.nautican.com	(778) 654-1408
15	Navtor	www.navtor.com	+47 51 49 22 00
31	Northern Lights	www.northern-lights.com	(206) 789-3880
27	PYI Inc.	www.pyiinc.com	(425) 355-3669
C4	R.W. Fernstrum & Company	www.fernstrum.com	(906) 863-5553
3	Scania USA	www.scaniausa.com	(210) 403-0007
56	Snow & Company	www.snowboatbuilding.com	Visit us online
20	Tampa Defense USA	www.tampa-defense.com	(714) 673-8118
13	Tidewater Marine	www.tdw.com	(504) 568-1010
5	Volvo Penta	www.volvopenta.com	Please visit our website
11	Waterman Supply	www.watermansupply.com	(310) 522-9698
15	YANMAR America Corporation	us.yanmar.com	Visit us online
19	ZF Marine LLC	mn.zfmarinecc.com	Visit us online

The listings above are an editorial service provided for the convenience of our readers.
If you are an advertiser and would like to update or modify any of the above information, please contact: nicole@marinelink.com

The Maritime Industry's Largest Social Media Presence

Maritime Reporter is a member of the Marine Media Network of websites, publications, and social media sources for news, editorial and information including the Maritime Network, the commercial marine industry's largest dedicated Linkedin group.

63,864
Facebook Page Likes

128,718
Linkedin Group Members (industry's largest)

27,505
Twitter Followers

MARITIME REPORTER AND ENGINEERING NEWS

THE MARITIME NETWORK

@ShipNews

Also part of the Marine Media Network

Page	Likes
Marine Electronics	34,849
Marine Technology Reporter	57,604
Maritime Global News	27,015
Maritime Jobs	46,961
Maritime Logistics Professional	31,807
Maritime Propulsion	23,378
Maritime Reporter & Engineering News	63,864
World Energy News	51,176

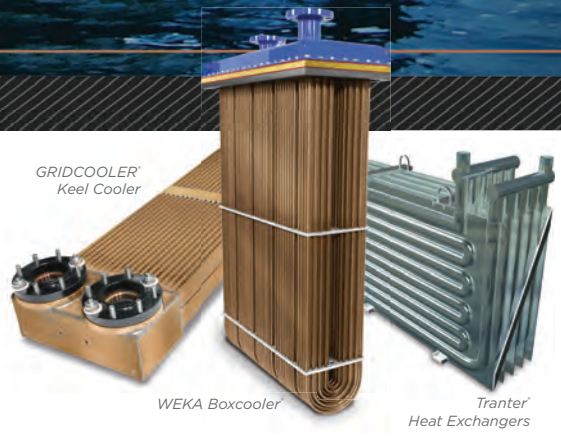
All stats from 02/14/2017

ENGINEERED COOLING SOLUTIONS.

Photo courtesy of Eastern Shipbuilding Group

OVER 65 YEARS COOLING THE MARINE INDUSTRY

R.W. Fernstrum is committed to providing long-lasting, quality cooling systems. Our sales and engineering team will work with you to custom design a solution that meets the needs of your vessel and operating conditions.



fernstrum.com
906.863.5553
sales@fernstrum.com

FERNSTRUM®
R.W. Fernstrum & Company