January 2020

MARITIME REPORTER AND ENGINEERING NEWS

www.marinelink.com

SHIP REPAIR

YARDS INVEST TO KEEP PACE WITH REGULATORY DEMAND

INTERVIEW
MORGAN FANBERG
"CRAZY IDEAS ARE NOT OFF THE TABLE"

IN THE SHIPYARD
FOILING WELL-LAID PLANS
INNOVATIVE REFITS TO SAVE FUEL

SURPLUS OSVs
FIT FOR REFIT
A FUTURE IN OFFSHORE WIND

OFFSHORE WIND
THE DOMINO EFFECT
FUELING THE U.S. MARITIME BOOM

THE PATH TO ZERO
SLOW DOWN
VOLUNTARY VS. REGULATORY

Since 1939

Number 1 Volume 82

PRECISE 360° PROPULSION
PLUS FULL AUXILIARY POWER

Twin Disc Marine Control Drives (MCDs) allow variable propeller speed — from full engine output to slower than engine idle — while splitting main engine power to drive FiFi pumps or other auxiliary equipment. The MCD-2000/4000/5000 series covers extended diesel power requirements from 1680 kW (2280 HP) to 5250 kW (7130 HP) with heat dissipation capabilities up to 450 kW (610 HP).

And our Veth Z-drives provide 360° thrust for optimal vessel maneuverability and positioning.

If you want the ultimate in slow-speed maneuverability, highly accurate positioning and simultaneous, full-firefighting capability, specify Twin Disc and Veth Propulsion on your next tug build.

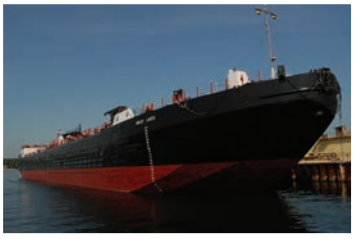
For expert engineering assistance to assure your optimal product specifications and performance, contact Klaus@TwinDisc.com.

MARINE CONTROL DRIVE

VETH Z-DRIVE

TWIN DISC **POWER** PARTNERS VETH PROPULSION

EXPERIENCE DEFINED



Servicing the winter repair needs of the Great Lakes bulk carrier fleet keeps our skills sharp year-round. Whatever your need—from repowering to scrubber installations to painting and hull repairs, to electrical and piping work—the Bay team has recent experience. This results in quality repairs and fast turnaround in returning your vessel to service.

Fincantieri Bay Shipbuilding has a 68-acre plant, computer-aided manufacturing equipment in climate-controlled environments, in-house engineering, a large graving dock and U.S. Navy-certified floating drydock. Our workforce of seasoned shipbuilding professionals is backed by a management philosophy tightly focused on customer satisfaction. That's what we call Experience-Plus.

FINCANTIERI
BAY SHIPBUILDING

For more information contact Michael Pinkham, Vice President Sales and Marketing, at 715.587.6960.
www.fincantierimarinegroup.com

NO. 1 / VOL. 82 / JANUARY 2020

28
© Wavefoil

Features

Departments

Some careers might offer
security, advancement or benefits.

MSC HAS THEM ALL

MSC careers are some of the best in the maritime industry. That's because we combine job security with training and advancement opportunities. This combination will take your career further, faster than you thought possible.

When you know this path includes federal benefits, paid leave, flexibility and camaraderie, you know MSC is a career worth pursuing.

We are actively hiring for:

Able Seaman

Deck Engineer Machinist

Refrigeration Engineer

Pumpman

Electronics Technician

Yeoman Storekeeper

Assistant Storekeeper

Various Culinary positions

And our Communications positions

Several positions have bonuses offered.

Visit sealiftcommand.com to learn more about open positions in various departments today!

info@sealiftcommand.com
888-891-4577
sealiftcommand.com

CIVILIAN CAREERS
REAL-WORLD CHALLENGES REAL-LIFE REWARDS
DEPARTMENT OF THE NAVY

MSC is an equal opportunity employer and a drug-free workplace.

MSC
MILITARY SEALIFT COMMAND

Authors

Bennett

Bryant

Ewing

Goldberg

Mulligan

Parker

Paschoa

Stoichevski

van Hemmen

Wilgus

Bennett
William Bennett is a Partner in Blank Rome LLP's New York office. He is Co-Practice Group Leader of the Maritime and International Trade Group and a graduate of SUNY Maritime. Prior to his legal career, he sailed as a licensed officer aboard various types of vessels. His practice focuses on serving clients in the global shipping, energy and international trade markets. He counsels owners, operators, managers, charterers, commodity traders, marine terminals and logistics companies.

Bryant
Dennis Bryant is with Bryant's Maritime Consulting, and a regular contributor to Maritime Reporter & Engineering News.

Ewing
Tom Ewing specializrd in energy and environmental topics.

Goldberg
Murray Goldberg is CEO of Marine Learning Systems, maker of MarineLMS. A researcher and developer of learning management systems, his software has been used by millions of people and companies worldwide.

Mulligan
Tom Mulligan was born in London in 1958 and grew up in Manchester, England. He graduated Trinity College Dublin in 1979 with a BA Hons Degree in Natural Sciences (Chemistry). Following a period as a production chemist in an electronic circuit board manufacturing company, he returned to the University of Limerick in 1986 where he obtained a Masters Degree in Industrial Chemistry in 1988. Today, based in Ireland, he serves as Maritime Reporter & Engineering News' science and technology writer.

Parker
Barry Parker, bdp1 Consulting Ltd provides strategic and tactical support, including analytics and communications, to businesses across the maritime spectrum.

Paschoa
Claudio Paschoa is a regular contributor to New Wave Media publications, print and electronic.

Stoichevski
After a honing the media campaign of Norwegian green group Bellona (current fuels advisors to the European Commission), William Stoichevski began working for the Associated Press in Oslo. In 2003, he left the AP to oversee and write for a number of print and electronic energy industry publications in the Norwegian capital. He has written thousands of offshore-focused reports from his North Sea vantage point. Hard-to-match access has granted him interviews with hundreds of industry captains and policy makers across the globe. William lives and works in Oslo. He started writing for Maritime Reporter in 2014.

van Hemmen
Rik van Hemmen is the President of Martin & Ottaway, a marine consulting firm that specializes in the resolution of technical, operational and financial issues in maritime. By training he is an Aerospace and Ocean engineer and has spent the majority of his career in engineering design and forensic engineering.

Wilgus
Lauren Wilgus is Of Counsel in Blank Rome LLP's New York office. Wilgus concentrates her practice in the areas of international and maritime litigation and dispute resolution. Her practice focuses on serving clients in all sectors of the global shipping, energy and international trade markets. Prior to joining the firm, Lauren worked both as a claims adjuster at a major Japanese shipping company and as a claims executive at the UK P&I Club.

MARITIME REPORTER AND ENGINEERING NEWS

MARINELINK.COM

ISSN-0025-3448
USPS-016-750
No. 1 Vol. 82

Maritime Reporter/Engineering News (ISSN # 0025-3448) is published monthly (twelve issues) by Maritime Activity Reports, Inc., 118 East 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 Maritime Reporter, 850 Montauk Hwy., #867, Bayport, NY 11705.

SUBSCRIPTION INFORMATION

In U.S.:
One full year (12 issues) $110.00;
Two years (24 issues) $190.00

Rest of the World:
One full year (12 issues) $189.00;
two years $228.00 (24 issues)
including postage and handling.

CONTACT INFORMATION:

Email: mrcirc@marinelink.com
Web: www.marinelink.com
t: (212) 477-6700
f: (212) 254-6271

Member BPA WORLDWIDE BRAND REPORT

Business Publications Audit of Circulation, Inc.

Technical competence

MAN PrimeServ

Service with passion

We at MAN PrimeServ understand that performance and reliability are paramount to your business. You need technical competence that drives your success. MAN PrimeServ's many decades of hands-on experience and its diverse portfolio provide this. With MAN PrimeServ as your partner you benefit from state-of-the-art technical and digital solutions that fit your individual situation. What's more, these benefits are brought directly to your business through a global network of local experts. Whatever the time and wherever you are in the world, you can count on MAN PrimeServ as a strong service solution provider for your needs.

To find out more about our technical competence, please visit:

www.man-es.com

Welcome to 2020 and the 'new look' for Maritime Reporter & Engineering News. The change in size to a more traditional magazine format is one that I have championed for several years. We produce five print titles and there is an efficiency in manufacture that comes with a uniform portfolio. While the tabloid size has been a signature of MR for generations, I'm not a stickler for doing things a certain way simply out of nostalgia. The world of information and the world of maritime are both undergoing transcendent, rapid and continuous change, and so too do we, both in print and online.

Courtesy of my position I have the opportunity to meet with C-Suite business leaders around the world on a regular basis. During our interviews, while getting a great story for our pages, I also like to gather insights on creating and sustaining a successful business.

Case in point is this month's feature focus on **Morgan Fanberg**, President of Glosten, starting on page 36. I met with Fanberg late last year when I was on a West Coast business trip and I landed in Seattle for a few days. Glosten is certainly well known within our walls, but in my book nothing substitutes for sitting down with an executive in their office to learn about them personally and profesionally from the best source available: their own words and mannerisms.

As it turns out, I knew Glosten, but I really didn't know Glosten. Yes, I knew of its founder, Larry Glosten, and some of its signature projects such as SBX, FLIP and it's portfolio of Research Vessels, but I didn't realize its breadth of work. And I really didn't know Morgan Fanberg. I won't blow the whole story here but Fanberg is a USMMA-graduate, a traditional 'steel-toe boots on the deck plate' sort of maritime guy that values a solid engineered solution, but at the same time an innovative leader with an eye always on the future. He, like the company he leads, is all about thinking outside of the box and challenging established norms when and where appropriate.

I think he said it best when talk turned to the the traditional nature of maritime, particulalrly as it navigates a multitude of rapid fire technological and regulatory changes.

"Doing business the same way over and over will not last; we know technology will advance our industry, and if we just sit back and don't take an active role, we're going to lose. There is no room for complacency."

With that I offer you the January 2020 edition. There are several modifications within, but what remains is a steadfast mission to deliver to you quality, insightful information 24/7/365.

Gregory R. Trauthwein
Editor & Associate Publisher
trauthwein@marinelink.com

Cover Image:
© Zhoushan IMC-YY Shipyard & Engineering Co., Ltd.

MARITIME REPORTER AND ENGINEERING NEWS
MARINELINK.COM

HQ
118 E. 25th St., 2nd Floor
New York, NY 10010 USA
T +1 212 477 6700; F +1 212 254 6271

FL Office
215 NW 3rd St
Boynton Beach, FL 33435-4009
T +1 561 732 4368; F +1 561 732 6984

Publisher
John C. O'Malley
jomalley@marinelink.com

Associate Publisher/Editorial Director
Greg Trauthwein
trauthwein@marinelink.com

Vice President, Sales
Rob Howard
howard@marinelink.com

Editorial Contributors
Tom Mulligan - UK
Claudio Paschoa - Brazil
William Stoichevski - Scandinavia

Production
Irina Vasilets
vasilets@marinelink.com

Nicole Ventimiglia
nicole@marinelink.com

Corporate Staff
Mark O'Malley, Marketing Manager
Esther Rothenberger, Accounting

Information Technology
Vladimir Bibik

Web Contributor
Michelle Howard; mhoward@marinelink.com

Subscriptions
Kathleen Hickey k.hickey@marinelink.com

Sales
Lucia Annunziata
annunziata@marinelink.com

Terry Breese
breese@marinelink.com; +1 561 732 1185

John Cagni
cagni@marinelink.com; +1 631-472-2715

John Constantino
constantino@marinelink.com; +1 561-732-0312

Frank Covella
covella@marinelink.com; +1 561 732 1659

Mike Kozlowski
kozlowski@marinelink.com; +1 561 733 2477

International Sales
Scandinavia & Germany
Roland Persson
Orn Marketing AB, Box 184 , S-271 24
Ystad, Sweden
roland@orn.nu; +46 411-184 00

Germany
Brenda Homewood
brenda@offshore-engineer.com;
+44 1622 297123

United Kingdom
Paul Barrett
Hallmark House, 25 Downham Road, Ramsden
Health, Essex CM11 1PU UK
ieaco@aol.com; +44 7778 357722

Classified Sales +1 212 477 6700

Founder:
John J. O'Malley [1905 - 1980]
Charles P. O'Malley [1928 - 2000]
John E. O'Malley [1930 - 2019]

SIMPLE ISN'T ALWAYS EASY...

BUT FURUNO RADARS ARE A SIMPLE CHOICE

Your objective is simple…Deliver your vessel and its contents safely and on time. While it might sound simple, we know it's not easy!

Whether you're navigating the open ocean, busy harbors, or through congested inland waterways, being aware of your surroundings is paramount. Your number one line of defense is a Radar you can rely on, from a company you can depend on. Furuno's award winning Radar technology is built to perform and withstand the harshest environments, keeping you, your crew and your precious cargo safe. With unique application features like ACE (Automatic Clutter Elimination), Target Analyzer, and Fast Target Tracking, Furuno Radars will help make that simple objective easier to achieve.

UHD
Ultra High Definition Radar

FAR22x8BB Series

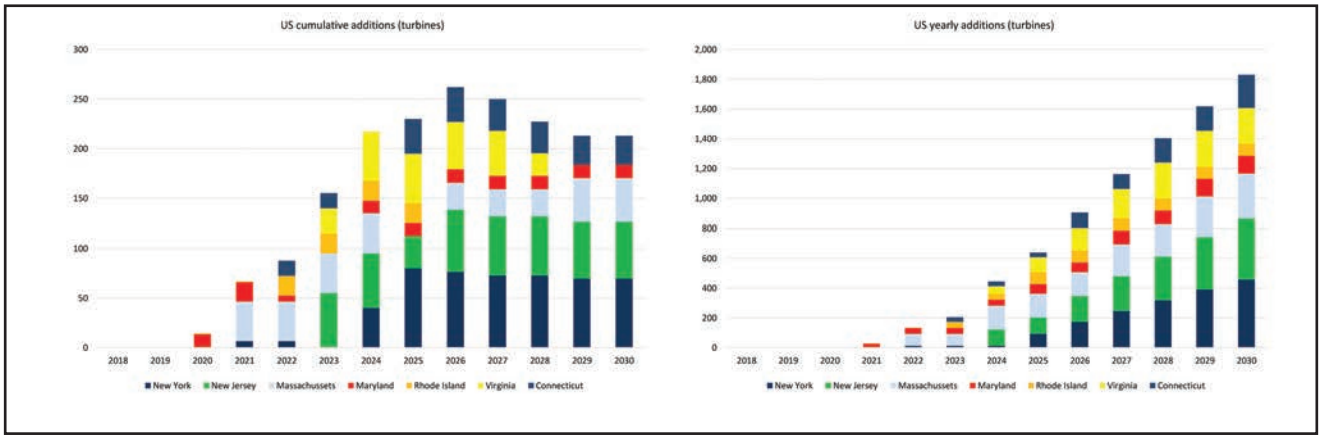
FR19x8VBB Series

FAR15x8 Series

FURUNO
www.furunousa.com

Offshore Wind to Power U.S. Maritime Growth

The U.S. offshore wind promise is set to become reality, with strong federal and state support. While there are still hurdles ahead, below is a state-by-state turbine estimates from **Clarksons Platou Offshore** through 2030. (See related story on page 14).

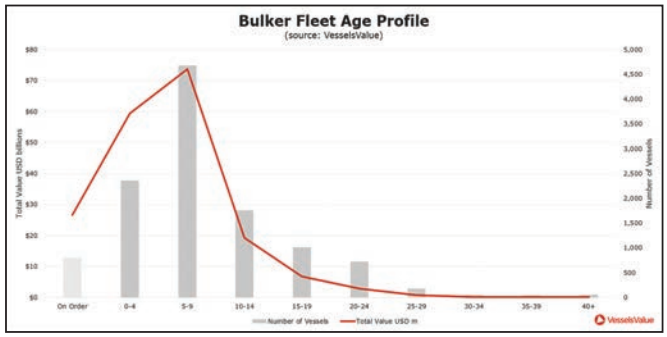


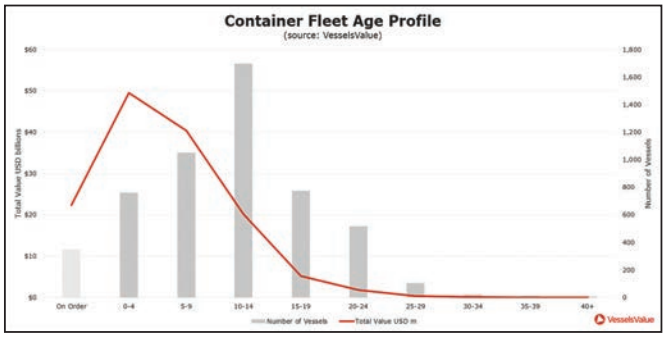
Source: Clarksons Platou Offshore

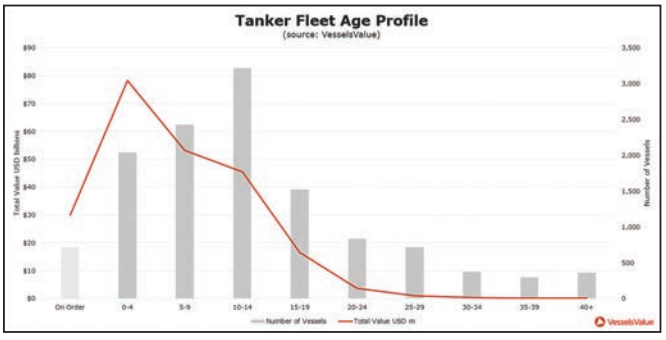
The Golden Oldies

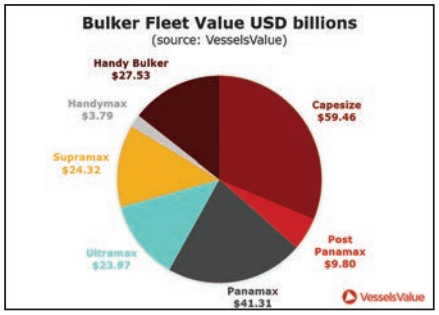
VesselsValue

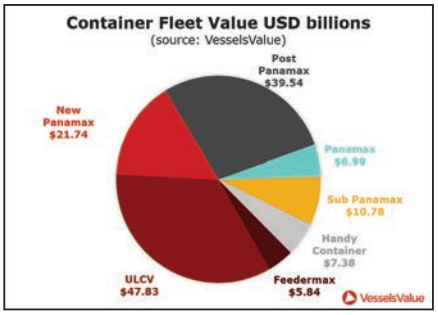
The age of the fleet is obviously of interest to all in the shipbuilding and repair communities, and there is nothing like a bar and line chart from our friends at **Vessels Value** to give 'the big picture'. A tech rapidly evolves the the expected lifespan of ships continues to drop, cast an eye on the container and tanker fleets

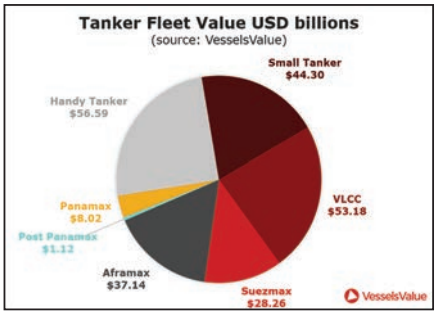













p. 14

"These are installation vessels and SOVs that require **an investment of $100m to $300m** (each), an investment that is very hard to make on spec."
Matt Tremblay
SVP, Global Offshore, ABS


p. 36

"I would love to design an all nuclear ship ... if you're seriously looking for a zero-emission technology to power ocean-going vessels, nuclear should be an option."
Morgan Fanberg, President, Glosten


p. 54

"The trouble will come when the products are mixed and some blends prove incompatible with one another: when a more aromatic 0.5% product comes into contact with a more paraffinic blend, the products are likely to separate and form sludge, blocking filters."
Jack Jordan, S&P Global Platts
p. 16

"SMM is the United Nations of shipbuilding."
Claus "Uli" Selbach, Business Unit Director, SMM

Tip #8

The Lecture is Dead!
(But Long Live the Classroom)

The traditional lecture, for millennia, has been the go-to method for teaching. Yet it is actually a terribly inefficient and ineffective way of teaching. It tends to leave many students feeling confused, bored or generally dissatisfied because it attempts to provide a "one size fits all" solution in an "every learner is different" world. Fortunately, the world is catching on. The broad trend in maritime training is that operators and maritime institutions are moving away from lectures. So, is the lecture dead?

Yes, the lecture is dead – or at least dying. However, that does not mean that the classroom experience is dead. Far from it. The classroom experience, where learners come together in the presence of an expert, is still tremendously valuable. The ability to learn from one another – peers and experts – can be supported and made more effective by technologies such as e-learning, but cannot be replaced by e-learning. This leaves us with the question of how to structure our learning gatherings to create the best possible learning outcomes. In other words, what is the new, best, classroom experience? The answer is a technique called the "flipped classroom".

To understand the flipped classroom, first consider the traditional classroom experience. There, as we all know, a trainer typically stands at the front of the room and lectures. This is largely a one-way experience where information is (hopefully) transferred from trainer to trainee. Another part of this traditional learning experience is what happens outside the classroom. Here, the trainer may assign "homework" or other practice for the trainees to do on their own time.

In the flipped classroom, the in-class experience and the outside-class experiences are "flipped". That is, instead of lectures happening during class time, trainees are asked to watch videos of lectures or are assigned some e-learning module outside the classroom – before class. Then, when the trainees arrive in the classroom, instead of being lectured to, trainees are able to ask questions, participate in group discussions, and practice or solve problems as teams or individuals in the presence of (and with the guidance of) the expert trainer. This allows them to reinforce the knowledge they gained and put it into practice. Simple, but very different. There are clear advantages to this model. First, one-way lecture experiences do not require a "live" lecturer. Video lectures or e-learning can be used as a substitute for the lecture experience. In fact, these technologies, done in the learner's own time before the classroom experience, have the advantage of allowing the learner to tailor their experience to their own level of background knowledge and learning abilities. This is not true for lectures.

Once the pre-learning portion of the flipped classroom is done, the trainer is freed from lectures and his or her time can now be used doing much more "high value" and more educationally effective interactive work with the trainees (the "in-class" part of the flipped classroom). They can work on problem sets, engage in practice, perform demonstrations or hold discussions, all of which greatly benefit from the presence and guidance of the trainer. In some sense, this is what an experienced trainer is meant to do: observe trainees, give practical guidance, correct performance and help trainees gain skills. The knowledge transfer part (the lecture) has many viable and more effective alternatives. Why not use them and put the trainer to work doing real training? The flipped classroom movement has been growing exponentially – by approximately 60% yearly. Research shows that trainees prefer it and that training outcomes can be improved. So as the industry continues its move away from lectures, the flipped classroom may be just the place to move toward.

Until next time, sail safely, and all the best for a healthy, happy and safe new decade.

The Author

Goldberg

Murray Goldberg is CEO of Marine Learning Systems which provides software and services to optimize knowledge, skills and behavior in maritime operators. Contact Murray @ Murray@MarineLS.com

Opinion

Offshore Wind

Finance Blows into O&G

The years-old trend that has seen offshore suppliers vie for work in wind by leveraging their offshore oil and gas credentials and development finance is being countered these days by wind players in search of oil and gas jobs, judging by some recent fleet owner moves.

Dutch offshore fleet owner, Jan De Nul, was busy recently-promoting its new-order, non-jack-up, heavy-lift crane vessel, Les Alizés, a mighty ship ostensibly aimed specifically at wind park builds but open to oil and gas work — including in remote areas.

The offshore construction vessel is "specifically designed for loading, transporting, lifting and installing offshore wind turbine foundations", but its 5,000-ton crane; 61,000 t deck-load limit and 9,300 square meters of deck space make it well-suited for oil and gas work in frontier areas.

"With these characteristics, Les Alizés can easily transport the heavier future (turbine) foundations, several in one trip, to the offshore installation site," the company said. Les Alizés — a floating installation vessel — does not have four legs to lift itself up out of the water, jack-up style, so it can work deepwater free, too, of seabed considerations.

"Les Alizés will mainly be used for the construction of offshore wind farms, but with her impressive crane she is also extremely suitable for decommissioning offshore oil and gas

Jan de Nul

platforms," the company asserts.

Her jack-up "sister ship", Voltaire — ordered in 2019 — is also available for both wind and petro-work, as it, too, wields a massive crane and is being marketed for offshore heavy lifts and decommissioning.

So, just as it was for deepwater oil and gas innovations now helping wind, "green-only" lending is available for new wind workhorses able to ply offshore oil and gas. "The fact that both new vessels will mainly work for the renewable energy sector, and are both equipped with an advanced exhaust gas treatment system, ensures that these investments were eligible for a green loan," a statement from the company said, while Group offshore director, Philippe Hutse, affirmed that, "We have financed this investment by means of a green loan thanks to the (exhaust filter system) on board the vessel."

Unlike some rig newbuilds these days, the project easily got a consortium of five banks aboard the heavy lift vessel new-build: KBC Bank, BNP Paribas Fortis, ING Luxembourg, Rabobank and Belfius Bank. For KBC, "it is the first syndicated green loan within the shipping sector."

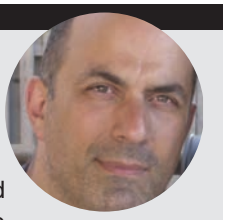
It's all reminiscent of Norwegian rig-builders and the days (20 years ago) when bottomless Norwegian finance gave suppliers here a lift in the Brazilian deepwater market. Now, green loans may help green vessels into new markets.

Though legless, the Les Alizes might have a leg up in the burgeoning Asian offshore wind segment, and perhaps its offshore oil and gas segment, too. The supersized vessel will deliver in 2022 from CMHI Haimen shipyard in Nantong City, China.

"We highlight China and the United Kingdom as global wind- power outperformers, with (China) set to register by far the fastest capacity expansion globally," an article by Fitch Solutions stated in November. Mexico, however, is Fitch's "wind power market to watch" over 2020 for its highly competitive auctions.

So, add Mexican wind to the list of cross-over markets for offshore fleet owners.

The Author



Stoichevski

William Stoichevski is MR's correspondent in Norway. He has written thousands of offshore-focused reports from his North Sea vantage point. He started writing for *Maritime Reporter & Engineering News* in 2014, and *Offshore Engineer* in 2018.

Q&A: Matt Tremblay, ABS

The Domino Effect

The next hot growth market is offshore wind; Is the U.S. marine industry ready to meet demand?

The American Bureau of Shipping convened a conference to discuss the pace and direction of the U.S. offshore wind market, including challenges and opportunities for maritime, offshore, subsea and logistics markets. ***Matt Tremblay,*** *SVP, Global Offshore, ABS, moderated the event and shares some of its findings here.*

by Greg Trauthwein

Where do you see opportunities today for growth in the U.S. offshore wind sector?

There's a lot of opportunities and growth that we're going to experience over the next five to 10 years. The question isn't so much 'how much growth,' rather how fast is that growth going to happen and how much capacity is there available on the design side, the construction side and the operation side of this business within the U.S. to support that growth?

What do you see today as the main challenges to get this market up to speed and scale?

The biggest challenge around the industry is the investment decisions around the vessels that are going to be supporting the installation and operations of offshore wind assets in the United States. These are installation vessels and SOVs that require an investment of $100m to $300m, an investment that is very hard to make on spec. You don't want to take a lot of risk in an emerging market with investment numbers that high. Having a contract that's going to support that investment to get that that investment from the banks, the financial support a project like this needs, is difficult when we're still in the infancy stages. Getting those first few contracts going, I think, is going to be one of the biggest hurdle for us to overcome to start seeing the exponential growth in the market.

With many OSVs sitting idle, do you see a possibility for conversions, or is this mostly a newbuild market?

Looking at the needs of the wind farm installation and support vessels, like the vessels built and designed in Europe, while we would like to see new opportunities for greater utilization of OSVs that have been somewhat stranded for the last few years, it is likely that most of these (offshore wind) vessels are going to have to be specifically designed, new built vessels to support the unique technical aspects and functions.

How does the new tech sweeping through the industry today play into the growth in the offshore wind sector?

Now this is a place where we are able to take advantage of the things that we're learning and in the offshore sector, specifically the OSV market, and apply a lot of that existing or newly emerging technology to the vessels that are going to be operating in offshore wind. One example is hybrid power systems, as we have seen a lot of success in the OSV market over the last few years with the installation of battery and hybrid power systems to increase the efficiency of vessels operating in the Gulf of Mexico and around the world. Also, the application of new digital technologies create opportunities to use tools like digital twin for asset integrity management, as well to support other operating characteristics as far as vessel optimization. I think the possibilities that we see starting to come out of the offshore industry on the MODUs, on the FPSOs, even on the OSVs; there are a lot of those similar types of technologies that we could apply to these same vessels to take a marginally smaller CAPEX and result in a pretty good OPEX return over the next 20 years of the vessel's life.

What are some of the main questions you're receiving from owners interested in this offshore wind market?

Class has become a resource of technical expertise and advisory services around OPEX optimization, around design

"These are installation vessels and SOVs that require an investment of $100m to $300m (each), an investment that is very hard to make on spec."

Matt Tremblay
SVP, Global Offshore, ABS

optimization and around risk management. A lot of the questions that we're getting in that area from the wind market are tied to many of those similar things that we work with all the maritime and offshore industry. Areas such as design optimization opportunities within the drivetrain in the power system, to hull design optimization, to the conceptual approval of new technologies as they're utilized either because they've been invented or because they're being moved from one industry into maritime. For example, we have crane technologies, we have walk to work gangways, we have different digital tools that are now being installed on board assets that they really haven't had a lot of experience (on these new technologies) prior to the last 10 years. Class is being relied upon to identify the risks related to those new technologies, to ensure we're meeting the mission of classification and helping to keep these assets safe, these operators safe, these workers safe, as well as protecting the environment.

As a ship owner interested in the offshore wind market, what should I be doing, today, to prepare?

First it is preparing yourself to know what's different in operating in this this Outer Continental Shelf (OCS) environment. Second, start having conversations early with regulators, class, the Coast Guard and flag to make sure that you have a true understanding of what the regulatory challenges are, and how they may be different. You should start to work out what your own business risk profile is in this emerging market, understanding the risks in this industry versus, for example, the OSV or crew boat markets.

IMO2020

Low Sulfur Fuels

Is Everyone Ready?

Are the world's ships' engines ready for IMO compliant very low sulfur fuel? That's a wide open question as ship owners step to the end of the preparatory gang-plank on January 1, 2020 when 0.5% very low sulfur distillate fuels (VLSF) have to replace residual heavy fuel oil (HFO) containing 3.5% sulfur.

You might think that given the length of time to prepare – since 2008 – shipping experts and engineers would have a clearer picture about new fuels and marine engines and operability. That newer engines and systems, for example, might fare better than older equipment. Or that trial runs so far are proving optimistic – we can do this. Or even a rather grim warning: there aren't any general conclusions – every singular engine and vessel and captain and crew face their own at-sea tests.

"The risk of a spate of engine failures across the world in 2020 is currently keeping marine engineers awake at night."

That pessimistic assessment was written by Jack Jordan, a researcher with S&P Global Platts. Jordan's comments are part of an extensive S&P report titled "Into the storm: How will shipping cope with fuel bills from IMO 2020?," published last May. In December, Jordan's concerns continue.

Jordan explains that marine fuel will shift from a historically limited offering – heavy residual fuel oil (HFO), with relatively predictable and constant properties – to a much wider range of new and unfamiliar distillate products.

He explains further:

The new fuels "could range from a largely unaltered low sulfur straight run fuel oil to a primarily distillate-based product, or use other refinery streams including VGO and hydrocracker bottoms. The trouble will come when the products are mixed and some blends prove incompatible with one another: when a more aromatic 0.5% product comes into contact with a more paraffinic blend, the products are likely to separate and form sludge, blocking filters."

Concerns with endless singular challenges may prove correct. This scenario is described, in detail, in a document titled "The supply and use of 0.50%-sulfur marine fuel" published as a "Joint Industry Guidance" by a host of trade groups, including the African Refiners Association, International Bunker Industry Association and the International Council on Combustion Engines. And I probably should mention the International Union of Marine Insurance. (Better check your policy.)

"The trouble will come when the products are mixed and some blends prove incompatible with one another: when a more aromatic 0.5% product comes into contact with a more paraffinic blend, the products are likely to separate and form sludge, blocking filters."

Jack Jordan
S&P Global Platts

The guidance covers fuel issues from bunkering, segregation, testing and, finally, combustion. It's a sobering review. Every aspect of a ship's fuel operations needs a re-look as well as new and revised crew training. These will be specific challenges on each ship. Don't expect helpful, broad-brush advisories or sector-wide how-tos.

The guidance advises that even crews familiar with fuel switching, say, when entering a coastal ECA (emissions control area), will need additional training to work with the new fuels. The Guidance advises that a systems evaluation should cover "different grades of fuels, and the issues and dangers that are associated with switching over while maneuvering, during long idle times and while starting engines in port. Potential hazards include, but are not limited to, loss of propulsion, blackouts, failure to start the engine, and fire and explosions."

More pointedly, the guidance tells that "the issues related to

fuel switching are unique to each ship and its condition, so there are no universal procedures that can be applied to all, or even most ships." Nevertheless, there are some general principles and procedures for the majority of ships. Recommendations include:

- Establish procedures, plans and instructions for key shipboard operations concerning the safety of the personnel, ship and protection of the environment.
- Ships that have never changed over fuels need to practice in advance.
- New crew members need to be trained before working on fuel switching.
- Avoid situations that jeopardize the safety of the ship, e.g. distance to the coastline and the density of traffic.

The guidance includes a separate section for the use of 0.50% fuel in boilers used primarily on board LNG ships and medium pressure boilers on tankers used for cargo tank heating and cargo pump operations. The main boilers onboard LNG ships were originally designed based on dual fuel firing with both HFO and heated LNG vapor. Again, an extensive list of cautionary advisories. The new, distillate fuels can impact or degrade boiler combustion systems. Equipment newly at risk includes:

- The size and specification of burner fuel supply pumps.
- Burner positioning.
- Guidance on purge duration.
- Combustion control settings and burner management systems including sequences for purging/relighting boiler flames.

The guidance was published in August 2019. As of this writing, crews had 18 days to study and practice. We'll quit early on New Year's Eve.

The Author

Ewing

Tom Ewing is a freelance writer specializing in energy and environmental issues. He started writing for *Maritime Reporter & Engineering News* in 2018.

Slow Down

Emission Reduction & Slow Steaming: The voluntary v. regulatory approach

Merchant ships traditionally operate in the open sea at or near full speed. This is hard on the engine, hard on the ship and hard on the crew. Slowing down reduces wear on the engine, improves fuel efficiency, reduces harmful air emissions and improves safety by providing the bridge personnel additional time to evaluate developing situations. Some marine engines, though, are designed to operate at near full load. Thus, for these engines, slow steaming creates its own set of problems – not insurmountable, but problems nonetheless.

It is posited, though, that each ship has its own sweet spot – the speed that is most efficient for the engine, the ship, the crew and the environment. Finding that sweet spot and utilizing it for open ocean voyages will save money for the owner and operator, reduce stress on the crew, improve safety, and minimize impacts on the environment.

Recent studies have examined the benefits of a 10-20% reduction in vessel speed. Benefits have been identified across the board, including greenhouse gas (GHG) emissions; emission of air pollutants such as Sox and NOx; black carbon emissions; generation of underwater noise; collisions with whales and other marine animals; and navigation safety.

There has been vocal disagreement regarding how such benefits should be obtained. Some groups urge the International Maritime Organization (IMO) to adopt mandatory standards that could be enforced by flag administrations, port states and coastal states. These groups note that modern technology, including satellite-based surveillance systems, can identify most vessels and monitor their speeds.

Groups at the other end of the spectrum argue that the maritime industry has made great strides toward minimizing its environmental footprint and that the last thing it needs now is yet another regulatory burden. Let the current efforts enter into full effect before consideration is given to another tranche of regulations, they contend.

In the middle of this argument are groups that have examined some of the technical issues involved in a potential regu-

latory regime. Speed through the water cannot be accurately checked, but is closely related to emissions. Speed over the ground can be checked, but is less closely related to emissions than speed through the water. Average speed can be measured, but is even less closely related to emissions. Limits on propulsion power can be accurately checked and are closely related to emissions.

For now, the IMO is leaning toward a goal-based approach, rather than proscriptive regulations. The approach under consideration would provide flexibility along with incentives for continued innovation for further reductions in air emissions. Possible technical approaches include setting new energy efficiency standards for existing ships and establishing power limitations for ships. Speed optimization, speed limits, and carbon intensity reduction targets are under consideration as possible technical approaches.

When bunker prices rose sharply in 2008, many in the marine sector adopted 'slow steaming' as a means to reduce expenses. Slow steaming was implemented voluntarily by the industry to address a recognized problem. There were no regulations, no monitoring and no reporting. The approach largely worked and remained in place until bunker prices moderated and the market adjusted.

It is suggested that a voluntary program be adopted again. The marine industry should be encouraged by the IMO, national governments, cargo interests, environmental advocacy groups and the public to engage in slow steaming, with all the benefits cited above. For cargo interests that demand speed of delivery, there should be surcharges in excess of the higher fuel costs so as to account for the environmental costs. These environmental costs could be somewhat analogous to a carbon tax. This would discourage, but not prohibit, ship owners and operators from acceding to demands from cargo interests for the higher speeds.

With minimal tweaking, the marketplace should be able to arrive at the desired solution with more efficiency than the IMO and national regulators could ever expect to achieve. If, and only if, a voluntary approach such as that suggested here fails, should mandatory requirements be taken under consideration.

The Author

Bryant

Dennis Bryant is with Bryant's Maritime Consulting, and a regular contributor to *Maritime Reporter & Engineering News.*

Marine Casualties

Alcohol is NOT the Probable Cause

First some disclosures. I have worked with the National Transportation Safety Board on a number of occasions. I consider it to be one of our national treasures similar to the USCG, the National Park Service, the National Science Foundation, NOAA and the National Weather Service. These organizations have real missions that function on science and engineering principles and personnel that is truly dedicated to doing the right thing for our nation and its citizens. If I were to criticize these organizations at all, I do it out of respect for the technical personnel in those organizations, who deserve open and unfettered technical discussions and, from my experience, readily engage in those discussions because they believe the same thing.

NTSB is tasked with investigating transportation accidents, and, specifically, is not tasked with assigning blame. Instead, it investigates accidents and identifies the probable cause(s). Periodically it evaluates the causes of the accidents they investigate, and provide a hit lists of causes that warrant further attention.

On October 23, 2019 NTSB issued a Marine Accident Brief (MAB-19/30) on an incident that occurred in Guam. I (or my company) had no involvement in that matter, but since it was a nice short report, I decided to read it. The incident in question was a passenger ship allision that resulted in damage to the vessel and to a US Navy berth, but, fortunately, not in any personal injuries. The investigation concluded that the probable cause of the incident was alcohol impairment of the master while he conned the vessel, resulting in an errant astern engine input.

Having read the report I do not think that alcohol impairment is the probable cause.

Figure 1, below, shows the sequence of events.

When reviewing this figure, at first glance, anybody may think that the probable cause of the incident is alcohol impairment by the master. However, in doing that, we may be jumping to a conclusion.

First of all, we need to consider the definition of probable cause. It turns out there is no definition, or rather, I have not been able to find NTSB's definition of probable cause. That is not as strange as it sounds, and is somewhat entangled in NTSB's mission. NTSB does not assign blame; it investigates. Furthermore, through years of operation, NTSB has

FIG 1: NIPPON MARU ALLISION, SEQUENCE OF EVENTS

- A passenger vessel is ready to depart.
- The vessel is manned by a Japanese crew.
- The third mate is in the wheelhouse, the other mates are on deck.
- The US Pilot boards the vessel.
- The Master is undoubtedly intoxicated, but may not be visibly so.
- The Master enters the wheelhouse.
- There is a short verbal exchange about the departure between the Pilot and the Master. There is no formal exchange or reporting procedure.
- The actual departure maneuver poses no special challenges.
- The vessel departs with the Master at the con.
- While departing the pilot provides orders, and the Master appears to respond but does not provide a verbal acknowledgement.
- Mid-way through the departure evolution the Pilot orders ahead, but the Master cons the vessel astern.
- This results in a rather lengthy interval where the Pilot is unsure the vessel ordered ahead or not. while the Third Mate knows the vessel is running astern but does not want to interfere with the Master.
- At one stage the vessel is going full astern.
- The Third Mate makes various attempts in Japanese to tell the Master that he has ordered astern and should be going ahead.
- By the time corrective action is being taken the vessel contacts the berth.

developed an informal list of accident causes, and for operational reasons, prefers picking a probable cause from that list. Alcohol impairment is a prominent member of that list, and, once NTSB completed its investigation, there was no doubt that the Master was impaired. As a matter of fact, the report provides an excellent discussion on alcohol impairment on pages 7 and 8.

However, a closer reading of the sequence of event should show that alcohol impairment is not a particularly useful conclusion to this investigation. Alcohol impairment in an industrial setting is often related to alcoholism (it could also be professional incompetence or dysfunctional corporate culture). Alcohol impairment is a physical reality that can throw a wrench in the works at inopportune moments in ship operations just like storms can cause a problem in ship operations. We don't like alcohol in a navigational setting, and we don't like storms at sea that much either, and we try to avoid both.

If I were to conclude that a storm was the cause of the El Faro sinking, I am sure there would be a collective "Duh" groan. Alcohol impairment is no different, and actually fuzzier, because we do not know if the Master would also have made the same mistake if he was sober. What we really need to figure out is how the system failed, and here it becomes more interesting.

By nature, we have to assume that a certain percentage of ship operating personnel have an alcohol problem, just like a certain number of voyages have storms. What we need to do is recognize when this becomes a problem and how to prevent it from impacting ship operations. The prevention is related to procedures and procedural failure will ask why a person with an alcohol problem can rise to become a ship master. What we also need to avoid is to miscast alcoholism as an easy probably cause. For example, when I worked on the Exxon Valdez (for plaintiffs, no less) it very quickly became clear that Capt. Hazelwood's drinking was highly unlikely to have been the probable cause of the incident. However, to this day, everybody talks about Tanqueray on the Rocks, and nobody talks about the wheelhouse screw-up on Capt. Hazelwood's clear and simple instruction, which really was the cause of the grounding.

So, if we study the sequence in figure 1 more closely, we can identify the lapses in the process shown in figure 2,

FIG 2: NIPPON MARU ALLISION, CAUSAL FACTORS

- The vessel operator did not determine they were employing a Master with a drinking problem.
- If the vessel operator or the vessel crew knew, they failed to take appropriate action. (Yes, he drinks, but, so far, it has been OK)
- Quite possibly, because the departure maneuver posed no special challenges, preparations were not considered to be vital. (Familiarity breeds contempt)
- The Pilot did not consider it necessary to perform a proper departure preparation with the Master, at which stage he may have noticed the Master's intoxication. (It is not the paperwork; it is the action taken to satisfy the paperwork)
- There probably is no formal process for Pilots and Junior Officers to deal with an intoxicated Master. (This is something you learn by exercise, and many years ago I was the "victim" of a drunk ship operator in an OPA 90 exercise)
- Lack of Standard English skills prevented the Third Mate from providing a warning of any sort to the Pilot. (We all have a duty to help everybody speak the same language)
- The Pilot did not insist on verbal order acknowledgements by the person manning the controls. (Why cut corners?)
- The Third Mate was not sufficiently comfortable to take forceful action when he became aware that the Master had ordered astern instead of ahead. (This is easier for some cultures than others)
- Radio communications took place in Japanese between the deck and the wheelhouse and in English between the tug and the Pilot. (The worst outcome for operational communications)
- The Pilot must have lost situational awareness. He was not primed (trained) for the crazy possibility that the Master could make a very serious mistake and therefore the Pilot reacted too late.

which, under optimal circumstances, would have prevented the incident.

And, yes, it is not alcoholism that drove this disaster bus, it was a sequence of operational screw-ups. There were a number of lapses by a large number of people which, if better executed, would have reduced the chance of the incident occurring. It is here where accident investigation becomes interesting, and where accidents can really be more likely prevented.

There are some practical takeaways from this incident. First, proper whistleblower mechanisms help in alerting management to serious flaws in their system. A word from a manager or a crew member would have prevented the vessel from being commanded by a master with an alcohol problem.

More interestingly, in reading the report, I have the feeling that the Pilot also learned an important lesson. When something does not look right it probably is wrong, and that demands immediate action. I like to say that the moment you are actually lost in the woods is not when you can no longer find your way home, but, rather, it is the moment you first realize you are not sure where you are going, and that is when you have to take corrective action. An ounce of prevention, prevents a ton of disaster.

Sea Scout Ship 228

For each column I write, MREN has agreed to make a small donation to an organization of my choice. For this column I nominate Sea Scout Ship 228 in Linden, NJ. **https://www.ship228.com/** Despite many publicized failures to take prompt action on preventative issues on the national level, Scouting on the local level, and especially traditionally co-ed Sea Scouting, teaches kids to not get lost in the woods or on the water.

The Author

van Hemmen

Rik van Hemmen is the President of Martin & Ottaway, a marine consulting firm that specializes in the resolution of technical, operational and financial issues in maritime.

Marine Casualties

Anatomy of the Investigation

Blank Rome's maritime attorneys have represented clients in some of the largest maritime casualties in the last 20 years, including the Staten Island Ferry allision with a maintenance pier in New York, the blow out and eventual loss of the Deepwater Horizon drilling rig in the Gulf of Mexico, the sinking of the El Faro during Hurricane Joaquin, and the collision between the Navy Destroyer USS John S. McCain and the tanker ALNIC MC in the Singapore Strait. These casualties have resulted in the catastrophic loss of life, significant personal injuries, damage to the environment and property damage.

Our experience investigating and providing legal representation for clients because of these casualties has shown that, despite decades of implementing international safety protocols, advancements in ship design, and an industry-wide focus and dedication to improved safety, marine casualties will continue to occur; maybe not as often, but they will happen. And following all the safety protocols put in place may not be enough to avoid a casualty. Simply put, large vessels transiting the world's oceans subjects them to influences beyond their control and creates the inherent risk of a casualty occurring.

MV Argo Merchant was an oil tanker that ran aground and sank southeast of Nantucket Island, Mass., on Dec. 15, 1976.

U.S. Coast Guard Archives

Obviously, the shipping industry's primary goal should always be to have zero lost days due to accidents. But, equally, the industry should also always be prepared to immediately respond to and investigate unfortunate events when they occur. In this regard, it is critical to understand the investigative process that occurs when a significant marine casualty occurs. First, it is important to note that although not required, it is not unusual for the National Transportation Safety Board (NTSB) and the United States Coast Guard (USCG) to coordinate, in part, their efforts to investigate and establish the root cause of a marine casualty. The process by which the NTSB and USCG investigate a casualty are similar in many ways, but different in some key areas. And recommendations made by the NTSB and/or the USCG, if any, following the conclusion of their respective investigations, differ in scope.

If you are an owner, operator or an entity with a role in the events that led to the casualty, you may be designated a party-in-interest following a marine casualty. An example of an entity that is not an owner or operator who may be designated a party-in-interest could include a port pilot or an equipment manufacturer. Whatever your role may be, it is important to understand the purpose and eventual outcome of both the NTSB's and USCG's investigations.

The NTSB

The NTSB's stated purpose can be found on its website:

"The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline."

Although the principal purpose of the NTSB is to investigate aviation accidents, it is also tasked with investigating significant marine accidents. The NTSB has five Board Members, each nominated by the President and confirmed by the Senate to serve five-year terms. A Member is designated by the President as Chairman and another as Vice Chairman for two-year terms. Notably, none of the current or recent Board Members have worked in the marine industry. However, the NTSB does have a designated marine department made up of numerous professional with significant marine experience. They include licensed Masters, Chief Engineers, Naval Architects, and other experts in various marine related fields of study.

Following notice of a major marine casualty, the NTSB's investigation team – called the "Go Team" – begins its investigation. Depending on the severity and or technical challenges relating to the marine casualty, the "Go Team" can be a small unit or a large unit comprised of personnel with a broad spectrum of technical expertise that is needed to solve complex transportation safety issues. The "Go Team" can also be comprised of three to four dozen specialists from the NTSB's headquarters in Washington, D.C. Team members are assigned on a rotational basis to respond as quickly as possible to the scene of the accident. The fact-finding mission of the investigation begins at the accident scene. The NTSB will inspect all vessels and equipment involved in the incident.

The NTSB may designate parties-in-interest following a marine casualty. The upside to the designation is it provides the party-in-interest access to information not provided to the public or others involved in the incident. The downside, however, is the NTSB may restrict a party-in-interest from independently investigating the incident, including interviewing employees and witnesses.

The NTSB's investigation will likely include a robust review of the Safety Management System and the safety culture of all entities involved in the casualty. The NTSB may serve comprehensive document requests and interview crew members and employees of companies involved in the incident. A corporate representative is permitted to attend crew and employee interviews, but witnesses are not entitled to have a lawyer present. With the consent of the NTSB, a company's general counsel may attend the interview.

Following the completion of its investigation, the NTSB will issue a preliminary report. The NTSB will request input from the parties-in-interest and are receptive to their input because the goal of the NTSB is not to find fault but to determine the probable cause of an accident and issue safety recommendations aimed at preventing future accidents. In our experience, the NTSB has accepted changes to its preliminary report when the recommendations are based on credible facts and well-founded expert opinion. Thus, it is vital to have respected experts available to review the NTSB's preliminary report.

Once the investigation is complete and the NTSB reviews the input from the parties-in-interest, the NTSB will issue its final report. It is important to note that in the final report, which is made public on their website, the NTSB will not specifically attribute fault to any individual or entity. Nor will the NTSB recommend a penalty, punishment or sanction. The NTSB report, which is not admissible in a United States court proceeding, will provide only a factual background and state what the NTSB thinks is the probable cause of the incident. That said, the findings of the NTSB will obviously give a roadmap for other governmental agencies and/or litigants to independently build a legal case of who is at fault and why, which is why a party-in-interest's participation in the investigation and comments on the preliminary report are critical.

Finally, following the issuance of its final report, the NTSB will generally hold a public hearing at which time the findings of the report will be announced publicly.

The USCG

As the primary agency responsible for marine safety, the USCG is tasked with investigating marine casualties. The investigations range from obtaining and analyzing evidence for minor incidents to establishing a marine board of investigation to investigate incidents involving serious personal injury, death, and significant environmental and property damage. The purpose of every USCG investigation is to analyze the facts surrounding the casualty, determine the cause(s) of the casualty, and, if necessary, initiate corrective actions.

Significant investigations are spearheaded by a USCG Lead Investigating Officer who will have substantial experience investigating marine casualties. He will be supported by USCG and civilian casualty investigators, technical experts, legal advisors, and other support personnel from within the USCG. Significant investigations also often include cooperation between the USCG and NTSB, which increases the compliment of skills investigating the casualty. The NTSB and USCG will, however, issue separate reports.

The primary mission of the USCG when investigating marine casualties is to determine the root cause(s) and to use the information gathered during the investigative process to consider promulgating new rules or advisories to prevent further casualties. Additionally, the USCG, unlike the NTSB, will determine if there were acts of negligence, misconduct or other violations of federal law that caused the casualty. And, if so, the USCG may refer the matter to the United States Department of Justice for a further review to determine whether a crime was committed.

Like the NTSB, if a major marine casualty occurs, the USCG also will designate parties-in-interest, who are typically individuals or entities that have a direct interest in the outcome of the investigation. In a joint investigation, the USCG and NTSB will agree on who to designate as a party-in-interest. Unlike a NTSB investigation, a party-in-interest may be represented by counsel at all stages of a USCG investigation, including when giving testimony. From the USCG's perspective, the primary role of a party-in-interest is to help the USCG gather the facts which led to the casualty. The USCG will request documents, access to computers and testimony from witnesses. If an entity or witness is not voluntarily cooperating, the USCG has the authority to issue administrative

subpoenas to require the production of documents and information and to summon witnesses for testimony. Testimony at a formal hearing is usually open to the public unless it involves classified materials or affects national security.

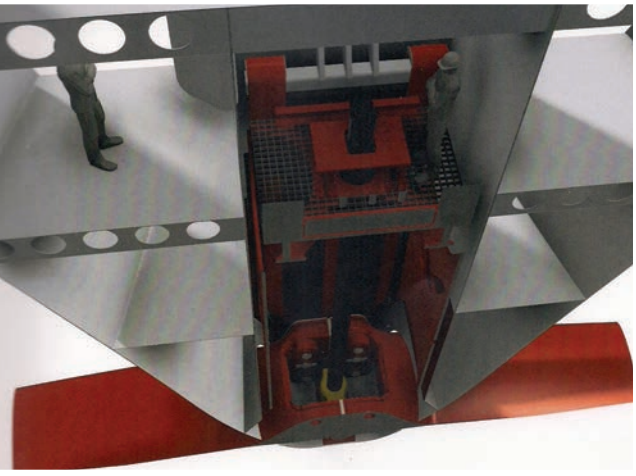
After gathering the relevant documents and witness testimony, the USCG will analyze all of the evidence to determine, as best as possible, the cause of the accident. At the completion of the investigation, a Report of Investigation will be prepared by the Lead Investigating Officer and his or her team. The report will contain findings of fact, causal analysis, conclusions, and safety recommendations. Unlike in the NTSB investigation, a party-in-interest is not typically given an opportunity to comment on the USCG's report until after it is finalized and submitted to the Commandant of the USCG for review and approval. The final report will be released to the public once approved by the Commandant.

In sum, while the NTSB and USCG strive for the same goal of determining the cause(s) of a marine casualty in order to identify safety recommendations that will hopefully prevent similar events in the future, the NTSB and USCG's investigative process and the scope and ultimate results of their reports differ. Thus, it is important for a party-in-interest to understand the differences between the two, so it can safely navigate the investigative process should it ever find itself in the unfortunate position of participating in one.

The Authors

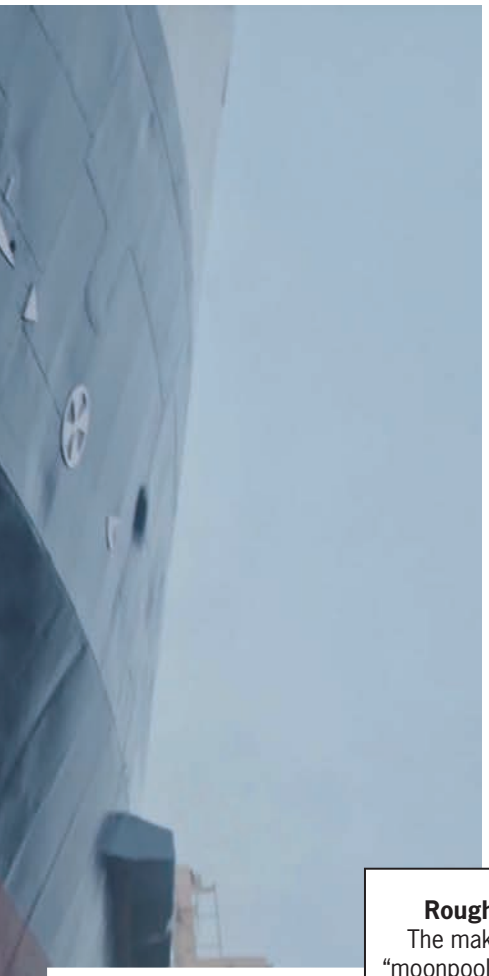
Bennett & Wilgus

William Bennett is a Partner in Blank Rome LLP's New York office. He is Co-Practice Group Leader of the Maritime and International Trade Group and a graduate of SUNY Maritime. Prior to his legal career, he sailed as a licensed officer aboard various types of vessels. **Lauren Wilgus** is Of Counsel in Blank Rome LLP's New York office. Wilgus concentrates her practice in the areas of international and maritime litigation and dispute resolution.



How to FOIL

Well laid plans

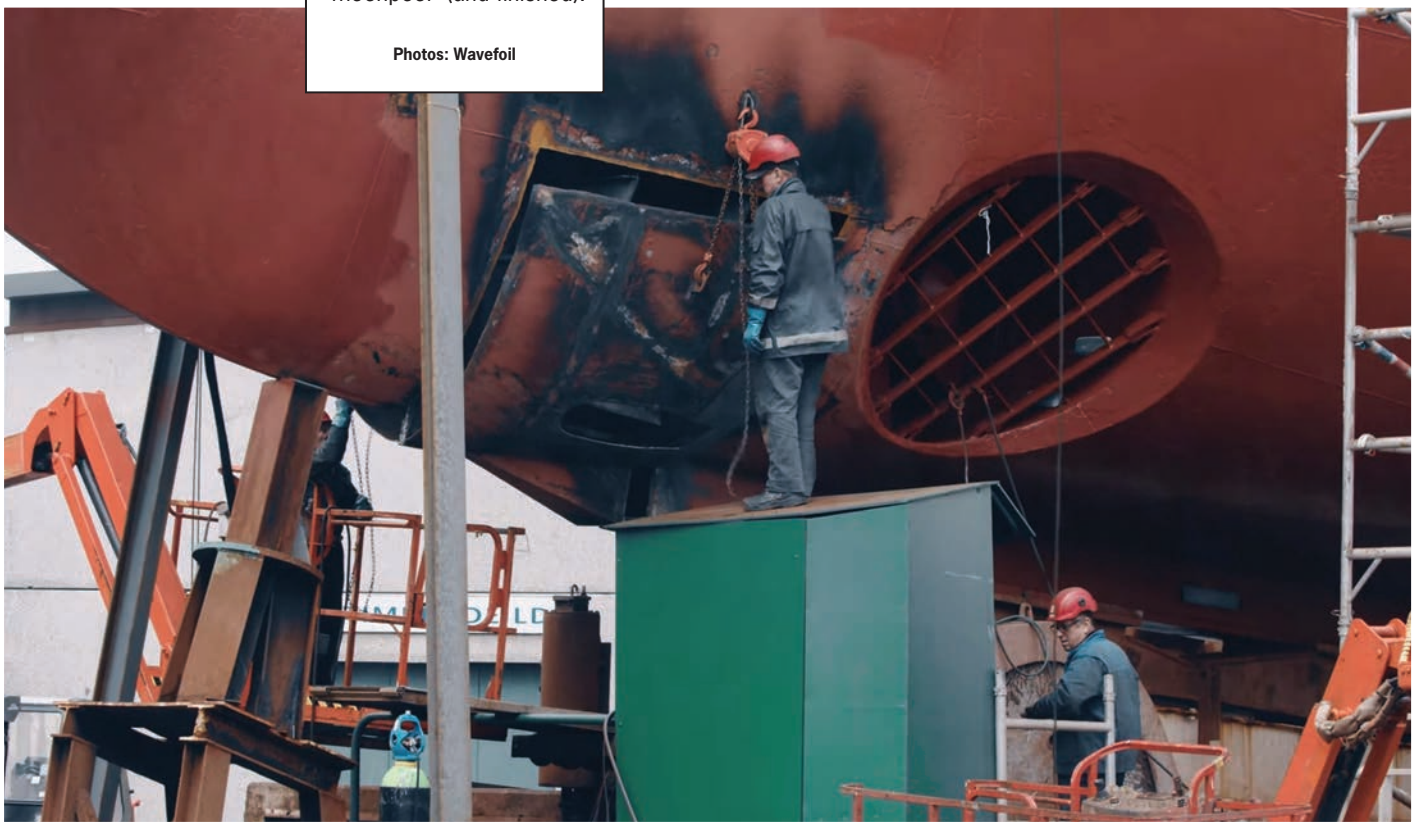


It was Canadian whalers, the Norwegians tell us, *who first noticed that a dead whale does not bob in the waves. The carcass didn't pitch or roll, either, and it was somehow "self-propelled" — its fins giving it forward motion and acting as stabilizers, or foils. The story still inspires Trondheim company Wavefoil, maker of scalable, retractable foils that offer ship owners and designers fuel savings and passenger comfort. In Norway, high-speed ferries, cruise ships and fishing vessels are the first customers for retrofits and newbuilds.*

By William Stoichevski

Rough Opening: The making of a foil's "moonpool" (and finished).

Photos: Wavefoil



You have to stand on an exposed seawall protecting a tiny Norwegian village's little marina to realize how "the basics" must be in place before you can mimic the security of town life.

The yellow ambulance vessel bobbing up and down alongside two camouflaged patrol boats is not, we tell ourselves, where you want to end up should you need emergency hospital transport through major sea states. Yet, when people get hurt living among these parts, they prefer boat ambulance over those that come by air or road. Travel times are three-times shorter.

Fast-forward 10 years, and the 3D impression of another ambulance launch catches our eye at Nor-Shipping in southern Norway. "Can I help you," asks Wavefoil sales engineer, Michael Paulsen. We ask about the yellow ambulance catamaran at his stand, and he tells us it's the future property of Loppa Legeskyss, a company that'll operate an ambulance service in northern Norway's remote Finnmark county. A high-speed catamaran, it's a $22 million project that'll cost $1 million a year to operate. The winning tender shows how catamarans sporting a Wavefoil stabilizer can be competitive on cost and comfort.

"The tender company won that job due to the Wavefoil. It offered the best combination of speed and comfort," says Paulsen. Indeed, the ambulance operator offered to shorten by an hour the up-to three-hour journey to Hammerfest hospital. It'll do that by travelling 10 knots faster for the same amount of comfort as a vessel unequipped without the Wavefoil. The installation aboard an Alusafe CAT 21 designed by Lindstoel Skip in southern Norway is scheduled for June 2020 at Maritime Partner in Aalesund. "The (ambulance boat) has been evaluated based on hull strength, manouverability, stability together with the ability to keep a high service speed in bad weather," Hammerfest Hospital said of the order. The tender revealed a demand that vessels be comfortable travelling 254 km in rough seas on trips that could take 1.5 hours (vs. 4 by road ambulance). The tender contract confirms the "retractable bow wings" tipped the scales of safey and confort in Lindstol's favor. The document also confirms Wavefoil's designs are backed up by the "stately" Norwegian Research Council, export enabling agency Innovasjon Norge and university spin-off entity, NTNU Discovery. The 22 m boat's Volvo Penta IPS 1050 will help it do 32 knots carrying 12 passengers, plus two stretcher holders. Passenger access appears to be from three decks via stretcher davits; floating dock or high pier, with ramps between deck.

Stable Ro-Pax

After that conference encounter with Paulsen, we meet him again on an October 2019 fact-finding trip in Trondheim. He seems a little more stressed this time but in good spirits.

Then in November we learn why: Wavefoil was having one of those critical business months the founders of start-ups talk about. We learn than a pilot project with Faroese ferry operator SSL has been a major success both in terms of business and in obtaining performance numbers for pre- and post-installations of the Wavefoil stabilizers. Suddenly for Paulsen, it seems they're on the path to becoming a go-to company for retrofit and newbuild foils. "We'll post something on this. We have the fuel consumption for that ferry for the last three years. We have November versus the average time, and November with foils produced a 15% reduction," he says. As with all foils, the pitch and roll improved, but most importantly, the 45-meter ferry has been used "all the time" — de-

Push Button Deployment
The deployed Wavefoil wings aboard the Faroese Ro-Pax ferry, Teistin.
Photos: Handout

ploying its foils several times a day in rough, open seas. After its Wavefoil retrofit, it continues to ply a 45-minute crossing as workhorse for the tiny island nation. "The captain had stars in his eyes, so to speak, at the ease of maintenance (and the retrofit). That's because all moving parts are at the top of the installation," Paulsen says, adding, "You can easily lift it out of the vessel, regardless of size, for maintenance. What kind of maintenance? (On a larger vessel), the moonpool. We call it a moonpool. Most agree it is, but for some reason, some disagree. We just mount the module in the moonpool. It's structurally part of the hull."

Forged from Trondheim's NTNU university spinoff community in 2016, Wavefoil is starting to make waves. Apart from the Faroese ferry, The Teistin, and the ambulance vessel, Ocean Loppa, they're installed aboard the 130-meter, electric, whale-watching, cruise catamaran, Brim Explorer (by Naval Dyanmics), and a sister ship is due to be delivered for Spitzbergen whale-watching in April 2020. The ambulance is due out in August 2020 after some delay related to public hospital tenders. For all these vessels — catamaran and monohulled — pitch reduction is said to be as much as 30 percent with fuel savings of between five and 15 percent, on average.

Large newbuild

As far as references go, the Faroe Islands RoPax was the first test of a platform installed module-by-module over about seven days via a custom-made "moonpool".

Wavefoil has also secured orders that'll put stabilizers aboard all four coastal steamers of the new liner, Havila Kystruten. The 130 m Kystruten vessels are expected to save $330,000 a year on fuel for having the retractable Wavefoil fins installed. The operator will, Paulsen says, spare the environment about 2,000 tons of carbon-dioxide emissions a year. For these larger vessels, payback comes in about 2.5 years for foils of composite, flexible material. Smaller orders are of steel construction.

Paulsen says vessel owners are well-versed on performance trade-offs. "They have designed and planned it and removed the bow thruster (and bulbous bow) for this," he says, adding that a large unit can weigh about 60 tons while still being out of the way and easy to install. For those hoping to retrofit their way to fuel efficiency and comfort, he says it's all there in black and white. "Retrofits — we weld a box into the hull and lower the foil into it. There's a mounting system. You don't need any new documentation, it's covered by DNV GL. We don't need it because of the way it's isolated (in a vessel's bulkhead recesses)."

Module masters

More retrofits of newbuilds incorporating Wavefoil stabilizers are in the cards. The ambulance launch, RoPax ferry and cruise ship show the units are scalable. Already, Rolls-Royce is understood to be drawing up a fishing vessel sporting a Wavefoil. Fishing boat captains, like the captain of the Faroese RoPax, ought to be impressed by the foil's ability to retract "without the captain knowing it". It's push-button. On Teistin, the captain was understood to have asked, "What are they (the assembly crew) doing," as the install seemed so perplexingly straightforward. The captain of the Brim Explorer and the ambulance vessel will be next in line to deliver comment.

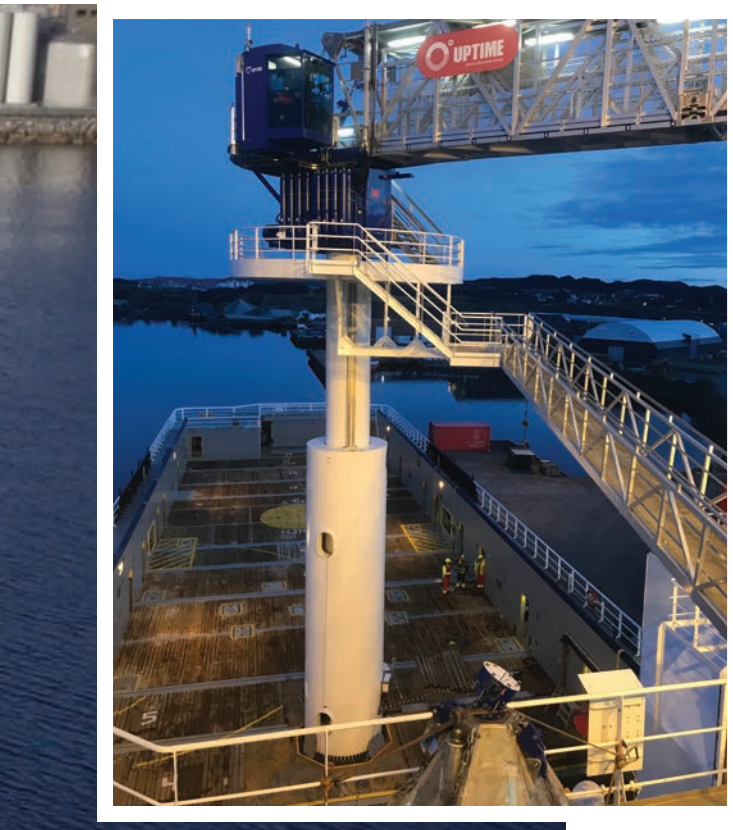
Paulsen says Wavefoil expects to sell "four or five modules" in 2020 in three different sizes — ferry weight 6.3 t for monohulls of 30 m to 50 m — and two others: the catamaran version (as on the electric cruise catamaran) and the ambulance type, which is a smaller, custom module of 432 kilograms.

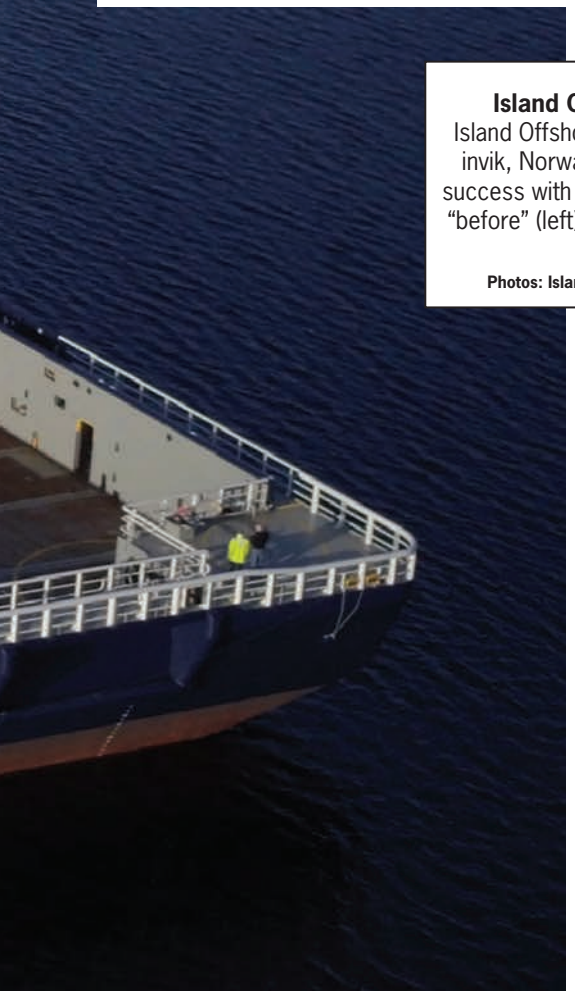
The only thing preventing more sales, Paulsen says, is the company's relative obscurity in the market. "The only obstacle is that we're quite new. But, we're sort of the first to install on a ferry. That was the biggest thing, getting someone to try it out first. It's (still) a conservative business."

Fit for Refit?

While it is generally agreed that the nascent offshore wind energy market in the U.S. will be a newbuild market, there is a repair and conversion possibility for some stacked OSVs.

By Barry Parker





Island Clipper: Island Offshore of Ulsteinvik, Norway, has had success with conversions. "before" (left) and "after".

Photos: Island Offshore

"As owners we always look for opportunities to increase the attractiveness of our vessels. In this context, modern PSVs can be converted and utilized for new operations at a competitive cost compared to new buildings."

Tommy Walaunet,
Managing Director,
Island Offshore

Though estimates on the pace of the offshore wind energy market in the U.S. vary widely, the direction is clear: offshore wind will be a huge marketplace for construction and support vessels to be deployed in U.S. waters over the next decade. The starting point for estimated vessel demand is the raft of projects along the U.S. East Coast, and to a lesser extent, in the Pacific waters, now in the pipeline. Though offshore wind presently accounts for a paltry 30 megawatts (MW) of actual power production (five turbines of 6 MW each off Block Island, RI), the Business Network for Offshore Wind estimates the size of that U.S. pipeline at somewhere around 8.5 gigawatts (GW) based on announced projects likely to come online through the mid 2020s. An estimate by DNV-GL suggested that in excess of 9 GW could be operating by 2027. Extrapolating further into the future, Tim Axxelson, Project Director at MHI Vestas, a developer of offshore wind projects, provided an estimate of 26 GW of offshore wind capacity online in U.S. waters 15 years from now.

These power production estimates imply a certain number of energy producing turbines needing to be constructed and serviced. Turbine capacities are now creeping toward 12 MW each, and the size is expected to rise further in coming years. A fairly rudimentary back of the envelope calculationsuggests that 8.4 GW of capacity implies 700 turbines, based on a 12 MW/turbine average. Much like oil patch OSV vessel count is derived from numbers of exploration rigs and producing platforms, the estimates of implied demand for offshore wind vessels can be developed. In a recent presentation Axelsson suggested that 48 additional U.S. crew transfer vessels (CTV) would be needed, along with 15 new U.S. built service vessels (with a "walk to work" type gangway). Other vessels in the mix include cable laying vessels (and other vessels for subsea servicing) and a new category – variously described as "guard" or "watch" vessels – reflecting

the concerns about security as the electric grid becomes more dependent on offshore wind.

These calculations and estimates provide a backdrop for the question on everyone's mind – where exactly will all these vessels come from? Activity in the oil patch has waned since crude oil's price slide of 2014, so many vessels that are surplus to the needs of offshore oil exploration and production are potential conversion candidates. Some categories of OSVs are experiencing marketed capacity utilization barely exceeding 50%. There is no "one size fits all" answer to questions of whether conversion (with a subsequent move from the Gulf Coast up to the East Coast) would actually make sense. The answers are very nuanced and the experts don't always agree.

Consider CTVs; Luther Blount, from the Rhode Island-based Blount Boats (which built a crew vessel for Block Island Wind) said that "vessels of opportunity could be a disaster," adding that "…there is a reason that these boats are purpose built (and there could be) a lot of downtime if they are not built properly." Blount Boat has recently announced an order for two CTVs that will serve East Coast wind projects, to be delivered in 2020.

Conversions of such vessels are at the low end of complexity spectrum. Naval architect Ajay Suda of Metarie, La.-based A.K. Suda Inc. told Maritime Reporter & Engineering News that "crew boats could be converted very easily…" for use in the wind patch (where demand will ramp up around 2023) and that platform supply vessels (PSV), especially those with cranes already installed, could also be converted into service vessels where a W2W (walk to work) type gangway could be retrofitted. Nian Hua Lim, President of ST Engineering Halter Marine and Offshore, told Maritime Reporter that "larger PSVs will be suitable for conversion for use in offshore wind."

The European experience, which is more than a generation ahead of the U.S. when it comes to offshore wind, also provides guidance. DNV-GL's Arnstein Eknes, Segment director Offshore Service Vessels and Special ships, said in a recent presentation, that: "Windfarm Service Operation Vessels (SOV) are being tailor-made, and some are converted PSVs with Accommodation & W2W systems."

Island Offshore, based in Ulsteinvik, Norway, has had success with conversions. Island Offshore Managing Director, Tommy Walaunet, told Maritime Reporter, "as owners we always look for opportunities to increase the attractiveness of our vessels. In this context, modern PSVs can be converted and utilized for new operations at a competitive cost compared to new buildings. We expect new building prices to be high going forward thus it makes sense to develop our existing fleet."

A host of factors may militate against straightforward conversions.

Halter's Lim said that rules governing "passenger" counts may limit non-vessel crew members to 12 or 16 (short of the 30 to 60 technicians who might ride out to service turbines). He added that improved safety features, including lifeboats, would be necessary in a conversion and that personal comfort is also an issue, where crews might be living aboard (rather than being transported out to a platform). An interface on the bow for connecting to a platform or wind turbine was identified as a further necessity. W2W and cranes also present challenges, "…they must be heave compensated…" said Lim. Halter also stressed the importance of good sea-keeping abilities, saying that PSVs of 60m or greater would be needed in U.S. waters, with Lim adding that dynamic position (DP) capabilities could be added.

However, as always the price tag is at the forefront, particularly as some of the higher ticketed items push the retrofit price into the range of a fit-for-purpose newbuild. The timing of construction and conversion also plays a role, with Lim saying that conversion times could range from three to four months "…if you plan well…" out to nine months. Where the project requires a quick turnaround, conversions might make sense. "A newbuild might take 24 months, which is more suitable for longer timeframe project," he said.

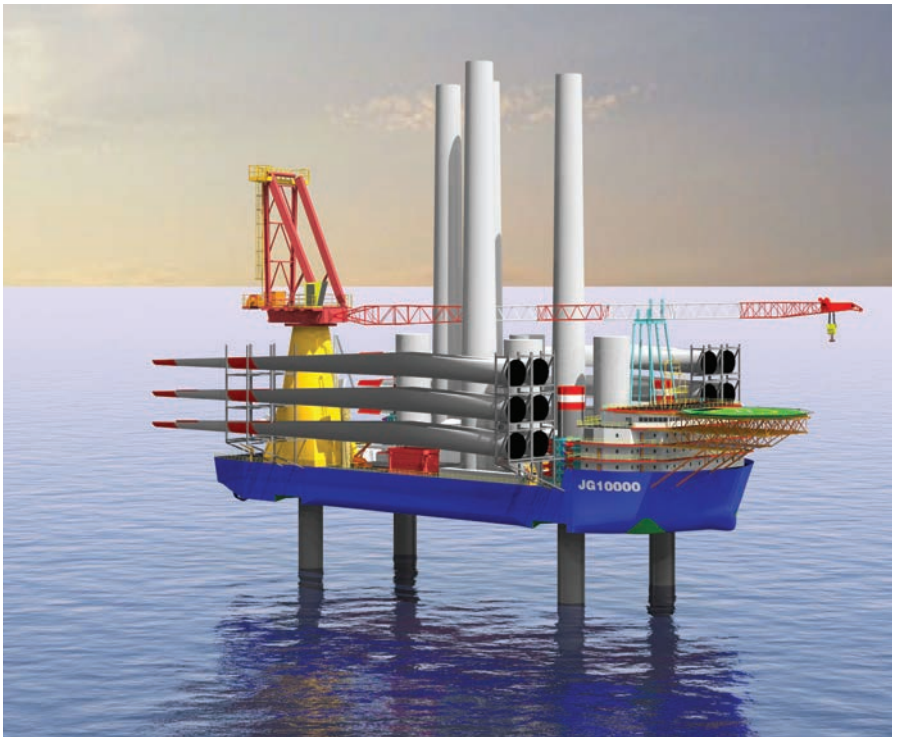
… and then there's the Jones Act …

The future growth of the U.S. offshore wind energy market and the impact to the U.S. marine market as a whole was the topic of a presentation hosted by the American Bureau of Shipping (ABS) in New Orleans in early December (See related story, page 14). And there are no discussions of the U.S. maritime market that don't start and end with the Jones Act.

Offshore construction vessels present a different set of challenges, with the Jones Act looming large in the minds of all participants. Presently, there are no Jones Act qualified vessels suitable for offshore wind construction, and solutions have included hiring a foreign lift vessel (stationery on the seabed) and then ferrying components out from coastal ports on U.S. assets that designers have called "super-barges".

Such vessels (if available in the marketplace) may be pressed into service as projects come online in the 2020s. However, with a booming demand pipeline, market participants expect U.S yards to build Jones Act compliant construction vessels capable of picking up components from onshore facilities, and also doing the assembly.

With larger blades, heavier turbines and taller towers, the experts could offer little incentive to convert or reconstruct existing construction vessels. Suda, from A.K. Suda, explained that conversion of a U.S. jack-up or lift vessel would be possible technically, but not feasible financially. In discussing super-barges, he explained that such barges would require legs for stability when offloading components, and would be very expensive with a jacking system outfitted. "At the end of the day," he said, "the owner would have an expensive vessel, with a limited remaining useful life." Lim, from the Halter engineering arm, also pushed back on re-outifitting of existing vessels, pointing to less than ample deck capacities on exist-



Suda JG10000
This design, offers a 2000 ton lift capability, the ability to handle eight x 8- 9.5 MW turbines with accommodation for 112, in depths up to 68 m.
Photos: A.K. Suda Naval Architects

ing conversion candidates. "Installation vessels will also need thrusters," he said.

Maritime Reporter spoke with Erwin Lammertink, the CEO of Van Es Holding BV (the Netherlands parent of Jack-Up Barge, Swift Drilling and other providers of offshore construction equipment) about the feasibility of converting existing rigs into installation vessels for the installations of the ever growing towers, turbines and blades. Its self-elevating jack-up installation vessels, working extensively in the North Sea, have lift capacities of several hundred tons, with one rig, JB-117, able to lift 1,000 tons. He notes that: "The growth of turbines has been significant. A huge investment would be required to upgrade units; these are not impossible but there are huge challenges." He suggests that "…for the long haul, the best way is build to suit….however for assignments with a nearby time-frame, look at assets like the JB-117, or a near sister- JB-118- with a lift of 1,000 tons, which today are being upgraded with DP2."

The European experience is important, but it is only a starting point. A representative from Windserve (a unit of Reinauer Transportation that is building two CTVs for work offshore North Carolina and New England, and is tendering for other deals), during a recent presentation in New Orleans, opined that, "Because of the Jones Act, we will see some ingenuity and some new approaches."

U.S. Jones Act suitable arrangements are already here. A.K. Suda, who has developed configurations for ABS classed high-spec lift boats deployed across multiple oil basins, has reworked its designs for the offshore wind sector. The Suda JG10000 design, offers a 2000 ton lift capability, the ability to handle eight x 8-9.5 MW turbines, or six x 10 MW turbines, or four x 12 MW turbines with accommodation for 112, in depths up to 68 meters. Ajay Suda offered that: "One of the great myths propagated has been that U.S. built Jones Act assets are going to be prohibitively expensive. The price is comparable with European designs built in Asian yards."

Photos: Glosten

"Doing business the same way over and over will not last; we know technology will advance our industry, and if we just sit back and don't take an active role, we're going to lose. There is no room for complacency."

Morgan Fanberg, President, Glosten

@ Glosten

"Crazy ideas are not off the table"

From racing scows on the inland lakes of Minnesota to graduating from the United States Merchant Marine Academy to taking the helm of Glosten, **Morgan Fanberg** has led a 'maritime life.' We caught up with Fanberg in his Seattle office to discuss the path ahead for one of the U.S.' most progressive and respected naval architecture and marine engineering firms.

By Greg Trauthwein

Morgan Fanberg has always been a 'maritime guy,' but his early maritime aspirations centered on racing sailboats. "I went to St. Mary's College of Maryland to race dinghies at a collegiate level but soon realized that racing sailboats was not going to turn into a career," said Fanberg. "I loved the boats, but I also had an underlying interest in how they worked. I liked engineering and I was good at math and physics."

As fate had it, one weekend he participated in a sailing regatta at Kings Point and he "fell in love with the place (the United States Merchant Marine Academy [USMMA]). I applied, I was accepted, and I transferred from St. Mary's to Kings Point in in 1994," said Fanberg. His decision has panned out, and he credits USMMA with melding his interest in boats and engineering. "I was excited to become a marine engineer after my first semester at sea as an engine cadet," said Fanberg. "The curriculum at Kings Point combined with applied sea-time is a perfect way to build confidence in young engineers. We all leave Kings Point knowing that we could fix anything."

Between his junior and senior years at USMMA Fanberg earned a six-week internship at Glosten, and he immediately felt an affinity for the firm. "During my internship I was able to participate in actual vessel system design. I realized then that it was a great place to work – a great place where I could continue my career in the marine industry and where I could see my design work turn into reality."

He joined Glosten upon graduation in 1998 and has never looked back. Ascending the ranks, his pivotal career moment was about 10 years ago when he was selected to lead the Marine Engineering group; a role that allowed him to lead larger engineering projects, develop leadership skills, and realize that one day he could lead the company. While much has changed in his 21 years with the company, today, as its leader, he strives to maintain it as a great place to work, attracting a talented crew with ample opportunity to grow personally and professionally under the Glosten banner. "Glosten has 100 employees that are looking for an amazing career, solving client's problems in the marine industry. It's incredible that there are that many people who share the same vision, and I feel an obligation to those people to help create career opportunities." Through it all, Fanberg remains humble, noting that "we are an employee-owned company; I have 100 bosses – more than 40 of which are shareholders."

Finding a Home at Glosten

"I knew that I had found a home at Glosten," said Fanberg. "There was already a large, talented and smart naval architecture group, but I joined Glosten's small group of marine engineers and was exposed to a wide variety of projects."

He credits Larry Glosten's philosophy of 'client service excellence' as opening new doors and exposing staff to new opportunities, a philosophy which has engendered steady growth. When Fanberg joined the company, he was the 38th employee. At the time of this interview in late 2019, Glosten was adding its 100th employee.

"Glosten has an entrepreneurial spirit where anyone within the organization can bring ideas for new business or capabilities," said Fanberg. "The secret to our success is our employees and our culture of mutual respect and collegiality among associates. We have hired brilliant minds that can solve any of our client's problems. Thinking back on my early experiences at Kings Point and shipboard problem solving, I am continually amazed by our associate's abilities to solve marine industry problems that have never been solved before."

Finding solutions to unique problems is clearly a motivator for Fanberg and his crew. "We are still constantly drawn to unusual projects," he said. "On a day-to-day basis, you never know what you're going to be working on here. We don't just do vessel design because not all of our clients are looking for a new vessel. You never know what client or challenge is going to walk through that door – you don't know what you're going to be working on in six months. You have to be able to solve complex problems, be flexible, and be ready to think out of the box."

As the complexity of the projects and solutions grew, so too did Glosten.

It's Electric. **Left:** The Gee's Bend Ferry. **Right:** The electric passenger/vehicle ferry for Washington's Skagit County.
Photos: Glosten

"When I started, a large portion of our work was focused on preliminary or contract level design packages or highly analytical problem solving," said Fanberg. "As we have grown in employees, we have also grown in technical capability. Our clients turn to us to solve more of their problems in more detail, so we have adjusted to meet this demand."

Most recently that customer demand has been to supply electrical solutions to solve some of the pressing emission and fuel-cost-saving demands. Historically, we all dabbled in electrical engineering, but that world has completely changed, said Fanberg. "We have our own electrical engineering group now with seven electrical engineers. The focus on electric propulsion systems and propulsion systems integration has really taken on a life of its own."

Consult and Deliver

Part of the Glosten value proposition is the fact that it does not promote a common book of off-the-shelf solutions. While it maintains a 61-year-old long and strong base of intelligence, the 'consultation' gene is woven into its DNA.

"Glosten employees have an overwhelming desire to solve our client's problems by engaging deeply with them," explained Fanberg. "If we can develop a relationship with a client that is based on trust and great work, job satisfaction is

off the charts. Ultimately, the work we do here is supporting our client's businesses with engineering excellence and unmatched problem solving."

While Glosten carries a diverse clientele and workload, Fanberg admits that its work in the Research Vessel niche – started with Larry Glosten's work with two oceanographers to develop the Floating Instrument Platform, more affectionately known as 'FLIP', with the Scripps Institution of Oceanography at UCSD – is work that truly sets the company apart.

"Research Vessel design is interesting because each vessel is a one-off design, as these ships are usually not repeated and they are infrequently built," said Fanberg. "Scientists and oceanographers are very involved stakeholders; they want to be a part of the design process and they want their complex research vessel to be the greatest research platform in the world." From FLIP to the floating golf green that Glosten designed for The Coeur d'Alene Resort, Glosten thrives on unique, technically challenging projects. Another under this category, to which Fanberg has a close affinity, is the SBX project (pictured below), a self-propelled semi-submersible modified oil-drilling platform developed for the U.S. Government's Sea-Based Test X-Band Radar (SBX) in support of its ground-based midcourse missile defense system. "That was a massive project we did with Boeing; a hallmark project for me because of the amount of blood, sweat and tears I put into it," said Fanberg, noting that this one project alone took Glosten from 40 to 65 people.

While he respects the past, Fanberg astutely keeps an eye on the future. "It's easy to focus on the past, but the things we've designed and worked on since – an icebreaking research vessel, wave energy converters, all-electric ferries – have really pushed us in new and exciting directions."

"Crazy Ideas are NOT Off the Table"

It is generally agreed that the marine industry is in a transcendent period, with the emission reduction, autonomy and digitalization all simultaneously conspiring to impact marine asset design, maintenance and operation for the coming generation. On the 'green' side decarbonization is the holy grail, and while it is generally agreed that there is no 'silver bullet' solution, Fanberg believes there could be one.

"I would love to design an all nuclear ship," he said. "I understand the cost, the red tape, and the bureaucratic issues, but If you're seriously looking for a zero-emission technology to

It's Projects. Glosten historically carries a broad base of work, from its signature work on research vessels to the ubiquitous SBX project (above left).

Photos: Glosten

> "I would love to design an all nuclear ship. I understand the cost, the red tape and the bureaucratic issues, but if you're seriously looking for a zero-emission technology to power ocean-going vessels, nuclear should be an option."
> **Morgan Fanberg,** President, Glosten

power ocean-going vessels, nuclear should be an option worth discussing. Hydrogen and ammonia are also possible future fuels for the marine industry, but the technology isn't quite there yet."

While the notion of a nuclear commercial fleet is unthinkable to most, it goes part and parcel to the Glosten philosophy. "We do a lot of brainstorming sessions at Glosten and the rule is 'anything goes,'" said Fanberg. "We set aside time for Research and Development. We have a program in place to encourage our staff to bring ideas to our internal R&D advocacy group. Our R&D efforts are important for the future of Glosten and the future of the industry. We are not going to survive as a naval architecture and marine engineering firm if we are not thinking about how this industry is going to change, as it is already changing rapidly."

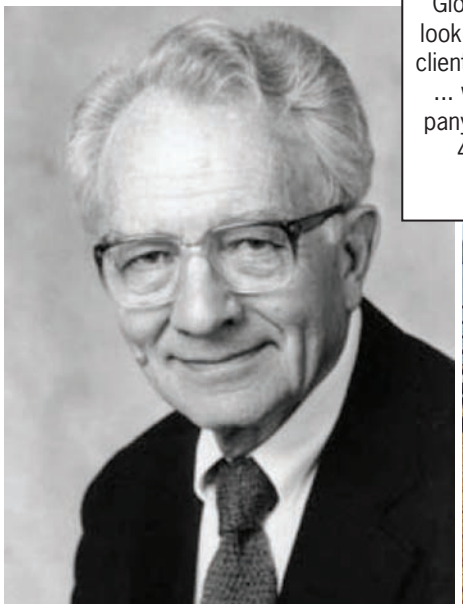
While he understands the value of thinking 10 years ahead, the practical business side of Fanberg knows the importance of serving his client's needs today.

"(Today) there's certainly a driver to be more cost efficient, to cut fuel costs while looking at ways to adopt green technologies. Whether its legislative or societal pressure, there is a push to move away from burning fossil fuels," said Fanberg. "We want to help our clients navigate any of their problems that need to be solved. Our efforts on purely electric ferries or hybrid propulsion is a result of both emissions and maintenance cost pressures. We have three electric ferry projects under our belt, and we are actively working on new ideas for other all-electric vessels."

To many, autonomy in the traditionally conservative maritime sector may be a challenge to hurdle 10 years down the road, but to Fanberg and his crew, the focus is clear. "I certainly don't have a crystal ball, but I can tell you that if there's anyone in this business that is not paying attention to the world of autonomy and how it applies to our industry, they are not forward thinking." While he admits that many of the autonomy opportunities today are on the government side, autonomy and all that it entails will significantly impact the commercial space.

"The other aspect of autonomy is big data, and how that loops back into our design work," said Fanberg. "We have 61 years of design history here at Glosten. To ignore that data, and how it can feed into more efficient designs in the future, would be foolish. We are looking back at our designs and envisioning ways to come up with internal tools to help us bring new designs to our clients quicker, more efficiently, and cheaper."

It's People.
From Larry Glosten (left) to the steadily growing Glosten team, Fanberg says "Glosten has 100 employees that are looking for an amazing career, solving client's problems in the marine industry ... we are an employee-owned company; I have 100 bosses – more than 40 of which are shareholders."
Photos: Glosten



Bayonne Drydock & Repair Corp.

BDDRC Invests in Shiplift Capacity

Bayonne Drydock & Repair in Bayonne, NJ, reported brisk business in 2019, with the BDDRC floating drydock and graving dock in use approximately 98 percent of the time, according to Bob Magas, General Manager Commercial Operations, BDDRC. Driving business was a variety of topside repair projects with existing clients, as well as three "successfully completed MSC vessel drydockings, on time and on budget," according to Magas. This trio of jobs was enhanced as BDDRC "engineered and installed a roller fendering system in our graving dock," said Magas. "This allowed BDDRC the capability to carry out and successfully complete side port / PVR testing on MSC vessel in our graving dock."

Magas is responsible for all aspects of commercial operations at BDDRC including the staff that supports it. "This currently includes our floating drydock, all topside repairs as well as oversite of our capital projects which include the MBH (Marine Boat Hoist) Project," he said.

Like any shipyard, BDDRC must continually invest to keep facilities updated, and Magas is particularly pleased to welcome a new ship lift capacity in 2020. "We have taken delivery of a 1280T MBH (Marine Boat Hoist) designed and delivered by Cimolai," said Magas. "Its components remain at our facility until assembly commences in March 2020. To date, our MBH is reported to be the largest travel lift built in the world."

As the clock turned to 2020, BDDRC was in the "construction phase of the project" (contract was awarded to Bird Construction of Bayville NJ) which includes the construction of new piers and bulkheads, creating the vessel basin, dredging to a 27-ft.. depth at MLW as well as upland improvements to what will be the "parking lot" for the vessels that BDDRC will haul and place at work stations for completion of repairs. "Each vessel will have its own work station where services such as shore power, fresh water, fire lines and air will be available while each vessel undergoes their repairs," said Magas.

If all construction plans stay on schedule, the new shiplift should enter service in June 2020.

While the shiplift capacity is the centerpiece of investment, BDDRC has also "expanded and upgraded our machine shop to include a CNC machine, press brake, plate roller, angle and pipe roller, iron workers, blast cabinet as well as new UHP machines."

> "We have taken delivery of a 1280T MBH (Marine Boat Hoist) designed and delivered by Cimolai ... our MBH is reported to be the largest travel lift built in the world."
>
> **Bob Magas,**
> GM, BDDRC

Photos: Bayonne Drydock & Repair

Shipyard Tools

Photos: Australian Pump Industries

Aussie Atlas Shipyard Ready Pressure Cleaners

Australian Pump Industries new Aussie Atlas pressure cleaner is the latest addition to its stainless steel line-up of machines designed for shipyard application. The first order will find the units on permanent hire at Garden Island Dockyard in Sydney Harbor, a rigorous test as Garden Island is the Australian Navy's leading base and arguably the busiest repair yard in the country. Thirty machines were built compact, heavy duty and in highly maneuverable stainless steel frames. The first machines delivered included a heavy duty stainless steel hose reel rated to 5,000 psi. The reel has 30m of non-marking blue high pressure hose rated at 5,800 psi. A 30-litre stainless steel break tank is incorporated in the stainless frame, helping to protect the blaster's triplex pump from supply variations at the dry-dock site. The heart of the Aussie Atlas is a Bertolini 'Big Berty' triplex pump running at 1,450 rpms. The drive is through a Bertolini 2 to 1 reduction gearbox. The Atlas gets its power from a Hatz model 1B50 air cooled diesel engine. The engine delivers 9.2 hp. Aussie Turbo guns were also included as part of the package. Turning the 4,000 psi pump pressure up to 6,4000 psi of EWP (effective working pressure). Turbos are indispensable in some cleaning applications, particularly doing large ship refurbishment.

www.aussiepumps.com.au

Astican & Astander

Regulatory Work, Offshore Drives Astican

Reliance entered Astican for the installation of a new **HydeMarine** Hyde Guardian ballast water management system.
Photo: Astican

While 2019 provided a mixed bag of results for many maritime companies, Spain's Astican reports a "fantastic year … one of the best in Astican´s history" with more than 100 drydockings and strong business on both the marine and the offshore sides of its business, according to Joaquín Andrés Bosqued.

On the marine side of the business, the yard reports several key projects, including repairs to a krill fishing & factory vessel, a project that included the exchange of three dryers (40T each) and two boilers, together with extensive piping repairs and replacement and typical drydocking jobs.

Another notable job involved repairs to an aluminum fast ferry catamaran that was involved in a collision, damaging one of its pontoons. Astican replaced around 17T of aluminum together with painting jobs and mechanical works on the waterjets. Bigger picture, the cruise ship repair market, particularly the expedition variety that go from Arctic to Antarctic, continues to provide a strong stream of business as the entire cruise sector enjoys unprecedented growth.

Capping the strong year was increasing levels of work for the offshore side. "We start seeing recovery in the O&G drilling business and have accomplished several reactivation projects," said Bosqued. Astican performed two projects on two drillships (twin) at the same time, including extensive steel conversion in WBT. Also, several MPD installations in some other drillships.

Looking to the coming 12 to 36 months, Astican sees the ballast water management system installation market as providing a steady stream of business, as "we expect an increase in 2020 through 2023 with almost every drydocking, in order to comply with the new regulation."

The positive results and promising outlook have the shipyard in invest mode, and Astican continues its plans of building a new graving dock in Las Palmas, significantly increasing its docking capacity and opening up new markets.

Astander

The other shipyard of the group, Astander, located in the north coast of Spain, has maintained a high level of occupation throughout 2019 performing all type of ship repair and conversion works. After the successful conversions carried out for the Canada's Clearwater Seafoods, converting two PSV into a two state-of-the-art clam harvesting and processing vessels, in 2019 two new scrubber retrofit projects have been completed in Astander for the Maritime Nantaise French – flagged ConRo vessels MN Calao and MN Tangara, which involved the installation of two hybrid loop in-line scrubbers on each vessel. Counting these two retrofits, in total 27 units have been installed at Astander, 23 of them for France's Britanny Ferries.

Significantly, the yard has experience installing different versions of the scrubbers, with open loop systems and in-line scrubbers installed in the M/V Normandie, M/V Cap Finistere and M/V Barfleur and hybrid loop systems and off-line scrubbers in M/V Mont St Michel and M/V Armorique.

Looking to the coming 12 months, Astander is scheduled to complete enlargement work on Astander drydock No. 2 during the first quarter 2020, enabling the yard to receive Panamax size vessels.

MARINELINK

THE MARITIME INDUSTRY'S GLOBAL INFORMATION GATEWAY

THE INDUSTRY'S #1 NEWS SOURCE

Including features on managing risks in the maritime industry

Maritime Network Group | @ShipNews | Maritime Reporter

www.MarineLink.com

Zhoushan IMC-YY Shipyard & Engineering Co.

"Green" Drydocks in China

Zhoushan IMC-YY is an innovator, with a family of automated systems to make ship maintenance clean & efficient.

Photo: Zhoushan IMC-YY

While the ship repair industry is not generally lauded for being progressive or 'green', Zhoushan IMC-YY Shipyard & Engineering Co., Ltd., a Chinese ship repair and maintenance company, is both, a claim confirmed by a number of independently developed repair efficiency tools, as well its recent winning of the "National Green Ship Repair Demonstration Enterprise" award, conferred by the Chinese Society of Naval Architects and Marine Engineers in December 2019.

In March 2016, IMC-YY invented and developed what it called the world's first high-efficiency UHP water-jetting/de-rusting tool with a direct vacuum system. Named Dockspirit, and also known as the de-rusting machine, the development was touted by the yard as bringing ship repair and maintenance into a new era by replacing conventional grit-blasting with UHP water jetting technology.

Since implementing the UHP process in the pretreatment of ship hull surfaces, from 2017 to date this solution has been applied to more than 500 ships.

But the shipyard's innovative spirit does not stop there, as it also researched and developed a series of intelligent equipment dubbed 'Dockelephant', a flexible platform which is designed to take the place of the cherry picker as the next generation carrier for UHP de-rusting and automatic painting in drydocks.

Dockelephant is remote controlled and configurable to carry various working tools, integrating a variety of options. Dockelephant includes three series based on different working heights – 6m, 25m and 32m – making it suitable for different areas during docking repair. According to the shipyard, its load capacity is larger and safer compared with a cherry picker, and it meets the demand of the ship dock repair as an operation platform (for hull cleaning, blasting and painting, etc.). In addition to Dockspirit and Dockelephant, IMC-YY has invented Dockforce, Dockcat, Dockwhale and Paintvac, all designed to provide systematic solutions for drydocks, making repair and maintenance operations safer, more efficient and environmentally friendly. IMC-YY's solutions for anti-corrosion treatment are all in service today.

La Ciotat Shipyards

Matière, Bardex Tapped for 4300T Shiplift

In the ship repair and conversion business there are myriad tools available to make otherwise dirty and dangerous jobs more efficient, safe and cost-effective. But arguably, the number one tool in its box is the ability to seamlessly move vessels.

Late last year La Ciotat Shipyards announced the award of a contract for the design and build of a new 4300-ton shiplift for megayachts, a contract awarded to a consortium of the French company Matière and the U.S. company Bardex. The new lift is scheduled to be installed and operational in 2022.

"Matière and Bardex have proven that they can offer the best compromise on price and quality," said Alexandre Rolland, Project Director La Ciotat Shipyards. "Having a French company as main partner in the team is very reassuring in view of a better control on costs and delays which are critical for this project. Very positive feedback from clients that have been using Bardex shiplift systems for more than 20 years has reinforced our analysis."

"This is the first shiplift designed for lifting megayachts using Bardex Chain Jacks," said Tom Miller, CEO, Bardex. "It was selected for its superior safety record and significantly lower lifecycle cost of ownership. The use of a rigid platform combined with a hydraulic lift system provides improved vessel load distribution along the platform, thereby reducing concentrated loads on the ship hull."

Obviously, this solution also addresses big yachts specific needs thanks to the addition of several improvements. It will use a double rail motorized transfer system with hydraulic technology as well as a "fluid bed," which allows yachts to leave the lift laterally or longitudinally.

Photo: Bardex

(L to R): Jean-Yves Saussol, CEO, La Ciotat Shipyards, Thomas Miller, CEO Bardex Corp., and Philippe Matière, CEO, Matière.

Direct docking on the platform will also be possible, and the platform lift will be designed to treat yachts up to 4300 tons and 105 meter long. "The shiplift permits both side and end transfer off the platform as well as docking directly on the platform to maximize the number of vessels that can be serviced at one time," said Miller. "Platform synchronization is closely monitored by the control system and adjusted automatically at all times to maintain synchronization during lifting/lowering. It allows the platform to be tilted in a controlled manner to simplify blocking of vessels with a sloped keel."

The modular transfer system uses Bardex patented hydraulic bogie cars with articulating wheels to evenly distribute the vessel loads to the transfer rails despite variations in individual rail placement. The transfer system is self-powered using two independent diesel power supplies..

"Bardex and Matiere are partners and co-contractors," said Miller. "Bardex is providing the engineering and design of the shiplift and transfer system and mechanical/electrical equipment. Bardex scope includes chain jack, lifting devices, hydraulic power supplies, control system, chains, transfer system hydraulic bogie cars. Matiere is responsible for platform and transfer system structural fabrication; equipment, piping and electrical fabrication; installation, interconnection and testing at site."

Miller is a Bardex veteran of nearly 40, and when he looks at the world today he sees ample opportunity. "We are seeing near term growth in new yards capable of lifting mega-yachts (over 100m length) in the Mediterranean region," said Miller.

"There is also opportunity for new shiplifts for launching and repairing military vessels in the Asia/Australia region."

Tech Files

Innovative products, technologies and concepts

Photo: Wilhelmsen

3D Printed Spares

Wilhelmsen Ships Service (WSS) launched an early adopter program for 3D printed marine spare parts. On-demand manufacturing is still in its infancy, but its impact on the ship spare industry should be significant in the coming decade as vessel owners explore new means to keep vessels running efficiently and cost-effectively. WSS recently said that Carnival Maritime, Thome Ship Management, OSM Maritime Group, Berge Bulk, Executive Ship Management and Wilhelmsen Ship Management have all signed up with Wilhelmsen's Marine Products division to begin using on-demand additive manufacturing. WSS, in cooperation with Ivaldi Group, will provide spare parts on demand to the selected six customers' vessels globally. Parts will be produced on-demand, helping to reduce or eliminate many costs, including parts storage, shipping, customs and receiving processes. From local micro-factories, Wilhelmsen are taking manufacturing ever closer to the end-user. Starting with smaller polymer and metal parts in the comfort critical category, spare parts are 3D printed and delivered within hours to vessels who subscribe to their services.

Zeabuz

Zero Emission Waterbus

While Norway ranks 120th among countries globally in terms of population size (5.3 million), it packs a powerful punch in the maritime world, as Norwegians rank near the top as maritime and offshore industry innovators.

With decarbonization, digitalization and autonomy on the maritime docket, innovation from Norway stands strong as the Norwegian university of science and technology (NTNU) has established a new firm, Zeabuz, to promote and build upon its newly developed autonomous waterbus concept for emission-free waterways transportation.

Zeabuz' (zero-emission sea-bus) is an all-electric, 10-30 pax waterbus concept designed to provide autonomous mobility services to cities and towns.

Photo: NTNU/Zeabuz

Spotlight: **TOOLS**

Deep Cut Hole Saws

L.S. Starrett has a new version of the Starrett Deep Cut Bi-Metal Hole Saws with a distinct variable pitch tooth design, featuring a pattern of seven different progressive teeth called NVP Tech (New Variable Pitch).

Quick Pipe Repairs

Qwik-Freezer Pipe Freezing System eliminates the need to drain pipework by creating a freeze plug. The Qwik-Freezer is a cost effective, quick way to perform pipeline maintenance without draining the system.

Miko Plasters Polar Kit

The Miko Plasters Polar Kit provides a defense against the risk of being holed by ice. The system provides for application of a magnetic patch to seal holes caused by accidental contact with hard ice.

Tube Bending Solutions

Schwarze-Robitec's electric tube bending machine, the CNC 25 E TB MR, is capable of bending tubes with diameters as small as 25mm. The system helps to reduce production time 20-40%.

Photo: Greg Trauthwein

Synthetic Natural Gas

Testing new fuels in real-world situations remains at pace, powered by collaborations. One such project recently announced is between Wessels Marine and MAN Energy Systems, on a project to convert the containership Wes Amelie to run on Synthetic Natural Gas (SNG). While SNG today is far to sparse and expensive to make it a near term commercial reality, this step is significant in that a ship outfitted with an MAN propulsion unit to run on LNG would need no modification to have it run on SNG, effectively making it 'future proof' while helping to dispel the notion that LNG is merely a bridge to strict new emission regulations which seek to cut greenhouse gas emissions from the maritime sector 50% by 2050. Wes Amelie, the 1,036-TEU feeder container ship which was retrofitted in 2017 to run on LNG, will use liquefied SNG produced from renewable electrical energy as drop-in fuel. The companies are cooperating on the Wes Amelie project with Nauticor, the LNG transportation company, and Unifeeder, the charter company.

AR & Maritime Maintenance

As maritime embraces new digitalization technologies aimed at reducing costs and enhancing safety onboard ships, **MAN CEON**, MAN Energy Solutions' umbrella brand for all its digital products, comes to the fore for **TechGuide**, an augmented reality maintenance platform. Using mobile devices or head-mounted displays, TechGuide enables engineers to use their preferred learning style on a job, whether through 3D-models, animations, video, to have instructions read aloud or to browse a pdf. It is currently being put to the test on a number of bulk carriers owned by Singapore-based Berge Bulk. When a maintenance job has been completed using the MAN CEON TechGuide, the information is automatically uploaded to the owner's system via WiFi in the engine room. "The MAN CEON TechGuide app is transforming the way maintenance and inspection operations are carried out on board," said Dr. Lars Gruenitz, Berge Bulk. "With the app working in tandem with our current fleet-management system, we believe that it will not only significantly reduce our crew's work load, but that it will also further enhance the quality and reliability of our maintenance operations."

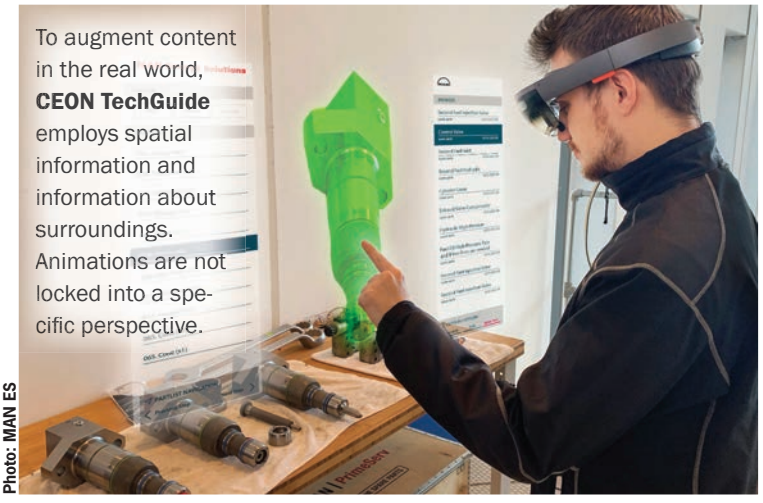
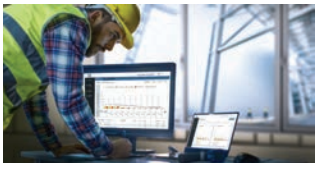


Photo: MAN ES

Spotlight: **COATINGS**

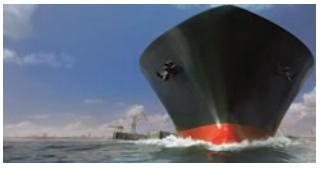


PPG ASSET Integrity Mgmt

PPG's Asset Integrity Management system is a software system that assists facility managers and maintenance engineers in scheduling, budgeting and optimizing the corrosion protection.

VRSim

VRSim's SimSpray 3.0, a virtual reality paint training tool, uses HTC's VIVE Pro HMD and VIVE Trackers, and offers aninntuitive user experience by featuring enhanced visuals and trainee feedback.



Hempaguard MaX

Hempel's Hempaguard MaX provides vessels with a smoother hull, reducing drag and lowering fuel requirements, with a guaranteed maximum speed loss of 1.2 percent over five years.


Knutsen OAS Shipping

AkzoNobel Intershield

Knutsen OAS Shipping chose AkzoNobel and its Intershield 300 and Intersleek foul release technologies for their latest LNG vessels built in Korea's Hyundai Heavy Industries shipyard.

In the Yard

New Ship & Boat designs, contracts & deliveries

New Contracts


Oshima Shipbuilding

World's First: LNG-fueled Large Coal Carrier Ordered

Kyushu Electric Power Co., Inc. has engaged in long term transport agreements by deploying the world's first LNG-fueled large coal carriers with; Nippon Yusen Kabushiki Kaisha and Mitsui O.S.K. Lines, Ltd. The vessels are expected to become the world's first LNG-fueled large coal carriers.

VARD: PONANT Orders Two

VARD will build two luxury expedition cruise ships for PONANT. Due for delivery in 2022, both are an evolution of the "Explorers" class. They will be operated in the South Pacific areas for Paul Gauguin Cruises. The ships will be hybrid electric, equipped with an extensive battery package for smokeless operation at anchor, in ports and in environmentally sensitive areas. The ships will be classed by BV.

LNG Ferries for MOL

Mitsubishi Shipbuilding Co., Ltd. signed a contract with Mitsui O.S.K. Lines (MOL) to build two LNG-fueled ferries, the first such project in Japan. The ships will be built at the Shimonoseki Shipyard & Machinery Works, with deliveries in 2022-23. Ferry Sunflower Limited based in Oita, will operate the ferries on its Osaka-Beppu route.
The ferries will be 199.9 x 28 m and 17,300 tons, carrying 763 passengers and 136 13-meter trucks and 100 passenger cars.

ESG Launches NYCDOT Ferry

Late last year Eastern Shipbuilding Group, Inc. (ESG) launched the SSG Michael H. Ollis (Hull 219) the first of three new Staten Island Ollis Class Ferries for the City of New York Department of Transportation (NYCDOT) Staten Island Ferry Division. The launch took place at Eastern's Allanton facility in Panama City, Fla. The series are named after fallen soldier of the US Army 10th Mountain Division at Fort Drum, 'Climb to Glory', Army Staff Sgt. Michael H. Ollis, a Staten Island native killed in Afghanistan on August 28, 2013 serving during Operation Enduring Freedom. The first of the series, Hull 219, is named in his honor. Staff Sgt. Michael H. Ollis, of the 2nd Battalion, 22nd Infantry Regiment, 1st Brigade Combat Team, 10th Mountain Division (Light), stepped into the path of a Polish officer, blocking him from the suicide vest of an insurgent who had raided Forward Operating Base Ghazni. Ollis has received several honors posthumously including: Distinguished Service Cross, Purple Heart, Bronze Star, Silver Star, The Audie Murphy Medallion, Polish Gold Star Medal of Honor, and the Afghanistan Star from Poland for his valor. He was 24. The three 4500 passenger ferries, are from a design provided by Elliot Bay Design Group, with each featuring four Electro-Motive Diesel (EMD) 12-710 @ 900 rpm EPA Tier 4 marine propulsion engines with two engines powering one Reintjes DUP 3000 P combining gear and one 36 RV6 ECS/285-2 Voith Schneider Propeller at each end of the vessel. Power generation is provided by three EPA Tier 3 marine continuous duty diesel generator sets, Caterpillar C18 driving 480 V, 60 Hz, 3-phase generators rated at 425 kW at 0.8 P.F. @ 1800 rpm.

New Designs

• Ammonia-Fueled Feeder Vessel

ABS will advise on compliance and safety considerations as MAN Energy Solutions (MAN) and the Shanghai Merchant Ship Design & Research Institute (SDARI) develop designs for a low-emission feeder container vessel. The joint development project aims to produce designs for an ammonia-fueled Chittagongmax container carrier of 2700 TEU capacity. SDARI will develop the ship design and engineering, using MAN's DF technology, and ABS will assess safety-related issues and contribute to the development of rules and standards in relation to ammonia as a fuel. Ammonia, when generated by renewable energy sources, has no carbon footprint and emits almost no CO2, SOx or PM.

• ABS AIP for DF Bulker Design

ABS granted Approval in Principle (AIP) to Deltamarin and GTT for a dual-fuel Newcastlemax bulk carrier design. Deltamarin, GTT and ABS have been cooperating on the development of this LNG-Fueled energy efficient Newcastlemax Bulk Carrier that is intended to meet current and future environmental targets, by introducing GTT Membrane type LNG Tanks with LNG fuel stored at atmospheric pressure and designed to ABS Class. The AIP addresses the design's introduction of a membrane fuel tank sited in the aft of the vessel. The tank design is intended to maximize cargo capacity, with the additional tank having zero impact on available cargo space or the vessel's hull dimensions.

Main Particulars

Hull # H219	SSG Michael H. Ollis
Hull # H220	SANDY GROUND
Hull # H221	TBD
Length o.a.	320 ft.
Beam, Molded	70 ft.
Depth at Main Deck at Side	21.5 ft.
Design Draft	13 ft.
Installed Horsepower	9,980 HP
Fuel Oil Capacity	30,000 gal
Minimum Seating Capacity	2,551
Max. Passenger Capacity	4,500
Crew	16

Regulatory ABS A1, Ferry Service, River Service, AMS Notation. USCG Subchapter H Passenger Vessel

Photo: ESG

Photo: Damen

Damen Custom Dredger for Brazil

Damen shipped a customized Cutter Suction Dredger (CSD) 350, to Brazil. The standard dredger was adapted to meet Brazilian Naval requirements and received additional options per customer request. The deal was carried out quickly, just four months from contract signature to vessel departure. The CSD350 has been designed to dredge inland waters at a dredging depth between -1 m and -9 m water depth. It is fitted out with a 55 kW cutter head for compacted soils, and the in-board dredge pump is powered by a 447 kW diesel engine. The dredger left Damen Dredging Equipment in Nijkerk, the Netherlands on five trucks – one for the main pontoon, one for both side pontoons and spuds together, one for the suction ladder and one for the separate container shipping, the operating cabin and various smaller items such as the navigation mast.

• HHI: AIP for Bulk Carrier Design

Hyundai Heavy Industries (HHI) received the Approval in Principle (AiP) for the design of a capesize bulk carrier with type C LNG fuel tank made of POSCO's high manganese steel and fuel gas supply system from DNV GL and Liberian Registry. High manganese steel was considered for LNG tank due to its cost, as well as its strength and toughness at cryogenic temps.

• ClassNK AiP on LNG-Fuel Bulker

ClassNK granted an Approval in Principle (AiP) based on its Rule Part GF which adopts IGF Code to NS United Kaiun Kaisha, Ltd. and Imabari Shipbuilding Co., Ltd. for its joint project on the concept design of an LNG-fueled capesize bulker.

According to the shipbuilder, "by installing two Type C LNG tanks at the stern, which are considered to be cost competitive and are comparatively easily to install, it is possible to build an LNG-fueled vessel without significant changes to the conventional vessel's basic design.

This basic design can achieve CO2 emission volumes that are 30% less than the reference line as required under EEDI Phase 3 by the IMO."

• Hybrid Dredger

Wärtsilä signed an agreement with China's CSSC Huangpu Wenchong

Shipbuilding Company Limited Huangpu Wenchong, a five year agreement is aimed at the joint development of a hybrid powered dredger. It could possibly extend to other hybrid vessels, too. The initial work will be based on a hopper dredger, a vessel that the shipyard already builds. Evaluations will be carried out to determine the most suitable hybrid solution for that class of dredgers.

Damen

Arnout Damen Takes the Helm

Arnout Damen became the new CEO of Damen Shipyards Group as of January 1, 2020, a management move that includes the shipbuilding company switching to a divisional structure. Damen takes over from **René Berkvens**, who has been the CEO of Damen Shipyards Group for more than 13 years, and will now join the Supervisory Board. **Jan-Wim Dekker** will be the new Chief Commercial Officer. Arnout Damen explained the rationale for the switch to a divisional structure. "Preparations for this have been going on for several months. With the growth of recent years, the switch to a divisional structure has become logical to remain close to the various markets and to further expand our leading position in the fields of quality, digitalization and sustainability."

V. Ships

Adams named V.Ships MD

Pacific Green Technology

Matthew joins Pacific Green Tech.

A.P. Moller - Maersk Management Change

A.P. Moller - Maersk changed the structure of its Executive Board by appointing **Vincent Clerc** as CEO of Ocean and Logistics and **Henriette Hallberg Thygesen** as CEO of Towage, Manufacturing & Others, a continuation of the company's transformation from a diversified conglomerate, which has included separating out the energy businesses, harvesting synergies between Terminals, Ocean and from the acquisition of Hamburg Sud, and building competitive advantage from technology through digital solutions.

Burnett Named CEO of Seiche

Seiche Water Technology Group announced that COO **Mark Burnett** has been promoted to CEO. Burnett joined Seiche as UK Regional Director in November 2016, before being promoted to COO in March 2018.

Adams Named V.Ships MD

V.Group appointed **John Adams** as managing director of V.Ships U.K. Ltd., joining the company after 30 years at Teekay Shipping, where he played a key leadership role during Teekay's growth, integrating acquisitions into the expanding fleet operations.

Pacific Green Technologies Expands

Pacific Green Technologies Group welcomes **Steven Matthew** as Sales Director of its new Asia office located in Hong Kong.

Tang New Head of APAC @ Intellian

Intellian appointed **Cheng-Yu Tang** as Vice President and Head of Asia-Pacific region, based in Hong Kong SAR, China. He will oversee Intellian's APAC business including sales, technical support, business development and operations.

Malin Names Sharples Director

Malin Group said that **Ben Sharples** joins as Director of Malin Marine, following a stint at JFD (James Fisher). Alan Hunter joins as Malin's new Business Development Manager, an oil and gas veteran with more than 30 years' experience. In addition Malin appointed **Stephanie Collins** as Business Unit Manager of its ship mobilization arm Malin React. Malin's specialist welding division – John Tracey Specialist

Welding (JTSW) – has brought in ex-oil and gas senior engineer **Iain Wilson** to help shape the company as it moves into a new chapter at the Scottish Marine Technology Park.

LeBlanc Joins Coastal Marine

Coastal Marine Equipment (CME) of Gulfport, MS said that **Trey LeBlanc** has joined CME and will be working with the Sales & Marketing group. LeBlanc has more than 30+ years experience in the marine industry.

LR Awards Wärtsilä Cyber Cert

Lloyd's Register (LR) awarded Wärtsilä system-level cyber certification for its network architecture relating to Wärtsilä's integrated main and auxiliary machinery. The LR's ShipRight SAFE AL2 certification, which is with Wärtsilä's Data Collection Unit (WDCU), gives Approval-in-Principle (AiP) for the entire Wärtsilä integrated system network, rather than for any individual component.

VIKING Acquires Drew FSR Division

Viking increases its global marine firefighting equipment services (MFS) with the acquisition of Drew Marine's FSR Division, which today provides services in more than 150 ports across 45 countries.

New Test Facility for Green Energy

Yaskawa Environmental Energy / The Switch announced a new facility in Finland, enabling the testing and serial production of a new breed of large multi-megawatt-class drives for customers in the wind, marine and turbo industries. The large drive test center, set to open during spring 2020, will be capable of testing drives up to 15 MW from the start, with an advanced assembly line and lifting capacity of up to 80 tons. It will be one of the largest renewable energy test centers in the world, helping The Switch satisfy growing market demand for increasingly powerful drive train technology.

ABB Delivers for Icebreaking LNG Carrier Fleet

The final vessel in 15-ship series enters service for Yamal LNG project ahead of schedule. Yakov Gakkel, owned by joint venture between Teekay LNG Partners and China LNG Partners, joins a fleet of 15 specially designed tankers transporting liquefied natural gas (LNG) year-round from one of Russia's most significant export developments in a generation, Yamal LNG. Built in less than six years and to ARC7 ice class, fifteen 170,000 cu. m. capacity vessels have opened the Northern Sea Route to commercial gas shipping and significantly expanded the navigation period in the direction of the Asia-Pacific region and ensured year-round transportation of gas to the customers westwards. BB's Azipod propulsion system, which features an electric drive motor in a submerged pod outside the ship hull, can rotate 360 degrees to increase maneuverability, which is particularly crucial for vessels operating in ice. The scope of ABB supply also includes turbochargers, generators, switchboards, transformers, electric drives and propulsion control systems.

Seiche

Burnett named CEO of Seiche

Malin Group

Malin names Sharples Director

ABB

SMM 2020

SMM: The 'United Nations' of shipbuilding

SMM is the largest and arguably the best marine exhibition in the world, and Claus Ulrich (Uli) Selbach, Business Unit Director at Hamburg Messe Und Congress is the man in the driver's seat. We recently met with Selbach in his office in Hamburg to find out 'what's new' for SMM in 2020.

by Greg Trauthwein

SMM 2020

Fast Facts

When: September 8-11, 2020
Where: Hamburg, Germany
Exhibitors: 2,250
Visitors: ~50,000
www.smm-hamburg.com/en

When Uli Selbach started in the trade show business 22 years ago, the big question was: "Will trade shows exist in 20 years?" While the advent of virtual meetings, seamless and ever cheaper communication technology and social media has made its mark, exhibitions remain a core tenant in the business community. "I think the more people get involved in the digital world, the more they want – and the more they need – to get out and meet people," said Selbach. "It's about a handshake; it's about seeing a real engine or propeller." At the same time SMM, like the marine industry it serves, must evolve, which is why the organizers added additional free meeting and networking space, among a number of additional improvements.

In the maritime world – increasingly congested with upstart exhibitions, conferences and awards– SMM stands out as the premiere event in the space, drawing 2,250 exhibitors from 69 countries to show their wares in 93,000 sq. m. of exhibition space in the heart of Hamburg, Germany, drawing approximately 50,000 visitors from 124 nations.

"SMM is the United Nations of shipbuilding," said Selbach. "We are very proud of that and we want to keep that. To do that we have to attract the entire value chain of the shipbuilding industry."

SMM has maintained its mantle courtesy of its willingness to change. Selbach entered the SMM team in 2014, but 2016 was the first show in which he was responsible for, start to finish. In this short tenure there have been continuous changes and upgrades with a sole focus in mind. "SMM is a business platform, creating a marketplace for the maritime community," said Selbach. "We always ask ourselves a simple question (when evaluating the components of the event): does it serve the interests of our exhibitors and visitors? If it does, we do it; if it does not, we don't."

Meet me in Hamburg

SMM 2020 is set for September 8-11, 2020, in Hamburg, Germany, and visitors can expect to see a number of changes geared toward increasing networking opportunities. Show management assesses overall market trends yearly, and combined with survey results from the previous exhibition it aims to enhance the coming event accordingly.

While SMM is a large, ship technology show, it has expanded and stayed relevant by adding and exploiting targeted areas for future growth.

In 2016, for example, it established Hall A5 as dedicated solely to green propulsion, effectively putting green shipping on the main agenda for SMM. "That was the right move, particularly when you look at the business and legislative climate in maritime today. In fact, the shipping industry has to speed up even a little bit more to become 'greener'," said Selbach.

In 2018 SMM launched the live 3D printing area on the show floor, and according to Selbach "we're going to double that space in 2020. We think this is a strong and growing future market."

Also in 2018 it introduced its cruise and ferry route to respond to growth in the passenger vessel sector, and in fact the success of that addition resulted in a spin-off exhibition, the Marine Interiors Cruise & Ferry Global Expo, which had its first event in September 2019. While the numbers were modest compared to the SMM – 110 exhibitors and 2,800 visitors – the growth potential is real, and the next Marine Interiors event is scheduled for September 8-10, 2021, in Hamburg.

Sustainable Growth

With less than a year to go, SMM 2020 is nearly sold out, and with almost 85% of exhibitors signing up again this is not hard to understand. In fact Selbach counts the mission to keep balance – keeping the exhibition fresh with timely, topical themes and exhibits, while balancing the needs of its legacy exhibitors and visitors – as one of his main challenges. "We look at the SMM strategically, asking ourselves, which areas of SMM would we like to grow?," said Selbach.

In 2020, there again will be growth at SMM, but there is never a concern that the exhibition will grow 'too big' as it is physically situated in the center of a harbor city, meaning there is no more physical room to expand. The theme for SMM 2002 is "Driving the Maritime Transition", meaning simultaneously the green, maritime energy, maritime digital and maritime security transitions. At the same time that the SMM team must plan for growth, it also has to do what would previously be 'unthinkable' in the trade show business: Open up space that was previously sold, investing in that space to create additional networking and relaxation areas for the visitors. As the SMM was built on technology and innovation, it recognizes its role in fostering future innovators – and its own future, with things like:

- **SMMART Founder:** Expanded space for start-ups
- An expanded **'Hack-a-thon'** in 2020
- More activities, in general, to highlight the industry to the **younger generation**
- A doubling of the size of the **marine interiors** section
- A doubling of the size of the **Live 3D printing** area on the show floor
- Open **networking** spaces for exhibitors and associations to make presentations
- Making it easier for individual stands to host networking **parties.**

"That was a really tough sell; convincing my directors to not only eliminate paid space, but to replace it with space that we would invest in," said Selbach. "We have to give our participants more space to sit down, talk and network. That's what we are going to do in 2020, even if it costs us money."

2020 Calendar of Events

PVA Maritrends
Feb. 3-6
Tampa, FL
www.passengervessel.com/SitePages/maritrends.html

EuroMaritime
Feb. 4-6
Marseille, France
www.euromaritime.fr/

Underwater Intervention
Feb. 4-6
New Orleans, LA
www.underwaterintervention.com/

FPSO Europe
Feb. 19-20
London UK
www.fpsonetwork.com/events-fpsoeuropecongress

Green Ship Technology Conference
Mar. 1-3
Copenhagen, Denmark
maritime.knect365.com/green-ship-technology/

Underwater Defense & Security
Mar. 3-5
Southampton, UK
defenceleaders.com/home/events-page/underwater-defence-security/

Sea Japan
Mar. 11-13
Tokyo Japan
www.seajapan.ne.jp/en/

NACE Corrosion
Mar. 15-19
Houston, TX
http://nacecorrosion.org/

Intermodal Asia 2020
Mar. 17-19
Shanghai, China
www.intermodal-asia.com

Ferry Safety & Technology
Mar. 18-20
New York, NY
ferrysafetyconference.squarespace.com/

Asia Pacific Maritime
Mar. 18-20
Singapore
www.apmaritime.com/

OTC Asia
Mar. 24-27
Kuala Lumpur, Malaysia
http://2020.otcasia.org/

Envirotech for Shipping Forum
Mar. 24-25
Rotterdam
www.envirotechforum.com

CMA Shipping
Mar. 31. - Apr. 2
Stamford, CT
maritime.knect365.com/cma-shipping/

Sea-Air-Space
Apr. 6-8
Baltimore, MD
http://www.seaairspace.org/

Clean Waterways
Apr. 7-19
Indianapolis, IN
2020.cleanwaterwaysevent.org/

AWO Spring Meeting
Apr. 21-23
Washington, DC
www.americanwaterways.com

Seatrade Cruise Global
Apr. 21-23
Miami, FL
www.seatradecruiseglobal.com

TOC Asia
Apr. 21-22, Singapore
www.tocevents-asia.com/en/Home.html

AUVSI XPONENTIAL
May 4-7
Boston, MA
www.auvsi.org/events

OTC
May 4-7
Houston, TX
http://2020.otcnet.org/

UDT
May 12-14
Rotterdam
www.udt-global.com/join-us-in-2020

Breakbulk Asia
May 18-19
Shanghai, China
www.asia.breakbulk.com/Home

Inland Marine Expo
May 18-20
St, Louis, MO
http://inlandmarineexpo.com/

MegaRust
May 19-21
San Diego, CA
http://www.navalengineers.org/Symposia/MegaRust-2020

Maritime Week Americas
May 23-27
www.petrospot.com/events/mwa2019-fl

Breakbulk Europe
May 26-28
Bremen , Germany
www.europe.breakbulk.com/Home

Posidonia
Jun 1-5
Athens, Greece
http://posidonia-events.com

TOC Europe
June 9-11
Rotterdam
www.tocevents-europe.com/en/Home.html

SeaWork
June 9-11
Southampton, UK
www.seawork.com/

Marine Money Week
June 15-17
New York, NY
www.marinemoney.com/forum/MMWeek20

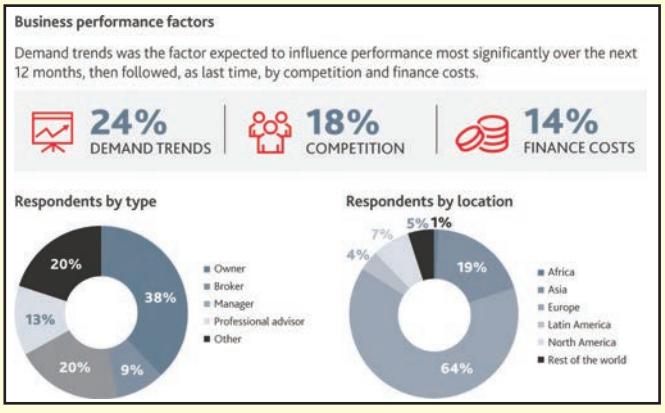
The BDO Survey says ...

Shipping Confidence Rises

"It is not far short of six years since confidence in the industry has been higher, and appetite for investment remains steady despite volatile economic conditions."

Richard Greiner, Partner, Shipping & Transport, BDO

Source: BDO



While gauging the views of any international group of business leaders is arduous at best, gauging the views of the notoriously tight-lipped shipping sector is a particular challenge. Enter shipping adviser and accountant BDO, formerly Moore Stephens LLP, who's shipping and transport team has been polling the industry for more than a decade regarding current and future trends.

According to the latest survey, BDO reports that confidence in the shipping industry rose in the last quarter to its highest level for 18 months, with an average confidence level expressed by respondents to the survey was 6.4 out of 10.0, compared to 5.8 Q3 2019. While confidence overall is up, it is hard to say there is euphoria across the board. Confidence in the broking sector was down from 5.1 to 3.9, the lowest rating for this category of respondent since the survey was launched in May 2008. Confidence was down in Asia from 6.8 to 6.0 but up in Europe and in North America from 5.7 to 6.2 and from 4.3 to 6.8 respectively.

The likelihood of respondents making a major investment or significant development over the coming year was unchanged from last time at 5.5 out of 10.0.

In looking at expectations for freight rates, the positive sentiment was unanimous with all three major sectors – tanker, bulk and container – anticipating escalating freight rates in the coming year.

1-5 June 2020

Metropolitan Expo, Athens Greece

Posidonia Ποσειδώνια

The International Shipping Exhibition

Organisers: **Posidonia Exhibitions SA,** e-mail: posidonia@posidonia-events.com

www.posidonia-events.com

BUYER'S DIRECTORY

This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR assumes no responsibility for errors. If you are interested in having your company listed in this Buyer's Directory Section, contact Mark O'Malley at momalley@marinelink.com

ANCHORS & CHAINS

Anchor Marine & Supply, INC., 6545 Lindbergh Houston, Texas 77087 , tel:(713) 644-1183, fax:(713) 644-1185, david@anchormarinehouston.com

APPROVED U.S. COAST GUARD MARINE SANITATION DEVICES

Environmental Marine, Inc., 711 Colyer Rd., Bronson, KY , USA , tel:(606) 561-4697, bobkenison@aol.com contact: Bob Kenison, www.envmar.com

AUTOMATIC IDENTIFICATION SYSTEM

Saab AB (publ) TransponderTech, SE-589 41 Linkoping , tel:46 13 180000, fax:46 13 182377, Info.transpondertech@saabgroup.com

CLEAN, QUIET, PROVEN: POWER & PROPULSION SOLUTIONS

BAE Systems, Bldg. 14, 1098 Clark Street Endicott, NY 13760 , tel:(607) 770-2083, carol.gorenflo@baesystems.com contact: Carol Gorenflo, www.GetToZero.com

COMMUNICATIONS

David Clark Company (Wireless Headset Communication Systems), 360 Franklin Street, Worcester, MA 77060, USA , tel:(800) 298-6235 , www.davidclarkcompany.com/marine

FALL OVERBOARD PREVENTION AND RESCUE & RECOVERY

HARKEN, N15W24983 Bluemound Rd. Pewaukee, WI 53072, Pewaukee, WI , USA , tel:+1 262 691 3320, infoUSA@harkenindustrial.com, www.harkenindustrial.com

FIRE FIGHTING

Aussie Pumps, 7 Gladstone Road, Castle Hill , Australia , tel:+61 (2) 88653500, marketing3@aussiepumps.com.au contact: Melinda Jansen, www.aussiepumps.com.au

GET TO ZERO EMISSIONS

BAE Systems, Bldg. 14, 1098 Clark Street Endicott, NY 13760 , tel:(607) 770-2083, carol.gorenflo@baesystems.com contact: Carol Gorenflo, www.GetToZero.com

INERTIAL SENSING SYSTEMS

Silicon Sensing Systems Ltd, Clittaford Road Southway, Plymouth, Devon PL6 6DE United Kingdom , UK , tel:+44 (0) 1752 723330, sales@siliconsensing.com

MECHANICALLY ATTACHED FITTINGS (MAFS)

Viega LLC, 585 Interlocken Blvd. Broomfield, CO 80021 , tel:(316) 425-7400, mark.brodie@viega.us

MEMS MOTION SENSING

Silicon Sensing Systems Ltd, Clittaford Road Southway, Plymouth, Devon PL6 6DE United Kingdom , UK , tel:+44 (0) 1752 723330, sales@siliconsensing.com

METEOROLOGICAL INSTRUMENTS

R.M. Young Company, 2801 Aero Park Dr., Traverse City, MI , tel:231-946-3980, fax:231-946-4772, vsherman@youngusa.com

NAVAL ARCHITECTS, MARINE ENGINEERS

All American Marine, 1010 Hilton Ave. Bellingham, WA 98225 U.S.A. , tel:(360) 647-7602, marketing@allamericanmarine.com

Bristol Harbor Group, Inc., 99 Poppasquash Road Unit H, Bristol, RI , USA , tel:(401) 253-4318, kribeiro@bristolharborgroup.com

The Shearer Group, Inc, 3118 Harrisburg Blvd., Suite 100, Houston, TX , USA , tel:(281) 532-2080, gbeers@bristolharborgroup.com

PASSENGER AND COMMERCIAL VESSEL REPAIR, MAINTENANCE, DRYDOCKING

Blohm+Voss B.V. & Co. KG, Hermann-Blohm-Strasse 3, 20457 Hamburg, Germany Germany , tel:+49 40 3119 2110, shipservices@blohmvoss.com , www.blohmvoss.com

SURFACE PREP TOOLS

Water Cannon, 4300 West Lake Mary Blvd. Units 1010-424 , USA , tel:321-800-5763, sales@watercannon.com , www.watercannon.com

ULTRASONIC TRANSDUCERS

AIRMAR Technology Corporation, 35 Meadowbrook Dr., Milford, NH, USA, tel: , tel:(603) 249-7199, sales@airmar.com

VACUUM TOILET SYSTEM

Jets Vacuum AS, Myravegen 1 6060 Hareid , tel:47 700 39 100, fax:47 700 39 101, post@jets.no , www.jetsgroup.com

MARKETPLACE

Products & Services

www.MaritimeEquipment.com

Vessels, Barges & Real Estate for Sale/Rent

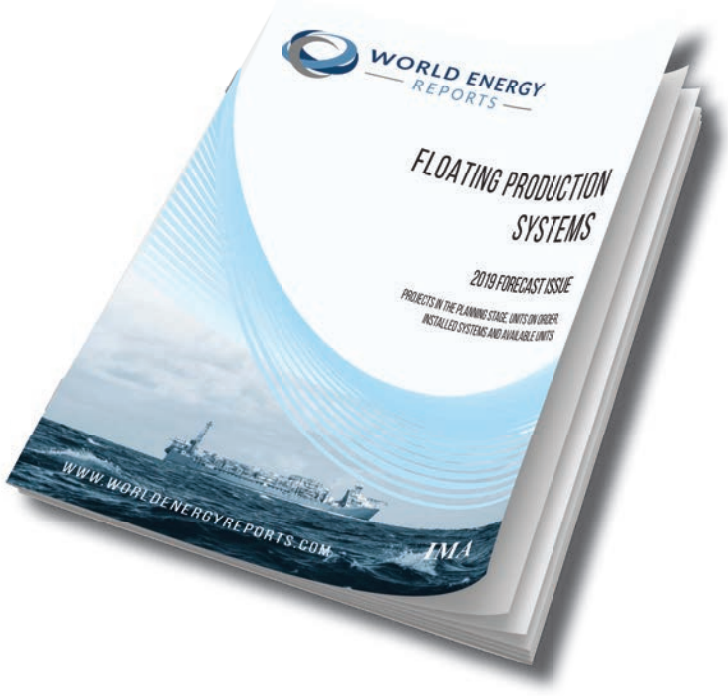
ADVERTISER INDEX

Page	Advertiser	Website	Phone#
12	ABS Americas	www.eagle.org	(281) 877-6774
39	Anchor Maine & Supply, Inc	www.anchormarinehouston.com	(800) 233-8014
1	Bay Shipbuilding/Fincantieri	www.bayshipbuildingcompany.com	(920) 746-3403
25	Cimolai Technology S.p.A	www.cimolaitechnology.com	011 39 049 940 4539
19	Click Bond, Inc.	www.clickbond.com	(775) 885-8000
35	Detyens Shipyards, Inc.	www.detyens.com	(843) 308-8000
11,13	Electronic Marine Systems	www.emsmarcon.com	(732) 382-4344
15,17	Electronic Marine Systems	www.emsmarcon.com	(732) 382-4344
7	Furuno USA, Inc.	www.FurunoUSA.com	Please visit our website
31	GULF COPPER MFG CORP	www.gulfcopper.com	(281) 752-4835
47	Hougen Inc.	www.hougen.com	(800) 426-7818
C4	Japan Ship Machinery and Equipment Association	www.jsmea.or.jp	81-3-3502-2041
5	MAN Energy Solutions SE	www.man-es.com	Please visit us online
3	Military Sealift Command	www.sealiftcommand.com	(888) 891-4577
23	Omnithruster	www.omnithruster.com	(330) 963-6310
58	Posidonia	www.posidonia-events.com	Please visit us online
C2	Twin Disc	www.twindisc.com	(262) 638-4000
21	Walz & Krenzer	www.wkdoors.com	(203) 267-5712
C3	World Energy Reports	www.worldenergyreports.com	(212) 477-6944

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: productionmanager@marinelink.com

WORLD ENERGY
REPORTS

The industry's most sophisticated and in-depth Floating Production Systems market intelligence, business outlook and interactive database.



Our Market Intelligence Suite Includes:

- Full industry intelligence covering: FPSOs, SEMIs, SPARs, TLPs, FLNGs, FSRUs & FPSOs
- Annual five-year market forecast
- Real time, interactive online database
- Monthly reports and forecast recalibration
- Customer support and research assistance

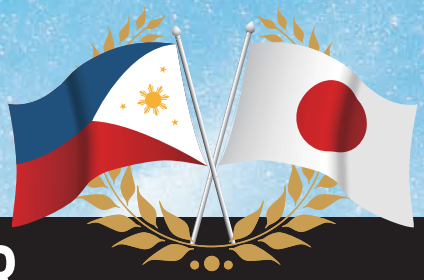
ACTIVATE YOUR FREE REPORT TODAY:

www.worldenergyreports.com

World Energy Reports:
+1-212-477-6944

Supported by 日本財団 THE NIPPON FOUNDATION

JAPAN JSMEA
Japan Ship Machinery and Equipment Association



SHIP MACHINERY & EQUIPMENT SEMINAR

PHILIPPINES 2020

DIAMOND HOTEL PHILIPPINES

Roxas Boulevard,
Corner Dr. J. Quintos Street,
Manila, 1000 Metro Manila

1st Floor DIAMOND BALLROOM

- 14:00–18:00 Presentation and Business matching
- 18:00–19:30 Networking Reception with ClassNK

6th FEBRUARY
14:00–19:30

FREE TO JOIN

FORUM REGISTRATION

To participate in the forum requires registration.

https://www.jsmea.or.jp/en/seminar/2020/Philippines/

Japan Ship Machinery and Equipment Association（JSMEA）

Shingo Tomomatsu（JSMEA）
Email. tomomatu@jsmea.or.jp
TEL. +81-3-3502-2041
FAX. +81-3-3591-2206
https://www.jsmea.or.jp