

Casualties: Master, pilot at odds as tanker hit vessels, infrastructure on Lower Mississippi

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Subscription Department
Toll-free 866-918-6972
professionalmariner@pcspublink.com

Editorial

editors@professionalmariner.com

Editor Rich Miller

Associate Editor Casey Conley

Copy Editor Harry Queeney

Art Director Kim Goulet Norton

Gulf Coast Photographer/

Correspondent Brian Gauvin

West Coast Photographer/

Correspondent Alan Haig-Brown

Columnist Capt. Kelly Sweeney

Advertising

advertising@professionalmariner.com

West Coast/Canadian/

International Susan W. Hadlock
207-838-0401

East Coast Charlie Humphries
207-939-1929

Gulf/Midwest Arthur Auger
207-577-3257

Publisher Alex Agnew
207-450-5363

Circulation/Events

Events & Marketing Lee Auchincloss
Coordinator 207-772-2466 x225

Business

Business Office Lee Auchincloss

Customer Service: 1-866-918-6972
All Other Departments: 207-772-2466
www.professionalmariner.com

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BY BRIAN GAUVIN

ON THE COVER

Capt. Gavin Fayard mans the helm of the passenger ferry *RTA 2* as it heads across the Mississippi River from downtown New Orleans to Algiers. The 105-foot aluminum catamaran is one of two recent builds from Metal Shark now providing service on the route. See story, page 24. Brian Gauvin photo



- 18 Biden presidency points to growth for US offshore wind industry

BY NICK KEPPLER



Signals



The bow of *Golden Ray*, being transported on the Crowley barge *Julie B.*, is guided along Bayou Chene in Louisiana on Dec. 29 on its way to a recycling facility in Gibson, La. Vehicles can be seen inside the bow, below, after it was cut from the ship in St. Simons Sound.

Coral Marine Services photo

Crews overcome COVID, complex hurdles in *Golden Ray* salvage

One of the most challenging salvage operations in U.S. maritime history is making headway, piece by piece, a year and a half after the vehicle carrier *Golden Ray* capsized and caught fire in Georgia's St. Simons Sound.

The 656-foot ship, weighing in at 71,178 gross tons, is resting on its starboard side about a half-mile from St. Simons Island. As many as 400 people and 50 vessels — including construction barges, tugboats and environmental response boats — have

been working on *Golden Ray*'s salvage, according to St. Simons Sound Incident Response.

"I've been working on response for over 20 years, but not a salvage this complex, because there has never been a salvage that is this complex," said incident commander Chris Graff of Gallagher Marine Systems of Moorestown, N.J., which is overseeing the project.

Golden Ray, carrying about 4,200 vehicles, was leaving the Port of Brunswick on Sept. 8, 2019 when



St. Simons Sound Incident Response photo

the ship capsized. All 24 crew were rescued. A preliminary analysis by the U.S. Coast Guard determined the rollover likely was caused by a combination of vehicles placed too high on the ship's decks and not enough ballast water aboard given the placement of the cargo.

Salvage crews have faced many ensuing obstacles, including working amid the COVID-19 pandemic, hurricanes, the need for extensive pollution containment, and a 5-knot current in St. Simons Sound.

"The hurricane season for 2020 was one of the biggest seasons we've experienced, so that has complicated the response, and we've had some no-name weather conditions" that caused additional delays, said Coast Guard Cmdr. Efren Lopez, the federal on-scene coordinator.

In June, 10 responders tested positive for COVID-19. As a result, salvage leaders implemented a stronger safety policy, according to Lopez. This included separating various personnel into self-contained groups.

"We keep all of the teams in their own separate bubbles," Graff said. Since then, "we've probably had an excess of 1,000 people coming and going, and we've only had a handful of people who have tested positive for COVID."

In late July, coordinators paused salvage operations for two months due to the coronavirus outbreak and the possible impact of storms during the hurricane season.

As of Jan. 7, T&T Salvage of Galveston, Texas had cut and removed two sections of the ship. Salvors decided that *Golden Ray* would be cut into eight sections, each weighing between 2,700 and 4,100 tons, with the pieces transported one at a time by



St. Simons Sound Incident Response photos

Section 8 of *Golden Ray*, the stern, is loaded aboard Crowley's Barge 455-8 after being removed from the wreck on Jan. 5 by the twin-gantry catamaran VB-10,000. Below, the cutting chain progresses upward on the hull.

barge to Modern American Recycling Services in Gibson, La.

The cutting and lifting of the sections is being done by Versabar's VB-10,000, the largest heavy-lift vessel ever built in the United States. The twin-barge catamaran has two 240-foot-tall gantries, four main hoist blocks and a lift capacity of 7,500 tons.

From April through June, T&T Salvage attached 16 lifting lugs to the hull, pieces of metal weighing between 35 and 85 tons that are the connecting points between the rigging of VB-10,000 and each section of the wreck, according to Coast Guard Petty Officer 2nd Class Michael Himes, spokesman for St. Simons Sound Incident Response. Two lifting lugs are attached to each section.

The cutting is done with a 400-foot chain that moves at about 7 feet per minute, slowly weakening the steel along the groove, according to Himes. The chain is made of 3-inch-diameter steel links 18 inches long that weigh about 80 pounds. Before each cut, holes are drilled in the hull to keep the chain in line.



"(The chain) uses a combination of friction and the weight of the wreck to do these cuts," Graff said.

Cutting the bow (section 1) from the ship started on Nov. 6 and finished on Nov. 28. The section was loaded onto the 400-foot Crowley barge *Julie B.*, which was transported to Modern American Recycling in December. It was the first time VB-10,000 had been used to divide a ship.

"We took lessons (from) the first

cut and we made modifications for the second cut,” Lopez said.

After the first cut took 21 days, the second cut — removing the stern (section 8) — took only eight and a half days. The second cut included changes in the cutting angle, modifications to the blocks and pulleys to increase the durability of the chain, and replacing some of the links with a higher grade of steel, according to Himes.

On Jan. 5, section 8 was transported to a local facility aboard Crowley Barge 455-8 for sea fastening and ballasting before making the trip to Louisiana.

In the fall of 2019 and winter of 2020, about 327,000 gallons of an oil

“We keep all of the teams in their own separate bubbles. ... We’ve probably had an excess of 1,000 people coming and going, and we’ve only had a handful of people who have tested positive for COVID.”

Chris Graff,
incident commander

and water mixture were removed from the wreck. In December 2019, salvors removed the rudder and propeller, which together weighed 130 tons.

Starting in February 2020, an environmental protection barrier was built around the wreck. After Weeks Marine installed 80 pilings, netting made of high-tensile polyester was put in place between the pilings from the seabed to above the surface of the sound.

There is no official estimate for a completion date for the salvage. “Each section is different and the plan (will change) when we get to the middle sections,” Himes said.

David A. Tyler

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Louisiana credentialing scam spurs ‘full-scale’ Coast Guard review

After 31 people were indicted in connection with a scam to boost test scores at a Mandeville, La., credentialing center in late 2020, the U.S. Coast Guard has been investigating to identify mariners who may hold fraudulently obtained documents and take appropriate action against them.

Cmdr. Martha Mannion, chairwoman of the Coast Guard Merchant Mariner Credentialing Fraud Task Force, said the investigation includes a forensic analysis of suspected mariners’ records.

“Concurrently, we have initiated a full-scale review of the merchant mariner credentialing program to ensure the integrity of our credentialing process,” Mannion said.

Dorothy Smith was a credentialing specialist at the Coast Guard’s Regional Exam Center in Mandeville whose job involved entering scores for safety and training tests that merchant mariners are required to pass to obtain licenses to serve in various positions on vessels. According to a U.S. Attorney’s Office indictment from Nov. 20, Smith took bribes to inflate exam scores, which resulted in applicants illegally obtaining licenses for officer-level positions including master, chief mate and chief engineer.

The indictment states that former Coast Guard employees Eldridge Johnson and Beverly McCrary were intermediaries in the scheme, as were maritime industry workers Alexis Bell, Micheal Wooten, Sharron Robinson and Alonzo Williams. The four maritime workers also allegedly had their own scores fixed by Smith.

The fraud at the exam center occurred over a period of seven years, according to the indictment. If found guilty, each defendant faces a sentence of up to five years in prison and a \$250,000 fine.

against any suspected fraudulent activity,” Mannion said. “The Coast Guard is committed to the safety and security of the Marine Transportation System.”

The Mandeville indictment came

Fraud at the Coast Guard’s Regional Exam Center in Mandeville, La., led to applicants illegally obtaining licenses for officer-level positions including master, chief mate and chief engineer, according to a federal indictment.



In addition to the charges against Smith and the six alleged co-conspirators, 24 current and former merchant mariners have been charged with unlawfully receiving officer-level licenses. Each of the mariners received false scores from Smith, with some receiving false scores on multiple occasions, according to the indictment.

The investigation by the Merchant Mariner Credentialing Fraud Task Force is being assisted by the National Maritime Center and the Suspension and Revocation National Center of Expertise.

“The Coast Guard is diligently working to identify and investigate any mariners potentially involved in fraud schemes and will pursue appropriate enforcement action

one month after another federal indictment in which four men were charged with selling fraudulent Coast Guard credentials from Mid-Atlantic Maritime Academy in Norfolk, Va. Given that the documents are intended to demonstrate competence for demanding positions with serious safety ramifications, the magnitude and duration of these fraud schemes have sent shock waves through the industry.

Prospective and current employers can verify credentials with the Coast Guard’s Merchant Mariner Credential Verification tool, which can be found at www.homeport.uscg.mil/missions/merchant-mariners/merchant-mariner-credential-verification.

Amy Paradysz

UN designates mariners as essential, but crew changes still in limbo

On Dec. 1, the United Nations designated mariners as key or essential workers, which in theory should facilitate crew changes on ships during the COVID-19 pandemic. The problem is there is no consistency in the protocols that countries or even states have in terms of allowing crewmembers to come ashore.

“It really depends on the company and the operation and where they go,” said Sean Kline, director of maritime affairs for the Chamber of Shipping of America. “(If) a ship pulls into L.A.-Long Beach harbor and the governor says we’re in a lockdown,” mariners can’t disembark. It even happens to U.S.-flagged ships that are simply trying to come home.

“You can’t go to California, but Washington might let you in,” he added.

Kline cited the example of a mariner aboard a Danish-flagged ship who had a cardiac issue that was life-threatening, “but the ship wasn’t allowed to divert because the (local) mayor wouldn’t allow anyone to come ashore.”

For every mariner who can’t get off a ship due to the pandemic, there’s one stuck at home who can’t work to feed his or her family. It’s estimated that travel restrictions have impacted up to 400,000 seafarers.

On Dec. 17, the International Labour Organization (ILO) stated that governments had failed to comply with several provisions of the Maritime Labour Conven-

tion during the COVID-19 pandemic, including Article I (2) on the duty to cooperate. An ILO committee found that national signatories had “failed abjectly to protect the minimum standards ... of seafarers’ rights as set out in international law. This includes basic rights such as access to health care, repatriation, annual leave and shore leave.”

Responding to the ruling, International Transport Workers’ Federation General-Secretary Stephen Cotton and International Chamber of Shipping Secretary-General Guy Platten issued a joint statement calling on governments to help mariners who are unable to leave their ships.

“This ruling clearly sets out that it is both legally and morally



Restrictions on traveling and disembarking at ports have impacted up to 400,000 seafarers worldwide, confining some crewmembers to their ships for more than a year and a half. “We need to help them get (to) where they need to be,” says Sean Kline of the Chamber of Shipping of America.

Pacific Basin Shipping photo

wrong for countries to continue to expect seafarers to work indefinitely supplying the world with food, medicine and vital supplies, while depriving them of their fundamental rights as seafarers, as workers and as humans,” Cotton and Platten said.

The statement insisted that mariners be allowed to disembark in ports for medical attention and be permitted to fly home when their contracts are finished. It also called on governments to let replacement crews through national borders to join a ship. To date, 46 countries have classified mariners as key workers.

“We welcome the news that 46 countries have designated seafarers as key workers, but more governments must now follow suit,” Platten told *Professional Mariner*. “They need to recognize the crucial role seafarers play in transporting food, medicine, energy supplies and other essential raw materials across the globe in the height of a global pandemic.”

Another group experiencing difficulty is third-party technicians who need to make repairs when a ship is in port. Local regulations in many areas are making it difficult for outside technicians to board. “If it wasn’t a transpor-

tation issue, it was a quarantine issue,” Kline said.

As COVID vaccines began to roll out at the end of 2020, International Maritime Organization Secretary-General Kitack Lim said the key-worker designation should ensure that seafarers and other maritime employees receive priority status to allow them to work and maintain global supply chains more efficiently.

“We need to help them get (to) where they need to be,” Kline said, referring to mariners. “Otherwise the Walmart and Target shelves are going to be empty.”

Eric Colby

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As threat rises, cyber-risk management now part of SMS protocol

Reflecting the new age of electronic marauding, a cyber-risk management plan must now be included in a vessel's safety management system (SMS) under international law. Related inspections will focus on critical navigation components and cybersecurity "hygiene," including frequently changing default passwords for onboard devices.

The changes under the International Safety Management (ISM) Code were adopted by the International Maritime Organization's Maritime Safety Committee in June 2017 and implemented on Jan. 1. Each vessel's cyber-risk plan will be evaluated along with the rest of the SMS no later than the first annual verification of the document of compliance after Jan. 1.

The goal is to protect operational technology as well as a ship's integrated technology that connects systems

to the internet. Individual vessels are subject to cyberattack, as well as vessel owners and operators. According to Naval Dome, an Israel-based maritime security specialist, cyberattacks on the industry have increased 900 percent since 2017, with operators as large as Maersk and COSCO being affected.

The U.S. Coast Guard's inspections will focus on systems critical to safe operation and navigation. Stand-alone computers and other systems that are not essential to operations or navigation will not be examined.

The inspectors will determine if a vessel has had a third-party assessment and complies with basic cybersecurity hygiene like changing default passwords and not having passwords taped to devices. The inspectors also will observe if the crew or officers complain about computer problems

that impact shipboard systems, or if spoofed emails from the master or crew are being sent to shoreside recipients within the company. Depending on the initial findings, inspectors may conduct a more detailed review and issue deficiencies based on any portion of the management plan that was not implemented.

For compliance under Coast Guard auspices, marine inspectors and port state control officers will conduct the cyber-risk assessments for all U.S.-flag vessels and foreign-flag ships that call on U.S. ports. Some security experts, however, question whether port inspection agencies have the technical skills for the job.

"I don't think the enforcement agencies around the world have the expertise to be able to get on a boat and be able to really determine what the cyber vulnerabilities are," said



Cyberattacks on the global maritime industry have increased 900 percent since 2017. Vessels, their operators, their owners and shoreside operations have all been targeted.

Techno FAO photo

Corey Ranslem, CEO of International Maritime Security Associates in Miami Lakes, Fla.

If a ship's cyber-risk management is not in compliance, it is subject to enforcement action similar to any other SMS violation. If the vessel failed to implement a management plan, the inspector may issue an operation deficiency and an ISM deficiency. The deficiencies must be corrected before the vessel is allowed to depart, and the vessel must conduct an internal audit.

Vessel owners should have a third-party consultant conduct a risk analysis of the shipboard network and devices, Ranslem said. A vul-

nerability scan, which can be done remotely, will identify shortcomings like a weak firewall. Then the vessel's crew or an information technology consultant can correct the problem before an inspection.

Ranslem has inspected a vessel on which a hardware firewall had been installed, but nothing was connected to it because shipboard personnel couldn't get it to work. "You can't always blame the crews," he said. "They need help to manage these systems."

According to the Coast Guard, approximately 1,170 U.S.-flag vessels maintain SMS certification, including 600 that do so on a voluntary basis.

Non-commercial, recreational and fishing vessels are not subject to the requirements, nor are those that operate exclusively on the Great Lakes and connecting waters.

Because the cybersecurity standards don't require specific technology, the cost of compliance may be relatively low depending on the vessel's age and current equipment. A third-party assessment can identify risks and help develop a plan to address them.

"I tell vessel owners, you're going to pay a little bit for cybersecurity now, or you're going to pay 100 times more when there's a breach," Ranslem said.

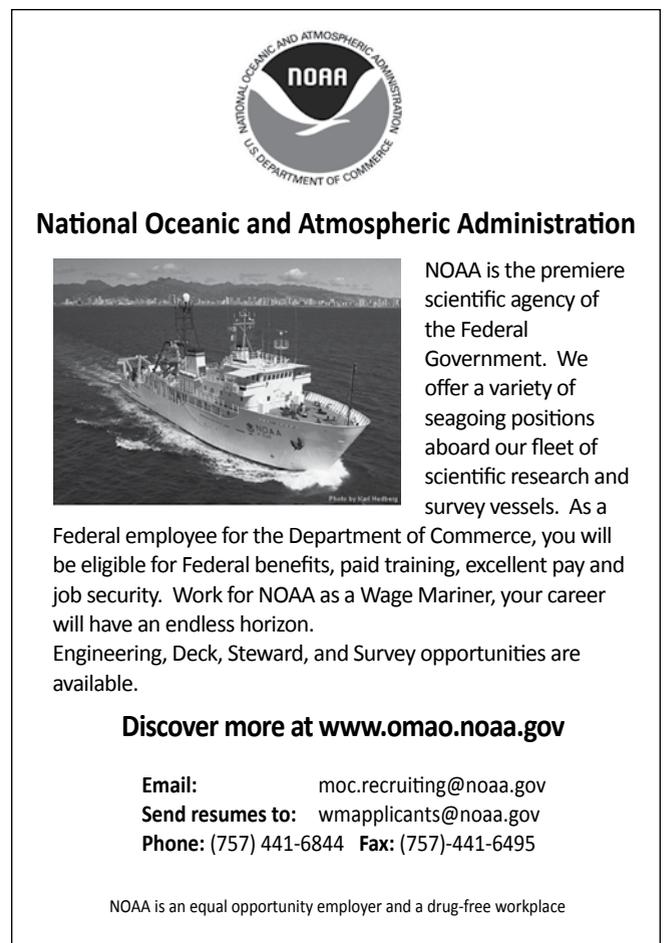
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Insurers face uncharted risks as new sea routes open in Arctic

Providing insurance coverage for ships in inhospitable and remote waters remains a dicey proposition at best, as the cost of claims from a grounding, spill or other incident can run hundreds of millions of dollars.

As the warming global climate has opened new sea routes through the Arctic and shipping companies are taking advantage of new opportunities and cost savings, insurers are still reluctant to write policies to cover potential problems because of numerous risks associated with operating in these areas. Those risks run the gamut: routes constantly shift amid the melting ice and are poorly mapped, extreme cold causes engine and systems problems, search-and-rescue resources often aren't readily available, spotty satellite coverage results in less accurate positional information, weather reports often are inaccurate, and so on.

Quantifying these risks and assigning a dollar value to them is very challenging, said Helle Hammer, managing director of the Nordic Association of Marine Insurers (Cefor) and chairman of a policy forum for the International Union of Marine Insurance (IUMI), a nonprofit association representing insurers.

"We have limited loss statistics for these sailings, which means we are currently not able to specify the impact based on data. This poses one of the challenges to insurers, along with the remoteness," he said. "Certain areas are consequently



Rosatomfoto photo

either conditional or excluded from (coverage), which means each sailing needs to be considered on a case-by-case basis. What we generally do know is that even a small incident in these waters could potentially lead to a large claim due to the sensitive area weather conditions and lack of infrastructure."

The IUMI is an active supporter of the International Maritime Organization's International Code for Ships Operating in Polar Waters, more simply known as the Polar Code. It lowers risks by ensuring that shipowners are better prepared for operating in the Arctic and by preventing trips that don't meet safety standards. Hammer said vessels found to be in breach of these standards, which went into effect four years ago, may not be covered if there is a claim.

The code requires operators planning a polar voyage to undergo a vessel assessment and train masters, chief mates and officers in charge

A convoy transits the Northern Sea Route in 2018. Commercial shippers are taking advantage as the waters of the Arctic lose ice, but little data is available to insurers to gauge the risks.

of navigational watch-standing to be eligible for a polar ship certificate. Proven enforcement of these standards is needed for insurance companies to feel more comfortable taking on the risk of providing coverage, said Capt. Rahul Khanna, global head of marine risk consulting for Allianz Global Corporate & Specialty.

"There are various risks associated with Arctic navigation. These need to be identified and measured so as to develop comprehensive assessments for the same," he said. "We would like to see that the vessels are fully equipped to navigate the harsh environments."

Khanna said insurers also like to see detailed risk assessments completed before such trips are undertaken, and access to a greater volume of data would allow insurers

to develop ways to more accurately estimate pricing.

Much more needs to be done, but some strides have been made toward better understanding and assessing risks. Khanna pointed to creation of an international database (www.pame.is) two years ago by the Arctic Council's Protection of the Arctic Maritime Environment working group to better coordinate, compile and assess live and historical shipping data for Arctic voyages.

Neil Roberts, head of marine and aviation for the Lloyd's Market Association, a member group for insurers at Lloyd's, referred to the Arctic as being "at the frontier of risk for underwriters." He lauded the "excellent cooperation in recent years between the Arctic Council and industry" that has produced a best-practice web portal containing "an invaluable archive of information."

"For insurers, it's about assessing the risk. This is done on individual voyages and will look at the characteristics of the ship and cargo, what ice classification the vessel has, what crew training can be evidenced and whether there is adherence to the Polar Code," Roberts said. "In the past, inquiries tended to be speculative, but there is a clear growth in interest, and both Russia and the U.S. have formal plans for their involvement in the high north. Underwriters are prepared to take on such risks but will require quite a lot of comfort that sufficient care has been taken, as no one wants a problem which could be hundreds of miles from help."

Patricia McCarthy



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Towing

by Will Van Dorp



Vane expands to Great Lakes with all-season asphalt trade

Air temperatures on a December day in Buffalo, N.Y., average about 20 degrees Fahrenheit or lower, with water temperatures around 40 and dropping, but the cargo on a newly arrived barge is maintained at 300 degrees. Snowflakes falling on the deck turn to steam.

Double Skin 509A, with a safety-yellow band painted on the bow, is pushed by the tugboat *New York*, which has a white superstructure, blue trim and a

large blue “V” embedded neatly in a horizontal green stripe on the stacks. It’s a new livery on the Great Lakes and Vane Brothers’ initial tugboat/barge unit in the region. The destination on this wintry day was a set of asphalt storage tanks on the Niagara River just upstream from the

Vane Brothers has arrived in the Great Lakes with the tugboat *New York* and tank barge *Double Skin 509A*, shown above in a push configuration. The vessels began service in the region last fall.

South Grand Island Bridge in Tonawanda, N.Y., less than a dozen miles from Niagara Falls.

In the past two decades,

Maryland-based Vane Brothers has expanded operations to other points on the East Coast, Gulf of Mexico, Caribbean and



Vane Brothers photo/Pat Rossi illustration

West Coast. This Vane unit arrived on the Great Lakes in the fall of 2020. “(The region) represents an exciting business opportunity in a new geographic area,” said Vane Brothers President C. Duff Hughes.

New York is a 4,200-horsepower Elizabeth Anne-class tug delivered by St. Johns Ship Building of Palatka, Fla., in 2018. *Double Skin 509A* was built at Conrad’s Deepwater South shipyard in Amelia, La., and delivered in 2015. The 50,000-barrel barge — 361 feet long with a 62-foot beam and 24.5-foot depth — is purpose-built to handle asphalt. Put another way, *Double Skin 509A* carries as much asphalt as 228 tank trailer trucks.

The Vane unit loads at Marathon Petroleum’s Detroit Refinery on the River Rouge, a narrow industrial waterway crisscrossed by six bridges. Two of the bridges must be transited twice because a turning basin needs to be used to position the vessels for loading and departure.

“On my first day up here, we spent an hour of my first 90 minutes on the boat waiting for two railroad bridges to open up so we could get to the barge,” said Vane Capt.

Rusty Harris. It reminded him of Norfolk, Va., and Philadelphia, where he’s also worked. But he added, “The three train bridges and three road bridges on the River Rouge are narrower and not on a straight shot of the river.”

After transiting Lake Erie to Buffalo, safety requires passage through the calm waters of the Black Rock Canal, which runs along the eastern bank of the Niagara River. Water in the river here is turbulent, flowing at 6 to 10 knots as it churns toward the falls. The outflow from the Great Lakes, holding 20



Vane Brothers photo



Will Van Dorp photo

Chief engineer Mark Johnson, above, monitors the performance of *New York*. The 95-foot, 4,200-hp tug was delivered to Vane Brothers in 2018 by St. Johns Ship Building. At left, the Great Lakes Towing Company tugboat *Vermont* assists *New York* and *Double Skin 509A* northbound through Buffalo’s Black Rock Canal.



Capt. Harvey Duff, above, oversees operations on *Double Skin 509A*. The barge can handle 50,000 barrels of product. Below right, crewmembers aboard *New York* include, from left, deck hand David Marchione, deck hand Nino Pollari, mate Rand Attaway, chief engineer Mark Johnson and Capt. Rusty Harris.

percent of the world's fresh water, races through here. The canal allows safe passage toward Tonawanda, 10 miles downstream from Buffalo, but the narrow 3.5-mile transit involves rocky banks, three bridges and a lock.

Double Skin 509A is the first in a series of Vane

Brothers barges designed to carry asphalt, which thickens as it cools. Think of an asphalt road and seasonal temperature changes — the product must be loaded and transported at temperatures of 250 to 350 degrees Fahrenheit to reduce its viscosity.

“It is necessary to maintain the cargo at an elevated temperature ... so that it will flow efficiently,” said Steve Magdeburger, special projects manager for Vane Brothers and supervisor of construction of the barge. “The primary enhancements for an asphalt barge

are the necessary heating capability to maintain cargo temperatures and a special type of pump to (deliver) liquid asphalt. If the asphalt temperature drops below 270 degrees, it becomes more difficult, if not impossible, to pump the asphalt.”

The Great Lakes experience rough weather and icing conditions in winter, but Vane expects the asphalt work will continue year-round, according to Capt. Rick Iuliucci, vice president of operations. Certain destinations cannot be accessed during the coldest months, however. Tonawanda needs to stock up before winter because the Black Rock Lock and canal close and navigational aids are pulled. In 2020, some buoys were pulled a week before Christmas — the day *New York* and *Double Skin 509A* made

their last run of the season into the city.

U.S. and Canadian regulations dictate that pilots be used on Great Lakes tank barges until captains have logged a minimum number of voyages. On the Black Rock Canal, as well as on other waterways in the region, a pilot may call on assist tugs. One or two Buffalo-based tugboats may be in order on the canal, particularly to line up with the lock and to turn at the asphalt terminal before discharging cargo, facing upstream.

Crossing Lake Erie in ideal conditions might take 36 hours, but in rough weather it can take a week. *New York* and *Double Skin 509A* deliver to customers on Lake Erie, Lake Michigan, Lake Huron and Lake Ontario.

“There are some pretty nasty storms in the Great

Vane Brothers photo



Vane Brothers photo



Will Van Dorp photo

The bascule Ferry Street Bridge in Buffalo is raised to allow passage on the Black Rock Canal.

Lakes region,” Iuliucci said. “Odds are that we will encounter ice on the freshwater Great Lakes on a grander scale than what we might see along the Hudson River or in other waters where Vane operates. Depending on our location and the weather conditions, it is possible we will require icebreaking assistance.”

For Harris, the challenge is welcome. “When talk of the Lakes job came up, I looked at it as an opportunity to learn and explore new areas,” he said. “The crews of the boat and barge work together well and know what to do and how to get the job done as a team. My most important job, no matter where I happen to be, is to make

the customer happy and keep everyone safe.”

Working on the Great Lakes in autumn and winter does have one advantage. “The pilots tell me that small boat traffic can be crazy in the summer, but now they are all out of the water (and) stored for the winter,” Harris said. “We already saw snow and ice in November, and the cold isn’t here yet! We have stocked up on bags of salt, snow shovels and ice mallets. We have brought totes onto the tug for crewmembers to store extra clothes and foul-weather gear.”

The amount and duration of ice coverage on the Great Lakes fluctuate year to year. But whatever the conditions are for the winter and spring of 2021, the crews of *New York* and *Double Skin 509A* will be out there.



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Biden presidency points to growth for US offshore wind industry

by Nick Keppler

The changing of the guard in Washington, D.C., holds promise for the development of wind power projects in U.S. waters. The 30-megawatt, five-turbine Block Island array south of Rhode Island is the first commercial offshore wind farm in the country.

In 2016, after seven years of regulatory battles, the Block Island Wind Farm went online and the first watts produced from a turbine built on America's continental shelf traveled to an energy grid. At the time, the Obama administration had secured \$200 million for offshore wind projects and research as part of a more climate-conscious energy policy, and the Department of the Interior had issued 11 commercial leases for offshore wind farms.

None of them was ever built. The plan that came the closest to breaking ground — an 800-megawatt set of turbines near Martha's Vineyard — wavered through regulatory efforts and finally died

in December. Meanwhile, nations like the United Kingdom, China and Germany have constructed more and larger offshore farms.

During the administration of President Donald Trump, the Bureau of Ocean Energy Management approved five additional leasing sites for offshore wind farms. Most of Trump's energy and environmental actions lifted restrictions on fossil fuels, a shift in balance that diminished incentives for investment in wind energy. Trump also sowed doubt about climate change, a strong impetus for development of renewable energy sources, and singled out windmills as "ugly," "noisy" and "dangerous."

Now, the offshore wind industry and the maritime interests that serve it see hope in the election of Joe Biden as president. His campaign promises included \$2 trillion in clean energy and sustainability measures, the creation of a carbon-free electricity infrastructure by 2035, an "irreversible path" to net-zero carbon emissions by 2050, and 10 million jobs in renewable energy sectors.

"I think when he puts his hand on the Bible (at his inauguration), there will be absolute confidence that offshore wind will be part of the country's energy policy," Liz Burdock, CEO of the Business Network for Offshore Wind, said in mid-December.

“There is no way you can get to carbon-neutral without offshore wind.”

Biden has not put forth a specific plan for offshore wind development, but his climate pledge on the campaign trail included developing renewables on federal lands and waters “with the goal of doubling offshore wind by 2030.” While that is not a lofty goal considering the nation currently has only one offshore farm, industry groups have cheered his interest in the energy source.

“The Biden team has laid out a comprehensive approach to climate-change policy that recognizes renewable energy’s ability to grow America’s economy and create a cleaner environment and a more prosperous and equitable future,” said Laura Morton, senior director of offshore policy and regulatory affairs for the American Wind Energy Association.

Offshore wind has the potential to be a bounty for the U.S. maritime industry. The needs are plentiful, including the installation of turbines and their groundwork, the maintenance of that infrastructure, and the delivery of supplies and personnel to sites. A research paper from the University of Delaware’s College of Earth, Ocean and Environment projected that an infrastructure of 1,700 offshore wind towers — which the authors forecast as a feasible goal for 2030 — would

generate \$70 billion a year for companies on the supply chain.

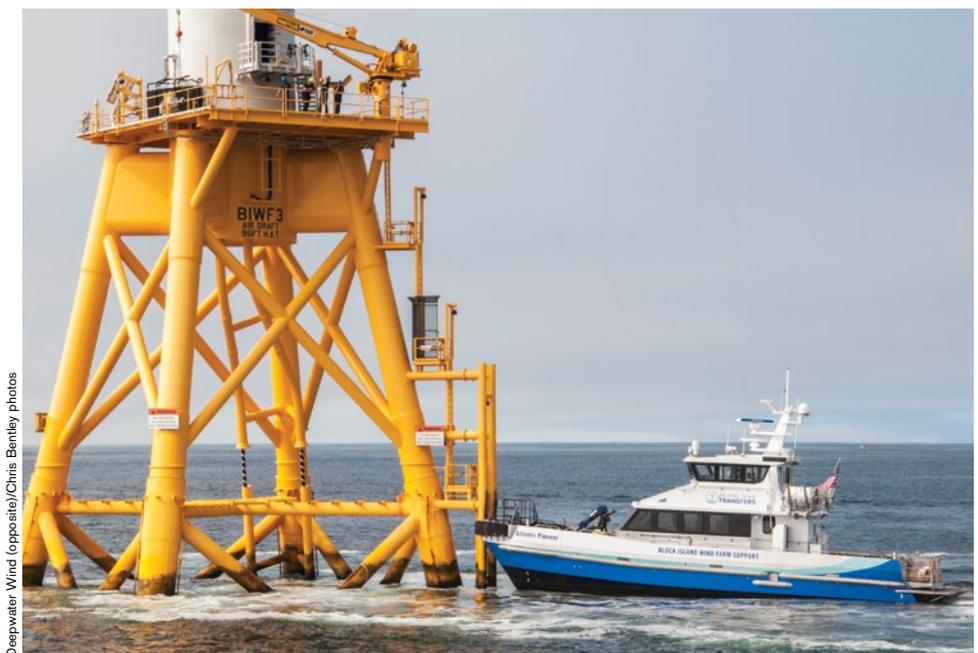
Under the Jones Act, the vessels required to meet these needs must be built in the United States, must be U.S.-flagged, and must be crewed by American mariners. U.S. shipyards have already built two vessels designed to service offshore wind farms — *Wind-Serve Odyssey* from Senesco Marine and *Atlantic Pioneer* from Blount Boats — and more are on the way.

It is uncertain how much of Trump’s personal opinion of wind power trickled down to his administration’s policies, but he has expressed an animosity toward wind turbines that dates back to his career as a real estate developer. Trump waged a lengthy battle to prevent the Scottish government from allowing offshore turbines near a coastal golf

course and hotel his company was building, and in 2012 he told the country’s Parliament that “Scotland will go broke” due to their impact on tourism. In campaign speeches, Trump falsely claimed that the noise from windmills can cause cancer.

Sean Kline, director of maritime affairs for the Chamber of Shipping of America, said in his lobbying of the Trump administration that he saw a drive to replace any Obama-era policy simply because it was the policy of that administration. This included the National Ocean Policy implemented by executive order in 2010. The NOP was the result of years of lobbying by industry and environmental groups for a unified approach to protect American lakes, rivers and coastal waters, rather than a hodgepodge of industry-by-industry regulations.

Atlantic Pioneer, delivered by Blount Boats of Warren, R.I., in 2016, approaches a turbine in the Block Island Wind Farm. It is the first crew transfer vessel purpose-built in the United States to support offshore wind farm construction and maintenance.



Deepwater Wind (opposite)/Chris Bentley photos



WindServe Odyssey, built by Senesco Marine of North Kingstown, R.I., left the shipyard last year for a short-term contract supporting the Coastal Virginia Offshore Wind project. The American Wind Energy Association expects 13 projects to be online in U.S. waters by 2026, boosting demand for service vessels.

WindServe Marine photo

“They called it ‘Obamacare on the seas’ even though it was started by the Bush administration,” Kline said.

The NOP endorsed data keeping and sharing of waterway usage, and it authorized managers from entities like the U.S. Coast Guard and Bureau of Ocean Energy Management to meet with industry stakeholders. These actions are crucial when establishing shipping routes and ocean space for a new industry like offshore wind.

“We told them, ‘Let’s not get rid of everything,’” Kline said. “I think they just wanted to pass their own version.”

And they did. In 2018, Trump repealed Obama’s executive order and replaced it with his own, emphasizing the importance of waterways for their resources. But the

The needs are plentiful, including the installation of turbines and their groundwork, the maintenance of that infrastructure, and the delivery of supplies and personnel to sites.

key elements remained, Kline said.

Replacing a president with acrimony toward wind power with one more receptive to renewable energy may open the gates for lucrative offshore wind development. Longtime industry watchers say there are still many challenges ahead, however, including the logistics of getting the power to the shoreside grid.

“As you build out offshore wind more and more, there are discussions on what the cabling would look like,” said Amy Trice, director of ocean planning for the Ocean Conservancy.

There is also the issue of dock space. Areas at major ports have been allotted to particular companies and industries for decades, part of complicated resource-sharing agree-

ments organized by industry and government. A variety of federal agencies would have to play a role in ensuring that space is given to a budding industry, and they would need flexibility from maritime stakeholders like cruise lines, cargo shippers and fishermen.

“Ports have limited space on the East Coast,” Trice said. “To add these additional components, someone has to think of the space for that.”

Burdock said the Biden administration can support state and local officials who are in favor of wind farm development by quickening and simplifying the oversight process. Often the leasing and construction of an offshore farm is a tug of war between states, local stakeholders, the developers and the Bureau of Ocean Energy Management.

“It’s not going to be easy to get a national energy policy,” Burdock said, noting that the federal approach is often scattershot with few singular goals. “(But the administration) can support all these governors. All these projects are in federal waters and so much can be resolved with some help at the federal level.”

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Book excerpt

by Capt. Sean P. Tortora

'Steaming to Djibouti' colorfully captures life on bygone supply ship

On my third day on board *USNS Shinnecock* (T-AOK 1) we rendezvoused with the aircraft carrier *USS John C. Stennis*, better known by its moniker "Big John," for a major UNREP. Underway replenishment, or UNREP in the vernacular of the specialty, is a critical necessity required to keep the combatant ships ready and in the fight. Moreover, it is also one of the most dangerous, if not the most dangerous operation, for ships at sea.

UNREP is not for the faint of heart. You will routinely find up to a combined 165,000 tons of three large moving masses operating less than 200 feet from each other, high-tension wires overhead carrying tons of cargo, the movement of petroleum at rates up to 15,000 gallons per minute through flexible rubber hoses, and crewmen working on deck and/or under the fuselage of specialized aircraft with their spinning rotors feet from their heads. Even more amazing is the fact that the massive amount of total

tonnage, in the form of up to three vessels, is physically connected by wires. In the end, the ultimate goal of UNREP is the safe and efficient transfer of the maximum amount of liquid and/or solid cargo in the least amount of time, while not interfering with the combatant vessel's mission and enabling the Navy ship to remain on station indefinitely.

After the rigs are across (connecting the ships), the UNREP stations must put their wires in tension.

That is yet another critical point. As *Shinnecock* rams down on each station's hydraulic ram tensioner, the helmsman can actually feel the ships being pulled together! That's correct, the 100,000-ton *John C. Stennis* and the 50,000-ton *Shinnecock* are being pulled together by these powerful wires under unbelievable tons of tension. The UNREP teams on both sides are at great risk of injury and even death if

one of these wires should part. But there is nothing that can be done; it is inherent to the job.

•••••

Directly centerline on the bridge, *Shinnecock* had a true telemotor ship's wheel. This was a beast, at 5 feet in diameter with the top damn near as high as I am tall. Steering with this, one

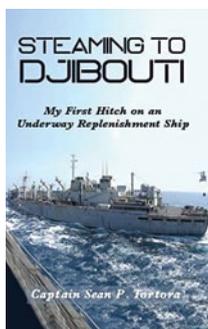
would feel like he was on an old clipper ship sailing across the Atlantic. Now a telemotor helm uses hydraulic fluid and pumping action within the helm to send

the fluid all the way down to the six-way valve in the steering engine room, which sat atop the rudderstock and operated the huge hydraulic rams, which in turn would move the rudder. So every time the helmsman would turn the telemotor ship's wheel, he would actually be pumping hydraulic fluid all the way down to the rams which move the rudder. As you can imagine, there are limitations such as the viscosity of the hydraulic fluid,

the speed or rate of the turn of the helm corresponding with that of the actual rudder stock.

Adjacent to starboard of the telemotor helm was the hand electric helm console. This consisted of a stand with a small ship's wheel the size of a car steering wheel, as well as some controls for automatic steering. This was called the "iron mike" or just "the mike." This wheel was much, much smaller because it was not a pump moving hydraulic fluid to the six-valve to move the rams. Rather, the hand electric would send an electric signal down to the six-way valve, which would then direct the hydraulic rams to move the rudder. The hand electric with automatic controls was considered state of the art.

Nevertheless, old Jabba the Hutt (the captain) was too, I don't know, what's the word ... foolish, idiotic, moronic, what have you, to ever use the damn thing. No, not this genius. He had these poor helmsmen toil away on the telemotor, physically moving the hydraulic fluid manually



via the ship's wheel. It's not an exaggeration to have a helmsman drenched in sweat after an hour and a half on the wheel in any type of sea. I guess I neglected to mention, at this time in history, captains were judge, jury and executioner on board — the last true autocracy remain-

sheets with carbon paper sandwiched between a white page and a yellow page. This was far different from the typical U.S. merchant marine commercial required logbook, also known as a rough log, which, kept by the watch officers, was bound and had just a small

page, all the while written in script, or what is now called cursive — and neatness counted!

Interestingly enough, if any of the watch officers made too many mistakes or didn't write neatly enough, that particular watch officer would actually have to

jokes. For those new third officers like myself, it took a while to learn the art of MSC logbook writing, and in my case, I was known as "the king of the rewrites." Further, it was the second officer who made the determination if a rewrite was necessary. Ultimately, the master would approve the logs, but the second officer wouldn't let anything but perfect logs make it to the captain's desk.

At the end of the voyage, the second officer would separate the copies from the originals, then apply a two-hole punch to the top and metal tabs to bind all the pages together. The original would go to MSC and the copy would remain on the ship — certainly not how I was trained in the art of logbook keeping. •



USNS Supply (T-AOE 6) delivers pallets to the guided-missile destroyer USS Roosevelt during a patrol in the Atlantic Ocean in May. Regardless of a ship's class, commissioning date or technological capability, underway replenishment remains a dangerous job that is not for the faint-hearted.

U.S. Navy photo

ing. This, of course, would change within the next 15 years with the advent of the internet, email and satellite phones. But when I signed aboard *Shinnecock*, the captain's word was gospel and once the ship was out of sight of land, there was no recourse.

••••••••

After I met my watch team, I went about my watch duties, one of them being the logbook. At the time, MSC (Military Sealift Command) kept a running logbook on 8-by-14-inch lined

section for writing pertinent notes of the watch. In addition, the master kept a similar logbook, called the smooth log. The logbook was sacred and pages could never be ripped out of the binding or, God forbid, rewritten over and over to the satisfaction of the master. This was not the case with the MSC logbooks at the time. The daily running log could continue in perpetuity. As long as events continued within that particular 24 hours, the recording would continue page upon

rewrite the entire log for that day. In addition, that one officer would even have to rewrite the sections written by the other officers that had no errors, then hunt them down to get them to sign their name. This was mind-boggling. I couldn't fathom it — rewriting logbooks? It was drilled into our heads at Fort Schuyler that no logs can be altered or tampered with, or gasp ... rewritten. This apparently did not apply to MSC; in fact, rewriting was so common it was often the butt of



Capt. Sean P. Tortora, a master mariner with 25 years of experience

at sea, conducted more than 2,000 underway replenishment evolutions during his career. He is now an associate professor in the Department of Marine Transportation at the U.S. Merchant Marine Academy. "Steaming to Djibouti" is available at Red Penguin Books (www.redpenguinbooks.com).

At Work



New Orleans steps up ferry service with duo from Metal Shark

Story and photos
by Brian Gauvin

A handful of passengers boarded the ferry *RTA 2* at the foot of Canal Street in New Orleans on a brisk but bright December day for the crossing to Algiers Point. The riders, masked against the COVID-19 pandemic, represented a tiny fraction of the 150-passenger capacity of the new 105-foot vessel.

The Mississippi River route previously was assigned to the 41-year-old *Col. Frank X. Armiger*, which frustrated commuters and tourists with unreliable service due to chronic mechanical issues. *RTA 1* and *RTA 2*, moored for over two years while awaiting certificates of inspection

from the U.S. Coast Guard, are now in service in New Orleans. *Col. Frank X. Armiger* will remain in the fleet as a backup vessel.

The certification issues with the new ferries involved the Regional Transit Authority (RTA), the current operator; Metal Shark Boats, the builder; and Transdev, the original operator. The problems have been resolved and the COIs issued.

“*RTA 1* and *RTA 2* signify the beginning of the next chapter in ferry service and regional transit connectivity in the Greater New Orleans region,” said Alex Wiggins, CEO of the RTA. “As we enter the two new

RTA 2 approaches the Algiers Ferry Terminal after a run across the Mississippi River from Canal Street in downtown New Orleans. The new ferry from Metal Shark is one of two sisters providing service on the route.

ferry vessels into service, residents, commuters and visitors will experience a more reliable, comfortable, enjoyable and safe transit option, which will help spur local economic development in our neighborhood business districts.”

Daily vessel operations and maintenance are contracted to LabMar Ferry Services, with the RTA providing oversight and direction regarding operations and long-term goals. The RTA also maintains relationships with Coast Guard and Louisiana Department of Transportation and Development to ensure the ferries meet the necessary regulations to maintain service.

The Subchapter T aluminum catamarans, designed by BMT, are powered by twin 715-hp Caterpillar C18 Tier 3 diesel engines. The design incorporates a low-wake, high-efficiency hull for reduced environmental impact.

Initially, the new ferries will operate on an alternating schedule, providing passenger service on the Algiers Point-Canal Street route. The RTA has expressed a commitment to improve regional connections among the parishes, and it is exploring ferry service to other destinations along the Mississippi River corridor — as well as the necessary funding.

The operator has implemented procedures to prevent the spread of COVID-19 aboard the vessels. A midday cleaning has been added to the regular cleaning schedule

between sailings. Other protocols require the crew and staff to wear masks, have their temperature checked at the start of each shift, and socially distance as much as possible from other crew and passengers.

Each crew conducts a virtual handover of operations to avoid contact with relief personnel and mariners from other ferries docked at the same facility. The procedures include contactless communication of operational and vessel details between the on-duty and relief crews. If a member of a crew is exposed to the coronavirus, they are required to report it to the agency, get tested and self-isolate. •

RTA 2 SPECIFICATIONS

Owner/operator: Louisiana Department of Transportation and Development, Baton Rouge, La./Regional Transit Authority, New Orleans
 Designer/builder: BMT, Teddington, United Kingdom/Metal Shark Boats, Jeanerette, La.
 Dimensions: L: 105' B: 25' D: 9'
 Mission: Passenger ferry
 Crew size: Four
 Hull: Aluminum catamaran

PROPULSION

- (2) Caterpillar C18 main engines, EPA Tier 3, 715 hp each
- Twin Disc MGX-5136SC gears
- (2) Kohler 65E0ZGJ generators

NAVIGATION/COMMUNICATIONS

- (2) Furuno DR56AX radars
- Furuno FA170 AIS
- Furuno SC30 GPS satellite compass
- Furuno GP33 GPS/WAAS navigation display
- Furuno NavPilot 700 autopilot
- Icom IC-M604A VHF radio
- R.M. Young digital anemometer

ADDITIONAL EQUIPMENT

- Freedman Gemini seats
- Flexco flooring
- Daikin HVAC

Capt. Gavin Fayard is joined in the wheelhouse by deck hand Joshua Burris. Both are graduates of SUNY Maritime College. RTA 2's propulsion package is anchored by a pair of Caterpillar C18 main engines, below right.



COVID distancing protocols are observed in the interior of the ferry, which features Freedman Gemini seats. Other passenger amenities include a bicycle rack, below, aft on the main deck.



Casualties

Conflict as tanker hits vessels, infrastructure: ‘Don’t listen to the pilot’

American Liberty eased off the dock at the Marathon Oil terminal near Reserve, La., and began to spin 180 degrees in the flooded Mississippi River. Before long, the loaded tanker was drifting in the fast-moving current.

The master misunderstood a crucial engine order and later second-guessed the pilot as he tried to bring the ship under control. As the situation became more urgent, the master issued his own engine and rudder commands. The bridge

crew began ignoring the pilot’s orders altogether.

At one point, the pilot repeated a full-astern engine order, National Transportation Safety Board (NTSB) investigators wrote in their accident report. The master countered with a request of his own. “Full ahead, don’t listen to the pilot,” he said.

Less than two minutes later, the 601-foot U.S.-flagged ship hit the first of several moored vessels and terminal infrastructure along

the left descending bank. Total damage exceeded \$40 million and four mariners were injured, one seriously.

The NTSB identified multiple factors leading to the incident, which occurred at 2042 on May 16, 2019 at mile 139.5. The agency noted poor bridge resource management and miscommunication between the master and the pilot on board from the Associated Federal Pilots and Docking Masters of Louisiana.



American Liberty, shown on the Mississippi River in New Orleans, was initially moored at mile 140.2 on May 16, 2019 near Reserve, La. A graphic, opposite, from the NTSB report shows the ship’s AIS track (red dots) and points of impact with vessels and infrastructure (red triangles). Not drawn to scale.

Copyright Ted photo

Those failures, the report said, “led to the bridge team’s delay in carrying out an engine order and caused a delay in the vessel attaining sufficient speed to conduct an undocking maneuver in high river conditions. Contributing to the accident was the decision to release the assisting tugs before the undocking maneuver was completed.”

The pilots group did not respond to inquiries seeking comment on the NTSB findings. Crowley, which manages *American Liberty* for American Petroleum Tankers, declined to comment.

American Liberty, delivered in 2017 by Philly Shipyard, is one of the newest tankers working the Jones Act trade. The Mississippi River was at major flood stage and its current around Reserve exceeded

5 knots at the time of the incident. The tanker was docked starboard side to the terminal, with its bow facing upriver.

The ship loaded a cargo of gasoline and low sulfur diesel from Marathon Petroleum Garyville for delivery to Tampa Bay, Fla. There were 23 crew on board when the ship got underway at 2028 on the clear, calm spring night.

American Liberty’s master and pilot agreed on a plan to work the ship off the terminal and spin it for departure. The tugboats *Josephine Anne* and *Vera Bisso* would help swing the ship around. The master and pilot later told investigators they understood the general undocking plan but acknowledged it was not comprehensive.

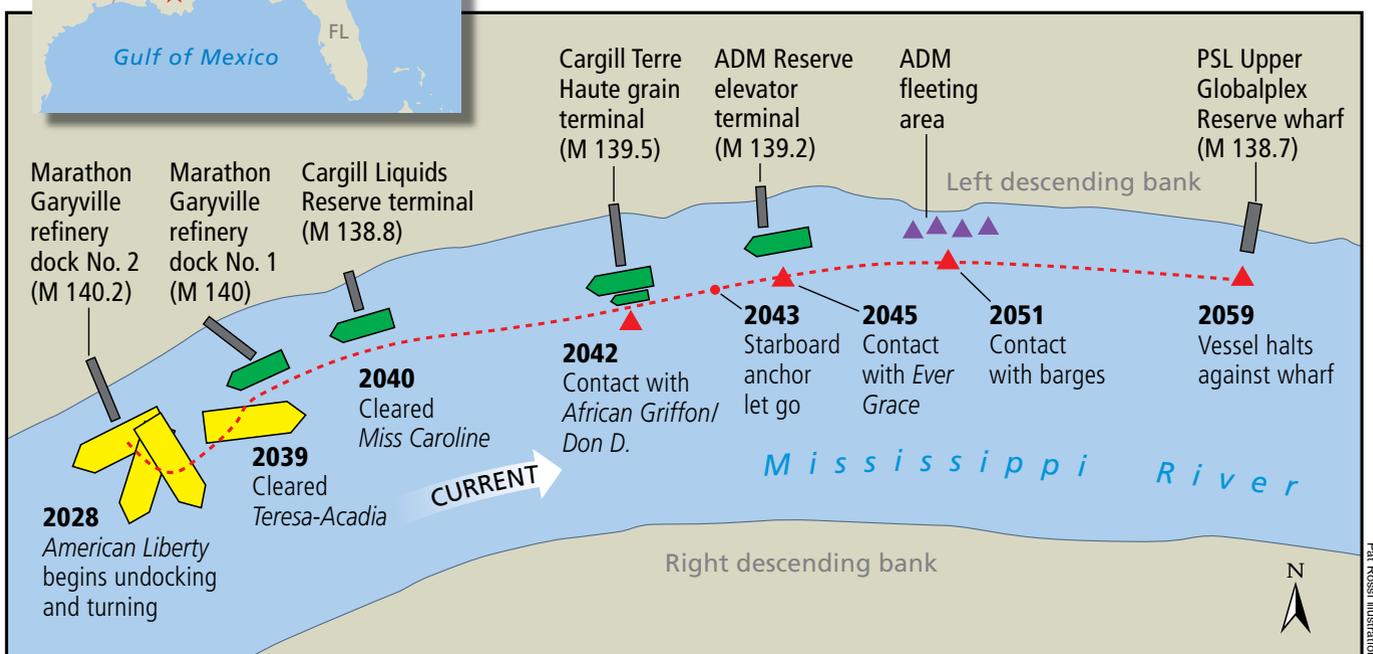
By 2033, *American Liberty*’s stern was clear of dockside obstructions as the ship began its turn. Within a minute, the turn was about two-thirds complete.

The pilot released the 4,200-hp *Vera Bisso* that was pushing the ship around from the port quarter. A minute later, the pilot asked the master for slow ahead on the main engine.

“Bring her up to slow (ahead) ... whenever you can,” the pilot said. The master responded, “Yeah, we’re probably going to need a little while, especially (with the current).”

The third mate operating the engine order telegraph heard the order but did not interpret it as a command, the NTSB said. Thirty-two seconds elapsed before the master walked to the engine order telegraph and set the speed to slow ahead as the pilot requested.

Meanwhile, the ship moved downriver at about 2.3 knots roughly parallel to the left bank, with its stern closer to the bank and the bow facing across the river. The pilot asked for “whatever you



can give me” from the master, who placed the engine at half ahead without telling the pilot. The pilot ordered the 4,000-hp *Josephine Anne* to push full on the port bow at 2037 before calling on the tug to stop and fall back. The master disagreed, saying the tugs should continue pushing the ship around.

Less than a minute later, the pilot ordered the engine stopped and additional assistance from the two tugs. The master countered with, “We need the engine; we need to go.” Neither the mate nor master acknowledged the stop-engine order. Instead, the mate placed the engine at full ahead. Nobody told the pilot.

“The master told the pilot to speed up to break out of the current, but the pilot responded that he didn’t believe he could get enough speed and instead intended to go astern,” NTSB investigators said.

“At 2039, the pilot ordered engine full ahead and the mate replied that they were already at full ahead,” the report said. “At 2039:08, the master ordered rudder hard left. The pilot counter-ordered rudder hard right.”

The ship continued along the left bank and cleared the moored articulated tug-barge *Teresa-Acadia* and the tugboat *Miss Caroline*. The proximity to terminal infrastructure and the moored vessels precluded *Josephine Anne* and *Vera Bisso* from taking position on the port side of the tanker. Meanwhile, the master and pilot continued the tug of war

over control of the ship. At 2040, the master ordered the mate and helmsman to stop listening to the pilot.

The master effectively had the conn at 2042 when *American Liberty*’s port quarter hit the crane barge *Don D.*, which was moored with a hopper barge outside of the bulk carrier *African Griffon*. At 2043, the master ordered the starboard anchor let go and the engine room evacuated. Two minutes later, *American Liberty* struck the port bow of the bulk carrier *Ever Grace* and mooring equipment at the ADM Reserve elevator terminal. At 2051, the tanker hit three strings of hopper barges that broke loose. Eight minutes later, *American Liberty* damaged mooring dolphins and a catwalk at the PSL Upper Globalplex Reserve wharf, where the ship was ultimately tied up.

American Liberty required nearly \$1.7 million in hull repairs, while *Ever Grace* and *African Griffon* each sustained less than \$100,000 in damage. *Don D.* cost more than \$500,000 to repair, while 11 ADM hopper barges sustained \$221,000 in damage. Repairs to the ADM Reserve elevator terminal exceeded \$32 million, while the PSL Upper Globalplex needed almost \$6 million in repairs.

Four mariners aboard *African Griffon* and *Don D.* suffered injuries during the incident. The stevedore production manager aboard *African Griffon*, who recorded the incident on his

cellphone when nearby wires split, suffered two skull fractures, the NTSB said.

Both the master and pilot on *American Liberty* were relatively new to their positions. The master had 13 years of maritime experience, but only 18 months as master on the tanker. The pilot was still in his probationary period and had worked alone for 10 months. He spent 18 previous years navigating large tows on inland waterways.

Investigators highlighted the imprecise communication between the master and pilot that began as *American Liberty* came out of its turn. Until then, the report noted, the pilot’s orders were precisely given and executed as expected. His order to increase the engine speed “whenever you can” was ambiguous; so was the request to “give me whatever you can give me.”

The pilot, who like the master was not identified, said he preferred to ask for speed changes rather than issue orders or commands because it was more polite that way.

“The pilot’s situation awareness was further diminished when the master changed the EOT (engine order telegraph) four times without informing him, so he continued to give engine orders without knowing what the EOT was set at,” the report said. “A pilot cannot be expected to successfully maneuver a vessel if their orders are not being followed or contrary orders are being executed without their knowledge.”

Casey Conley

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Fabled Alaska ferry sinks after Washington pier collapses in storm

Two historic vessels broke free and one sank in Anacortes, Wash., after the concrete pier to which they were tied collapsed during a fierce winter storm.

The 99-foot *Chilkat* and 213-foot *Acushnet* both went adrift in Guemes Channel after the 300-by-60-foot pier segment sank at Lovric's Sea-Craft at about 0230 on Jan. 13. A third vessel, the tugboat *Helen S.*, also broke free and became snagged in mooring lines, the U.S. Coast Guard said.

An assist tugboat corralled *Acushnet*, a World War II-era salvage ship turned Coast Guard cutter, said service spokesman Steve Strohmaier. The 64-year-old *Chilkat*, the first purpose-built ferry for Alaska's burgeoning marine highway system, was not so lucky. It rolled over and sank near the Guemes Island Ferry Terminal later that morning.

John Lovric, vice president of Lovric's Sea-Craft, said the pier segment took on water in the hours before it sank. How and

why that happened likely won't be determined until after the section is refloated.

"We don't know yet if one of those boats punched a hole in the side. Maybe it was bouncing or knocked the fenders loose, but that is what we believe happened at this time," Lovric said in a phone interview. "It didn't pull the boats down with it, but it snapped their mooring lines."

A powerful storm on the night of Jan. 12 and morning of Jan. 13 brought heavy rain and 40-knot winds, Strohmaier said, with gusts reaching 50 knots. Seas in Guemes Channel were 4 to 5 feet.

After the vessels broke free from the boatyard, the wind blew them northeast along the channel, Strohmaier said. The tugboat *Garth Foss* brought *Acushnet* under control and towed it to the Port of Anacortes undamaged, but the tug could not respond to *Chilkat* in time.

The decommissioned vessel lodged against the Guemes Island Ferry Terminal and took on water, likely through an opening cut in the stern. It eventually capsized and was pulled away from the terminal by the current before sinking in 35 feet of water. Commercial salvage crews marked the vessel's location. Details on a possible salvage were not available at press time.

Ferry service from Juneau to nearby communities in southeast Alaska started in the late 1940s with a private operator. Private service



Chilkat and *Acushnet* broke from their lines after a 300-foot section of concrete pier collapsed on Jan. 13 at Lovric's Sea-Craft in Anacortes, Wash.

Chilkat eventually lodged against the Guemes Island Ferry Terminal, right, capsized and sank. The ferry once served residents of southeast Alaska, opposite.



U.S. Coast Guard/Facebook photos

proved untenable, and in 1957 the territorial government took over the operation. *Chilkat*, with its bow ramp capable of landing on beaches, was a workhorse that served the state for more than three decades.

The 59-passenger, 15-vehicle ferry built by J.M. Martinac Shipbuilding entered service in June 1957, two years before Alaska became a state and six years before the Alaska Marine Highway System began formal operations. *Chilkat* was retired in late 1988.

The ferry holds a special place in the hearts of many Alaskans, particularly residents in the state's rugged and remote southeast region, according to Robert Venables, executive director of the Southeast Conference. The nonprofit group formed more than 60 years ago in part to advocate for a robust marine transportation system.

"*Chilkat* was the first vessel that began daily dependable service between communities. From that point on, other boats were built and

other communities served," Venables told *Professional Mariner*. "To see *Chilkat* go down like it did ... was kind of heartbreaking. It was once a great asset for the state."

Many Alaskans remember *Chilkat* as the first "blue canoe" — the nickname bestowed on Alaska State Ferry vessels. Mariners who worked aboard the ferry considered it the "queen of the fleet," said Capt. William Hopkins, who joined the Alaska Marine Highway System as a mate in December 1977. He retired in 2007 and now lives in Ketchikan.

His first assignment as captain, in 1988, was aboard *Chilkat*. The vessel served as a proving ground and training platform for a generation of ferry system captains, Hopkins said in an article commemorating the ferry for the Alaska Marine Highway System's 50th anniversary in 2013.

"Every new captain was assigned to *Chilkat* first," Hopkins said in an email. "After that experience, everything else seemed easier."

After it left the ferry system fleet, *Chilkat* worked briefly as a fish processor and later as a scalloper for a fishing operator. Its interior components were removed and the hull underwent modifications.

"It should be noted that *Chilkat* had been greatly modified (after decommissioning) and was hardly recognizable from her original profile," Hopkins said.

The former cutter *Acushnet* has a similarly noteworthy past. It was built as *USS Shackle* in 1943 and served as a U.S. Navy salvage and rescue ship during World War II. Its crew supported the invasions of Iwo Jima and Okinawa in 1945. After the war, the vessel joined the Coast Guard fleet, where it was used for international ice patrols, maritime research and finally, in the late 1990s and early 2000s, Bering Sea patrols. It was decommissioned in 2011.

The sunken pier segment at Lovric's has some history of its own. The boatyard used two sections, one 300 feet long and the other 270 feet long, as a floating pier. Both were initially part of the Lacey V. Murrow Memorial Bridge in Seattle, a portion of which sank in November 1990. It is the second-longest floating bridge in the world.

Lovric plans to refloat the pier section in the near future. "Hopefully we can see what damage there is and refloat it," he said. "Hopefully whatever it is, it is minimal and we can get it back into service."

Casey Conley



Dale Fujita photo

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Crew rescued, fuel escapes as tugboat sinks off Puerto Rico

Three mariners escaped from a 71-year-old tugboat before it sank near the port of Yabucoa, Puerto Rico, on Christmas Eve.

The 111-foot *Proassist III* started taking on water during the early evening on Dec. 24 while returning to Yabucoa. Crew issued a mayday call at about 1700 when the vessel was 2 miles from the harbor, located on the island's east side.

"The crew realized the vessel was listing and that water was inside.

They were having difficulty getting rid of it, to the point that (the tug)

ended up sinking," U.S. Coast Guard spokesman Ricardo Castrodad said in a phone interview.

Crew aboard the fishing vessel

Sal Pa Fuera rescued the tugboat's three mariners before the vessel went under. There were no injuries, but an unknown quantity of diesel escaped the tugboat, which had about 1,100 gallons on board.

Coast Guard air crews spotted sheening where the vessel sank roughly a quarter mile from the harbor entrance. There were no impacts to the shoreline or wildlife, Castrodad said.

The 3,000-hp, U.S.-flagged *Proassist III* was built in 1949. It is part of the American Tugs Inc. fleet that provides ship handling and rescue towing around Puerto Rico. American Tugs did not respond to



Remigijusz Piotrowski/U.S. Coast Guard photos



The crew of a fishing vessel rescued the three mariners aboard *Proassist III*, above, as the tug tried to make it back to port while taking on water on Christmas Eve near Yabucoa, Puerto Rico. The tug's captain deployed a life raft before the vessel sank.

an inquiry seeking comment on the sinking.

Proassist III typically assists ships calling the Port of Yabucoa, home to a large fuel terminal. The tug was underway without any vessels in tow when it encountered trouble while returning from Guayama, roughly 30 miles away, on the island's south side.

It's not clear when the vessel began taking on water, how soon the crew recognized the problem and what steps they took to counter it. Crew continued toward Yabucoa after issuing the mayday call and nearly made it back.

"Between the moment they

realized they were taking on water to the moment they were back in Yabucoa was about two hours," Castrodad said. "They were working to contain the situation but also making arrangements to abandon the vessel."

Photos released by the Coast Guard show a life raft that was deployed at some point during the episode. The tug's captain deployed the raft, although it is unclear if the crew took refuge in it before embarking onto the good Samaritan vessel.

Proassist III sank in about 27 feet of water outside the main shipping channel, Coast Guard Chief Warrant Officer Daniell Lashbrook said. Divers plugged vents on the tug to prevent remaining fuel from escaping.

As of mid-January, Castrodad said the Coast Guard and tug company were still working to finalize a plan to salvage the vessel.

Casey Conley

Loss of towline shackle pin cited in sinking of tug in Pacific

Chamorro encountered 13-foot seas, heavy rain and 50-mph winds from a developing typhoon as it towed the unmanned tugboat *Mangilao* from Guam to the Philippines. While en route, the 1,700-hp oceangoing tug struggled to maintain speed in difficult conditions.

Before dawn on Aug. 5, 2019, the second mate on watch in the wheelhouse couldn't see *Mangilao's* navigation lights. He roused the chief mate, who asked another crewman to check the tug's speed, which by then had jumped to 5.5 knots.

"The chief mate said that, at that point, he knew they had lost the tow," the National Transportation Safety Board (NTSB) said in its accident report.

Chamorro's crew located *Mangilao* after sunrise. It was listing

to port and its port quarter was submerged. *Chamorro's* captain considered it too dangerous to board the tug in hopes of stanching the flooding. The 37-year-old U.S.-flagged vessel sank at 0742 in the Pacific Ocean about 800 miles west of Guam.

Investigators determined the cotter pin on the 50-ton shackle securing *Mangilao* to other aspects of the towline broke or came loose, allowing the bolt's securing nut to loosen.

"It is likely that the chain from the bitt on the foredeck of *Mangilao* was not long enough for the attached shackle to clear the fendering on the bow," the NTSB said. "In heavy seas, as the vessel pitched and the bow of the vessel lifted up over the waves, the shackle likely made repeated contact with the fendering."

Cabras Marine Corp. of Guam operated the 105-foot *Chamorro* and 107-foot *Mangilao*. The latter tug was bound for Subic Bay in the Philippines for dry-docking and repairs, including the addition of new watertight doors and fittings. *Chamorro's* captain acknowledged that *Mangilao's* watertight integrity was suspect.

U.S. Coast Guard personnel spent nearly two hours inspecting the two tugboats and reviewing the towing plan before departure. According to the NTSB report, *Chamorro's* captain was anxious to leave, in part because of an approaching weather system. Days later, that storm became Typhoon Lekima.

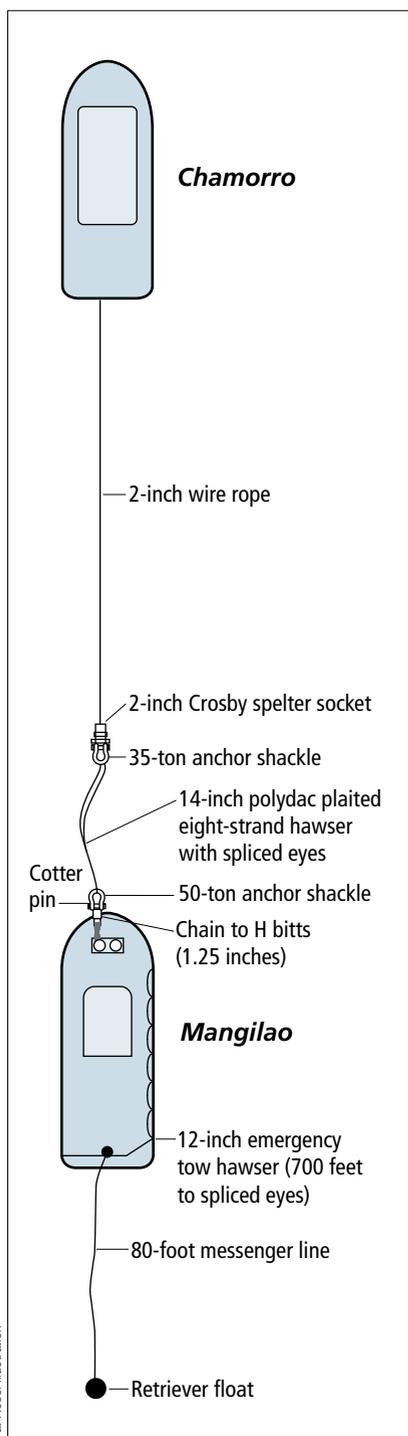
Chamorro left Apra Harbor in Guam at about 1400 on July 29 for the 1,571-mile journey with 10 crew aboard. The tow was esti-



Mangilao, shown in Apra Harbor, Guam in 2012, was being towed to the Philippines for dry-docking and repairs when it took on water and sank. A diagram, opposite, from the NTSB accident report shows the towing arrangement based on an interview with the captain of the tugboat *Chamorro*. Diagram not drawn to scale.

Bob Gendroy photo

mated to arrive on Aug. 8. The tug's crew established a robust towing arrangement intended to survive a rough passage through open water. Solar-powered LED



Pat Rossi illustration

lights on *Mangilao's* port, starboard and stern illuminated after dark.

The transit was mostly uneventful through late in the day on Aug. 3, at which time the Joint Typhoon Warning Center announced that a tropical cyclone could form in the next 12 to 24 hours. The burgeoning low-pressure system was forming "right over" the tow, the NTSB said. As predicted, conditions worsened on Aug. 4.

"At 0905, (the captain) called all hands to the wheelhouse for a safety briefing," the report noted. "He directed the crew to extend the tow wire (from 1,000 feet) to about 1,400 feet, explaining that they were expecting to encounter some significant weather and that this would provide a smoother ride. About 15 minutes later, once the tow wire was extended, he ordered all crew off deck."

The vessels soon encountered 10- to 13-foot seas, 50-mph winds and heavy rain. Visibility was poor, but the crew saw *Mangilao* pitching heavily in the waves. The chief mate, finishing his watch from 0000 to 0400 on Aug. 5, spotted *Mangilao's* navigation lights at about 0340. The rain cleared for a time at 0420 and the second mate on watch could not see the tow. That's when he woke the chief mate, who confirmed the tow was gone.

The crew first took to recovering the towing system. Working downwind, with seas washing over the deck, it took nearly 50 min-

utes to haul in the 2-inch towing wire. "The wire and the 14-inch tow pendant came aboard, but the crew noticed the shackle closest to *Mangilao* was missing its pin," the report said.

Later that morning, *Chamorro* turned back and identified *Mangilao* on radar. At that point, with the tug's port quarter under water, there was little *Chamorro's* crew could do but watch it sink.

Investigators reviewing the incident noted the captain's decision to set sail toward a developing storm. He later told the NTSB he felt confident making the voyage, in part because the weather routing service was available. The report confirmed the routing service guided the tug around the worst of the storm.

It's not clear when *Mangilao* started taking on water. The NTSB noted the condition of its watertight fittings and suggested the vessel slowly flooded over several days before the encounter with the storm. The agency also suggested boarding seas could have dislodged one or more watertight fittings, increasing the rate of water ingress.

"If *Mangilao* was flooding, the added water weight would have put greater stress on the towing components," the report said. "Once the towline arrangement for *Mangilao* failed, leaving it dead in the water, it is likely that seas more easily boarded the vessel and continued to flood it, leading to its eventual sinking."

Casey Conley

NTSB: Strong following current contributed to Illinois bridge strike

Federal investigators determined that “higher-than-average current speed” was a contributing factor in a New Year’s Day bridge strike on the Des Plaines River southwest of Chicago.

The 1,200-hp towboat *William C.* was downbound with six loaded barges when the pilot lost control while lining up for the third bridge transit in a half-mile. The lead two barges struck a protection cell for the Rock Island Railroad Bridge at 0032. The bridge is located at Des Plaines River mile 287.6, near downtown Joliet, Ill.

The impact caused more than \$500,000 in damage, mostly to the bridge. The two lead barges that hit the protection cell sustained minor damage. None of *William C.*’s six crewmembers was injured.

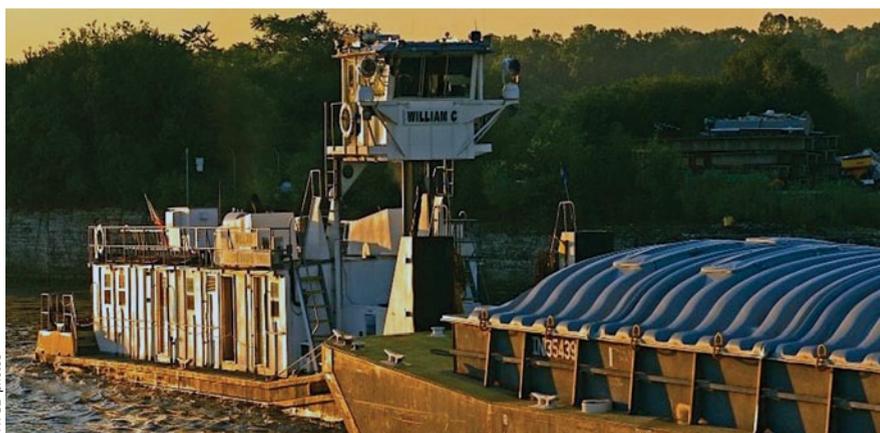
Investigators with the National Transportation Safety Board (NTSB) determined the faster-

“When the pilot determined there was not enough time to move the vessel in order to avoid striking the bridge, he reversed both engines ... which reduced the force of the impact but did not prevent the barges from hitting the bridge’s protection cell,” the NTSB said.

William C. got underway from the Illinois Marine Towing fleet facility, located at mile 299 on the Chicago Sanitary and Ship Canal, at about 2000 on New Year’s Eve. The towboat’s des-

barge loaded with scrap metal. The barges were in a two-wide, three-deep configuration. The tow was a combined 662 feet long.

The pilot helming the tow began his 12-hour watch at 1800 on a calm, clear night. The current in the Des Plaines River was running at 3 knots. The river’s flow rate, measured by the U.S. Army Corps of Engineers on Dec. 31, registered 6,500 cubic feet per second. River authorities consider that volume “very high



NTSB photos



William C., shown in a pre-incident photo from the NTSB report, was downbound on the Des Plaines River with a six-barge string when the two lead barges hit a protection cell for the Rock Island Railroad Bridge, left. The impact location is circled.

than-normal current contributed to the towboat pilot’s “inability to correct the tow’s position after completing the transit through the previous bridge.”

tionation was another company fleeing site downriver at Des Plaines River mile 280 in Chanahan, Ill. The tow consisted of five loaded coal barges and a sixth

flow” but not enough to require an assist vessel.

Three bridges await downbound traffic passing through Joliet from the north. The Cass Street Bridge and Jefferson Street Bridge are both drawbridges with 150-foot-wide channels. The Rock Island Railroad Bridge, the

southernmost of the three, is a lift bridge that crosses the river at about a 45-degree angle.

William C. passed under the Cass Street Bridge at about 0020 and began lining up for the Jefferson Street Bridge two-tenths of a mile downriver. That's when the tow got out of shape for the approach to the Rock Island span, the report said.

"The pilot said that as he attempted to line up the tow at a speed of 5 mph to pass through the Jefferson Street Bridge, he realized that he had turned the tow too far to port toward the left descending bank and to counter this action, turned the rudders to starboard," the NTSB said. "The vessel moved to starboard, toward the center of the channel, but when the pilot returned the rudders to midships, the vessel moved to port again."

The tow was just 200 feet from the Jefferson Street Bridge and the pilot had little choice but to continue through the span. After clearing that bridge, the rail bridge lay less than 1,600 feet

ahead. The pilot again turned the rudders to starboard to line up in the channel as it bent slightly to the west. According to the report, the vessel did not respond and continued moving toward the left descending bank.

Recognizing an impact was

The river's flow rate registered 6,500 cubic feet per second. River authorities consider that volume "very high flow" but not enough to require an assist vessel.

imminent, the pilot sounded the general alarm and backed hard to slow the tow. The two lead barges, *INO 85100* on the starboard side and *INO 85226* on the port side, hit the protection cell on the northeast side of the bridge at 0032. The tow remained intact.

Railroad officials later deter-

mined the impact pushed the concrete cell nearly out of position, along with other damage. The two barges sustained minor hull insets. The 88-year-old bridge owned by CSX Transportation closed to rail traffic for at least 10 days, the report said.

Investigators said the following current pushed against the tow's starboard quarter as it approached the Jefferson Street Bridge, and again as the pilot tried to line up for the railroad bridge. "The pilot attempted to move the tow to starboard," the report noted, "but, since the following current was pushing against the tow, it continued toward the left descending bank."

The 76-foot *William C.*, a 52-year-old towboat with a retractable pilothouse, is operated by Canal Barge Co. subsidiary Illinois Marine Towing. The company did not respond to an inquiry about the NTSB findings. *INO 85100* and *INO 85226* are owned by Ingram Barge Co.

Casey Conley

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Rise of new fuels raises questions about adequacy of mariner training

by Alan R. Earls

New maritime fuels are coming or are already here, and the associated changes are raising concerns about the readiness of today's mariners. For example, the rise of liquefied natural gas (LNG), which is handled in ways dramatically different from fuel oil or diesel, has some concerned that not enough has been done to prepare those who may start to encounter the fuel in their work.

And while LNG is the main focus at the moment, a recent study prepared by Lloyd's Register and the UCL Energy Institute points to other alternatives that may develop market momentum

of their own, further complicating training challenges.

According to "Global Marine Fuel Trends 2030," demand will likely double by that year given the scenarios that the authors assessed. In each, demand for heavy fuel oil (HFO) is projected to increase through 2025, potentially falling back to 2010 levels by 2030 as operators continue to respond to stricter environmental regulations. But at the same time, marine diesel oil (MDO) and marine gas oil (MGO) could reach 50 percent of total demand.

Those two fuels, at least, are relatively familiar. But the authors mention three other fuels in addi-

tion to LNG that have a shot at taking some meaningful market share: primarily low sulfur fuel oil (LSFO), but also hydrogen and methanol.

With that broad spectrum of fuels in the pipeline, some industry experts — notably the head of the American Bureau of Shipping, Christopher Wiernicki — are suggesting it's time for action. In a keynote address late in 2020, Wiernicki suggested that the rapid adoption of LNG means training needs to be updated, at least for crew on LNG-fueled vessels.

With LNG clearly in mind, he noted that the "next-generation fuels" have a dynamic nature not

Fure Ven, a dual-fuel tanker owned and operated by Furetank of Sweden, became the first foreign-flagged vessel to bunker LNG in the United States on Sept. 1 at the Talleyrand Marine Terminal in Jacksonville, Fla. The growth of LNG as a marine fuel will require a new focus on training for ship crews and bunkering personnel.

present previously — namely they can change physical state during the course of a voyage depending on how much fuel is used and ambient conditions (e.g. boil-off of product).

To be sure, the maritime industry has had experience handling almost every kind of fuel, but usually just as cargo or in highly specialized vessels such as LNG tankers. This knowledge will need to become more universal as ship types multiply — dual-fuel or even tri-fuel vessels — and as new fuels gain traction.



LNG is a natural gas that has been cooled to a liquid at minus 260 degrees Fahrenheit. Those who handle it have to deal with the freezing of valves and surfaces, both on vessels and shoreside tanks.

Wiernicki said he believes the International Maritime Organization (IMO) will seek to update SOLAS to account for the challenges posed by the alternate fuels and other new technologies. He also pointed out that current crew

training standards were developed a long time ago, prior to the internet and the advent of cellphones.

Peter Lindsey, vice president of the marine sector at Purify Fuel in Houston, said that apart from LNG in the “new fuels” category, there are more additives coming into the market to make marine fuels safer, more efficient or more environmentally compliant. Therefore, he said, vessel operators and bunkering crews are increasingly going to be asked to “additize” fuels being delivered, based on the needs of the customer.

“Bunker barge crews might be tasked with adding things to barge tanks that they aren’t doing as much today,” Lindsey said. New technologies are emerging to help do this safely, including metered injection systems, but in either

case “there is a training element ... working out the math for proper dosing, dealing with pouring potentially hazardous liquids into a barge tank, etc.”

Regarding LNG, Lindsey said the industry is going from “hot”

fuels that sometimes need to be warmed to 160 degrees Fahrenheit to flow properly to a fuel that involves cryogenics in storage and handling. “Mariners will need to understand that it (LNG) always wants to become a gas,” he said. As a result, freezing of valves and surfaces will be a problem because decompressing a gas causes a loss of temperature.

Other potential training issues were identified by Simon Hooton, technical product manager at North Ridge Pumps in the United Kingdom. He has found that when users switch to LSFO they sometimes experience issues with their equipment, such as leakage from mechanical seals due to the viscosity of the fuel being much lower than what original pumps had been designed to handle. He also has seen instances of accelerated pump wear (LSFO can contain abrasive particles that lead to premature pump failure). These are new challenges that personnel will need to understand.

“Customers need to be aware when handling such fuels that maintenance should be performed more frequently, as systems are designed with very small tolerances ... to function as intended due to the high pressures involved,” Hooton said. If equipment is operated outside of these parameters, he added, it can quickly lead to failure.

Unsurprisingly, third-party training is starting to emerge for the new fuel alternatives. In Europe, a large operator is working with Wartsila to enhance



Students at the United States Maritime Resource Center spray a dry chemical extinguishing agent on an LNG flange fire at the Massachusetts Fire-fighting Academy in Stow, Mass. USMRC began LNG training in 2014 in partnership with Harvey Gulf International Marine.

crew simulator training. According to Wartsila, its customized LNGPac bunkering and liquid cargo-handling simulators have been installed at the customer's largest maritime training centers. Although targeted primarily at users of Wartsila's LNG-handling equipment, the company noted that the training aligns with the International Convention on Standards of Training, Certification and Watchkeeping (STCW) and International Code of Safety for Ships Using Gases or other Low-Flashpoint Fuels (IGF Code).

In North America, the United States Maritime Resource Center (USMRC) in Middletown, R.I., offers training for LNG users. "Basic and Advanced Low-Flashpoint Fuel Operations" is taught in partnership with Harvey Gulf International Marine, which was the first operator of an LNG-fueled vessel on the continent. Other USMRC instructors include

marine fuel experts with extensive LNG experience.

Rick Schwab, senior director of the Maritime and Industrial Training Center at Delgado Community College in New Orleans, said the school is "building a tankering program with LNG and looking at things on the firefighting side as well." He said the LNG industry has a big presence in his area, so there is often an overlap between the concerns and needs of mariners and those of shore-based operations. Both communities are served by the center.

"We are looking at options to help and assist anyone – industry leaders and associations," he said.

On the West Coast, Julie Keim, who operates Compass Courses in Edmonds, Wash., said she is taking a somewhat more conservative approach. "To be honest, I react to what the Coast Guard has put out on the subject, because if you offer something before it is

required, it doesn't work," she said. "Companies will tell you they don't want to pay for it."

At this point, she added, there have not been any inquiries about LNG training. "We have fewer training schools on this coast, so we tend to react to what is happening on the East Coast," she said.

For Lindsey, the key is to get widespread training accomplished and out in the field so that even deck hands know and better understand what they are facing with LNG and other new fuels. "Everyone will need to be more careful, whether it is passing over a grounding cable to a barge or properly handling tank bleed-offs," he said.

Wiernicki said new fuels present "one of the major challenges the industry needs to address, and companies will need to embrace more competency-based training to ensure crews and shore staff fully understand the safety aspects ... and what to do in all operational scenarios, both planned and unplanned."

This will have an impact on the International Safety Management (ISM) Code as well, he said, because management systems will need to address continuous training and support a closer link between crews and shore-based teams. •



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Correspondence

by Edward Lundquist



The Coast Guard cutter *Smilax* (WLIC 315) underwent a 15-week overhaul at the Coast Guard Yard in Baltimore, Md., in 2015. Commissioned in 1944, the 100-foot inland buoy tender – the “Queen of the Fleet” – is the oldest vessel in active Coast Guard service.

U.S. Coast Guard photo

White, black or red, Coast Guard needs new hulls

From patrols in the tropics to icebreaking in polar waters to fixing channel markers in the heart of America, the U.S. Coast Guard has a vital job to do.

To address its 11 statutory missions, the service needs reliable, capable and state-of-the-art ships to meet contemporary threats and those of tomorrow. But over the years, the Coast Guard has had to repeatedly extend the service life of many of its cutters. It's still operating 52-year-old high-endurance cutters and has medium-

endurance cutters that are even older. The service's only heavy icebreaker is 45 years old and the oldest inland tender is more than 70.

Back in 2012, a Government Accountability Office (GAO) report said the service's ability to conduct its missions was impacted by the generally poor physical condition and declining operational capacity of its older high-endurance cutters, medium-endurance cutters and 110-foot patrol craft. That's why the effort to recapitalize the

aging fleet with new cutters with better endurance, capability and efficiency is so important.

The fact that the Coast Guard has done such a good job operating despite an old and in some cases obsolete fleet is a testament to the crews and support teams. But new ships are needed. Fortunately, they are on the way.

The Coast Guard classifies and color-codes its cutters by function and size. The “white hull” ships, ranging from the national security cutter to the smaller fast response

cutter, conduct patrol operations. The “black hull” ships are buoy tenders and workboats of different sizes and capabilities to work on the open ocean, along the coasts and in inland waterways and rivers. Finally, “red hulls” are icebreakers. The recapitalization plan covers all three.

White hulls patrol the sea

The largest group of cutters, and the ones most people associate with the Coast Guard, are the white hulls dispatched for search and rescue; drug and migrant interdiction; port, waterway and coastal security; protection of living marine resources; defense readiness operations; and support for other Coast Guard functions such as aids to navigation (ATON) and pollution response. Missions that have been carried out by high- and medium-

endurance cutters and patrol boats eventually will all be handled by the national security cutter (NSC), offshore patrol cutter (OPC) and fast response cutter (FRC).

Of the white hulls, the 12 ships of the Hamilton class of 378-foot high-endurance cutters have been the largest and most capable cutters since the first was commissioned in 1967 and the last joined the fleet in 1972. Despite their age, three are still in service with the Coast Guard, and all of the others have been transferred to other navies and coast guards in the Philippines, Sri Lanka, Bangladesh, Nigeria and Vietnam.

Like the Hamilton class, the new Bertholf-class national security cutters — or Legend class, named for famous Coast Guard leaders — are multimission ships. They carry the designation WMSL,

with the “W” denoting a Coast Guard ship and “MSL” denoting “maritime security cutter, large.” The lead ship, *USCGC Bertholf* (WMSL 750), is named for Cmdr. Ellsworth Bertholf, who was the fourth commandant of both the Revenue Cutter Service and Coast Guard.

The service’s original program of record called for eight NSCs to replace the 378-foot Hamiltons, with the idea that the newer ships would be more capable — with better sea-keeping, endurance and range — and able to meet the mission with fewer vessels. However, the program has ordered 11 NSCs to date. All NSCs were built or are planned to be built at Huntington Ingalls Industries’ Ingalls Shipbuilding of Pascagoula, Miss. Nine NSCs have been delivered.

The 360-foot Heritage-class

The Heritage-class offshore patrol cutter is one of the Coast Guard’s top acquisition priorities. The 360-foot OPCs will replace the service’s medium-endurance cutters.

Eastern Shipbuilding Group photo



offshore patrol cutter, which will replace the aging medium-endurance cutters (WMECs), stands as one of the service's highest acquisition priorities. The Coast Guard currently operates the 210-foot Reliance-class and 270-foot Famous-class WMECs, as well as two converted salvage ships that were transferred from the Navy. The OPC is expected to displace about 4,500 tons and will have a flight deck and facilities for helicopters and unmanned aircraft. It will have much greater sea-keeping, range and endurance than the WMECs.

The first of the 16 210s was commissioned in 1964. Two have since been decommissioned and have transferred to Sri Lanka and Colombia. All 13 270s are still active, with the oldest being commissioned in 1983. The Coast Guard also has a one-of-a-kind medium-endurance cutter, *USCGC Alex Haley* (WMEC 39), which was originally commissioned for Navy service in 1971 and after significant modifications was activated in the Coast Guard in 1999. It is still active and home-ported at Kodiak, Alaska.

Designed to complement the capabilities of the 418-foot NSCs, the OPCs will be the backbone of the Coast Guard's strategy to project and maintain an offshore presence. The OPC program of record is set to deliver 25 hulls, which will eventually comprise more than 70 percent of the Coast Guard's offshore fleet. The first ship, *USCGC Argus* (WMSM 915), is under construction at Eastern Shipbuilding

in Panama City, Fla., where its keel was authenticated in April 2020. The second OPC is under contract and long lead-time items are being procured for the third.

The Coast Guard's large fleet of smaller patrol boats (WPBs) includes 87-foot and Island-class 110-foot cutters, with the 110s now being replaced by the 154-foot fast response cutter (FRC). The Sentinel-class FRCs — designated as WPCs — are much more

Growing interest in the polar regions demands presence. Coast Guard officials have said the service needs at least three heavy icebreakers to provide the ability to operate anywhere at any time.

capable than the boats they are replacing, with improved C4ISR capability (command, control, communications, computers, intelligence, surveillance and reconnaissance); stern launch and recovery (up through sea state 4) for a 26-foot cutter boat instead of the WPB's 17-foot RHIB; improved sea-keeping, and enhanced crew habitability.

The FRCs are being constructed by Bollinger Shipyards of Lockport, La., and are based on the "parent craft" design of the Damen Stan 4708 patrol vessel.

The plan is to build 58 FRCs, as well as procure FRCs to replace the six 110s currently serving with Patrol Forces Southwest Asia in Bahrain. The Coast Guard accepted delivery of the 42nd FRC in December.

Black hulls maintain ATON

One of the Coast Guard's most important and unheralded missions is to maintain the ATON system that allows the safe and efficient movement of vessels and prevents collisions, allisions and groundings at sea and along the nation's intra-coastal and inland waterways. This duty is performed by the service's black hulls.

The fleet includes 16 Juniper-class, 225-foot seagoing buoy tenders used to maintain aids to navigation and also assist with law enforcement and search and rescue. The first entered service in 1996 and the 16th joined the fleet in 2005. Two of them are stationed on the Great Lakes. There are 14 coastal buoy tenders of the Keeper class used to maintain coastal ATON. They entered service between 1996 and 2000, with one of them based on the Great Lakes.

The inland and river construction tenders are the oldest cutters in the Coast Guard inventory. The average age is 55 years; the oldest is more than 75. There are three classes — inland buoy tenders (WLI), river buoy tenders (WLR) and inland construction tenders (WLIC) — in various versions from 65 to 160 feet, which along with their respective

work barges can reach up to 190 feet. Together these tenders and their work barges place buoys; handle tower construction, pile driving and extraction; and support maintenance of the 28,200 ATON along America's 12,000-mile Marine Transportation System (MTS).

The inland tenders will be replaced under the Coast Guard's Waterways Commerce Cutter (WCC) program, which is on an accelerated schedule to reach initial operational capability by 2025 and full operational capability by 2030. The program released draft specifications for the river buoy and inland construction tenders in October 2019 and top-level requirements for the inland buoy tenders in November 2019. The Coast Guard released a draft request for proposals in July for detailed design and construction of the river buoy and inland construction tenders.

Red hulls break ice

Like much of its legacy fleet, the Coast Guard's red hulls are old. Of the two heavy icebreakers — *USCGC Polar Star* (WAGB 10) and sister ship *USCGC Polar Sea* (WAGB 11), commissioned in 1976 and 1977, respectively — only the first is operational. The medium icebreaker *USCGC Healy* (WAGB 20), commissioned in 1999, is larger than the Polar class but is less powerful, and it is used primarily as an icebreaking research vessel. The oceangoing icebreakers are based in Seattle; the Great

Lakes icebreaker *USCGC Mackinaw* (WLBB 30) is based in Cheboygan, Mich.

Growing interest in the polar regions demands presence. Coast Guard officials have said the service needs at least three heavy icebreakers to provide the ability to operate anywhere at any time. *Polar Star* is used almost exclusively to support the annual resupply mission to the National Science Foundation base at McMurdo Sound in Antarctica, but the Coast Guard has long lobbied for ships that can do more. The result is the polar security cutter (PSC)



Halter Marine is building the nation's first polar security cutter, set for delivery in 2024, with options to build two more. The PSCs are sorely needed to complement *Polar Star*, the nation's only operational heavy icebreaker.

program to deliver a multimission vessel with world-class icebreaking capability.

The Navy and Coast Guard established a joint integrated program office to procure the PSC. Halter Marine of Pascagoula, Miss., was awarded the contract to design and build the first ship in the class, with options for two more. The

first PSC is scheduled for delivery in 2024, with the second notionally in 2025 and third notionally in 2027 if the options are executed. At 460 feet in length and with a full load displacement of about 33,000 long tons, the PSC will be substantially larger than *Polar Star* (399 feet, 13,000 tons) or *Healy* (420 feet, 16,000 tons).

“In order to conduct the full range of Coast Guard missions, Coast Guard icebreakers must be fully interoperable with interagency and international stakeholders, including the Department of Defense, to carry out national defense operations,” Adm. Charles Ray told a House subcommittee in

May 2019. “Thus, the new PSC will include sufficient space, weight and power to conduct the full complement of multimission activities that support our nation's current and future needs in the Arctic.” •

Retired Navy Capt. Edward Lundquist is a communications professional with 38 years of experience in military, private association and corporate service. During his 24-year naval career, Lundquist qualified as a surface warfare officer and later served as a public affairs officer. He retired from active duty in 2000.



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it comes to establishing sovereignty in the Arctic. Unfortunately, the United States government hasn't shown the same level of commitment.

On Dec. 4, my wife and I boarded the Washington state ferry *Salish* in Port Townsend on the Olympic Peninsula and headed up to the passenger deck to enjoy the trip. A few minutes after getting underway, I walked over to the starboard side to see if any Military Sealift Command ships were loading munitions at Indian Island, and I caught a glimpse of a vessel in the outbound traffic lane off of Marrowstone Point. As we got closer, I realized that it was the famous Coast Guard heavy icebreaker *Polar Star*. Usually down in Antarctica during the winter, the ship was sent to the Arctic instead in 2020 in response to Russia's military and political maneuvering. Capt. William Woitrya, master of *Polar Star*, said that sending the icebreaker north would give the United States the chance to "tell the world that the Arctic is important to us, and that we're going to pay attention to it."

Unfortunately, words alone cannot remedy the long-standing governmental neglect of our Arctic interests. We

haven't been establishing new bases nor refurbishing any old ones. Even worse, compared with Russia's nearly 50 icebreaking vessels, it is pathetic that the only operational heavy icebreaker the United States has is *Polar Star* – a 45-year-old workhorse that has been plagued by breakdowns and unexpected repairs for years. It is disconcerting to think that if *Polar Star* were to break down in thick Arctic ice during its mission this season, in all likelihood the U.S. would have to rely on Canadian icebreakers to rescue it.

One recent piece of good news regarding American interests in the Arctic came in December when Sen. Maria Cantwell, D-Wash., announced that the new military appropriations bill — which was vetoed by President Trump but enacted when Congress overrode him — included funding for three heavy-duty and three medium-duty icebreakers. The first 460-foot polar security cutter, a heavy icebreaker, is currently in the detailed design phase at Halter Marine in Mississippi and is expected to be delivered in 2024.

As the ice continues to melt, 30 percent of the world's natural gas reserves and 15 percent of its untapped oil reserves are becoming accessible in the Arctic. Sea

routes that have been frozen for all of recorded history now have cargo ships and passenger ships plying their waters, saving thousands of miles and tens of thousands of dollars on each voyage. With things changing so fast and with so much at stake, continuing to ignore what is happening up north makes no sense, and it could have dangerous repercussions. I am hopeful that President Biden's administration will develop a thoughtful, comprehensive policy on dealing with the new emerging reality in the Arctic — one that emphasizes building new coastal military bases in Alaska, beefing up our icebreaker fleet and continuing to update our alliances with the other Arctic nations. I believe that if we want to avoid just giving up on our claims, or having to go to war to defend them, there is no other option.

Till next time, I wish you all smooth sailin'.

Kelly Sweeney holds a license of master (oceans, any gross tons), and has held a master of towing vessels license (oceans) as well. He sails on a variety of commercial vessels and lives on an island near Seattle. You can contact him at captswweeney@professionalmariner.com.

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A Mariner's Notebook

by Capt. Kelly Sweeney

Russia flexing its muscles, outflanking US as Arctic heats up

In 2020, temperatures in parts of the Arctic were an unbelievable 14 to 18 degrees above normal, with the region recording its second-highest yearly average since 1900. Readings were so extreme that a

Siberian heat wave caused wildfires on the tundra, a biome that is normally too wet or too frozen to burn.

Extraordinarily high

temperatures and melting ice in the Arctic Ocean have disrupted the food chain, wreaking havoc not only on native wildlife but on indigenous communities as well. At the same time, the ice melt has revealed oil and mineral riches on the ocean floor and has opened shipping routes that have been frozen and impassible for millennia. As these new opportunities emerge, the six countries that border the North Pole — Russia,

the United States, Canada, Greenland (actually a territory of Denmark), Iceland and Norway — have each been staking out claims in the region. One in particular, our Arctic neighbor Russia, has become increasingly strident about flexing its nationalistic muscles.

On a quiet Sunday late in the 2020 season, the U.S.-flag Bering Sea fleet was working the Alaska pollock fishery in calm seas and pleasant weather. All of a sudden, in an aggressive show of force, 50 Russian warships, a Russian nuclear submarine and 40 Russian military planes began harassing them and disrupting their operations — all of this despite the fact that the American ships were working in our exclusive economic zone (EEZ) and had a legal right to be there. The appearance of the Russian armada completely took the Americans by surprise, prompting some of the mariners to ask, “Are we being invaded?”

Luckily, it wasn't a Rus-

sian invasion but an unannounced exercise simulating a battle in the Bering Sea. A colleague of mine was a crewmember on *F/V Blue North*, one of the ships working the area that day. He told me how frightening the experience was, especially when the warships and warplanes began issuing warnings about the imminent firing of missiles and ordering U.S. citizens to leave immediately. John Anderson, the captain of *Blue North*, radioed the U.S. Coast Guard asking how he should respond to the Russian military demands. The reply was, “Just do what they want.”

American mariners, politicians and military officials were dismayed at how brazenly the Russians obtruded on U.S. commercial activities on the Bering Sea, but they were not surprised. Ever since 2007, when Russia infamously placed its flag on the North Pole seabed, it has been pushing its way around — most recently claiming 463,000

square miles of the oil- and gas-rich Arctic continental shelf for itself. To support and defend its claims, Russia has been undertaking the biggest military buildup in the Arctic since the Cold War, refurbishing dozens of old military bases along the Northern Sea Route and the Bering Sea — including the full-service port of Provideniya, just 200 nautical miles from Nome, Alaska.

During the past year, a Russian nuclear submarine was deployed to the North Pole, Russian paratroopers were dropped in the Arctic for battle training, and Su-35 fighter jets tauntingly flew to the edge of U.S. airspace in Alaska — all part of President Vladimir Putin's stated goal of furthering his country's Arctic claims. In March 2020, Putin announced an ambitious 15-year plan to build 40 ice-class military and commercial ships, including several large dedicated icebreakers. Russia obviously means business when

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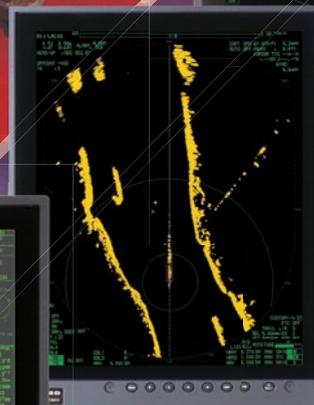
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