Casualties: Coast Guard hearings into *Seacor Power* tragedy yield emotional testimony

# PROFESSIONAL MARINER

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## Towing industry inches toward all-electric future

Ballast water treatment tech advances rapidly

Mississippi River pilots face fresh scrutiny

Gulf group launches Jones Act enforcement vessel

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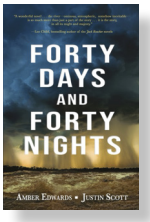








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## Trends




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## Vessels at Work



**ON THE COVER**

The Mobile Bay Ferries vessel *Marissa Mae Nicole* backs away from the dock on Dauphin Island, Ala., on a stormy late July morning. Photo by Casey Conley

# Signals

## Great Lakes shippers oppose Canada's new ballast water rules

By Bill Bleyer

Shipping associations on both sides of the border have raised objections to Canada's new ballast water regulations.

The rules, announced in June, aim to minimize the spread of invasive species that can harm fisheries, infrastructure and native species. The rules cover Canadian vessels all over the world, but also will impact American vessels calling on Canadian ports within the Great Lakes.

The regulations require vessel operators to plan for managing ballast water to reduce the number of organisms in it, typically by installing a ballast water treatment system. Operators must also carry a valid certificate, keep records and be regularly surveyed and inspected. Ships built in 2009 or later have until 2024 to meet the rules, while older ships must meet them by 2030.

"Canada is taking action to prevent aquatic species invasions, which harm the environment and the Canadian economy," Minister of Transport Omar Alghabra said. "The new ballast water regulations will limit the introduction and spread of these species by vessels


U.S. Army Corps of Engineers photos

**The bulker *Frontenac* passes through the Soo Locks. Shippers on both sides of the Canadian border are critical of Canada's new ballast water rules.**

while protecting Canada's biodiversity."

Jim McKane, chair of the Canadian Section of the Great Lakes Fishery Commission, estimates the regulations will prevent up to 34 invasive species from reaching Canadian waterways. The use of ballast water treatment by all vessels calling on Canadian Great Lakes ports, he added, would help reduce the spread of invasive species by 82 percent.

Canada's Chamber of Marine Commerce, however, called the new rules "half-baked" and counterproductive in meeting the country's environmental goals. The chamber believes the regulations unfairly target Canadian ship operators, which have spent billions of dollars on new fuel-efficient eco-ships, while giving an extra six years for compliance to owners of older vessels — including virtually all U.S. ships operating in the Great Lakes-St. Lawrence Seaway.

The chamber has cautioned Canadian officials that the changes would create an uneven playing field between the Canadian and the U.S. domestic fleets. The latter operates virtually all older vessels, and the chamber argues the rules would discourage investment in new fuel-efficient ships.

"This is a very disappointing development that will risk jobs and stall economic recovery, while doing little to protect the environment," Bruce Burrows, chamber president and CEO said.

The chamber asserts ballast water has not introduced non-native invasive species into the Great Lakes since 2006, when new Canada/U.S. ballast water requirements jointly took effect. The chamber also argues Canadian and U.S. domestic vessels pose no risk of introducing new invasive species because they do not travel overseas.


**Ships built before 2009 would have until 2030 to meet Canada's ballast water requirements. Newer ships must comply by 2024.**

Shipping groups believe the cost of installing ballast water treatment systems will exceed Transport Canada's estimates. The chamber, for instance, pointed to a recent study by Research and Traffic Group showing it would cost more than $560 million to finance, install and operate treatment systems on all Canadian domestic ships operating exclusively within the Great Lakes and St. Lawrence River. Those new ballast treatment systems, the report argues, would provide just $31 million in environmental benefits.

The Canadian rules also contradict American rules in the binational waterway, the chamber said. The U.S. Environmental Protection Agency (EPA) recently determined ships operating solely in the Great Lakes and St. Lawrence built after 2009 face the same hurdles to install systems as older ships because there are no current ballast water management systems that are practical or suitable. The chamber called the pre- and post-2009 distinction "completely irrational and puzzling in the circumstances."

Gregg Ruhl, CEO of Algoma Central Corp., which owns and operates the largest Canadian domestic fleet on the Great Lakes, said targeting newer vessels could cause ship operators to prolong the use of older, less-efficient ships.

"Algoma Central has spent over $500 million to renew our Great Lakes fleet with 11 brand-new vessels that are 40 percent more carbon-efficient and are equipped with scrubbers that virtually eliminate many air pollutants," Ruhl said. "Does it make sense for com-

panies to invest in fleet renewal if it puts them at a disadvantage to their competitors?"

American shippers are also critical of the new Canadian rules, but for different reasons.

"We believe that Canada has overreached with their regulations. They're the only country in the world that we know of that regulates ballast water loading," said Jim Weakley, president of Lake Carriers' Association, the trade association representing 11 companies and 46 U.S.-flag vessels operating on the Great Lakes. "Every other country in the world, including the United States, regulates ballast water discharge. Canada has chosen to regulate ballast water loading in Canada for discharge in the U.S., and we think that the U.S. government should regulate ballast water discharges."

> "Canada is taking action to prevent aquatic species invasions, which harm the environment and the Canadian economy."
>
> – Omar Alghabra, Minister of Transport

"We also think they have overreached because…in the United States you either meet a discharge requirement or you don't," Weakley said. "But Canada has chosen to say that if you have equipment on board and you're using it, it doesn't matter if you meet discharge standards or not."

The Lake Carriers' Association also notes that Canadian shippers operate more vessels built before 2009 than their American counterparts that would benefit from the additional six-year lead-in period.


IBM

*MAS400* turned back toward England three days into a planned trans-Atlantic crossing.

# 'Unforeseen' component failure ends autonomous voyage

By Casey Conley

The Mayflower Autonomous Ship's trans-Atlantic voyage ended well short of its goal after a component failed on the vessel's hybrid drive line after three days at sea.

ProMare and IBM, two partners on the project, said the fully autonomous and unmanned *MAS400* sustained a fracture in the flexible metal coupling between its generator and exhaust system. The fault could not be repaired "without human intervention," IBM said.

"We suffered a failure in a small, commercially available component on the hybrid drive line that was unforeseen," said Ayse Atauz Phaneuf, president of the nonprofit marine research firm ProMare. "As a result, we turned back ... and made for the Isles of Scilly."

The unmanned trimaran was built in 2020 and outfitted with IBM's artificial intelligence suite known as Captain AI that can make decisions in real time. The vessel is propelled by electric motors powered by solar panels, batteries and a backup generator.

The concept for the vessel emerged in 2016 to commemorate the 400th anniversary of the *Mayflower* voyage from England to what is now Plymouth, Mass. The new ship was outfitted with myriad scientific equipment to collect data about the ocean and the climate along the way.

IBM is the lead science and technology partner on the project overseen by Connecticut-based ProMare. Other partners include the National Oceanic and Atmospheric Administration.

The ship departed from Plymouth in southwest England on June 15 and made a steady 7 knots, covering nearly 450 nautical miles over three days at sea. The vessel's autonomous systems "worked perfectly" during that time, Atauz Phaneuf said.

The first signs of trouble with the generator coupling occurred late on June 17, and the support team made the decision early on June 18 to turn around. *MAS400* sailed another 100

## MAS400 at a glance:

| | |
|---|---|
| **Design:** | Trimaran |
| **Dimensions:** | 49' by 20' |
| **Weight:** | 10,000 lbs. |
| **Mission:** | Ocean research |
| **Propulsion:** | (2) 20-kW electric motors |
| **Power:** | Lithium-ion phosphate batteries charged by solar panels and backup generator |
| **Max speed:** | 10 knots |
| **Sensors:** | More than 50 |
| **AI-enabled cameras:** | Six |

nautical miles before switching to a loitering mode to save battery power. A recovery tugboat ultimately towed the ship back to Plymouth on June 19.

"There simply wasn't enough sun to charge her up, and the deteriorating weather meant that we had to save power for any emergency maneuvering that may have been required during rendezvous or if encountering another vessel while waiting for recovery," Atauz Phaneuf said.

The maritime industry has been moving toward autonomous control of vessels for some time. ProMare acknowledged the forces driving the transition, noting that an unmanned ship reduces the cost of a voyage.

"Compared to all the costs of shipping, labor is a very small slice," Adam Vokac, president of the Marine Engineers' Beneficial Association, said in an email. "However, it receives outsized scrutiny as companies believe it is one of the few in their control," unlike fuel, shipyard and docking fees.

The exhaust coupling failure that halted *MAS400*'s voyage is a relatively routine issue that can arise due to vibration, heat and myriad other factors. The cost of building a 100-percent foolproof engine room, Vokac said, is not a cost-effective alternative.

"Obviously, other aspects of autonomous ships like routine navigating may be more realistic, but mariners aren't necessarily needed for routine issues," he said. "It is the non-routine (when) humans excel over automation — like a crowded channel, bad weather, or a simple mechanical failure that can bring down the whole operation.

"In this case, they went with solar in an attempt to remove as many mechanical-failure points as possible and it still only lasted three days," Vokac continued.

> "We suffered a failure in a small, commercially available component on the hybrid drive line that was unforeseen."
>
> – Ayse Atauz Phaneuf, President, ProMare

As of late July, *MAS400* was in dry dock undergoing inspections and repair. The generator involved has been removed and a replacement will be installed. ProMare is redesigning the coupling to avoid a repeat failure at sea.

Project partners are considering another crossing attempt this year but are wary of potential Atlantic hurricane activity later this summer. Meanwhile, the vessel will return to the water for further research closer to its home base in England.

"Despite the setback, we've learned a lot," Brett Phaneuf, director of the Mayflower Autonomous Ship Project, said in a prepared statement. "We're more encouraged than ever that the *Mayflower* will safely navigate the world's oceans in the near future."

# Gulf group launches first-ever Jones Act enforcement vessel

By Casey Conley

A trade group supporting U.S.-flagged offshore service companies is taking a new approach to protecting the Jones Act.

The Offshore Marine Service Association (OMSA) has activated the 175-foot fast supply vessel *Jones Act Enforcer* to document possible violations in and around the Gulf of Mexico. The vessel is homeported in Port Fourchon, La., but can operate from any port.

*Jones Act Enforcer* is the first vessel of its kind patrolling U.S. waters in search of Jones Act violations, said Aaron Smith, OMSA's president and CEO.

"We are standing up for the men and women who make up the U.S. merchant marine," he said in a recent interview. "They are tired of standing on the dock watching as foreign crews … go to work while they go home and sit by the phone waiting for the next job."

"That is unfair, that is not right, and we are going to do something about it," he continued.

OMSA, based in New Orleans, is composed of 140 maritime businesses, including about 60 that operate service vessels in U.S. waters. Other members include shipyards and marine suppliers.

The group has reported numerous potential Jones Act violations to federal regulators over the years. Specifically, its members have witnessed foreign vessels depart from U.S. ports with cargo on the deck that is gone when the ship returns, Smith said.

The organization has long advocated for the Jones Act, which it believes has been diluted by federal actions. U.S. Customs and Border Protection (CBP), OMSA said, has issued policy decisions over the years that reinterpret aspects of the law. As recently as 2019, the CBP determined foreign vessels engaged in "lifting operations" can transport cargo between two U.S. points, such as a port and offshore energy fields.

OMSA considers the agency's decision to be "in direct contravention of the text of the Jones Act," and it has filed a lawsuit challenging it.

CBP did not specifically address OMSA's assertions about policy rulings allowing foreign vessels to work in the Gulf and other U.S. waters. However, in a statement the agency said "protecting the homeland from violators who circumvent the applicable laws" is a key focus.

"CBP vigorously enforces and ensures compliance with the coastwise laws," the statement said. "CBP carefully reviews allegations involving potential coastwise violations and takes appropriate action based on the information set forth in these allegations."

Crewmembers on foreign vessels earn a fraction of what their American counterparts make for the same work. As a result, foreign operators can underbid American companies for contracts servicing offshore platforms, depriving American firms and


OMSA

**The Offshore Marine Service Association has outfitted *Jones Act Enforcer* with equipment to capture evidence of potential violations.**

mariners of work within U.S. waters.

OMSA chartered *Jones Act Enforcer* with a full crew who work at the group's direction. Several of OMSA's members voluntarily increased their dues to pay for the effort, Smith said.

The crew aboard *Jones Act Enforcer* has been trained to identify and document Jones Act violations. The vessel also is equipped with photo and video recording equipment, including aerial surveillance gear, to capture violations as they happen.

Evidence will be shared with relevant federal regulators, Smith said. It also will be released to the media. OMSA believes the threat of public exposure could change behavior among some companies that are wary of negative publicity.

"You have heard the line that sunshine is the best disinfectant? That is what we are doing," Smith said. "We are going to shine some light on these operations, and we are fairly confident it will change the (approach) of foreign vessels and those who hire them."

The Louisiana Oil & Gas Association (LOGA) said it supports efforts to crack down on illegal activities in the Gulf of Mexico by foreign entities. *Jones Act Enforcer*, LOGA said, appears to align with that mission. However, the group offered a more nuanced position on the Jones Act.

"For 100 years, the Jones Act has contributed to the precarious lawsuit culture in Louisiana," LOGA said in a prepared statement. "Oil and gas companies have been subject to frivolous lawsuits that result in disinvestment from Louisiana's coastal economy.

"While many aspects of the Jones Act are antiquated and need to be amended," the statement continued, "we are hopeful that OMSA will utilize the valuable parts of the law to protect American workers in the energy sector."

Several other Gulf-based energy trade groups did not respond to inquiries or declined to comment.

# Gulf of Mexico shows promise for offshore wind development

By Nick Keppler

The Gulf of Mexico, long a dominant producer of fossil fuels, could one day become a clean energy hub.

State and federal authorities and private developers are exploring the potential of offshore wind within the Gulf. The region has several promising attributes, including a ready maritime workforce, diverse port network and offshore construction know-how garnered through decades of offshore drilling.

In June, the federal Bureau of Ocean Energy Management (BOEM) published a formal Request for Interest to assess developers' willingness to install wind farms (or other renewable power infrastructure) off the coasts of Louisiana, Texas, Mississippi and Alabama. A few days later, BOEM convened a task force of regional government officials.

The Gulf has long been dominated economically and politically by oil and gas interests that compete with renewable energy. But offshore wind backers think the sheer economic opportunity from what could be a $70 billion business by 2030 will overcome any local hesitance.

"[T]his is a very real economic opportunity and I would say that it's the U.S.'s opportunity to miss right now," Brandon Burke, vice president of policy and regulatory engagement at the Network for Offshore Wind, told *Professional Mariner*.

The more focus, engagement, and investment Gulf Coast states can provide to support to their in-state businesses and promote their entry into the offshore wind industry, the better prepared they will be, he said. "I think this is really a once-in-a-generation economic opportunity for Americans around the country."

The nascent offshore wind industry has, to date, focused much of its attention on the East Coast. That region is home to the country's two existing offshore wind farms, off Rhode Island and Virginia, and more are in the pipeline. BOEM has already approved leases totaling 1.7 million acres between Cape Cod and Cape Hatteras.

The agency first accessed the feasibility and economic potential of Gulf of Mexico offshore wind farms starting with a set of studies commissioned in 2017 and published in mid-2020. The first found the region could support enough wind farms to produce 508 gigawatts of electricity. But the turbines must be adapted for installation in softer sediments and bolstered to withstand seasonal hurricanes. (Wind farms have been built to withstand extreme weather conditions across the world.)

The second study found just one offshore wind project could support about 4,470 jobs and raise $445 million in gross domestic product (GDP) during construction and 150 jobs and $14 million in economic activity annually from its ongoing operation, service and maintenance. Study authors looked for potential offshore wind hub ports in the Gulf and decided Pensacola, Florida, and the Texas cities of Port Arthur and Port Isabel were the most promising.

BOEM

The Gulf of Mexico has a maritime workforce with skills that could transfer into offshore wind.

Louisiana Gov. John Bel Edwards invited BOEM to start a task force in the region last year, and in May he announced plans to shift the state to become carbon-neutral by 2050.

Policymakers in Texas have thus far shown less interest in offshore wind. But that, too, could change

over time. "Texas doesn't have much in energy clean goals," said Luke Metzger, executive director of the group Environment Texas. "I think there is less momentum in Texas but if we have BOEM instigating and if some developers emerge, we could be up to speed in 10 to 15 years. I'm hopeful."

Anthony Bodin, director of business development at Greater New Orleans, Inc., an economic development corporation, said this type of conflict does not exist among business leaders across industries.

"[W]hat we found was a unanimous support for (offshore wind) and for us in this region becoming a leader," Bodin said. "This is certainly not an end to oil and natural gas. We are in a transitional phase and oil and natural gas is going to remain the main economic driver for our region, but there is ample to space to add a new sector like offshore wind."

Additionally, he said, the region's history of offshore drilling makes it more capable of developing offshore wind farms. "The oil and natural gas sector, they have the skill and the expertise that would be transferrable to offshore wind, so there is a direct jobs effect to manufacturing and an indirect jobs effect all across the supply chain."

Burke, from the Network for Offshore Wind, said the existing offshore infrastructure in the Gulf could have a new life supporting offshore wind projects.

"[T]here is some potential to repurpose some of these platforms as offshore substations and that could minimize environmental impact," he said. "Provided that it is structurally appropriate, and all the engineering works out, you can use this existing infrastructure offshore and to avoid having to disturb the seabed in another location."

# Panama Canal authorizes transits for larger, wider ships

By Will Van Dorp

In May 2019, the 1,210-foot neo-Panamax containership *Triton* transited the Panama Canal carrying the equivalent of 15,000 20-foot cargo containers. That trial run was followed by successful passages by *Talos* and *Theseus*, two sister vessels in the Evergreen shipping fleet.

Based on the success of these transits and others involving similarly-sized ships, the Panama Canal Authority (PCA) in May 2021 formally increased the maximum length and beam for ships passing through the waterway to 1,215 feet long and 168.14 feet wide. The previous maximums were 1,205 feet and 161 feet, respectively.

The change came a month before the fifth anniversary of the opening of the Cocoli and Agua Clara Locks. Their opening, in June 2016, created a larger third lane through the nearly 50-mile waterway.

Container ships account for more than half the transits of the new locks. These larger size limits allow container ships loaded with boxes 20 rows wide to transit. Previously, the new locks could accommodate container ships loaded no more than 19 boxes wide. With this 20-row configuration, the *Triton*-class vessels have a total twenty-foot equivalent unit (TEU) allowance of 15,313.

With this change, nearly 97% of the world's container ships can now transit the canal, excluding only the largest of the ultra large container vessels now sailing. The largest such ships in the world are now longer than 1,300 feet, with beams exceeding 200 feet, and cargo capacities approaching 24,000 TEU.

Panama Canal Authority

**Tugboats assist the containership *MSC Anzu* into the Agua Clara locks completed in 2016. The Panama Canal Authority in May increased the maximum length and beam for ships passing through the waterway.**

"Given the shorter traveling distance and larger capacity it offers, the Canal reduces vessels' fuel consumption and therefore emissions, having a positive impact on the reduction of global greenhouse gases compared to other routes," the canal authority said in a statement.

The authority adds that the larger authorized size of vessels gives shipping companies "greater flexibility in making decisions for the deployment and construction of vessels with greater capacity that can transit through the Panama Canal."

The trial transits involving *Triton* and its sister vessels were used to confirm the ships could safely operate within the canal. In a statement, Panama Canal Administrator Ricaurte Vásquez Morales said this modification in maximum size of vessel "was made possible by our team's experience operating the neo-Panamax Locks safely and reliably over the past five years."

Accommodating larger ships through the neo-Panamax vessels is only one change PCA has implemented since June 2016. Slightly deeper drafts also are permitted. The former maximum, a 49-foot draft, has been increased to 50 feet. The Canal Authority said "increased rainfall and successful water management at the Gatun Lake" allowed the canal to handle deeper drafts.

The monthly number of vessels has also increased. In the second half of 2016, the locks saw about 100 vessels per month. By contrast, between May 2019 and August 2020, the last time period for which statistics are currently available, more than 266 vessels passed through the locks per month.

# Mississippi River pilots again face scrutiny over pay, fees

By Amy Paradysz

Lower Mississippi River pilots faced scrutiny this spring from Louisiana lawmakers and industry groups targeting their salaries, fees and hiring practices.

The three pilot associations ultimately beat back new oversight and regulation, but the campaign placed fresh emphasis on the groups' perceived insularity and lack of diversity.

"There is a severe problem with diversity industry-wide," said Jack Anderson, president of the Crescent River Port Pilots Association oversight board. "We've been struggling with this for 30 years that I've known about. But every woman and every African American who has applied and met the qualifications is a pilot today."

One exception, he said, was a mariner thrown out for substance abuse during their apprenticeship.

Of 122 Crescent pilots, four are Black, five are Asian and five are Hispanic. Anderson said these numbers roughly correlate with the racial breakdown at the United States Merchant Marine Academy, which is about 1.5 percent Black, 6.4 percent Asian and 5.7 percent Hispanic. Where Crescent pilots' statistics lag the Academy's, however, is with the number of women, with 22 percent female at the Academy compared to 4 percent among the Crescent pilots.

There are three pilot associations on the Lower Mississippi River. The Associated Branch Pilots operate between the Gulf of Mexico and Pilottown, the Crescent pilots work from Pilottown to New Orleans, and the New Orleans-Baton Rouge Steamship Pilots Association (NOBRA) pilots operate between New Orleans and Baton Rouge. Each of these associations has its own oversight board made up of existing pilots, and those boards vote on who can be made a pilot.


Brian Gauvin

A pilot launch speeds down the Mississippi River near New Orleans. River pilots opposed new regulations proposed earlier this year in the Louisiana legislature.

"Pilots associations throughout the country are monopolies, but most of them have boards that include court officials and industry representatives," said state Rep. Thomas Pressly, a Shreveport Republican. "Louisiana has the only pilot associations that are completely self-governed, and that's an issue for Louisiana if we want to grow our ports. We want to be sure there's a place where industry can voice their grievances and be heard."

"We see a lack of oversight," said Tyler Gray, president of the Louisiana Mid-Continent Oil and Gas Association. "They have more politically affiliated pilots—with the same last names—than they do women or African Americans.

NOBRA Pilot Lee A. Jackson Jr. said, "NOBRA, along with other pilot associations in Louisiana, is developing and accelerating programs to address the disparities in our industry. We have come together to establish a Diversity & Inclusion initiative that will bring awareness, advocacy, and opportunity to our great industry."

The Associated Branch Pilots declined to comment.

Complaints about nepotism

and a lack of diversity aren't new. Neither are complaints about the pilots' salaries, which typically exceed $500,000 a year. Last summer, the Crescent pilots requested a rate increase to put their pay in line with the NOBRA pilots, whose salaries top out at $697,999. The group also wanted authority to add another 28 pilots to their association.

"When they made this outlandish request, it woke up our members, who said this is too much," said Gray, who helped write the bill Pressly sponsored this spring.

The original proposal addressed several issues related to pilots' qualifications and equal opportunity, and would have added transparency about hiring practices, membership and nepotism. Most significant, it would have given industry representatives a greater role overseeing these pilot groups.

The pilot associations argued Pressly's bill and the changes it proposed would threaten safe navigation on the river. Making changes to a system safely handling 20,000 ships a year, Anderson argued, would be "dangerous."

Pressly is the fifth Louisiana lawmaker who's tried to enact pilotage reforms over the last 20 years. His bill ultimately died in the State Senate, although he said the effort could still lead to positive changes.

"I'm hopeful that we'll see some reforms," he said. "And if we don't, I'll likely bring another bill forward."

# Coast Guard seeks ideas for lightweight mass-rescue flotation device

By Casey Conley

The U.S. government has asked industry groups, inventors and other "innovators" to develop a new type of floating device that can be deployed during mass-rescue events at sea.

Broadly speaking, the new product should be extremely light and suitable for deployment from aircraft or over the side of a vessel, according to the U.S. Department of Homeland Security Science and Technology Directorate (S&T).

The agency solicited conceptual plans for the new device in June. S&T wants something that can hold at least 100 people, weighs no more than 150 pounds, has a compact design and a shelf life of up to a decade. The product must allow safe egress from the water, have redundant inflation modes, require little or no maintenance and function in very warm and very cold environments.

Large flotation devices that meet some of these criteria already exist in the commercial market. However, the existing products are typically too heavy to deploy from a Coast Guard helicopter, S&T officials said.

"The desired large-capacity floating device will differ from existing off-the-shelf USCG/SOLAS-compliant 'life-saving devices' by its lighter weight, increased portability and limited functionality," according to the solicitation.

The Coast Guard Research and Development Center (RDC) is assisting with the project and will provide technical assistance to Homeland Security officials considering different designs.

The service envisions the new device providing immediate assistance to large numbers of people in situations that exceed normal search and rescue capabilities — passenger vessel casualties well offshore where lifeboats are not accessible, for instance. Keeping people out of the water until help arrives is the main objective.

"The Coast Guard wants to develop a non-standard, one-time-use, large-capacity and ultra-lightweight floating device that will be deployed from air or vessel during a mass-rescue operation to mitigate the loss of life," the service said in a news release.

Concept plans were due in early August. S&T plans to select up to three proposals for grants worth up to $100,000 to develop prototypes and begin testing. From there, one product could be chosen to receive up to $200,000 to build a working model suitable for open-water testing.

"If successful, the mass life-saving device will give first responders additional capability and capacity to respond quickly to a mass-rescue situation," said Capt. Dan Keane, RDC commanding officer.

# NOAA weather upgrade helps mariners see what's coming

By Gary Wollenhaupt

Mariners will have access to more accurate wind and wave forecasts further into the future through an updated weather model launched by the National Oceanic and Atmospheric Administration (NOAA).

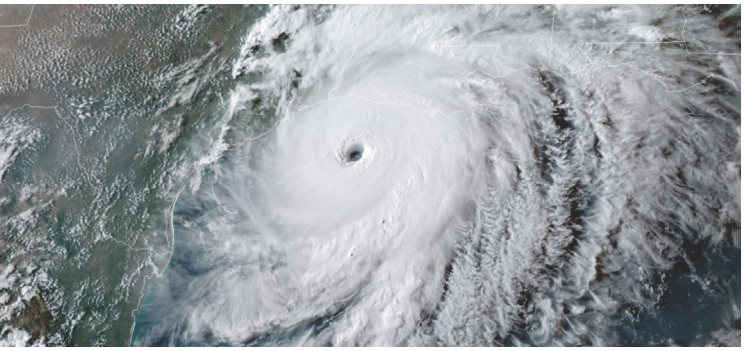
The latest Global Forecast System (GFS) model provides wind and wave predictions 16 days out, compared to 10 days under the prior model, according to Vijay Tallapragada, Ph.D., chief of the Modeling and Data Assimilation Branch at NOAA's Environmental Modeling Center.

"For long-term planning for route planning, the marine industry will have more information for significant weather events that can cause significant wave events, and the avoidance regions will be determined much farther ahead of time before the ships navigate into those areas," Tallapragada said.

NOAA announced the new GFS weather model in March 2021. The program will provide better hurricane forecasting and improved predictions for snowfall location, heavy rainfall forecasts and more accurate predictions overall. The GFS was last updated in 2018.

"When we announced our upgrade to the global forecast system in 2018, we described it as replacing the engine of a car," Louis Uccellini, director of the National Weather Service, said at a press conference unveiling the new model. "With today's upgrade, we are adding more horsepower to that engine, and actually more upgrades to the entire car."

Through the updated GFS, wind and wave forecasts are distributed simultaneously using consolidated atmospheric data, which makes the wave forecast more accurate. Under previous models, the wave forecast was updated every six hours, but with the new model, the wave forecast updates every five minutes. The new model calculates the effect of ocean currents on waves for a better depiction of swells and significant wave heights.



NOAA

NOAA's new weather model will provide wind and wave data 16 days out, giving mariners more information about potential weather hazards.

"The primary motivation for making this upgrade is to improve the tropical cyclone forecast, especially in the Atlantic," Tallapragada said.

The tropical cyclone track and hurricane track forecast has been improved by 15 percent under the new model, and the intensity forecast for those storms has been improved by about 20 percent, he noted.

Also, the new wave forecast provides a higher resolution down to nine kilometers compared to roughly 28 kilometers under the previous model. That means estimates for primary and secondary waves and significant wave heights are available at a higher resolution.

NOAA also is modernizing the Global Data Assimilation System that will allow its weather forecast model to incorporate more data from geostationary and polar-orbiting satellites and flight-level wind, temperature, and moisture observations from aircraft.

The new model was tested using retrospective data based on part of the 2018 hurricane season and real-time testing May 2020 through March 2021 and compared to the performance of the previous version to assess accuracy and reliability.

"This substantial upgrade to the GFS, along with ongoing upgrades to our supercomputing capacity, demonstrates our commitment to advancing weather forecasting to fulfill our mission of protecting life and property," Uccellini said in a statement.

The model upgrade, he added, "also establishes a strong foundation for further planned enhancements that will allow for the assimilation of even more data into the model." •

# Towing

By David Tyler

## Towing industry inches toward all-electric future

As electric ferries and tour boats become more common, the next big challenge is electric tugboats.

Two companies in particular have taken up that challenge: Crowley Maritime and Robert Allan Ltd. More stringent air pollution control regulations are driving interest in tugboats that run entirely on battery power.

In May, Robert Allan Ltd. announced five electric tugboat designs in its ElectRA series. All five will produce zero emissions during typical operations, but some will include backup diesel generators for firefighting and extended endurance.

In early July, Crowley announced it will build the first all-electric tug in the United States. Designed by Crowley Engineering Services, the 82-by-40-foot *eWolf* will deliver 70 tons of bollard pull with azimuthing drives, two 1,000-kW motors and 50 strings of batteries totaling 6.2 MWh.

"The tug represents everything Crowley stands for: innovation, sustainability and performance," Tom Crowley, company CEO and chairman, said in prepared statement. The tug will operate at the Port of San Diego's Tenth Avenue Marine Terminal and is projected to be in service by mid-2023.

The *eWolf* project arose through a public-private partnership between Crowley, the San Diego County Air Pollution Control District, the California Air Resources Board, the Port of San Diego, the U.S. Environmental Protection Agency (EPA) and the U.S. Maritime Administration.

The EPA provided $2 million toward the project through the Diesel Emissions Reduction Act, according to Kathleen Keehan, supervising air resources specialist for the San Diego County Air Pollution District. "It will be going to Crowley for building the e-tug," she said. "The air district is providing an additional $8 million to Crowley for the e-tug through our Community Protection Program, and Crowley is making up the rest of the cost to build the new tug."

The *eWolf* will be built by Master Boat builders in Coden, Alabama, with design and construction management provided by Crowley Engineering


Robert Allan Ltd.

Robert Allan Ltd. recently introduced five all-electric tugboat designs in its ElectRA series.

Services. The tug's battery system will be charged by a shoreside station developed by Cochran Marine. A fully-integrated electrical package will be created by ABB Marine & Ports, along with artificial intelligence technology to increase safety and efficiency.

The future *eWolf*, which will generate zero carbon emissions during typical towing jobs, will replace a diesel-powered tug that burns 30,000 gallons of fuel annually. It also will sharply reduce particulate matter and other greenhouse gas emissions compared to a conventional diesel-powered tugboat.

It was Crowley that first contacted the Port of San Diego and asked them to become involved in the project, said Thom MacLean, director of energy and policy for the Port of San Diego. "They called me, and I said, 'yes, we can do this.' After that we began to solve the problems and try to figure out how to make it happen." The port already has a clean air strategy, and this project fit within it.

In addition, MacLean said, innovative projects such as *eWolf* are crucial in the development of new propulsion technology. "Other companies, before they want to follow, want to see that it is working," he said, "or at least have a good feel for it."

Once completed, *eWolf* will be able to complete one or two ship-assist jobs on a single battery charge, depending on the specific job, according to Coulston van Gundy, a director of Crowley Engineering Services. Its projected 70 tons of bollard pull can be sustained for 30 minutes, he said.

The vessel's design platform can be modified for other power needs and can also be built with hybrid propulsion, he said. The shore-side battery system can also be powered with solar panels, taking advantage of cheaper electric rates at different times of day. "We've designed it to charge at one megawatt per hour, so that crews can actually manage the size of the cables," said van Gundy.

There is also the potential to use fuel cells to replenish the tugboat's batteries through the shoreside charging station, he said. "This type of charging can be overridden to charge at a faster rate."

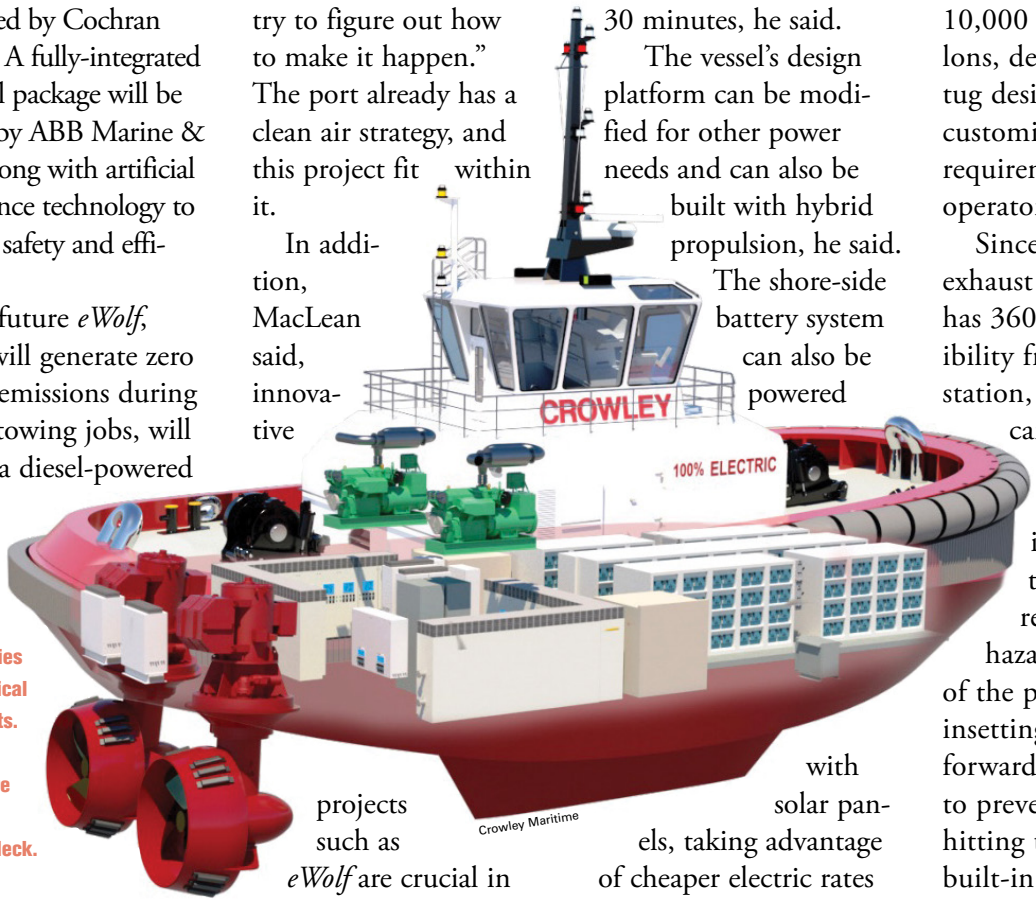
The tug does have a small diesel generator for long trips. Its fuel capacity is between 10,000 and 15,000 gallons, depending on the tug design, which can be customized to meet the requirements of different operators.

Since there is no exhaust stack, the tug has 360-degree visibility from the helm station, so the operator can see aft without obstruction.

The design incorporates safety features such as reduced tripping hazards at the back of the pilot house, the insetting of some of the forward shoulder bits to prevent lines from hitting the crew and a built-in ladder on the side for self-rescue.

"We were basically able to build the vessel from the ground up," said van Gundy.

Robert Allan Ltd.'s all-electric ElectRA series includes four tugs with various combinations of electric propulsion with back-up diesel generators. However, the ElectRA 2100 is fully electric. It is about 70 feet long and 36 feet wide, with a 15-foot draft. It has a maximum bollard




Crowley Maritime

**The machinery space on *eWolf* has batteries and electrical components. Backup gensets are located on the main deck.**

pull of 50 tons.

Mike Phillips, product manager for Robert Allan Ltd., said one of the biggest challenges was figuring out how many batteries could fit in the vessel. "Undoubtedly, this is balancing range and endurance against capital costs that are proportional to the size of the battery pack," he said.

"All but the [ElectRA] 2100 feature significant backup diesel generators, but these are still electric drive, with L-drive propellers," Phillips said. The ElectRA 2100 not only eliminates backup diesel generators, "but many of the associated exhaust, ventilation, fuel and cooling systems as well," he said. "This not only serves to reduce costs to a minimum, but also allows for even more space to be afforded in batteries."

The ElectRA 2100, with a 5,160-kWh battery bank, can produce 50 tons of bollard pull for over an hour. "Practically speaking, of course, sustained operation at full bollard pull very rarely exceeds five to ten minutes, so the tug has ample endurance to complete missions on a single charge, including transit to and from the job site," Phillips said.

It is possible to recharge the ElectRA 2100's batteries in 15 minutes, but that would require a very large charging station. Most operators will choose smaller stations to recharge batteries in two-to-four hours, according to Phillips.

ABB also acknowledged the challenge around fitting sufficient battery power within a tugboat, which have significant power requirements and a limited machinery space. "This could create a challenge to fit electrical systems, including the batteries, into the hull design," said Edward Schwarz, vice president for sales in ABB's Americas division.

But without diesel propulsion, including the large engines that typically take up much of an engine room, he said there is flexibility to locate electrical equipment in different areas within the space.

"With the removal of large engines, shaft lines, gearboxes and fuel tanks," he said, "it allows for the replacement with batteries." •

# At Work

## Miles add up fast for Mobile Bay ferry captains

Story and photos by Casey Conley

With three short blasts of the whistle, *Marissa Mae Nicole* got underway from Dauphin Island, Ala., for Fort Morgan, four miles across Mobile Bay.

Longtime Mobile Bay Ferry Capt. Dennis Kula guided the double-ended vehicle ferry away from the landing under gray skies and steered east toward open water.

Joe Kula, his brother and port captain, came along for the voyage both have done thousands of times before.

"This is it, back and forth, back and forth," Joe said.

"The last time I added it up, I have been across the bay enough to go around the world eight times," Dennis added.

The Mobile Bay Ferry, operated by HMS Ferries, runs year-round between Dauphin Island and Fort Morgan with two ferries. The 35-minute crossing saves about 90 miles when driving around the bay. Vacationers heading to Gulf Shores or points further east account for much of the summertime traffic.

The 112-foot *Marissa Mae Nicole* was built in 1970 for North Carolina's state ferry system. It arrived in the Gulf of Mexico after Hurricane Katrina, which wiped out a bridge connecting Bay St. Louis and Pass Christian in Mississippi. HMS Ferries began operating the ferry after the Bay St. Louis Bridge reopened in 2007.

Propulsion on the 22-vehicle ferry comes from three 184-hp Detroit Diesel 6V71 engines turning four-bladed brass props. Two Cummins generators provide ship service power. Depending on the weather and tides, *Marissa Mae Nicole* crosses the bay at about 7 knots while drawing around 3.5 feet.

The Kula brothers grew up boating and swimming around Mobile Bay. Joe started working on deck 27 years ago and worked his way up to engineer, then captain and now port captain. Dennis started 21 years ago after serving in the military, and he's been a captain for 13 years.

The brothers have helped create a culture where everyone from captains to deck hands pitch in. Dennis Kula, for instance, directs vehicle loading and occasionally checks the engine oil between runs.

"We don't have anyone who is too good to get dirty," he said.

*Marissa Mae Nicole* sailed east-southeast toward Fort Morgan in Mobile Bay's shallow, murky waters. The ferry passed energy platforms while supply boats zigged and zagged in the distance.

With so many crossings under his belt, Dennis has a familiarity


**Above, *Marissa Mae Nicole* gets underway from Dauphin Island.**

**Right, Capt. Joe Kula, left, stands with his brother, Capt. Dennis Kula, on Dauphin Island.**


Top left, Capt. Dennis Kula guides *Marissa Mae Nicole* toward Dauphin Island. Top right, deck hands Jennifer Larison and Gary Glass pause between runs.

Middle left, Kula directs loading at Dauphin Island. Middle right, one of three Detroit Diesel 6V71s powering *Marissa Mae Nicole.*

Bottom, *Marissa Mae Nicole* prepares to get underway from Fort Morgan.

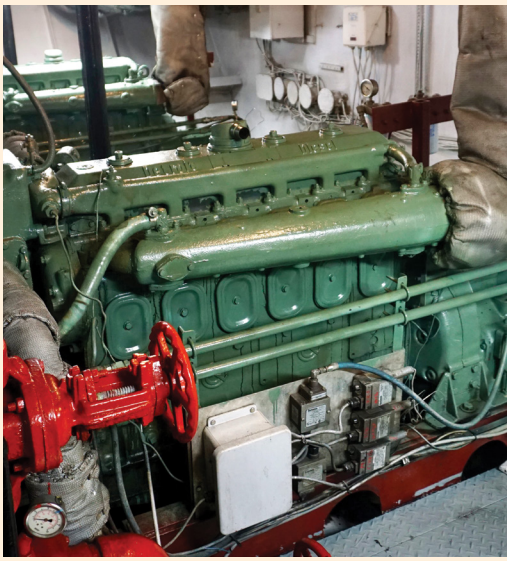
with the route few captains can match. This knowledge comes in handy during bad weather, which can bring squalls, fog and swells from the Gulf of Mexico.

"You'd be surprised. Today is a pretty normal, average-looking day, but you can get 8-foot seas right here in a matter of 10 or 15 minutes," he said.

"I like to think I have seen everything you can see on these ferries, but there is always something new," Joe added.

Dennis lined up the bow with an energy platform just north of the Fort Morgan ferry terminal, then began his starboard turn toward the landing. The ferry spun around to dock with the stern facing the loading ramp. Shallow water and dolphins on the starboard side left little room for error.

Dennis brought in the vessel for a gentle landing. Within a minute or two, vehicles were funneling off the ship. Before long a new batch came on for the return trip, which gave both captains another 4 miles in the logbook as they worked toward another turn around the earth.

# Casualties

U.S. Coast Guard

The first week of testimony during the Coast Guard's hearings into the *Seacor Power* capsizing offered new details into the tragedy.

## Survivors offer emotional testimony during *Seacor Power* hearings

By John Simerton

A U.S. Coast Guard hearing this month into the April 13 capsizing of the *Seacor Power* in the Gulf of Mexico cast a spotlight on how a fierce storm caught a seasoned crew off guard, while communication and equipment problems complicated the response.

The Marine Board of Investigation hearing into the catastrophic wreck off the Louisiana coast was held over two weeks in mid-August in a hotel conference room in Houma, La. The incident left 13 dead among the 19 crewmembers and contractors who boarded the *Seacor Power* in Port Fourchon, La., hours earlier.

The 175-foot boat left port a little after noon, headed to service a Talos Energy platform at Main Pass 138, about 40 miles east of Venice. With its 265-foot legs raised, *Seacor Power* ran into a line of unexpectedly severe thunderstorms that moved southeast into the Gulf.

Behind it came an unusually potent "wake low," a circular low-pressure system that kept the winds and seas high into the next morning, National Weather Service forecaster Philip Grigsby testified.

"It was almost a 12-hour event," he said.

Those seas would reach 10 to 12 feet in the aftermath, confounding rescue attempts and keeping divers at bay, according to Coast Guard and private rescuers. Six survivors were pulled from the Gulf. The boat's veteran captain, David Ledet, was among those who died.

The oil services vessel capsized seven miles south of Port Fourchon at 3:41 p.m., while crew members made a last-ditch attempt to lower its massive legs to the sea floor for stability.

Two of the survivors offered emotional testimony of the wreck and a prolonged wait for rescue in the Gulf. One, first mate Bryan Mires, described a squall packing 79 mph winds, followed by another squall.

Mires said he received two calls from the galley during that time, with reports that the watertight doors, which are meant to be shut while in transit, weren't sealing.

He began to lower the *Seacor Power's* legs to stabilize it, while turning toward the storm, to no avail. He said Ledet then took the helm, steering the other way before it flipped.

"I realized we were not going to be able to correct it, so I hit the tilt alarm, which sends an alarm through the vessel," Mires said. "This all happened in a minute or two."

Mires saw Ledet disappear from the wheelhouse before the first mate ended up in the Gulf. He said he'd grabbed the ship's search and rescue radar transponder before floating away, but it didn't work. Four ships passed him by in the Gulf before an offshore supply vessel, *M/V Cape Cod,* rescued him, Mires testified.

It wasn't the only equipment failure cited in testimony during the hearing.

> "I realized we were not going to be able to correct it, so I hit the tilt alarm, which sends an alarm through the vessel. This all happened in a minute or two."
>
> Bryan Mires,
> First Mate, Seacor Power

One Coast Guard commander testified they discovered a "connectivity issue" that morning that halted weather alerts through the Navtex system. It was not fixed until after *Seacor Power* had capsized.

In the meantime, the National Weather Service had issued several special marine warnings as the line of thunderstorms moved south. Each message warned of tropical storm force winds — 39 mph or greater — accompanied by "suddenly higher waves."

The accessibility of those warnings to the crew aboard the *Seacor Power* became a key focus of the hearing.

Seacor Marine officials, who placed responsibility for tracking the weather en route with the captain, described several other technologies on board to hear updated forecasts, including NOAA weather on VHF, the Inmarsat-C system, or the internet.

An inspection this year showed those systems in working order on *Seacor Power*. American Bureau of Shipping auditors testified that a recent audit showed no major issues or red flags with the vessel or its operation.

Ledet expressed no apparent concern when he sent out a routine email update shortly after 3 p.m. as *Seacor Power* moved across the Gulf. Ledet put the seas at 3 to 4 feet, with winds at 15 to 20 mph — well within the lift boat's limits.

According to Mires, the winds shot up shortly after Ledet returned to the wheelhouse from sending that e-mail.

Soon, the Coast Guard was scrambling to respond to several distress calls from the Gulf, including an EPIRB beacon from *Seacor Power* that at first gave off no location.

But Coast Guard LTJG Brandon Critchfield testified that when they called a Seacor dispatcher, he insisted the lift boat remained in port.

"His words were: 'The vessel was in Fourchon,' and I believe his words that followed were, 'I

can guarantee you, they're at the dock,'" Critchfield said.

Another company official called back awhile later to say *Seacor Power* was indeed believed to be capsized, but then claimed there were only seven aboard, he added.

The Seacor official, operations manager Paul Fremin, denied telling anyone there were only seven aboard, however.

Ultimately, the captain of a nearby lift boat that was jacked up, *Rockfish*, alerted the Coast Guard and Seacor Marine to the flipped vessel, igniting a search for survivors that was frustrated by severe winds and high seas that kept divers at bay for days.

Attorneys for both Mires and Seacor Marine were allowed to question witnesses during the hearing, previewing arguments likely to emerge in ongoing litigation.

Mires is among more than a dozen survivors or family members of the deceased who have filed lawsuits in state or federal courts, alleging the company placed the crew in harm's way.

Seacor Marine has argued in court the storm on the afternoon of the incident was a "force majeure" event, a sudden act of nature.

The marine board investigation may result in recommendations on how to prevent similar accidents and could determine if anyone committed misconduct or failed to perform their duties, said Capt. Tracy Phillips, the presiding officer.

The National Transportation Safety Board, which is conducting a parallel investigation and plans to release its own findings on the cause of the wreck, joined in the hearing.

*Editor's note:* Professional Mariner *went to press before the Coast Guard completed its Marine Board of Investigation in Houma, La. This report offers details from the first six days of testimony.*

# Poor communication, stuck anchor cited in BC bulker allision

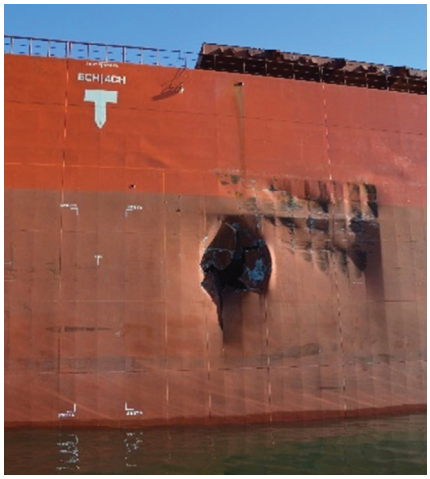
By Casey Conley

The loaded bulk carrier *Caravos Harmony* approached an anchorage in Vancouver Harbor, British Columbia, when currents began pushing the vessel to port, directly toward a ship already at anchor.

The pilot aboard *Caravos Harmony* gave engine and rudder orders to correct its heading. But those engine orders were not effectively carried out by the second mate, who lacked familiarity with the engine control system. Separately, deck crew did not ready the anchors as the pilot requested earlier in the voyage, according to Canada's Transportation Safety Board (TSB).

Unable to steer out of danger, the 751-foot ship rammed the anchored bulker *Pan Acacia* on March 17, 2019, at about 0020. The impact holed *Pan Acacia*'s starboard side and damaged *Caravos Harmony*'s bow. No injuries or pollution were reported.


TSB




TSB

***Caravos Harmony*, above, hit the anchored *Pan Acacia* bow-first in 2019 near Vancouver, British Columbia.**

TSB investigators identified multiple failures and misunderstandings between the pilot and crew that spiraled after currents began pushing the ship off course.

"The pilot and bridge crew did not share critical information to build a common and accurate team situation awareness, and this impeded timely and effective coordination of actions to safely maneuver the vessel and avoid the striking," the TSB said in its accident report.

The Marshall Islands-flagged *Caravos Harmony*, carrying nearly 70,000 tons of corn, departed Tacoma, Wash., late on March 15 for Vancouver Harbor to refuel. A pilot from the British Columbia Coast Pilots boarded at 1655 on March 16 near Victoria, B.C.

The pilot and master conducted a briefing on key details for the entrance into Vancouver Harbor and the planned anchoring maneuver. Soon afterward, the pilot asked for both anchors to be prepared before the ship reached the entrance to the harbor. At about 2320, the pilot asked the master to have both anchors lowered to within 3 feet of the waterline.

The pilot warned the helmsman of strong currents as the ship entered Vancouver Harbor just before midnight. The currents began pushing the ship to port at about 0014, and the captain issued engine and rudder orders to counter them. The ship did not respond as expected.

"At 0015:12, with the main engine in the process of responding to the full-ahead order and the vessel's speed at around 6 knots, the pilot ordered the master to let

go the starboard anchor. Seconds later, the pilot ordered emergency astern," the report said.

The pilot again ordered the anchor let go, and the master again relayed the message to crew on deck via handheld radio. The pilot issued the emergency astern engine order for a second time because the ship did not respond after the first request.

Crew on deck were unable to release the starboard anchor, which had not been used in nearly three months. The master ordered the port anchor dropped without discussing it with the pilot. That action hastened the ship's turn to port, putting it on a collision course with the Panama-flagged *Pan Acacia*.

After further engine difficulties, *Caravos Harmony* began moving astern at 0018, but by then *Pan Acacia* was 1,400 feet away and an impact was imminent.

The engine problems, investigators found, stemmed from the way the second mate was moving the engine lever and telegraph unit (LTU). The proper technique for engaging emergency astern propulsion was not followed, the report said. Instead of rapidly moving the LTU handle directly into the emergency astern position, the second mate instead moved the unit through each engine setting along the way, pausing for several seconds between each movement to reduce potential damage to the engine. That series of movements, however, explained the engine's lack of responsiveness.

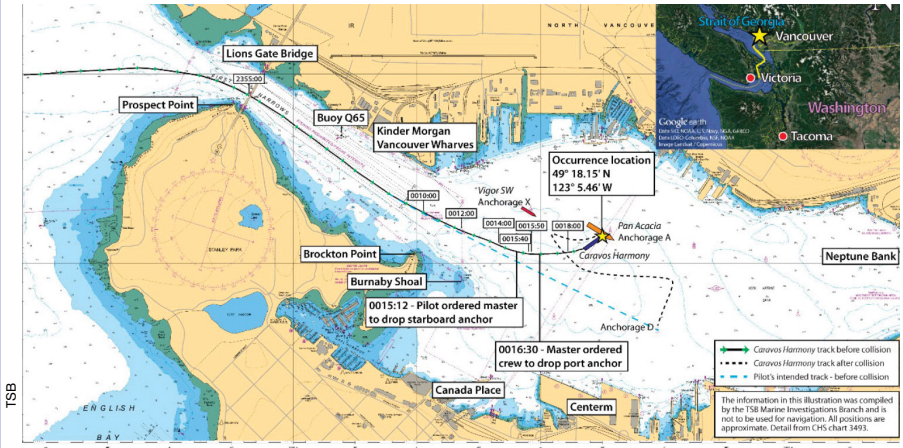
"As a consequence of the second officer's lack of familiarity with the main engine bridge control automation, the engine orders were ineffective and the vessel was slow to respond and continued moving to port," the report said.

When the starboard anchor would not budge, the master and chief mate discussed the situation in Tagalog, their native language, which the pilot did not understand. The pilot, meanwhile, was unaware that the starboard anchor was stuck or that the master ordered the port anchor released.

The failure involving the starboard anchor would have been known earlier had crew prepared both anchors for deployment as the pilot requested, the report said.

Investigators said the incident highlighted the importance of team situational awareness so that each member correctly understands what is happening. The TSB noted the need for a common working language between the pilot and bridge crew, and said ship personnel also must be familiar with the vessels they operate.

"If familiarization on essential shipboard machinery and equipment is not effective and if necessary instruction manuals and vessel-specific procedures and training are not provided, the crew may not be proficient in the use of the equipment, increasing the risk of accident or injury," the report said.




**A series of failures contributed to the collision between the inbound *Caravos Harmony* and the anchored *Pan Acacia*.**

The Vancouver Fraser Port Authority has since changed its rules to allow vessels to refuel in English Bay, reducing the number of ships passing into the main harbor through First Narrows.

*Caravos Harmony*'s operator, Iason Hellenic Shipping Co., has added new training for bridge crew. It also has focused attention on boosting awareness fleetwide about the company's safety management system.

Attempts to reach the firm, based in Greece, were not successful.

# NTSB notes inadequate navigational assessment in Fla. bridge strike

By Michael Joe

*Old Glory* and its loaded hopper barge approached a bridge over the Intracoastal Waterway (ICW) near Fort Pierce, Fla., when a strong current set the tow to port, pushing the vessels outside the navigation channel.

The relief captain turned to starboard to counter the current, which again set the tow toward the port. The tow's stern was 65 feet outside of the channel with Peter P. Cobb Memorial Bridge a quarter mile ahead.

Recognizing a collision was imminent, the relief captain sounded the tug's general alarm. The 230-foot barge *Cole* carrying dredge material hit the bridge's eastside protective fendering on Aug. 19, 2020, at about 0251.

Nobody was hurt, and there was no pollution. *Cole* sustained minor damage, but the bridge fendering cost nearly $650,000 to repair.

National Transportation Safety Board (NTSB) investigators determined the relief captain failed to conduct an adequate navigational assessment. As such, strong cross currents near the bridge caught him by surprise.

"Both the *United States Coast Pilot* and navigational charts had information on 'strong cross' and 'extremely fast' currents in the area of the Peter P. Cobb Memorial Bridge," the NTSB report said. "Although the relief captain acknowledged the available navigational information on the vessel's ECS and in the *United States Coast Pilot* publication, he did not use all the resources available to him."


NTSB images

**The towboat *Old Glory*, left, hit the Peter P. Cobb Memorial Bridge. The map, above, shows the tow's trackline.**

*Old Glory* got underway Aug. 17 at 1900 from Hillsboro Beach, Fla., en route to Jacksonville, Fla. The tow's total length was 281 feet, and it was drawing 7 feet.

The relief captain began watch at about midnight on Aug. 19, and he reported using the vessel's electronic chart system to monitor tides and currents. The transit was uneventful until the tow approached the Peter P. Cobb Memorial Bridge at ICW mile 965.

The deckhand came to the wheelhouse to serve as a lookout during the overnight bridge transit. The vessel was making 5.5 mph with a course over ground of 337 degrees when the current impacted the tow.

"According to the relief captain, the current started to set the vessel and tow from the center to the west side of the channel," the NTSB report said. About 0246, the course over ground of the tow was now 333°, and the bow of the barge was outside the western limit of the channel."

The tow began to "bog down" as it crossed into the Fort Pierce City Marina channel, outside the main navigation channel, and only 6.5 feet deep. Investigators said it was possible the tow's stern hit a sandbar in the shallower waterway.

The relief captain tried to twist *Old Glory's* stern to line up *Cole's* bow for the bridge transit. As that proved unsuccessful, then he began backing down. Again, he found the tow not behaving as he expected,

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suggesting the tow was stuck on a sandbar or the propeller wash was hitting the barge. Soon, *Cole* hit the bridge fendering, damaging a 55-foot section under the span and wedging the tow between the east and west fendering.

The starboard face wires holding *Old Glory* and *Cole* together parted during the collision. Crew replaced the line and notified authorities and the vessel owner before straightening out and passing under the bridge at about 0635. The Coast Guard allowed the tow to continue to Jacksonville, the report said.

Although the relief captain said he had checked the tow's electronic chart system for tidal conditions and currents, he did not expect the cross-current to be running near low tide. He admitted not referring to the *Coast Pilot* but said the captain was responsible for voyage planning, the NTSB said.

The *Coast Pilot* warns that vessels approaching the bridge from the north or south should maintain sufficient headway to minimize the effects of the cross current. The current at the bridge at the accident time was predicted to be at maximum velocity, ebbing at about 1.6 mph.

"Had the relief captain been aware of the cautionary note and information contained in the *United States Coast Pilot*, he would have been better prepared to address the risk of strong currents often seen near the Peter P. Cobb Memorial Bridge," the NTSB said.

The relief captain had about 10 years of experience operating towing vessels and had successfully transited the bridge three times prior to the accident. Drug and alcohol tests were negative, and he said he felt well rested after seven hours of sleep, the NTSB said. He was not named in the report.

River Ventures LLC, owner and operator of the *Old Glory*, declined to comment on the NTSB findings.

# 'Historic rainfall event' preceded Houston-area barge breakaway

By Guthrie Scrimgeour

A barge breakaway that damaged a Houston-area highway bridge was the result of "extreme rise and flow of water" during a tropical storm, federal investigators determined.

Eleven barges broke free from the San Jacinto River Fleet on Sept. 19, 2019, at about 2338 during Tropical Storm Imelda, which dropped up to 30 inches of rain across Greater Houston. Six barges struck the Interstate 10 bridge over the San Jacinto River at Channelview, Texas.

National Transportation Safety Board (NTSB) investigators determined the force of the fast-moving current on the moored barges from the "historic rainfall event" caused the mooring lines to part, allowing the barges to float free.

"Contributing was the operating company not rearranging fleeting area tiers to mitigate the effect of current on barge tiers," the report continued, referring to fleet operator Cheryl K Marine.

Attempts to reach Cheryl K Marine for comment on the NTSB findings were not successful.

The Interstate 10 bridge struck by the barges sustained more than $5.1 million in damage. Removing and repairing the six barges cost another $350,000. There was no pollution or injuries reported in the episode.

The San Jacinto River Fleet occupies more than 190 acres with seven tiers that can accommodate up to 150 barges. The fleet is located just upriver from the I-10 bridge. Barges are stored in seven tiers, or barge groupings. They are typically anchored to one another via fleeting lines and wire ropes and secured to concrete or steel anchors known as "dead men."

NTSB

Eleven barges broke free from a Channelview, Texas, fleeting area during Tropical Storm Imelda and six hit a nearby highway bridge.

At 0756 on September 19, the National Oceanic and Atmospheric Administration (NOAA) issued a flash flood warning that forecasted the San Jacinto would rise from 3.6 feet to 12.4 feet over 24 hours. Later, at 1218, after levels surged to 11 feet, NOAA revised the prediction for the San Jacinto to 15.4 feet within 24 hours.

Rising water levels in the San Jacinto came from Lake Houston, which rose steadily during the day, resulting in the uncontrolled release of water over the Lake Houston Dam, the report said. At its highest point during the storm, Lake Houston rose to 48.08 feet, which allowed 6 feet of water to flow over the spillway into the San Jacinto.

The fleet's operations manager monitored worsening conditions in Lake Houston and the San Jacinto. At about 1530, the manager requested towboat crews working the fleet add extra mooring lines to the barges. Lightning storms prevented that from happening until about 1717, when a team from the towboat *Sara K* checked the fleet and added lines to the barges.

*Cheryl K's* captain and crew noticed the 11 tank barges from tier 3 breaking away at about 2030. For the next 2.5 hours, several fleet towboats, including *JB Bloomer*, worked to control the breakaway barges and return them to the fleeting area.

"*JB Bloomer* attempted to push the string of six barges upriver, but the towing vessels could not hold the barges in the rising floodwa-

ters," the NTSB report said. "*JB Bloomer's* captain maneuvered away from the barges to avoid being pinned between the barges and bridge.

"At 2337," the report continued, "the block of six barges contacted and damaged the protective cell closest to the channel on the eastern bank and then struck and damaged the western bank protective cell."

A damage assessment after the storm determined that the westbound span sustained damage. Three support columns on the north side of the bridge were seriously damaged. Protective cells upriver from the bridge intended to blunt impact from vessels also sustained serious damage.

Federal investigators noted efforts by Cheryl K Marine's personnel to monitor the weather and keep customers appraised of the situation throughout the day. But they said fleet officials should have implemented its severe weather plans sooner and acted faster to reinforce vessels in the fleeting area.

"Had the longer string of barges at (tier 3) been broken down and barges more evenly distributed among the tiers, the resulting shorter strings would have been less vulnerable to swift currents," the report said. "The forces on the barges' mooring lines in tier 3 would have been lessened due to the lower number of barges acted on by the current."

San Jacinto Fleet's port captain told investigators that when severe weather approaches, the barges are usually rearranged to reduce the number of barges exposed to swifter currents. On the day of the accident, however, the captain reported that the weather changed so rapidly that they did not have a chance to remove the barges.

> "Had the longer string of barges at (tier 3) been broken down and barges more evenly distributed among the tiers, the resulting shorter strings would have been less vulnerable to swift currents."
>
> National Transportation Safety Board

Investigators found no indication that Cheryl K Marine's senior leadership followed their own severe weather procedures for Tropical Storm Imelda, the NTSB determined. No completed or signed severe weather forms, checklists, or required actions items listed in the procedures were provided to investigators to demonstrate these processes were followed.

The bridge was repaired and reopened to its original capacity by mid-February 2020, about five months after the accident. •


Doug Beckers

# Ballast water treatment technology advancing rapidly

by Alan Earls

Managing ballast water is an indispensable part of maritime operations. How that water is treated before it is discharged will grow in importance as new international rules come into effect.

The Ballast Water Management Convention entered into force internationally in September 2017. As of July 2021, 86 countries have signed onto the agreement. Regulations in the United States enforced by the Coast Guard roughly parallel those international rules. California, meanwhile, has its own ballast water standards.

Tugboats and smaller vessels, as well as cruise ships, tankers, and bulk cargo carriers, regularly take on and pump out significant quantities of water. That water can contain non-native plant and animal species and pollutants. Reducing or minimizing the spread of these materials is a primary goal of the regulations.

More than 60 ballast water management systems (BWMS) have received basic or type approval by the IMO, and the U.S. Coast Guard has authorized more than 40 systems. Compliance is monitored in the U.S. during port state control inspections, or through the certificate of inspection protocols for U.S. ships.

According to Coast Guard-spokesperson LTJG Sondra-Kay Kneen, the examination begins with a check of the ship's documents, including the Ballast Water Management Plan, National Bal-

*Hanjin Port Hedland* discharges ballast water while being loaded with coal at Newcastle Harbor in New South Wales, Australia.

last Information Clearinghouse Report, and ship's ballast water recordkeeping. "If there is a ballast water treatment system onboard, inspectors will check to ensure it is functioning and that the crew knows how to maintain and use it per the manufacturer's specifications," she says.

Kneen says the Coast Guard continues to see a trend toward greater compliance with the ballast water management regulations contained in 33 Code of Federal Regulations Part 151.

That trend toward improved compliance has driven investments in more sophisticated (and expensive) ballast treatment systems. De Nora, based in Milan, Italy, is one of many firms making these systems. The company recently acquired the UV Technologies Division from Calgon Carbon Corp., which includes the products, brands, and assets of the ultraviolet ballast water management system company Hyde Marine.

The company says the merger creates one of the largest ballast treatment manufacturers in the world, with a portfolio that includes the De Nora Balpure electrolytic disinfection system and the Hyde Marine ultra-violet Hyde Guardian system.

With the deadline for ships to install a BWMS approaching, temporary bottlenecks are occurring across the industry – alongside a boom in demand, notes Matt Granitto, global marine director at De Nora. He says this has created "a new dynamic."

Erma First, founded in 2009 and headquartered in Greece, has been selling its electro-chlorination systems for larger vessels and is now expanding its portfolio to provide a wider range of products. In May, it acquired German water treatment company RWO GmbH and recently added what it calls "the world's smallest ballast water treatment system" to its product line through its acquisition of oneTANK LLC.

In a press statement, Erma First Managing Director Konstantinos Stampedakis said, "This is a game-changing ballast water treatment technology ... to win the battle against invasive marine species ... ballast water from internationally trading smaller vessels also needs treating in a way which is practical and economically viable."

OneTANK had been a subsidiary of Seattle-based naval architecture and marine engineering firm Glosten, which developed a compact, innovative, and low-cost system that was compliant with U.S. and international requirements. Built originally on a patented mixing technology developed by the U.S. Geological Survey, the system can be installed in larger vessels' aftpeak tanks. Its compact dimensions also make it potentially useful for workboats, tugboats, semi-submersibles, and fishing vessels, according to the company.

OneTANK says the technology has been adopted on Overseas Shipholding Group's tanker fleet and on the dredger *MV Charlock* in the Netherlands.

OneTANK Managing Director Kevin Reynolds explains that the system treats ballast water within the vessel's ballast tank and has no filters, ultraviolet lamps or electrolytic chlorine generators. Its footprint is only about two feet by two feet, making it half the size of its nearest competitor.

For smaller vessels, Reynolds notes that its 110-volt, AC requirements are easy to work with and its power consumption is like that of a home appliance.

Many vessel owners have now operated a ballast water management system at sea for the first time and have discovered the issues that poor quality or unreliable systems cause in real life, says Matt Granitto, global marine director at De Nora.


**OneTANK says its compact, filterless ballast water treatment system is less than half as big as its nearest competitor.**

As a result, "shipowners and operators have placed more emphasis on ensuring that a BWMS is reliable, easy to operate, and will treat water to the required standard while onboard a vessel," he says. At the same time, he suggests installers and yards are prioritizing suppliers who are able to leverage global, agile supply chains and have a manufacturing footprint capable of meeting demand.

But there is another challenge ahead, according to Steve Candito, CEO of Ecochlor, a ballast water treatment maker based in North Haven, Conn.

That challenge is for operators subject to IMO rules. The IMO rules for biological efficacy commissioning tests are scheduled for mandatory implementation in less than a year, by June 2022. "With everything that a shipowner needs to accomplish in preparation for the BWMS installation, the logistics and planning for the commissioning test occurs at a stage where it is often overlooked with consequences that could be quite costly," he says.

Candito offers four suggestions for making IMO commissioning successful — advice that could also help with other ballast treatment compliance verification.

First, he recommends getting the applicable test requirements in hand, for example from a given flag state.

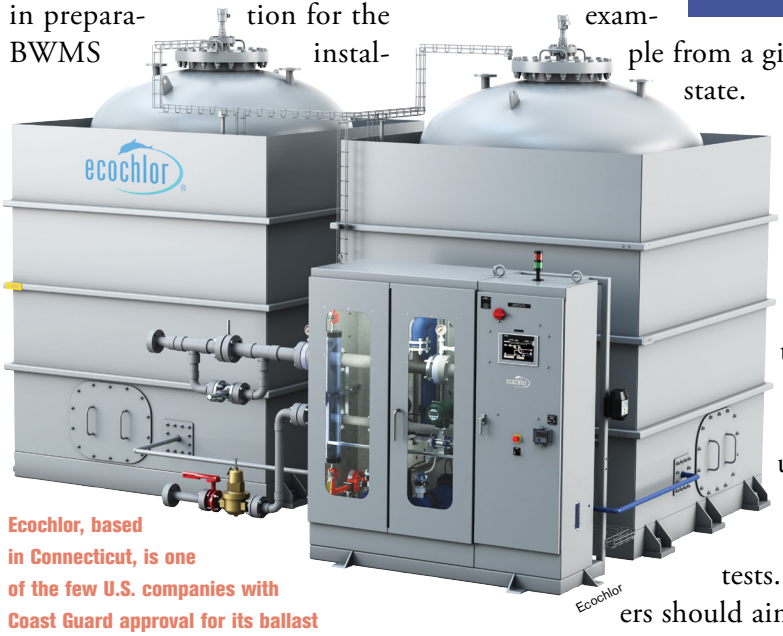
Second, he recommends dedicating time to plan, schedule, and conduct the tests. "Owners should aim to complete BWMS installation before the final phase of the shipyard period so that the commissioning tests can be conducted with sufficient time prior to the vessel's scheduled departure from the shipyard," says Candito.

Third, ballast tanks should be cleaned prior to the ballast treatment installation. According to Candito, a number of manufacturers have been reporting that contamination coming from ballast tanks that have not been cleaned at BWMS installation and which therefore contain significant levels of untreated silts and sediments has led to high failure rates during testing.

The fourth and last recommendation from Candito is, when possible, to have the manufacturer attend the testing and potentially help address any issues that arise.

Reynolds agrees commissioning these systems requires attention and specific skills. "Most installs are done in shipyard," he says, "and many organizations are now struggling to meet the schedule, especially smaller companies that didn't have a plan." •

> Tugboats and smaller vessels, as well as cruise ships, tankers, and bulk cargo carriers, regularly take on and pump out significant quantities of water. That water can contain non-native plant and animal species and pollutants. Reducing or minimizing the spread of these materials is a primary goal of the regulations.




Ecochlor, based in Connecticut, is one of the few U.S. companies with Coast Guard approval for its ballast water management system.

# Correspondence

by Capt. Sean P. Tortora

## Americans pay for cruise industry's flags of convenience

There is some great news this summer for the American travel and leisure industry: cruise ships are back! Travelers who have endured a global pandemic and waited 18 months can now pack their bags and book that cruise, maybe even to Alaska.

The bad news? Cruising now comes at even higher cost for the U.S. Merchant Marine and the broader U.S. maritime industry.

Pre-pandemic, Americans accounted for nearly 50 percent of the almost 30 million worldwide cruise travelers. Yet of the 323 ocean passenger ships, only one, *Pride of America*, is registered in the United States. This results in a potential loss of roughly 162,000 good-paying American jobs. More egregious is that most large cruise lines are American-owned and/or based in the U.S. – serving mostly American passengers yet not employing American mariners. I often wonder how many of those 15 million Americans planning on cruising would be appalled to know these facts.

The glaring question is — why?

Instead of registering in the U.S., major cruise lines register their ships in another country, often in the developing world. This is called "flags of convenience (FOC)," which is a contentious maritime industry practice of allowing vessel owners to avoid regulations and taxes and reduce labor costs by hiring cheaper foreign mariners, often with questionable credentials.

Cruise lines utilizing foreign-flagged ships may argue the question of mariner competency is moot with the advent of the International Maritime Organization's International Convention of Standards of Training, Certification, and Watchkeeping (STCW). What these same FOC cruise lines will not tell you is that each flag state has the ultimate authority to administer, certify, and

Casey Conley

enforce STCW. As such, a flag state with limited resources may not have the training assets or personnel to ensure proper mariner certification. Complicating matters further, many of the same foreign flag states are ripe for corruption and graft. Together, these raise questions about the training and skills of mariners working on foreign-flagged cruise ships.

Could passenger safety be impacted?

Use of FOC ships allow American-owned cruise lines to side-step American labor laws. Mariners working on foreign-flagged cruise ships also lack the pay, benefits, and labor protections available to their American counterparts. A typical able seaman on an FOC ship will earn about $1,500 a month for 12 hours of work every day, with little to no overtime. The same able seaman typically must sign a contract for very long stretches of work, with pay contingent upon completing the tour. An able seaman aboard a U.S.-flagged ship earns a base monthly salary of about $3,750 for an eight-hour workday — not including overtime.

Finally, these companies registering in other countries benefit by building ships overseas, rather than in the U.S. This arrangement deprives American shipyards of lucrative contracts and threatens the nation's long-term security. With fewer big ships to build, the expertise needed to build large ships used in national defense will atrophy. Then what happens? I dread to think of having to depend on FOC ships to ferry U.S. military personnel and supplies in times of national emergency or war. Think it can't happen? Think

again. During Operation Desert Storm 30 years ago, the U.S. did not have sufficient sealift capability, and had to ask FOC ships to carry the fire to the fight. Many refused, and since they were registered elsewhere, they could not be ordered, commandeered, or compelled to sail into a war zone.

Why is this year, of all years, going to be worse?

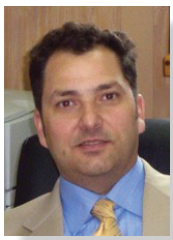
The Passenger Vessel Service Act (PVSA) is the answer. Originally passed in 1886 to help protect our new and fledgling maritime industry — which ironically needs that protection now more than ever — it states, "No foreign vessel shall transport passengers between ports or places in the United States, either directly or by way of a foreign port, under penalty of $762 for each passenger so transported or landed." Accordingly, this is the reason FOC cruise ships normally depart a U.S. port and then head directly to a foreign port before arriving at a subsequent U.S. port. FOC ships plying Alaskan waters would normally begin voyages in a Canadian port, typically Vancouver, British Columbia, and then continue to Alaska, thus complying with the PVSA. Canada's decision in February to defer the resumption of large cruise travel until early 2022 effectively turned the Alaskan Cruise industry upside down. Now, the big American-owned and American-based cruise lines with FOC ships can no longer use a Canadian port "escape clause" to comply with the law.

Not deterred, the large cruise lines lobbied U.S. politicians for a waiver from the PVSA for their FOC ships. And on May 25, 2021, President Joe Biden waived the PVSA by signing the gently named Alaskan Tourism Restoration Act. The law temporarily allows FOC cruise ship to sail directly from Washington state to Alaskan ports without the need for that pesky stop in Canada. But wait, what about the smaller U.S.-flagged Alaskan cruise ships? Those are the American cruise ships with several hundred passengers versus the jumbo FOC ships with thousands of passengers. Their feature draw, and thus a key to their business model, is the benefit to sail from one U.S. port directly to another with no need to sail foreign, because these tenderfoot cruise ships are actually American; built in America and operated by U.S. merchant mariners. With the stroke of a pen, the FOC ships continue to employ foreign non-union labor and avoid paying U.S. taxes while benefitting as if they were American ships.

Unfortunately, there was one other option that apparently nobody raised. Instead of waiving the PVSA, the government could have required the colossal cruise lines to re-flag in the United States. Of course, in this scenario, cruise lines would then have to hire Americans to operate these "new" U.S.-flagged ships. Oh, and by all means, pay their mariners a living wage and permit unions like the rest of America demands. And I almost forgot to mention, yes, the cruise lines would have to pay their taxes; another annoying obligation that every American must satisfy.

This would not be precedent setting. In December 1986, after seeking American permission, Kuwait temporarily re-flagged its supertankers as U.S. vessels to be protected during the Iran-Iraq War. These ships employed unionized U.S. merchant mariners, abided by the U.S. labor laws, and paid their taxes.

The same argument, in the way of both economic and national security, most certainly could have been made regarding the Alaskan cruise industry and the PVSA. Regrettably this did not occur. As of this writing, Canada has eased its pandemic response cruise ship ban from Feb. 28, 2022, to Nov. 1, 2021. But has the damage to the U.S. Maritime Industry already been done? That remains to be seen.



*Capt. Sean P. Tortora is a Master Mariner with 25 years at sea having commanded many different vessels including tankers, general cargo, break bulk, ammunition, ocean towing and salvage, and special mission, with his specialty of underway replenishment vessels. He is an associate professor in the Department of Marine Transportation at the U.S. Merchant Marine Academy. He is the author of the novel,* Steaming to Djibouti *and textbooks,* Study Guide for Marine Fire Prevention, Firefighting, and Fire Safety, *as well as,* Study Guide for Bridge Resource Management. *The views expressed in this article are those of the author and not those of USMMA, MARAD, DOT, or the U.S. government.*

# Bookshelf

By Amber Edwards and Justin Scott

## *Forty Days and Forty Nights*

Editor's note: *The following is an excerpt from* Forty Days and Forty Nights*, a forthcoming novel of the Mississippi River published by the University of Louisiana Press and written by Amber Edwards and Justin Scott. The book is available for pre-order, and will be released this fall.*

Captain Ike Edwards—master of the long-haul towboat *Miss Josephine of Blytheville*— felt like a prisoner set free when he pushed fifteen super-jumbo hopper barges out of the Chain of Rocks Canal six miles north of St. Louis. The dams and locks that made the steeply descending Upper Mississippi River navigable ("Schedule-screwing, pain-in-the-butt water elevators," Ike called them) were behind him at last, good riddance.

The Middle Mississippi River and the Lower Mississippi flowed along flat land and didn't need dams. *Miss Josephine of Blytheville* would stop only once between here and the Gulf of Mexico to pick up fifteen more super jumbos at a staging area a few miles below St. Louis. From there to the Gulf, the unimpeded river could accommodate his entire forty-five-thousand-ton fleet (which happened to be carrying, Ike would tell anyone who would listen, more gravel and grain than a freight train six-miles long, or thirty miles of trucks in a row) without having to break it up into smaller units to descend locks.

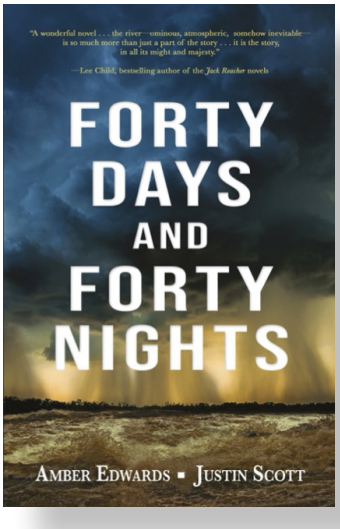
But first, they had to get past St. Louis.

Seven bridges crossed the river on an obstacle course of piers and archways. Each of *Miss Josephine's* barges was nearly as long as the distance between home plate and the outfield fences. When they were cabled together in a fleet five barges long and three wide, it felt like steering the entire ballpark.

The earliest hint of trouble was a strange buzz on the radio, jamming the signals.

But it was no big deal. The radio would kick back in a minute or two. They were well underway. He'd already spoken with all the boats nearby, and he could see everything ahead on the AIS. Behind him was a "poison fleet" of ammonia barges, her captain hanging back to give him time to pull ahead.

Ike Edwards envied the poison captain's extra pay. The ammonia captain had to be hauling down five-hundred a day, easy, maybe more. On the radio he had sounded like a ninety-year-old geezer. Trouble was, management liked geezers running their red-flag boats more than hard-working, hard-driving young fellows like Ike Edwards. Trusted cautious geezers to be safer. Just wait till that geezer got hisself a heart attack one night while flanking down a chute; fall dead on the steering bars, tear the hulls open on the revetment, and




spill ammonia clouds across fourteen counties and two states.

He checked again that the geezer was still laying back where he belonged and got a surprise. The radar showed a boat pulling alongside, flying fast—a little guy he couldn't see out the window. He craned his neck, but still couldn't see his lights.

Ike Edwards could not abide anything moving around him that he couldn't see. He called his mate on the handheld radio, to tell him eyeball that little son of a bitch. The handheld was jammed too.

"Shee-it!" He was puzzled by the continued radio failure, but more concerned that some damned fool was ranging alongside on too many six packs to know he was in danger. Shouldn't be out here in the first place, not at night with rain coming down like sheet steel and the river blasting along at damned near flood stage. He telephoned down to the

galley two decks below to roust out the boys drinking coffee. "Git on deck. Check out the right side 'fore we run down some damned drunk."

He flipped on a search light. *"Damn!"* There he was, a black rubber skiff with a bunch on board, coming in fast at an angle that was going to slam him right against *Miss Josephine's* steel hull. Ike let loose a deck-shaking bellow on the air horns to warn him off, then lost sight of the skiff as it slipped under where he could see.

He turned on the make up lights—the deck floods—so his crew could see any drunks thrown in the water. Might get lucky and pull one or two out. He was not expecting gunfire and when he heard the sharp reports he thought, *goddam*, cables were popping, the tow was breaking up, and he'd be chasing loose barges all the way to St. Louis.

Then his work lights went out in showers of white sparks and it finally dawned on him that he still didn't know what was going on, but he had more trouble on his hands than trying to keep fifteen barges in the channel while not running down drunks.

Boots pounded up the stairs. More shots. A frightened yell. Sounded like the cook. A black-clad commando pushed open the wheelhouse door. The towboat captain took him in in a swift glance. Masked. Flak vest. More guns and knives than the Tulsa Arms Show.

> Ike Edwards envied the poison captain's extra pay. The ammonia captain had to be hauling down five-hundred a day, easy, maybe more. On the radio he had sounded like a ninety-year-old geezer. Trouble was, management liked geezers running their red-flag boats more than hard-working, hard-driving young fellows like Ike Edwards.

The commando shoved an automatic rifle with duct-taped double banana clips in Ike Edwards' face and said, "Don't touch a thing."

A man who had earned the right to be master of a nine-thousand horsepower towboat pushing forty-five-thousand tons of corn and sand on a river famous for destruction neither panicked nor frightened easily. Ike Edwards replied in the same calm, clear voice he would use to straighten out a deck hand.

"You bet, mister. Only if I don't touch anything we are going to crash into an upbound tow, or a bridge pier, or a flood wall, or a levee—whichever comes first."

The commando said, "Now wouldn't that be a shame."

*SWEENEY continued from page 40*

Cal Maritime, has a firearm company he runs during time off from his job onboard a ship. Over the years he has traveled to gun shows throughout the country, selling both new firearms that he has purchased and ones that he has restored. He enjoys his "second career," and plans to expand his business even more in retirement. Floyd, a ship captain I sailed with, used his earnings to buy a mobile home park in Eastern Washington. He feels good about supplying people with a place to live, and makes a healthy extra living from the park year-round to boot. His mobile home park is a big part of his retirement plan.

Shipping is a notoriously cyclical business, which was made abundantly clear during the covid-19 crisis. Having a side interest can help smooth out the rough spots employment-wise, and be personally satisfying as well. We are lucky as merchant mariners to have the option to take advantage of opportunities outside of work. So, the next time you are on vacation, get off that couch. I encourage you to follow your dreams.

Till next time I wish you all smooth sailin.'

*Capt. Kelly Sweeney holds the license of master (oceans, any gross tons) and has held a master of towing vessels (oceans) license as well. He has sailed on more than 40 commercial vessels and lives on an island near Seattle. He can be contacted by email at captsweeney@outlook.com.*

# A Mariner's Notebook

by Capt. Kelly Sweeney

## Pursuing your passions outside of the job

I was looking forward to getting married in a few weeks. My fiancée and I decided on a backyard ceremony at her Long Beach, Calif., home. Everything was going according to plan except for one thing — we had not had any luck arranging music for the wedding.

I was complaining about that to Dana, a cook on the tug I was working on, and was surprised when he said, "I play in an Irish fiddle band on my time off. I would be honored if you allowed us to play at your wedding." I remembered then how Dana would rosin up his bow and practice his fiddle sometimes when we were at sea. I gratefully accepted his offer to play at our ceremony. A few Saturdays later, "The Ceilidh Band" played at our July wedding, a wonderful first day of marriage to the beautiful woman I am still happily married to.

Our profession, with its scheduled periods of work and vacation, offers ample opportunities for mariners to follow their passions outside of the job. Indeed, there are few other occupations I know of that are as "user-friendly" for those interested in developing themselves when not at work. Seafarers generally get paid well enough to afford their hobbies. Plus, not being constrained by the typical Monday through Friday, 9-5 routine most people are saddled with, we have the time to pursue our interests, whatever they are. Over the years I have sailed with many men and women who were able to follow their avocations while on vacation from the vessel.

During the four to six months most mariners have off from work each year, putting in one or two quarters of school is doable. Chris, an engineer I sailed with, took welding classes at the local community college to sharpen his skills during his time off. After a few years, he completed all the welding classes the community college offered and earned certification as a master welder, opening many more maritime job opportunities. Jim worked as a deckhand and mate in the Bering Sea for seven years, taking college law classes during his vacations. He is now a successful practicing maritime lawyer. These are just two examples I know of where mariners learned new skills, or advanced proficiency in old skills, during time off from their sea-going job.

Many mariners I have worked with have had what I call a "side hustle," things they made money at while at home. We did not pay Dana for playing at our wedding, that was his gift to us. But he made extra money playing his fiddle at parties and small clubs. He told me he loved polishing his fiddle skills and making a few bucks on the side. Another guy I worked with on tugs, an engineer named John, restored old cars while at home in San Pedro, Calif. One time during our vacation he invited me over to his place, and showed me the work he was doing restoring an old Ford Fairlane. He later sold the restored car for a big profit, which paid for a vacation he took to see his relatives in Italy. Even my Dad, who sailed for years as an able-seaman and boatswain, would paint houses on his vacation. He felt it was healthy being outside in the Spokane sunshine, and liked the interaction he had with his clients. The extra money he made paid for some great family times I will always remember warmly.

Other mariners I have known have even made their "side hustles" a formal business. Davey, my friend and roommate at

*SWEENEY continued on page 39*





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