



The NAMS Global eNews

September, 2020

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The President's Corner

Members,

I hope that you, your families, and colleagues are all well and that you're finding ways to maintain business continuity and to work safely during this challenging period in our history. Our Headquarters in Houston has remained closed for the most part and our manager, Jennifer Yovan, continues to work efficiently from home. We will be guided by local directives and decide in due course when to return to a routine schedule at the office. I have spoken to many of you since the last newsletter in June, and it sounds like many of you have adapted well to the new normal and finding ways to keep operating. If you have any good advice on how you've adapted your business practices or found creative ways to keep your customers served, please let us know about it. If you would like to share those with Phil Peterson, we can publish those in the next eNews, or you could simply share that through the website Forum at any time.



David Pereira, President

I hope that those of you that were in the path of Hurricane Laura fared well. If you live and work in southwest Louisiana, please let us know that you are OK or if we can help you in any way with recovery. A good way of letting us know would be to email Jennifer or use the member Forum on the website to let us all know. Let's hold our collective breaths and hope that we can avoid major landfalling hurricanes for the rest of the season.

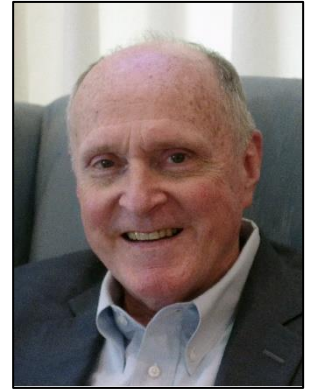
We are paying close attention to the phased-in opening of the economies in various locations, and we are still very optimistic that our annual National Conference will take place in New Orleans on March 21-23, 2021, at the Hilton Higgins Hotel property. Please mark your calendars accordingly. Looking forward to seeing some of you virtually in upcoming RVP and board meetings.

Work Safe. Stay Hydrated. No swimming on the job!
Kind Regards,

David Pereira NAMS-CMS
President

View From the Helm of The NAMSGlobal eNews

I'd like to make a special acknowledgement to member Joe Derie of Southwest Passage Marine Surveyors, LLD, of Portland, OR for the excellent three part series of articles on OSHA requirements for marine construction he has written for our newsletter. Joe has a well-rounded background for marine surveying, including sea time as a USCG officer, post graduate engineering degrees, and time as an adjunct instructor at California Maritime Academy and has a willingness to share his knowledge.



Joe Derie

It is members like Joe who make NAMS a great organization!

Be safe out there!

Phil Peterson, NAMS-CMS
Editor, NAMSGlobal eNews

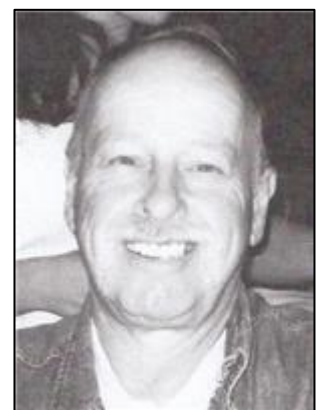
Applicants/Members Change in Status

Name	Applying For	Region	Sponsored By
Revel Boulon	CMS	South Atlantic	Darin Miller
Rajkumar	CMS	West Gulf	Darin Miller
Patrick Fitzsimmons	Apprentice	New York	Shawn Barnett

Crossed The Bar

Kenneth Peter Helmrich, St. Amant, LA

Kenneth Peter Helmrich passed away at the age of 75, on April 11, 2020. He is survived by his wife, Laura Moore Helmrich; preceded by wife, Patricia K. Helmrich and son, Christopher G. Helmrich. He is survived by son, Mark J. (Christina) Helmrich and granddaughter, Kayleigh Helmrich. He was the son of Henrietta Sharkey and John Helmrich from New Rochelle, NY. Kenneth was a third generation combat veteran and served in the U.S. Navy, USS Kitty Hawk 1965-1969 in the aviation division. His extensive world traveling included the orient. His legacy was a long career as boat builder and marine surveyor. His boat-building career began at Ft. Schuyler Shipyard in NY and living on a wood sailboat named "Gypsy". Kenneth was Gulf Coast Expert Antique Boat Surveyor and Renovation Consultant. He was devoted to mentoring, designing, building and restoration of homemade boats to luxury yachts. His two surveying businesses were operated as ministries. His joy in life was attributed in



Kenneth P.
Helmrich

huge part to 32-year sobriety through AA and he was yearly Manresa retreatant in Convent, LA. The family would like to recognize and thank Dr. Jones Samuel and his nursing staff, who guided Kenneth through his valiant battle against kidney disease. A Celebration of Life Service will be held Saturday, July 18, 2020 at St. John Episcopal Church, 2109 17th Street, Kenner LA 70062. Starting with a Visitation 10 am to noon. A private burial will be held at a later date. Please wear your personal mask during Visitation and Service to protect each other. Visitors will be rotated to comply with Covid ordinances. The family is grateful for the opportunity to memorialize Kenneth and thanks you in advance for your compliance. For expressions of love and sympathy, please visit www.tharpsontheimerfh.com.

James Francis Prichard, St. Louis, MO

August 12, 1945 (Pittsburgh, PA) – June 27, 2020 (St. Louis, MO)

We are sad to share that we recently lost the best grandfather, parent and husband a family could want. No man has loved or been loved more by his family than Jim "Papa" Prichard. He will be missed forever by his wife, Mary Walsh Prichard, children Nora and Chad Naes, Matthew Brickel and Joseph Brickel, grandchildren Madison, Nicholas, Nina and Connor Naes and Lily, William and Katie Brickel, brother Michael Prichard and sister-in-law MaryJo, and his many nieces, nephews, cousins and dear friends.



James F. Prichard

Jim was born in Pittsburgh, Pennsylvania to John and Helen Prichard, and spent his formative years raising Cain in Pennsylvania, Ohio and finally St. Louis, Missouri. At 18 while attending college in Cape Girardeau, he began a long career in the marine industry, beginning with a job as a deckhand, spending years as marine surveyor, then finally opening North American Marine Consultants, LLC with partner Keith Weber in 2009. Jim first met Mary, the love of his life, in grade school and the fates reconnected them in 1985, at which point the lifelong bachelor turned in his stag card for good. The rest, as they say, is history.

Jim loved life, knew how to live it well, and no one could light up a room quite like him. A big kid himself, he was most at home cavorting with the grandbabies or yuckin' it up with friends. He may very well have singlehandedly kept the Silly String makers in business for decades! Jim had a way of making people feel better for having talked with him, and impacted every life he touched. Those who knew him will never forget that one-of-a-kind laugh, irreverent humor, kind soul and generous heart.

While no one loved a party more than he, Jim valued his family and friends more and we can't responsibly risk a large gathering now. A small memorial with immediate and extended family will be held in August for his 75th birthday, and once the risks from COVID 19 have diminished, we will get everyone together for the big celebration he deserves. In the meantime, the family would be most grateful if you would send a fond memory, funny story or other happy recollection of Jim to nora@namarineconsultants.com or North American Marine Consultants, LLC, 556 Leffingwell Ave, Kirkwood, MO 63122, Attn: Nora. These will be compiled in a book for Jim's grandchildren and to share with all of his friends and family once we are able to gather.

In lieu of flowers please consider making a donation to either Friends of Kids with Cancer or Pedal the Cause. www.boppchapel.com

Upcoming Educational Opportunities

*** INTERNATIONAL ASSOCIATION OF MARINE INVESTIGATORS ***

IAMI's 31st Annual Training Seminar
Feb. 21 – 24. 2021, Orlando, FL
<https://www.iamimarine.org/>

*** INTERNATIONAL ASSOCIATION OF MARINE SURVEYING ***

Marine Events & Conferences, including Online Seminars
<https://www.iims.org.uk/events/categories/whats-on/marine-events-conferences/>

*** LLOYD'S MARITIME ACADEMY ***

A list of online courses here:
<http://www.lloydsmaritimeacademy.com/filter>

*** AMERICAN INSTITUTE OF MARINE UNDERWRITERS INTRO CLASSES ***

AIMU has a number of distance learning programs, including webinars and e-learning:
<https://aimu.org/edprograms.html>

*** AMERICAN BOAT AND YACHT COUNCIL ***

ABYC's course listing. Most are now Interactive Online:
https://abycinc.org/events/event_list.asp?

*** NORTHWEST SCHOOL OF WOODEN BOAT BUILDING ***

Week long classes have tentatively been postponed due to Covid-19:
<https://www.nswb.edu/systemsintensives/>

*** TOWING VESSEL INSPECTION BUREAU ***

TVIB Drydock/Internal Structure Examination (Virtual) Sept. 22 – 25; TVIB Subchapter M Auditor Certification, Channelview, TX; Oct. 6 – 7; TVIB Annual Survey of Towing Vessels, Nov. 3 – 5, 2020, Harahan, Louisiana

Go to TheTVIB.org “News & Events” then scroll down to “training” for updates.

<https://www.thetvib.org/category/tvib-training/>

*** SOCIETY OF ACCREDITED MARINE SURVEYORS ***

2021 IMEC – March 28 - 31, New Orleans, LA

Other Educational Courses, Seminars & Meetings for Marine Surveyors:

<https://www.marinesurvey.org/education/>

*** INDEPENDENT MARINE CONSULTANTS AND SURVEYORS***

Courses listing here:

<https://imcs-training.eu/>

*** AMERICAN SOCIETY OF APPRAISERS ***

ASA is now offering eLearning classes, including the USPAP 15 hour course for Personal Property, Gems & Jewelry and Machinery & Technical Specialties Oct. 6, 2020; and the USPAP 7 hour refresher Oct. 26, 2020.

ASA Course listing here:

<https://www.appraisers.org/Education/national-asa-courses/eLearning>

NAMSWorthy Articles of Interest

OSHA REQUIREMENTS FOR MARINE CONSTRUCTION
(Part 3 of 3 – Cranes and Derricks on Barges)

**CAPT Joe Derie, NAMS-CMS; AMS, SAMS; CMI
Co-Chair, Fishing Vessel Technical Committee, NAMS
Southwest Passage Marine Surveys, LLC**

This is part 3 of a 3-part series of articles on OSHA requirements for marine construction as they pertain to un-inspected commercial vessels. Part 1 discussed 29 CFR 1026.605 *Marine operations and equipment* (basically deck barges) and was published in the last NAMS e-News. Part 2 discussed 29 CFR 1926.1437 *Floating cranes/derricks and land cranes/derricks on barges*,

subsections (a) through (i). These articles were published in the preceding two NAMS e-News. This article discusses 29 CFR 1926.1437 *Floating cranes/derricks and land cranes/derricks on barges* subsections (j) through (n).

29 CFR 1926.1437 *Floating cranes/derricks and land cranes/derricks on barges* has the following requirements:

(j) *Working with a diver.* The employer must meet the following additional requirements when working with a diver in the water:

(1) If a crane/derrick is used to get a diver into and out of the water, it must not be used for any other purpose until the diver is back on board. When used for more than one diver, it must not be used for any other purpose until all divers are back on board.

(2) The operator must remain at the controls of the crane/derrick at all times.

(3) In addition to the requirements in §§ 1926.1419 through 1926.1422 (Signals), either:

(i) A clear line of sight must be maintained between the operator and tender; or

(ii) The signals between the operator and tender must be transmitted electronically.

(4) The means used to secure the crane/derrick to the vessel/flotation device (see paragraph (n)(5) of this section) must not allow any amount of shifting in any direction.

(k) *Manufacturer's specifications and limitations.*

(1) The employer must ensure that the barge, pontoons, vessel, or other means of flotation must be capable of withstanding imposed environmental, operational and in-transit loads when used in accordance with the manufacturer's specifications and limitations.

(2) The employer must ensure that the manufacturer's specifications and limitations with respect to environmental, operational, and in-transit loads for a barge, pontoon, vessel, or other means of flotation are not exceeded or violated.

(3) When the manufacturer's specifications and limitations are unavailable, the employer must ensure that the specifications and limitations established by a qualified person with respect to environmental, operational and in-transit loads for the barge, pontoons, vessel, or other means of flotation are not exceeded or violated.

(l) [Reserved]

(m) *Floating cranes/derricks.* For equipment designed by the manufacturer (or employer) for marine use by permanent attachment to barges, pontoons, vessels or other means of flotation:

(1) *Load charts.*

(i) The employer must not exceed the manufacturer load charts applicable to operations on water. When using these charts, the employer must comply with all parameters and limitations (such as dynamic and environmental parameters) applicable to the use of the charts.

(ii) The employer must ensure that load charts take into consideration a minimum wind speed of 40 miles per hour.

(2) The employer must ensure that the requirements for maximum allowable list and maximum allowable trim as specified in Table M1 of this section are met.

(3) The employer must ensure that the equipment is stable under the conditions specified in Tables M2 and M3 of this section. (Note: Freeboard is the vertical distance between the water line and the main deck of the vessel.)

(4) If the equipment is employer-made, it must not be used unless the employer has documents demonstrating that the load charts and applicable parameters for use meet the requirements

of paragraphs (m)(1) through (3) of this section. Such documents must be signed by a registered professional engineer who is a qualified person with respect to the design of this type of equipment (including the means of flotation).

(5) The employer must ensure that the barge, pontoons, vessel or other means of flotation used:

(i) Are structurally sufficient to withstand the static and dynamic loads of the crane/derrick when operating at the crane/derrick's maximum rated capacity with all planned and actual deck loads and ballasted compartments.

(ii) Have a subdivided hull with one or more longitudinal watertight bulkheads for reducing the free-surface effect.

(iii) Have access to void compartments to allow for inspection and pumping.

(n) Land cranes/derricks. For land cranes/derricks used on barges, pontoons, vessels or other means of flotation, the employer must ensure that:

(1) The rated capacity of the equipment (including but not limited to modification of load charts) applicable for use on land is reduced to:

(i) Account for increased loading from list, trim, wave action, and wind.

(ii) Be applicable to a specified location(s) on the specific barge, pontoons, vessel or other means of flotation that will be used, under the environmental conditions expected and encountered.

(iii) The conditions required in paragraphs (n)(3) and (n)(4) of this section are met.

(2) The rated capacity modification required in paragraph (n)(1) of this section is performed by the equipment manufacturer, or a qualified person who has expertise with respect to both land crane/derrick capacity and the stability of vessels/flotation devices.

(3) For list and trim.

(i) The maximum allowable list and the maximum allowable trim for the barge, pontoon, vessel or other means of flotation must not exceed the amount necessary to ensure that the conditions in paragraph (n)(4) of this section are met. In addition, the maximum allowable list and the maximum allowable trim does not exceed the least of the following: 5 degrees, the amount specified by the crane/derrick manufacturer, or, when, an amount is not so specified, the amount specified by the qualified person.

(ii) The maximum allowable list and the maximum allowable trim for the land crane/derrick does not exceed the amount specified by the crane/derrick manufacturer, or, when, an amount is not so specified, the amount specified by the qualified person.

(4) For the following conditions:

(i) All deck surfaces of the barge, pontoons, vessel or other means of flotation used are above water.

(ii) The entire bottom area of the barge, pontoons, vessel or other means of flotation used is submerged.

(5) Physical attachment, corraling, rails system and centerline cable system meet the requirements in Option (1), Option (2), Option (3), or Option (4) of this section, and that whichever option is used also meets the requirements of paragraph (n)(5)(v) of this section.

(i) *Option (1) - Physical attachment*. The crane/derrick is physically attached to the barge, pontoons, vessel or other means of flotation. Methods of physical attachment include crossed-cable systems attached to the crane/derrick and vessel/flotation device, bolting or welding the crane/derrick to the vessel/flotation device, strapping the crane/derrick to the vessel/flotation device with chains, or other methods of physical attachment.

(ii) *Option (2) - Corraling.* The crane/derrick is prevented from shifting by installing barricade restraints (*i.e.*, a corraling system). Employers must ensure that corraling systems do not allow the equipment to shift by any amount of shifting in any direction.

(iii) *Option (3) - Rails.* The crane/derrick must be prevented from shifting by being mounted on a rail system. Employers must ensure that rail clamps and rail stops are used unless the system is designed to prevent movement during operation by other means.

(iv) *Option (4) - Centerline cable system.* The crane/derrick is prevented from shifting by being mounted to a wire rope system. The employer must ensure that the wire rope system meets the following requirements:

(A) The wire rope and attachments are of sufficient size and strength to support the side load of crane/derrick.

(B) The wire rope is attached physically to the vessel/flotation device.

(C) The wire rope is attached to the crane/derrick by appropriate attachment methods (such as shackles or sheaves) on the undercarriage, and that the method used will allow the crew to secure the crane/derrick from movement during operation and to move the crane/derrick longitudinally along the vessel/flotation device for repositioning.

(D) Means are installed to prevent the crane/derrick from passing the forward or aft end of the wire rope attachments.

(E) The crane/derrick is secured from movement during operation.

(v) The systems/means used to comply with Option (1), Option (2), Option (3), or Option (4) of this section are designed by a marine engineer, registered professional engineer familiar with floating crane/derrick design, or qualified person familiar with floating crane/derrick design.

(6) *Exception.* For mobile auxiliary cranes used on the deck of a floating crane/derrick, the requirement specified by paragraph (n)(5) of this section to use Option (1), Option (2), Option (3), or Option (4) does not apply when the employer demonstrates implementation of a plan and procedures that meet the following requirements:

(i) A marine engineer or registered professional engineer familiar with floating crane/derrick design develops and signs a written plan for the use of the mobile auxiliary crane.

(ii) The plan is designed so that the applicable requirements of this section are met despite the position, travel, operation, and lack of physical attachment (or corraling, use of rails or cable system) of the mobile auxiliary crane.

(iii) The plan specifies the areas of the deck where the mobile auxiliary crane is permitted to be positioned, travel, and operate, and the parameters and limitations of such movements and operation.

(iv) The deck is marked to identify the permitted areas for positioning, travel, and operation.

(v) The plan specifies the dynamic and environmental conditions that must be present for use of the plan.

(vi) If the dynamic and environmental conditions in paragraph (n)(6)(v) of this section are exceeded, the mobile auxiliary crane is attached physically or corralled in accordance with Option (1), Option (2) or Option (4) of paragraph (n)(5) of this section.

(7) The barge, pontoons, vessel or other means of flotation used:

(i) Are structurally sufficient to withstand the static and dynamic loads of the crane/derrick when operating at the crane/derrick's maximum rated capacity with all anticipated deck loads and ballasted compartments.

(ii) Have a subdivided hull with one or more longitudinal watertight bulkheads for reducing the free surface effect.

(iii) Have access to void compartments to allow for inspection and pumping.

Tables M-1 – M-3 can be found in the OSHA regulations.

Note the requirement in subparagraph m-(4) that requires documents must be signed by a registered professional engineer who is a qualified person with respect to the design of this type of equipment (including the means of flotation).

Note also in sub-paragraph n-(4) (v) that requires the systems/means used to comply the various options must be designed by a marine engineer, registered professional engineer familiar with floating crane/derrick design, or qualified person familiar with floating crane/derrick design.

The above areas are frequently overlooked when operating these types of equipment on barges. Although not mentioned it would appear that the requirements of 29 CFR 1919 *Gear Certification* also apply. I have discussed that in a previous article. If you would like a copy of that article, please contact me.

As always, I hope anyone who wants to discuss this column or has questions about Commercial Fishing Vessels will contact me at 503-236-6818.

Thanks to Joe Derie for submitting this article.

Successful trial of remote surveys on Sembcorp Marine newbuild

Bureau Veritas (BV), Nokia and Sembcorp Marine, have successfully completed remote surveys that pave the way for establishing a new class procedure for the remote inspection of vessels under construction.

The new solutions enable remote surveys to be performed at multiple locations, with feedback transmitted to a single monitoring station. This optimizes the waiting time between surveys and increases operational efficiencies by providing connectivity between all stakeholders involved, while minimizing inspectors' and workers' exposure to onsite safety risks, especially during the COVID-19 pandemic.

In a pilot trial last month, BV, Nokia and Sembcorp Marine test-bedded remote surveys on a new-build vessel under construction at Sembcorp Marine's Tuas Boulevard Shipyard. Various checks were carried out to assess the integrity of the hull components, which were in various stages of construction. checks included material verification, panel fit-up, as well as visual inspections of the sub-assembly block.

Using Nokia's cloud-based collaboration platform and FastMile 4G Customer Premises Equipment (CPE), the remote monitoring center at Tuas



The

Sembcorp Marine and BV performing a real time remote survey with the on-site quality control team.

Boulevard Shipyard communicated effectively with Sembcorp Marine’s quality control (QC) inspectors located at the vessel’s fabrication and assembly sites. The QC inspectors were equipped with rugged head-mounted cameras with high-definition video streaming and voice communication functionalities that enabled the BV surveyor at the remote monitoring center to verify production quality and spot defects.

“The pandemic situation has led to an acceleration of remote survey techniques,” said David Barrow, Bureau Veritas Vice-President – Marine & Offshore, South Asia and Pacific. “As we now move forward in our ever complex digital world, and manage new norms of working post COVID-19, we feel that true success is often about working collaboratively with stakeholders.”

He noted that Bureau Veritas, Sembcorp Marine, and Nokia had clearly shown in the trial that technology provides both efficiency and quality gains. And, he added, “one major benefit of digitalization and remote survey that must be emphasized is that of increased safety. This benefit must be recognized. This technology reduces the risk for all involved.”



Sembcorp Marine Quality Control inspector working with helmet-mounted camera and communication device

“We are delighted to be part of a collaboration with Bureau Veritas and Sembcorp Marine that promotes digital automation in the marine industry,” said Stuart M Hendry, Head of Nokia Enterprise, Asia Pacific. “With our Fastmile 4G CPE solution and cloud-based digital collaboration platform for remote tools, both BV and Sembcorp Marine teams working in the shipyard can communicate and work seamlessly together. Taking a lead in the digital transformation of Industries is Nokia’s focus. We are proud that both BV and Sembcorp Marine share this drive in bringing the use of technology to achieve their productivity and operation goals.”

As part of its innovation and sustainability strategy, Sembcorp Marine has embraced Industry 4.0 technologies including digital design, advanced manufacturing and the Industrial Internet-of-Things (IIOT) to boost its production capabilities and capacity.

Sembcorp Marine Head of Research & Development Simon Kuik said: “The collaboration with BV and Nokia is in keeping with our ambition to achieve project execution leadership through continuous improvement in our production and process innovation. This will enable Sembcorp Marine to deliver safer, faster, and more efficient project turnaround.”

With the successful pilot trial, BV, Nokia and Sembcorp Marine have reinforced the feasibility of complementing remote surveying with specific traditional surveys without compromising personnel safety and survey quality. They believe this type of remote service delivery will likely become the new normal in vessel surveys. *Thanks for Childs Dunbar for forwarding this article*

Study: Gas Hydrate Plug May Have Led to Deepwater Horizon Blowout

Ten years ago, the Deepwater Horizon accident in the Gulf of Mexico killed eleven men and resulted in the largest accidental oil spill in history. Years of investigations concluded that the drilling crew missed critical warning signals that would have stopped the problem. A new analysis suggests that wasn't the case.

The magnitude of the Deepwater Horizon accident is almost impossible to fathom. On April 20, 2010, eleven men died when the drilling rig exploded. An estimated 507 million litres of oil spilled into the Gulf of Mexico over 87 days, coating nearly 1000 km of coastline with sticky black goo. Birds and marine life took a beating, and shrimpers who relied on the Gulf of Mexico were deeply affected when fishing grounds were closed.

Years of investigations and legal proceedings found many reasons for the accident, including that the crew itself had missed critical information which, had they noticed in time, would have allowed them to address the problem before it exploded.



Deepwater Horizon fire, 2010

But a new analysis of data from the drilling platform paints a very different picture of what has previously been found, said Dag Vavik, a Norwegian engineer with 30 years in the industry. Vavik recently defended his PhD on the accident at the Norwegian University of Science and Technology.

“In previous investigation reports... we have been told how the drilling crew failed to observe that the well was flowing during the last 20 minutes before the explosion,” Vavik said. “However, real time data and witnesses from the Deepwater Horizon tell a different story.”

Questioned industry standard

Vavik has nearly 25 years' experience designing offshore floating drilling units, like the Deepwater Horizon, and was well aware of the problems these rigs could face.

His experience made him question an industry practice recommended in 2001 for separating natural gas from drilling mud. Vavik felt the recommendation could result in an uncontrolled release of mud and gas onto the rig.

The Deepwater Horizon's mud gas separator system was based on this recommendation. The problem was that the system was designed to allow gas and mud to return from the well by being routed directly to the mud gas separator without any restrictions, Vavik said.

His concerns about the industry practice led him to warn clients and alert his colleagues to the problem. Ultimately, he ended up designing a new system for handling the mix of mud and gas for deep water drilling ships commissioned by Petrobras in Brazil. He ultimately patented the design.

Vavik became deeply interested in the Deepwater Horizon accident after reading BP's own report on the disaster. The company found that one of the main problems contributing to the explosion was the

design of the mud-gas separator system — the exact issue that Vavik himself had flagged years before, when the industry instituted its 2001 practice.

“When I read this in the investigation report, I blamed myself for not having done more than I did... to get the industry to change the industry practice with having a mud gas separator directly connected to the diverter system,” he said. “At the time I promised myself to do whatever I could to prevent such a disaster ever happening again.”

Years later, however, Vavik found out that the drilling crew probably didn’t use the mud gas separator system during the accident, and likely tried to divert this fluid directly overboard, which is what the written instructions said they were supposed to do.

“In one way this was a relief,” he said. “On the other hand, this meant that something else must have caused this accident.”

And that is what Vavik really wanted to find out.

Previously overlooked data

What launched Vavik on his PhD, however, was the discovery in 2014 that some information from the Deepwater Horizon had simply been dismissed as improbable.

To understand what Vavik found — and why it matters — you need to first understand what the drilling crew would have been looking for — and what they found.

The Deepwater Horizon drill ship was an exploration ship, looking for oil and gas. It was not designed to produce oil and gas, just to find it. Once the find at this particular drill site had been confirmed, the crew sealed off the well so it could be later developed for production. If all had gone according to plan, the drill ship would have moved on.

But things didn’t go to plan. The well wasn’t actually sealed off properly, and instead, there was a huge build-up of gas in the well’s piping system in the days before drilling stopped and as the crew tried to seal off the well. This gas exploded on April 20 and caught fire.

“We have been told how the drilling crew failed to observe that the well was flowing during the last 20 minutes before the explosion. However, real time data and witnesses from the Deepwater Horizon tell a different story.”

Gas influx is a known problem, Vavik said, and the Deepwater Horizon had two independent sensors that should have detected it. In fact, the two sensors actually showed that there was no flow in the system until right before the explosion.

But somehow investigators decided that the crew hadn’t detected the problem. In their accident assessment report, BP wrote that the “rig crew did not recognize the influx and did not act to control the well until hydrocarbons had passed through the BOP (blow out preventor) and into the riser.” Vavik says that’s not quite right.

Data suggests well was plugged

Using data from the sensors and a series of simulations in the lab, Vavik says that part of the problem was that the system was plugged with gas hydrates, which can form when natural gas encounters cold water and freezes into a kind of natural gas ice.

The plug of natural gas hydrates means that there was no way for the crew to know exactly what was going on until right before it happened.

Vavik said BP’s investigations and simulations predicted that thousands of gallons of fluid were coming up from the well every minute during the last 30 minutes before the explosion. However, he said, the two flow sensors showed that there was no return flow from the well until right before the accident.

“Several witness statements support what the recovered flow meter data was telling us. The situation developed extremely fast,” he said. “Flow from the riser started to come back only a couple of minutes before the first explosion.”

Furthermore, Vavik said, some of the actions known to have been taken by the crew just before the explosion suggested that they knew there was a plug in the system.

The crew was troubleshooting and investigating what may have caused the anomalies they had detected when the hydrate plug suddenly loosened, Vavik said.

“This caused rapid gas expansion and pressure built up underneath the gas hydrate plug, allowing the plug to move like a “bullet” in a gun barrel,” he said. “Then it was too late to avoid the accident.”

A forensic study

Among Vavik’s dissertation opponents was Jerome Schubert , an associate professor in petroleum engineering at Texas A&M University.

“Your dissertation was like a forensic study, step-by-step,” he said during the defence. “You used simulations to back up your ideas. I liked your work, and it was great work.”

Schubert said it was important for the industry to have a better understanding of what can go wrong in deep water drilling situations, and that Vavik’s findings did just that.

“That is the value of your work,” Schubert told Vavik. “There were a lot of questions there (in the accident) that no one had the answer to. You offer potential reasons as to why things didn’t look normal.”

Among the recommendations Vavik offered based on his research was that the industry needs a better way to detect influx of gas and gas hydrates earlier than was done on the Deepwater Horizon. The explosion couldn’t have happened without tons of natural gas entering the drilling system undetected until it was too late, he said.

“The people who can tell the real story of what happened are not here anymore,” he said. “I hope that the research work I have done will contribute to give the families and colleagues of the eleven men a better understanding of what really happened in the last 45 minutes before the explosion.”

*This article appears courtesy of Gemini News and may be found in its original form [here](#).
(By GEMINI NEWS) Thanks for Childs Dunbar for forwarding this article*

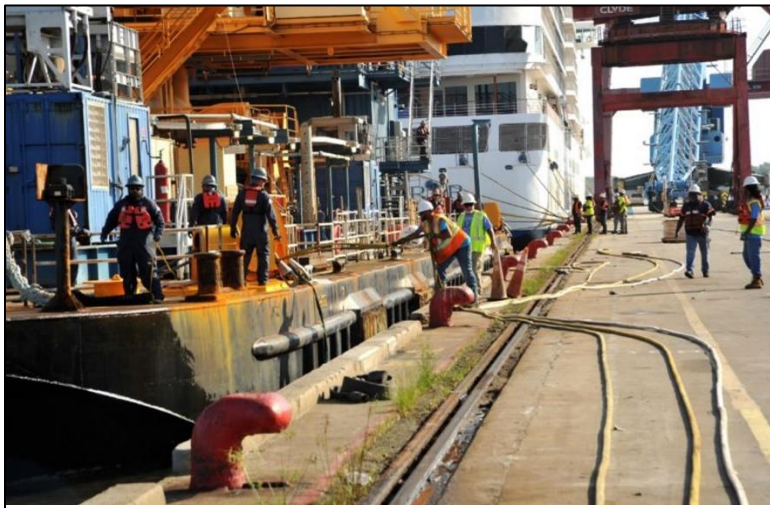
Heavy Lift Crane Prepares to Lift Capsized Golden Ray

The team working on the removal of the capsized car carrier *Golden Ray* is preparing for the final stage of the operation to remove the vessel that has been lying on its side in St. Simons Sound since September 2019.

The twin-hull heavy lift vessel VB-10,000 arrived at the Port of Fernandina in Florida on July 3 for final modifications and function

VB-10,000 arrives in Florida - Photo by
U.S. Coast Guard Chief Petty Officer
John D. Miller





VB-10,000 docked - Photo by U.S. Coast Guard Chief Petty Officer John D. Miller

checks before heading to St. Simons Sound. The lift vessel is currently scheduled to arrive at the wreck site by mid-July.

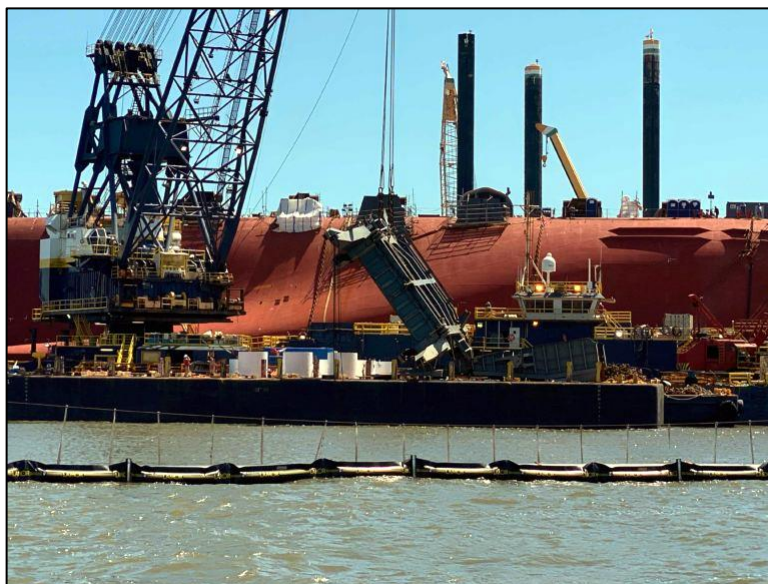
The 255-foot tall gantries of the VB-10,000 made an impressive sight at the docks in Florida. The configuration of the rigging beams underneath the top of the gantries will be modified to prepare for the lifting on the *Golden Ray*.

Under a plan approved in February, contractors will remove the wreck using the VB-10,000 which will straddle the wreck and cut through the hull with a large diamond-cutting chain. They will make seven cuts separating the wreck into eight large sections. Each section of the *Golden Ray*, weighing approximately 2,700 to 4,100 tons,

will then be lifted by the VB-10,000 onto a barge. Finally, the sections will be transported to a certified off-site recycling facility for further dismantling and recycling.

“Each individual large-section cut will take approximately 24 hours, and once a cut begins, must continue until that cut is complete,” said John Maddox, Georgia Department of Natural Resource state on scene coordinator. “That means noise through the night during some 24-hour periods. We do not yet know when the cutting will begin, but we will make announcements for cutting operations once they are scheduled.”

Work on the wreck is also proceeding to prepare for the final cutting and lift operation. In June, using acetylene torches workers cut the ramp off the *Golden Ray* that had been used to load vessels. The ramp was removed in four sections to reduce the amount of stress the 275-ton ramp placed on the hull, and to reduce the amount of weight of the stern section to prepare for the lift. The team also released in February a brief animation showing how the life operations will be completed.



Car ramp removal in June 2020 - U.S. Coast Guard photo by Petty Officer 1st Class Anthony Clark

A video link of the St. Simons Sound wreck removal is here:

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=0UJIWQDRXPA](https://www.youtube.com/watch?v=0UJIWQDRXPA)

(THE MARITIME EXECUTIVE 07-06-2020) Thanks for Childs Dunbar for forwarding this article

SHIPPING SUFFERS WAVE OF SPILLS, FIRES, COLLISIONS AND LIVES LOST

A fully laden crude tanker went up in flames. A giant dry bulk ship broke in two on a reef, spilling fuel

into pristine waters. A livestock carrier sailed into a typhoon, killing over 40 crew and 5,800 cattle. A tanker and barge collided, with 14 presumed dead. Another tanker, used to store crude oil offshore, began to take on water.

And all of that happened in the past six weeks.

The frequency of shipping casualties has dramatically decreased over recent decades. Ship losses fell to a record low last year. The new spike in casualties may be an anomaly, not a trend. And yet, it's happening at a time when COVID-19 safety fears are on the rise due to financial pressures and crew-change barriers — so there could be more trouble ahead.

Wakashio Spill in Mauritius

The Japanese-owned, Panama-flagged dry bulk vessel Wakashio went aground on a coral reef off Mauritius on July 25. It began spilling fuel oil into a highly environmentally sensitive lagoon on Aug. 6. The 203,130-DWT vessel spilled an estimated 1,000 tons of fuel oil before it split in two on Aug. 15. Then, on Aug. 31, a tug and barge involved in salvage operations collided. Four crew drowned.

Gulf Livestock 1 Sinking in East China Sea

The Panama-flagged livestock carrier Gulf Livestock 1, operated by Dubai's Gulf Navigation, departed Napier, New Zealand, on Aug. 14, en route to Tangshan, China. There were 39 Filipino crew aboard and four contract workers (two from Australia, two from New Zealand). The ship was carrying 5,867 cattle, which were being delivered for breeding purposes, not slaughter. The ship sailed into the path of Typhoon Maysak, lost power and capsized. Rescuers found only three survivors. One of them subsequently died, putting the human death toll at 41.

New Diamond VLCC Fire Off Sri Lanka

A boiler in the engine room of the tanker New Diamond exploded on Thursday, reportedly killing a crewmember, burning another and igniting a large fire. The very large crude carrier (VLCC, a tanker that carries around 2 million barrels of crude oil) was fully laden, en route from Kuwait to Paradip, India. It was 30 nautical miles off the coast of Sri Lanka when the explosion occurred.

Qing Long 1 Tanker Collision and Fire

On Aug. 14, the 30,169 DWT Chinese-flagged products tanker Qing Long 1 collided with a sand barge in a busy estuary of the Yangtze River, near Shanghai. The barge sank and the tanker, which was carrying gasoline, erupted into flames. Rescuers saved only three of the two ships' 17 total crew, according to Chinese media reports.

Storage Tanker Listing Off Venezuela

The VLCC Nabarima has been stationary and moored for storage use at Venezuela's Corocoro offshore field for the past decade. The PetroSucre joint venture, 26% owned by Italy's Eni, operates that field. The ship reportedly has close to 1.2 million barrels of crude onboard. Earlier this month, PetroSucre workers claimed water was flooding into the engine room and other compartments and that the vessel was listing, according to Argus Media.

Venezuela oil company PDVSA disputes allegations that there is any danger, calling the reports “fake news.”

The good news is that recent accidents and COVID concerns follow a period when shipping’s safety track record consistently improved. Data from IHS Markit shows improvements over an even longer period. Between 1980 and 2017, the number of lost ships per year fell by 74% and the number of lives lost at sea declined by 81%, according to IHS Markit data. (*American Shipper*, 9/8/2020)

LLOYD’S REPORTS FIRST HALF LOSS OF \$520M ON COVID-19 INSURANCE CLAIMS

Lloyd’s of London recorded a pretax loss of 400 million pounds (\$520.08 million) in the first half, battered by the coronavirus pandemic, the commercial insurance market said on Thursday. Insurers around the world have paid out on event cancellation, travel, trade credit and business interruption policies due to the virus, with Lloyd’s expecting the global bill for non-life insurers to reach more than \$100 billion.

Lloyd’s, whose results are an aggregate of its more than 90 syndicate members, said it would pay out 2.4 billion pounds [\$3.12 billion] in COVID-19-related claims in the first half, net of reinsurance. Its first-half loss compared with a 2.3 billion pound [\$3 billion] profit in the first half of 2019. Chief Executive John Neal said the first half had been “an exceptionally challenging period.” Gross written premiums rose 1.7% to 20 billion pounds [\$26 billion].

Combined ratio, a key measure of underwriting profitability, deteriorated to 110.4% from 98.8% a year earlier. A level above 100% indicates an underwriting loss.

Excluding COVID-19 claims, however, combined ratio strengthened to 91.7%, which Neal said represented the positive impact of the market’s “robust approach to performance management.” Lloyd’s has required its members to ditch their worst-performing lines of business in recent years. (*Insurance Journal*, 9/10/2020)

BIG SEAFARING NATIONS AGREE TO OPEN BORDERS FOR CREW CHANGES

Several nations have agreed to ease border restrictions to allow for the repatriation of hundreds of thousands of sailors who have been stranded for months as a result of coronavirus-related lockdowns.

The countries, including the U.S. and 12 other nations, will recognize seafarers as essential personnel, making it easier for them to board flights and to move to and from ships. “After months of this crew-change crisis getting worse, governments must do their bit,” said Stephen Cotton, general secretary of the International Transport Workers’ Federation. “That means that port states where ships dock, flag states where ships are registered, transit hubs with airports and the home countries of seafarers all need to make visa, quarantine and border exceptions for seafarers now, not tomorrow, not next week.”

In addition to the U.S., Denmark, France, Germany, Greece, Indonesia, the Netherlands, Norway, the

Philippines, Saudi Arabia, Singapore, the United Arab Emirates and the U.K. agreed to the change in rules for ship crews.

China hasn't signed onto the agreement but shipping industry officials say most crew changes for ships routed through Asia take place in Singapore and Dubai.

Some 150,000 sailors fly around the globe each month to connect with ships to replace colleagues that have been at sea for months. The widespread travel restrictions countries have imposed to rein in the spread of the coronavirus have made their travel nearly impossible, while their replacement crews are stuck on land without work.

The international Maritime Organization, a United Nations body that regulates global shipping, estimates there are 200,000 mariners waiting to be replaced. The IMO and shipping companies say the situation is creating a humanitarian crisis, with crew members facing growing health problems under the strain while safety standards are threatened as seafarers face stresses and exhaustion. "It is unacceptable that there remain thousands of people stranded around the world and we owe it to them and their families to change things," U.K. Transport Secretary Grant Shapps said Thursday. "Today marks a new chapter for seafarers and alongside our international partners, we are taking a stand to end the bureaucracy preventing men and women around the world from returning home." (The Wall Street Journal, 7/10/2020)

MAGISTRATE RECOMMENDS DROPPING FEDERAL CRIMINAL CHARGES IN 2018 MISSOURI DUCK BOAT ACCIDENT THAT KILLED 17

A federal magistrate judge has recommended that criminal charges be dismissed in a 2018 duck boat sinking during a storm on a Missouri lake that killed 17 people, including nine from the same family. U.S. Magistrate Judge David P. Rush made the recommendation on Friday, writing that a 47-count indictment against the duck boat's captain, operations supervisor and on-duty manager should be dropped because the tragedy occurred on a lake that is not considered a "navigable waterway" under federal admiralty law governing waterways and highways customarily used for commerce. After hearing arguments from both sides of the case, Rush concluded that the federal court has no jurisdiction over the case and that it should be handled in state court.

A final decision on the case has not been made and a hearing on Rush's recommendation has yet to be scheduled.

The maritime calamity, one of the worst in American history, happened on July 19, 2018, on Table Rock Lake near Branson when the Ride the Ducks amphibious vessel owned and operated by Ripley Entertainment sank during a ferocious storm. Among those killed were nine members of the Coleman family of Indianapolis, including four children, the youngest a 1-year-old girl. Other victims were from Illinois, Missouri and Arkansas.

A total of 29 passengers and two crew members were on board the Stretch Duck 7 when it experienced turbulent waters during a thunderstorm that swept into the area, officials said. In what was scheduled to be a 70-minute tour of Table Rock Lake, the duck boat was buffeted by gusts of up to 73 miles per hour and capsized by waves that crested at 6 feet, officials said.

While the pilot of the boat, Bob Williams, 73, were among those who died, the captain, Kenneth Scott McKee, survived. McKee was indicted by a federal grand jury in November 2018. A superseding

indictment unsealed in June 2019 also charged Curtis Lanham, the general manager of the boat's operator, Ride the Ducks Branson, and Charles Baltzell, the manager on duty the day of the deadly trip.

All three men were indicted on numerous charges of neglect under the seaman's manslaughter statute. Each pleaded not guilty to the charges.

The earlier indictment against McKee, who had been a duck boat captain for 18 years, alleged that he failed to properly assess incoming weather before launching the boat and did not order passengers to put on life vests as the weather conditions worsened.

The National Transportation Safety Board released the findings of its investigation on April 28, 2020, concluding the vessel sank when it was flooded through an air intake hatch on the bow that was not weather tight.

The NTSB investigation also found that the tragedy could have been avoided had the U.S. Coast Guard followed recommendations to improve the safety of such tourist attractions that were made following a similar duck boat sinking in Arkansas in 1999 that killed 13 people. The Coast Guard's failure to require sufficient buoyancy in amphibious vehicles and its failure to address emergency exits on such vehicles with fixed canopies contributed to the sinking and loss of life, according to the NTSB report.

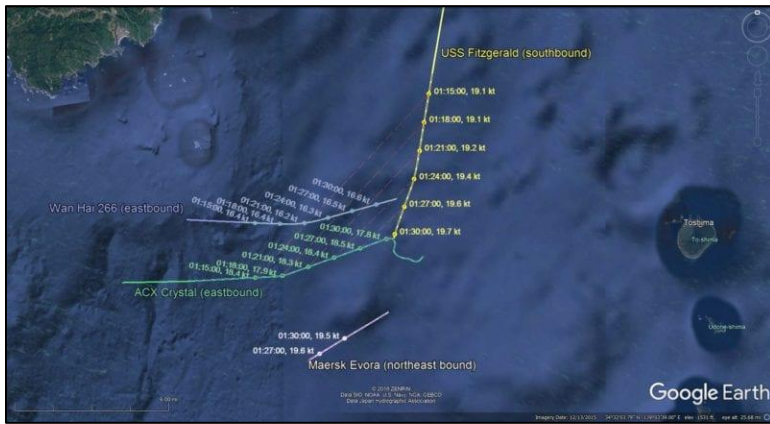
Ripley Entertainment has settled numerous lawsuits stemming from the tragedy, including a \$100 million federal lawsuit filed in Kansas City, Missouri, by lawyers representing the Coleman family. (ABC News, 9/6/2020)

COLLISION BETWEEN US NAVY DESTROYER FITZGERALD AND PHILIPPINE-FLAG CONTAINER SHIP ACX CRYSTAL

Executive Summary: About 0130 (local time) on June 17, 2017, the US Navy Destroyer Fitzgerald with 315 persons on board was southbound at a speed of about 22.1 knots in the bay of Sagami Nada off Japan's Honshu Island after departing the US Navy Base at Yokosuka, Japan, bound for the Philippines. The Philippine-flag container ship ACX Crystal, operated by Sea Quest Ship Management, Inc., with 20 crewmembers on board was east-northeast-bound at a speed of about 18.5 knots, headed to Tokyo, Japan, from Nagoya, Japan. As the distance between the two ships continuously decreased, neither vessel radioed the other. Seconds



USS Fitzgerald departing Pascagoula MS on June 13, 2020, following more than two years repairs. (Photo by Derek Fountain/Huntington Ingalls Industries)



AIS from Fitzgerald / ACX Crystal Collision

before the collision, the watch officers attempted to maneuver the vessels to avoid impact, but the actions were too late, and the ships collided. Seven Fitzgerald crewmembers died in the accident, and three crewmembers suffered serious injuries. The destroyer sustained extensive damage to its forward starboard side. The ACX Crystal sustained damage to its bow; no injuries were reported. The National Transportation Safety Board (NTSB) was the lead federal agency in this accident investigation and delegated its authority to the US Coast Guard to gather documents and perform interviews on behalf of the NTSB. The NTSB

developed the analysis and probable cause based on the evidence gathered by the Coast Guard and additional documentation provided by the Navy.

Probable Cause: The National Transportation Safety Board determines that the probable cause of the collision between US Navy Destroyer Fitzgerald and container ship ACX Crystal was the Fitzgerald's bridge team's failure to take early and substantial action to avoid collision as the give-way vessel in a crossing situation. Contributing was ineffective communication and cooperation among the Fitzgerald crew on the bridge and in the combat information center (CIC), and the Fitzgerald commanding officer's (CO) insufficient planning for the hazards of the vessel's intended transit. Also contributing was the Navy's ineffective oversight of the Fitzgerald in the areas of operations scheduling, crew training, and fatigue mitigation. Also contributing to the accident was the ACX Crystal watch officer's lack of early detection of the Navy vessel and insufficient actions to avoid collision once in doubt as to the destroyer's intentions. (NTSB Advocacy Update, 9/9/2020)

Underwater Inspection of Fixed Offshore Steel Structures

By Jean-Pierre Assaker, Marine Surveyor, CL Surveys,
IUMI Professional Partner, www.cl-surveys.com

Offshore structures are large platforms that provide the necessary facilities and equipment for exploration and production at sea. Generally, these structures are progressively being used in the offshore sector. They are designed to withstand environmental loads such as waves, currents, wind, earthquakes and daily operational forces. Inspection procedures must be performed in an effective way to reduce the risk of fatigue and failure of these structures. A research paper by CL Surveys discusses international and national codes and regulations concerning the inspections of offshore structures, as well as the different types of underwater non-destructive testing inspections that must be carried out at sea. Moreover, this research elaborates on marine growth development, inspection and the cleaning of the underwater offshore structure. It also provides information on the correct implementation, inspection and monitoring of the corrosion prevention system fitted on these structures. In addition, we have developed a strategy for an effective underwater inspection, allowing for a better understanding of the risk levels during the expected service life of the structure.

Finally, we discuss what risks divers frequently face, the access limitations of the structures and the role of automation in this sector. The purpose of this paper is to identify different inspection and maintenance systems to develop an efficient methodology that will keep fixed offshore structures safely out of dry-dock. For the full paper please click [HERE](#). (from the IUMI website)

Charges May be Brought in California Boat Fire That Killed 34

Nine days after the scuba boat *Conception* went down in flames with 34 people trapped below deck in one of the deadliest disasters in California maritime history, a federal grand jury began looking into whether a crime had been committed.

Now, a year after the Sept. 2 tragedy, investigations into the cause of the pre-dawn blaze and whether someone is to blame are still ongoing, though court documents say criminal charges are imminent.



Dive boat Conception

The captain of the boat, who could face an unusual federal manslaughter charge, was briefed in July on the evidence prosecutors have against him. It's the type of meeting often used to persuade a suspect to plead guilty, lawyers for the boat's owners said last week in a related lawsuit.

An attorney for Capt. Jerry Boylan and federal prosecutors declined to comment on the disclosure.

The *Conception* was carrying 33 passengers on a Labor Day weekend scuba diving expedition near an island off Santa Barbara. The fire broke out while passengers were sleeping and quickly swept through the vessel.

Boylan and four crew members barely escaped after trying in vain to save the others, authorities said. Boylan made a mayday call at 3:14 a.m. saying, "I can't breathe," before abandoning ship.

All the passengers and one crew member perished in the bunk room beneath deck. It's unclear if any had time to try to escape. Coroners said they died from smoke inhalation before their bodies were burned.

All six crew members were asleep when the fire broke out, according to the National Transportation Safety Board. If that's the case, it would violate Coast Guard regulations requiring a roving watch.

"The lack of a night watch was an outrageous oversight," said Jeffrey Goodman, a lawyer representing family members of nine victims.

Legal experts said prosecutors are likely trying to apply an obscure federal law known as the Seaman's Manslaughter Statute that predates the Civil War and was enacted to punish negligent captains, engineers and pilots for deadly steamboat accidents that killed thousands.

Prosecutors would only need to prove simple negligence or misconduct on the part of the captain or crew. Conviction carries a penalty of up to 10 years in prison.

The lawsuit filings also revealed that the company that operated the boat and the couple who own it, Glen and Dana Fritzier, have offered to settle the lawsuit with dozens of victims' family members.

Goodman said settlement discussions were preliminary and attorneys for victims were still trying to find the cause of the fire and the financial resources of the boat owners.

Families of 32 of the victims and one surviving crew member have filed claims against the Fritzier family trust and the boat company, Truth Aquatics. The Fritziers and the company in turn have filed a legal claim to shield them from damages under a maritime law that limits liability for vessel owners.

Attorney Russell Brown, who represents the Fritziers and made the disclosures in court papers, did not return a phone call or email seeking comment.

Brown said in a report filed Friday that a federal grand jury in Los Angeles issued subpoenas to the Fritziers and Truth Aquatics Inc. on Sept. 11 and 18 seeking records on the boat and communications related to its safety operation.

He also revealed that Boylan met with prosecutors in a meeting held routinely when "the government has concluded that it has sufficient evidence to bring criminal charges." He said "an indictment, or indictments, will be forthcoming."

Federal investigators are still working to complete what's known as an origin and cause report, which will rule if the fire was accidental, incendiary – meaning it was deliberately set – or undetermined. Authorities have said there is no indication the fire was arson.

The five-person NTSB will hold an Oct. 20 meeting to vote on the safety investigation's findings, as well as the blaze's probable cause and any potential recommendations.

An NTSB official has cited how difficult it was to reach an escape hatch in the Conception's bunk room, a design that has routinely met regulations. Coast Guard records show the boat had passed its two most recent safety inspections without violations.

The NTSB is a federal regulatory agency but it has no enforcement powers and can only submit its suggestions to bodies like the Federal Aviation Administration or the Coast Guard, which have repeatedly rejected some of the board's safety recommendations.

The Coast Guard has issued additional safety recommendations in the wake of the tragedy, such as limiting the unsupervised charging of lithium-ion batteries and the use of power strips and extension cords. (*Insurance Journal 9/4/2020*)

EXIS TECHNOLOGIES LAUNCHES CARGO SCREENING TOOL FOR MISDECLARED AND UNDECLARED DANGEROUS GOODS

Exis Technologies, global leaders in IT solutions for the management of dangerous goods in sea transport, and their parent company National Cargo Bureau (NCB), the New York based cargo inspection company have launched Hazcheck Detect, a cargo screening tool to detect mis-declared and undeclared dangerous goods in containerized shipments. Maersk are the first customer signed to the Hazcheck Detect solution.

In a white paper published by NCB in July this year they reported that a recent Container Inspection Safety Initiative they had carried out revealed an alarming number of containers carried by sea include mis-declared dangerous cargoes that represent a serious safety risk to crew, vessel and the environment. The inspection initiative showed that 55% of containers were non-compliant with 43% failing to secure dangerous goods correctly within the container itself. Approximately 6.5% of containers carrying dangerous cargoes had been mis-declared. The white paper is calling for industry to adopt a comprehensive, holistic and coordinated approach to address this worrying trend with 12 recommendations ranging from embracing a safety culture for dangerous goods compliance to practical measures for container and vessel inspections and monitoring.

One of the white paper recommendations is the incorporation of integrated digital tools that automate critical compliance functions, like Hazcheck Detect. Hazcheck Detect focuses on:

Undeclared dangerous goods – looks for cargo that is not declared as DG, looking for suspicious items that should be declared as DG.

Mis-declared dangerous goods – looks for cargo, which is declared as DG, but may not have been declared as the correct DG. It scans all booking details for keywords, validates against rules and highlights suspicious bookings to identify mis-declared and undeclared dangerous goods (DG). Container lines that sign up to use the service will be able to screen their bookings and bills of lading using the same keywords and rules to try to find mis and/or undeclared dangerous goods, thereby helping to ensure the safety of the crew, ships and cargo. In the future there is also scope to apply the tool for use in other global screening applications not related to dangerous goods, for example, the illegal shipping of wildlife or other compliance cargo. Currently, the system has around 4,500 mis-declared rules and 10,000 undeclared rules available.

The solution supports the creation of rules based on keywords and the rules are designed to ensure that only search results of interest are returned for specific follow up. The rules are continually enhanced and will evolve using machine learning and AI techniques.

Hazcheck Detect is delivered as a software-as-a-service solution, hosted and maintained by Exis Technologies. It includes a web user interface so that users can enter and maintain data search terms, keywords and rules.

Henrik Lauritsen, Director at Maersk said, "Exis Technologies has developed a solution that could be used industry wide and allows easy sharing of keywords and rules between industry partners. This is very important so that container lines know that partner lines are searching using the same criteria. The service went into live operation in February 2020 and we are finding an average of 40 containers a week which are stopped, undeclared DG or re-declared as DG. In the past these containers would have been loaded on board as non DG cargo or mis-declared. Critically we get the search hits returned from Hazcheck Detect within seconds so that we can follow up quickly to ensure that suspicious cargo is not loaded on to the vessels. We are delighted to be the first shipping line to start using Hazcheck Detect and we encourage more lines to come on board." (Exis Tech Press Release, 9/1/2020)

Heading Home: U.S. Coast Guard Icebreaker Healy Suffers Fire Off Alaska

The United States' only medium icebreaker USCGC Healy has suffered a fire and propulsion failure while en route to the Arctic.

The U.S. Coast Guard reports that the Healy was approximately 60 nautical miles off Seward, Alaska on August 18 when an electrical fire in one of the ship's main propulsion motors was reported at 9:30 p.m. A fire team disconnected the affected motor, and the fire was confirmed extinguished by 9:56 p.m.

The exact cause of the fire is currently unknown, the Coast Guard said.

The USCGC Healy is one of two operational icebreakers in the U.S. Coast Guard's fleet, along with the 45-year-old heavy icebreaker USCGC Polar Star. By comparison, Russia currently operates more than 50 icebreakers – several of which are nuclear powered.

The Coast Guard reported that due to the fire, Healy's starboard propulsion motor and shaft are no longer operational, and the ship is transiting back to its homeport in Seattle for further inspection and repairs, the Coast Guard said,

Prior to the fire, the Healy completed a 26-day patrol in support of Operation Arctic Shield, demonstrating U.S. presence and influence in the Bering Sea, along the U.S.-Russian Maritime Boundary Line, and in the Arctic.

On August 15, the Healy was in Seward and embarked 11 scientists before departing on August 18 on a national security and science mission in the Arctic.



The U.S. Coast Guard Cutter Healy (WAGB-20) pictured in Arctic ice in October 2018, about 715 miles north of Barrow, Alaska, in the Arctic. NyxoLyno Cangemi/U.S. Coast Guard

As a result of the fire, all Arctic operations have now been cancelled, the Coast Guard said. "I commend the crew of the Healy for their quick actions to safely combat the fire," said Vice Adm. Linda Fagan, the Pacific Area commander. "This casualty, however, means that the United States is limited in icebreaking capability until the Healy can be repaired, and it highlights the nation's critical need for Polar Security Cutters."

The USCGC Polar Star, capable of breaking ice up to 21 feet thick, is reserved for Operation Deep Freeze, the annual re-supply mission to U.S. interests at McMurdo Station in Antarctica. Polar Star returned from the mission this year in March following a 123-day deployment. During the 2019 mission, [the ship experienced multiple problems](#) with its electrical systems, an evaporator, and a rupture of the vessel's centerline shaft seal resulting in water ingress. The vessel also experienced ship-wide power outages while breaking ice in McMurdo Sound and afire in the ship's incinerator room.

The U.S. Coast Guard and Navy are currently in the process of replacing the United States Coast Guard's aging fleet of icebreakers with the Polar Security Cutter Program, which plans for up to three PSC ships.

In April 2019, the Navy and Coast Guard [awarded a contract](#) to VT Halter Marine for the detail design and construction of the Polar Security Cutter. Construction of the first Polar Security Cutter is scheduled to begin in early 2021 with delivery in 2024.

The President's Budget request for fiscal year 2021 requests full funding for the construction of the second Polar Security Cutter. (*gCaptain 8/26/2020*)

NEARLY A THIRD OF U.S. GULF OIL PRODUCTION REMAINS SHUT-IN AFTER LAURA

Nearly a third of the U.S. Gulf of Mexico's oil production and a quarter of natural gas production remains shut-in after Laura blew through the energy-producing region as a category 4 hurricane last week, the Bureau of Safety and Environmental Enforcement (BSEE) said Tuesday.

Based on current data from offshore operator reports, personnel remain evacuated from a total of 71 production platforms, 11.04 percent of the 643 manned platforms in the Gulf of Mexico.

All dynamically positioned rigs have returned to their working locations. Personnel still remain evacuated from one of the 12 non-dynamically positioned rigs operating in the Gulf.

From operator reports, BSEE estimates that approximately 28.38 percent of the current oil production in the Gulf of Mexico remains shut-in, while approximately 24.96 percent of the natural gas production is also still shut-in. (gCaptain, 9/1/2020)



Oil platform in the Gulf of Mexico during Barry
reddit.com

WHY DAMAGE FROM HURRICANES KEEPS RISING

A destructive storm rising from warm waters. Again. America and the world are getting more frequent and bigger multibillion-dollar tropical catastrophes like Hurricane Laura, which menaced the U.S. Gulf Coast, because of a combination of increased coastal development, natural climate cycles, reductions in air pollution and man-made climate change, experts say.

The list of recent whoppers keeps growing: Harvey, Irma, Maria, Florence, Michael, Dorian. And hurricane experts have no doubt that Laura will be right there with them.

It's a mess at least partially of our own making, said Susan Cutter, director of the Hazards and Vulnerability Institute at the University of South Carolina.

"We are seeing an increase of intensity of these phenomena because we as a society are fundamentally changing the Earth and at the same time we are moving to locations that are more hazardous," Cutter said Wednesday.

In the last three years, the United States has had seven hurricane disasters that each caused at least \$1 billion in damage, totaling \$335 billion. In all of the 1980s, there were six, and their damage totaled \$38.2 billion, according to the National Oceanic and Atmospheric Administration. All those figures are adjusted for the cost of living.

The Atlantic is increasingly spawning more major hurricanes, according to an Associated Press analysis of NOAA hurricane data since 1950. That designation refers to storms with at least 111-mile-per-hour (179-kilometer-per-hour) winds that are the ones that do the most damage. The Atlantic now

averages three major hurricanes a year, based on a 30-year running average. In the 1980s and 1990s, it was two.

Some people argue the increase is due to unchecked coastal development, while others will point to man-made climate change from the burning of coal, oil and gas. In fact, both are responsible, said former Federal Emergency Management Agency chief Craig Fugate.

“There’s a lot of factors going on,” he said. When it comes to hurricane risk, a major factor is “the amount of stuff in the way of natural peril and the vulnerability of the stuff in the way,” said Mark Bove, a meteorologist who works for the insurance firm Munich Re U.S.



Photo courtesy nytimes.com

One factor that increases the possibility that there will be “stuff in the way” of a major storm is that federal disaster policy and flood insurance subsidize and encourage people to rebuild in risky areas, Fugate said.

After storms, communities “always say they are going to rise from the ashes,” and, too often, they build the same way in the same place for the same vulnerability and the same outcome, Fugate said.

Now add in the meteorology. Scientists agree that waters are warming, and that serves as hurricane fuel, said NOAA climate scientist Jim Kossin. A study by Kossin found that,

once a storm formed, the chances of its attaining major storm status globally increased by 8% a decade since 1979. In the Atlantic, chances went up by 49% a decade.

While climate change is not the most important factor in warming waters, it contributes to creating more damaging storms in other ways, by causing a rising sea level that worsens storm surges and making storms move more slowly and produce more rain, scientists say.

All of this means that we should get used to more catastrophic storms, according to Munich Re’s Bove. In addition, he said: “Climate change will be a bigger driver of losses in the future.” (*Insurance Journal*, 8/28/2020)

AIMU YOUTUBE CHANNEL

Are you aware that AIMU has a YouTube channel? We recently posted a “pre-Covid-19” memory from a year ago – AIMU’s mini field trip to USCG Sector New York with an assist from the NYCDOT Staten Island Ferry. A reminder that AIMU aims to mix a bit of fun into our educational offerings. Enjoy the video and the sights of New York Harbor on a gorgeous summer day. https://www.youtube.com/watch?v=Zr_C1dxcdwE (from AIMU Newsletter 8/28/2020)

US COAST GUARD TO CONSIDER REGULATIONS ON AUTONOMOUS VESSELS

The country’s top maritime regulator is asking for the public’s view on the economic opportunities and the safety consequences of automated vessel technology as a precursor to potential regulations affecting commercial shipping in the United States.

In a Request for Information (RFI) scheduled to be published Tuesday, the U.S. Coast Guard has asked for responses to 16 questions on how automated commercial vessels and vessel technologies will affect U.S.-flagged commercial vessels as well as all shipping within U.S. port facilities. The Coast Guard also wants to evaluate potential barriers to developing autonomous vessels.

“Highly automated and autonomous vessels have the potential to improve safety in the maritime system, where it is estimated that 75% of accidents are caused, at least in part, by human error,” according to the RFI. It cited a 2019 report published by Allianz Global Corporate & Specialty (AGCS), an insurance company, which found that those claims related to human error represented an equivalent of over \$1.6 billion in losses.



Photo courtesy Flickr/Bernard Spragg

“However, the introduction of automation and autonomous technology into commercial vessel operations brings a new set of challenges that need to be addressed, affecting design, operations, safety, security, training, and the workforce.”

The Coast Guard acknowledged that “automated and autonomous commercial vessels and vessel technologies” covers a wide range of maritime applications, and that the vessel functions it wants to assess include, but are not limited to, navigation operation, communication, machinery operation, cargo management, emergency response and maintenance.

Among the questions on which the Coast Guard is seeking comment and data:

- What are the benefits (direct and indirect) and cost savings of automated and autonomous commercial vessels and vessel technologies, if any?
- What potential economic factors (such as risks, costs or practical limitations) will a commercial vessel owner or operator have to consider before implementing automated and autonomous commercial vessels and vessel technologies?
- What impacts to the maritime workforce may occur with the introduction of automated and autonomous commercial vessels and vessel technologies?

The Coast Guard says its RFI is aimed at complementing a joint White House – U.S. Department of Transportation (DOT) policy, Ensuring American Leadership in Automated Vehicle Technologies: Automated Vehicles (AVs) 4.0, and notes that it plans to coordinate automation activity across agencies. (*American Shipper*, 8/10/2020)

PLASTIC POLLUTION IN OCEANS EXPECTED TO TRIPLE BY 2040

The annual flow of plastics into our oceans is on a trajectory to triple over the next 20 years, which could add up to 110 pounds of plastic trash for every meter of coastline worldwide, a new report finds. That path is not inevitable, however. The volume could be cut by 80%, the analysis found, by taking

actions to reduce the growth of virgin plastic production, improve waste collection systems across the globe, and invest in the creation of plastic materials that are easier to recycle.

“There is a path where we can have substantial reduction,” said Dr. Winnie Lau, a co-author of the report and a senior manager with the preventing ocean plastics program at Pew Charitable Trusts. “We picked numbers that were realistic to achieve but not easy.”

The technical underpinnings of the report were published Wednesday in the journal *Science*. Its projections are based on an economic model that quantifies the flow and amount of plastic in the global system developed by Pew, a non-profit, and SystemIQ, a commercial company founded to develop models and markets to achieve the goals of the Paris Agreement.

The model estimates the quantity of plastic pollution that will make it to the oceans by 2040 under six scenarios ranging from “business as usual” to a total overhaul of plastic systems from production through collection, consumption, and disposal/recycling. It compares the associated cost, climate, and employment implications of each scenario.

Currently roughly 11 million metric tons of plastic make their way into the oceans each year, causing incalculable damage to wildlife habitats and harm to humans and animals. The research found that if no action is taken, the amount of plastic litter will grow to 29 million metric tons per year by 2040. Although some hydrocarbon-based plastics break down into tiny particles known as microplastics (which are themselves harmful to humans and animals) they don’t biodegrade, meaning that the cumulative amount of plastic in the ocean could reach 600 million tons in 20 years. While some governments and industries have made pledges to reduce plastic use, the report’s authors estimate that even if these commitments are met, plastic dumping would fall by just 7%. The report also noted that the fight against COVID-19 might make the challenge even harder since the pandemic has increased single-use plastic consumption. (Insurance Journal, 7/24/2020)

NTSB ISSUES REPORT ON TRIPLE TOWBOAT SINKING

The National Transportation Safety Board has issued its report on a July 5, 2019, incident in which three towboats and an unnamed deck barge - all owned by Hex Stone Inc., Louisiana, Mo. - that sank in the Illinois River at Mile 20.7 while moored at the Jersey County Grain Company facility in Hardin, Ill. No crew members were aboard any of the vessels. Approximately 2,800 gallons of diesel fuel were released into the river and mostly recovered. Damage to the vessels, deck barge, and facility totaled an estimated \$920,000.

Four vessels were involved in the incident: the 47-foot-long towing vessel *Chattie Sue Smith*, built in 1963, the 55-foot-long *Mary-*



Triple tug boat and barge sinking on Illinois River, July 5, 2019 Photo courtesy professionalmariner.com

R, built in 1964; the 54-foot-long Mary Fern, built in 1978; and the 50-foot-long Teddi B, built in 1989, which was moored with the other vessels on the day of the accident but did not sink. The towboats, all equipped with twin propellers, were moored with a 50-foot-long-by- 18-foot-wide steel deck barge.

On July 5, 2019, the four vessels and the deck barge were moored on the right descending bank of the Illinois River at mile 20.7.

At 0654, the Hardin Fire Protection District was dispatched to the Jersey County Grain Company following an initial report made by a crewmember aboard a passing towing vessel who witnessed the vessels sinking. Employees from Hex Stone arrived on scene before the fire department. The company's river operations manager notified the Coast Guard regarding the sinking as well as an environmental spill response company concerning diesel fuel in the water.

Subsequent to the initial response and pollution prevention efforts, between July 12 and 19, a salvage company recovered the three towboats that had sunk and the deck barge. An inspection revealed no reported signs of water ingress from the three towboats. Aboard the barge, however, several small holes were found on the deck, the sides (about 6–12 inches from the bottom), and the bottom plating. An open watertight hatch (manhole) on the deck of the barge, which provided access to the midbody compartment for power cords and discharge hoses, was found during salvage operations. The barge was equipped with two electrically operated submersible bilge pumps powered from shore, one in each of the midbody compartments, that were designed to be activated automatically by float switches. Both pumps were tested after the sinking for proper function: one was found to be inoperable.

In its analysis, NTSB notes that, based on a review of the barge's condition, the holes likely had been present for a significant amount of time and were the source of the flooding. The side and bottom holes would have allowed water to continuously flood the barge's compartments, which required the automatic bilge pumps to dewater the spaces at frequent intervals.

PROBABLE CAUSE: The National Transportation Safety Board determines that the probable cause of the sinking of the towing vessels along with the deck barge, was the deteriorated condition of the barge and the infrequent monitoring of the vessels, which allowed the barge to flood and sink, ultimately pulling down the moored towing vessels. (Marine Log, 7/19/2020)

USCG BOATING SAFETY CIRCULARS

Member Larry Riley is reminding us of the excellent information in the USCG Boating Safety Circulars. They can be found on line at: <https://www.uscgboating.org/content/boating-safety-circulars.php> There is excellent information in the circulars, and they are worth perusing.

Legal Stuff

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