The NAMS Global eNews

June, 2020

The President's Corner

Members,

David Pereira, President

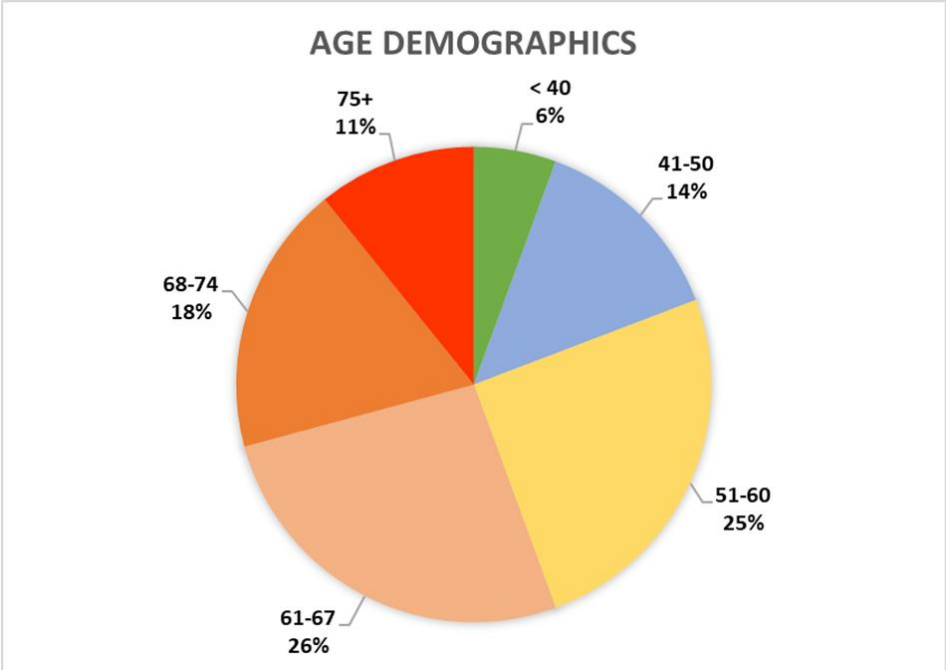
I hope you are all well. I want to thank all of you for your patience over the last few months. The postponement and ultimate cancellation of this year's conference was a difficult but necessary decision. The age demographics of our membership is such that over fifty percent of us are in the over 60 category and we should not be exposing ourselves to the un-necessary risk of air travel and gathering as a large group. Our speakers expressed concern too and many of them requested to be excused. We had a great line of speakers and sponsors and most of them have expressed interest in the conference next year. These are unprecedented times and I hope that our conference next year will be a brighter day. I certainly look forward to the face to face camaraderie that all of us have enjoyed every year.

In addition to the concern for the health and you and your families I am also very concerned about your livelihood. I hope and pray that all of your businesses recover from the effects of closings and social isolation and that you were able to get financial support from some of the available programs.

As most of you know at our virtual board meeting last month Greg passed the gavel over to me. I am honored to take the reins of this great organization, I want to thank Greg Gant for his two terms as our National President. Greg has worked steadfastly to keep us on course, all while working on high profile assignments overseas and dealing with an onslaught of personal challenges. Greg's dedication and hard work as President and other contributions he has made over the years is greatly appreciated. His continued support and advice as our Immediate Past President is much welcomed.

In addition to the public health crisis we are now enduring, as a group we face many challenges as we move into 2020. My first task as President is to draft a Strategic Plan for the 2020-2021 period. Ethics, which is the cornerstone of a NAMS Certified Marine Surveyor, will remain at the forefront of our organization. Growing our membership with quality surveyors, providing our membership with opportunities to develop, and the implementation of an apprentice program with a clear and defined track to CMS, will be a top priority. In addition, the continued integration of technology: our website, on-line testing, elections, and continuing education will be the core around which the Strategic Plan will be drafted.

The Strategic Plan must also take a close look at age demographics of our CMS Members. Growth of our association is not only about increasing membership, it is about increased involvement of younger members in our association and governance. We have enjoyed the benefits of so many of our senior members' volunteerism for a long time. The hard reality is that it is time for us to consider the inclusion in and orderly succession of committee chairs to younger members in our association. It is the only way to ensure the legacy of NAMS and a great way to get more involvement from our members on both the local and national level. I am respectfully asking that each of our committee chairs, in the near future, consider this and identify someone willing to take over the committee in the future. I feel this will be good for the long-term health of our organization.



Age demographics of NAMS members

We are still the oldest and most professional organization of our type. We need to strive to remain the "go to" association for ethical and professional service worldwide. The continued growth of our organization will depend on all of us getting involved in some way. I challenge each of you to take an active role, either as a mentor and/or in association governance on the local or national level.

I look forward to working with each of you over the next 2 years. My door is always open.

Kind regards,

David M. Pereira, NAMSGlobal – CMS
President

View From the Helm of The NAMSGlobal eNews

The NAMS eNews will be going to a quarterly publication, and are always looking for articles written by NAMS members. Please submit them to the NAMS office. Thanks!

Be safe out there.

Phil Peterson, NAMS-CMS
Editor, NAMSGlobal eNews

Applicants/Members Change in Status

Name	Applying For	Region	Sponsored By
John Killough	CMS	Central Atlantic	Michael McCook
Yavuz Yavuzer	CMS	Western Rivers	Jeff Cook
William Brown	Apprentice	South Atlantic	Robert Bartek
Cameron Buchanan	Associate	Eastern Canada	Vinay Talwar
Michael Soler	CMS	New York	John Wilson III
Javed Siddiqi	CMS	South Pacific	Lee Frain Jr.
Nira Sombatwong	CMS	South Atlantic	Robert Bartek
Gionanni Concepcion	CMS	West Gulf	Darin Miller
Olie Morton	CMS	East Gulf	Eldie Almoite
George Beck	CMS	East Gulf	Robert Keister
Kevin Reilly	CMS	Great Lakes	Steven Erhardt
Matthew Humphrey	CMS	South Atlantic	John Venneman
New Member List:			
Jeff Blumfield	CMS	East Gulf	Norman Antrainer
Christopher Palo	CMS	New York	Leo Falgot
Garreth Fernandes	CMS	East Gulf	Eldie Almoite
Udaykumar Jayachandran	CMS	West Gulf	Chitti Morampudi
Brandon Parrish	CMS	West Gulf	Darin Miller
William Daniels	CMS	South Atlantic	Matthew Knoll
James Bailey	CMS	East Gulf	James Stansbury

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/

* LLOYDS'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:
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.nwswb.edu/systemsintensives/

* TOWING VESSEL INSPECTION BUREAU *

TVIB Annual Survey of Towing Vessels, June 23 – 25, 2020, Channelview, TX; and Drydock Class July 21 - 23, 2020, Monessen, PA, plus other locations at later dates
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 *

2020 IMEC – Montreal, Quebec – Canceled.

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 7 hour refresher. The 15 hour introductory course is expected to be available by July 1:
https://www.appraisers.org/Education/national-asa-courses/eLearning

ASA Course listing here:
https://www.appraisers.org/Education/national-asa-courses/eLearning

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NAMSWorthy Articles of Interest

OSHA REQUIREMENTS FOR MARINE CONSTUCTION (Part 2 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 2 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. This article discusses 29 CFR 1926.1437 *Floating cranes/derricks and land cranes/derricks on barges,* subsections (a) through (i).

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

(a) This section contains supplemental requirements for floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation (*i.e.,* vessel/flotation device). The sections of this subpart apply to floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation, unless specified otherwise. The requirements of this section do not apply when using jacked barges when the jacks are deployed to the river, lake, or seabed and the barge is fully supported by the jacks.

(b) *General requirements.* The requirements in paragraphs (c) through (k) of this section apply to both floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation.

(c) *Work area control.*

(1) The requirements of § 1926.1424 (Work area control) apply, except for § 1926.1424(a)(2)(ii).

(2) The employer must either:

(i) Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas; or

(ii) Clearly mark the hazard areas by a combination of warning signs (such as, “Danger - Swing/Crush Zone”) and high visibility markings on the equipment that identify the hazard areas. In addition, the employer must train each employee to understand what these markings signify.

(d) *Keeping clear of the load.* Section 1926.1425 does not apply.

(e) *Additional safety devices.* In addition to the safety devices listed in § 1926.1415, the following safety devices are required:

(1) Barge, pontoon, vessel or other means of flotation list and trim device. The safety device must be located in the cab or, when there is no cab, at the operator's station.

(2) Positive equipment house lock.

(3) *Wind speed and direction indicator.* A competent person must determine if wind is a factor that needs to be considered; if wind needs to be considered, a wind speed and direction indicator must be used.

(f) *Operational aids.*

(1) An anti two-block device is required only when hoisting personnel or hoisting over an occupied cofferdam or shaft.

(2) Section 1926.1416(e)(4) (Load weighing and similar devices) does not apply to dragline, clamshell (grapple), magnet, drop ball, container handling, concrete bucket, and pile driving work performed under this section.

(g) *Accessibility of procedures applicable to equipment operation.* If the crane/derrick has a cab, the requirements of § 1926.1417(c) apply. If the crane/derrick does not have a cab, the employer must ensure that:

(1) Rated capacities (load charts) are posted at the operator's station. If the operator's station is moveable (such as with pendant-controlled equipment), the load charts are posted on the equipment.

(2) Procedures applicable to the operation of the equipment (other than load charts), recommended operating speeds, special hazard warnings, instructions and operators manual, must be readily available on board the vessel/flotation device.

(h) *Inspections.* In addition to meeting the requirements of § 1926.1412 for inspecting the crane/derrick, the employer must inspect the barge, pontoons, vessel or other means of flotation used to support a floating crane/derrick or land crane/derrick, and ensure that:

(1) *Shift.* For each shift inspection, the means used to secure/attach the equipment to the vessel/flotation device is in proper condition, including wear, corrosion, loose or missing fasteners, defective welds, and (when applicable) insufficient tension.

(2) *Monthly.* For each monthly inspection:

(i) The means used to secure/attach the equipment to the vessel/flotation device is in proper condition, including inspection for wear, corrosion, and, when applicable, insufficient tension.

(ii) The vessel/flotation device is not taking on water.

(iii) The deck load is properly secured.

(iv) The vessel/flotation device is watertight based on the condition of the chain lockers, storage, fuel compartments, and hatches.

(v) The firefighting and lifesaving equipment is in place and functional.

(3) The shift and monthly inspections are conducted by a competent person, and:

(i) If any deficiency is identified, an immediate determination is made by a qualified person whether the deficiency constitutes a hazard.

(ii) If the deficiency is determined to constitute a hazard, the vessel/flotation device is removed from service until the deficiency has been corrected.

(4) *Annual: external vessel/flotation device inspection.* For each annual inspection:

(i) The external portion of the barge, pontoons, vessel or other means of flotation used is inspected annually by a qualified person who has expertise with respect to vessels/flotation devices and that the inspection includes the following items:

(A) The items identified in paragraphs (h)(1) (*Shift*) and (h)(2) (*Monthly*) of this section.

(B) Cleats, bitts, chocks, fenders, capstans, ladders, and stanchions, for significant corrosion, wear, deterioration, or deformation that could impair the function of these items.

(C) External evidence of leaks and structural damage; evidence of leaks and damage below the waterline may be determined through internal inspection of the vessel/flotation device.

(D) Four-corner draft readings.

(E) Firefighting equipment for serviceability.

(ii) Rescue skiffs, lifelines, work vests, life preservers and ring buoys are inspected for proper condition.

(iii) If any deficiency is identified, an immediate determination is made by the qualified person whether the deficiency constitutes a hazard or, though not yet a hazard, needs to be monitored in the monthly inspections.

(A) If the qualified person determines that the deficiency constitutes a hazard, the vessel/flotation device is removed from service until it has been corrected. See requirements in § 1926.1417(f).

(B) If the qualified person determines that, though not presently a hazard, the deficiency needs to be monitored, the deficiency is checked in the monthly inspections.

(5) *Four-year: internal vessel/flotation device inspection.* For each four-year inspection:

(i) A marine engineer, marine architect, licensed surveyor, or other qualified person who has expertise with respect to vessels/flotation devices surveys the internal portion of the barge, pontoons, vessel, or other means of flotation.

(ii) If the surveyor identifies a deficiency, an immediate determination is made by the surveyor as to whether the deficiency constitutes a hazard or, though not yet a hazard, needs to be monitored in the monthly or annual inspections, as appropriate.

(A) If the surveyor determines that the deficiency constitutes a hazard, the vessel/flotation device is removed from service until it has been corrected.

(B) If the surveyor determines that, though not presently a hazard, the deficiency needs to be monitored, the deficiency is checked in the monthly or annual inspections, as appropriate.

(6) *Documentation.* The monthly and annual inspections required in paragraphs (h)(2) and (h)(4) of this section are documented in accordance with §§ 1926.1412(e)(3) and 1926.1412(f)(7), respectively, and that the four-year inspection required in paragraph (h)(5) of this section is documented in accordance with § 1926.1412(f)(7), except that the documentation for that inspection must be retained for a minimum of 4 years. All such documents must be made available, during the applicable document retention period, to all persons who conduct inspections in accordance with § 1926.1412.

(i) [Reserved]

Note the requirement in sub paragraph h-(4) (i) for the external portion of the barge, pontoons, vessel or other means of flotation used to inspected annually by a qualified person who has expertise with respect to vessels/flotation devices.

Note also the requirement in sub-paragraph h-(5)(i) for a marine engineer, marine architect, licensed surveyor, or other qualified person who has expertise with respect to vessels/flotation devices surveys the internal portion of the barge, pontoons, vessel, or other means of flotation. OSHA has not defined licensed surveyor. Note also the following paragraphs which require action by the surveyor if deficiencies are identified.

The above areas are frequently overlooked when inspecting 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.

3RD CIRC. SINKS INSURANCE COVERAGE BID OVER DAMAGED YACHT

An insurance company escaped coverage over a partially sunken yacht after the Third Circuit said Tuesday in a precedential opinion that the boat's owners failed to show their damages were "a matter of chance," joining other circuit courts in finding that such insureds must prove a loss was fortuitous. A three-judge panel affirmed a summary judgment win for Chartis Property Casualty Co. in its New Jersey federal suit against John and Joan Inganamort over the 2011 damage to their 65-foot fishing vessel, Three Times a Lady, while it was docked behind their part-time home in Florida, rejecting their bid to show fortuity by claiming the loss stemmed from heavy rainfall.

The insurer's statement of undisputed facts - which the Inganamorts did not oppose - noted "there is 'no data to support [the] theory that [Three Times a Lady] was subject to 'heavy rains' on any date,'" according to the panel opinion authored by U.S. Circuit Judge Kent A. Jordan. "Even if we were tempted to look beyond the statement of undisputed facts, the evidence elsewhere in the record does not support the assertion that the loss was due to heavy rainfall," the panel said. "Not even the Inganamorts' own expert could say with assurance that there was heavy rainfall in the area at the relevant time."

The Inganamorts were at their residence in New Jersey in September 2011 when they "received the sad news that Three Times a Lady had come to the end of her rainbow, sinking enough to sustain serious damage," the panel said, noting that the "end of her rainbow" line was a "hat tip" to Lionel Richie, The Commodores and their hit song "Three Times a Lady." The Inganamorts sought coverage under their all-risk insurance policy with Chartis, which sent a claims specialist to examine the boat, the panel said. The specialist found three inches of standing water inside part of the vessel and "multiple potential sources of water ingress, including a hole in the hull the size of a screw," the panel said. His survey also showed "the electrical breakers were 'severely rust-stained and blackened from an electrical failure[,]' and subsequent testing 'revealed obvious water intrusion,'" the panel said.

"The final review of the vessel, completed June 28, 2012, confirmed the claim specialist's initial findings and also identified that the ship's battery charger was not working, and without a source of power, the ship's bilge pumps had ceased functioning," the panel said. "Despite that state of disrepair, the Inganamorts pressed Chartis for payment on their insurance policy." Chartis has claimed the partial sinking resulted from a hole in the boat caused by the Inganamorts' failure to maintain the vessel, court documents state.
On the Inganamorts' appeal of that ruling, the circuit panel rejected their primary argument that they did not need to prove fortuity, citing related decisions from the First, Second, Fifth and Eleventh circuits, all of which "held that, for marine insurance policies, the insured bears the burden of proving that the loss was fortuitous." "We address a simple question of federal maritime law: Who bears the burden of proving a fortuitous loss?" the panel said. "Every circuit to decide the issue has determined that the insured bears that burden, and we agree. The Inganamorts did not carry it, so we will affirm the decision of the district court." (Law360, 3/24/2020)
Thanks to Greg Weeter for submitting this article.

Future Possibilities in Ship Wind Propulsion

The combination of environmental exhaust emissions regulations and fuel prices have prompted introduction of wind assisted vessel propulsion involving sails, kite sails, bladed horizontal-axis turbines and vertical-axis Magnus rotors. Modern commercial vessels incur many times the weight of earlier generation wind-driven ships and require many times the propulsive power. Future maritime wind propulsion technologies could involve many times the scale of present day technologies.

File image courtesy Lpele (CC BY-SA 4.0)

BY **HARRY VALENTINE** 05-31-2020 10:01:09

Over a period of centuries and even into the 20th century, wind driven vessels carried trade between nations. During the early 20th century on the Upper Great Lakes, some ship owners increased payload capacity by converting coal-powered steam ships to bulk-carrier schooners. When fuel prices increased during the later 20th century, ship designers reconsidered the use of wind assisted propulsion to reduce fuel cost. The variety of designs includes deck-mounted sails, adapting modified airplane wings to function as airfoil sails, deck-mounted vertical-axis Magnus (Flettner) rotors and a proposal for a large-diameter deck-mounted 3-bladed wind turbine.

It was during the 1980's that Canadian physics professor Dr. Brad Blackford built a small windmill powered boat capable of sailing into a headwind at great speed than sail-driven boats of comparable size. He eventually built a boat capable of sailing directly into a headwind at a speed of 8-knots. Ships assisted with vertical-axis Flettner rotor propulsion have also proven capable of sailing directly into a headwind, the rotors driving electrical generators to activate electrically driven propellers. The power requirements of large commercial ships require future innovative breakthroughs in the variation and physical size of wind propulsion technology.

Sail Fabric

The 20th century saw many innovative developments in textiles and fabric that included lightweight, ultra-strong, UV-resistant fabric such as Kevlar, nylon, rayon, glass fiber, carbon fiber and numerous other materials that could be used as sail material for boats. Combining development in materials/fabric technology with developments in frameless para-cell kites and kites that could be pumped with air pressure resulted in the appearance of rugged kites capable of withstanding severe wind buffeting. Such developments made possible the emergence of kites capable of towing a boat in severe weather conditions and propelling a boat using energy from severe crosswinds.

Mega-Scale Wind Technology

The propulsive power requirements of commercial ships involve massive amounts of power, such as 25,000 to 35,000-horsepower. At the present time, the largest 3-bladed wind turbines develop 12,000kW or just over 16,000-Hp. Severe winds have caused the structural collapse of wind turbine towers. As a result, ship pitching and rolling could cause destruction of the tower of a mobile super-size horizontal-axis wind turbine. There may be scope to develop mega-scale vertical-axis wind turbines such as Magnus (Flettner) rotors on floating platforms and capable of withstanding severe ocean wave imposed dynamic structural loadings.

A pair of mega-size Magnus rotors mounted on a bidirectional catamaran may be coupled to the stern of a commercial ship. The catamaran twin hulls may be spaced 100-m or 300-feet apart, with the Magnus rotors extending up to 200-m above the twin hull platform. Torque reaction control arms secured to the ship's hull would minimize catamaran pitching. Magnus rotors would drive electrical generators that would supply power to electric motors installed inside the ship and drive propellers. Such wind technology could propel ships sailing westbound across the North Atlantic from Europe to North America.

Wind Turbine Terminals

While mega-scale wind power technology could provide ship propulsion, the technology would be too large to enter ports or pass below bridges. Offshore terminals would be required for mega-scale, ocean going wind power technology. The wind turbine ship power unit would be uncoupled from the ship at an offshore terminal, where it would be secured. A mobile generator vessel may subsequently couple to the stern of the ship and provide electric power to the ship's electric motors and propellers, to allow the ship to sail for the final few miles to dockside.

Mega-scale Magnus rotors coupled behind a vessel stern would assist in North Atlantic westbound propulsion, with vessel to sail directly into the wind. Airborne kite-sail technology would assist in providing eastbound propulsion from North America to Europe. There may be scope to use such wind technology to sail ships between South America and Asia on a voyage via Cape Town, also in trans-Pacific service. Wind turbine terminals would be required at both north and south entrances to the Suez Canal, to allow ships to sail the South Side Canal–Asia and North Side Canal–Europe services.

Future Research

Future research into wind powered ship propulsion would likely focus on developing much larger scale wind turbines capable of sailing ships directly into headwinds. Due to space restrictions at port and comparatively low roadway bridges at several ports, separate floating platforms would carry mega-scale wind turbines. In some cases, the wind turbines would generate electric power to sustain operation of the ship propeller(s), in which case the ship would tow the turbine platform. Special levers would connect to the ship hull to minimize pitching of the turbine platform.

Ocean waves would impose mechanical stresses on mobile towers carrying horizontal-axis wind turbines, thereby limiting turbine diameter. Future research would determine the maximum size of ocean going 3-bladed wind turbine and maximum size of vessel. Such research would also determine the maximum size of Magnus (Flettner) rotors carried aboard separate catamaran platforms, turbine power capability and maximum size of ship to be powered by such technology. There would likely be scope to use lightweight, high-strength material in the construction of future mega-scale mobile wind turbines.

Rotor Airfoils

Deck mounted airfoils have proven effective as vessel wind power propulsion technology capable of converting wind energy from crosswinds and diagonally approaching headwinds. Airplane hobbyists have built scale model airplanes that replace wings with transverse-axis Flettner rotors and still fly, also incorporating Flettner rotors into the upper wing surface. In maritime propulsion, a Flettner rotor installed into an airfoil sail prevents stalling on the downwind surface, increasing pressure difference between upwind and downwind sides and increasing propulsive force. Ships that do not need to pass under bridges could sail with extreme height of rotor-airfoil sails.

Staircase Airfoil

An aircraft hobbyist built a model plane with slatted, stepped or staircase wing configuration to allow low speed flight without stalling. The stepped wing is able to maintain very low air pressure on the equivalent of the wing upper surface at low flight speeds. When installed vertically on a boat deck, the stepped wing airfoil would maintain low air pressure on the downwind or shadow side, providing a large difference in air pressure between windward and downwind surfaces. For boat propulsion, being able to invert a staircase airfoil would offer greater versatility in terms of wind direction.

Forward Super Sails

Modern freight ships are built to greater length and beam than earlier wind driven commercial ships. Several modern fabrics can offer higher tensile strength and even greater long-term endurance than earlier generation sail fabrics. Ships that bypass sailing under bridges may carry an extreme height of cable stabilized mast capable of securing a super-size sail system to be deployed when sailing parallel to trade winds. It could involve a width of 500-feet (150-m) with maximum height secured close to 200-m or 660-feet above sea level. It could be deployed in addition to airborne kite-sails.

Future research could explore the possibility of installing ultra-tall masts on bi-directional twin-hull catamaran units to be coupled to a ship’s bow area at multiple elevations and points so as to minimize or eliminate pitching movements. The same catamaran hull could also carry Flettner rotors to be deployed when the same end is coupled to a ship’s stern, with ship sailing into a headwind. Ship bow and stern would include identical couplings for the catamaran, with forward mega-sails deployed while sailing downwind. The catamaran would be attached to and detached from a ship outside of the port terminal area.

Mega-size Kite Sails

Catamaran mounted super-sails that provide downwind propulsion would be mounted high above the water, allowing for installation of fold-up mega-size kite sails at lower elevation. Drones may be required to assist in launching such kite sails, larger versions of existing technology, where kite sail towing cables would be secured to the catamaran which in turn would be secured to the ships main hull in a manner to prevent catamaran pitching. Upon arrival outside the destination port, drones may assist in retracting and folding the kite sail for it to be placed into storage.

Kite sails secured to each side of the hull would convert higher altitude energy from faster blowing crosswinds into propulsive force. However, mega-size kite sails main application would be to provide propulsion while sailing parallel to trade winds. The use of a bi-directional catamaran that couples to either ship bow or stern and includes mega-size kite sails, super-size sails and mega-size Flettner rotors would allow wind energy to assist in the propulsion of container ships where deck mounted sails would be impractical. Container ships would require an alternative wind power technology.

The sheer size and weight of modern commercial freight ships requires massive amounts of propulsive power, leaving wind-powered ships requiring massive amounts of cross-sectional area to produce the necessary propulsive power. Mounting mega-scale wind power technology on bidirectional twin-hull catamaran units that may be coupled to either ship bow or ship stern, offers a method by which to greatly increase the power producing wind surface area. While deck-mounted sails and turbines may be installed on bulk carrier ships, container ships would require alternative wind propulsion technology, the subject of future wind propulsion research and development. (The Maritime Executive, May, 2020) *Thanks for Childs Dunbar for forwarding this article*

World's First Boat With Air-Filled Swinging Bulb Keel Gets Under Way

Image courtesy Dacoma BY **THE MARITIME EXECUTIVE** 05-26-2020 09:07:45

Danish startup Dacoma is turning canting keel technology upside down by fitting an air tank - rather than a lead weight - inside of the keel bulb.

The canting keel is a device found in offshore racing, particularly in the largest vessel classes. It minimizes a monohull sailing yacht's angle of heel and keeps down keel mass at the same time. The canting keel features a long strut connecting a bulb keel to the bottom of the hull, along with an actuating mechanism to swing the assembly to windward at the required angle.

Dacoma's version is air-filled and computer-controlled, and it swings in a manner tuned to wave action. Known as the Airkeel, it adds about 1.5 meters in draft below the boat, and its lower part is a hollow, oblong compartment filled with air. Its primary target application is for wind farm crew transfer vessels, which need smooth handling for crew comfort.

Recently, the first vessel ever fitted with an automated air filled swing keel got under way for a brief sea trial on a seven-meter workboat. The keel automatically swings from side to side with movements controlled by a computer and by software developed by Dacoma.

Image courtesy Dacoma

After a year of patenting, funding, development and lab testing, Dacoma took its keel design out to sea for the first time at Faaborg Harbor, on the island of Funen. Dacoma and Tuco Marine Group joined forces to test the Airkeel on Tuco's fast ProZero-type workboats. In the shipyard, Tuco cut a hole in the bottom of the boat and worked with Dacoma to mount the Airkeel. Inventor and Dacoma founder Arnd Baurichter climbed on board and started the outboard engine." It was a big moment, when I sailed away from the slings, but immediately I felt safe at the boat's movements. It sailed just as expected. The only unusual thing was that the boat didn't heel over, when I turned and swung around – but that's exactly what the software adjusts in order to make things as stable and comfortable as possible," says Baurichter.

Hundreds of data points were recorded by the system's computer during the 30-minute harbor trip, and after weeks of analysis, Dacoma determined that the swing keel operated as designed. "When I did a 360 degree turn, the keel swung by only 5 degrees to prevent heeling, but that was at quite a slow speed," says Baurichter.

The analysis also shows that more testing of the system's power consumption and course stability is needed in order to fine-tune it. "From the beginning, the system batteries have been overdimensioned, but we need to optimize that. Power usage and weight are important parameters when it comes to commercializing the system," says Baurichter.

At the next launch, the keel will demonstrate its function in waves outside the harbor. The project takes place within the Maritime Cluster of South Funen, with support from the Danish Maritime Fund and the Innovation Fund. (The Maritime Executive, May, 2020) *Thanks for Childs Dunbar for forwarding this article*

Towboat collision underscores importance of accurate AIS data entry and display

A recent collision on the Mississippi River has prompted the Coast Guard's Office of Investigations & Analysis to issue a Marine Safety Alert (04-20) that says the incident serves as an important reminder that accurate AIS data entry and display is essential to safe navigation. It is one of the many important tools used in providing vessel operators with a clear picture of potential upcoming vessel passing situations, especially on waterways with bends, bridges, or other visual obstructions.

Although the investigation into this casualty is not yet complete, the following information is provided to alert owners and operators of the hazards created by inaccurate AIS data, and prompt them to review and update their procedures to prevent similar casualties from occurring.

Figure 1: A representation of an AIS broadcast for a towing vessel pushing a 1,600' tow, and using Ship Type 31 (Actual view may vary based on type of Electronic Charting System and chart scale as set by user).

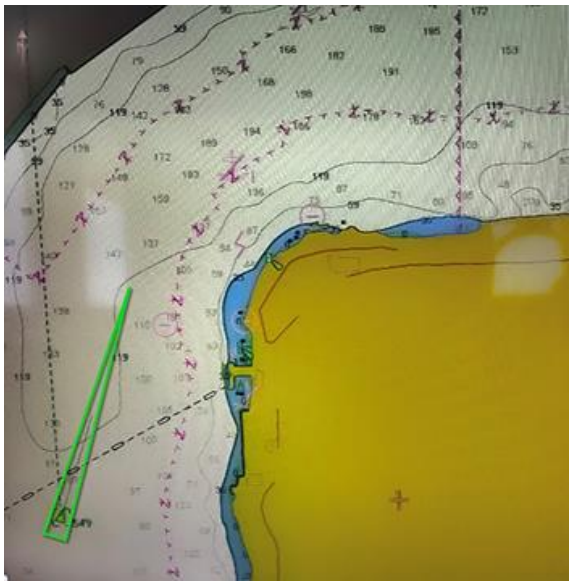

Figure 2: A representation of an AIS broadcast for a towing vessel pushing a 1,600' tow, properly entering overall dimensions, and using Ship Type 57. (Actual view may vary based on type of Electronic Charting System and chart scale, as

Before sunrise, two towing vessels were approaching a bend on the Mississippi River. Neither vessel was broadcasting the total length overall of their tow to other AIS users. The first vessel's AIS broadcast showed its length at 72 feet, but the overall length of the vessel and its two-barge tow was 672 feet. The second vessel's AIS broadcast showed the length at 200 feet, but the overall length of the vessel and its 40-barge tow was 1,600 feet. Without the information regarding the total length of the other vessel and its tow, the operators did not have a full understanding of the pending passing situation. As the vessels rounded the bend and completed their turns, they collided, causing the down bound towing vessel to capsize and sink with several fatalities.

The AIS is a valuable tool which broadcasts critical vessel information to other vessels on the waterways. However, proper function of the AIS is dependent on accurate vessel data entry, including entering the proper ship type code and the full length of a vessel and its tow. The accurate display of a vessel's full length becomes particularly important in situations that prevent vessels from seeing each other until they are in very close proximity. The AIS carriage and operating requirements are found in Title 33 Code of Federal Regulations 164.46, which includes a requirement for the accurate input and upkeep of all AIS data fields. The Coast Guard Navigation Center has produced the **AIS Encoding Guide,** which provides instructions on how to populate all data fields in AIS, including steps to report the total length of the vessel and the vessel's tow. Given the wide variety of sizes and lengths of tows, and the heavy density of these types of vessels traveling on the country's marine

transportation system, accurate AIS input is vital to an operator's ability to make informed navigational decisions.

The Coast Guard strongly recommends that vessel owners and operators:

- Use the AIS Encoding Guide to ensure that accurate and up to date information is entered into the AIS, including, but not limited to, the overall dimensions of the vessel and its tow.
- For vessels towing ahead or alongside, use Ship Type 57 (not Ship Type 31) within the static data fields in order to broadcast the overall dimensions of the vessel and its tow.
- Ensure towing vessel personnel responsible for navigational duties have the appropriate training and resources in order to update AIS data when tow sizes change.

Investigations and inspection personnel are encouraged to maintain an acute awareness of AIS data issues while investigating marine casualties, and initiate corrective actions as needed.

New Rope Design Improves Vessel Mooring Safety

Mooring is one of the most dangerous aspects of port and vessel operations. When a mooring rope holding a docked vessel snaps, the abrupt energy release can cause the rope to whip across the dock and ship at a speed of almost 500 MPH or more than twice the speed of a NASCAR race car.

P&I Club, a U.K. marine insurer, released data that showed over half of all reported injuries over the past 20 years occurred during mooring. The data showed that 40 percent of serious accidents were due to lines breaking or tightening unexpectedly with an estimate that seafarers had a one in four chance of losing a limb and one in seven chance of death from a rope accident.

Alarmed by statics like these, shipping giant Maersk will begin implementation of an innovation called Snap Back Arrestor (SBA) ropes on the mooring lines used to hold vessels in place while docked in port for loading and unloading.

Working closely with suppliers to solve this industry challenge, Maersk reports that it chose a Norwegian-based manufacturer called TIMM ROPES that offers new mooring rope technology that features a special core that elongates more than the surrounding rope, acting to absorb and dampen the tremendous energy released when mooring ropes break while under strain. As a result, instead of snapping back in unpredictable ways at great speed, a broken SBA rope will simply drop to the ground. The new ropes are also colored with a Maersk blue color stripe, making it easier for operators to spot any damage or twists in the rope that could affect breakage. Maersk says that this is another important visual feature developed to enhance the safety of people working in our industry.

Once the SBA concept was verified by snap tests, several Maersk vessels were enrolled in a nine-month pilot project in 2019 to ensure the rope's operational conditions, alongside traditional mooring ropes, using vessels of various sizes. As part of the testing, they ensured the standardization of the new SBA mooring rope sizes and compatibility with existing mooring designs.

"This SBA rope technology embraces one of the fundamental elements of our "Safety Differently approach, by building in capacity to safeguard people," said Aslak Ross, Maersk's Head of Marine Standards.

Each year Maersk buys and replaces some 1,000 mooring ropes – an annual expense of nearly $2 million. Maersk will be implementing an exchange program in which their current mooring ropes will be replaced at the end of their 5-year lifecycle with SBA enhanced ropes and Maersk anticipates that full fleet implementation of the new SBA ropes will be completed within five years.

"This new technology and innovative approach enables us to safely transform the mooring rope approach in our industry and help lead by example to protect our seafarer community and our dockworkers ashore," added Ross. (The Maritime Executive, June, 2020) *Thanks for Childs Dunbar for forwarding this article*

LLOYD'S INSURERS MAP OUT NEW LOOK FOR SEPTEMBER REOPENING

Clear screens on underwriting boxes, temperature-check thermal cameras and a click and collect take-away catering service are among changes Lloyd's of London insurance workers will see when they return to the office in September.

Having shut its London "underwriting room" in March in response to the coronavirus pandemic - the first closure of physical trading in the commercial insurance market's 330-year history - Lloyd's confirmed on Wednesday its doors would reopen on a new-look environment. Staff capacity will shrink to 45% to ensure social distancing, there will be regular deep cleans, queueing and one-way systems - all designed to limit the potential spread of the deadly virus, Lloyd's Chief Executive John Neal said. Lloyd's, which started life in Edward Lloyd's coffee house in 1688 and has remained a face-to-face market ever since, is now turbo-charging a planned switch to electronic trading.
It plans to establish a "virtual room" and is testing a number of digital platforms to allow brokers and underwriters to connect, Mr. Neal said.

There will be a help desk, or "connectivity bar" on the ground floor, digital booths with souped-up WiFi and digital screens in the cafe and other areas for confidential meetings and network connectivity has also been enhanced.

Lloyd's' 90-plus syndicate members, separately run firms under the market's umbrella, underwrite many of the world's largest commercial insurance deals, from oil rigs to pop concerts. Brokers and insurers have long met in the underwriting room of Lloyd's City of London tower to agree on deals, which are sealed with company stamps and ink signatures.

But since its closure, industry players have been surprised at how smoothly the technology has worked. Videocalls are replacing hours on planes going to meetings to places such as North America, Lloyd's' biggest market. Figures from PPL, an existing electronic trading platform that will form the basis for one of two electronic exchanges Lloyd's plans to launch next year, showed the number of deals completed nearly doubled in the week ending June 8 compared with four months earlier, to

3,040. *(Business Insurance, 6/17/2020)*

USCG BOATING SAFETY APP

Did you know the U.S. Coast Guard has an app to assist boaters? Read below for more info on this useful tool. Links to the app for iOS and Android phones are found below. The USCG Boating Safety App features include:

- •Find the latest safety regulations
- •Request a vessel safety check
- •Check your safety equipment
- •File a float plan
- •Navigation Rules
- •Find the nearest NOAA buoy
- •Report a hazard
- •Report pollution
- •Report suspicious activity
- •Request emergency assistance

As the nation's recreational boating safety coordinator, the Coast Guard works to minimize loss of life, personal injury, property damage, and environmental harm. Our boating safety program involves public education programs, regulation of boat design and construction, approval of boating safety equipment, and vessel safety checks for compliance with federal and state safety requirements. The Coast Guard Mobile App supports these missions by providing the essential services and information most commonly requested by boaters.

Features of the app include: state boating information; a safety equipment checklist; free boating safety check requests; navigation rules; float plans; and calling features to report pollution or suspicious activity. When location services are enabled, users can receive the latest weather reports from the closest National Oceanic and Atmospheric Administration weather buoys as well as report the location of a hazard on the water.

The app also features an Emergency Assistance button which, with locations services enabled, will call the closest Coast Guard command center. The Boating Safety Mobile app was not designed to replace a boater's marine VHF radio, which the Coast Guard strongly recommends all boaters have aboard their vessels.

The app is self-contained, so personal information is stored on the phone and is not sent to the Coast Guard unless the user chooses to send it. The Coast Guard does not track a user's location, and the app does not track a user's location unless the app is being used.

(Courtesy of the Propeller Club of NY/NJ, 6/18/2020)

Legal Stuff

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