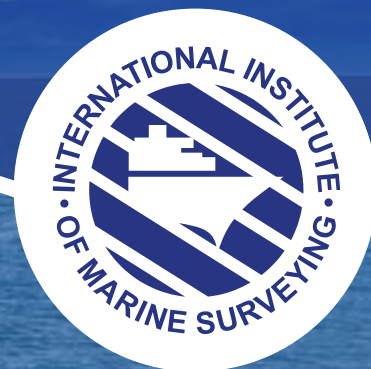


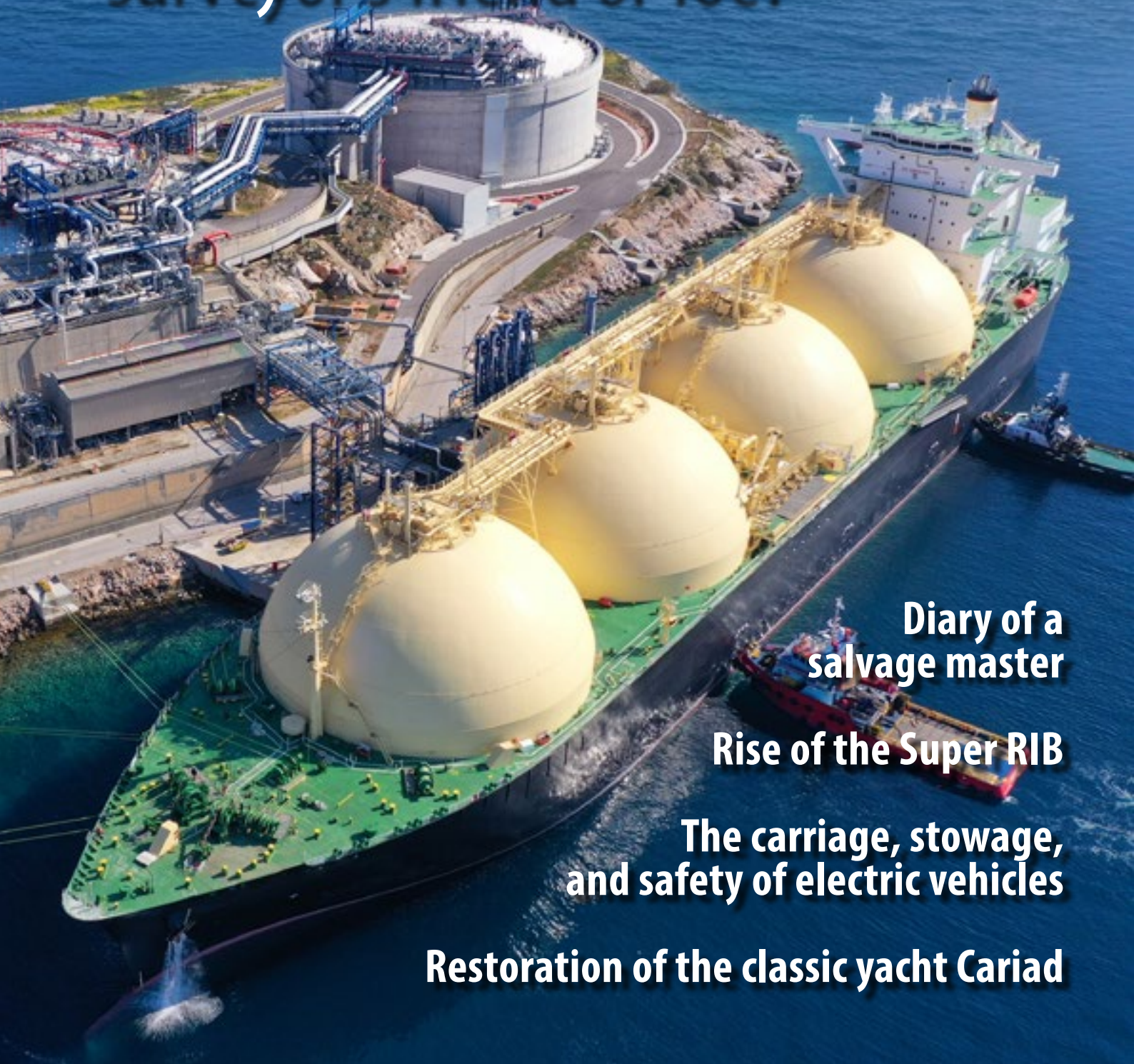
THE REPORT

JUNE 2023
ISSUE 104

The Magazine of the International Institute of Marine Surveying



ChatGPT... surveyor's friend or foe?



**Diary of a
salvage master**

Rise of the Super RIB

**The carriage, stowage,
and safety of electric vehicles**

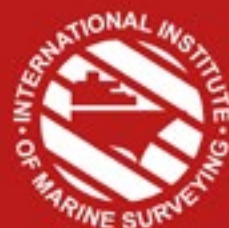
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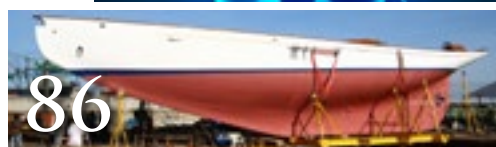
THE REPORT

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EDITOR'S LETTER



Dear Colleague

The publication of this edition of The Report Magazine comes just a few days before the 2023 AGM and Southampton Conference. If you are a member of the Institute, there is still time to get involved in either or both events which take place on Wednesday 7th June. To find out more go to pages 38 and 39.

This edition is a blend of the old, the new and the future. The old comes in the form of a fascinating article penned by veteran surveyor, Des Kearns MIIMS, about the restoration of the Cariatid in Thailand (page 86). It has proved to be something of a major challenge but the renovated vessel which was first commissioned in 1895 is soon to be launched. The new and future come in the form of two articles about ChatGPT, the AI technology (pages 48 to 59) that has been sweeping the world. And before you dismiss ChatGPT as irrelevant, I would urge you to read the lengthy article by Nick Parkyn AssocMIIMS. It is thought provoking and this new technology offers some interesting and potentially helpful opportunities to marine surveyors, but it comes with a safety warning too.

'Trust in tomorrow – the evolution of underwriting' is another article with one eye firmly on the future. The maritime industry is manoeuvring towards the destination of decarbonisation, but the unpredictable route, and

ever-increasing complexity of the journey, creates major challenges for all ocean stakeholders, not least the underwriting sector.

Des Kearns, a published author in his own right, is also the subject of the 'Day in the Life of' feature and I am grateful to him for sharing his many years' experience for your benefit and enjoyment.

Since the last Report Magazine, IIMS has hit the road delivering some excellent training for yacht and small craft surveyors which has been well attended. The pandemic changed so much, one of those things being the ability to offer training both in-person and online. There are several pages devoted to some of the training initiatives to be found elsewhere with supporting photos.

The article entitled 'Boats of the future' gives readers an insight into what lies around the corner. The onslaught and proliferation of next-generation technology has opened the door to unprecedented advances in marine electronics and engineering. See page 95.

Of interest to those with a fascination for maritime history will be the lifestyle story on page 130 entitled 'A unique international maritime collection goes online'. The article explains how over one million maritime archival records, documenting nearly 100,000 ships, are now available online

for the first time following a five-year digitisation programme by the Lloyd's Register Foundation Heritage and Education Centre.

'The Rise of the Super RIB' (page 108) takes a look at how the humble rigid inflatable has developed over the past 40 years. Kim Kavin brings the picture up-to-date in her review of this sector and as you will see this vessel has been vastly transformed from those basic early designs.

The carriage of electric vehicles on ships remains a hot topic and Taslim Imad, Manager Loss Prevention Department, Steamship Mutual gave a presentation on this subject which has been translated into a feature story. His thoughtful article on page 114 is worth a read to understand how the industry is adapting and coping.

As well as members' and marine news, plus the latest safety briefings, there are a series of other informative articles covering a wide variety of topics relevant to the surveying profession.

Enjoy this edition of the Report Magazine and I hope to see you online at the AGM and/or the 2023 Southampton Conference next week.

Regards



Mike Schwarz,
Chief Executive Officer



THE PRESIDENT'S COLUMN

Dear Members,

Almost a year has passed since I was elected as President of IIMS and it has gone by so fast. It is a good time to reflect on what has happened in the past twelve months.

First of all, I would like to say how impressed I am with the way that Mike Schwarz runs our organisation in his capacity as our CEO. We must remember that we are a business, and every business needs good leadership and teamwork. I have become more aware of the inner workings of The Institute in the past twelve months and have seen how well the ship is helmed. We have had some turbulent waters but Mike, the staff and the Management Board all step up

to the challenges as necessary and deal with our members and external stakeholders professionally and responsibly.

We have a very diverse membership across 107 countries, which is split almost equally between surveyors who deal with large commercial vessels, hull, machinery, P&I and cargos, etc., and then other surveyors who are involved with super yachts, smaller commercial vessels under 24-metre, non-commercial vessels, inland waterways vessels and more. The educational courses and professional qualifications that IIMS offers are extensive and impressive. All this is managed by Mike and our Head Office team at our HQ, 'Murrills House', who do this with great enthusiasm and passion.

IIMS has become increasingly recognised for the training content it offers. It is almost impossible to list all the events that have taken place in the past twelve months that IIMS has been involved with organising, but in recent weeks the Institute has arranged and delivered a variety of hybrid training events for surveyors of different disciplines which has attracted more than 150 delegates.

Just a few examples to report.... A small craft training event on the UK South coast at the end of March drew a large number of delegates, both in person and online. This was followed by the Ian Nicolson lecture which was broadcast live from Murrills House and attracted over 70 enthusiastic and appreciative attendees online, plus a small in-

person audience, including Ian's proud daughter and son.

'Heel test' training on under 24-metre vessels is notoriously hard to organise, but under the leadership of IIMS Certifying Authority Chairman, Fraser Noble, a group of 20 surveyors came together at Haslar Marina, Gosport in the UK. The practical hands-on day proved a success as the group heeled a catamaran workboat and a RIB before recording the data.

Further afield, the Western Mediterranean Large Yacht and Small Craft training event in Palma at the end of April (the first since 2019) drew a strong contingent on both days from the local area as well as one delegate who travelled some distance from Poland.

And in early May, our inland waterways working group met at a marina in Nottinghamshire, UK for a day's training which proved to be hugely valuable. Further short reports with supporting photos about these events can be found in the members' news section of this publication.

We are planning to attend KORMARINE in Busan, South Korea, in October 2023, with a stand in the UK Pavilion and hopefully, an opportunity to present a paper at the conference which is titled 'Maritime Sustainability Innovation for a Greener Future.'

We have had several ZOOM gatherings in the past six months with our members around the

Asia Pacific region, Hong Kong, Singapore, Malaysia, Indonesia, Philippines, Australia and New Zealand. All the members who have joined these gatherings have been enthusiastic about IIMS and value their membership. They have all expressed interest in us having more regional-centered events. We are looking at a possible schedule for 2024 to have more face-to-face regional events based on other conferences and trade shows that are relevant to our members.

We all need to keep up to date with evolving technologies in the marine industry and one topic that is prevalent and of concern is lithium-ion batteries. You will have seen several articles in the Report Magazine and the IIMS news bulletins in the past twelve months offering different perspectives on the technology. Many relate to installation and the safety of these batteries. Several presentations have offered different perspectives on the technology with a large emphasis being placed on the various 'toys' that are stored onboard Mega Yachts, posing a potential risk with over 70 reported major incidents last year alone, some of them catastrophic. Also, the risks presented for batteries in transit and as cargo are becoming more well-known. What you need to know about lithium-ion batteries and 'Thermal Runaway', will be presented by Ian Bartle, Managing Director of Nobel Fire Systems at our Annual Conference on 7th June 2023. You don't have to be there in person either. Join as an online delegate to take advantage of

this essential knowledge sharing and the other topics that will be presented on that day.

We will also be discussing insurance and report writing software and what AI can bring to the marine surveying sector.

We are also delighted that Sir Robin Knox-Johnston, CBE, the first person to complete a single-handed non-stop circumnavigation of the globe in 1969, will join us for the Conference to give a short presentation.

I look forward to meeting you at the Conference Dinner on the 6th of June, or the AGM the following morning and the Conference on the 7th of June that follows. And I urge you to attend either in person or virtually and join in the Yacht & Small Craft, or Commercial Ship presentations that will be run through the later morning and afternoon of the 7th of June 2023 for your benefit.

For full and further information about the AGM, Dinner, Conference and booking details please check out the IIMS website at <https://bit.ly/3ju8PFc>.

Stay safe.



Peter Broad,
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Tel: +44 (0) 23 9238 5223 | Email: info@iims.org.uk | IIMS, Murrills House, 48 East Street, Portchester, Hampshire, PO16 9XS, UK | www.iims.org.uk

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HOLLAND SHIPYARDS GROUP TO DEVELOP AUTONOMOUS 3D PRINTED FERRY

The Holland Shipyards Group has started work on building the largest ever 3D printed ferry as part of a new project sponsored by France to highlight innovations in sustainable and autonomous shipping. In December last year, Holland Shipyards Group, Sequana Développement and Roboat were designated as winners in a national call for autonomous passenger boat projects initiated by the French inland waterways authority, Voies Navigables de France.

The ferry will to be deployed in the summer of 2024 in a key location, still under wraps, in the vicinity of the major sporting events at the Paris Olympics and will enable visitors and athletes to fulfill their mobility needs in a new and environmentally friendly manner.



Photo credit: Holland Shipyards Group

SHAREHOLDING ACQUIRED IN MEGAYACHT BUILDER

The sovereign wealth fund of Saudi Arabia, the Public Investment Fund (PIF), has taken a 33% share in the Azimut Benetti Group. The investment is aimed at opening new strategic opportunities for the Group, supporting the boatbuilder's growth plans.

Tamburi Investment Partner, TIP, which has been an investor in the Group for more than eight years, will remain with a reduced stake.

"I confirm the satisfaction and pride of the family for having earned - as the most important megayacht building group in the world - the trust of one of the largest global sovereign wealth funds, already present in luxury, technology and leisure," said Giovanna Vitelli, chair of Azimut Benetti Group.



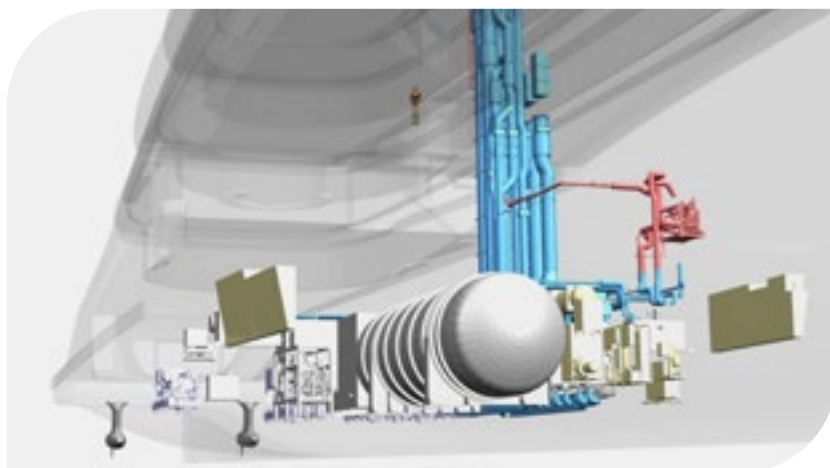
GREEN PROPULSION 'TASK FORCE' IS REQUIRED

The European Boating Industry (EBI) is urging manufacturers to create an alternative propulsion 'task force' to help decarbonise the leisure marine sector. A recent survey conducted by the EBI and boot Düsseldorf of 38 representatives from across the industry found that customers are in favour of sustainability and welcome greener propulsion but are not prepared to pay significantly higher prices, nor compromise on comfort, range and safety.

Against a backdrop of ever-tightening regulation to combat climate change, the boating industry needs to be ahead and ready to react, says the study – 'The Future of Sustainable On-Water Propulsion'.

"It is time for boat builders, engines manufacturers, associations and consumer representatives to come together, form a task force and develop joint strategies," said the authors of the study.

The industry finds itself at a crossroads, with policy makers increasingly demanding zero-emissions operation coupled with reluctant customers concerned about higher prices and poorer performance.



DUTCH SHIPYARD ANNOUNCES FIRST HYDROGEN FUEL-CELL SUPERYACHT

Dutch shipyard Feadship, specialists in custom superyachts, has confirmed it is entering the hydrogen superyacht market.

Jan-Bart Verkuyl, Feadship director and chief executive of Royal Van Lent Shipyard, confirmed that its first hydrogen fuel-cell superyacht is in-build. "[We're] proud to

announce Feadship's advanced solution for more sustainable yachting: a fully certified liquid hydrogen fuel-cell yacht," he says in a statement released on LinkedIn.

Feadship confirms the yacht will house a cryogenic fuel tank, storing liquified hydrogen at around -250°C; being the densest storage method of pure hydrogen. The shipyard says this fuel cell bank will be sufficient to sail at a decent speed while still powering the hotel load in summer conditions.

Hydrogen propulsion has an increasing interest in recent years among superyacht builders and commercial vessel makers, as it can be produced efficiently through electrolysis from electricity. With increasing wind, sun and other renewable power supply, green hydrogen production will ramp up to buffer the renewable energy.

BRAZIL BANS LIVE ANIMAL EXPORTS

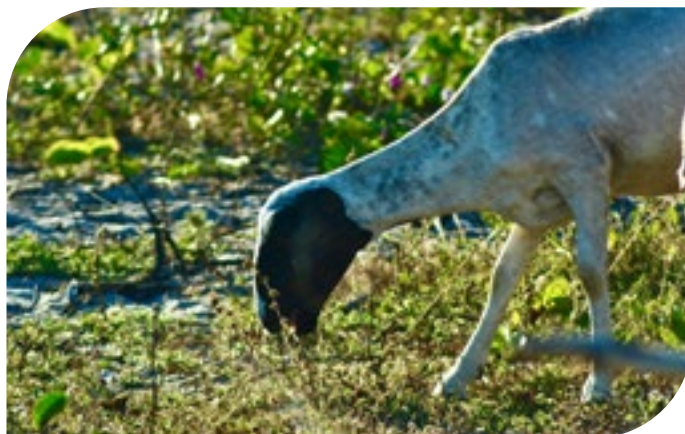
Reuters reports that federal judge Djalma Gomes's ruling states: "Animals are not things. They are sentient living beings, that is, individuals who feel hunger, thirst, pain, cold, anguish, fear."

The verdict was handed down after the National Forum for the Protection and Defense of Animals filed a law suit in 2017.

The case, still subject to appeal, comes as New Zealand also banned the export of cattle from its shores from April 30. Over 30,000 people signed a petition by animal welfare group SAFE's, and over 57,000 emails were sent to the Prime Minister calling for a ban.

The New Zealand Ministry for Primary Industries began a review of the live export trade in 2019 when news broke of New Zealand cattle suffering in Sri Lanka. The review found over 86% of submitters were in favor of a total ban on the trade.

SAFE CEO Debra Ashton says the ban sends a powerful message to the world that the mistreatment of animals will no longer be tolerated. "The ban will spare hundreds of thousands of animals from the horrors of live export and has prompted similar calls across the globe. Australia is now moving to ban the live export of sheep, and Luxembourg has limited the countries they will export to for animal welfare reasons. Steps have also been made to tighten regulations for live export from the European Union, amidst pressure to ban live export completely."





S&P Global
Market Intelligence



Vessel Ownership, Trade Finance and Regulatory Compliance



VESSEL OWNERSHIP RISK WHITEPAPER 2023

This white paper coauthored by the Institute of International Banking Law & Practice (IIBLP), Global Financial Integrity, and S&P Global examines the connection between the availability of a vessel's beneficial owner information, and the risk of criminal or sanction-violating behavior.

Financial institutions are increasingly expected to combat sanctions and financial crime compliance evasion by monitoring suspicious vessel behavior. These expectations are largely in response to the U.S. Department of the Treasury's Office of Foreign Assets Control (U.S. OFAC) and the United Kingdom's Office of Financial Sanctions Implementation (UK OFSI) advisories on shipping published in May and December 2020, respectively. These documents contained a number of recommendations for financial institutions to recognize and implement. While not previously expected of trade finance operations, a nuanced understanding of the maritime shipping industry has become a critical aspect of regulatory compliance, such as identifying commodities and trade corridors where transshipment and ship-to-ship (STS) transfers may occur.

The complexity of the shipping industry, however, has caused some anxiety amongst financial institutions as it requires a level of expertise that may not be reasonable for, or even available to, small or medium sized banks, whether seeking to bring such expertise in-house, or rely on sophisticated service providers.

Helpfully, recent guidance papers have been published to better assist the industry, but the authors considered that a global statistical review

of vessel data could further benefit the community. This statistical review is intended to complement those guidance papers and further crystallize the compliance concerns arising from the shipping industry.

This review shares our findings related to the availability of vessel Group Ownership in relation to each vessel's compliance behavior. Recommendations for financial institutions and insurance companies include adding at least one additional check during their risk-based approach. That check could be review of the ownership information of a particular vessel in light of its known compliance status, flag of country and ownership domicile. Put differently, banks should be able to, as a general matter, have a baseline calculation of risk for a given vessel so reasonable decisions may be made in light of the increased regulatory pressure regarding the maritime industry. Additionally, government regulators and port security officials should consider requiring Group Ownership information prior to port calls, and further down the line, establish a beneficial ownership registry to ensure additional transparency.

Download the white paper at
<https://bit.ly/421mLY9>.



SUNSAIL TO INSTAL ELECTRIC MOTORS ON ITS TENDERS

Following a trial of electric outboard motors in Lefkas in 2022, Sunsail has now upgraded its tenders to electric in its Agana and Dubrovnik bases.

The upgrade is part of Sunsail's OCEAN Promise, which identifies five core pillars of focus for sustainability, with yachts and future development being the first element.

"We need new technology to move forward and to reduce our carbon footprint," explained Laura Bowtell, global sales operations and sustainability manager for Sunsail.

WORLD'S LARGEST ELECTRIC CRANE UNDER CONSTRUCTION

A new electric-powered ring crane being built for Dutch engineered heavy lift company Mammoet is set to become the world's highest capacity land-based crane. The first parts of the new 6,000t ring crane will soon be delivered to Mammoet's engineering nerve center in The Netherlands. In the months ahead, fabrication and production will continue as it is being readied for its very first project, with delivery scheduled in 2024.



Image credit: Mammoet

"The introduction of this 6,000t ring crane sets a new standard in worldwide heavy lifting capacity and allows customers to construct heavier and larger components than ever before. With its unrivaled outreach, hook height and lifting capacity, it offers a carbon-free lifting solution that others simply cannot match," Mammoet said.

The new SK6000 crane employs similar design principles and lifting techniques as its predecessor, the SK350. Like earlier models, the SK6000 is containerized, enabling swift mobilization and on-site assembly, providing ultra-heavy lift capacity wherever it is needed.

Mammoet said the new crane has been designed to serve next generation offshore wind farm projects, where greater lift capacity is required to handle components that continue to grow in scale and in weight. In the offshore oil and gas sector, the SK6000 is capable of lifting larger and heavier topside modules, and on land it can help refineries to remove and install larger components.

NON-FLAMMABLE BATTERY TECHNOLOGY DEVELOPED

ABS has issued New Technology Qualification (NTQ) for a non-flammable battery technology for use at sea. The Blue G battery consists of a water-based electrolyte solution, storage tank, stack cell and regulating pump.

The battery incorporates Vanadium redox technology, a feature of which is that the process of charging and discharging energy does not produce excess heat.

"Vanadium redox technology is a potential game changer in the application of batteries at sea," said Gareth Burton, ABS vice president, Technology. "It has the advantages of a long lifespan, greatly improved energy capacity and an improved safety profile as a non-flammable product. This technology is one that has the potential to accelerate the energy transition in the maritime industry, supporting global decarbonisation goals."



Photo credit: Ports of Stockholm

PORTS OF STOCKHOLM EXPLORES SAFETY ASPECTS OF AUTONOMOUS SHIPPING

Ports of Stockholm and its collaborative partners have been awarded funding from the Swedish Transport Agency maritime transport research and innovation portfolio. Research Institutes of Sweden (RISE) is coordinating the research project, which has the name PLUZ Policy Lab Urban Zjöfart. Other organisations participating in the project are Norwegian shipping company Torghatten, technology supplier Zeabuz, Det Norske Veritas Sweden (DNV), who work with vessel classification and certification, as well as the Vattenbussen AB organisation, which focuses on efficient use of resources and the potential of waterways to contribute to a sustainable society.



"Being part of a joint effort to explore and develop the safety aspects of innovative autonomous vessels is fully aligned with the City of Stockholm's quays strategy, where one of the focus areas is research and development of urban waterborne transport. We are also looking forward to the potential the project has to strengthen Stockholm's and Sweden's standing internationally in the area of development of maritime sustainability and mobility," says Ports of Stockholm CEO, Magdalena Bosson.

US BOATBUILDER BECOMES 100% EMPLOYEE-OWNED



Manufacturer of aluminium watercraft, SAFE Boats International has completed a transaction that transfers 100 per cent of the company's ownership to its employees. The SAFE Boats International Employee Stock Ownership Plan (ESOP) has acquired the company, completing the journey that started in late 2022.

SAFE Boats says it has experienced dramatic growth since its beginning in 1996 and now has more than 250 employee-owners in two locations.

"It has always been our dream and our vision to make SAFE Boats International about our team and the community we live in," says co-founder Scott Peterson. "Transitioning to a 100 per cent employee-owned company creates the foundation to become a true Northwest legacy.

"This allows an incredibly talented and dedicated SAFE Boats team to continue supporting the men and women in uniform around the world for generations to come."

LUXURY BOATBUILDER DEVELOPS HYDROGEN ENERGY SYSTEMS

Italian boat builder Baglietto has presented its Bzero project using green hydrogen as an energy source. A prototype is being developed, with plans for a smaller scale one to be installed on Baglietto yachts over 50m in length. The prototype will be used to develop operational procedures, optimise technical solutions, and obtain the certifications required to use the system on board yachts and refill the tanks, either independently, or from an external source. The BZero system is based upon a hydrogen production module which uses filtered and deionised sea water to produce hydrogen with 5.0 purity grade at a maximum pressure of 35 bar using AEM-type electrolyzers, developing an overall power of around 55kW.

The company believes yachts equipped with the technology will be able to produce zero emissions up to 75 hours at anchor and have a range of up to 20 nautical miles at a speed of 7 knots.

"The combination of hydrogen and batteries will result in four times more available energy than that ensured by current batteries, which will also mean great savings for the owners," said Baglietto's sales director Fabio Ermetto.

Alessandro Balzi, director of the shipyard's Energy Department, added: "The project's primary objective is to increase the cruising range of the boat in the electric, zero-emission, navigation mode."





THE WORLD'S FIRST RECYCLABLE RACING BOAT

The one design Ecoracer (OD30) is believed to be the world's first recyclable sportsboat. The boat, which is due to be launched in June, is designed by Matteo Polli YD and built by Northern Light Composites (nlcomp). It has a length overall of 9.15m and a beam of 3.03m with a displacement of 1850kg.



The craft is a recyclable composite solution for the boating industry's end-of-life problem, say the founders of nlcomp who have been awarded the Smart Innovative Yacht Award in the Startup category at this year's Smart Yacht Rendezvous held during the Monaco Ocean Week. Nlcomp aims to part of the transformation towards a fully circular economic model, solving the problem of abandoned fibreglass boats being left abandoned at the end of their life. The Ecoracer uses thermoplastic resin and natural and recycled fibres in the construction of the craft.

BOATBUILDER ANNOUNCES SUPPLIER RATINGS



Groupe Beneteau is to assess its suppliers with a view to reducing environmental impacts and promoting responsible ethical and social practices. The organisation is to work with the international rating agency EcoVadis to assess the corporate social responsibility performance of the suppliers with criteria weighted depending on the size, business sector and geography of the company being assessed.

"This initiative represents a major step forward with our commitment to incorporating sustainability criteria across our entire supply chain," explained Delphine Planes, Groupe Beneteau VP purchasing. "We are proud to work with suppliers who share our commitment. We are convinced that this initiative will help further strengthen our supply chain and maintain the confidence and trust of our customers and partners."

The assessment results will make it possible to provide suppliers with support if required.

"In 2022, more than one fifth of the Group's strategic suppliers were already certified by EcoVadis and they represented around 24% of the Group's spend," added Delphine. "Groupe Beneteau's ambition is to support our suppliers so that the majority of them have been covered by awareness initiatives and are certified by 2025."



BV ISSUES RULES FOR THE CLASSIFICATION OF HARBOUR EQUIPMENT

This Rule Note gives the requirements for construction and classification of harbour equipment intended to be operated as floating dock, floating bridge, floating door and other storage or working unit floating in smooth stretches of waters. NR612 is to be applied for structural elements of the hull and for components of the machinery and electrical installations of harbour equipment.

Main changes in NR612 – Rules for the classification of Harbour Equipment. In general:

1. Harmonisation of Rules' content, structure, wording and terminology with NR217 Rules for the classification of inland vessels.
2. Extension of Rules application to hull materials other than steel: aluminium (A), composite (C), wood (W) and concrete (CR).

Download the rules at <https://bit.ly/412IAGZ>.



A RECYCLABLE FOILING DINGHY MADE FROM BIO-COMPOSITES

Thomas Tison Yacht Design & Engineering and nlcomp have collaborated together to create a recyclable foiling dinghy made from bio-composite materials.

The project has seen the French yacht designer combine his INEOS Britannia and America's Cup expertise together with the Italian shipyard nlcomp's rComposite technology.

"While there are several foiling concepts in the market, the ecoFoiler is going to set the bar high. It will be the first production foiling dinghy to be designed with bio-composite materials, offering a refined, fast design that ensures ease of sailing," said Thomas Tison.

MARINE SCRUBBER MARKET TO REACH \$20.3 BILLION BY 2031

Allied Market Research has published a report revealing the global marine scrubber industry was valued at \$4.9 billion in 2021 and is estimated to generate revenue of \$20.3 billion by 2031, witnessing a CAGR of 16.2% from 2022 to 2031.

The report demonstrates that the global marine scrubber systems market is driven by the implementation of the 2020 sulfur rule, air pollution prevention policies & laws imposed by governments to protect the environment, the growth in international marine freight transport, and an increase in demand for cargo transportation through ships.

Drivers, Restraints, and Opportunities

Implementation of sulfur 2020 rule, air pollution prevention policies & laws imposed by governments to protect the environment, the rise in international marine freight transport, and an increase in the demand for cargo transportation through ships drive the marine scrubber market. However, strict regulatory policies for disposal of contaminated effluents from scrubber system and high installation & maintenance cost of marine scrubber are likely to hinder the market growth during the forecast period. On the other hand, the rise in e-commerce & online trading and the growing demand for retrofit applications as ship owners race against time to obey rules and regulations will present new growth opportunities for the global market in the coming years.



Photo credit: Meyer Werft



RSG GUIDELINES 2023 VERSION 2 PUBLISHED

The most recent revised version of the RSG Guidelines 2023 (version 2) has been released and contains a number of updates.

These guidelines are the go-to document for boatbuilders and boatyards, detailing the RCD requirements, and supporting ISO Standards which clarify certain areas of the regulations.

The RSG Guidelines 2023 are prepared to assist with the conformity assessment procedures undertaken by Notified Bodies for recreational craft, personal watercraft, their components and their engines, in accordance with Directive 2013/53/EU of the European Parliament and of the Council, dated 20 November 2013 on recreational craft and personal watercraft and repealing Directive 94/25/EC as amended. This Directive lays down the requirements for the assessment procedures to be followed by manufacturers when demonstrating conformity of their products.

The English text of the Recreational Craft Directive (RCD) is the basic text used for a common understanding within the Recreational Craft Sectoral Group (RSG). Since these Guidelines provide information about watercraft and engines outside those conformity assessment procedures undertaken by Notified Bodies, this information is provided as guidance only.

Download the guidelines at <https://bit.ly/3ZJkzT9>.

A UNIQUE INTERNATIONAL MARITIME COLLECTION GOES ONLINE



Over one million maritime archival records, documenting nearly 100,000 ships, are now available online for the first time following a five-year digitisation programme by the Lloyd's Register Foundation Heritage and Education Centre (HEC).

The collection includes maritime technical records such as ship plans and survey reports for famous ships including the Carpathia – the Cunard passenger liner that rescued survivors of the Titanic – and other material such as wreck data, correspondence, photographs and certificates. Alongside the digitised collection of Lloyd's Register of Ships from 1764 to 2000, it provides a fascinating insight into the history of maritime safety, the development of Lloyd's Register, and the working lives of surveyors, shipbuilders, engineering firms and associated trades throughout the last two centuries. The material is also of unique interest to family historians through the inclusion of the names of shipowners, builders, surveyors and masters, all of which are searchable via HEC's online research tools.

Archivist for the centre Max Wilson said: "It's extremely unusual for such an extensive private sector collection such as this to be digitised unless it's a statutory requirement. It captures a wealth of maritime history including from Lloyd's Register, the world's first maritime classification society which was created more than 260 years ago to improve the safety of ships."

The online collection is freely available via the Lloyd's Register Foundation Heritage and Education Centre's website and can be viewed at <https://bit.ly/3K8dmaZ>.

The Red Ensign Group Technical Forum was held in Southampton (UK) and included delegates from Anguilla, Bermuda, the Cayman Islands, Gibraltar, Guernsey, Isle of Man, Jersey, Guernsey, Montserrat, Turks and Caicos Islands and the UK.

As well as the main REG Technical Forum, there were also specific meetings for representatives from what's known as the Category 2 Shipping Registers for their own Working Group and also a Surveyor Standards Working Group. Co-chairs Richard Pellew (Maritime and Coastguard Agency) and Greg Evans (Cayman Islands Shipping Registry) steered the group through a busy agenda.

FIRST LARGE CRUISE VESSEL DOCKS IN ABERDEEN SOUTH HARBOUR

The Port of Aberdeen said it had welcomed the first cruise ship into the "transformational" £400 million Aberdeen South Harbour expansion. The 203-meter-long AIDAaura, with a capacity for more than 1,000 guests, is the longest vessel to visit the Port of Aberdeen to date.

The AIDAaura berthed on Castlegate Quay, and the guests were greeted by a 50-strong pipe band and Highland dancers from Robert Gordon's College and 'Welcome to Aberdeenshire' volunteers.

"Together with today's arrival of the polar expedition ship National Geographic Resolution into Aberdeen's North Harbour on its maiden call, the port's cruise season has kicked off to a strong start. Aberdeen will welcome 39 cruise calls between May and October this year, with up to 31,000 guests visiting the region which could boost the local economy by £4.2 million," Port of Aberdeen said.

The expansion of Port of Aberdeen is expected to catalyze year-on-year growth in cruise tourism. More than 50 calls are already booked for 2024, including the AIDAdiva which measures more than 250m in length and accommodates over 2,000 guests.



RED ENSIGN GROUP BRINGS TOGETHER EXPERTISE TO FOCUS ON SUPPORTING MARITIME

An ongoing commitment to pioneering technology, sharing resources and continuing improving the expertise it offers to the maritime world at large as well as its own members was the focus of the recent REG Technical Forum.



UK BOATERS COULD BE PRICED OUT AS ABOVE INFLATION LICENCE FEES BITE

Above inflation price increases to the licence fees will risk pricing boaters off the system or result in them being unable to pay. That's the warning from the Inland Waterways Association (IWA) regarding the Canal & River Trust's (CRT) proposals to its boat licence fee.

The IWA says that bearing in mind the CRT is dependent on a government grant that is not inflation linked for a good part of its income and needs to raise more from other sources to compensate, increasing the licence fee beyond inflation could result in a net loss.

Proposals have been made to raise licence fees for continuous cruisers above those with home moorings, however the IWA says it is impossible to define continuous cruisers and the proposal to charge more for continuous cruisers would be an administrative nightmare, open to abuse and highly divisive within the boating community. But the IWA says the proposal to charge by area would bring it in line with Environment Agency registration fees.

The IWA would like to see CRT achieving a considerable increase in the non-boating income from all those who currently enjoy the waterways and whose benefits will suffer if they deteriorate.

In addition, the IWA says it will continue to campaign for local and national government to recognise the many benefits including health and wellbeing that the inland waterways provide to a large part of the population and fund them accordingly.



ANTIFOUL POLLUTION IS ADDRESSED

The negative environmental impact of antifoul chemicals used in boat maintenance are being addressed by Eyemouth Marine.

The company has installed a new pollution prevention system (PPS) supplied by FiltaBund that will process toxic antifoul water mixture and pump out fresh, clean water, minimising harm to local wildlife and ecosystems.

"We welcome this significant investment from Eyemouth Marine who are taking the lead in keeping our waters clean," said Andy Ashcroft, executive director, Berwickshire Marine Reserve in Scotland.

"These positive steps will contribute to our collective efforts to protect the reserve and marine life in the area."



DUTCH BARGE IS ABLE TO CRUISE IN VIRTUAL SILENCE

Staffordshire, UK boatbuilder Piper Boats has chosen Hoppecke batteries for its latest Dutch-style barge. The new model is purpose-designed for the UK market with the installed energy system allowing the boat to cruise in virtual silence.

"We know of Hoppecke and its excellent reputation in the motive power sector so opted to partner with them because we needed a reliable energy source that would power a parallel hybrid drive," said Simon Piper, MD of the family run business.

"Hoppecke batteries were the best choice for a safe and trouble-free solution, and everyone is delighted with the end result."

Hoppecke supplied a custom-built battery bank which integrates with the boat's 48v DC hybrid system designed and manufactured by A R Peachment of Norfolk. The hybrid system is combined with a Nanni engine, which delivers extra range and power during river flood conditions.

"Our first project with Piper Boats posed an interesting challenge as a Dutch-style barge is wider and shorter than the narrowboats we're familiar with," said Hoppecke's general manager, Stuart Browne. "Since the layout is quite different, we created a bespoke energy system that fits into a special container housed in the mid-deck area."



OYSTER YACHTS EDGES CLOSER TO PROFITABILITY

Continued investment together with post Covid issues have delayed a return to profitability for Oyster Yachts.

The boatbuilder saw a growth in profit of £2.6m against an operating loss excluding exceptional costs of £8.6m for the financial year 2022. The company's latest financial statements show production for the financial year (FY) 2023 is 100% covered by the order book with FY2024 95% covered and orders for some models stretching into 2025.

"It is particularly encouraging that the order book is strong across all yacht series and all regions," said chairman Richard Hadida.

Throughout 2022, Covid continued to have an impact on operations with production, productivity and availability of parts affected. In his report, CEO Ashley Highfield, said the Board has decided to allow more time to see Oyster return to sustainable growth and profitability.

"The backdrop of a strong orderbook for new yachts across all models in the range well into 2025, along with full build bays at all sites in 2022, provides a positive outlook for the company as it looks forward and transitions to one of future sustainable revenue growth and profitability," said Ashley.



£3.7 MILLION INVESTMENT IN NEW SCOTTISH MARINA

The Thomas Telford Corpach Marina, Fort William, has been officially opened by HRH The Princess Royal, accompanied by Lord Lieutenant James Wotherspoon.

The £3.7 million facilities have been built to provide a sheltered, all-weather, fully accessible marina and public slipway, with berths for 45 yachts and motor vessels plus small day boats, café, and amenities.

The marina has been developed with a partnership approach by community volunteers from Caol Regeneration Company, supported by The Highland Council, Scottish Government, HIE, Crown Estate Scotland, MOWI, SSE and other local businesses and organisations.



HISTORIC CANAL BOAT FUNERAL FOR 'INSPIRATIONAL' WATERWAYS VOLUNTEER, DIANA SKILBECK MBE

Inspirational waterways volunteer Diana Skilbeck MBE was given a highly appropriate send-off at the National Waterways Museum, Ellesmere Port, when her coffin was transported on a historic working boat, Gifford, which she had once helped to save and restore.

In recognition of her 50-year contribution, HM King Charles sent a letter of condolence from Buckingham Palace to say he was sorry to hear of the death of Diana Skilbeck MBE and offered his sincere sympathy and very best wishes to the National Waterways Museum in Ellesmere Port. He described her role as an early volunteer at the Boat Museum as "inspirational".

After a memorial service at her local Holy Cross Church at Woodchurch on the Wirral, the coffin was taken from the hearse and transported by boat along the Shropshire Union Canal for a short distance before cremation at Blacon Crematorium, near Chester.



SUNSEEKER LAUNCHES NEW BOATBUILDING SKILLS ACADEMY

Sunseeker International has recently announced the launch of a new training initiative to address a national skills shortage affecting the marine industry in the UK. The Sunseeker Skills Academy, developed in partnership with Bournemouth and Poole College, is open to those seeking a career change, offering individuals the opportunity to undertake a fully-paid, 12-week intensive boat-building course.

Successful applicants will learn trade skills across five boat building specialisms, comprising carpentry, plumbing, composite bonding, engineering and electrical installations. Following an intensive training program, students will join colleagues at the Sunseeker Shipyards in Poole to further develop competencies and achieve a nationally recognized qualification over 12 months.

ESTIMATED 10 YEARS' LIFE FROM BATTERIES

Leoch batteries have been installed on the narrowboat Old Nick, built by Rob Howdle at OrtoMarine. The move to go electric by owner Paul Sumpner led to 24 x 2V LC-800 batteries from Leoch Battery UK being installed.

"I figured we will probably do no more than 300 days cruising a year and it will be rare that we get as low as 60% depth of discharge so, by my estimations, we should get a minimum of 10 years life out of the LC2 batteries," said Paul.

"After about two months on the water in Old Nick, we found that if we set out with a fully charged set of batteries, we had approximately 23KWh of power or 480Ah at 48V before the batteries reach 40% SOC, even with zero solar power, which is never the case.

"To put this into cruising hours, at our preferred 800rpm cruising speed, we could cruise for 16 hours continuously."



RNLI SAVED 164 DOGS IN 2022

The Royal National Lifeboat Institution (RNLI) has confirmed it saved 164 dogs last year with the release of its latest animal rescue figures. Coinciding with the launch of the paperback version of *Saved from the Waves*, the charity revealed an increase in the number of animals it aided in 2022. The majority of the 209 creature call outs were to dogs, but RNLI crews were also called upon to rescue 27 dolphins, two deer, a rabbit and a snake.

The RNLI says 'the book shines a light on the necessity of animal rescues, not only to save the animals at risk of drowning but to prevent people putting themselves in danger when trying to rescue their furry friends'. The royalties from all sales of the book will support the lifesaving charity.

The book includes the incredible story of the rescue of Flossy the dog, who survived a 130ft cliff fall on Anglesey, North Wales.

INCE COLLAPSES AND FILES FOR ADMINISTRATION

The legal firm Ince Gordon Dadds, heavily associated with the maritime sector, has filed for administration, while its ex-CEO has registered multiple company names relating to Ince as part of an apparent bid to reclaim the firm. The 150-year-old listed law firm's shares were suspended on 3 January when it was unable to produce its accounts, and it announced on Wednesday that after almost four months its audit remained "uncompleted".

Ince said the length of BDO's auditing process had put "increasing pressure" on cash flows and that when a major creditor decided it would "no longer continue to support the business" the Ince board concluded it had "no choice" but to place the company into administration.

The Aldgate-headquartered firm, which employed over 700 staff and had revenues of over £100 million in the year to March 2021, was at one point the largest listed law firm in the UK.

SUPERYACHT INDUSTRY FLYING A LITTLE BLIND WITH INSUFFICIENT DATA ON SUSTAINABILITY

MB92 Group, the world's leading superyacht refit, repair and maintenance company with facilities in Spain and France, published today its third report that highlights the need for greater regulation and concertation across the superyacht industry and its vast supply chain.

For this new report, MB92 Group surveyed its supply network and consulted key stakeholders from the industry and environmental NGOs for a broad discussion on the path ahead for the luxury yacht sector and its suppliers. Among the topics discussed were the challenges for refit shipyards and suppliers to propose sustainable solutions to clients, considerations when looking at the whole of the superyacht lifecycle such as material sourcing and sustainable manufacturing processes, research and development and innovation from the supply chain.

"For all the spectacular growth seen in recent decades, the yachting industry is today faced with a daunting challenge" says Jean-Marc Bolinger, MB92 Group CEO, "Either it becomes truly sustainable, or it risks disappearing".

Many industry players feel they are flying blind

The survey of MB92 suppliers showed that 44% of respondents consider the data available to support sustainable development in their field of expertise either insufficient or non-existent. In addition, only 39% of the companies surveyed had a mechanism in place to measure their impact and just 14% a mechanism to evaluate that of their own suppliers.

Indeed, a lack of reliable data to judge the credentials of alternative products and solutions was one of the main obstacles emphasised by panel members for implementing sustainable upgrades on the superyacht fleet. Prescribers often find themselves ill-equipped to convince decision makers with several captains and yacht managers highlighting the uphill battle they face to enhance the sustainability profile of their ships. In addition to the scarcity of data, they also underlined the importance of regulation and public scrutiny in convincing owners to invest in sustainable upgrades.

Philippe Bernard, MB92 Group Procurement Director explains: "We need to be able to offer a catalogue of solutions, and to be able to recommend the right solution for the right boat. This is really where, as a refit shipyard, we can bring something to the table together with our network of suppliers."

The main conclusions of the report:

- Research conducted by MB92 for this report, within its network of suppliers, shows that 82% of companies surveyed already have a sustainability plan in place.
- Survey results also highlighted that 50% of suppliers had no mechanism in place to assess the impact of their own activity and 75% had no means to measure that of their own suppliers.
- Efforts undertaken by these companies appear to be broad-based, encompassing many aspects of their business operations.

Despite these efforts, progress regarding the sustainability profile of yachts themselves has been relatively slow.

- The industry needs to intensify its efforts to raise awareness regarding the sustainability challenge among all stakeholders.
- The lack of reliable data to assess the sustainability credentials of alternative products and solutions offered is a major challenge.
- The limited progress made by the supply chains of some equipment makers is also another important challenge.
- Industry players show strong interest for a broader assessment of their impact, with regards to Environmental, Social and Governance (ESG) criteria.



UK TRANSPORT SELECT COMMITTEE PUBLISHES REPORT ON MARITIME 2050

The UK Government's Transport Committee has published a report on the Government's Maritime 2050 strategy, and calls for investment in new technology, cleaner fuels and workforce training so that the UK's sector can compete with the world.

This sometimes-overlooked "Cinderella" sector is vital to the UK economy. Approximately 95 per cent of goods by weight come to the UK by ship, and the Department for Business and Trade predicts maritime cargo volumes will triple by 2050. The UK's sector employs 185,000 people throughout the four nations and contributes £40 billion a year to the economy.

The cross-party Committee's new report critiques the Department for Transport's (DfT) Maritime 2050 strategy, published in 2019. It was praised at the time for taking a decades-long view, which is critical when vessels and infrastructure vary between countries and are built with lifespans of 30 years. However, the strategy has since been criticised for lacking distinction between aspirations and actions to be taken. The Committee makes a number of recommendations on how to help both the sector and ministers achieve the strategy's aims. Transport Committee Chair Iain Stewart said:

"All the evidence we received about the UK's maritime sector has shown it is resilient, entrepreneurial, and used to working independently from government. Nonetheless, there is an array of things government should do to support the sector and help it achieve its ambitions to decarbonise and remain a positive force on the world stage and for the UK economy. We commend the Government for being forward thinking in developing the Maritime 2050 strategy, but clarity and focus are needed to refine its muddle of 184 recommendations.

The sector will need sustained support to overcome the challenge of radically cutting carbon emissions. We urge ministers to bring forward the promised Clean Maritime Plan, which will give industry the certainty it needs to invest in technology, new vessels, infrastructure and low-carbon shore power. Without it, we will fall behind other countries and miss our net zero targets.

And while enforcing fairer wages should help repair the sector's reputation after the shocking practices seen by P&O Ferries, we heard a lot needs to be done to raise the sector's profile as a career option among young people, women and those from diverse backgrounds. More attention should also be paid to a problem seen in many sectors – skilling up older workers who may otherwise be left behind by the pace of technological changes. Autonomous vessels, for example, also require new regulation to clarify the skills that are needed."

Download the report at <https://bit.ly/3JpspLG>. Or scan the QR code.



OFFSHORE SUSTAINABILITY INSIGHTS REPORT PUBLISHED BY ABS

The American Bureau of Shipping (ABS) has published Offshore Sustainability Insights, an industry-leading report representing the latest thinking in sustainable offshore operations from across the globe. The first in a series of reports designed to support offshore clients in reaching their emission reduction targets, the document serves as a primer for offshore decarbonization, ESG trends, sustainable financing tools and carbon pricing.

"We found pressures on the offshore industry to improve its carbon footprint were coming from all directions, including the investment community. As the leading class for offshore assets worldwide, ABS has a key role to play in supporting the industry through the clean energy transition. The ABS insights series is designed to



help offshore clients quickly assess the sustainability landscape and understand what factors might impact their projects and assets. Pressure for change is affecting the entire offshore supply chain and will require a holistic approach to make significant impact,” said Miguel Hernandez, ABS Senior Vice President, Global Offshore.

Market trends are explored by asset type such as floating production storage and offloading units (FPSOs), offshore support vessels (OSVs) and offshore wind vessels. The report also considers how, despite investing in decarbonization strategies, the offshore industry remains challenged to implement further sustainability measures.

View the report in eReader format at <http://bit.ly/3m9OoyA>. Or scan the QR code.



BSI, TT CLUB & TAPA EMEA CARGO THEFT REPORT 2022

In 2022, similar to 2021, BSI, TT Club and TAPA EMEA recorded fewer cargo theft incidents globally. Despite this year-on-year decline in recorded incidents, we are tracking a steady increase in criminals targeting basic goods like food and beverage, automotives and truck parts, and fuel. This is in large part due to the macro-economic impact of inflation, or the loss of purchasing power, on criminal patterns. Parallel to this gradual shift in the theft of basic goods, and sustained theft of higher-valued goods like electronics, we are also tracking a shift in theft types.

In 2021, cargo crime was characterized by long idle times and cargo at rest, whereas in the second half of 2022, we are tracking a return to pre-pandemic levels as global trade volumes slow. This translates to easing supply chain disruptions that piled up over the pandemic and less cargo waiting at ports and in-transit. As the volume of goods moving slows down and port congestion eases, there is a consistent trend of thefts from facilities and increases in thefts from container/trailers juxtaposed to global drop offs in hijackings. This is only further exacerbated in countries experiencing serious social unrest, like Peru and Bolivia, where cargo is halted, and we are tracking a subsequent drop-off in hijackings. As the delays that defined 2021 and early 2022 ease, so does theft at unsecured parking lots or container yards near port facilities.

This report highlights the cargo crime trends that characterized 2022 supply chains and simultaneously provides organizations with mitigation recommendations to combat these threats to better anticipate emerging threats in 2023. BSI and TT Club have identified themes to better capture the 2022 risk environment and define how they will likely manifest in 2023 – how crime patterns have shifted as criminals adapt to inflation, lessened port congestion, an evolving logistics landscape, and new fraudulent methods to tamper with and steal cargo.



Download the full report at <https://bit.ly/43erF51>. Or scan the QR code.



CORRUPTION IS ENABLING CRIMINAL GANGS TO INFILTRATE EUROPEAN PORTS IS REPORT FINDING

Europol, the EU agency charged with preventing and combatting international and organized crime, has published its first report exploring how organised crime infiltrates the ports of Europe. Detailing its findings and releasing the 24-page report, Europol said it believes criminal networks are constantly evolving in their techniques as they are increasingly working towards infiltration of and control over major logistical points. The agency is calling for increased cooperation and awareness and focused efforts to address the challenges of crime in Europe's ports.

“The Europol report on criminal networks in ports illustrates what we are up against. It lays bare the sophistication of criminal drug gangs, their strength, and their savagery,” said Ylva Johansson, Commissioner for Home Affairs for

the European Commission. "The drug traffickers promote corrupt actions and practices sometimes by bribery, sometimes by intimidation. We are working with authorities at all levels to strengthen systems in the fight against the criminal activity this report outlines."

The analysis was conducted with the Security Steering Committee of the ports of Antwerp, Hamburg/Bremerhaven, and Rotterdam. Europol said that Europe's three biggest ports are among the most targeted for criminal infiltration although organised crime networks are also expanding into smaller ports as a means of avoiding enforcement. In the last few years, they estimate that at least 200 tons of cocaine have been trafficked through the ports of Amsterdam and Rotterdam alone.

The report finds that the structure of the ports and the nature of their operations makes them vulnerable to infiltration. They highlight the open structure, need for access, growing automation, and a large number of companies and personnel involved in port operations.

The report identifies a few common techniques used in smuggling including "rip-on/rip-off" where the drugs or other items are hidden with legitimate imports and retrieved in or outside the port at the destination. A newer switch method involves moving the drugs between containers during inter-community transport from one EU country to another. However, the gangs are also becoming more sophisticated by cloning containers by using the same registration number of multiple boxes. "Trojan horse containers," are used to get extraction teams into the port often hidden inside an export container sometimes days before the arrival of the illicit goods.

The main recommendations of the report include better international information exchange as they note the gangs have infiltrated ports on all the continents. They said ports must integrate security features into the design of their infrastructure and public-private partnerships need to be implemented to involve all port actors essential for tracking the infiltration.

Read the full report at <https://bit.ly/3KCeNyh>. Or scan the QR code.



IMO PUBLISHES GLOLITTER, A GUIDE FOR TACKLING PLASTIC WASTE THROUGH PORT FACILITIES

The International Maritime Organization has published a new guide to support countries to put in place port reception facilities to receive marine plastic litter from ships. Plastic litter has devastating effects on our oceans, marine life and human health. Some scientists warn that, by 2050, the quantity of plastics in the sea will outweigh fish.



The Guidance Document on Conducting Techno-Feasibility Studies for the Establishment of Port Reception Facilities for Plastic Waste has been developed by the GloLitter Partnerships team.

The document outlines the costs of operating a port reception facility and the revenue that such facilities can generate. It provides tools and guidance on conducting economic assessments and techno-feasibility studies concerning Port reception facilities for plastic waste generated on board ships, including fishing gear. Case studies of waste reception facilities in different ports around the world (large and small) are used to illustrate the relevant income and expenditure flows.

Ports need to cover the costs incurred in collecting and treating the waste received from ships by charging direct and/or indirect fees, and by selling products derived from the waste. In smaller ports with limited vessel calls, it is deemed essential that all ships contribute to the cost of provision of reception facilities, including those ships not actually using them. Reception facilities in large ports are on standby around the clock so that ships that need to discharge waste are not unduly delayed. In smaller ports this would be too costly.

Download the report at <https://bit.ly/3KeKxbC>. Or scan the QR code.



EFFICIENCY IS KEY TO ALIGNING SHIPPING TO 1.5°C BY 2030



UMAS has published a report which studies how unlocking much greater efficiency improvement is key to aligning shipping to 1.5°C by 2030. Taking expected growth in demand for international shipping into account, the report considers four scenarios with relatively low levels of fuel substitution by 2030, and then derives from them fuel substitution scenarios accounting for the amount of energy efficiency improvement required to meet the target of 37% absolute lifecycle emission reduction by 2030 (on 2008 baseline).

According to UMAS, aligning international shipping's level of ambition with 1.5°C requires significant absolute greenhouse gas (GHG) emissions reduction by 2030 and 2040: 37% and 96% reductions respectively relative to 2008. Efficiency improvements reduce the demand for energy, and in turn, make the transition away from fossil fuels easier.

Achieving these reductions requires the parallel activities of maximizing energy efficiency and transitioning away from the use of fossil fuels in international shipping. Both of these steps are needed for both the existing fleet and new ships built during this period.

The 2040 target is dependent on the scale-up of new energy supply chains in the next decades thus, developing these supply chains and fostering use of new fuels on ships this decade is important. However, given the short timescale between now and 2030 means, new energy supply chains are unlikely to play a significant role in achieving 1.5°C-aligned 2030 ambitions; therefore, the role of energy efficiency is key in the near-term.



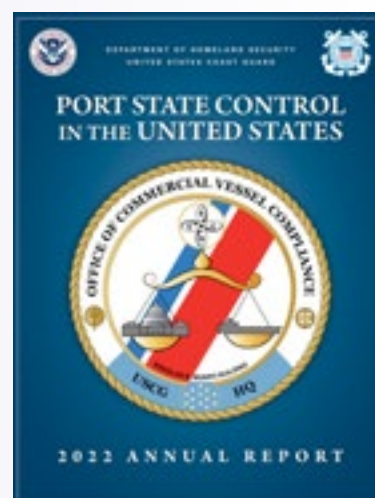
Read the report in full at <https://bit.ly/3ZL8ltl>. Or scan the QR code.

USCG PSC REPORT 2022: 63 SHIPS DETAINED FOR ENVIRONMENTAL PROTECTION, SAFETY, AND SECURITY DEFICIENCIES

The US Coast Guard's Office of Commercial Vessel Compliance has published the U.S. Port State Control Annual Report for 2022. USCG reported that the total number of ships detained in 2022 for environmental protection, safety, and security related deficiencies increased from 63 to 78.

The main findings:

- In 2022, the Coast Guard conducted 8,706 SOLAS safety exams with a total of 78 detentions.
The annual detention rate increased from 0.73 percent to 0.89 percent.
- The three-year rolling average detention ratio decreased slightly from 0.87 percent to 0.80 percent.
- The total number of ships detained in 2022 for environmental protection, safety, and security related deficiencies increased from 63 to 78.
- Flag Administration performance for 2022 dropped slightly with the overall annual detention rate increasing from 0.73% to 0.89%



Vessel Arrivals, Exams, and Detentions

In 2022, a total of 11,235 individual vessels, from 78 different flag administrations, made 80,280 port calls to the U.S., and 8,706 PSC exams were conducted. As we strive to put the global pandemic behind us, these exam numbers increased over the 2021 total of 8,663 and have now surpassed the 2019 pre-pandemic total of 8,622, USCG report reads. The total number of ships detained in 2022 for environmental protection, safety, and security related deficiencies increased from 63 to 78.

Flag Administration Performance

Flag Administration performance for 2022 dropped slightly with the overall annual detention rate increasing from 0.73% to 0.89%. However, the three-year rolling detention ratio decreased slightly from 0.87% to 0.80%. Belgium, Israel, Mexico, St. Kitts and Nevis, Tanzania, Panama, Portugal, and Vanuatu were removed from the Targeted Flag List this year.

Detention and Association Appeals

In 2022, the Coast Guard received a total of twenty-three appeals. Nine appeals challenged the overall merits of the detention. Of those merit appeals, two were granted, seven were denied. In addition to receiving appeals contesting the overall merits of a detention, we also receive appeals requesting the removal of a party's association to a detention. For those parties appealing their association with a detention, fourteen were received.

Of those, eight were granted, five were denied and one was still under adjudication at the time of this report. For more information on the Coast Guard's appeal process, please see our process guidance on page seven of this report.

QUALSHIP 21 and E-Zero Programs

The QS21 program ended calendar year 2022 with an impressive 4,431 vessels enrolled. In 2021, we welcomed five additional flag administrations into the program with one losing their QS21 eligibility. For 2022, seven flag administrations lost their eligibility while four new flags became eligible. USCG welcomes the flag administrations of Belgium, Panama, Portugal, and Vanuatu for becoming QS21 eligible this year.

The E-Zero program focuses on environmental stewardship and worldwide compliance with international environmental conventions. At the close of 2022, 306 ships were awarded the E-Zero designation.

Detainable deficiencies found during PSC examinations in 2022

1 Fire Safety

For the second straight year fire safety deficiencies lead all deficiency categories and remains a concern throughout USCG's PSC program. Oil accumulation in the engine room stood out once again with over seventy deficiencies noted. Oil soaked lagging, fuel leaks, excessive oil in the bilge, and open buckets filled with oily waste throughout the engine room were the most common deficiencies cited. On one ship the PSCO discovered excessive oil leaks throughout all machinery spaces with multiple areas of lagging soaked with oil. The lagging was found to be painted over to hide the leaks.

The bulkheads and decks were slick from the oil and oil soaked mops along with trash bags full of oil soaked rags were present throughout the engine room.

We recorded several deficiencies where the firefighting equipment was not readily available. On one ship the PSCO discovered water-mist nozzles covered with plastic and tape. There was also another ship where the fire-extinguishing main control panel was turned off. And a third where the CO2 storage room was secured with a padlock. The key to the pad lock could not be located preventing the system from being ready for immediate operation.

2 Safety Management Systems (SMS)

The number of SMS deficiencies increased slightly over 2021 totals. Deficiencies related to maintenance of the ship and equipment, reports of non-conformities, and deficiencies related to shipboard operations led all SMS categories respectively. On one ship, the PSCOs determined the ship was not in substantial compliance with relevant conventions, calling into question the adequacy and implementation of the vessel's SMS and ultimately an expanded SMS exam.

Initially, they found the oily water separator (OWS) system was not operational yet neither the flag, class, nor company was informed. The master could not provide documentation regarding reporting of inoperable equipment and no effort was made to rectify the OWS. All fuel shutoff valves were inoperable when tested even though the vessel's maintenance logs show testing 14 days prior.

PSCOs discovered multiple non-functional smoke detectors in the engine room as well as finding the vessel's rescue boat engine inoperable. Finally, PSCOs discovered all engine spaces were soaked in a layer of oil with hoses, rags and mops located throughout the engine room as well as open buckets filled with oil.

3 Lifesaving Appliances

Detainable deficiencies related to lifesaving systems remained fairly consistent with 2021 totals. Deficiencies related to rescue boats, lifeboats, and the operational readiness of lifesaving appliances were most frequently cited. PSCOs found rescue boats to have had a severed steering gear linkage and a corroded steering cable rendering them inoperable.

On one ship it took the crew over 1.5 hours to lower the rescue boat due to severe corrosion in the lowering boom actuator. During three separate exams over half the immersion suites onboard were found with failed seams, broken zippers, and deteriorated rubber seals.

4 MARPOL Annex I

Deficiencies issued under this category increased from four in 2021 to twenty-two in 2022. Oil filtering equipment and oil discharge monitoring systems accounted for almost half the deficiencies. PSCOs witnessed systems exceeding 15PPM with no activation of the valves to control overboard discharges. PSCOs observed control valves stuck in the open position with a build-up of corrosion in the overboard piping.

There were also three instances where the PSCO identified evidence of illegal discharges of oil overboard. In one case a whistle blower provided video evidence of the ship bypassing the oil filtering equipment and discharging oil directly over the side.

The Coast Guard stresses that if any ship's system required by international conventions is not in working condition, the master and crew should take necessary actions to remedy the situation in accordance with their SMS before the ship enters port and report any unresolved issues on their advance notice of arrival.

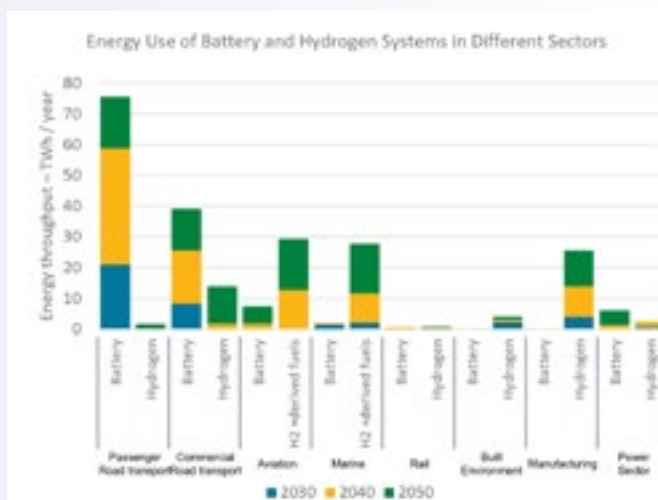
ROLE OF HYDROGEN AND BATTERIES IN DELIVERING NET ZERO IN THE UK ANALYSED IN NEW REPORT

The Faraday Institution has published a report analysing how hydrogen and battery technologies are likely to be used in different sectors within the UK, including transportation, manufacturing, the built environment, and power sectors, to 2050. Both are anticipated to play an increasingly vital role as the UK transitions to a low-carbon future to address critical concerns of climate change and energy security.

Professor Pam Thomas, Chief Executive Officer, Faraday Institution said: "Batteries and hydrogen have distinct characteristics and should largely be viewed as complementary rather than competing technologies. Both will require significant technological advance and extensive scale up of manufacturing and deployment if the UK is to meet its obligation to reach net zero by 2050. The varying timescales of their rollout leads to considerable uncertainties in predicted market share profiles over time."

The report was commissioned by the Faraday Institution and authored by DNV. The sector analysis draws on DNV's knowledge and experience within both the battery and hydrogen industries. The analysis uses DNV's Energy Transition Outlook model, an integrated system-dynamics simulation model covering the energy system that provides an independent view of the energy outlook from now until 2050. The modelling includes data on costs, demand, supply, policy, population and economic indicators.

Read the report in more detail at <https://bit.ly/451cg99>.



REPORT bites

Oranje Nassau, a Berlin sightseeing boat and watertaxi, has ditched the diesel and now has an electric Torqeedo Deep Blue system providing her passengers a silent, smooth, emission and fume-free outing along the Spree River.

Alex Thomson has bought Banque Populaire's IMOCA 60 following the team's withdrawal from the next Vendée Globe in 2024 due to the controversy over dropping female skipper Clarisse Crémer.

The Union Shipping Ministry of India has plans to boost inland vessel and ship construction, aiming at self-reliance and developing a blue economy.

South Korea's flagship carrier HMM announced that it has cut its carbon emissions by half over the past decade.

Groupe Beneteau is raising its forecast having maintained its growth during the first quarter of 2023, with revenues of €478m, up 51% from 2022.

The Australian Maritime Safety Authority issued a 90-day ban to a Cypriot-owned containership managed by MSC Shipmanagement following what it describes as "months of sub-standard performance" on critical maintenance issues.

A 24,116 TEU ultra-large containership was named and delivered at China State Shipbuilding Corporation's Changxing shipbuilding base.

Fincantieri has delivered the newest to the cruise ship, Viking Saturn, to the Viking cruise line at its Ancona yard.

Stena Line, the Irish Sea's leading ferry company, has announced it is constructing two new bespoke freight ferries for its expanding Heysham-Belfast freight service.

German luxury boatbuilder Alva Yachts, which specialises in electric solar catamarans and sailboats, has announced details of a pioneering solar superyacht catamaran.

Methanex Corporation and Mitsui O.S.K. Lines, Ltd. has announced the dual-fuel vessel "Cajun Sun" successfully completed the first-ever net-zero voyage fuelled by bio-methanol.

Classification society ABS has issued New Technology Qualification for non-flammable battery technology called Blue G for use at sea.

Safety Briefings

MAIB SAFETY BULLETIN: POTENTIAL SAFETY HAZARDS FROM FLEXIBLE HOSE INSTALLATIONS

On Sunday 19 September 2021, fire broke out in the auxiliary engine room on board the Finland registered roll-on/roll-off cargo ship Finnmaster while departing Hull, UK. The fuel source for the fire was identified as coming from a small-bore flexible hose that failed due to being overheated by an exhaust gas leak from the outboard turbocharger of auxiliary engine 2.

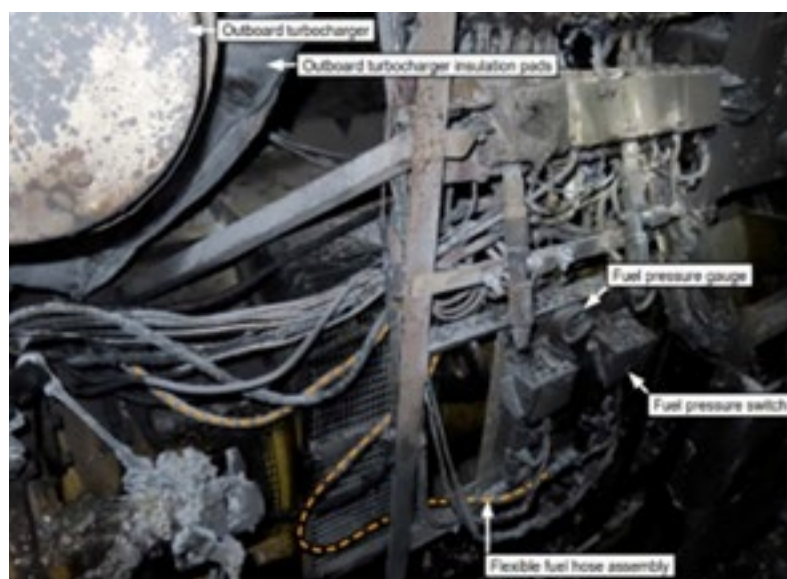
The flexible hose assembly was part of a modification made to the auxiliary engine alarm system more than 15 years prior to the fire. It was contrary to requirements and relevant guidance, as it was too long and had been routed close to hot surfaces. The hose had not been approved or surveyed by the classification society when it was installed. Furthermore, despite being replaced a number of times in the intervening period, the material, length and routing of the hose had remained the same throughout and the risk it posed had not been identified or mitigated.

The key safety issues identified were:

- The risks associated with a modification on safety critical equipment should be considered before and during the work being completed. The relocation of the pressure switch closer to the cartridge filters would have removed the need for a long hose; if this was not possible, a rigid metal pipe secured with clamps and routed at an appropriate distance from the engine's exhaust might have been a safer option.
- Flexible hoses are recognised as having a higher risk of failure than a properly fitted metal pipe. An isolation valve fitted at the point of supply allows a flexible hose to be safely isolated in the event of leakage.

This accident remains under investigation and the detailed causes and circumstances will be published in an investigation report in due course.

Download the safety bulletin at <https://bit.ly/3GdossJ>. Or scan the QR code.





WARNING FOR UK POWERED WATERCRAFT USERS AS NEW LEGISLATION COMES INTO FORCE

New legislation, which came into force on 31 March 2023 puts the responsibility on users, operators and owners of powered watercraft to make sure they protect not just themselves but other water users from harm. If someone on a powered watercraft causes serious injury or death they can be prosecuted. There are also provisions allowing prosecution for other dangerous uses of a powered watercraft.

Under the new law, the parts of the Merchant Shipping Act designed to keep all those on the water safe from accidents now apply to powered watercraft as well as to fishing vessels and larger ships. The new law also means powered watercraft must obey the 'rules of the sea', which are designed to prevent collisions.

Maritime Minister Baroness Vere said:

"While it's great to see more and more people enjoying our country's coasts and waters, safety will always be our top priority. Our new law will help to ensure anyone using watercraft like jet skis dangerously can be more easily prosecuted, helping to prevent avoidable accidents and tragedies."

Serious breaches of the legislation could see users facing a fine or imprisonment. Details of the new legislation can be found at <https://bit.ly/3ZpFc6Q>.

Posting on LinkedIn, Jenny Vines, an independent maritime consultant adds some useful context. She said, "This is a very positive move to finally close a known UK loophole that was publicly exposed after an accident in 2004 where a later court ruling went on to establish that a watercraft (in this case a jet ski) is neither a ship nor capable of navigation and so was deemed to fall outside of the Merchant Shipping Act and its framework of MS Regulations.

The new Watercraft Order and supporting MGN 684 give new powers covering the use of powered watercraft including application under COLREGs. It also establishes penalties meaning that watercraft will be seen in law alongside fishing vessels and ships.

The 2006 ruling arose following a collision between two jet skis (one moving, one stationary) in Weymouth Bay in 2004 in which one of the riders suffered a serious injury and was unconscious for 2 days. The other rider was charged under section 58 of the Merchant Shipping Act 1995 and initially sentenced to a 6 month jail term. The original judge decided that the jet ski was a 'ship' as far as the Act was concerned and the Act was applicable.

On appeal, this conviction was quashed and it was deemed that since a jet ski was not capable of making a passage nor standing up to heavy weather it was not a 'ship' and therefore the Act did not apply. This decision was upheld i.e. no offence was committed under this Act."

A report by Dr Roger Tyers was published in 2021 which provides good background - go to <https://lnkd.in/e6EGspDg>.



REPORT bites

The U.S. Fish and Wildlife Service announced the agency's Boating Infrastructure Grant will provide more than \$20 million in funding for 19 states to construct, renovate and maintain marinas and other boating facilities for outdoor recreation.

Associated British Ports has launched its wide-ranging new sustainability strategy, Ready for Tomorrow (RFT), backed by a plan to invest around £2 billion in decarbonising its own operations by 2040.

The Inter-American Development Bank and the Caribbean Shipping Association have signed a Memorandum of Understanding to help decarbonize the shipping industry.

Swedish energy tech firm Abtary has outlined battery-to-battery high speed electric boat charging.

Ocean Safety's commercial liferafts have been approved to carry the Red Ensign logo, the new standard for UK marine equipment conformity.

The Australian Maritime Safety Authority has handed down a 90-day ban to the Netherlands-flagged ship Flevogracht, in what has been described as a 'crackdown on poor performers in the maritime industry.'

IMOCA's 2022 sustainability report details the progress it has made surrounding the use of alternative materials and collision avoidance.

China's first hydrogen fuel cell powered boat "Three Gorges Hydrogen Boat No. 1" was successfully launched in Guangdong.

The largest European center for sea trials entirely dedicated to floating wind power and marine renewable energies, called the OPEN-C Foundation, has been set up in France.

South Korea has held a naming ceremony for its first domestic liquefied natural gas bunker vessel, the country's Ministry of Trade, Industry and Energy revealed.

The Port of Halifax in Nova Scotia and the ports of Montreal and Quebec in the province of Quebec were hit by a cyber attack, but cargo movements at all three facilities were unaffected.

The Italian luxury yacht builder Sanlorenzo ended 2022 on a high with net profits up 45.4% compared with the previous year.

Safety Briefings

AMSA FOCUSING ON WATERTIGHT AND WEATHERTIGHT INTEGRITY AT PORT STATE CONTROL



Photo credit: AMSA

The Australian Maritime Safety Authority (AMSA) has announced they are carrying out ongoing watertight and weathertight integrity inspections during routine Port State Control (PSC) throughout 2023.

The aim of this PSC campaign is to support foreign-flagged and regulated Australian ships with information to help operators avoid water ingress and the associated safety and financial risks. Ship inspection data shows that watertight and weathertight integrity remains a persistent and concerning issue for ships in Australian ports, making up 9% of detainable deficiencies in 2021.

Newly information and resources are now available on the AMSA website, including guidance on regular checks and the importance of including watertight and weathertight components in maintenance plans.

Watertight and weathertight elements are part of the design of a ship. Watertightness is required for all openings located below the ship's waterline, for example, shaft tunnels, ballast tanks, and bow thruster compartments. They must be designed and maintained to prevent ingress and egress of water during continuous submersion. Weathertightness is required for all other ship components, which must be designed and maintained to prevent water from entering the ship in any sea conditions.

AMSA Manager Vessel Operations, Dr Michelle Grech, said AMSA takes an intelligence-led and risk-based approach to compliance. She said, "With our data showing detainable deficiencies for watertight and weathertight integrity on the rise, we are reminding all ships entering Australian waters to find it, fix it, and keep your ship watertight." She also highlighted the importance of "committing to routine checks and planned maintenance for all watertight and weathertight components".

Watertight and weathertight deficiencies identified during a port State control inspection often reflect a failure of the planned maintenance program to address watertight and weathertight integrity issues in areas such as:

- watertight doors
- cargo hatches and hatchways
- ballast tanks and cargo hold venting
- overboard sea water valves.

"The price of conducting proper maintenance is far less than the potential cost of detention or banning, and certainly worth it to avoid the potential consequences which include injury, death, dry docking, labour costs, or even lawsuits over environmental damage," Dr Grech commented.

RULES FOR CERTIFICATION OF TRAINING PROVIDERS OF SERVICE PERSONNEL FOR LIFE-SAVING APPLIANCES PUBLISHED BY RINA

Classification Society RINA has published the Rules for the Certification of Training Providers in accordance with ISO/DIS 23678 Standard on Service Personnel for Life Saving Appliances. The document became effective from 15th April 2023. These Rules set out the procedures:

- a) to verify that the Training & Competency Management (TCM) system of a Training Provider responsible for the training of "Service personnel for the maintenance, thorough examination, operational testing, overhaul and repair of lifeboats (including free-fall lifeboats) and rescue boats (including fast rescue boats), launching appliances and release gear" is in compliance with the International Standard ISO/DIS 23678, Parts 1 to 4, hereinafter named the "ISO Standard" as per [2.7];
- b) to issue a Training & Competency Management Certificate (TCMC) to the Training Provider enabling it to issue the Training & Competency Qualification Certificates (TCQC) to its students in accordance with the ISO Standard; and
- c) to carry out the periodical verifications of compliance with the requirements of these Rules.

RINA reserves the right to carry out additional verifications as deemed necessary in pursuance of its internal Quality System or as required by external organizations.



INDUSTRY BODIES UNITE TO PRODUCE GUIDELINES FOR SAFE TRANSPORT OF LITHIUM-ION BATTERIES IN CONTAINERS

The Lithium-ion Batteries in Containers Guidelines seek to prevent the increasing risks that the transport of lithium-ion batteries by sea creates, providing suggestions for identifying such risks and thereby helping to ensure a safer supply chain in the future. Together with its partners, the Cargo Incident Notification System Network (CINS) has compiled a comprehensive publication covering the properties of these batteries and their potential to explode, initiate fires and emit toxic gases.

Extensive measures to safely transport what is an exponentially increasing volume of lithium-ion batteries, in their various states of charge and when also contained in electronic devices are fully examined including, classification and regulation, container packing, landside storage, stowage onboard ships, incident detection and fire suppression, and loss prevention and risk mitigation.

"We strongly urge all stakeholders in the production, supply, transport, handling and sale of lithium-ion batteries whether as individual components or integrated into an electronic device, vehicle or other product to recognise their responsibilities in maximising safety when in transit," comments Dirk Van de Velde, who is Deputy Chair of CINS and a board member of the association of cargo handlers, ICHCA.

"As our experience of transporting lithium-ion batteries widens and the technology surrounding their chemical composition, production and application rapidly evolves, risk controls and loss prevention measures need to keep pace. The work encapsulated in these Guidelines will, of necessity, continue and be undertaken in collaboration with all relevant stakeholders to increase our knowledge and understanding of the risks posed by carriage of lithium-ion batteries in containers by sea.

Peregrine Storrs-Fox, Risk Management Director at freight transport insurer TT Club concludes, "As the pressure on all forms of economic activity for decarbonisation increases, the use of these batteries will inevitably escalate at rates we have previously not experienced. Air transport has been heavily restricted already and it is clear that surface modes will be called upon to transport these goods. As an adaptable unit, the container will remain a focal point for safe transport, including for EVs alongside other vehicle carriers."

Download the guidelines at <https://bit.ly/3nHQoyt>. Or scan the QR code.



REPORT bites

A tall ship named after the famed Italian explorer, Amerigo Vespucci, is to set sail on a two-year journey to promote the country's cuisine and wine as a symbol of national identity, as part of Italy's conservative government's objective.

A \$2 million blunder was the result of an incorrect estimate of a crane's boom height, leading to a collision with the Houma Twin Span Bridge, according to the National Transportation Safety Board.

Palumbo Superyachts has announced they have begun construction of a new shed at the Ancona production facility in Italy which will open in September 2023.

Hattie Rogers has been named as 2022 YJA Yachtsman of the Year, the youngest-ever winner of the trophy.

Inter Terminals Sweden is collaborating with the Port of Gothenburg to introduce methanol bunkering services in the port by the end of 2023.

ABL Group has been appointed as a marine warranty surveyor for the transportation and installation operations on several Aker BP-operated offshore field developments located on the Norwegian Continental Shelf.

SailGP is to help bolster the numbers of endangered White's Seahorses in Sydney Harbour as part of its Local Impact Project in the city.

The hull of the first-ever inland hydrogen vessel has arrived in Rotterdam on board the heavy lift vessel 'Sun Shine'.

The British Ports Association has mapped out some of the most important pieces of legislation and regulation that affect ports and rated their suitability to the industry.

ARES Shipyard of Antalya, Turkey, has announced its entry into the superyacht industry after delivering a wide range of high-speed passenger and military vessels.

With the superyacht industry having doubled in the last decade, the Institute Marine of Engineering, Science and Technology (IMarEST) has launched a superyacht special interest group.

UK-based builder Princess Yachts has announced the latest edition in its S class series, the 25.43-metre Princess S80 yacht.

India bans oil tankers, bulkers older than 25 years to modernize fleet and cut emissions.

Safety Briefings

MAIB SAFETY DIGEST APRIL 2023 PUBLISHED

SAFETY DIGEST

Lessons from Marine Accident Reports

1/2023



The Marine Accident Investigation Branch has published the MAIB Safety Digest April 2023, the first of its two biannual publications featuring a wide selection of case studies.

Here is an extract from the introduction written by Andrew Moll OBE, Chief Inspector of Marine Accidents.

"Welcome to MAIB Safety Digest April 2023. In my opinion, this is the more important of the MAIB's biannual Safety Digests because it is published as the northern hemisphere emerges from winter. This is not simply an observation that the leisure boating season is about to start, though the digest does give us the opportunity to re-emphasise some good safety tips before going afloat. More to the point, anyone can be caught out as the air warms and layers of clothing are shed. Strong sea breezes that develop as the sun heats the land can add significant wind-chill that turns a pleasant day into a cold one, and anyone entering the water, deliberately or otherwise, will find the sea temperature is still very cold.

Case 12 interested me because it involves the failure of a component that was not the subject of routine maintenance or periodic replacement. Safety critical systems are full of such components; in this case it is a fuel actuator valve, but it could be a limit switch (see case 6), a pressure relief valve or any number of other items. Ships can be in service for 25 to 30 years and while many components are inspected, maintained and routinely replaced, others soldier on until they fail. When you have done all the easy jobs, start thinking about the onboard systems you take for granted, and what might happen if they were to fail suddenly. If you do find out the hard way, please let us know and we will include your story in these digests so others can learn from your experience."

Finally, the Reul A Chuain safety flyer, reproduced at the back of this digest, helps me make the point that it is too late to start thinking about man overboard procedures when you have someone in the water. One of MAIB's key safety messages for 2023 is not just to think about how you would recover an unconscious man overboard, but to actually practice it as realistically as possible. Put simply, if your risk assessment identifies a risk of falling or being knocked overboard, especially if one of the mitigations is wearing a personal flotation device, then should that occur the next task will be man overboard recovery. Putting a lifejacket on is easy; recovering a man overboard is not – please practice it. I hope you enjoy reading the MAIB Safety Digest April 2023 and, when you have finished, please pass the digest on so others can benefit too."



Download the Safety Digest at <https://bit.ly/3K8R1sn>. Or scan the QR code.

Photo credit: US Coast Guard



ADHERENCE TO INSTRUCTIONS FOR INFLATABLE BOATS IS CRUCIAL SAYS USCG SAFETY ALERT

The United States Coast Guard (USCG) has released a safety alert to address the importance of proper maintenance and adherence to manufacturer's recommendations for filling and/or inflating buoyancy chambers on some models of inflatable boats.

During a recent investigation of an incident that occurred involving foreign cruise vessel operations in the Antarctic, a US passenger was severely injured due to a Zodiac MILPRO model FC 580/MK5 keel bladder failure while underway on a sightseeing excursion. In calm weather, the keel bladder suddenly ruptured, sending the passenger several feet into the air before landing onto

the deck and sustaining serious injuries including a fractured femur. Another passenger was thrown overboard into the freezing water, risking hypothermia.

An investigation has identified that the keel bladder suffered a rupture due to excessive pressure in the tube. The recommended operating pressure by the manufacturer is 3.4 pounds per square inch (p.s.i) or 240 millibar pressure (mb). An on-scene survey of multiple inflatables on board the cruise ship noted pressures up to and exceeding 9 p.s.i. (620 mb) in other keel bladders. The keel bladder is not protected by a safety relief valve, and the manufacturer recommends that they be inflated with a foot pump to reduce the chance of overpressurization. However, crewmembers were routinely using an air compressor to fill the buoyancy chambers (including the keel tube) prior to the incident. In addition, pressure levels were not being checked using a manometer as recommended by the manufacturer.

The Coast Guard strongly recommends that operators of cruise ships and other companies employing inflatable boats:

- Review all manufacturer recommendations for inflatable boat filling and maintenance to verify those procedures are being followed prior to any boat operations including passenger excursions.
- Use manufacturer recommended inflation devices (e.g., a foot pump) and appropriate pressure measurement tools to avoid over-pressurization.
- Verify that company policy addresses manufacturer recommendations and that crews are properly trained before operating and performing maintenance on inflatable boats.
- Contact the manufacturer of your inflatable boats for any additional recommendations and/or training options they may offer.

ABS PUBLISHES GUIDANCE NOTES ON STRUCTURAL DIRECT ANALYSIS FOR HIGH-SPEED CRAFT

The American Bureau of Shipping has published the Guidance Notes on Structural Direct Analysis for High-Speed Craft. This document was issued on 1 April 2023 and became effective on the same date.

These Guidance Notes are an extensive revision of and supersede the ABS Guidance Notes on 'Dynamic Load Approach' and Direct Analysis for High-Speed Craft (February 2003). This revision is effective 1 April 2011.

These Guidance Notes provide information about the analysis procedure for Structural Direct Analysis, which is available to assess the strength of high-speed craft and light warships, patrol, and high-speed naval vessels.

In addition, they provide guidance to be followed when submitting required direct analyses or such analyses submitted in place of standard calculations.

Download the Guidance Notes at <https://bit.ly/3K3J5Zu>. Or scan the QR code.



REPORT bites

RightShip's data shows there were 2,400 incidents in 2022 where the location was recorded. Half of the incidents occurred for vessels in the ports and terminals environments, and most of those (813) were in ports and harbours when docked.

SeaFit, a project initiated by the Fishermen's Mission with the Seafarers Hospital Society, has been shortlisted in the 'Innovation of the Year' category for this year's Fishing News awards.

The UK National Boat Count has shown a 1.9% rise in boat numbers on the network across England and Wales with licence compliance now standing at 93%.

The Gothenburg Port Authority has announced that it will convert the M/S HAMNEN into an electric powered ship.

Solent University, Chartwell Marine and Newcastle Marine Services have joined forces to develop a new electric hydro-foiling high-speed ferry.

At noon on 10 April, adequately surrounded by tugboats at the port, the largest container ship in the world, MSC IRINA, capable of housing 24,346 TEUs docked at the container terminal of Nansha Phase II of Guangzhou Port.

UK based oil and gas major BP has launched the green hydrogen cluster of the Valencia region (HyVal) at its Castellón refinery in Spain.

Valenciaport has carried out a test flight of an electrically powered airship for security and traffic control.

Singapore-based shipping company Ocean Network Express (ONE) has launched a new tool that calculates carbon dioxide (CO2) emissions from the company's operating vessels.

Electric hydrofoiling pioneer Candela has raised \$20M to bring their 30-passenger electric hydrofoil shuttle to mass production and launch in Stockholm this summer.

Sir Michael Arthur, a member of the Royal Southampton Yacht Club, will take over the position of RYA Chair from Chris Preston after the RYA Annual General Meeting in November 2023.

Brunswick's Freedom Boat Club, the world's largest boat club operator, has announced a new location in Canet-en-Roussillon, France.

Safety Briefings



IMPROPER USE OF HEAT CABLES IS A FIRE HAZARD

The US Coast Guard (USCG) has recently investigated a fire on board an inspected towing vessel which resulted in the vessel suffering a loss of propulsion. The source of the fire was determined to be heat cables (also referred to as heat tracing cable or heat tape), which were improperly installed to prevent condensate from forming and freezing within hoses used to transmit compressed air for the vessel's air-operated engine throttle control system.

The heat cables were designed to be installed on fixed piping systems. They were not designed to be used on hoses or in applications which subjected the heat cables to movement. This installation had the heat cables wrapped around hoses connected to a retractable pilot house, which would move whenever the pilot house was raised or lowered. This movement subjected the cables to stresses from flexing and bending for which they were not designed.

USCG strongly recommends that vessel owners, inspectors, and third-party surveyors:

- Inspect the installation of all heat cables installed on board vessels to ensure they are designed, installed, and maintained in accordance with all manufacturer installation instructions and warnings. This includes strict adherence to bend radius limitations and the use of Ground-Fault protected electrical circuits.
- Heat tracing cables should be listed to meet UL 515 and in consultation with the cable manufacturer, be verified safe for both use in the marine environment and in the intended application on board the vessel³. This is critical to ensuring safe vessel operations and to protect personnel from electrical hazards, to include fire and electric shock.
- For heat cable installations involving vital systems (i.e., propulsion controls, steering systems), a review of potential vulnerabilities of the effected vital system should be conducted. Implement steps to minimize the risk of an unexpected failure of the vital system resulting from a heat cable failure or the Ground-Fault circuit protection tripping off-line
- Implement an inspection and maintenance program as required by the heat cable manufacturer's instructions. This typically requires insulation resistance readings taken post-installation, and at specified intervals to ensure the insulation is not breaking down. Heat cables with insulation resistances found below the manufacturer's specified values should be removed and replaced as soon as possible.

KEY ITEMS TO CHECK FOR ENHANCED FIRE SAFETY ON SMALL PASSENGER VESSELS

*Photo credit:
Tambrey Laine/Pasco County Sheriff's Office, via Associated Press*

Over the past year, fires on several small passenger vessels (SPVs) have highlighted the need for a renewed focus on fire safety, says the US Coast Guard (USCG) and consequently has issued a Marine Safety Information Bulletin to address key areas of concern.

USCG has initiated a focused self-assessment by owners and operators of all small passenger vessels, and a Coast Guard-led concentrated inspection campaign. The Coast Guard's concentrated inspection campaign will include additional inspections of some SPVs initially certificated prior to 1996 that carry 100 or more passengers.



The focus of the inspection aligns with the list below.

Owners and operators are encouraged to conduct their self-evaluation prior to the Coast Guard's scheduled attendance.

USCG advises owners and operators of all small passenger vessels to conduct an assessment of each vessel, using the following checklist:

- Review emergency duties with the entire crew to ensure everyone understands their role in the event of fire, flooding, man overboard, abandon ship, or other type of emergency. Regularly conduct training and drills to ensure each crewmember is familiar with the use of onboard firefighting, lifesaving, and safety systems.
- Review the frequency and content of crew training and drills. Ensure each event is logged.
- Review the vessel's Certificate of Inspection (COI) and ensure crewmembers are aware of the number of passengers permitted, minimum manning requirements, and operational limits such as route, safe speed, or weather conditions.
- Review procedures for recording passenger count. Ensure that the passenger safety orientation includes the location of emergency exits, survival craft, and ring life buoys; locations of and instructions for donning life jackets; and any other instructions pertinent to the particular vessel's operations. Consider conducting emergency escape drills with passengers, especially when they have access below the main deck.
- Ensure all firefighting and fire protection equipment is on board and operational including fixed suppression systems, portable extinguishers, fire doors, and smoke and heat detectors. Verify integrity of installed structural fire insulation.
- Ensure every means of escape is unobstructed, marked with "EMERGENCY EXIT, KEEP CLEAR," and can be operated by one person from either side, including in the dark.
- Ensure extension cords are used only in temporary applications and power strips are used sparingly. Identify lingering or outstanding electrical problems and provide a repair proposal to the local Officer in Charge, Marine Inspection (OCMI).
- Verify that flammable or combustible materials, such as cardboard boxes, rags, and garbage, are not stored near sources of heat, such as machinery, stoves, and space heaters. Remove any accumulation of oil, trash, and debris from bilges. Ensure stoves and surrounding areas are free of grease buildup.
- Ensure all written procedures, instructions, checklists, and manuals are accurate and used by the crew. Determine which onboard practices for operations, maintenance, emergency response, or training are not documented and create written procedures, instructions, checklists, or manuals.



RESCUE BOAT LIFTING ARRANGEMENT FAILURE

The Republic of the Marshall Islands (RMI) Maritime Administrator has recently been notified of a marine casualty which occurred aboard an RMI-registered ship's rescue boat that resulted in the injury of two crewmembers.

During a planned drill, the ship's rescue boat was being lowered to the water with two crewmembers aboard when the release hook support post failed. The rescue boat and two crewmembers fell about 9 meters to the water. The two crewmembers were quickly recovered from the water and transported ashore for medical treatment. Immediately prior to the incident, the rescue boat had been hoisted, swung over the side, and lowered several meters without anyone on board.

During the investigation, it was found that significant deterioration of the lower end of the support post for the release hook had occurred due to corrosion. The lower side of the release hook support post was below the deck and only visible following removal of a portable fuel tank.

The Jiangyin Wolong model "JY40KR" rescue boat involved in this incident was manufactured in 2008. No defects or issues were noted when the boat was tested in 2019 or in November 2022 during the last annual inspection. The Administrator recommends that owners, operators, and Masters of RMI-registered vessels fitted with Jiangyin Wolong "JY40KR" rescue boats thoroughly inspect the release hook and entire support post, including mounting hardware, for signs of deterioration.

Additionally, the Administrator recommends that owners, operators, and Masters ensure monthly inspections of life-saving appliances include thorough inspections of lifting arrangements for all onboard lifeboats and rescue boats with specific emphasis on hidden or hard to access components.

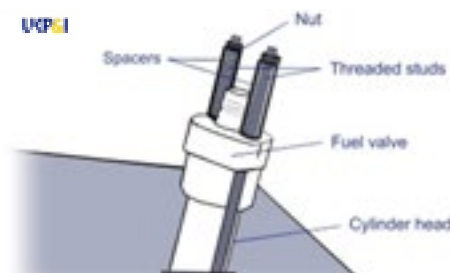
ABS RELEASES PORT STATE CONTROL DEFICIENCIES FROM QUARTER 4 IN 2022

Port State Control inspections have proven to be an effective tool for eliminating substandard vessels that may be in operation, which may impact maritime safety and the marine environment.

A ship is regarded as substandard if the hull, machinery, equipment or operational safety and the protection of the environment is substantially below the standards required by the relevant conventions or if the crew is not in conformity with the safe manning document.

Evidence that the ship, its equipment, or its crew do not comply substantially with the requirements of the relevant conventions or that the master or crew members are not familiar with essential shipboard procedures relating to the safety of ships or the prevention of pollution may be clear grounds for the PSC inspector to conduct a more detailed inspection. Good ship and crew preparation is always essential, in keeping up to date with all International, National and Port State requirements.

Download the full report at <https://bit.ly/3ZNo238>. Or scan the QR code.



UK P&I CLUB RELEASES VIDEO ON CORRECTLY SECURING FASTENERS AFTER AN OVERHAUL

The Loss Prevention team at the UK P&I Club has produced its latest 'Inside Ship' animated training video, focused on correctly securing fasteners to prevent equipment failures during an overhaul.

The proper installation of fasteners is essential to avoiding preventable engine room incidents. Threaded studs have a variety of critical uses on board, including to secure engine fuel injectors, pumps and monitoring instruments in place. If these studs are incorrectly fastened, they can stretch beyond their elastic limit and shear. This can lead to engine room fires, potentially immobilising the vessel, causing significant damage and presenting a danger to crew.

The Club's on board risk assessments have revealed most fastener-related failures can be traced back to human error. Use of incorrect fasteners, overtightening, poorly calibrated tools or only tightening fasteners by hand after an overhaul have resulted in preventable incidents.

View the video at <https://vimeo.com/799412822>.

OUTBOARD ENGINE FIRE CAUSES YACHT TO SINK

Now, a Marine Casualty Investigation Board (MCIB) report is recommending that racing yacht owners should ensure their auxiliary engines provide the necessary power for their craft to make a safe passage. In addition, the MCIB says risks associated with refuelling outboards at sea need to be highlighted.

The Beneteau First Class 8 (FC8) yacht, Black Magic, was motor sailing using a 3hp outboard and mainsail, on route from Crosshaven, Co Cork to Kinsale Harbour for winter lay-up in December 2021. The owner and skipper of the yacht the sole person onboard for the approximately 19-mile passage.



The report states that around 15 minutes after refuelling the outboard, the skipper saw flames coming from the outboard.

The fire rapidly spread to spare drums of petrol that were in the cockpit. The skipper, who was afraid he would be trapped if he went into the cabin if the petrol tanks exploded, went up to the bow area and made a MAYDAY distress call. He was picked up by a fishing vessel, and the yacht, which was destroyed by the fire, sank.

The MCIB report states that the yacht had been bought by her new owner six months previously and had been raced in Cork Harbour. The report concludes that the engine had not been serviced recently and was likely to have suffered a significant mechanical failure.

In addition, while achieving the speed necessary to deliver the yacht to its appointed destination on time, the engine was operating at the upper limits of its mechanical and power operating envelope and its sub-optimal capacity was a contributory factor to the loss of the yacht, together with spilled fuel from the refuelling operation.

The report states that 10hp is the recommended minimum horsepower for a yacht of Black Magic's size.

Risks associated with dirty engine room bilges

The Shipowners Club would like to highlight the potential hazards associated with oily engine room bilges and the checks and steps that a ship's crew should undertake to assist mitigate the associated possible issues. It is common for bilge water to accumulate during the routine operation of machinery in the engine room spaces. However, engine room bilges contaminated with oil can pose hazards if not managed properly and could indicate a wider problem on board.

Bilge water can accumulate due to air condensation in the machinery space, condensation from air systems (such as air conditioning equipment, air compressors, compressed air vessels etc.), and the routine cleaning of the surrounding and connected areas. However, if the machinery, associated pipelines, and valves are not well-maintained, the associated leakage may seep into and contaminate the bilges.

A bilge filling up with oil or water could also be a tell-tale sign of a more significant problem, such as a leaking propeller shaft, stern seal, or cracks in the hull or tank bulkheads.

Associated Risks

- Fire – While an oily bilge may not be the immediate source of a fire, any fire that arises in an engine room or machinery space can escalate and spread rapidly. The presence of oil accumulated in bilges or drip trays acts as additional fuel to sustain burning and increases the likelihood of the fire reaching other areas. Rags that may be used to clean oily bilges if not disposed properly may further increase this risk.
- Pollution – Bilge water can be contaminated from various sources, such as oil leakage from machinery, sediments or cleaning agents used for machinery space cleaning. Contaminated bilge water, if not appropriately managed, can pose a pollution risk if the international/ local requirements on the discharge of bilge water are not complied with.

- Detention and fines – Port State Control officers increasingly classify oily bilges as a detainable deficiency. Illegal discharge of bilges may subject the vessel to heavy fines and the potential for the crew to face charges, including imprisonment.
- Machinery breakdown – Various leakages in the machinery, pipelines and valves may be signs of poor maintenance or an inherent failure which may lead to machinery/equipment breakdown.

Best Practices

- Engine room bilges should always be kept clean and free of oil.
- Engine room bilges should be painted in a light colour to visually assist in identifying a fresh leak.
- Chemical cleaning should be carried out periodically. On vessels fitted with an Oily Water Separator (OWS), the chemical used should be confirmed as compatible.
- Any identified source of any oily water in the bilge should be thoroughly investigated.
- Machinery, equipment, pipelines and valves should be periodically inspected and maintained as per Planned Maintenance System (PMS) and Manufacturer's Instructions.
- The OWS overboard discharge valve should be secured in the closed position with an appropriate notice clearly posted to warn against unauthorised opening.
- Proper recordkeeping of the transfer, discharge, or disposal of bilge water should be maintained.
- The Safety Management System / ship-specific procedural system should allow for periodic checks on the engine room bilges and written procedures regarding oily bilge transfer and discharge operations.

NEW EMSA CARGOSAFE STUDY INVESTIGATES RISKS FROM CARGO FIRES

Based on a safety risk study on containerized cargo fires, the European Maritime Safety Agency (EMSA) has released the CARGOSAFE study, with the goal of identifying cost-effective risk control options for cargo fires. It assesses the dimensions of the problem for both existing ships and newbuilds.

The CARGOSAFE study examines the risks associated with fires on container ships and evaluates measures to control these risks in terms of prevention, detection, firefighting, and containment. CARGOSAFE follows the Formal Safety Assessment (FSA) structure for use in IMO rule-making process. A dedicated risk model has been developed to assess the risks for the loss of life, cargo, ship, environment, and salvage. Finally, the study presents the results of a cost-effectiveness assessment (CEA) of the identified Risk Control Options (RCOs) for three generic ship types (feeder, twin island, single island).



Definition of the problem

The high-risk areas which need to be addressed according with each protection layer are:

- Prevention: reduce the fire occurrence, particularly in relation to the misdeclaration/undeclaration or dangerous cargo.
- Detection: detected sufficiently early to try a local extinguishment by crew or release a first shot of extinguishing agent.
- Firefighting: extinguishing or at least control the fire in the hold of origin for a long period of time.
- Containment: control the fire at the bay of origin or the bay above the hold of origin.

Fires on containerships, in particular originating in containers, have gained increasing visibility in the last five years, even though cargo fires are already a known characteristic accident occurrence for such ship types. The increased attention to cargo fire accidents is well aligned with an increase in the size of these ships, with a fleet which has seen a close to 30% capacity increase in the VLCS and ULCS categories over the last two years.



Download the study at <https://bit.ly/3KcAow7>. Or scan the QR code.

THE IAN NICOLSON LECTURE

The Ian Nicolson Lecture Live on 13 April 2023, broadcast from IIMS HQ at Murrills House, drew a large audience and they were not to be disappointed. Defying his age, Ian spoke enthusiastically for a couple of hours about his 78 years as a marine surveyor using over 40 delightfully hand-drawn sketches to depict his talk. His anecdotes delighted those online as he dispensed a range of helpful tips and plenty of advice acquired over his career.

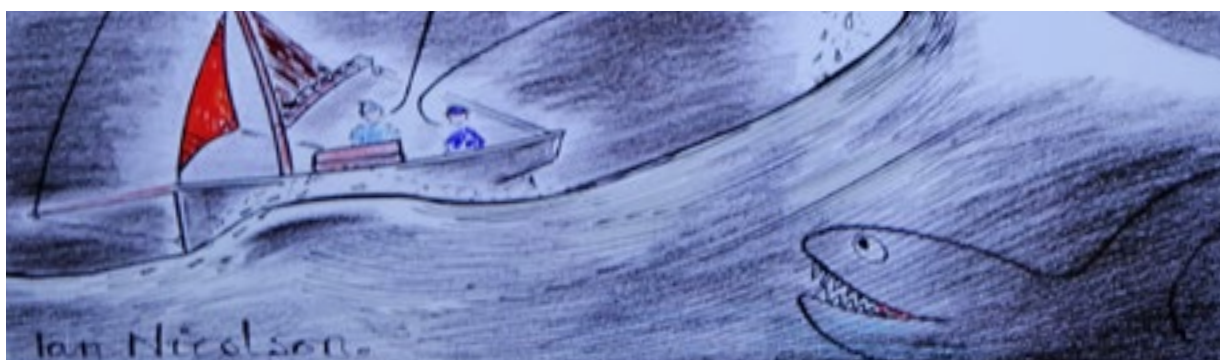
Ian's observation that a surveyor can realistically only inspect 50% of a boat as a general rule, given that much of the vessel is inaccessible or hidden by panels and so on, was an interesting comment. And because of that, he stressed the need to do a very thorough job each and every time on the 50% of the vessel that was accessible for survey.

Ian is pictured below being presented with an Honorary Fellowship by Geoff Waddington HonFIIMS.

The lecture was recorded, and a copy of the video is available to purchase for £35.

Ian was joined in the room by his daughter and son, Beth and Richard.

Full details can be found at <https://bit.ly/3L1K64O>.





2023 Annual General Meeting



Notice is hereby given that the Institute's 2023 Annual General Meeting will be held on Wednesday 7th June 2022 at 08.30 (UK London time).

VENUE

In-person at the Axis Conference Centre,
3 Venture Road, Chilworth,
Southampton, Hampshire, SO16 7NP
and broadcast online via Zoom

AGENDA

- 1) Apologies
- 2) Minutes of previous AGM held in June 2022
- 3) President's Report (Peter Broad)
- 4) Chief Executive Officer's Report (Mike Schwarz)
- 5) Directors' Reports
- 6) Pre AGM election voting results on
 - a) Management Board re-election en-bloc
 - b) Proposed fee structure for 2024 membership
- 7) Fellowship & Honorary Membership awards
- 8) Any Other Business

FINAL CALL: One day essential IIMS hybrid Conference at Southampton on 7th June 2023

The Institute is ready to deliver a first-class event for the benefit of members (and others who would like to join) on Wednesday 7th June. The range of topics to be covered is impressive and extensive, relevant to surveyors no matter which branch of the sector you work in. Sadly, it is too late now to join us in person, but you are welcome to attend as an online only delegate. If you have yet to reserve your place, please go to <https://bit.ly/3ju8PFc>.

The cost for the day's proceedings is just £95 and we will make all the videos available for delegates after the event as part of the deal.

There have been a few amendments to the original schedule, but here is what we have to offer you.

10.50 - 11.00	President's opening address by Peter Broad
11.00 - 11.15	Ten achievements that IIMS should be proud of by Mike Schwarz
11.15 - 12.05	Plenary session 1: What you need to know about lithium-ion batteries and thermal runaway by Ian Bartle
12.05 - 13.00	Plenary session 2: 10 key corrosion considerations for marine surveyors by Dr Mike Lewus

13.00 Lunch **Buffett assortment lunch provided**

Room 1

***Presentations and discussions
for Yacht & Small Craft Marine Surveyors***

13.45 - 14.25	Q&A session by Sir Robin Knox-Johnston
14.25 - 15.10	Electrical surveying from an electrical engineer's perspective by Paul Madeley

15.10 Afternoon coffee and tea

15.25 - 16.10	The surveyor's duty of care by Karen Brain, Matrix Insurance
16.10 - 16.40	Join your fellow surveyors in Room 2 for an open forum discussion hosted by Mike Schwarz and Peter Broad

Room 2

Presentations for Commercial Ship Marine Surveyors

13.45 - 14.20	Developing Technologies and Practices Within Commercial Marine Surveying by Mike Wall
14.25 - 14.55	Update on the progress with autonomous shipping by Alexandros Ntovas and George Alexios Ntoules

14.55 Afternoon coffee and tea

15.05 - 15.45	Buyers' perspective when appointing a marine surveyor by Per Åge Nygård, Norwegian Hull Club
15.45 - 16.10	Future challenges for marine survey by Jeff Wilson
16.10 - 16.40	Open forum discussion hosted by Mike Schwarz and Peter Broad

Close

The link to reserve your place online once again is <https://bit.ly/3ju8PFc>.

If you prefer not to use the secure online booking system, please email Vicki Loizides at education@iims.org.uk or call her on +44 23 9238 5223.

The event is generously supported
by **Matrix Insurance Ltd.**
www.matrix-ins.co.uk



INLAND WATERWAYS SURVEYORS MEET NEAR NOTTINGHAM

A small group of ten narrowboat surveyors gathered at Redhill Marina, Ratcliff-on-Soar in Nottinghamshire during early May for a day's training and education. As well as some classroom based training, including studying the potential impact of lithium-ion batteries on narrowboats, those present were able to look around some newbuilds and a painting facility too.

Keith Meadowcroft, Voltmaster Systems spoke at length and knowledgeably about lithium-ion battery technologies. He was followed by Tom Keeling. He presented the results of his survey into gas installations with some quite shocking findings which he plans to share with readers in a future edition of The Report.

Jeremy Greenwood from Tristar, based on site, gave those present a glimpse of a lithium-ion battery installation currently being installed on a narrowboat.



NEW HANDY GUIDE: What a marine surveyor needs to know about things you see on survey (and can't quite always believe)...

By Geoff Waddington, IIMS Past President

Over the years, he has seen some absolute shockers in the course of his work, which has led to him writing this handy guide to share some of what he has encountered with the surveying profession. Essentially a book comprising photographs taken over the years, Geoff has added short comments to give context to the images and to explain what is going on.

As Geoff advises anyone involved in undertaking marine survey work, "You should behave like a forensic scientist or investigator looking for clues at the potential scene of a crime. You must use all the available means at your disposal to draw a picture of what you may be facing and remember if you fail to find any signs of hull blistering, or serious defects, this does not preclude the possibility of these being present somewhere, or from arising in the future."

The book extends to 148 pages. The handy guide is available at £25 + P&P in paperback or £22 in electronic pdf format. For more details go to <https://bit.ly/41LtGE8>.

Retrospective Report Writing Review Service launched by IIMS

One of the biggest challenges for any marine surveyor is to produce a clear, well laid out, timely, and factual report containing unambiguous findings and clear recommendations for the client.



For some, report writing remains a bit of a dark art. Sadly, IIMS continues to receive complaints, more often than not as a result of a poorly crafted report rather than a lack of technical knowledge. Additionally, the Institute sees too many reports that could do with some improvement and polishing up.

The surveyor's report is his/her end product and intellectual property; if done effectively, it could secure future business from those who read it.

Mike Schwarz, IIMS Chief Executive Officer, said, "Let's be clear. All of us can further improve the reports we write and reaching out for a second opinion and some constructive criticism from a fellow professional is not something to be ashamed of; and as they say, 'every day's a school day'."

After internal discussion, IIMS has decided to launch a retrospective report writing review service, with the aim of assisting any member, no matter what grade of membership they hold, who would like help.

Reviews will only be undertaken by members of the IIMS Professional Assessment Committee (PAC). It is members of the PAC who review each and every application before membership is granted. They are experienced marine surveyors at the top of their game.

The findings of each review will be kept confidential between the member and the reviewer.

Clearly having not personally inspected the vessel, the reviewer cannot be expected to (and won't) make comment on the technical findings in the report. However, if the reviewer feels there is a lack of technical content/detail on a critical part of the vessel, that will be pointed out. This is about providing constructive feedback and criticism.

The key components of the independent review are:

- to assess the length of the report;
- to review the use of photos;
- to comment on the language and grammar;
- to review the style and layout;
- to comment on how well the findings and recommendations are shown;
- and to assess the executive summary.

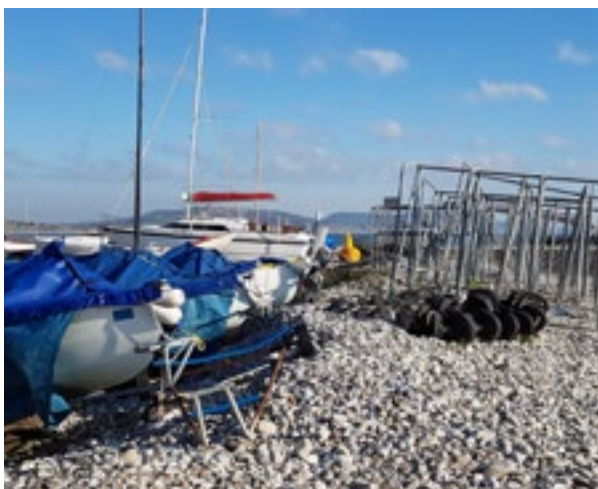
This service is only available to reports written in the English language.

Members may submit up to three reports for review by an IIMS PAC member. The pricing structure is:

1 report for review £70 | 2 reports for review £120 | 3 reports for review £150

If you are interested and would like to discuss this further, please email Camella Robertson, Membership Secretary at membership@iims.org.uk or call on +44 23 9238 5223.

Disclaimer: IIMS cannot be held liable if any advice or feedback given by a reviewer is used that later becomes the subject of a litigation claim against the member.



NEW 4 DAY RESIDENTIAL PRACTICAL SURVEYING COURSE FOR YACHT AND SMALL CRAFT SURVEYORS

IIMS recognises that for some with less or limited marine surveying experience, especially those who have completed a Professional Qualification with the Institute, actually undertaking those early surveying jobs can be daunting. Am I inspecting this boat correctly and in sufficient detail and is my report up to scratch are just two of the major concerns a surveyor will face?

IIMS is planning to launch a new 4 day residential programme, (subject to demand), which will run at the Boat Building Academy in Lyme Regis from 13 to 16 November 2023. The key aim is to offer delegates a mix of theory and practical surveying with the final test being to write a report on a boat that has actually been inspected earlier in the week. Senior surveyors will be on hand to assist delegates as they inspect and survey the boats.

The plan is to spend two days surveying two different boats in the Lyme Regis area. A further day will be turned over to detailed report writing tuition plus a review of the surveyor's tool kit.

The cost for the training programme is £650 (no VAT) or £995 (no VAT) to include 4 nights' accommodation. Food and drink are at own cost.

At this stage IIMS is asking those interested in attending to register their expression of interest to participate. Depending on the numbers, a decision will be made whether to proceed or not.

To register your interest please use the online form at <https://bit.ly/3OaIY36>.

The Boat Building Academy in Lyme Regis offers a selection of practical courses in traditional skills, including wooden boatbuilding. More information is available at <https://boatbuildingacademy.com/>.

VISIT THE IIMS STAND AT SEAWORK

IIMS will once again be exhibiting at the annual Seawork show in Southampton from 13 to 15 June.

Seawork is Europe's largest on-water commercial marine and workboat exhibition. Marine Civils is co-located with Seawork.

Every year this valuable meeting place for the commercial marine and workboat sector hosts launches, demonstrations, new vessels and the latest equipment. If you are coming to the show do pop by and meet some of the IIMS team who will be pleased to welcome you to Stand P103.

For more information about the event go to <https://seawork.com/>.



RECENT NEW IIMS MEMBERS

Full members

Dameon Clark	MIIMS	UK
Ian Michael Knowles	MIIMS	Japan
Christopher Kuzmierz	MIIMS	USA
Heath Mabbett	MIIMS	New Zealand
Jatinder Singh	MIIMS	India
Ramanbir Mangat	MIIMS	Canada

Graduate members

Jeremy Greenwood	GradIIMS	UK
Peter Langmead	GradIIMS	Zambia

Associate members

Mustafa Aksut	AssocIIMS	Canada
Wai Tak Poon	AssocIIMS	Hong Kong

Affiliate members

Alex Segall	AffiliIIMS	Columbia
Domagoj Vakante	AffiliIIMS	Croatia

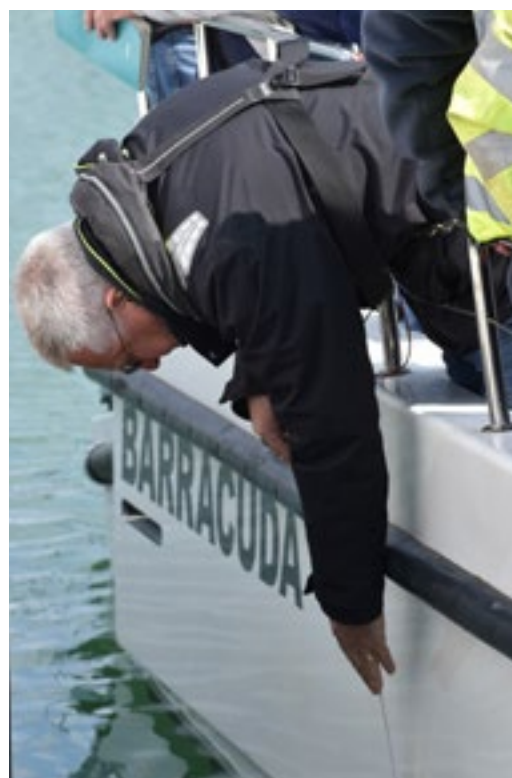
Technician members

Charles Hazouri	TechIIMS	USA
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IIMS congratulates Jeremy Greenwood and Peter Langmead for completing their studies in the **IIMS Professional Qualification in Yacht and Small Craft Marine Surveying**

IIMS STABILITY TRAINING DAY - HASLAR MARINA, GOSPORT, APRIL 19 2023

It has been a number of years since IIMS has been able to organize a practical stability training day, partly because finding boats to heel with the owner's permission is not always straightforward. A group of 20 surveyors came to Haslar Marina to participate in the event on what turned out to be a kind weather day. After a short theory session conducted by IIMS Certifying Authority Chairman, Fraser Noble, the group headed out on to the pontoons to heel, measure and record the data of two vessels. All seemed to agree that it had been a valuable experience.



THE IIMS WESTERN MEDITERRANEAN LARGE YACHT AND SMALL CRAFT WORKING GROUP

The return of the Western Med Working Group, which took place during late April in Palma, caused something of a stir amongst surveyors on the island of Mallorca, for it has been some time since this event has been possible. A good number of delegates joined the group and were treated to the most fascinating series of presentations.

It is always good to get the perspective from a broker and Anja Eckart, a broker with Flensburger Yacht-Service, gave a forthright presentation. Felix Bussman tackled the scary topic of lightning strikes and their after effects. The results of an extensive two-year laboratory test on the removal of ceramic coatings were presented by Claire Steel of Cerashield, who was joined by Alejandro Expósito from Optimiza. IIMS friend, Karen Brain, came to the meeting remotely to give an update and to present her opinions on report writing software. Perhaps the most topical presentation of the days was given by David O'Neill, AkuPalma Energy Solutions who gave a technical overview of lithium-ion battery technology and installation.



Seafarers desperately need training to handle explosive lithium-ion batteries

By Captain Simon Hodgkinson

Simon Hodgkinson, Head of Loss Prevention at West P&I, believes dedicated courses are a must to safeguard mariners' lives as well as others who may be onboard, including marine surveyors!



Transporting potentially explosive lithium-ion batteries on vessels is a dangerous business, as incidents in recent years have shown. An investigation by the United States Coast Guard into a freight container that caught fire on a US highway in 2021 attributed the blaze to a batch of lithium-ion batteries. The cargo ignited while enroute to the Port of Virginia, where it was to be shipped to China aboard a container vessel.

The dangers of carrying lithium-ion batteries on ships has been highlighted in an Allianz Global Corporate & Speciality report, which ranks fire and explosion as the number one cause of marine insurance losses by value from 2017 to 2021. The research, issued in November 2022, also reveals the growing threat of fires caused by lithium-ion batteries that are not stored, handled or transported correctly.



Crews do not have a standard approach for quelling a blaze originating from a lithium-ion battery

In damaged lithium-ion batteries, individual cells are prone to overheating, expelling flammable and toxic gases, and affecting surrounding cells as part of an explosive chain reaction called thermal runaway. While such perils have been widely reported, there is little talk in the maritime industry about the inconsistent training methods for dealing with fires caused by lithium-ion batteries onboard vessels.

The biggest concern is that firefighting crews do not have a standard approach for quelling a blaze originating from a lithium-ion battery. Some firefighters

recommend throwing a blanket over the fire, while others suggest plunging a burning electric vehicle into a huge tank of water. The lack of consensus on how such fires should be dealt with means that few, if any, STCW firefighting training programmes cover lithium-ion batteries. That creates a gap in expertise, making it incredibly difficult to know what type of training seafarers should receive.

It also puts the lives of crewmembers – many of whom have limited knowledge about thermal runaway and the warning signs before an electric vehicle battery explodes or ignites – at risk. Without training, seafarers cannot be expected to attempt to prevent damaged lithium-ion cells from creating a thermal runaway chain reaction, which could spark an electric vehicle fire so

powerful that it would need 150,000 litres of water to extinguish.

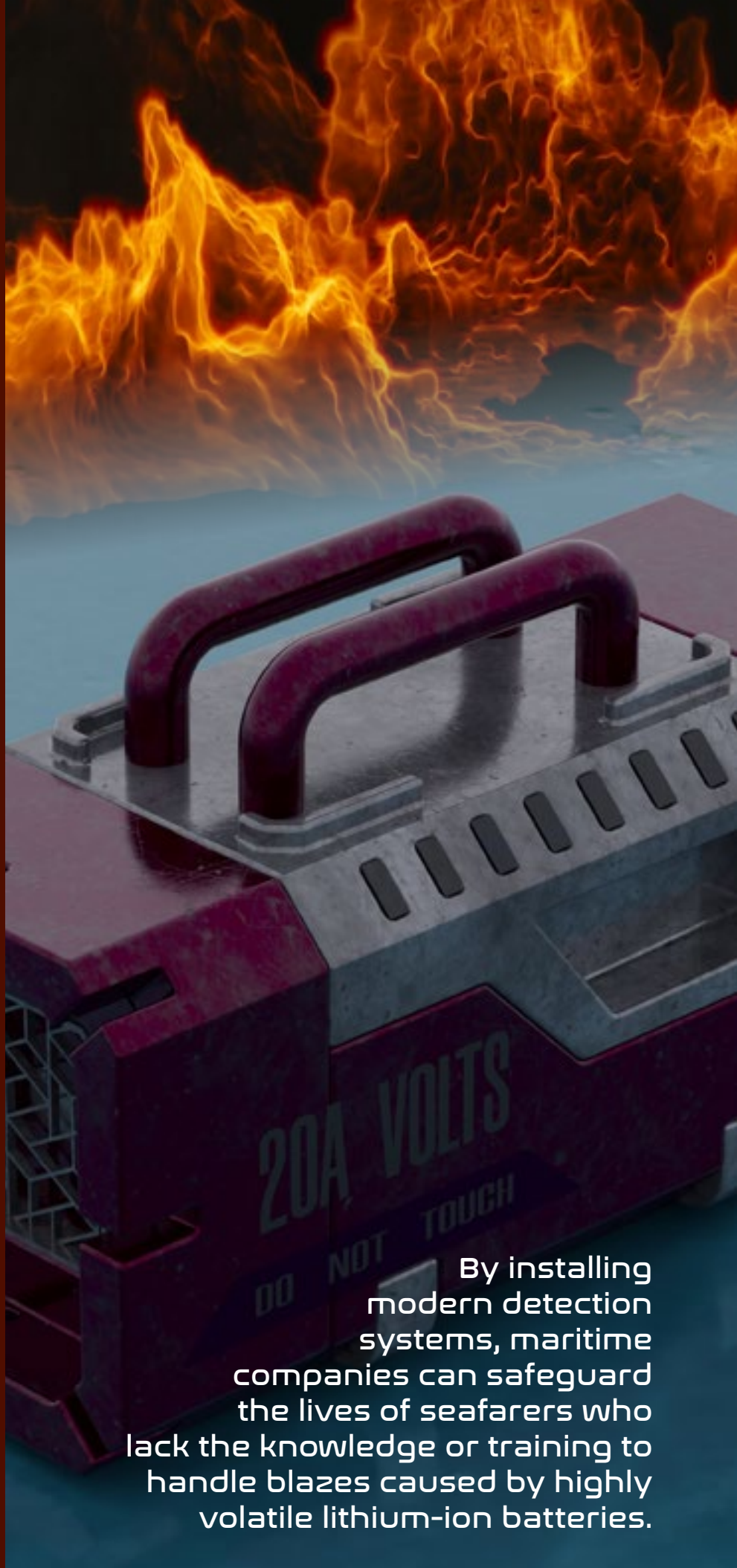
In the near-term, modules that address the dangers of lithium-ion batteries should be added to existing STCW firefighting courses. We then need specific training programmes set up globally and run by experts who can teach seafarers how to deal with this potentially life-threatening hazard.

Establishing what type of training mariners need is the first challenge. The next is ensuring vessels have the right equipment on board to handle a lithium-ion battery fire in line with what they have been taught. For example, crew members may learn that the best approach for dealing with a burning electric vehicle is to submerge it in a tank of water. But what is the point in teaching them this if the ship lacks the right kit or machinery for doing that safely?

Another issue is that electric vehicles are loaded onto carriers in the same way as cars with combustion engines. Petrol or diesel cars that ignite are relatively easy to deal with as each tank has a small amount of fuel that will quickly burn out. With electric vehicles, each lithium-ion battery needs about 50% charge to ensure it does not go flat while being shipped.

Loading electric vehicles with lithium-ion batteries, each carrying a substantial amount of energy, in the same way as standard cars is recipe for a potential catastrophe. If one battery ignites, it can cause a chain reaction, sparking a huge blaze that mariners will struggle to contain. As part of any training courses, specialists need to think about how electric vehicles are loaded onto car carriers and whether crew members have enough room around burning vehicles to contain the blaze.

A definitive solution for dealing with lithium-ion batteries that overheat, catch fire or explode will likely come from chemistry experts or firefighters. Until that happens, our advice to shipowners and operators is to invest in the latest fire-protection systems such as infrared cameras and heat sensors that can detect issues before a thermal runaway occurs. By installing modern detection systems, maritime companies can safeguard the lives of seafarers who lack the knowledge or training to handle blazes caused by highly volatile lithium-ion batteries.



By installing modern detection systems, maritime companies can safeguard the lives of seafarers who lack the knowledge or training to handle blazes caused by highly volatile lithium-ion batteries.

ChatGPT: The AI chatbot that has the power to change the way marine surveyors work



By Mike Schwarz, IIMS Chief Executive Officer

The one thing we know for sure is that in this modern digital world, things never stand still for long and there is always something bright, shiny and new coming along to challenge us, threatening to change the digital landscape and the way we operate for good.

ChatGPT is one such innovation. Perhaps you have already heard about this phenomenon, or maybe it is completely new to you. As a business acquaintance said to me when I asked her about it, “No idea Mike what you are talking about, can I phone a friend?” she asked. So, don’t be too harsh on yourself if ChatGPT has passed you by thus far!

Although ChatGPT was only launched to the big wide world in November 2022, in the first few weeks it was said to have gained 100 million users. Indeed, so busy were their servers that getting on to the platform proved difficult for me and I had to try repeatedly, (such was the interest), although that has eased now. A couple of friends and marine surveyors drew my attention to the platform initially.

So what is exactly is ChatGPT, what’s the buzz and where do the concerns lie?

(Content in italics adapted from Wikipedia)

ChatGPT is an artificial intelligence chatbot developed by OpenAI. It is built on top of OpenAI’s GPT-3 family of large language models and has been fine-tuned using both supervised and reinforcement learning techniques. ChatGPT has quickly garnered attention for its detailed responses and articulate answers across many domains of knowledge. Its uneven factual accuracy, however, has been identified as a significant drawback. GPT-4, the newest OpenAI model, was released on March 14, 2023.

Features and limitations

Although the core function of a chatbot is to mimic a human conversationalist, ChatGPT is versatile. For example, it can write and debug computer programs, compose music, teleplays, fairy tales, and student essays; answer test questions (sometimes,

depending on the test, at a level above the average human test-taker); write poetry and song lyrics; emulate a Linux system; simulate an entire chat room and play games like tic-tac-toe.

Limitations

ChatGPT suffers from multiple limitations (for now). OpenAI acknowledged that ChatGPT “sometimes writes plausible-sounding but incorrect or nonsensical answers”. This behavior is common to large language models and is called artificial intelligence hallucination.

ChatGPT has limited knowledge of events that occurred after 2021. According to the BBC, as of December 2022, ChatGPT is not allowed to “express political opinions or engage in political activism”. Yet, research suggests that ChatGPT exhibits a pro-environmental, left-libertarian orientation when prompted to take a stance on political statements from two established voting advice applications.

Assuming I have not completely lost you at this point, there are a couple of clues in the above text that might help you to understand the concerns. The Professional Qualifications that IIMS delivers by distance learning are assignment based. Let's assume an unscrupulous student uses ChatGPT to cheat and create the content for his/her assignment. We then run it through our internal IIMS plagiarism checker and, lo and behold, it says the content is original material; and indeed it is original material generated by ChatGPT. How can we be sure the assignment is the student's own original work? And how much, if anything, has the student learned about the topic if his/her assignment has been generated by a chatbot? Myself and two colleagues asked ChatGPT the same question and it came back with three different answers generating original content each time and factually correct in each case.

Of course, this is not just a concern for IIMS. Think of the potential consequences for teachers marking students' homework, or academics and University Professors assessing a detailed degree thesis. Has it been produced by the student or by artificial intelligence? At this time these are major concerns for educators across the globe.

In February 2023, these mounting concerns prompted the University of Hong Kong to send a campus-wide email to instructors and students stating that the use of ChatGPT, or other AI tools, is strictly prohibited in all classes, assignments, and assessments at the university. Any violations will be treated as plagiarism by the university unless the student obtains the prior written consent from the course instructor. An interesting development.

And others have weighed in with their comments too. Here's just a small selection

- Kevin Roose of The New York Times labelled ChatGPT "the best artificial intelligence chatbot ever released to the general public".
- Samantha Lock of The Guardian newspaper noted that it was able to generate "impressively detailed" and "human-like" text.

- Technology writer Dan Gillmor used ChatGPT on a student assignment, and found its generated text was on par with what a good student would deliver and opined that "academia has some very serious issues to confront".
- Kelsey Piper of the Vox website wrote that "ChatGPT is the general public's first hands-on introduction to how powerful modern AI has gotten, and as a result, many of us are stunned" and that ChatGPT is "smart enough to be useful despite its flaws".
- Stuart Cobbe, a chartered accountant in the UK, decided to test ChatGPT by entering questions from a sample exam paper on the ICAEW website and then entering its answers back into the online test. ChatGPT scored 42 percent, which, while below the 55 percent pass mark, was considered a reasonable attempt.

Before considering what direct impact this might have on the marine surveying and maritime world at large, let's consider the upsides and downside of ChatGPT.

The positives **Here are the potential benefits of ChatGPT:**

- ChatGPT provides specific responses to user queries and questions.
- Follow up questions and prompts. ChatGPT can answer follow up questions and prompts as you continue an ongoing dialogue with it, giving you more understanding on the original question you asked.
- Admits its mistakes. If something goes wrong, ChatGPT seems to recognise that, will admit its mistakes and helps you get to the right answer.
- Reject inappropriate requests. ChatGPT is designed to filter out inappropriate language and requests.
- User-friendly. Chatting with ChatGPT seems no different to speaking with another human and provides fluid and accurate replies. It is user-friendly, composes its replies the way

a human might and has an intuitive interface.

- ChatGPT is multilingual. The software can detect for dialogue in 73 different languages and can provide intelligent answers in the language of the user.

The negatives **The drawbacks and disadvantages of ChatGPT:**

- ChatGPT is designed to generate plausible conversations based on what it's learned from training data, but sometimes it can return answers that don't make any sense or are totally inaccurate.
- Monitoring for misuse. The use of natural language processing could be considered a double-edged sword. While it allows the system to follow instructions, it can also be convenient for misusing it too. If users give instructions to generate unsafe responses, ChatGPT may not be able to identify those instructions and could process them.
- Lack of knowledge and making up facts. At this time ChatGPT has no data beyond September 2021 so cannot deal with topical questions. ChatGPT is only as accurate as the data it's fed. If the data is outdated or insufficient, it can lead to inaccurate responses and even complete falsehoods.
- Lack of quality control. Quality control is difficult to implement when using ChatGPT. Since it is simply generating text based on what it is told, it is unable to understand any nuances or levels of quality.
- ChatGPT cannot be used in all situations. For complex tasks involving reasoning or explanation, it is not suitable.
- Since ChatGPT is modelled on natural language processing, the AI is not sophisticated enough to understand the user's moods or facial expressions. Similarly, its accuracy in detecting and responding to the user's intent is relatively low.

Despite the drawbacks to the platform, it will almost certainly improve and change rapidly as the system is further developed and improved.

So how does this play out in the world of marine surveying and the wider maritime world? Let me start by quoting from a frankly staggering and frightening article entitled "Ship captain believes ChatGPT told him to change course" written by John Konrad that was published on the gCaptain website.

Here's an extract from the article:

"gCaptain has obtained a troubling report from an American captain, who claims that a shipowner utilized an AI bot, potentially ChatGPT, to suggest modifications to the ship's voyage plan. While the captain chose not to adhere to the recommendations, they are concerned that others may not exercise the same caution.

"The captain composed a message with his concerns and emailed it to the shipowner for guidance. The captain received a quick reply. He informed gCaptain that the first and final paragraphs of the message contained pleasantries and appears to be written by a human, but the advice on how to mitigate risk "sounds like an AI wrote it". This message included advice that would have required a course change during the voyage.

"At this point, it's difficult to prove the message was created by an AI, but it's certainly in a style similar to that produced by AI."

You can read this disturbing article in full at <http://bit.ly/40dIMmj> and I recommend you do.

It will not surprise you to learn that I have personally tested ChatGPT partly for business use, but also for fun by asking it to write poems and indeed it delivered beautifully crafted and linguistically impressive verse which I could never have managed.

I'd like to share with you some of the recent conversations I have had with ChatGPT.

Mike asked:

Please tell me something about the marine surveying profession.

ChatGPT replied:

Marine surveying is the profession of inspecting, assessing, and evaluating marine vessels, cargoes, and equipment for a variety of purposes, including safety, compliance with regulations, and insurance coverage. Marine surveyors are typically employed by shipowners, insurance companies, government agencies, and other maritime entities.

The primary goal of a marine surveyor is to ensure that a vessel or piece of equipment is safe and seaworthy for its intended use. They conduct inspections and tests to verify that the vessel or equipment meets the relevant standards and regulations. They may also investigate accidents and incidents to determine the cause and recommend preventive measures.

Marine surveyors can specialize in a particular area of expertise, such as cargo, hull and machinery, or yacht surveying. They may also work in different types of environments, including shipyards, ports, offshore installations, and marine insurance offices.

To become a marine surveyor, one typically needs a degree in naval architecture, marine engineering, or a related field, as well as several years of experience in the maritime industry. Professional certifications and licenses may also be required.

Overall, the marine surveying profession plays a crucial role in ensuring the safety and efficiency of the maritime industry.

Mike asked:

Who can practice as a marine surveyor?

ChatGPT replied:

Marine surveyors are professionals who inspect and evaluate boats, ships, and other watercraft to assess their condition, safety, and compliance with applicable regulations and standards. The qualifications and requirements to practice as a marine surveyor can vary depending on the specific type of surveying being performed and the jurisdiction in which the work is taking place.

In general, however, marine surveyors typically need to have a strong background in marine engineering, naval architecture, or a related field, as well as relevant work experience in the maritime industry. They may also need to obtain specialized training and certification in areas such as cargo, hull and machinery, yacht and small craft, or offshore energy.

In addition to technical knowledge and experience, marine surveyors should possess good communication skills, attention to detail, and an ability to work independently and manage their own workload. They should also have a thorough understanding of the regulations and standards that apply to the type of surveying they are performing, as well as the ability to stay up-to-date with changes and updates in these areas.

”
**ChatGPT: Overall,
the marine surveying
profession plays a crucial role
in ensuring the safety and efficiency
of the maritime industry.**

Mike asked:

I'd like to know what yacht masts are made of.

ChatGPT replied:

Yacht masts can be made from a variety of materials, including:

Aluminum: This is the most common material for yacht masts. Aluminum is lightweight, durable, and relatively inexpensive. It's also easy to work with, which makes it a popular choice for custom masts. However, aluminum masts can corrode over time and require regular maintenance to prevent this.

Carbon Fiber: Carbon fiber masts are becoming increasingly popular for high-performance racing yachts. They are lighter and stiffer than aluminum masts, which can improve the boat's speed and handling. Carbon fiber masts are also corrosion-resistant and require less maintenance than aluminum masts. However, they are more expensive and can be more difficult to repair if damaged.

Wood: Wooden masts are traditional and aesthetically pleasing, but they are less common than they used to be due to their weight and maintenance requirements. Wooden masts can be made from a variety of woods, such as Sitka spruce or Douglas fir, and require regular varnishing and upkeep to prevent rot and decay.

Steel: Steel masts are strong and durable, but they are also heavy and can be prone to corrosion. They are more common on larger, commercial vessels than on yachts.

Overall, the material used for a yacht mast depends on factors such as the size of the boat, its intended use, and the owner's preferences and budget. Each material has its advantages and disadvantages, and the choice of material will affect the performance, maintenance, and longevity of the yacht mast.

From what I can judge these are plausible, well thought out replies and there is nothing incorrect with the answers provided by ChatGPT to my three questions. The language is good with no grammatical or punctuation mistakes. It is impressive.

If I have a fear it is that a marine surveyor could use ChatGPT to advise on a technical aspect which he/she then inserts into his/her survey report. Whilst you will certainly get an answer to your question, how accurate is it and how can you fact check it? Tread carefully is my best advice and use the platform with caution. But it could be a useful tool to further your knowledge in technical areas.

A friend recently told me he had asked ChatGPT to write a fantasy film script based on a James Bond theme to include espionage, gold smuggling and inter government conspiracies. I have read ChatGPT's output and it was most impressive indeed and if my friend chose to, there is nothing seemingly to stop him passing it off as his own work.

I will leave you with a few additional quotes to ponder on.

"ChatGPT is a chatbot that can write essays with advanced language skills, reply to questions similar to human conversation, write code, and reminds us all that artificial intelligence is changing the world as we speak."

Dave Waters

"ChatGPT is one of those rare moments in technology where you see a glimmer of how everything is going to be different going forward."

Aaron Levie

"ChatGPT will be brutal in classrooms where writing is assigned rather than taught."

Brett Vogelsinger

"As more boneheads use ChatGPT to cheat, the worth of excellence will skyrocket globally."

Abhijit Naskar

"ChatGPT is like the Industrial Revolution. During the Industrial Revolution, many people lost their jobs but machines helped to produce things faster. Similarly, if ChatGPT is free forever, many people will lose jobs but productivity will be manifold!"

Md. Ziaul Haque

So in conclusion, you may be wondering if I actually wrote this article myself, or was it written by ChatGPT, the AI chatbot that is here to stay and change our lives forever? You will never know!

Mike: *If I have a fear it is that a marine surveyor could use ChatGPT to advise on a technical aspect which he/she then inserts into his/her survey report.*



THE RISE OF THE BOTS

PART 1:

Conversational Artificial Intelligence (AI) Bots [Exploring the talent of ChatGPT]

by **Nick Parkyn**

- IIMS accredited Yacht and Small Craft Surveyor
- Owner of Marine ML (AI consultancy to the marine industry)

Mike Schwarz has written an excellent article on ChatGPT (ChatGPT: The AI chatbot that will change the way marine surveyors work and live) which presents some interesting and extremely valid viewpoints and observations.

Since I am both a Marine Surveyor and Computer Scientist, I will present chatbot technology (ChatGPT) from these viewpoints.

Artificial intelligence (AI) systems are becoming ubiquitous in a diverse and ever-growing set of decision-making applications. AI systems can make consequential decisions at a speed and volume not possible for humans, creating new opportunities to assist humans and improve and personalise services.

"Any sufficiently advanced technology is indistinguishable from magic".

- Arthur C. Clarke -

Experts suggest that the rise of artificial intelligence will make most people better off over the next decade. However, many experts have concerns about how advances in AI will affect what it means to be human, to be productive and to exercise free will. These aspects will be discussed in Part 2 of this article "AI Ethics and Impact of Bots".

Bots, specifically chatbots are computer programs that can maintain a conversation with a user in natural language using Natural Language Processing (NLP), by understanding their intent, and replying. They are designed to convincingly simulate the way a human would converse.

Natural language processing (NLP) is an essential function of Bots and is an interdisciplinary subfield of linguistics, computer science, and artificial intelligence concerned with the interactions between computers and

human language, in particular how to program computers to process and analyse large amounts of natural language data. To enable the capability to “understand” the contents of documents, including the contextual nuances of the language within them. The technology can then accurately extract information and insights contained in the documents as well as categorize and organize the documents themselves. NLP is an enabling technology. NLP is used to analyse the meaning of text and speech, and to generate responses that are appropriate and relevant to the conversation.

The bots that most of us are already familiar with are the chatbots which appear (pop up) on websites to assist us with our orders or completion of tasks. These chatbots or chatterbots are software applications used to conduct an online chat or conversation via text or text-to-speech, in lieu of providing direct contact with a live human or human agent.

Chatbots

There are two types of chatbots: rule-based and machine learning-based. Rule-based chatbots use a pre-defined set of rules to respond to user queries, while machine learning-based chatbots use algorithms to learn from user interactions and improve their responses over time.

Rule-based chatbots use pre-set rules and data and have limited conversation capability and typically require continuous addition of rules and data with related human tuning and testing. Basic chatbots cannot learn and typically only have the capacity to complete a limited number of tasks like answering frequently asked questions (FAQ's). These are the chatbots that you would already be familiar with.

Machine learning based chatbots use Artificial Intelligence (AI) and Machine Learning (ML) with conversational AI to enhance their ability to understand human language to provide both transactional functionality and informational capabilities. Conversational AI is a type of artificial intelligence (AI) that can simulate human conversation. It is made possible by natural language processing (NLP), a field of AI that allows computers to understand and process human language. Conversational AI works by using a combination of natural language processing (NLP) and machine learning (ML).

Conversational AI systems are trained on large amounts of data, such as text and speech. This data is used to teach the system how to understand and process human language. The system then uses this knowledge to interact with humans in a natural way. It's constantly learning from its interactions and improving its response quality over time.

ChatGPT is an advanced type of chatbot, a conversational (AI) chatbot, developed by OpenAI and released in November 2022. ChatGPT is a member of the generative pre-trained transformer (GPT) family of language models, hence its name.

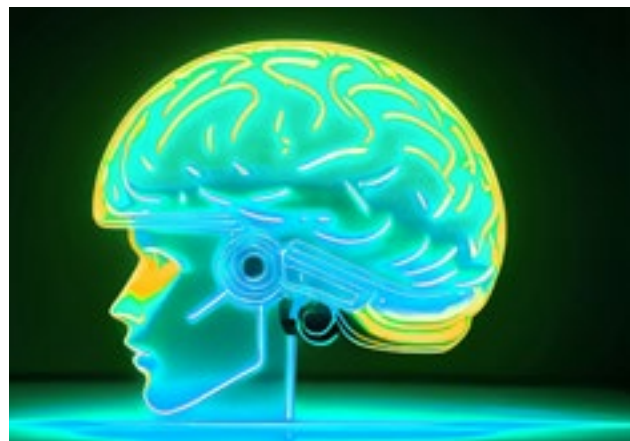
OpenAI trained a model called ChatGPT enabled it to interact in a conversational way. The dialogue format makes it possible for ChatGPT to answer follow-up questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests.

AI and ML models require extensive training and fine-tuning to reach a level of acceptable performance; however, learning is a continuous process.

The training of ChatGPT is a three-part process:

1. It learns itself how to generate text.
2. It gets some guidance from humans.
3. It gets feedback from humans for “fine tuning”.

Although the core function of a chatbot is to mimic a human conversationalist, ChatGPT is extremely versatile as it can write and debug computer programs, write business pitches, compose music, write songs, write scripts, write poetry, write student essays, answer test questions, translate and summarize text.



What are ChatGPT's limitations?

Despite looking very impressive, ChatGPT still has limitations. Such limitations include the inability to answer questions that are worded in a specific way, as it requires rewording to understand the input question. A bigger limitation is a lack of quality in the responses it delivers -- which can sometimes be plausible-sounding but make no practical sense or can be excessively verbose.

Instead of asking for clarification on ambiguous questions, the model just guesses what your question means, which can lead to unintended responses to questions.

Critics argue that these tools are just very good at putting words into an order that makes sense from a statistical point of view, but they cannot understand the meaning or know whether the statements it makes are correct.

People are expressing concerns about AI chatbots replacing or atrophying human intelligence. For example, the chatbot can write an article on any topic efficiently (though not necessarily accurately) within seconds, potentially eliminating the need for a human writer.

ChatGPT produces content that can appear to have been created by a human. There are many proposed uses for the technology, but its impressive capabilities raise important questions about ownership of the content.

“ChatGPT is scary good. We are not far from dangerously strong AI,”

- Elon Musk -

A **search engine or web search engine** (e.g., Google, Bing, and others) is a specialised computer server that carries out web searches (searches for data on the Web). Driven by a textual query a web search engine searches the World Wide Web (Internet) in a systematic way for particular information specified in the textual query and present the results (referred to as hits) back to the user. The user then interprets and uses the results (data). More specifically, when a user enters a query into a search engine, the engine scans its index of web pages to find those that are relevant to the user's query. The results are then ranked by relevancy and displayed to the user. The data may be a mix of links to web pages, images, videos, articles, research papers, and other types of files. Web search engines are essentially very large data mining applications.

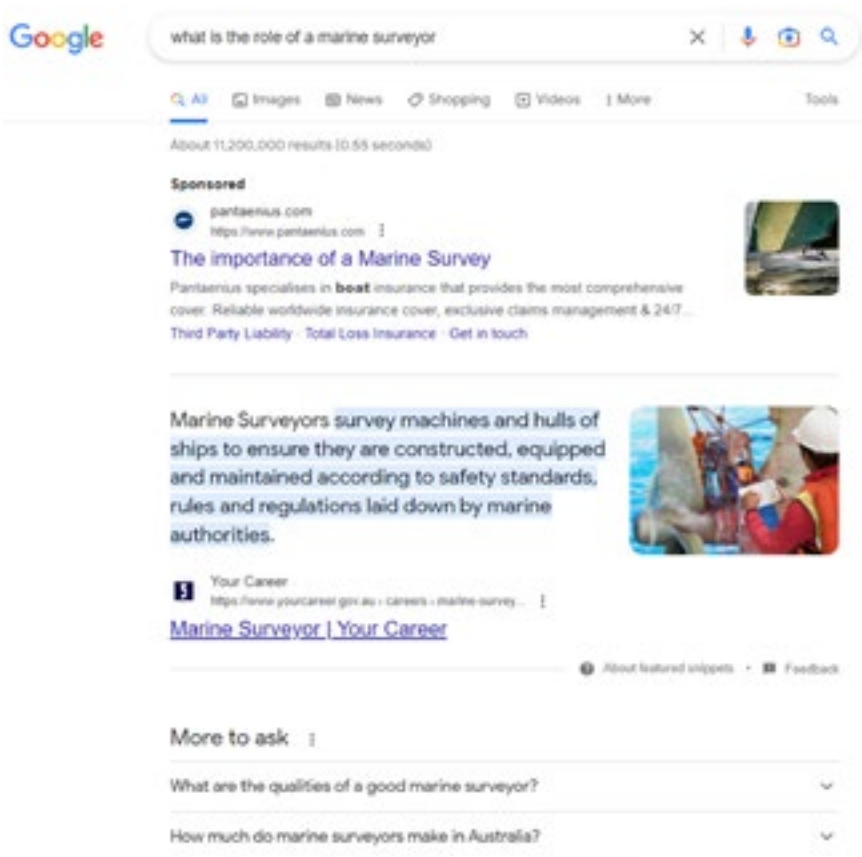
Chatbots are different to search engines, while chatbots hold data for a long period of time, search engines have short-term memory. This explains why chatbot replies are more personalized and specific. Chatbots analyse the question typically based on the entire historic context pertaining to the question while the search engine looks for only the previous searches.

The difference between ChatGPT and a search engine (like Google) is that ChatGPT is a language model created to hold a conversation with the end user. A search engine indexes web pages on the internet to help the user find the data they asked for. ChatGPT does not have the ability to search the internet for information. The most significant difference between ChatGPT and search engines is how they respond to user requests.

If you input a query (search) into any search engine, it will respond with a list of relevant web pages related to the topic. You may have to browse one or more or sometimes web pages to find a suitable response to your question. By comparison, ChatGPT provides you with summarised answers to your questions directly. If you input the same query to ChatGPT, the chatbot will give direct, straightforward advice.

As an example, let us pose the query "what is the role of a marine surveyor" to a search engine (Google) and ChatGPT (chatbot)...

Response from Google is as follows:



Response from ChatGPT is:

A marine surveyor is a professional who is responsible for assessing and inspecting various types of vessels, including ships, boats, and yachts. The primary role of a marine surveyor is to ensure that a vessel is seaworthy and safe for operation.

Marine surveyors typically conduct inspections of vessels for a variety of purposes, including pre-purchase surveys, insurance surveys, damage assessments, and regulatory compliance. They examine the hull, machinery, electrical systems, safety equipment, navigation systems, and other key components to identify any potential problems or issues.

Based on their findings, marine surveyors provide detailed reports that highlight any deficiencies or areas that require attention. These reports are often used by vessel owners, buyers, insurers, and regulatory authorities to make informed decisions regarding the vessel's operation, maintenance, and safety.

In addition to inspections and surveys, marine surveyors may also provide consulting services to vessel owners and operators, including advice on maintenance and repair, regulatory compliance, and safety management. Some marine surveyors specialize in specific types of vessels or industries, such as commercial shipping, recreational boating, or offshore oil and gas operations.

Commentary from the author: Compared to the Google search, the response from ChatGPT is very descriptive and comprehensive and the response can be used directly. Clearly ChatGPT has learned what the role of a marine surveyor is! ChatGPT has done the work for us as no browsing and compilation is required.

In the following part of this article, I will make requests in the context of marine surveying to ChatGPT, show its responses and provide my thoughts and insights. This will allow readers to understand the technology.

It should be noted that ChatGPT output is currently only textual output.

My ChatGPT request:

Write a Pre-purchase marine surveyor report on 30-foot sailboat.

Response from ChatGPT is:

Pre-Purchase Marine Surveyor Report on a 30-foot Sailboat

Introduction:

This report is a pre-purchase marine surveyor report on a 30-foot sailboat. The purpose of the survey is to provide an assessment of the vessel's overall condition and to identify any existing or potential problems that may affect its seaworthiness and value. This report is based on a visual inspection of the vessel and does not include any invasive testing or dismantling of equipment.

General Information:

The sailboat is a 30-foot sloop-rigged vessel with a fin keel and a spade rudder. The hull is constructed of fiberglass, and the deck is constructed of a combination of fiberglass and balsa core. The vessel is powered by a single inboard diesel engine.

Hull and Deck:

The hull and deck of the vessel appear to be in good condition. There are no visible signs of cracks or damage. The gel coat has some minor scratches and nicks, but nothing that affects the integrity of the hull. The deck appears to be solid, and there are no signs of soft spots or delamination. All deck hardware is securely fastened, and all hatches and ports are watertight.

Keel and Rudder:

The fin keel and spade rudder are in good condition. There are no signs of damage or cracking, and the keel bolts are secure. The rudder operates smoothly and has no excessive play.

Sails and Rigging:

The sails and rigging appear to be in good condition. The standing rigging is tensioned correctly, and all fittings are securely fastened. The sails have some wear and tear, but they are serviceable for the vessel's intended use.

Engine and Mechanical Systems:

The engine and mechanical systems appear to be in good condition. The engine starts easily and runs smoothly. The belts, hoses, and filters are in good condition, and there are no signs of leaks or corrosion. The through-hulls and sea-cocks are in good condition, and all valves operate correctly.

Electrical Systems:

The electrical systems appear to be in good condition. The batteries are secure and have sufficient charge. The wiring and connections are in good condition, and all electrical systems operate correctly. The navigation lights and other safety equipment are operational.

Plumbing Systems:

The plumbing systems appear to be in good condition. The fresh water and holding tanks are clean and free of leaks. The pumps and hoses are in good condition, and all valves operate correctly. The galley and head sinks drain correctly.

Conclusion:

Based on the visual inspection, the vessel appears to be in good condition and suitable for its intended use. No major defects were found that would affect its seaworthiness or value. However, routine maintenance and upkeep will be necessary to ensure the vessel remains in good condition. It is recommended that a more in-depth survey be conducted by a qualified marine surveyor before purchasing the vessel to identify any hidden problems that may not be visible during a visual inspection.

Commentary / observations from the author

This is dangerous:

- It is a fictitious sailboat.
- It is just a fabricated document.
- It is lightweight and lacks specific detail.
- If fictitious photographs, detail of dimensions, build date, inventory, and other data, was added the report could be manipulated to seem plausible to the inexperienced / un-initiated / unsuspecting purchaser.
- Any bonafide marine surveyor would understand that such a survey report (even when embellished) was unacceptable and lacking in many areas.

Imagine that the seller of a 30-foot sailboat does not want to engage a marine surveyor but wishes to allude to the fact that a survey exists, they could use ChatGPT to generate such a report and expand it by adding detail. However, creating fictitious survey reports is of course possible without the help of ChatGPT, but ChatGPT just makes it easier.



My ChatGPT request:

Write a Pre-purchase marine surveyor report on 30-foot sailboat with wooden hull.

Response from ChatGPT is:

Pre-Purchase Marine Surveyor Report

Introduction: This report is a pre-purchase survey on a 30-foot sailboat with a wooden hull. The surveyor has visually inspected the vessel and conducted a sea trial to assess the condition of the vessel's structure, systems, and equipment. The report is intended to provide the prospective buyer with an objective evaluation of the boat's condition to aid in the decision-making process.

General Information: The boat is a 30-foot sailboat with a wooden hull. The vessel is sloop-rigged and equipped with a diesel engine. The boat was built in 1978 and has had several owners throughout its life.

Hull: The hull of the vessel is constructed of wood planks with copper fastenings. The hull was visually inspected above and below the waterline, and no evidence of damage or significant wear was found. The hull appeared to be in good condition, with no signs of rot or delamination. The hull was also checked with a moisture meter, and readings were within acceptable limits.

Deck: The deck of the vessel was also visually inspected, and no signs of significant wear or damage were found. The deck was found to be solid and secure, with no evidence of soft spots or delamination.

Rigging and Sails: The rigging and sails were inspected and found to be in good condition. The standing rigging appeared to be well-maintained, with no signs of excessive wear or damage. The sails were inspected and found to be clean and free of significant wear or damage.

Engine and Mechanical: The diesel engine was started and operated for a period of time during the sea trial. The engine performed well, with no signs of significant issues. The sea trial also revealed that the boat handled well under power and sail.

Electrical and Electronics: The electrical and electronic systems were inspected, and all equipment appeared to be in good working order. The navigation equipment, including the GPS and VHF radio, functioned correctly, and the boat's battery system was found to be well-maintained.

Conclusion: Based on the inspection and sea trial, the surveyor finds that the vessel is in good condition for its age and appears to have been well-maintained by its current owner. The hull, deck, rigging, sails, engine, and mechanical and electrical systems are all in good working order. However, the prospective buyer should be aware that as a wooden boat, ongoing maintenance will be necessary to ensure the vessel's longevity. Overall, the vessel represents a good value for its age and condition.

In the future it will be essential that survey reports can be validated by recipients for authenticity and IIMS could play a key role in enabling this!

I then ask ChatGPT:

How can I validate if a report was created by ChatGPT?

ChatGPT response:

As an AI language model, I am not capable of producing reports on my own. I am simply a tool that processes input data and generates output based on that data. Therefore, if a report was created by ChatGPT, it would mean that a human user used me to generate the report by inputting specific information and parameters.

However, there is no way to validate whether a report was created by ChatGPT or not, as I do not have any record or memory of past interactions. Additionally, even if a report was generated using my language model, it would still require human interpretation and editing to ensure accuracy and completeness.

Commentary from the author:

This report is dangerous:

- It is a fictitious sailboat.
- It is just a fabricated document but notably different from the previous one (not only with respect to hull material).
- It also alludes to a fictitious sea trial, moisture meter testing and build date.
- It is lightweight, because it lacks detail, but interestingly it highlights ongoing maintenance and longevity.
- It also includes a fictitious build date.
- If fictitious photographs, detail of dimensions, inventory, and other data, was added the report could be manipulated to seem plausible to the inexperienced / un-initiated / unsuspecting purchaser.
- Any bonafide marine surveyor would (even after embellishment) understand that such a survey report was unacceptable and lacking in many areas.

Imagine that the seller of a 30-foot wooden sailboat does not want to engage a marine surveyor but wishes to allude to the fact that a survey exists, they could use ChatGPT to generate such a report and expand it by adding detail. Further the report alludes to a sea trial and moisture testing. However, creating fictitious survey reports is of course possible without the help of ChatGPT, but ChatGPT just makes it easier.

But how can we determine whether ChatGPT wrote the report?

There are software tools which can determine with some degree of certainty whether textual compilations were written by Artificial Intelligence / ChatGPT. ZeroGPT is one such tool and is currently considered to be the most advanced and reliable Chat GPT detector tool.

To validate ZeroGPT, I used a "survey report" previously written by ChatGPT as input to ZeroGPT.

If we assign a probability of 80% or greater to the event "it is written by AI/GPT", then from the output from ZeroGPT it is clear that the report was written by ChatGPT.

Now I will make similar, but more detailed marine survey related requests to ChatGPT which drive different responses.

My request to ChatGPT: Write a Marine Surveyor Report on the condition of a Contessa 32.

Response from ChatGPT is:

As an AI language model, I cannot conduct a marine survey on a Contessa 32 or any other vessel. However, I can provide you with a sample outline of what a marine surveyor report on the condition of a Contessa 32 might look like.

I. Introduction

- Brief overview of the vessel and the purpose of the survey

II. General Information

- Vessel name, make, model, year, and hull number
- Owner's name and contact information
- Date and location of the survey
- Weather and sea conditions during the survey

III. Hull and Deck

- Description of hull and deck construction materials
- Visual inspection of hull and deck for any signs of damage or wear
- Moisture readings of the hull

Response from ZeroGPT is as follows and indicates that with 83.21% degree of certainty the report was AI/GPT generated:



- Inspection of the keel, rudder, and through-hulls
 - Assessment of the condition of the non-skid surface
 - Summary of findings
- #### **IV. Rigging and Sails**
- Description of rigging and sail materials
 - Visual inspection of rigging for any signs of wear or damage
 - Assessment of the condition of the sails
 - Inspection of the mast and boom
 - Testing of the furling system and winches
 - Summary of findings
- #### **V. Engine and Mechanical Systems**
- Description of the engine and mechanical systems
 - Visual inspection of the engine and engine compartment
 - Testing of the engine for proper operation
 - Assessment of the condition of the fuel and water tanks
 - Inspection of the bilge pumps and other mechanical systems
 - Summary of findings
- #### **VI. Electrical and Plumbing Systems**
- Description of the electrical and plumbing systems
 - Testing of the electrical system for proper operation
 - Inspection of the wiring and electrical components
 - Assessment of the condition of the plumbing system
 - Inspection of the seacocks and hoses
 - Summary of findings
- #### **VII. Safety Equipment**
- Description of the safety equipment on board
 - Assessment of the condition and suitability of the safety equipment
 - Inspection of the life rafts and EPIRBs
 - Summary of findings
- #### **VIII. Conclusion**
- Overall assessment of the vessel's condition
 - Opinion on whether the vessel is suitable for its intended use
 - Recommendations for repairs or upgrades that may be necessary
 - Estimated cost of any repairs or upgrades

Note: This is just an outline of what a marine surveyor report on the condition of a Contessa 32 might look like, and the actual content and format of the report may vary depending on the surveyor and the specific vessel being surveyed. It is important to hire a qualified and experienced marine surveyor to conduct a survey and to review the survey report carefully.

My comments / observations

This is a good outline of a survey report.

The following initial part of the response and end note are indication of responsible and ethical AI.

As an AI language model, I cannot conduct a marine survey on a Contessa 32 or any other vessel. However, I can provide you with a sample outline of what a marine surveyor report on the condition of a Contessa 32 might look like.

This is just an outline of what a marine surveyor report on the condition of a Contessa 32 might look like, and the actual content and format of the report may vary depending on the surveyor and the specific vessel being surveyed. It is important to hire a qualified and experienced marine surveyor to conduct a survey and to review the survey report carefully.

My ChatGPT request:
What types of defects might a Marine Surveyor find when surveying a Contessa 32.

ChatGPT response:
A marine surveyor may find a variety of defects when surveying a Contessa 32, depending on the age, maintenance, and usage of the vessel. Here are some examples of common defects that a surveyor may look for:

1. Hull damage - including cracks, blisters, delamination, and osmosis.
2. Deck damage - including cracks, soft spots, and leaks.
3. Corrosion of metal components - such as the keel bolts, rigging, and chainplates.
4. Rigging defects - including broken or damaged wires or fittings, improper tension, or rust.
5. Sailing defects - including worn or damaged sails, faulty furling systems, and winch problems.
6. Engine defects - including leaks, worn parts, or improper installation.
7. Electrical system defects - including outdated or improperly installed wiring, corroded connectors, or malfunctioning electronics.
8. Plumbing defects - including leaks, clogs, and faulty or outdated equipment.
9. Safety equipment defects - including missing or expired safety equipment, damaged or malfunctioning life rafts or EPIRBs, or improperly stored fire extinguishers.
10. General wear and tear - including worn or damaged upholstery, loose or missing hardware, or other cosmetic issues.

It is important to note that the types of defects that a marine surveyor may find can vary depending on the specific vessel, and the surveyor's experience and expertise. A comprehensive marine survey by a qualified and experienced surveyor can help identify and address any potential issues with the vessel and provide a detailed report that can be used to make informed decisions about the purchase or maintenance of the vessel.

My comments / observations

- This is a reasonable summary of possible defects, but not necessarily those commonly found during surveys of the Contessa 32
- Aspects of the response are generic.
- ChatGPT is not producing a report which is good.
- ChatGPT is recommending / endorsing the engagement of a marine surveyor.
- This is responsible and ethical AI.

The following initial part of the response and end note are indication of responsible and ethical AI.

A marine surveyor may find a variety of defects when surveying a Contessa 32, depending on the age, maintenance, and usage of the vessel.

It is important to note that the types of defects that a marine surveyor may find can vary depending on the specific vessel, and the surveyor's experience and expertise. A comprehensive marine survey by a qualified and experienced surveyor can help identify and address any potential issues with the vessel and provide a detailed report that can be used to make informed decisions about the purchase or maintenance of the vessel.

Using ChatGPT to review text

Since AI chatbots use natural language processing (NLP) they are extremely capable and efficient at evaluating text structure, grammar, tone, and semantic meaning of content and provide feedback. This capability can enable students to analyse their writing in ways that teachers have never been able to do before. AI systems can also efficiently scan content for plagiarism.

HeadMind Partners group (see reference) recommend that users

use the tool as a source of creative inspiration, to give ideas and serve as a starting point for a work that will afterwards mainly be human.

Ultimately, ChatGPT is a tool that can help the users in their daily lives, but it will never replace the value-added input that a human contributes.

ChatGPT can be used as a collaboration tool providing inputs that could be a combination of existing and new contexts that could possibly take creation or innovation in a direction that would not have been considered if working in isolation.

Currently, AI remains a tool that can be used as an enabler to increase productivity and stimulate creativity, however AI will never totally replace the work of humans who are graced with sensitivity and multiple forms of intelligences.

The best advice is to explore technology like ChatGPT but remain aware and to stay conscious of their limitations.

Care must be taken with respect to proof and trust, ethics, bias, data privacy, and the objectives of the creators.

ChatGPT itself says: "My responses are not intended to be taken as fact, and I always encourage people to verify any information they receive from me or any other source." OpenAI also notes that ChatGPT sometimes writes "plausible sounding but incorrect or nonsensical answers."

It is legitimate to be enthusiastic about this new technology, but it is important to take a step back from it and to question how it works in order to get the best out of it and keep a critical eye.

– HeadMind Partners

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2. Conversational AI for richer, more intuitive experiences - Google - <https://bit.ly/3nKUw17>.
3. What is ChatGPT and why does it matter? - Sabrina Ortiz - <https://bit.ly/3HWZVZM>.
4. Using ZeroGPT : GPT-4 And ChatGPT detector by ZeroGPT: detect OpenAI text - <https://www.zerogpt.com/>.
5. ChatGPT: what the law says about who owns the copyright of AI-generated content - <https://bit.ly/3VQsTjK>.
6. Wikipedia

My ChatGPT request:

Review the following text (I input one of the survey reports [30-foot sailboat with wooden hull] previously created by ChatGPT).

ChatGPT response:

The text provides a comprehensive and objective evaluation of a 30-foot sailboat with a wooden hull. The report covers various aspects of the boat, including the hull, deck, rigging and sails, engine and mechanical systems, and electrical and electronic equipment. The information is presented clearly and concisely, with specific details and findings of the surveyor's inspection and sea trial.

The report highlights the boat's good condition and well-maintained status, which could be valuable information for prospective buyers. However, it also emphasizes that the ongoing maintenance of the wooden boat is crucial for its longevity. This warning shows that the report is balanced and informative, and it could help buyers make informed decisions.

Overall, the report is well-written and provides useful information for anyone interested in purchasing the sailboat. It covers all the essential aspects of the boat and presents the findings in an objective and informative manner.

My closing request to ChatGPT:

Write a poem about surveying a small sailing craft.

ChatGPT response: (An ode to the small craft surveyor by ChatGPT - refined over five iterations with incremental coaching by the author.)

With sails unfurled and mast held high,
A small boat sets off with a sigh,
Surveyors on board, eyes on the prize,
To inspect every inch with careful eyes.

The hull, the rigging, and the keel,
All must be checked with detail ideal,
For safety's sake, and a smooth sail,
Every aspect, they must unveil.

The ropes and lines, the pulleys too,
All must be checked to ensure they're true,
The mast must stand, firm and straight,
For it is the boat's pillar of fate.

The sails, oh how they catch the breeze,
Their fabric must be checked with ease,
For tears and frays, or wear and tear,
To ensure the boat's safety, and no despair.

The surveyors, with skilled precision,
Inspect the boat with great ambition,
For a small craft, can be mighty,
If all is well, and everything tidy.

With the survey complete, and all checked twice,
The boat is ready to set off, nice and precise,
With sails full and the wind in her favour,
She sets off on her journey, a small sailing saviour.

So let us thank the surveyor's skill,
For ensuring the boat's safety, and thrill,
For the small craft, can be a delight,
A peaceful journey, under the sun's light.

A new era in Greek national maritime legislation began on 1 May 2023

*By Valina Giouzelaki and Matina Kanellopoulou,
Watson Farley & Williams
with contributions from Constantina Koutsoumpa-Santos*

Experts from Watson Farley & Williams are on hand to explain how a new Code of Private Maritime Law (the New Code) will impact the Greek national maritime legislation. The New Code, which came into force on 1 May 2023, replaces the existing code which dates back to 1958, establishing a legal framework for an electronic operation of the register among others.

The New Code's provisions aim to:

- restore coherence to the code, which has changed considerably following the ratification of numerous international conventions;
- enhance the legal certainty and transparency for transactions regarding the operation and legal status of ships;
- regulate modern forms of maritime activity that were previously overlooked, whilst reforming existing regulations that have in practice proved to be incomplete, inadequate, or outdated, such as the maritime insurance and chartering regimes;
- modernise the legal framework of the code through the digital operation of the register; and
- protect the rights of seafarers by providing for the most appropriate solutions to safeguard the position of Greek seafarers in every aspect of their professional life.

Following is an outline of several of the New Code's key provisions.



Valina Giouzelaki



Matina Kanellopoulou

A. Broader definition of a "ship"

The New Code redefines and broadens the legal concept of what is considered a "ship" in line with the technical and scientific consensus;

- and the concept of a "floating craft" is introduced to cover floating platforms and storages, floating constructions, cranes and platforms.

B. Digitalisation of the Ship Registry

The long-standing policy of port authorities for records being kept in the form of hard copies and handwritten entries in their records is to be abolished, with the New Code establishing a legal framework for an electronic operation of the register, namely:

- electronic record keeping and e-filing;
- submitting documents by electronic means provided they bear an approved e-signature; and
- issuing certificates (including nationality certificates), attestations and other documents in digital form.

C. Simple and Preferred Ship Mortgage

The New Code includes unified provisions for the constitution of both simple and preferred mortgages over a ship; accordingly, legislative decree 3899/1958 on preferred mortgages is to be abolished.

Although, the New Code in many instances repeats rules that are already applicable, several new rules are being introduced, notably including the following:

- tonnage restriction for a preferred mortgage: although the New Code retains the tonnage restriction for the registration of a preferred mortgage (i.e. only ships with a gross tonnage equal or over 500 grt can be encumbered with a preferred mortgage), it also introduces the possibility of reducing said tonnage restriction upon issue of a relevant presidential decree;
- mortgage over ships under construction: the New Code allows for the constitution of a simple or preferred mortgage over a ship under construction;
- ranking: the New Code provides that the time determining the ranking of a mortgage (either simple or preferred) is the time of submission of the relevant petition for the registration of the mortgage with the competent ship registry. This is currently the rule for determining the ranking of mortgages over ships registered in accordance with the ministerial decisions issued pursuant art. 13 of L.D. 2687/1953 and differs from the general rule, which provides that mortgages registered on the same day have the same ranking;
- invalidity of mortgage registered after an attachment: the New Code amends the previous rule that any mortgage registered after the registration of an attachment is erga omnes invalid and provides that any such mortgage shall be invalid only towards the party imposing the attachment; and
- compulsory revocation of mortgage in case of bankruptcy: the New Code extends the application of the bankruptcy code provision according to which any mortgage granted within six months prior to the "suspect period" and until the declaration of bankruptcy is subject to compulsory revocation; it is highlighted however that the exceptions applicable to mortgages that secure loans are still applicable.

D. Maritime liens

The New Code reinstates the basic characteristics of maritime liens (i.e. that they are imposed directly by law, "follow" the claim they secure and rank ahead of any mortgage and other subordinate claims) and determines their debtor in a general manner, capturing both the owner and the operator of the ship. It is worth mentioning that pursuant to the New Code:

- maritime liens rank ahead of any mortgage (as is the common international practice) with the exception of mortgages over ships registered in accordance with the ministerial decisions issued pursuant art. 13 of L.D. 2687/1953, in which case such mortgage outranks any maritime liens;
- liens refer to the ship and are not extended to the fare;
- costs incurred by creditors for the commencement of the enforcement procedure against a ship are deducted from the enforcement proceeds and are not included in the creditors' list. The same applies for any costs made for guarding a ship following its attachment;
- first class liens (shipping taxes, duties and rights that burden the ship) remain unchanged.

However, liens for duties and rights that burden a ship will secure such a claim up to the amount reached during the last six months prior to its attachment:

- second class (captain and crew wages, social security funds), third class (assistance at sea claims) and the fourth-class liens (ships collision claims) remain unchanged;
- liens "survive" the contractual sale of a ship, provided that the person in favour whom the lien is created files a relevant lawsuit for the recognition of such lien within three months from the registration of the sale with the competent ship registry. The above deadline is one year for the recognition of liens for the captain and crew's wages; and
- liens are released following the sale of a ship through public auction, though a creditor whose claim has not been fully satisfied still has the right to pursue it with the new owner of said ship.



E. Transfer of obligations after transfer of ship

Under the previous code, the transfer of a ship could be considered as a transfer of business, with the seller and buyer being jointly and severally liable for any existing liabilities in connection with the ship. This is now to be abolished and the buyer will no longer be liable for any such debt of the previous owner. However, creditors' rights are still protected to a certain extent as:

- a. this new rule does not apply in connection with maritime liens which are transferred to the new owner of a ship; and
- b. the general provisions of Greek law for creditors' protection against fraudulent transfers of assets also offer sufficient protection.

F. Ship operation

The legal regime for ship operation (efoplismos) is redefined in line with international conventions:

- the New Code clarifies that the cessation of a ship's operations may either be declared by a common statement of the shipowner and ship operator or, in the event of dispute, following a court order; and
- the New Code provides that the applicable law governing the liability of a shipowner for claims arising from the operation of a ship is the law which is the most appropriate taking into account the relevant circumstances (i.e. flag of ship, jurisdiction of the parties, place where the relevant agreements was concluded and/or performed, and any choice of law agreed between shipowner and ship operator).

"The concept of ship arrests as interim measures to be used on an emergency basis will be governed by the Brussels 1952 International Convention and the Greek Code of Civil Procedure."

G. Administration and marine agency

The concepts of ship administrator and ship agent are introduced.

H. Pollution liability

The New Code cross-refers to international conventions in relation to oil pollution liability, diesel fuel pollution liability, third party liability arising from diesel fuel

pollution and hazardous and noxious substances liability.

I. Modernisation of chartering provisions

- A broader definition is given to the concept of a "charterparty", which now also includes the use of a ship or floating craft as permanent or temporary storage of oil and other petroleum products, or the chartering of drilling vessels;
- emphasis is given to the primacy of contractual freedom doctrine in line with international shipping practice;
- bareboat charters and contracts of affreightment are officially introduced as types of chartering. The list is non-exhaustive however since the constantly evolving nature of shipping industry practice is creating hybrid conventional forms to meet ever-changing transport needs; and
- the rules of governing carriage of goods by sea are reformed in accordance with the Hague-Visby Rules.

J. Enforcement

- The concept of ship arrests as interim measures to be used on an emergency basis will be governed by the Brussels 1952 International Convention (to the extent applicable) and the Greek Code of Civil Procedure;
- the New Code also provides for payment of damages in the event of detention or arrest of a ship when a plaintiff requesting the imposition thereof as interim measures has acted in bad faith;
- a time limit of five days from the service of an enforcement order has been set for the commencement of the enforcement proceedings, following which a ship's sailing may no longer be prohibited;
- English law concept of "court approved sale" is introduced; and
- the legal consequences of the registration of an auction sale effected abroad are made equivalent to those for auction sales effected in Greece.

About Watson Farley & Williams

Watson Farley & Williams is an international law firm advising on complex transactions and disputes through local knowledge and an integrated international network. They have a strong sector focus, combining their technical excellence with deep industry knowledge across energy, transport and associated infrastructure.

Website: <https://www.wfw.com/>





How to ensure **ESG** (Environmental, Social, and Governance) compliant ship recycling

A DNV interview with Jannicke Eide-Fredriksen, Principal Consultant at DNV, republished here with thanks from IIMS.



With ship recycling volumes expected to increase significantly, ship and cargo owners recognize their responsibility to ensure ESG-compliant shipbreaking. Our expert interview provides valuable insights on the risks, solutions and available support.

Jannicke Eide-Fredriksen has been working with ship recycling since 2008, including the development of DNV class services related to the Hong Kong Convention, recycling yard assessments and the preparation of Inventories of Hazardous Materials. For the past six years she has worked closely with the EU Commission, which DNV assists in assessing applications for the European list submitted by non-EU ship recycling facilities. That also involves on-site inspections of ship recycling facilities under the supervision of the Commission and in collaboration with the authorities of the third country in which the ship recycling facility is located.



DNV: As in other industries, ESG reporting in the shipping sector not only covers emission-related criteria but also recycling as one important part of asset life cycle management. What are the ESG risks related to ship recycling?

Jannicke Eide-Fredriksen:

Many shipowners have policies for responsible ship recycling, but the majority of ships are still recycled in facilities which do not meet basic health, safety and environmental requirements. Recycling volumes are expected to significantly increase in the coming years, and shipowners need to navigate a complex regulatory landscape where it is difficult to know the standards of the different ship recyclers. International regulations governing recycling are defined in the IMO Hong Kong Convention (HKC), which has yet to be ratified by a sufficient number of state signatories and has therefore not yet entered into force. The most relevant regulations in force today are the UN Basel Convention regarding transboundary transport of hazardous waste, including its Ban Amendment, as well as the EU Ship Recycling Regulation and the EU Waste Shipment Regulation. The latter can be seen as the Basel Convention incorporated into EU / European Economic Area law. In light of recent regulatory developments and stricter enforcement of national maritime laws, shipowners feel compelled to make informed decisions regarding recycling. Consequently, they must now consider several factors other than just the sale price. Ignoring these factors can give rise to significant risks. Inadequate ship recycling strategies and practices can lead to criminal liabilities, reputational damage, loss of investors and reduced access to finance.

DNV: Which stakeholders in the maritime industry show a particular interest in ship recycling within ESG reporting and why?

Jannicke Eide-Fredriksen:

Stakeholders in the industry are becoming more aware of the challenges arising from the present regulatory situation. Stakeholders include not only shipowners and operators, but also other global players, such as cargo owners, insurers, finance institutions, the media and the public at large. Over the last few years, some institutional investors have been blacklisting certain companies due to their recycling practices. Some banks are using criteria such as the Responsible Ship Recycling Standards and lately also the Poseidon Principles, a global framework for responsible ship finance, when evaluating borrowers. We have also seen an intensifying public debate regarding recycling practices, and a growing relevance of business interests, for instance in connection with the Ship Recycling Transparency Initiative (SRTI) and the Clean Cargo Group. It is assumed that cargo owners working towards more sustainable production do not want to be associated with non-sustainable ship recycling practices. It is expected that some cargo owners may demand transparency from their carriers, which is not unreasonable to ask.



DNV: How can shipping companies make sure that their ship recycling processes are ESG-compliant?

Jannicke Eide-Fredriksen:

Although significant improvements have been made over the last few years, strict due diligence should still be exercised when selecting yards by making sure they hold Statements of Compliance with the HKC or certificates for the EU Ship Recycling Regulation. Today, ship recycling facilities operate with a variety of standards, both between and within countries. This has to do with the way national law is implemented and enforced. In these regulatory systems, assurance products such as Statements of Compliance from the HKC have been issued by independent assurance providers contracted to the yards. The HKC Statement of Compliance products are not based on legal rights or obligations under the convention (as it is yet to enter into force), but rather on a service provided by some stakeholders. The recycling process is a series of steps from arrival to completion, each with its own critical tasks and procedures with a high risk of serious accidents and environmental impact at every stage. A shipowner should, before selling a ship for recycling, assess the yard in order to verify that it operates in a safe and environmentally sustainable manner, so as to ensure that their reputation is not at risk. A shipowner may conduct the assessment with their own resources or employ the services of a third party to carry out the assessment. On-site supervision by the shipowner or an independent third party during the recycling process may add additional advantages.



DNV: How can DNV support customers in ensuring ship recycling processes meet the above-mentioned stakeholder expectations and are ESG-compliant?

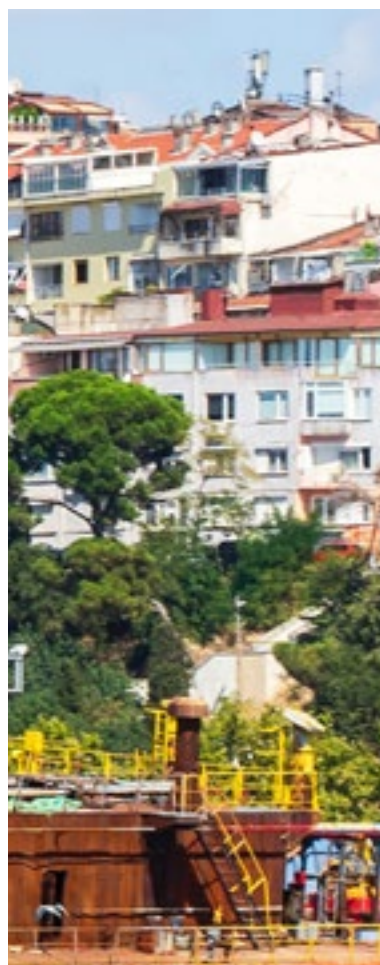
Jannicke Eide-Fredriksen:

DNV has created a guidance paper to support shipowners' recycling decisions, in particular for yards that are not featured on the European list. We cannot see that any of the present assurance services in the market can replace a proper, individual case-by-case assessment of yards that are not on the European list. The HKC has not entered into force, and the Statement of Compliance is not anchored in national law. Shipowners should be aware of two areas in particular. The first is related to scope. Although the HKC requires authorization of the downstream waste management facilities by national authorities, there is no assessment of their actual operation. This might be satisfactory from a strict regulatory perspective. However, if a wider CSR and ESG perspective is taken, it might merit a more coherent discussion. The second is related to the verification methodology of the ship recycling facilities. To our knowledge, there are no defined, established or internationally accepted certification schemes in place. There are also no clearly defined, transparent and available methodologies for the verification itself, whether it's a document review or a site inspection. Furthermore, there are no consistent, transparent requirements for the adherence to the resulting Statement of Compliance during its validity period. So, the standards of the certified recycling facilities can still vary quite significantly. DNV offers consultancy services to shipowners for evaluating ship recycling yards to make sure acceptable standards are met. DNV may assist in the evaluation of the ship recycling facility plan, the ship recycling plan and other relevant documentation. DNV can also be a consulting partner for shipowners seeking to avoid possible pitfalls, based on our experience with evaluating ship recycling applications in connection with the EU list.

DNV: What data or proof points are needed for final ESG reporting?

Jannicke Eide-Fredriksen:

Ship recycling is an industry which touches on all aspects of ESG. On the environmental side, this includes the possible negative impacts of ship recycling. The vast majority of commercial ships are demolished on mudflats or by the landing method. The reporting should cover the mitigating actions taken to avoid or significantly reduce the negative environmental impact of ship recycling, such as collecting hazardous liquids, handling spills, collecting slag from flame-cutting, avoiding chemical contamination from anti-fouling compounds, and avoiding the transfer of invasive species through ballast water or biofouling. From an ESG perspective, specific considerations must be made regarding the adequacy of the downstream waste management facilities.



DNV: What about the social and governance aspects?

Jannicke Eide-Fredriksen:

On the social side, the main concern is worker health and safety, particularly the industry's high accident and fatality rates. Reporting should cover health and safety practices related to ship recycling. Shipowners should be aware that many recycling countries have only partially implemented International Labour Organization (ILO) conventions and that workers' rights are not necessarily adhered to. From an ESG perspective, minimum wage, working hours, overtime payment, injury insurance and housing/dormitory standards must be considered. With regards to governance, shipowners should consider that the countries recycling their ships may have different levels of corruption and transparency compared to where they primarily operate. It is important that shipowners identify such differences and take suitable mitigating actions in line with corporate policy and the interests of their stakeholders and the global community.



By 2024, the Norwegian container ship Yara Birkeland is expected to carry fertilizer autonomously from plant to port with zero emissions.



Autonomous ships are on the horizon: here's what we need to know

Ships and ports are ripe for operation without humans - but only if the maritime industry can work through the practical, legal and economic implications first.

Article authored by Rudy R. Negenborn, Floris Goerlandt, Tor A. Johansen, Peter Slaets, Osiris A. Valdez Banda, Thierry Vanelstlander and Nikolaos P. Ventikos.

In January last year, a Japanese car ferry, the *Soleil*, became the first large vessel to navigate without human intervention. The 220-metre-long ship automatically berthed and unberthed, turned, reversed and steered itself for 240 kilometres across the Iyonada Sea from Shinmoji in northern Kyushu — manoeuvres that even skilled human operators find challenging.

It is early days, but ships are increasingly deploying sensors and artificial-intelligence (AI) systems to navigate, steer and

avoid collisions. As with cars, such advances should improve safety, increase efficiency and — along with cleaner fuels and engines — reduce environmental impacts.

This is crucial: 80% of global trade (around 11 billion tonnes) is transported by sea each year. In 2018, shipping generated around 3% (about 1,000 million tonnes) of global carbon dioxide emissions². The International Maritime Organization (IMO) has committed to halving the industry's greenhouse-gas emissions by 2050.

Seafaring is risky and workers are in short supply. Inefficiencies and congestion at ports add delays and costs, as do accidents, such as the grounding of the container ship *Ever Given* in the Suez Canal for six days in March 2021. Streamlining passage through locks, reducing energy consumption and negotiating manoeuvres to avoid collisions would enable safer and more optimal use of waterways.

Some small, fully autonomous boats, typically less than 10 metres long, are already in operation for specialist



tasks such as monitoring water quality and infrastructure in the open sea, or as test beds for the technology. But the next couple of years will see a sea change, with the first larger 'maritime autonomous surface ships' planned to start commercial operation.

Pilot projects include the Norwegian container ship Yara Birkeland (pictured), an 80-metre-long vessel that, by 2024, is expected to convey fertilizer autonomously and with zero emissions from a manufacturing plant to an export port. In China, a 120-metre-long electric container ship called Zhi Fei has been demonstrated shuttling under remote (and sometimes autonomous) control between two ports in Shandong province.

In a decade, automated vessels might interact with one another. For instance, the Vessel Train, a pilot project funded by the European Union and coordinated by the Netherlands Maritime Technology Foundation in Rotterdam, uses a crewed lead vessel to head a convoy of smaller, automated ones that can access small waterways around ports efficiently. Ultimately, fleets of self-steering ships or boats might be managed from maritime traffic-control centres located on shore.

But if autonomous vessels are to fulfil their promise, much remains to be done — and soon. More than 50,000 merchant ships trade internationally, under the flags of some 150 nations. A large, high-tech vessel can cost US\$200 million to build, and can operate for decades. Ships are complex technically. They need to work in busy shipping lanes, ports and rough open seas.

Combining maritime systems is daunting — from radar, satellites and GPS, cameras and sensors, to image recognition, data analytics and machine-learning algorithms. And autonomous ships need to be plugged into a broader ecosystem of maritime technologies, including interactions between ships and with cargo handlers, equipment, pilots, traffic services and ports.

Here, we highlight research gaps in six key areas...

UNDERSTAND THE CHALLENGES AT DIFFERENT LEVELS OF AUTONOMY

The roll-out of increasing levels of autonomy needs to be managed to assure safety and to allow regulation to keep up. Operational guidelines are needed for vessels in the four classes of autonomy defined by the IMO.

The first challenge is to add sensors and algorithms based on AI and deep learning to the autopilot systems that are currently used on some crewed ships and boats — classed as IMO autonomy level one. Obstacles such as small boats, debris, swimmers and riverbanks do not appear on radar or on the global 'automatic identification system' (AIS) that tracks maritime traffic. Visual and thermal cameras and lasers would give a captain a better view of what is around, helping to avoid collisions, assess risks and plan routes — tasks that are now done manually. But to do that, researchers need to overcome limitations to sensor systems — for instance, that some smaller obstacles can be indistinguishable from waves.

Autonomy level two includes remotely controlled vessels that are run by a small on-board crew to act as a

back-up and deal with maintenance and cargo. Increasingly used on rivers and canals to transport freight, these are operated at a distance on behalf of ship and boat owners, by maritime technology providers such as Seafar in Antwerp, Belgium, and the US company Sea Machines.

Remotely controlled vessels without crew (level three) are also already in operation. So far, these are mainly 'drones' less than 10 metres long, used for measuring water depth or monitoring marine habitats and harbours. Scaling them up to ship size, and carrying cargo, cranes, robotics and fuel, requires passing a higher safety bar, and adding systems to avoid grounding, collisions and loss of communication.

Some small drones have achieved full autonomy (level four). In these, the operating system makes decisions and determines actions by itself for a period. For example, the Wave Glider, AutoNaut, Sailbuoy and Saildrone boats can operate independently for days in the open ocean, powered by wind, solar and wave energy. The challenges of operating near coasts, among other vessels and in shallow water and currents remain to be addressed.

For vessels at all levels of autonomy, guidelines must also encompass mixed environments in which autonomous and crewed vessels share the same waters. Researchers need to develop cooperative navigation and communication systems in and between groups of vessels, enabling them to operate as a fleet.

DEFINE THE ROLE OF HUMANS

Autonomous ships will always have a human somewhere in the loop, to check on navigation, perform

maintenance, handle cargo, supervise and monitor tasks, and gauge risks. These roles must be carefully specified. Until any ship with a high level of autonomy has been fully tested, at least one human should retain command and control. They might be on board, like an airline pilot, or remote, like a drone operator. As systems improve, human supervision might be required only in emergencies.

Researchers need to design human-machine interfaces to support decision-making for navigation, remote control and interactions with people on other ships and at ports. Remote-control centres will look and feel like those used to direct air traffic. A few centres are already in place, including those running the Zhi Fei, Yara Birkeland and Seafar vessels.

More analysis is needed of how humans and AI interact, including how best to relay performance or navigation information to and from remote operators. Methods need to be designed for verifying automated detections by sensors of small boats and other hazards. And more needs to be learnt about how people understand and anticipate the manoeuvres of other ships to avoid collisions in busy waters. Humans might need to check that the calculated risks of voyages are acceptable in light of weather forecasts and other uncertainties.

ASSURE SAFETY AND SECURITY

As in the automotive sector, development of maritime technologies must have safety at the centre. Preliminary guidelines for using automated processes for navigation and systems maintenance have been published by classification societies such as DNV in Norway and the French firm Bureau Veritas (see go.nature.com/43kxqte and go.nature.com/43me6e7). These guidelines cover processes for

qualification of concepts and technologies, and how systems supporting the autonomous and remote operation of vessels should be designed. But they lack specifics about how they should be applied, for example, in poor visibility, during storms or in sea ice.

Ships have a lot of moving parts (engines, generators, propellers, cranes and hatches) that require observation and maintenance by humans for safe operation. Researchers need to develop smart maintenance procedures, which monitor components and identify, diagnose and repair faults remotely. More redundancy in systems, with spare components available to take over when one has failed, would increase resilience.

Current guidelines also say little about cybersecurity risks, which will increase in the context of autonomous ships. In the past few years, cyberattacks on major shipping companies — such as the Danish firm Maersk in 2017 and on South Korea's HMM and Japan's K Line in 2021 — have damaged assets and finances. Maersk was forced to rebuild its IT infrastructure in 10 days and sustained losses of more than \$300 million, as well as reputational damage. Fleets came to a standstill, blocking ports and delaying cargoes.

To extend the guidelines, researchers should define safety and security requirements for autonomous ship technologies in a range of operational contexts. For example, how should human-machine interfaces be assured to work when a ship is rolling on heavy seas? How should uncertainties in navigation be handled when operating in currents, winds and tides? Sensors need to distinguish different types of sea ice and feed that back to ship systems to find the safest route. Measures for preventing and responding to cyberattacks need to be developed. Infrastructure such as buoys,

antennas and IT systems at sea and ashore need to be secure, and data links between ships and control centres reliable. The bandwidth of wireless communication systems is influenced by environmental and weather conditions. Digital twins (computer-based copies of large systems) are helpful for monitoring, verifying and validating functional and safety requirements for autonomous ships through simulation. Current models accurately replicate ship navigation by combining data on water depths, sea-bed composition, tidal heights and water visibility, as well as land and weather data.

RETHINK PORTS

Autonomy does not demand radical changes to ship design, although advances will be needed to accommodate equipment to support autonomous operation and the parallel development of cleaner propulsion systems.

It is a different matter for ports, where the advent of autonomous ships will accelerate trends towards fuller automation. The current focus is on automating cargo handling — in 2020, more than 800 million containers were moved around the world by human-operated cranes and vehicles. For example, in the port of Rotterdam, unmanned cranes and 'automated guided vehicles' allow an entire container terminal to be operated by 10–15 people each day. Robotic mooring and crane systems are in use in Stockholm, Tallinn and in the Finnish ports of Naantali and Helsinki. Singapore is constructing the world's largest autonomous terminal at a cost of around US\$15 billion, which is expected to be completed in 2040.

Autonomous ships will require more services, including automated pilotage and tug assistance, arrival management and berth allocation.

Pilots, who now board ships to help crew to enter ports, and 'vessel traffic services', which monitor traffic and provide recommendations to avoid hazards, will need to take control of the vessel remotely. Ways to connect ropes between tugs and crewless ships will be needed. Further ahead, autonomous ports will need to interact with one another and along logistics chains, to ensure that cargo flows seamlessly without bottlenecks and delays. Integrating all the different systems is a major challenge.

EMBED AUTONOMY IN LEGAL AND REGULATORY FRAMEWORKS

Maritime trade is heavily regulated through a web of international rules negotiated over centuries by many countries with many legal systems. The United Nations Convention on the Law of the Sea (UNCLOS) sets out the rights and responsibilities of states for vessels under their jurisdiction. The framework seems well equipped to incorporate autonomous ships. But there are challenges.

Long-established legal concepts underlying maritime law must be reconsidered. For instance, the concepts of 'seaworthiness' (the condition of the vessel and the ability of crew to operate it), 'master' (a single person in charge of a vessel) and the 'genuine link' (between the vessel and the state conferring its nationality on that vessel through its flag) no longer hold for autonomous vessels. Whether the nationality of a vessel is a suitable basis for regulating autonomous ships needs to be questioned, given that their operation can involve many actors spread around the globe.

The IMO has begun to develop a code for autonomous ships, although it has yet to set goals, requirements and rules. Initially, the code will be non-mandatory, potentially becoming mandatory in 2028. It will aim to balance the benefits of these

technologies against safety and security concerns, the impact on the environment and on international trade, the potential costs to the industry and the impact on personnel on board and ashore.

Key research questions include: how to design the land-based communications and smart navigation systems that ships interact with. How can the code be harmonized with other national and international regulations — for instance, those related to equipment in ports and land-based logistics? How can conformity with the code be verified? What skills and training are needed for operators in remote-control centres?

Legal researchers should address civil liability, for when third parties incur damages caused by autonomous vessels. Currently, those affected need to prove a wrongful action or omission by a person or by the ship. It is hard to hold AI accountable. Interpretations will also vary across jurisdictions. If companies cannot assess their liability exposure, they might not invest in autonomous vessels and infrastructures. The European Commission's development of an AI Liability Directive offers a positive example, because it will lay down rules for operating markets and standards of proof for claims involving AI-based systems.

SET OUT THE CASE FOR AUTONOMOUS SHIPS

The economic costs and benefits of ship automation and autonomy need to be established if the technology is to be taken up. Balancing all the factors across many parties is challenging, however. It is hard to know how many crew members will be required, on board or on shore. The impacts of illness, strikes and technical problems, and thus rates of shutdowns, must be judged.

More evidence is also needed regarding the economic,

environmental and safety implications of autonomous vessels. Equity is key: who will reap the benefits and who will bear the costs? The societal costs of lost crew jobs must be counted, but automated shipping will also require higher-skilled staff. Redundancy payments and costs of hiring or training staff need to be factored in, from business and welfare perspectives. The existing workforce will need reskilling, with new training opportunities put in place — across naval architects, maritime engineers, ship crew and remote-control operators, port and shipping managers and maritime administrators.

Optimizing operations and logistics chains might deliver savings, yet managing vast quantities of data adds expense. Investments will be needed for archiving and sharing data securely, and for building and staffing data centres.

Inequitable distribution of benefits and costs of innovation can lower public trust in regulators and politicians. The concentration of economic power in the large corporations that might control global autonomous logistics chains must be looked at: for example, food security could be affected if a few multinationals control key supply chains.

Unlike for self-driving cars, there is scant research on how the public perceives risk around autonomous vessels. More studies are needed, especially in contexts in which world views might conflict. For instance, in Canadian coastal areas, Indigenous peoples have a right to be involved in decision-making on matters related to protection of the marine environment.

Autonomous ships are already on the horizon. For them to really make a difference, scholars need to improve understanding of how waterborne autonomy can be adopted.

IIMS would like to express its thanks to the nature.com website where this article was first published.

1970

The Inter-Club Agreement after 50 years: Does experience mirror intent?

Helena Biggs



*By Helena Biggs, Senior Lawyer, London and
Mark Russell, Vice President, Head of Cargo Claims,
both from Gard.*

The Inter-Club Agreement (ICA) was formulated by International Group of P&I Clubs in 1970. It is intended to provide a relatively simple mechanism whereby liability for cargo claims arising under New York Produce Exchange Form (NYPE) or Asbatime charterparties and contracts of carriage authorised under such charterparties, can be swiftly and fairly apportioned between owners and Charterers. The purpose behind the development of the ICA was to avoid costly and protracted litigation.

Mark Russell



How well does Gard's experience in handling cargo claims subject to the ICA match these intentions?

ICA allocation – the basics

The Inter-Club Agreement formulated in 1970 was refined by the clubs in 1984, 1996 and 2011. The full text of the ICA following amendment in 2011 can be found at the end of this article. In broad terms, cargo claims are entirely for owners' account where they arise from matters within the shipowners' sphere of responsibility, i.e. unseaworthiness or error in the navigation or management of the ship unless the unseaworthiness results from cargo handling operations. Cargo claims are entirely for charterers' account where they arise from cargo handling operations, unless either

(a) responsibility for the entirety of the cargo handling operations has been transferred to the master in which case the cargo claim is shared equally; or

(b) the problem with the cargo handling operation resulted from the unseaworthiness of the ship in which case the cargo claim is entirely for owners' account.

All other claims, including shortage or over carriage, are shared equally between the parties unless there is clear and irrefutable evidence that it was caused by the act or neglect of one party or the other in which case that party bears the full loss. Whereas

the 1984 version of the ICA dealt with specific claim types, the 1996 revision expanded the scope of the ICA to encompass "all other claims whatsoever", promoting its application to all types of cargo claims.

Cargo interests may claim in the first instance against the shipowner or against the time charterer and the ICA applies both ways although the usual route is a claim against the shipowner under an owner's bill of lading. Often cargo claims begin with an arrest or threatened arrest of the ship and demand for security for the claim. Usually, security is provided by a club letter of undertaking in order to avoid a threatened arrest or secure

the release of the vessel. Under English law, the right to security only crystallises when a party incurs a loss. With cargo claims, there may be a delay between shipowners issuing security to the cargo claimant and paying the cargo claim which would ordinarily trigger their legal right to security from the charterer. In 2011, following the financial credit crisis and in an environment of increased sensitivity to counter-party credit risk, the ICA was refined to create a contractual right to counter-security in respect of any security provided to the cargo claimant. Thus, in the usual scenario, once owners (or owners' P&I club) have put up security to the cargo claimant, the charterer must provide security for the nascent ICA claim on a reciprocal basis.

Incorporation of the ICA into the charterparty

Although originally an agreement between the Clubs, as a matter of industry practice, the ICA is usually given contractual force as a result of express incorporation into NYPE charterparties. Some care is required in the wording of the incorporation to ensure that the correct version of the ICA and all of its terms apply. In London Arbitration 18/18, the Tribunal found that only the ICA allocation of liability was incorporated into the relevant charterparty, but not the terms creating a contractual right to security. Although there is some disagreement over whether that decision was right, the IG P&I clubs have since produced a standard clause to secure the incorporation of all the terms of the ICA as follows:

Icon quote

"Cargo claims as between Owners and the Charterers shall be governed by, secured, apportioned and settled fully in accordance with the provisions of the Inter-Club New York Produce Exchange Agreement 1996 (as amended 2011), or any subsequent modification or replacement thereof. This clause shall take precedence over any other clause or clauses in this charterparty purporting to incorporate any other version of the Inter-Club New York Produce Exchange Agreement into this charterparty".

Where properly incorporated, the ICA prevails in the event of any conflict with other charterparty provisions. In *The Kamilla* [2006] EWHC 509 (Comm), an ICA claim concerning the Algerian authorities' rejection of an entire cargo due to a small quantity of cargo damaged by water ingress, the court commented, "The agreement prevails over the provisions of the charter-party, since it represents an agreed interpretation of the provisions of the charter-party dealing with liability for loss of or damage to cargo. Any questions as to the interpretation of the ICA must therefore depend on the construction of the ICA itself and not on the construction of the charter-party." This extends to any contractual time-bar for claims, *The Genius Star* [2011] EWHC 3083 (Comm).

It was further recognized more recently in London Arbitration 10/22 that apportionment under the ICA is "a full and final remedy, and in light of its findings, the tribunal found that it need not consider the owners' further and alternative case that the charterparty contained an implied right of indemnity in favour of the owners." As such, the ICA operates as a complete code for allocating responsibility for cargo claims under the relevant charterparty.

Conditions for the application of the ICA apportionment

Cargo claims subject to apportionment:

- Must be made under a contract of carriage authorised under the charterparty and on terms no less favourable than the Hague-Visby Rules (or Hamburg Rules where compulsorily applicable).
- There must be no material amendment to the cargo responsibility clauses in the governing charterparty.
- The claim must have been properly settled or compromised and paid.

The ICA claim must be notified within 24 months of discharge or the date on which the cargo should have been delivered or 36 months

where the cargo was discharge in a jurisdiction applying the Hamburg Rules. Although the ICA refers to the inclusion of specific details in the notice, the absence of those details will not render the notification ineffective, London Arbitration 3/20. Provided the ICA claim has been notified, the standard six-year contractual limitation period will then apply under the Limitation Act 1980.

Legal costs

One of the more common arguments in resisting an ICA claim is that the claim was not "properly settled" usually implying that the cargo claim was defensible. Where a claim has been settled in accordance with legal advice or on the basis of the local correspondents' recommendation, it is more likely to be accepted as properly settled. What about cases that are successfully defended – are legal and expert costs recoverable? Cargo claims are defined to mean not only the underlying cargo claim itself, but also the cargo claimant's legal costs and interest as well as the costs incurred by the contractual counterparty who had to defend the incoming cargo claim, such as fees for lawyers, surveyors or experts. Where parties arrange operational or precautionary surveys in anticipation of a possible claim, these costs are unlikely to be recoverable as part of an ICA claim as they would always have been incurred whether or not a claim was presented. However, where a party successfully defends the incoming cargo claim and therefore has no third-party liability, there is authority in London Arbitration 30/16 that they will be entitled to recover the costs incurred in doing so as a Cargo Claim under the ICA. That said, this point may still be open for debate due to a conflicting decision in London Arbitration 10/15 where the Tribunal found that any ICA claim was qualified by the requirement that there was a third-party liability. The more commercial view is that the ICA includes recovery of the costs of successfully defending a claim. It would seem illogical if defence costs are recoverable under the ICA when the cargo claim is settled for USD 1, but not where the cargo claimant withdraws or loses the claim entirely.

Custom dues or fines

It has been a debated issue whether all dues or fines related to the cargo are subject to the ICA. The minority view is that ICA applies to all cargo dues or fines levied on and paid by the shipowners. The majority view is however that it is only cargo dues or fines levied on the cargo interest, and then in turn pursued against the carrier under the contract of carriage, that are subject to the ICA. The reasoning behind the majority view is that it is only the latter type of claim that can form part of a claim under a contract of carriage.

Does incorporation of the ICA clause lead to swift and fair apportionments between owners and charterers?

The goals of both a swift and fair resolution are in some ways in tension. Swift resolution can result in what might be regarded as an unfair outcome; conversely, if the parties invest time in negotiating a fair outcome, it is likely to take time and generate costs, undermining the ICA's key objective of efficient dispute resolution. It is a question of balance and proportionality that may be different in each case. Taking these goals separately -

Swiftly apportioned

Owners generally do not pursue claims arising from unseaworthiness and Gard's experience is that some claims, for example, for straightforward cargo shortage, can be resolved with an exchange of a few e-mails between Clubs' claims handlers. Equally, security is usually exchanged on a relatively prompt basis, provided the usual requirements for security are met. This allows the parties to focus on resolving the underlying dispute. The fact that Club correspondents are known to the Clubs more widely and are often involved in the negotiation of the incoming cargo claim probably also helps to expedite the resolution of the ICA claim by improving confidence in the level of settlement achieved.

That said, where a claim is of greater financial significance, it is more likely to be scrutinised and

less likely to be swiftly apportioned between the parties.

Fairly apportioned

Can a mechanistic approach to cargo claims ever result in a fair apportionment between owners and charterers? To the extent that the ICA recognizes the general framework of responsibility in a free in/free out charterparty, it is difficult to see how any result would be regarded as unfair. However, there are the inevitable shades of grey where cargo claims arise from causes beyond either party's control, such as attritional shortage or excess landing claims due to differences in the calibration of shore scales at different ports covered by Clause 8(c). For these claims, responsibility is simply split equally between the parties and the ICA certainly delivers a pragmatic outcome. However, it is less certain that the rough and ready approach would be regarded as fair, particularly in the context of paper shortages which were deemed by the Tribunal in Arbitration 28/17 to form a valid ICA claim even though there is no physical loss of cargo.

Similarly, Clause 8(d) inevitably picks up a wide array of claims due to its catch-all nature and simply splits them equally in circumstances where a less mechanistic approach might result in a perception that the cause of the loss more naturally fell within one party's sphere of responsibility. For example, it was held by the Tribunal in London Arbitration 10/22 that inherent vice claims are to be split equally between the parties even though charterers would ordinarily be perceived as responsible for the cargo and therefore the risk of quality issues with the cargo which is shipped. It seems unlikely that the owners in that case would regard having to shoulder half of the losses arising from the inherent characteristics of cargo as being a fair outcome. In reality, the true unfairness of shouldering losses arising from inherent vice is most pronounced where the courts hearing the claim do not recognise the defence of inherent vice and neither the owners nor the time charterers have any relationship to the cargo. Whilst it appears that there may be scope to recover contributions under the NYPE form

from time charters, there is usually no recourse against the voyage charterer who supplied the cargo. In such circumstances, the fact that owners and charterers share the pain may not be seen as unfair as both owners and time charterers usually know which trades present a risk of unfair court decisions.

That said, the potentially harsh effects of Clause 8(c) and (d) are mitigated by the exception allocating one of the parties only where there is clear and irrefutable evidence that the claim arises from their act or neglect.

An example of the mitigating effect of this provision is to be found in the case of Transgrain Shipping (Singapore) Pte Ltd v Yangtze Navigation (Hong Kong) Ltd [2017] EWCA Civ 2107 where the charterers ordered a ship loaded with soyabean meal to wait off the discharge port for four months during which time the condition of the cargo deteriorated so that it was ultimately damaged on outturn. The Tribunal found that the cause of the damage was the inherent nature of the cargo combined with the protracted period of storage onboard the ship. Consequently, the ICA claim fell within Clause 8(d) with the starting point being equal allocation between the parties subject to the exception transferring responsibility to one party. The Tribunal ultimately found that the decision to keep the ship and cargo waiting off the discharge port was an "act" for the purposes of the exception shifting responsibility entirely to the charterers. One of the key points in dispute was whether or not the "act" had to be culpable and the Tribunal's decision that the relevant act did not have to be culpable was upheld on appeal through to the Court of Appeal. However, it is clear from London Arbitration 19/17 that performance of an existing obligation under the charterparty will not constitute an "act" for these purposes. This decision concerned sweating damage to a steel cargo which the shipowners argued was due to the charterers' decision to load different cargo at different temperatures at different ports. The Tribunal declined to find an "act" for the purpose of transferring responsibility for the cargo claim to the charterers because

the parties had specifically agreed to load different cargo at different ports. In the tribunal's view, the word "act" was directed at some specific and definable event or occurrence, not at the charterers' general compliance with their contractual obligations under a charterparty.

Taking the two cases together, it appears that an act need not be culpable, but must be non-contractual.

Overall, it seems likely that for smaller cases, the ICA is often successful in delivering a swift resolution. However, for higher value claims, the parties will be tempted to explore ways to circumvent the simplistic mechanical approach to claims in the hope that the legal spend will be set off by a reduction in the contribution. Regrettably, this approach undermines the objective of the ICA. Whilst a fair outcome may be desirable, what different parties perceive as fair in any particular case is inevitably subjective. However, whilst difficult to support empirically, it does seem likely that the losses of one case will be offset by gains of another case and that the ICA may be considered fair to the extent that it delivers a more economical outcome for P&I insurers across a portfolio of claims.

Is the purpose of the ICA to avoid costly and protracted litigation met in practice?

The concept of the ICA is certainly simple and to some extent has withstood the test of time, being revised only twice in 1984 and 1996 with the 2011 amendment in relation to counter-security. However, despite the stated purpose of the ICA, the reality is that its effectiveness is heavily reliant on both Club claims handlers and the assureds following the spirit of the agreement.

The number of ICA claims which form the subject of Tribunal awards or judgments seems relatively limited taking into account the vast number of cargo claims which clubs routinely handle and the popularity of the NYPE form as a charterparty. As such, whilst difficult to measure empirically because of the absence of any visibility of unreported ICA claims, the general perception is that

the ICA does provide a swift and effective resolution for many cargo claims. However, where commercial considerations interfere with the expeditious resolution of cargo claims under the ICA, the creativity and inventiveness of the English legal industry has generated a substantial body of law. Fortunately, arbitration Tribunals and Courts generally seem to recognize and give effect to the commercial objective and character of the agreement.

In the 2018 case of the *Maria*, in which charterers argued unsuccessfully that a partial transfer of responsibility for stowage to the Master constituted a material amendment to the cargo handling responsibilities resulting in a 50/50 split, the Court commented:

The regime created by the ICA was designed to achieve, and has achieved, a clear and certain system for allocating responsibilities as between owner and charterer in the cases to which it applies. Since the only options within clause (8) (b) are 100 per cent charterer, 100 per cent owner or 50/50, it is obviously a very mechanistic and no doubt sometimes arbitrary regime. Which is why it is sometimes criticised. But it has the merit of simplicity, as with motor insurers' "knock-for-knock" agreements to which it has been compared.

In London Arbitration 10/22, mentioned above, the Tribunal similarly recognised in relation to technical and semantic arguments about which version of the ICA was incorporated into the relevant charterparty that where the Courts had previously used expressions such as "edition", "versions", "form", "predecessor" and "amendment" interchangeably when referring to different versions of the ICA, "it would be a strange approach...to conclude that commercial parties in the present case intended something stricter."

Further, in *Kamilla* Hans-Peter Eckhoff KG v. A.C. Oerssleff's Eftf. A/B ("The *Kamilla*") [2006] EWHC 509 (Comm), owners were appealing against an arbitration award finding them responsible for the losses arising from the authorities' decision to reject the entire cargo on the basis that the underlying cause was the unseaworthiness of the vessel. However, the Court agreed with the

Tribunal's findings and observed: "As the courts seem repeatedly to have acknowledged in the various cases in which they have considered the working of the ICA, it is an attempt to cut through the legal and factual problem which arose when interpreting the provisions of the New York Produce Exchange form in the context of liabilities for loss of or damage to cargo and to provide what was described by Counsel for the Charterers as "a form of rough and ready justice"."

The very existence of court judgments on ICA claims suggests that the ICA is perhaps not entirely successful in avoiding protracted and costly litigation. However, reported cases are relatively few and far between and, if nothing else, the ICA probably does reduce the scope for complex legal debate.

Concluding remarks

The ICA is, at times, an imperfect solution aimed at cutting through legal complexities to deliver a pragmatic result. It is perhaps ironic that ICA claims by definition will be dealt with in their initial stages within P&I clubs and yet Tribunals and Courts are having to hold the counterparties to the spirit of the agreement. Instead of questioning whether ICA is fit for purpose, parties should maybe more often ask themselves whether their arguments "fit the purpose" of the ICA. The above comments by arbitrators and judges suggest parties sometimes get it wrong.

Gard recommends all its members to apply and follow the ICA in all cases where it is properly applicable even if the counterparty is not insured by an IG club. Gard's perception is that the ICA has brought significant costs savings to the membership overall and a cooperative approach avoids parties becoming side-tracked by pointless disputes.

Gard would like to additionally thank Fredrik Doksrød Olsen, Senior Claims Adviser, Dry Cargo and Louis Shepard, Senior Claims Adviser, Defence Lawyer for their contributions to this article.

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Water Revolution Foundation issues call for superyacht sector to become green faster

Dry as dust, arcane text and eye-glazing data. Annual reports never make for a fascinating read. The Water Revolution Foundation (WRF), a 47-member alliance of superyacht sector companies, happily avoids that trap and doesn't mince its words.

Its latest annual report is a clarion call to the global sector to "make the transformations to become a sustainable sector." It argues sustainability is not a distant fancy but around the corner, citing the Environmental Port Index that Norwegian cruise ships have helped develop. It calculates port fees based on emissions.

A non-profit founded in 2019, the Amsterdam-based WRF has fended off snide green-washing accusations with helpful research and innovative projects putting superyacht builders, designers, suppliers and marinas in the driver's seat of sustainability.

However, WRF executive director Robert van Tol says while talk of sustainability gains traction in high-end yachting, "some professionals or entire groups in the sector are not really aware of what we are doing. So, we need to be even more present and loud."

The annual report says the WRF is making good tracks. "We now have the answer to many questions and needs."

The WRF's annual report explains how it applies a Life-Cycle Assessment method to rate the green credentials of products or design features.



WRF executive director Robert van Tol

Covering the mid-2021 to mid-2022 period – the WRF's third year – the annual report explains how it applies a Life-Cycle Assessment method to rate the green credentials of products or design features. These go into a Database of Sustainable Solutions covering all stages of a yacht's life cycle.

In 2022, the WRF entered these "first verified solutions": the Hull Vane (an energy-saving transom foil that improves a yacht's hydrodynamics), Explore E8 & E9 (underwater lights using very little power) and Hempaguard X7 (an eco-friendly alternative to standard antifouling products).

Another eye-catching WRF undertaking is the Yacht Environmental Transparency Index (YETI), a standard sustainability measuring tool, that was launched at METSTRADE 2022.

"You cannot look at one type of yacht," says WRF naval architect and sustainable design specialist Hanna Dąbrowska. "You need to compare various projects to define what is acceptable or better. The focus comes through optimisation and learning from the innovations of other projects."

The 47 WRF members, rivals on any day of the week, jointly toil on a sustainable future for their sector. The WRF uses ecological impact calculations from boats built by more than 20 yards into a single YETI graph.

"The group's willingness to share data has been formative in our successful, and continuing, development of YETI 1.0," says Dąbrowska in the annual report. "This tool will reach the impactful parties who can drive real change in the sector."

YETI 1.0 is "an objective measuring tool, able to compare new and existing yachts on their environmental credentials," says WRF chairman Henk de Vries. The WRF has also developed a Yacht Assessment Tool that measures each yacht's ecological impact.

Lacking the massive economic, industrial and lobbying heft of the car, plane and IT sectors, the WRF seeks support from within the global high-end yachting sector whose wealthy clients are deemed able and willing to drive sustainable solutions.

The unspoken motive is that solutions crafted by the high-end yacht sector will be more palatable than whatever solutions national or local governments will impose.

"Both owners and shipyards must take responsibility," says Lürssen Yachts CEO Peter Lürssen. "We need to talk to our clients and encourage them to invest in more sustainable technologies. We will discover these new technologies more quickly and introduce them to clients more easily if we work together."

Vienne Eleuterik, WRF initiator and vice president said "There is no bigger opportunity for the yachting community to step up the plate now and take on the strategic role it can have."

"We need to be equally clear, unambiguous, and sector-specific when contributing to the ongoing emergency,"



Vienne Eleuterik, WRF initiator and vice president

she say. "Therefore, there is no bigger opportunity for the yachting community to step up to the plate than now and take on the strategic role it can have."

She is a sustainability scientist. The WRF annual report carries a 1,300-word contribution from her explaining the state of the oceans.

Dutch superyacht builders were vital in creating the WRF. Six of its 13 "Anchor Partners" are Dutch, but the WRF stresses its sustainability drive is designed to benefit the global industry.

Its sustainability forces the superyacht sector to tread carefully. "Sustainability and superyachting might sound like an oxymoron," the annual report says, "but no sector is free from impact. Every time an industry player communicates wrongly, it hurts all of us. As an industry, the license to operate can be on the line."

WRF treasurer Louis van Beurden says the challenges of 2022 have not slowed down the WRF, saying, "We were pleased to maintain the commitment of the partners and their financial support."

The annual report showed an income for the WRF in the year to June 30, 2022, of €483,345, primarily membership fees (€476,700) and expenses of €388,308.

The WRF board members comprise:
Chairman Henk de Vries (Feadship/Netherlands), Vice-President Vienna Eleuteri (Italy), Designer Philippe Briand (France), Martin Redmayne (Superyacht Group/UK), Peter Lürssen (CEO Lürssen Yachts/Germany), Carolina Corral (Safe Harbor Marinas/USA) and Louis van Beurden (WRF Treasurer/Netherlands).



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UK Transport Select Committee

publishes report on Maritime 2050

maritime

2050



NAVIGATING THE FUTURE

The UK Government's Transport Committee has published a report on the Government's Maritime 2050 strategy, and calls for investment in new technology, cleaner fuels and workforce training so that the UK's sector can compete with the world.

This sometimes-overlooked "Cinderella" sector is vital to the UK economy. Approximately 95 per cent of goods by weight come to the UK by ship, and the Department for Business and Trade predicts maritime cargo volumes will triple by 2050. The UK's sector employs 185,000 people throughout the four nations and contributes £40 billion a year to the economy.

The cross-party Committee's new report critiques the Department for Transport's (DfT) Maritime 2050 strategy, published in 2019. It was praised at the time for taking a decades-long view, which is critical when vessels and infrastructure vary between countries and are built with lifespans of 30 years. However, the strategy has since been criticised for lacking distinction between aspirations and actions to be taken. The Committee makes a number of recommendations on how to help both the sector and ministers achieve the strategy's aims.

Chair's comments

Transport Committee Chair Iain Stewart said:

"All the evidence we received about the UK's maritime sector has shown it is resilient, entrepreneurial, and used to working independently from government. Nonetheless, there is an array of things government should do to support the sector and help it achieve its ambitions to decarbonise and remain a positive force on the world stage and for the UK economy. We commend the Government for being forward thinking in developing the Maritime 2050 strategy, but clarity and focus are needed to refine its muddle of 184 recommendations.

The sector will need sustained support to overcome the challenge of radically cutting carbon emissions. We urge ministers to bring forward the promised Clean Maritime Plan, which will give industry the certainty it needs to invest in technology, new vessels, infrastructure and low-carbon shore power. Without it, we will fall behind other countries and miss our net zero targets.

People make the maritime sector. Many will be supportive of the

Government's plans to enforce the UK minimum wage equivalent for seafarers who frequently work here, albeit on ships registered abroad, but this will not be sufficient to ensure proper treatment of seafarers. We urge the Government to bring forward its promised welfare charter as soon as possible and make it mandatory for UK operators.

And while enforcing fairer wages should help repair the sector's reputation after the shocking practices seen by P&O Ferries, we heard a lot needs to be done to raise the sector's profile as a career option among young people, women and those from diverse backgrounds. More attention should also be paid to a problem seen in many sectors – skilling up older workers who may otherwise be left behind by the pace of technological changes. Autonomous vessels, for example, also require new regulation to clarify the skills that are needed."

The National Oceanography Centre's (NOC) Associate Director of NOC Innovations, Huw Gullick, said:

"The UK, and the Solent region in particular, is a world leader in maritime autonomy. The sector has benefited in the past from an

absence of regulation in testing and scaling up new technologies. But to now take the industry forward, we need the regulation to catch up and the Committee is right to push the government on this. We have the right technology, and scale can only now be achieved with the regulation that supports this fast-moving sector. The UK can harness first mover advantage to drive autonomy to the next exciting stage in the ocean space.”

Decarbonise the maritime sector

The Government aspires for the UK to become a world leader in zero emission shipping, and to revitalise ports and coastal communities by investing in technology, in turn making the UK more competitive. But industry sees the Government’s net zero emissions target as its biggest challenge.

DfT has said it is working on a follow up to its 2019 Clean Maritime Plan, with aspirations that by 2025 all new vessels ordered for use in UK waters will have zero-emission propulsion capability, and that the UK will be in the process of building clean maritime clusters. These will be focused on innovation and infrastructure associated with zero emission propulsion technologies.

The Government itself recognised in its first Clean Maritime Plan that “the market may benefit from further policy certainty.” The Committee therefore calls on DfT to bring forward the refreshed Clean Maritime Plan without further delay.

The Committee also argues for long term investments in scaling up mature technologies that will help the sector reach net zero, as R&D funding can only take innovation so far.

State investment is needed – over and above the match funding ministers promised in February 2023 – to bolster shoreside electrical power supplies, ‘shore power’. Ports themselves are commercial entities that are often unable to take on risks of high capital costs.

Invest in people

Experts told the Committee of an ageing workforce that struggles to recruit and retain younger workers or those from diverse backgrounds. Less than 4% of seafarers are women.

The rate of technological change has created a necessity for older workers to learn new skills. Martyn Gray of Nautilus International said: “Innovation and education have to move at the same pace, otherwise the whole sector will fall down.”

The report says DfT should review training funding in the maritime sector to establish if there are barriers to access and how the system can be improved. This should include an assessment of the potential costs and benefits of providing fully funded training places for both officers and ratings to attract new workers.

The Committee also heard of a lack of education about careers in the sector, and misconceptions that the majority of roles would entail working at sea.

The Committee welcomes the Seafarers’ Wages Bill but considers it alone will not be sufficient to ensure proper treatment of seafarers. The Government must bring forward its promised Seafarers’ Welfare Charter as soon as possible, and make it mandatory for UK operators.

Enable ‘smart shipping’

Autonomous ships that use sensors to help them navigate or to assist crew are widely seen as the cargo vehicles of the future. This ‘smart shipping’ would allow a vessel to sail more efficiently, thereby reducing costs and boosting competitiveness.

The Committee was told by the National Oceanography Centre that challenges with recruitment have resulted from a “lack of defined quality standards [regulation] for autonomy”, which has led to “a lack of easily identifiable and transferable skills”.

The 2022 Queen’s Speech stated that the Government would “introduce new laws that safely enable [...] remotely operated vehicles and vessels.” The Committee was then informed in December that new legislation had been shelved. The necessary reforms must be legislated for at the earliest opportunity so that a major commercial opportunity for UK innovators – at the forefront to date – is not lost.



DfT should publish the outcome of its consultation on maritime autonomy and remote operations as soon as possible so the sector has a clear understanding of the regulatory framework it will be operating within. DfT should also establish the promised Centre for Smart Shipping as soon as possible, empowering it to work with the sector to enable innovation to prosper.

Ports shouldn't be 'Swiss army knife'

Following the outcry over P&O Ferries' sacking of nearly 800 seafarers in March 2022, the Government announced plans to enforce the UK national minimum wage equivalent for all workers on ships that use UK ports 120 times a year or more.

The Seafarers Wages Bill, currently making its way through Parliament, would place the burden of enforcing this on individual harbours and the Maritime and Coastguard Agency. For the ports sector to be effective and competitive it is important that the Government department and agencies they work with have a good understanding of their role and competencies.

DfT should clarify across government the role of ports authorities and protect them from inappropriate

enforcement burdens. Ports authorities cannot be used as the Government's 'Swiss army knife' to undertake an ever greater variety of tasks without appropriate resourcing and expertise.

Strategy is too 'muddled'

Witnesses told the Committee that the Maritime 2050 strategy contains so many recommendations that it appears to lack clear priorities and focus. More distinction is needed between which of its 184 recommendations are specific actions and which are aspirations.

DfT should have dialogue with industry to streamline and prioritise the strategy's recommendations, and set out targets for each, so that it becomes a more useful tool for tracking progress and accountability.

Grow the ship register

The Government should set concrete targets for how it will grow the UK Ship Register, after it shrank by a third between 2009 and 2021. It is currently the 24th largest in the world, measured by tonnage.

Having more ships registered with the UK makes the country more influential in terms of setting standards for safety and workers' welfare.

The Committee praises the Government for creating the UK Shipping Concierge Service in 2021, which provides bespoke financial guidance and support for firms wishing to register in the UK.

Level up coastal areas

Coastal towns and cities could be levelled up if the Government continues to develop new 'regional maritime clusters', which are concentrations of firms and institutions around ports. The purpose of clusters is to "maintain and enhance the attractiveness of the UK's regional maritime offer".

The Committee argues that coastal shipping and inland waterways were overlooked in Maritime 2050, and should be supported by a review of the funding streams available to promote modal shift. This part of the sector should also be seen as an area of growth for domestic seafaring jobs.

Download the full report at
<https://bit.ly/3JpspLG>



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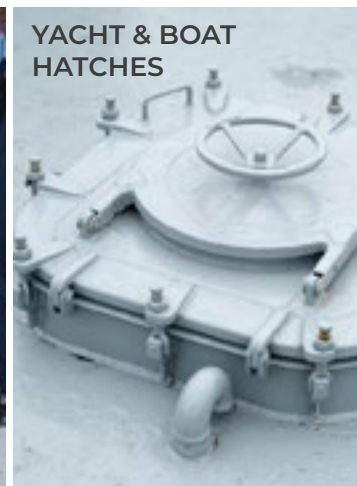
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TRUST IN TOMORROW

– the evolution of underwriting –



Matias Bøe Olsen, Executive Underwriter, Skuld

The maritime industry is manoeuvring towards the destination of decarbonisation, but the unpredictable route, and ever-increasing complexity of the journey, creates major challenges for all ocean stakeholders.

Skuld's executive underwriter Matias Bøe Olsen assesses how underwriters can help create certainty and trust in tomorrow in uncertain times.

How do you assess risks for shipowners looking at 25-30-years vessel lifecycles when no one seems to know what's going to happen tomorrow? How will the industry hit regulatory targets without a 'silver bullet' fuel solution? Why are you smiling Matias?

Matias Bøe Olsen has remarkable poise and maturity for someone comparatively new to the shipping industry. The big questions don't appear to derail him; simply putting him on track to deliver answers rooted in understanding, research and, with his education in marine engineering, a solid appreciation of technical considerations.

"We need to take things one step at a time," he says calmly. "Sustainability is a challenge, of course, but specialist underwriters can help. In fact, I'd go as far to say that the function of underwriting is actually sustainability in practice."

Responsible role

What Matias, an Executive Underwriter with Skuld's sustainability group, means by this is manifold. Firstly, there's the 'bread and butter' aspects of assessing risk and setting P&I premiums that are commensurate with any potential third-party liabilities – for example cleaning up an oil spill, or safely removing a wreck. So, there's clear environmental responsibility.

The premiums also have to be sustainable in terms of Skuld's operations, and its members' businesses, while providing an adequate safety net to meet all future claims.

And this is where, from a sustainable perspective, things get a little complicated.

Despite the fact that Skuld has over 125 years' experience in assessing maritime's ever-evolving risk picture, the situation the industry, and indeed the world, currently faces is unprecedented. A new generation of expertise is required.

Physical threats

"The climate is changing, and so is risk," notes Matias. "We now have to consider two categories of risk – physical risk and transitional risk."

In the past, assessing physical risk was comparatively "straightforward" in an environment of relative stability, he says, but the rapid warming of the planet disrupts established risk models. Now, he explains, it's necessary to consider a wide range of climate scenarios before coming to any conclusions. "The risk picture changes in accordance to future global warming projections," Matias comments. "The higher the increase above the 1850-1900 baseline, as set by the Intergovernmental Panel on Climate Change (IPCC), the greater the frequency and intensity of 'extreme' events. So, for example, if the world warms up by 2 degrees as opposed to 1.5 degrees, the probability and consequence (hence the risk) of an event that could impact upon our members' operations, will increase.

"That's something we have to constantly track and understand to be able to provide optimal levels of cover."

Defining developments

The other side of the coin, transitional risk, is no less important.

With the lack of any aforementioned silver bullet solution to enable a truly green maritime industry, owners are confronted with a myriad of (often



unproven) alternative fuel choices. This is challenging for them, but also for the insurance industry, which has to assess and cover risks. Skuld, Matias says, is working to stay at the vanguard of the transition.

The organisation has just participated in a Green Shipping Programme with Grieg Star to assess the potential of retrofitting an open hatch bulk carrier with green ammonia. This kind of cross industry partnership, he stresses, is crucial to unlocking understanding.

"Ammonia has huge potential for deep sea shipping, but there's also challenges, not least in its toxicity," Matias explains. "So, how do those challenges and risks compare to those of conventional fuels, and how can ammonia be handled, how can the technology develop, to mitigate those risks? Maybe it – or hydrogen, or any of the other competing alternatives – could incur less risks than conventional heavy fuels?"

"These are questions that we don't have all the answers to as yet, but through involvement in such projects we can build industry leading expertise. This enables to advise our members, helping them navigate the uncertain waters ahead."

Easy does it

As if that task of navigation wasn't already complex enough, Skuld's members also have an array of regulations and reporting requirements to contend with, as Matias acknowledges.

"The regulatory landscape is changing fast," he notes. "Owners now have CII to consider, and all the implications inherent in that, while we also need to look ahead at the development and adoption of new Emission Trading Schemes. For our members, who obviously need to focus on their core businesses, staying informed, ahead, and compliant can be an increasing challenge."

Thankfully, Matias and the team are on hand to help. He says that their collective knowledge works to "simplify complexity", streamlining regulatory developments into advisory services that help both Skuld's claims handlers, and members, understand how trends impact upon their operation and insurance needs. As such, Skuld can act as a "partner and enabler" when it comes to negotiating a landscape where ESG demands are, understandably, looming ever larger.

Ongoing optimisation

"The whole industry is evolving, but so is Skuld, and so is the task of underwriting," Matias states, adding that the organisation's recent commitment to the Poseidon Principles for Marine Insurance demonstrates the accountability, and responsibility, defining shipping today, and tomorrow.

"This is a collective effort," he says. "No one can suddenly become 'sustainable' in isolation, so we need to work together, and Skuld has a strong part to play. Looking at the big picture, I see sustainability as optimisation – a process of continual improvement – and there's multiple factors to consider, including underwriting insurance."

Matias sits back to gather some final thoughts, revisiting the start of the conversation at its conclusion.

"Look, the future is uncertain," he says, "and there are some big questions ahead for this industry. If you want to find the right answers, you need the right partners. And that's Skuld."

"We've been a robust partner for our members for over 125 years, and I look forward to playing my small part in building that role for a successful, sustainable future."

This article was first published on the Skuld website and is published here with our thanks.



2025 2030 2035 2040 2045 2050

Lloyds Register: Timeline for compliance with the FuelEU requirements

FuelEU is a draft Regulation, part of the EU's 'Fit for 55' package, which aims to incentivise the use of renewable and low-carbon fuels on ships to reduce greenhouse gas (GHG) emissions (CO₂, CH₄ and N₂O). The final draft text of the Regulation is not yet available, but Lloyd's Register has issued a Class News paper to provide essential information about it.

The Regulation is expected to apply from 1 January 2025 to ships over 5000 GT which use EEA (EU plus Norway and Iceland) ports. To incentivise the use of renewable and low carbon fuels, FuelEU will impose limits on the greenhouse gas intensity of fuels used onboard, and require certain ship types to have zero-emissions at berth from 2030, with stringent financial penalties for non-compliance.

On 22nd of March 2023, EU agreed to the world's first green shipping fuels law in favor of at least 2% mandate for green shipping fuels by 2025, compared to the latest agreement of a mandate by 2030. Negotiators agreed new targets for shipowners to reduce the greenhouse gas intensity of the energy they use onboard by 2% from 2025 and 6% as of 2030. Ships will be required to increasingly switch to sustainable fuels and at least 2% of the bloc's shipping fuels will need to come from e-fuels derived from renewable electricity by 2034 at the latest.

Key requirements of FuelEU

Reduction of GHG intensity: The yearly average GHG intensity of energy used onboard a ship will need to be determined in accordance with the Regulation. The value is not to exceed the 2020 fleet average GHG intensity of energy used onboard ships. Every 5 years from 2025 to 2050 this reference value will be reduced as follows:

- | | |
|----------------------|--------------------|
| • By 2% from 2025 | • By 6% from 2030 |
| • By 14.5% from 2035 | • By 31% from 2040 |
| • By 62% from 2045 | • By 80% from 2050 |

Do you know? The GHG intensity is a measure of the CO₂ equivalent emissions per quantum of energy used on board. This will be measured based on reported fuel consumption, from EU MRV, and the emission factors of the fuels used on a well-to-wake basis.

As stated by ESPO, the agreement provides the shipping sector with a framework to accelerate their green transition through reduced emissions during navigation and at berth. The ambitious requirements for ships to reduce emissions starting in 2025 will help drive the uptake of alternative fuels in shipping, as well as help ensure the use of shore side electricity (SSE).



Noting the aforementioned, the following are of consideration:

- There will be a financial penalty for each quantum of energy used above the reference value.
- Any compliance surplus, compared to the annual reference value, may be banked until the following reporting period.
- Any compliance deficit, compared to the annual reference value, may be borrowed as an advance compliance surplus from the subsequent reporting period. However, it will be subtracted from that subsequent reporting period at a rate of 1.1 x the borrowed surplus. Once a FuelEU certificate of compliance is issued surplus banking or use of an advanced surplus cannot be changed.
- To incentivise the decarbonisation of the maritime industry, the annual compliance balance of two or more ships may be pooled if verified by the same verifier. Allocation of the pooled allowance is at the discretion of the company/companies.
- Penalties are to be paid for each ship with a compliance deficit. Similarly, penalties are to be paid for each non-compliant port call. (The funds raised from the penalties will be allocated to support common projects aimed at decarbonising the maritime sector.

Zero Emission Berthing

From 1 January 2030 container and passenger ships entering major EEA ports will need to connect to onshore power supplies to meet new zero-emission at berth requirements. This will also apply to other EEA ports from 2035 if they have an onshore power supply. There are several exceptions to the requirements, which include staying at port for less than two hours, using zero-emission technology onboard whilst at berth or making a port call due to unforeseen circumstances or emergencies.

Fuel certification

The calculation of GHG intensity will require factors for each fuel type used. Greenhouse gas emission factors of the following fuels (compliant with the greenhouse gas emission savings criteria) will be determined according to the methodologies set out in Directive (EU) 2018/2001:

- biofuels and biogas not produced from food or feed crops
- renewable fuels of non-biological origin

If they do not comply, they will be considered as having the least favourable fossil fuel equivalent emission factors.

Data provided on the above fuels must be verified by a scheme that is recognised by the Commission in accordance with Article 30(5) and (6) of Directive (EU) 2018/2001. Companies may use values other than the default values for the tank-to-wake emission factors provided that the actual values are certified by means of laboratory testing or direct emissions measurements.

Voyages that fall into scope of FuelEU

Ships entering EEA ports from a non-EEA ports / EU outermost regions or vice-versa will have 50% of the energy used in that voyage subject to the Regulation, whilst intra-EEA voyages will have all the energy used in those voyages subject to the Regulation. All energy used at berth in the EEA will be subject to the Regulation.

Ensuring compliance with the FuelEU requirements

The shipping company is responsible for ensuring compliance with the requirements of the FuelEU regulation. As per regulation EU 2015/757 (MRV), the 'company' means the shipowner or any other organisation or person, such as the manager or the bareboat charterer, which has assumed the responsibility for the operation of the ship from the shipowner.



Timeline for compliance with the FuelEU requirements

By 31 August 2024: Monitoring plans

Shipping companies will need to submit a monitoring plan to verifiers for assessment for each of their ships indicating their chosen method to monitor and report the amount, type and emission factor of energy used onboard. From 1 January 2025: Recording information

Based on the monitoring plan, each company will need to record the following information on an annual (1 January to 31 December) basis, for each of its ships arriving at, berthed at, or departing from an EEA port:

- port of departure and port of arrival including the date and hour of departure and arrival and time spent at berth;
- for container and passenger ships, the connection to and use of on-shore power or the existence of any of the exceptions;
- the amount of each type of fuel consumed at berth and at sea;
- the well-to-wake emission factors for each type of fuel consumed at berth and at sea, broken down by well-to-tank, tank-to-wake and fugitive emissions, covering all relevant greenhouse gases; and
- the amount of each type of substitute source of energy consumed at berth and at sea.

By 30 March 2026: Information submission

From 2026, and in each subsequent year, by 30 March the company is to provide the verifier the information listed above (in recording information) for each of its ships.

By 30 March 2026: Pooling

From 2026, and in each subsequent year, by 30 March companies are to notify verifiers of their intention to include a ship in a pool for the preceding reporting period. If the pool includes ships controlled by two or more companies, they should jointly notify the verifier. Once a FuelEU certificate of compliance is issued pooling cannot be changed.

By 30 April 2026: Reporting

From 2026, and in each subsequent year, by 30 April the verifier will have reported the following information back to the company:

- the yearly average GHG intensity of the energy used on-board by the ship
- the ship's compliance balance
- the number of non-compliant port calls in the previous reporting
- period including the time spent at berth for each non-compliant port call; and
- the amount of the penalties.

The shipping company will then record that information in a compliance database (to be established by the European Commission).

By 30 April 2026: Compliance surplus/deficit

From 2026, and in each subsequent year, by 30 April, the company must record the use of any advance compliance surplus, following approval by its verifier, in the compliance database. Once a FuelEU certificate of compliance is issued surplus banking or use of an advanced surplus cannot be changed.

By 30 April 2026: Pooling

From 2026, and in each subsequent year, by 30 April, the verifier has to record the use of a pool in the compliance database, after which the composition of the pool cannot change.

On 1 May 2026: Penalties

From 2026, and in each subsequent year, on 1 May, if the ship has a compliance deficit the company will need to pay a penalty.

By 30 June 2026: FuelEU certificate of compliance

From 2026, and in each subsequent year, by 30 June the verifier will issue a FuelEU certificate of compliance for the ship valid until 30 June in the subsequent year. Ships entering an EEA port will have to carry a valid certificate of compliance. A certificate cannot be issued if the ship has a compliance deficit or non-compliant port calls for which the penalty has not been paid.

Failure to present a FuelEU certificate of compliance for two or more consecutive reporting periods could result in a ship being banned from the EU.

The restoration of the 127-year-old large classic yacht “Cariad”

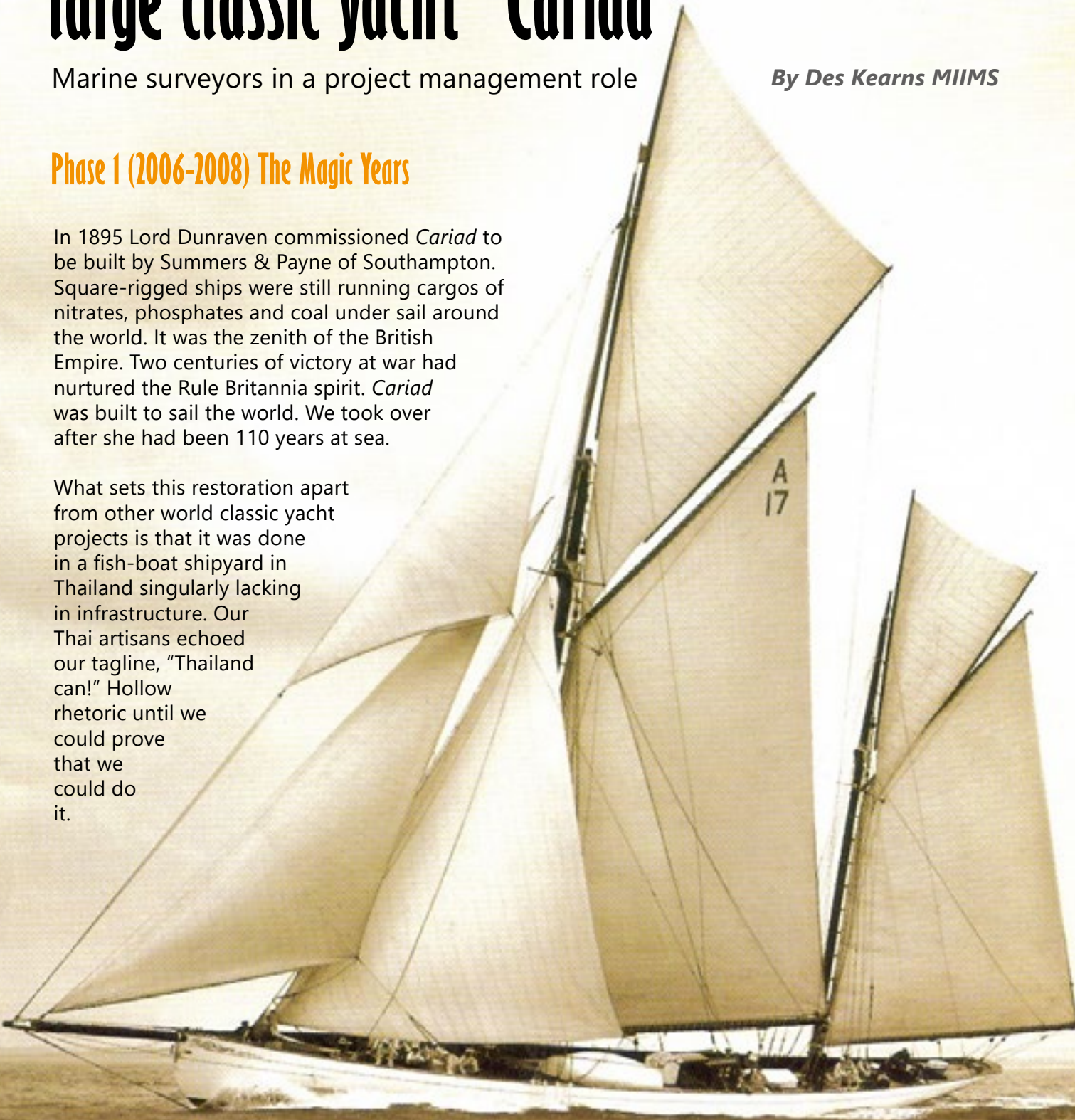
Marine surveyors in a project management role

By Des Kearns MIIMS

Phase 1 (2006-2008) The Magic Years

In 1895 Lord Dunraven commissioned *Cariad* to be built by Summers & Payne of Southampton. Square-rigged ships were still running cargos of nitrates, phosphates and coal under sail around the world. It was the zenith of the British Empire. Two centuries of victory at war had nurtured the Rule Britannia spirit. *Cariad* was built to sail the world. We took over after she had been 110 years at sea.

What sets this restoration apart from other world classic yacht projects is that it was done in a fish-boat shipyard in Thailand singularly lacking in infrastructure. Our Thai artisans echoed our tagline, “Thailand can!” Hollow rhetoric until we could prove that we could do it.



Cariad under full sail - Beken & Cowes photo 1896

During Phase 1 *Cariad* was owned by Stuart Williamson, a British businessman residing in Kuala Lumpur. Half a world away in Italy the famous yacht *Lulworth* was being restored. Des Kearns, project manager and Jory Lord, design and engineering, were at Finnegan's Irish Pub drinking a pint of Kilkenny. The phone rang. It was Stuart. Where are you? In Finnegan's Pub. Stay there I am sending over the *Lulworth* book. It was the long-awaited glossy account of the *Lulworth* restoration spanning five years and a cost of \$21 million. We single out *Lulworth* above the others because she is the closest in design to *Cariad* and identical in construction.

Our budget to achieve the same objective was \$2.5 million - a hard act to follow. Budget aside, our true challenge was to produce a quality of workmanship in Thailand that would be judged favorably by our peers in Europe.

My involvement began thirty-three years ago when I carried out a routine survey on *Cariad* in Singapore. Sixteen years later, I was asked to do a follow-up survey while the vessel lay derelict off the port of Laem Cabang, Thailand. It took 30 seconds to sum up that she was *uninsurable*. The potential buyer, Stuart Williamson said he would purchase her anyway and accept the cost to restore this piece of British maritime history.

As Project Manager I was privileged to manage a team of diverse people performing tasks and achieving standards beyond their wildest imaginations. Our project was about ordinary people stepping up to the mark when opportunity knocked. You saw the spirit in their eyes. In Mike Howett's eyes you could almost see the finished boat. The

same spirit and pride could be seen in the eyes of all our carpenters, steelworkers and artisans, meaning we chose our team well.

For me, restoring *Cariad* was an opportunity to leave behind something tangible.

The word spread like wildfire. By the time we finished casting our recruiting net most of the region's best boat builders were now employed on our project. Twenty-one steel workers and twenty-eight carpenters along with their tools, arrived in fleets of pick-up trucks. Without briefing or time-consuming meetings, they started work in earnest. They knew what to do.

There are no benchmarks when it comes to restoring a 100-year-old classic yacht like *Cariad*. We had basic 1895 naval architect plans drawn in pencil and a Beken & Cowes 1896 photo of *Cariad* under full sail. For the rest we had to rely on creative talent and good boat building practice to make it work. We began by sketching basic conceptual drawings then converting them into AutoCAD.

Our project was a journey in time, a look into a bygone era. Our brief was to duplicate the craftsmanship not from the last century, but the century before.

You only get one of these jobs in a lifetime. We built a wooden access ramp up to the deck and called it *The Ramp of Opportunity*. Each of us who daily walked up that ramp was being given the chance to achieve or exceed our personal best.

Before any antique vessel is restored it must be dismantled. We removed the hull interior, all the planks and 90% of the iron frames under the watchful eye of the Thai King Rama

IX whose photo was on display above our materials container. Our workshops were painted yellow in respect of the Monarch. Sadly, when we finished dismantling the derelict, there wasn't much left.

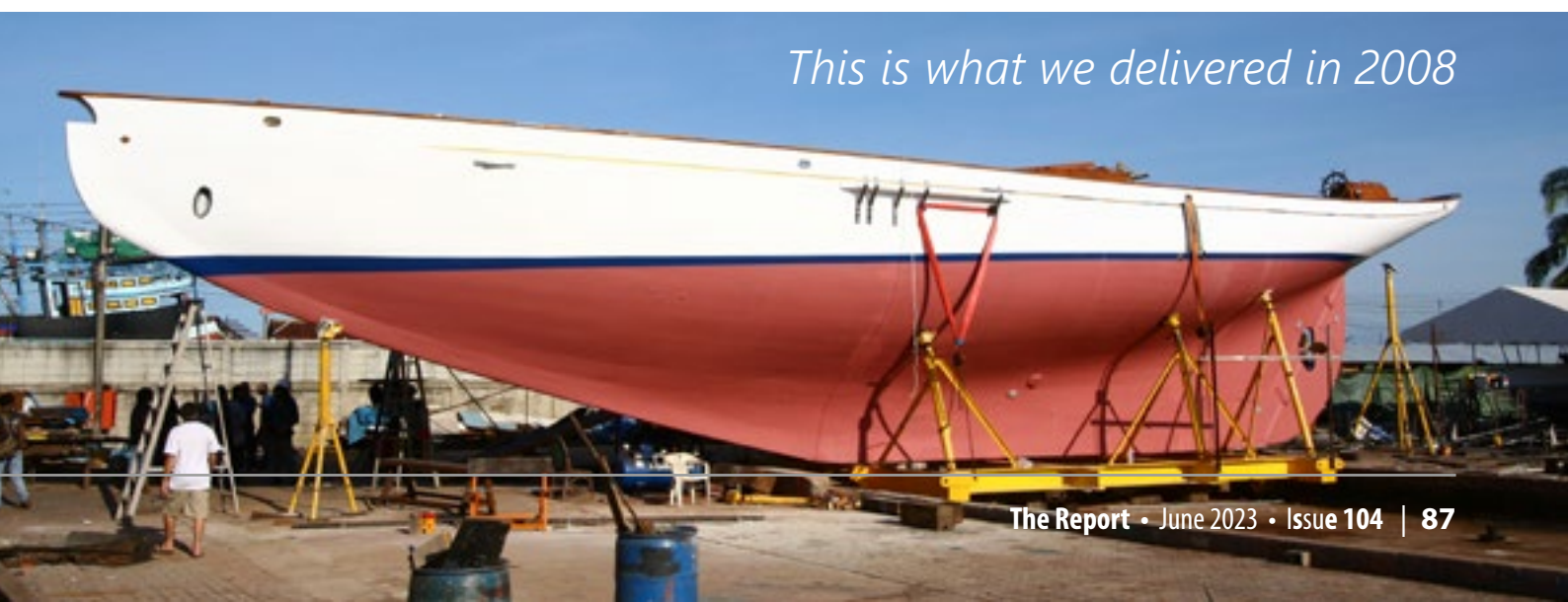
The hull was of composite construction, meaning, teak planking over iron frames. Each iron frame had to be removed and copied individually. Then we got lucky. The keel was found in sound condition. Replacement could have been the final straw for Stuart Williamson to stop funding.

We started with a shell and soon the project took on a life of its own. Steel was fabricated into complicated frames and each welded in place to return the wineglass shape. A ten-man team secured huge Takian Thong planks, a greenish oily timber from Laos, using top mauls and drove home 5,500 silicon bronze bolts coated with oakum and red lead. The bolts were custom-made in upstate New York by a company that guaranteed flawless bolts.

Burmese teak was fashioned into deckhouses, skylights and hatches to match the original 1896 design. We heard the throbbing of the British classic 8LXB Gardner engine. Carpenters completed their fine woodwork, then laid quarter-sawn teak decking. We fashioned Canadian Douglas Fir and Sitka Spruce into fine masts and spars. To me personally the highlight was the staccato ring of caulking mallets. When the job was done, we walked the new decks and allowed ourselves a moment of reflection.

In 2008 we launched a perfectly restored *Cariad*. Unfortunately, this coincided with the world financial crash and Stuart was forced to sell.

This is what we delivered in 2008





*This is what we
got back in 2022*

Phase 2 (2008 — 2021) The Destructive Years

In 2021 when the horrifically neglected Cariad was returned to us, we began to piece together the intervening years.

Reportedly she was purchased by a businessman who, for thirteen years treated her like a trophy on a shelf. She sat at Raffles Marina in Singapore under the care of a boat boy. Over time marina dwellers reported the boat was fast deteriorating, but these reports fell on deaf ears. Allegedly no remedial work was ever done. Neglect was one thing, but neglect coupled with indifference, was quite a different dimension.

During the thirteen-year period the owner carried out almost no routine maintenance, inclusive of not drydocking the timber hull. Teredo worms chewed up her beautiful new planking and she began to leak. The sacrificial zincs quickly degraded, and electrolysis began affecting the through-hull valves.

In Singapore it rains, then it steams. It was clear the caretaker rarely ventilated. Judging by the extent of internal planking rot our carpenters surmised that lack of ventilation caused freshwater condensation which rotted the hull from inside.

We heard she partially sank three times completely submerging the engine room each time. This was later confirmed by our team when they observed the dirty water 'tide' line across the electrical distribution panels.

In summary, evidence points to the fact the owner of Cariad was oblivious to the fact he was inadvertently destroying a piece of British maritime history. More to the point, our workmanship, which we believed would stand for another century, had been obliterated in just fourteen years.

Phase 3 (2022 — 2023) Rescue and Restoration

In 2021 Cariad was purchased by Tim Hartnoll, CEO of X-Press Feeders Shipping Line, a man with the passion and money to restore Cariad to former glory. Tim contacted me. I called PSS shipyard and together we formulated a plan how to get Cariad into Thailand at a time when the border was closed due to the Covid 19 pandemic.

An Indonesian tug was contracted to tow Cariad as a dead ship from Singapore back to PSS Shipyard in Thailand, a distance of 450 miles.

At that time Cariad was covered by insurance only while moored in Raffles Marina. It was a longshot, but we thought we would apply for a Tow Approval Certificate from Underwriters who in turn appointed Aqualis-Braemar-LOC, a global marine

surveying and consultancy company, to act on their behalf. The attending surveyor was thorough during his vessel inspection and besides stipulating a three-man competent crew to ride the tow to maintain twenty-four-hour watches and operate the four large diesel pumps when required, he issued an additional string of safety/contingency recommendations to be complied with. We were surprised when the risky tow was approved.

Unquestionably the attending surveyor went out on a limb and took a giant leap of faith. The tow



*The fully restored boat
we delivered in 2008*



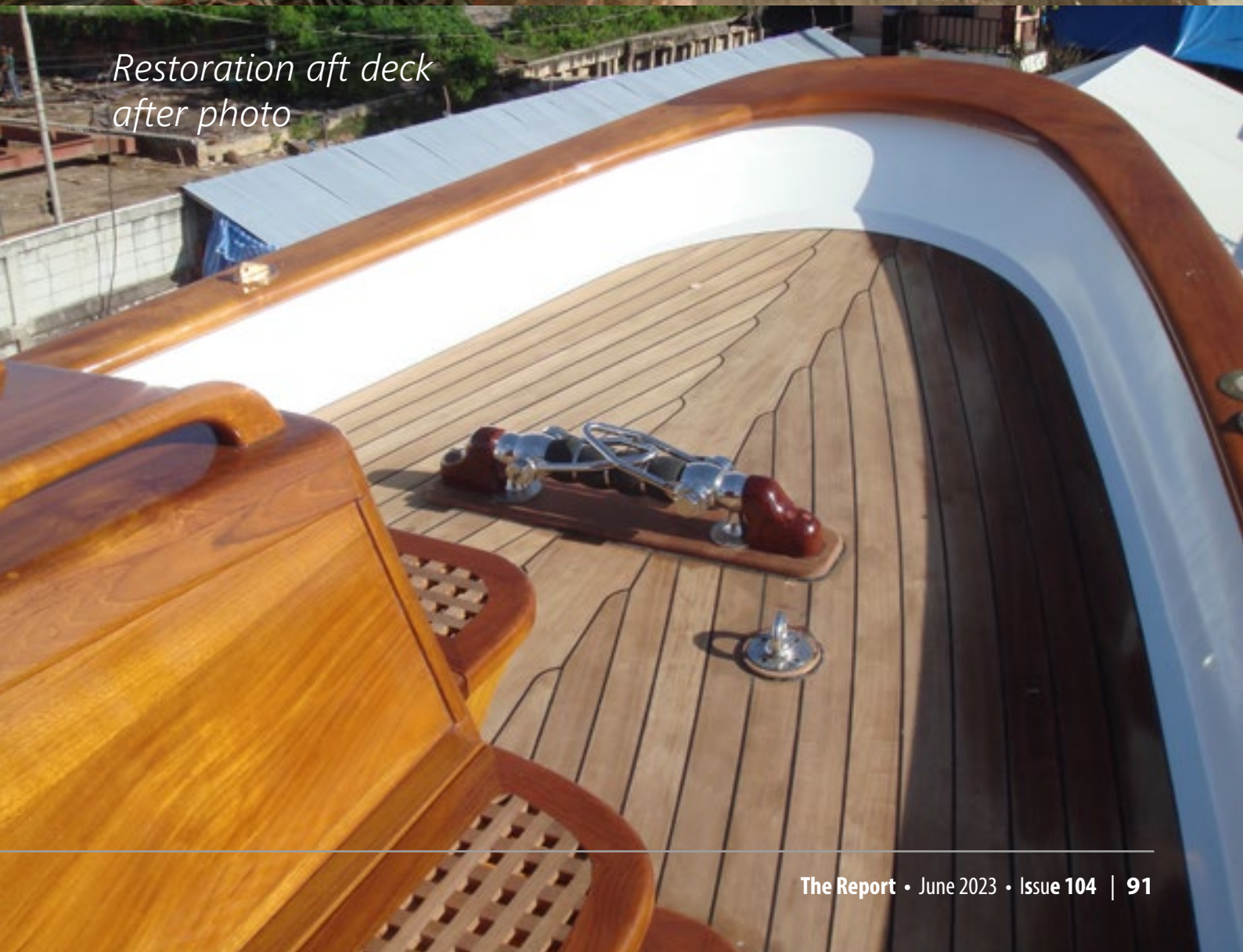
This is what we got back in 2022

*Risky
haulout*





Restoration aft deck before photo



*Restoration aft deck
after photo*

was successful despite the mizzen mast crashing down on deck due to internal wood rot. Perhaps a good example of risk analysis based on experience, and maybe a bit of luck.

It was déjà vu. Pickup trucks began arriving at the shipyard loaded with tools and highly skilled enthusiastic tradesmen. However, when *Cariad* was brought alongside the PSS jetty using tugs, we were not prepared for the derelict vessel that was returned to us. Our enthusiasm quickly turned to disappointment.

The following morning, we stopped feeling sorry for ourselves and commenced the process of restoring *Cariad* for the second time.

We ordered a crane to remove the rotted masts and booms. Our engineers cringed when they saw the seawater contaminated main engine and corroded generator emerge. Salt water corroded wiring was removed inclusive of the main electrical distribution panel. Carpenters, engineers and electricians stood by observing their once proud work dripping sea water. Last items for removal were the fuel and water tanks. In all fifteen tons of equipment was removed. I am sorry to say what remained was a filthy cavern. Worse, because with the hull stripped out the extent of the corroded steel frames and rotten planking was clearly visible.

Given PSS shipyard was the closest yard in the region capable of hauling *Cariad*'s deep draft, coupled with the fact there were no suitable tides for several months, we decided to take a chance and haul out on a 2.9 metre tide instead of the required 3.7 metres.

This was risky and not recommended practice. We rigged a sling system plus a 60-ton crane to lift the bow and skid/assist the vessel onto the haul-out trolley. The old adage was uppermost in my mind, "Don't screw this up - you are only as good as your last job."

As surveyors we adhere to the criteria of sound engineering principles and good marine practice. Was I a surveyor or an independent manager where the buck stopped? Where is the dividing line? Should we go for it or wait three months for a suitable tide? My surveyor's hat said wait, my managers hat said that we must find a way.

There are always two sides to every story. It depends on which side of the fence you are on. Years previously as a warranty surveyor during jack-up rig moves when the weather exceeded allowable limits, I frequently had to ask the drilling supervisor to shut down the rig move and wait for the weather to ameliorate. I can't count the times I received irate phone calls from head offices in Houston, "Boy, do you know how many United States Dollars this deelay is costing me? Ah don't give a rat's ass about your weather, just move the mahfarker, ya hear me, Boy."

I now reflected on his situation. He had a job to do, come hell or high water. It was now my turn. The experienced Singapore surveyor had taken a leap of faith. Based on the known collective skills of our team, we decided to go for it.

When finally on dry land *Cariad*'s hull was observed riddled with worm holes. The rudder was badly eaten away. Teredo worms are the enemy of every timber hulled vessel. They bore into the plank through a small hole the chew away inside the plank sometimes hollowing it out.

Fitting heavy 2 1/2" and 3" planks with three-dimensional bends is a dying art. Our original planking team again rose to the challenge. We also phoned Australian shipwright, Mike Howett, in Tasmania who agreed to come back and restore the hull to sound condition. Samples of rotten planking indicated a lack of ventilation in Singapore which caused freshwater condensation and rotted the hull from inside. Internal planking rot - Teredo worm damage on the outside.

Regionally timber is a cut-throat business. In 2006 naively we went deep into the forests of Laos in search of Takian Thong planking timber. It was plentiful, old growth, clear grained, no knots. Timber brokers laughed at our requirements.... "All timber must be Legal with Government Approved Certification, minimum 100 years old, forest grown, preferably gully grown. Straight grain, no knots, no pin borers, no heartwood, minimum sapwood, quarter sawn and back sawn to our specifications."

We took a five-kilometre trip into the forest guarded by men with AK 47's in search of the perfect timber. With 45-calibre handguns on the

front seat of our 4 x 4, we bumped our way through dusty bush roads deep into the forests and were shown exactly what we needed, high quality Thakien Thong logs. We then drove northwest to Tha Li, a border crossing so hidden it was almost secret. It consisted of a small bridge over the Hueang River. Twenty-four hours a day, undocumented timber crossed from Laos into Thailand whereupon the Thai timber mills took over. The lumber was sawn to specific sizes and received government legal stamps, with paperwork to match.

Today governments have cleaned up the timber business and stopped the export of raw logs but sadly, the high-quality timber has also dried up. Second time around, we had difficulty finding suitable planking material. Persistence paid off when we located old stock in remote timber yards.

The internal steel frame was corroded but not as badly as we first thought. Nevertheless, our eight-man paint team and five-man steel team took nine months to bring the steel frames, floors and longitudinal stringers back to life. During the same timeframe the planking team, replaced 80% of the planking.

Tim Hartnoll and his naval architect Paul Spooner redesigned the entire interior. As I type this our 50-person team is powering ahead towards a 2nd August 2023 launch date. We still have a long way to go. When launched, *Cariad* will sit alongside the PSS jetty while the masts and rig are installed by a team of European rigging specialists. Sea trials will follow.

Cariad was built to sail the world. When finished she will sail home to the Mediterranean. Departure from Phuket is scheduled for January 2024. The northwest monsoon should provide ideal broad reach sailing conditions up as far as Socotra Island in Yemen. Then she will battle the northerlies in the Red Sea. She is no stranger to adversity, she has already completed three circumnavigations, survived two World Wars and the Great Depression. Twice we've brought her back to life.

"To you Cariad, 127 years young, we raise our glasses and be upstanding. May you last another 100 years."

For more details and information go to <https://www.cariad1896.com/>



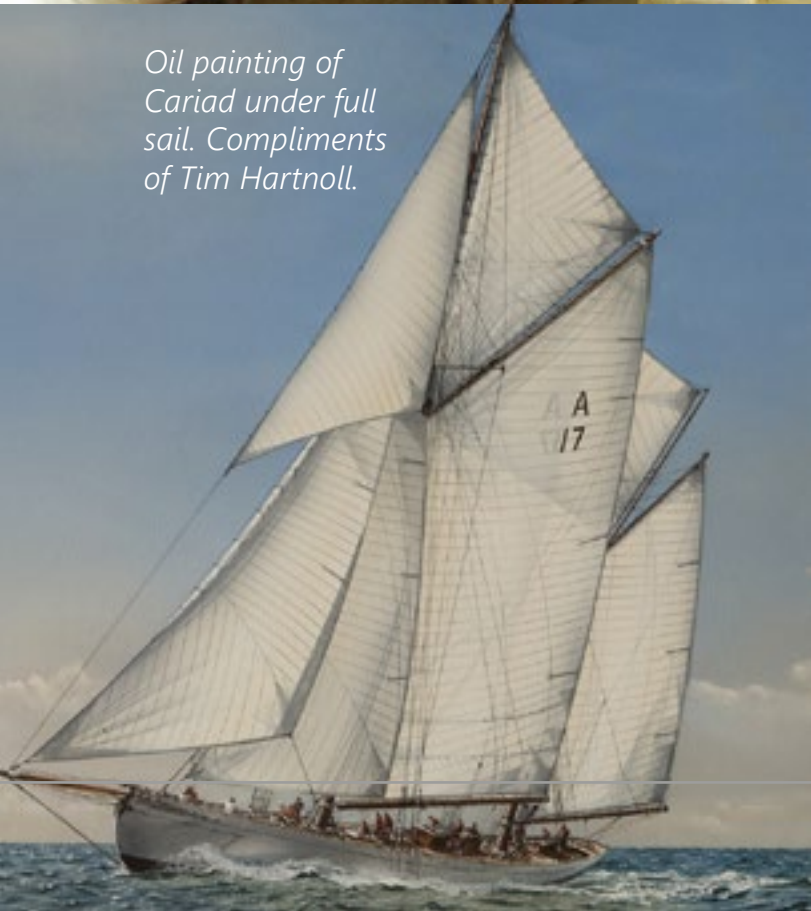
Restoration frames before photo



Restoration of frames after photo



Oil painting of Cariad under full sail. Compliments of Tim Hartnoll.



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BOATS OF THE FUTURE

Next-generation technology has opened the door to unprecedented advances in marine electronics and engineering, bringing boaters greater safety and convenience than ever. Technology continues to evolve at lightning pace. Curious what the future holds? Here's just a sample of the new high tech we could be seeing on the water in the years ahead.

If you think you're hearing about more new technology these days, you're right. Solar panels, electric cars, virtual meetings – even mobile phones – were all once considered far-fetched ideas straight out of science fiction novels. They have all since gone on to become part of everyday life. So, what's next?

Where boaters are concerned, the future is full of amazing new technologies.

MAGNETIC SHORE POWER SYSTEMS

One of the realities of having electricity anywhere near water is that corrosion is inevitable, and that in turn can lead to short circuits. In the case of shore power systems, corrosion can cause serious fires if a connection arcs or overheats.

A Canadian company called VoltSafe has developed a new magnetic plug design that eliminates the traditional prong-and-socket configuration altogether, creating what it says is the safest shore power system in the world. Inspired by the magnetic power cords used on Apple laptop computers, VoltSafe invented and subsequently patented a high-voltage magnetic connection that can provide 30, 50 or 100-amp shore power – or even charge an electric boat – without risk of arcing or corrosion.

"The plug will only let power flow once the outlet recognises an exact electrical signature from the plug, and this happens in less than five milliseconds," says VoltSafe CEO, Trevor Burgess. "So, if you accidentally drop your plug in the water, it's not going to pop all the breakers or electrocute anyone."

The company is now talking with boat builders and marina pedestal manufacturers to bring the system to market.



HULL COATING INSPIRED BY SHARK FIN



Most boaters are familiar with stepped hulls, which use an irregular shape to break surface tension and increase performance. In Europe, German engineering firm BASF is achieving even better results by replacing the single abrupt step with millions of much tinier ones.

Inspired by the way sharks can swim at high speeds for long distances with minimal effort, the company has developed a super-slippery film that's covered with tiny, diamond-shaped structures inspired by the sandpaper-like denticles found on shark skin. This film can be applied to any hard surface to reduce drag and, as a result, significantly lower both fuel consumption and emissions.

In lab tests the new film proved so successful that the German national airline, Lufthansa, has entered into a programme to conduct real-world testing on one of its cargo jets. Initial results have been encouraging, meaning the drag-reducing film could make its way to market in the very near future.

NEXT-GEN STABILISERS

Let's face it, it's hard to have fun on the water when the boat's pitching up and down in rough seas. But a new stabiliser technology aims to tame the waves by suspending the yacht above them.

The Martini concept – a collaboration between Servo Yachts and Shuttleworth Design – uses parallel pontoons to form a catamaran style hull, with the passenger compartment suspended between them on shock-absorbing legs. Imagine a spider straddling a pair of matchsticks and you get the basic idea.

As the pontoons heave up and down in the waves, their motion is absorbed by the articulated legs, leaving the yacht itself level and still at all times. The unique suspension system is said to deliver the smoothest possible ride in rough seas.

Servo Yachts has tested a series of prototypes and is now partnering with Shuttleworth Design to develop a pair of luxury yachts – dubbed the Martini 6 and the Martini 7 – around the concept.



SOYBEAN SEAT CUSHIONS



Foam seat cushions are made from oil, and with prices skyrocketing these days, boat builders are open to alternatives, like plant-based resins made from soybeans.

The idea of using plant-based resins isn't new. Ford first tried them a dozen years ago, when it put soy-based foam in the seats of its 2008 model year cars, including the flagship Mustang. More recently, Toyota and BMW have also adopted the use of plant-based resins in their own vehicles.

North American boatbuilder Campion Marine started using soy-based seat cushions in 2016 and won a Boat Builder Award for Excellence at METSTrade the following year as a result. As oil prices continue to rise, it's very likely other companies will adopt foam cushions made from soybeans to curb costs and reduce their reliance on fossil fuels.

CHARGE YOUR ELECTRIC BOAT IN 5 MINUTES

The main knocks against electric boats (and electric cars) are limited range and that they take a long time to recharge. Researchers at Purdue University in the USA are aiming to change that with a new type of power cable that could cut recharge times to just five minutes.

Charging time is limited by the capacity of the cable linking the boat to the power source. Pushing more power through the cable speeds the process, but also generates more heat. Too much, and the cable melts.

The Purdue team has developed a water-cooled cable that can take much higher voltage without overheating – allowing charge times 20 times faster than possible with a standard power cable. Patents are pending, and investors are standing by – including major electrical equipment companies.



HIDING BATTERIES IN SAILS

Electric boats need big battery packs, and they can suck up a lot of interior space especially on sailboats, where there isn't much room to begin with. But a new flexible battery technology could eliminate that problem by allowing a vessel's sails to store all the energy it needs.

Researchers at the Nanyang Technological University in Singapore have developed a flexible, lightweight and paper-thin battery that can be rolled, folded, twisted or even ripped without impairing its ability to supply power. This allows the battery to be integrated into flexible structures like sails, or even a canvas top. Combined with solar panels and an electric motor, the flexible batteries could theoretically give any sailboat unlimited global range.

CREATING FUEL FROM WATER

Several leading engine builders are touting hydrogen gas as a replacement for diesel and gasoline in engines, given that it's cheap, widely available, and the only emission it produces is steam. Further, engines running on hydrogen would only require minor modifications from existing ICE designs, making the transition fast and cheap.

Like any other propellant, hydrogen would need to be carried onboard in a tank, which takes up space and delivers a finite volume of fuel. But a new technology being developed in the US to strip hydrogen from water could theoretically give boats, yachts and commercial ships unlimited range, allowing them to create their own fuel on the fly as required.

By introducing water to two key elements – aluminium and gallium – researchers at the University of California found they were able to induce a chemical reaction which produces significant volumes of hydrogen gas that can be used to power a vessel.

Best of all, the reaction takes place at room temperature, eliminating any need to heat or cool the water in order to achieve a result.

Whether or not their process for generating hydrogen fuel on demand can be scaled to commercially viable levels remains to be seen. The researchers have filed a patent application for the process, however, so clearly, they believe it possible for boats to produce their own fuel on the go while enjoying unlimited range roaming the oceans of the world.



PAINT ON SOLAR PANELS

Not everyone likes the look of a solar panel array. But what if the panels could just be painted on, and in any colour you like?

That's the goal of researchers at the University of Toronto in Canada, who are developing paint-on solar panels using quantum dot solar cells. Quantum dots are tiny, light-sensitive grains small enough to be mixed into regular paint. They are

more effective than traditional solar panels because they respond to a broader range of light wavelengths and can be used to coat the entire vessel.

Even better, quantum dots are cheap, so they offer a low cost per watt of power – a key factor in making the technology commercially viable. The technology has already attracted interest – and investment – from major automakers.

FULL AUTONOMOUS BOATS

Progress toward the development of fully-autonomous boats took a giant leap forward in January this year when a Japanese car ferry completed a 240km voyage through the Iyonada Sea, successfully departing port, navigating the crossing while avoiding other traffic, and docking at its destination, all without human intervention.

Built by Mitsubishi, the *Soleil* executed several automated manoeuvres in the course of its voyage, including high-speed navigation at speeds of up to 26 knots. The electronics used to guide the 222m vessel include infrared cameras that can detect other ships in even total darkness, an automated ship navigation system collision avoidance capability, and an advanced automated port berthing/unberthing system that provides fully automatic docking.

The *Soleil* ferry began navigating with a human crew in July 2021, allowing the vessel to compile six months of passage data in preparation for its fully autonomous navigation. That data bank can now be shared among other autonomous vessels travelling a similar route or visiting the same ports. The long-term goal is to create a global, shared library of navigation and port data that can be collected by and shared among all autonomous vessels – updating the data bank in real time to reflect any changes.

Scaled-down versions of the system could also allow fully automated leisure boats to handle the driving while their occupants relax and lay out in the sun. Industry analysts say that automation systems could be just the ticket to encourage more people to come boating by eliminating anxiety over docking or learning navigation skills.



INSULATION YOU CAN EAT

Boats use a lot of insulation, whether it's to make overnight accommodation more comfortable, or to cut noise from the engine compartment. But traditional insulation isn't the nicest stuff from an environmental perspective, leading a group of German scientists to experiment with more ecologically-friendly alternatives – like popcorn.

Researchers at the University of Göttingen in central Germany say granulated popcorn is a great insulator that actually outperforms the stuff already in use. Further, popcorn can be formed into sheets or applied with a spray gun for easy installation. It's highly fire-resistant, costs pennies, and is widely available. Best of all, at the end of its life popcorn insulation is fully biodegradable. You can even eat the stuff.



This article was first published in Boating New Zealand magazine and is republished here with our thanks.



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New AMSA report raises concerns about the alarming increase in vessel fires

The Australian Maritime Safety Authority (AMSA) has issued an urgent Maritime Safety Awareness report on fire safety in order to raise awareness of the risks and prevent further incidents as the number of vessel fires continues to grow alarmingly since 2020.

According to AMSA, fire and explosion incidents on ships result in the most expensive insurance claims in the marine industry. Fires spread quickly on ships and can be particularly difficult to contain, often resulting in crew abandoning ship. There have been over 70 reported serious fire incidents on container ships worldwide in the past 5 years.

Key messages:

- Having an effective maintenance plan to prevent and reduce the risk of malfunction or equipment failure will ensure there are no delays in the detection of a fire and in the implementation of firefighting to help protect the crew and passengers, as well as cargo.
- Emergency escape routes should be maintained in a safe condition, clear of obstacles and clearly marked.
- All fire protection systems and firefighting systems are to be maintained ready for use, and properly tested and inspected in accordance to the SOLAS Chapter II-2, Regulations 14 (Operational Readiness).
- Fire drills help the ship's crew better understand the basics of fire prevention and prepare the crew in dealing with emergency situations as a result of a fire on board.

In the report, AMSA presents two incident and case studies to draw lessons from...

INCIDENT ONE



Photo credit AMSA

A fire broke out in the lower cargo hold of a general cargo ship whilst berthed. The fire started during hot work to remove sea fastenings from the tween deck in preparation for cargo discharge operations.

The investigation identified the operators had not effectively implemented the safety management system hot work permit procedures and fundamental risk controls such as maintaining a continuous fire watch and

protecting combustible cargo with fire retardant coverings to prevent the spread of fire. Items of cargo stowed in the lower hold below the work site were not adequately assessed as a fire risk and protected before starting the hot work. Of concern is that lessons learnt from previous similar incidents were not properly considered, noting this was the tenth fire-related incident on the company's ships in the past 14 years.

INCIDENT TWO



Photo credit: AMSA

During cargo discharge operations while alongside, a fire broke out in the internal cargo handling spaces of the self-unloading (SUL) bulk carrier. The ship sustained substantial structural damage and was declared a total loss.

The investigation identified that the fire was likely the result of a failed bearing in the ship's conveyor system, which created the heat necessary to ignite the rubber conveyor belt. Five years before the fire, the operators identified the fire risk in the ship's cargo SUL system

spaces, particularly the C-Loop, as being unacceptably high due to the absence of fire detection or fixed fire extinguishing system. However, at the time of the fire, the prevention and mitigation measures had not reduced the risk to an acceptable level.

The ship did not have an emergency contingency plan for responding to fire in the ship's SUL spaces and there were technical failures of the ship's alarm systems during the emergency response to the fire.

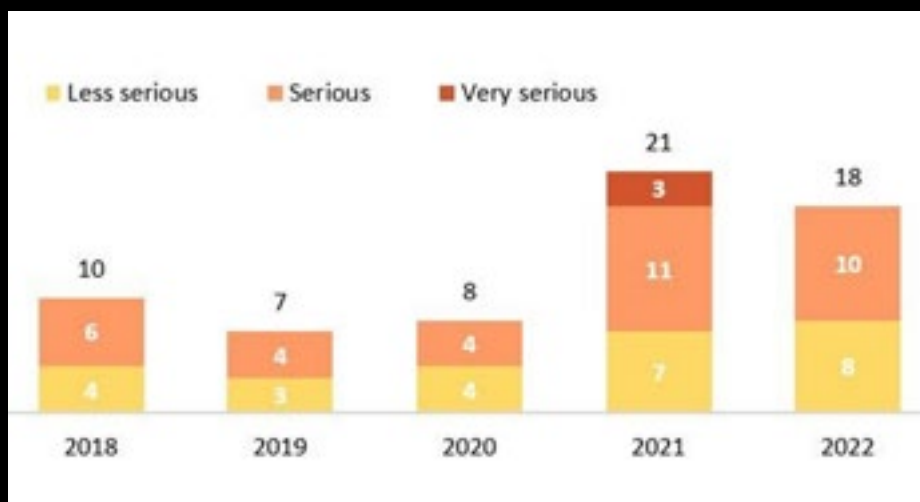
At the time of the fire, 14 of the ship's crew of 20 had not participated in a fire drill on board in the previous month as per SOLAS regulations.

In response to the incident, the operator initiated a fire risk mitigation project with the aim of:

- improving fire detection and suppression technology
- reviewing and improving their firefighting policy
- setting minimum fire safety standards for early fire detection and suppression at the ship design and build stage.



Increase in fire incidents reported to AMSA since 2020



In 2021 there were 3 very serious and 11 serious fire incidents reported onboard foreign flagged vessels in Australian waters. In addition, 13.6% of all port State control detainable deficiencies in 2021 were fire safety related issues.

Source of fire

Most fires were initiated in machinery/workspaces, followed by cargo spaces. The Safety and Shipping Review 2022 identified cargo fires are often a result of mis-/non-declaration of hazardous cargo, such as chemicals and batteries. If improperly packed and stowed onboard this can result in ignition and complication in detection and firefighting.

The increasing concern in this area has prompted a Tokyo Memorandum of Understanding (MoU) and plans to commence a Concentrated Inspection Campaign (CIC) focusing on fire safety, with AMSA intending to inspect vessels for fire safety from 1 September 2023 until 30 November 2023.

Maintenance

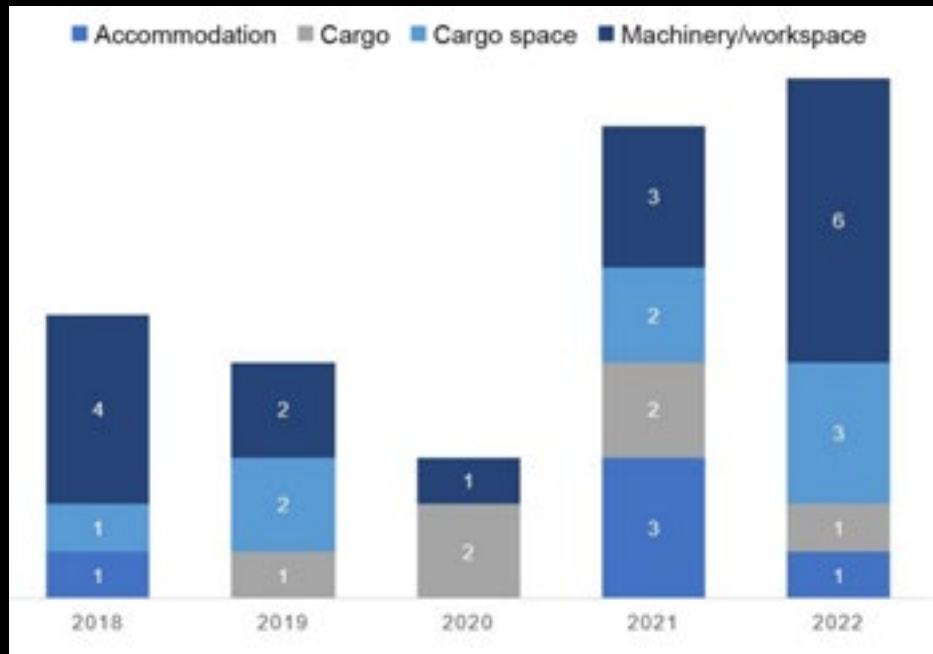
Chapter II-2 of the International Convention for the Safety of Life at Sea Convention, 1974 (SOLAS) Regulations and amendments sets out requirements for the provision and maintenance of fire detection, fire suppression, fire prevention and means of escape in case of fire.

As per the International Safety Management code the ship must have a maintenance plan⁵ as part of the safety management system to ensure the maintenance and inspection of fire detection, fire prevention and firefighting equipment are carried out at periodic intervals in accordance with the relevant recommendations and manufacturers' guidelines.

Fire drills

Regular onboard fire drills are prescribed by the SOLAS Convention. The ship should carry out routine and frequent fire drills to address different simulated fire incidents in different areas of the ship, such as machinery space, cargo holds, accommodation areas, etc. These fire drills are to be realistic and tailored to address foreseeable fire scenarios specific to ship operations including the engine room⁴.

All crew should participate in at least one abandon ship drill and one fire drill every month on a cargo ship. On passenger ships, an abandon ship drill and fire drill should take place weekly.



Teamwork and communication

The importance of fire drills as per SOLAS requirements must consider the fire-fighting capability of the team. Effective communication and teamwork are essential to ensure the crew are familiar and well-equipped in firefighting and the containment of fires. Lack of operational readiness of firefighting equipment, lack of a centralised chain of command, and gaps in training and familiarisation of crew are some of the aspects that can contribute to delayed response times in actual fire incidents.

The Australian and New Zealand National Council for fire and emergency services (AFAC) published a report identifying psychological factors underpinning decision-making in firefighting. Some shortfalls include:

- command and role confusion
- lack of trust
- unable to predict fire behaviour.

Environmental stressors that can also impact teamwork and performance include:

- multiple information sources
- incomplete, conflicting information
- rapidly changing, evolving scenarios
- adverse physical conditions
- time pressure
- high work or information load
- auditory overload or interference.

Characteristics of good teamwork include leadership, followership, effective communication, trust building, and motivation. It is important that there is accurate and timely transmission of information to avoid miscommunication, which could result in serious consequences.

Good teamwork will build mutual trust and team coordination amongst the crew, as well as reduce risk of error, particularly in life-threatening situations. It is important that crew members are able to respond, communicate, receive and carry out instructions efficiently in the event of a fire onboard.





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New extreme climate conditions means extreme product testing is essential



Photo credit: Raymarine

With climates becoming ever more extreme, environmental testing in the harshest of conditions is critical to a product's success says Raymarine.

Changes in climate extremes and their impacts on the natural physical environment means that technology needs to be more durable than ever. The ability of a product to withstand the environment within which it has to operate, is critical to its success and the reason Raymarine goes beyond industry standards to test its marine products.

Raymarine's testing centre in the UK is at the forefront of the industry. The facility provides a comprehensive range of accredited marine environmental testing, from hard drops, prolonged vibration, extreme temperatures, wireless emissions, relentless rain and spray, full submersion, and the simulation of months at sea inside a salt mist chamber.

Vibration test

Vibration is the hidden enemy for both electronics and mechanical structures. Constant shaking across a range of frequencies can create loose connections, fatigue wires, damage solder joints and result in equipment failure.

Vibration testing at Raymarine's environmental test centre goes well beyond standard tests. In the shaker room, vertical and horizontal shakers perform swept sine and dwell tests, subjecting items to a vibration sine tone across a broad frequency range. Where a resonance is found during the sweep, testers dwell on that frequency for two hours, then check for fatigue damage. The standard test is 5Hz-100Hz, but Raymarine pushes that to 600Hz, as well as performing shock and random vibration tests simulating and surpassing real-life vibration data from customers' boats.

Electromagnetic compatibility

Following brutal vibration and drop testing, products are taken to the EMC (electromagnetic compatibility) area, where power supply tests are performed. Interference from switching on other boat equipment can disrupt the shared power supply, so these tests ensure that products will continue to work over the various voltage ranges they might experience. These tests cover issues such as voltage drops, inrush current and surges.

Products are then moved to Raymarine's radiated immunity chamber, where testing ensures that products can still operate efficiently when exposed to a powerful radiated electromagnetic field. The walls of the test chamber are covered in pyramid-shaped material designed to prevent reflections so that only the direct signal from the antenna is received, making it easier to produce a uniform test field. In this process, the transmit antenna is placed at the far end of the chamber while the test product is placed on a table in the pre-calibrated field and monitored to ensure it operates correctly under radiation, without failures such as lines of interference appearing on a video feed.

In a separate chamber, radiated emissions testing identifies the unintended release of electromagnetic energy. To prevent interference from external signals, the outer chamber is made from two layers of steel. Inside, a combination of ferrite tiles and blue absorber material stops reflections.

From the freezer to the oven to the helm

Mariners operating in polar waters can experience huge seas and sub-zero temperatures. Closer to the equator, searing temperatures create a new set of demands. In either extreme, functional electronics remain a matter of survival, which is why Raymarine gives all its products such a punishingly hard time at its environmental test centre. Extreme temperature testing takes place in specially designed thermal chambers, where products are repeatedly tested and soaked overnight to ensure they start up, restart and function over a massive temperature range between -25 degreesC (-13 degreesF) and 55 degreesC (131 degreesF), and also survive non-operational storage in temperatures between -30 degreesC (-22 degreesF) and 70 degreesC (158 degreesF).

During hot room testing, products are placed inside a 55 degreesC (131 degreesF) chamber for life tests, where they often remain for months. Along similar lines, an IR (Infrared Radiation) test simulates noon sunshine to ensure that displays don't black out and that no sunlight damage such as glow marks or buckled film occurs inside the display panels.

Thereafter, the salt mist room exposes products to continuous salt spray for two hours before they are then left for seven days in

a warm, damp atmosphere. This process is repeated four times, taking the test duration to 28 days. Products are then examined to ensure that salt and water has not damaged the coatings causing blisters, cracks or colour loss.

Water ingress testing

The next testing is in the wet room, a water ingress area where IPX6 tests are carried out. Products carry this rating if they can withstand arduous tests designed to assess an item's water and/or dustproofing capabilities. One such test requires products to be continually sprayed with at least 100 litres of water per minute from a fire hose, for a minimum of 30 minutes, and for the unit to continue to function both during and after the test.

The industry standard requires products to be left in a damp and drizzly atmosphere for half an hour, but Raymarine leaves them in for an entire day to replicate real-world usage, with testers taking the products apart afterwards to make sure there's no water inside. A drip of water over the life of a product becomes a flood inside the unit and is unacceptable.

But these water ingress tests are merely the opening act. Subsequent IPX7 tests determine products' abilities to withstand immersion at a defined depth for a specified duration. The immersion tanks are also used to check sonar transducer performance. As thorough as the above test procedures are, Raymarine does even more. It employs AIS simulators to test AIS transceivers, DSC base station simulators for radios, GNSS simulators, Wi-Fi simulators and more.



Diary of a salvage master



The work of a salvage master is often dangerous and precarious as they are brought in after an accident to clean and clear up the resulting mess. It is a job requiring attention to detail and, of course, each salvage project is entirely different, and each needs a special solution, depending on the gravity of the incident. The essential work of salvage masters often goes unheralded, so The Report Magazine is grateful to the TSAVLIRIS Salvage Group for sharing diarised accounts of some of their projects which took place in the first quarter of 2023.

TSAVLIRIS is recognised as one of the most active emergency response contractors for maritime casualties worldwide, as well as the most frequent user of LOF contracts. The Group's international activities embrace every service relating to marine salvage and towage, extending to complex wreck removals and partnering today's shipowner in fulfilling its obligation to protect the marine environment from pollution.

Over the years, TSAVLIRIS has consistently performed more Lloyd's Open Form (LOF) salvage services than any other company. The Group has undertaken more than 3,000 maritime casualties in the last 50 years, averaging 25 each year. In 2000 the Group signed 50 LOFs, the highest number ever recorded by Lloyd's in a single year. The "MSC CARLA", a 1997 TSAVLIRIS mid Atlantic landmark case, is considered to be one of the largest LOF awards of all time.

The case of MV ASASTRA

On 13 January 2023, the Bulk Carrier "MV ADASTRA" (GT 25,554 – DWT 46,493), laden with Agribulk, experienced main engine problems and was drifting off Yemen. The vessel was en route from Riga, Latvia, to Dar es Salaam, Tanzania.

On 14 January, TSAVLIRIS despatched the AHTS "HERCULES" (BHP 5,150 – BP 67) from her salvage station at Berbera, Somalia, arriving at the casualty's position on 16 January when towage to Oman commenced.

On 25 January the convoy arrived safely at Duqm anchorage, Oman, and the vessel was berthed safely with the assistance of port tugs. On the same day the operation was successfully completed.

The case of MV ABILITY

On 25 January 2023, the Bulk Carrier "MV ABILITY" (GT 36,757 – DWT 64,253), laden with 55,000 tonnes of wheat, was immobilised due to fuel (sub-zero temp) solidification, 350 nautical miles NE of Kuril Islands, Japan in the North Pacific Ocean.

The vessel was performing a voyage from Vancouver, Canada to East Africa (three intended discharge ports: Nacala, Mozambique, Dar Es Salaam, Tanzania and Mombasa, Kenya).

The Japanese Tug "AKATSUKI" (BHP 10,400 – BP 150) was hired by Owners but was unable to reach the immobilised vessel due to technical problems and heavy weather conditions. Tug "AKATSUKI" took shelter to rectify technical issues and wait for improved weather.



Photo credit: MV ADASTRA by TSAVLIRIS Salvage Group

On 3 September 2022, the Motor Yacht "007" struck rocks off Kythnos Island, Greece, and was beached at nearby picturesque Kolones Bay. The yacht was aground, laying semi-sunk on her port side with a list of approximately 80 degrees. The starboard side shell plating had several cracks, and the bulbous bow was severely deformed/fractured. All the yacht's internal spaces were flooded.

On the same day of the accident, TSAVLIRIS Salvage and Environmental Pollution Engineering (EPE) proceeded to the assistance of the casualty. The OSV "AEGIS I" (BHP 2,000 – BP 25), operated by EPE, was mobilised for antipollution services. Bunkers on board the yacht were removed, and all necessary precautions were taken to prevent marine pollution.

TSAVLIRIS mobilised immediately a Salvage and a Diving Team for inspections. The Owner's Master assisted in the removal of valuable items from cabins including expensive jewellery. Wreck removal tender was arranged by the Owner's P&I club and in February 2023 the task was awarded to TSAVLIRIS / EPE.

On 1 March 2023, TSAVLIRIS Salvage Team, Antipollution Team and Divers from "Thalassa Diving" company arrived at the casualty's position and on 2 March, EPE's antipollution tug "AEGIS I" arrived, carrying various salvage equipment. Two floating cranes were arranged for the operation with the assistance of two tugs: floating crane "KOMNINOS" (110T lifting capacity) was towed from Heraklion, Crete, by the T/B "MICHALIS S" (BHP 1,000 – BP 20) and floating crane "BT1" (120T lifting capacity) was towed from Skala, Katerini, by TSAVLIRIS'.

On 15 March, the yacht was successfully refloated, following all safety protocols and necessary repairs. The divers removed all debris from the seabed and cleaned the coastline to the satisfaction of Port Authorities. The floating cranes and the OSV "AEGIS I" demobilised back to their base.

On 24 March, Syros/Kythnos Port Authority granted sailing permission to M/Y "007" and T/B "MICHALIS S" commenced towage to Bodrum, Turkey, arriving safely at destination on 27 March. The entire operation was completed successfully on the same day.

The case of motor yacht 007

*Photo credit: Motor yacht 007
by TSAVLIRIS Salvage Group*



On 30 January, Tsavliris were contracted to provide salvage assistance and despatched the tug "LIAN HE QI RUI" (BHP 23,500 – BP 250) from Shanghai, China.

On 11 February, under severe and adverse sea conditions (8m waves) tug "LIAN HE QI RUI" established tow connection and towage commenced towards Tokyo, Japan.

On 22 February, the convoy arrived safely at YOKOHAMA anchorage, Japan, and was handed over to five port tugs to anchor at Yokohama anchorage. Tug "LIAN HE QI RUI" provided stand-by services until 25 February when the operation was successfully completed.

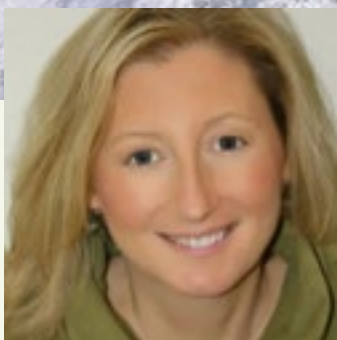
*Photo credit: MV ABILITY by
TSAVLIRIS Salvage Group*



The Rise of the Super RIB



By **Kim Gavin**



Kim is a national award-winning journalist who has been writing about yachts for two decades. She grew up driving a ski boat and sailing a Hobie Sunfish at her grandfather's lake house in New Jersey, and today, she has cruised and chartered in and around more than 50 countries and islands, aboard everything from sailboats, catamarans and trawlers to America's Cup sailing yachts and luxury superyachts.

This article was originally published in the April 2023 issue of Soundings and is published here with our thanks.

The Grand850 is just shy of 28 feet

Once considered a mere dinghy for larger boats, RIBs are now packed with features for family day-boating and more.

If you want to understand why “super RIBs” are now showing up at boat shows and marinas nationwide with features and amenities the simple dinghy could never have imagined, you have to go back in time about 40 years, to the era of Cabbage Patch Kids, MTV and Caddyshack.

It was during the 1980s and into the 1990s that rigid inflatable boats really started to evolve for recreational boaters. The style of boat had been invented in the 1960s in the United Kingdom, where the Royal National Lifeboat Institution was trying to find a fix for wear and tear on the fabric bottoms of inshore lifeboats. They

tried using plywood, but it cracked up in rough waters. Eventually, various builders figured out how to use fiberglass and aluminum with an inflatable collar wrapped around it.

By the time Pat Benatar, REO Speedwagon and Blondie were beaming videos into homes all across America, boaters in France and Italy had fully embraced the RIB as a safe, lightweight alternative to traditional boats. In the early 2000s, European designers started to mix in eye-appealing aesthetics, leading RIBs to become even more popular for people who wanted to cruise over to the bay next door.



Highfield's Sport 760

Highfield's Sport 760

The RIB business was booming in Europe in the 2000s when more advancements began to supercharge the style and functionality of this design for consumers worldwide. An increasing number of builders started to offer larger RIBs with creature comforts that, previously, had only been available aboard boats like center consoles and express cruisers.

"If you join that with the quality of outboards — they're quiet, they don't smell anymore, they can have a joystick — now you have a boat that looks great, that projects a good image, that has amenities and that has a good engine," says Christophe Lavigne, president of Highfield USA. "The package, all together, makes a lot of sense."

Today, that package is becoming increasingly popular in the United States, where builders and dealers of dayboat-style RIBs say they're seeing more interest than ever in this style of boat. Younger boaters like the fact

that the RIB's inflatable collar is more forgiving when docking or rafting up. "You have built-in fenders and built-in seating all around. You're everyone's favorite," says Matthew Velutto, vice president of sales and marketing at Ribcraft.

Younger boaters also enjoy having a style of boat that looks nothing like what their parents and grandparents had, builders say. And customers of all ages, with concerns about inflation and high fuel prices, are deciding that lower-priced, lighter-weight (and thus more fuel-efficient) RIBs can be a smart alternative to boats that are pricier to buy and operate.

"It's been a trend in Europe for many years, and it's starting to make its way over to the U.S.," says Daniel Parker, U.S. marketing manager for Zodiac Nautic. "The larger RIBs have always been considered working boats, rescue boats, diving boats, but with features added in, they're great family boats."

Chris Keenan, who owns Essex Marine Group in Essex, Connecticut, says last year was his best-ever year for sales because of booming demand for feature-packed RIBs, particularly for customers who want to cruise around Long Island Sound.

"A lot of the people that contacted me about buying one had seen one pull up at a waterfront restaurant, or a friend had one and took them for a ride," Keenan says. "One of the other big markets for these boats are the 35-, 40-year-olds with kids who are actively in a sailing program. They're buying these to go watch their kids race. The kids can tie up to them with the Optimists and grab a bottle of water. Yacht clubs are using them for that reason too. They're becoming race committee boats."

Sean Burke of ZAR New England also says that "in New England, the growth and use of the inflatable has been tremendous." Two of his customers, a couple, bought a

RIB to use at their first waterfront property. "They're taking it out for morning coffee rides and afternoon sunset rides; they're celebrating Thanksgiving with the boat in the water," he says.

Keenan is also seeing RIB owners take advantage of the fact that the boats are easy to tow on a trailer, because of their light weight. "I have one customer whose kids sail all over the country," he says. "So he tows his RIB all over the country to go to the regattas. He has a 45-foot Tiara, but he uses this boat to take the kids sailing."

Velutto says Ribcraft is seeing similarly increasing interest now that RIBs are being built with features that more closely resemble what's available on other types of boats.

"We've always seen customers look to us on the recreational side because they see the Navy or the Coast Guard or their local harbor master using our RIBs. They say if it's good enough for them, it's good enough for their family," Velutto says. "I think there's now a demand for larger RIBs. People are either moving on, or they're seeing them out there and catching on."

Here's a look at a few big RIBs from five major manufacturers that can be ordered with the kinds of features and amenities that make them usable as much more than a traditional dinghy.

ZAR Formenti Italy's ZAR Formenti has been building boats since 1979. Burke says the boats have been in the United States since 2011, with as many as 150 of them entering the country each year. The ZAR Imagine 130 is the new flagship that premiered at boot Düsseldorf in Germany this past January. It's a 43-footer with two staterooms, a tender garage and a galley. There are eight tube compartments and the boat has a maximum rating of 18 passengers.

Staterooms on a RIB may sound unusual, but they're made possible by the hull design that ZAR uses on its boats. The builder carries the inflatable portions only about three-quarters up the length of the boat, instead of all the way around the bow, the way most other RIB builders do. ZAR's boats instead have a big rise at the bow, creating the under-deck space.

"The faster you go, the smoother the ride gets," Burke says. "All the water

stays under the boat and provides an incredibly dry ride."

There's still enough of the inflatable portion to help newer boaters feel confident, he adds. "I've heard the story a thousand times, that dad's got a Grady-White, but it has a fancy, shiny side and everybody's afraid to dock it. The inflatable is softer on the sides, so people are more comfortable. And if you're more comfortable, you're going to use it more and you're going to be safer."

Miami-based Highfield Boats offers six lines of aluminum-hulled RIBs. The Sport line has a few models, including the new 650 and 800, that Lavigne says are popular with families who use the boats for day cruising. The Sport 900 is the flagship model in the line. It's an inch shy of 30 feet length overall with 60-knot speed and standard features that include sun beds, a removable table, a built-in fridge, a freshwater shower, a bow boarding step and a Sunbrella top. A hardtop can be ordered as an option. The Sport 900 is built with six air chambers. Its maximum rating is 15 people on board. "It's very versatile," Lavigne says. "You can customize our RIBs for any activity you're looking to do. If you want more sonars to go fishing, that's OK. If you want a good sound system, it's possible. Our dealers can set them up the way the customer wants to make them."

Ribcraft USA Massachusetts-based Ribcraft USA just added new seating configurations to its 7.8 and 9.0 models, which are about 25 and 30 feet length overall, respectively. The Ribcraft 7.8 has a maximum rating for 14 people, while the 9.0 can take as many as 18 people on board.

"We've added some additional bow seating," Velutto says. "Before, it was either a small little seat or a bow platform up there. Now, we have more horseshoe-style seating with a table that pops up and a lounge area."

Those amenities are in addition to others that are available throughout the range. "Even in our smaller boats — the 21, 22, 25 and bigger — they have stereo systems," he says. "We offer freshwater showers, the head, built-in and integrated coolers. If you wanted refrigeration in the bigger boats, it can be done."

Zodiac Nautic This builder, which is based in France, expects the Medline

5.8 to premiere in early 2024 as the newest model in the Medline roster of day-boating RIBs. The newest model that consumers are likely to see at boat shows before then is the Medline 7.5, which is a 24-foot, 1-inch model that is rated to take 16 people maximum.

"Our Medline series is our family boat range," Parker says. "We've got dual wings at the back of the boat behind the tubes, which are pretty large access platforms with a ladder on one side and a shower on the other. We have cockpit lighting, joystick steering, electronic controls—pretty much anything you'd see on a fiberglass boat. There's also convertible seating, and you can add things like tables, sundeck cushions and stern cushions. We have a U-shaped rear lounge on some of our models that provides a lot of security for families."

Also notable about the Medline range is its availability with bright accent colors, which include teal and orange—a far cry from the little white dinghy of years past.

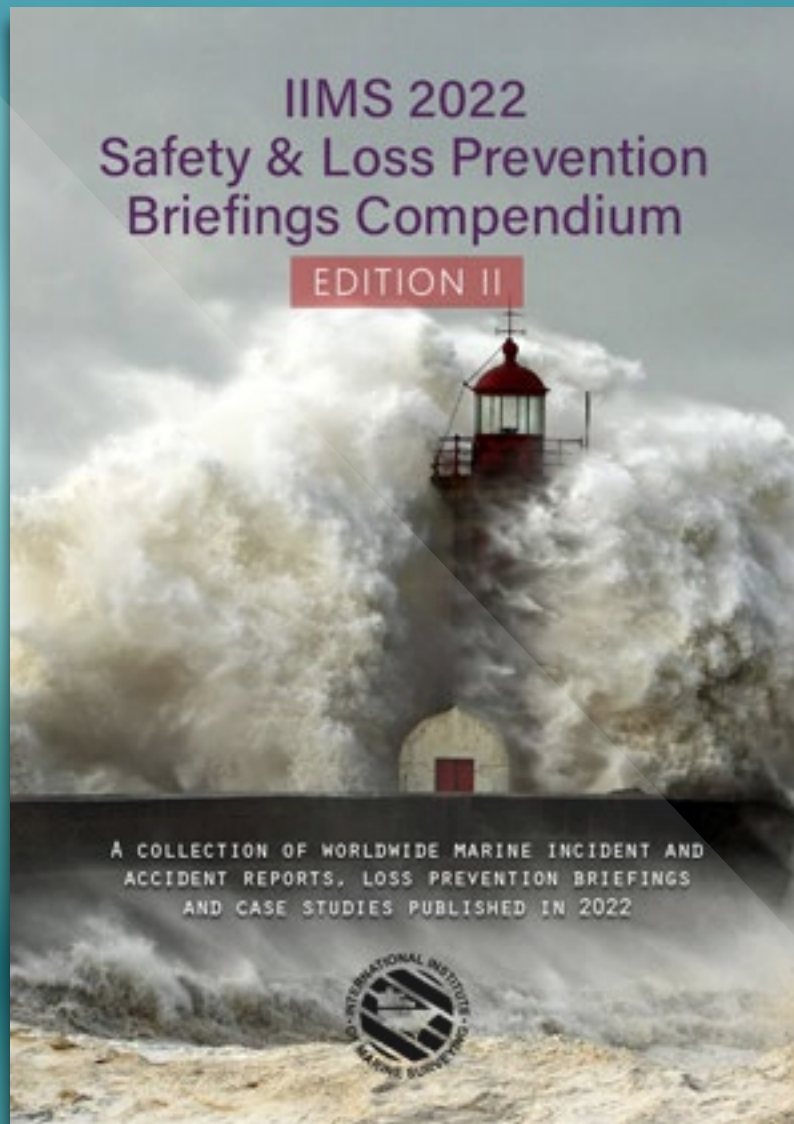
"We looked at the most popular features that customers have requested over the years, things like hull and upholstery colors, and made those standard," Parker says.

Grand Marine This manufacturer builds its boats in Ukraine, where a number of other RIB companies have factories facing challenges from the war with Russia. Despite the war, Grand is still producing what numerous dealers say are high-quality RIBs, and an increasing number of U.S. dealers are picking up the brand.

"Based on our success with the bigger inflatables, we decided to take on the Grand Boats line," says Keenan, who is expecting to take delivery of his first Grand order this April in Connecticut. He has already sold a Grand 850L here in the United States. It's the flagship model of Grand's Golden Line. The boat is just shy of 28 feet length overall with five chambers and a maximum capacity of 12 people.

"It has a refrigerator, an option for an electric grill, a full head—it can have all the same amenities as any 26-foot center console. And you can put twins on it," Keenan says. "They're good-looking boats. And I'm a traditionalist, a New England guy. If it doesn't look good, I don't want to sell it."

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SAFETY TIPS FOR HANDLING ENERGY SOURCES ONBOARD

Electrical energy on board ships can be hazardous. Machinery, equipment, and systems found aboard a ship differ substantially from those found in landside facilities of general industry. They often lack individual disconnect or cut-off mechanisms that provide complete isolation from other machinery. Properly isolating and controlling energy sources is critical to ensuring that seafarers and others stay safe.

Lockout/tag out operations (LOTO) apply whenever a service, inspection or maintenance requires the disabling or removal of normal guards and safety devices during unexpected startup of the machinery, equipment or the release of energy could cause injury. Potential resources of hazardous energy include, but are not limited to electrical, hydraulic, pneumatic, fluid thermal, chemical or mechanical.

Responsibilities

The Master is responsible to inform all shipboard personnel about these instructions and make sure they become familiar with them. The Responsible Officer (C/O and/or C/E) must ensure the implementation of these instructions and for maintaining the appropriate log on the work procedures to be followed. Finally, he/she is the Officer responsible for issuing the permit.

It is responsibility of the crewmembers to report unsafe or unusable equipment to the Master or Watch Officer and they should ensure that equipment which has been identified as being not fit for service is locked out or tagged out as appropriate. The key responsible person for the lockout/tag out of the electrical equipment should ensure that each seafarer working on any electrical piece of equipment,

requiring control of hazardous energy, is instructed in the lockout/tag out process.

How to conduct LOTO

Lockout/tag out devices needed for lockout/tag out shall be readily available for use aboard each vessel. General requirements for locks and tags are as follows:

- Seafarers involved in working on a piece of equipment requiring to be locked out, shall carry a unique key where no one else's key can open the other employee's safety padlocks.
- The removal of a lock or tag by a person other than the one who original placed the lock or tag into service, is strictly prohibited. The only person who may remove a

lock or tag other than their own, is the Authorizing Officer for the job. This person can be the Master, Chief Engineer, Chief Officer or Electrician.

- Tag should be of substantial strength and durability and include the words "Danger" and "Do not Operate", "Do not Start", "Do not Open" or similar.
- Locks shall be available onboard for machinery isolation according to the type of machinery particular to that vessel. - Locks may include baker locks, valve locks, cable locks, plug locks, etc.

In case more than one individual is involved with the work where equipment and/or circuits are required to be locked out, everyone shall place their own personal lock on the energy isolating devices provided the device is able to accommodate multiple locks. If this is not feasible, either person may be designated as the individual responsible for carrying out all steps of the lockout procedure. That individual will inform the work crew when it is safe to work on the equipment and/or circuits.

Gear or equipment must be tagged out of service when it becomes worn or damaged and is no longer safe or suitable for its intended use, and/or may present a hazard if used in their present condition must be tagged out of service. Portable equipment sent for repair must be securely tagged. The tag must be filled out with a complete description of the equipment problem.

The following information must be written on the tag:

- "Do Not Operate" on one side.

- "Do Not Remove This Tag" on the other side.
- Description of the problem with the item.
- Name of the vessel to which the equipment is assigned.
- Signature of individual tagging item.
- Date of tagging.
- Long Term Lockout Requirements.

In the event a repair cannot be made immediately, the Responsible Officer must ensure that the energy sources are tagged "Do Not Operate" and physically locked with appropriate devices, such as:

- Key locks.
- Clamps.
- Tie wraps.
- Other suitable methods and material that cannot be removed except by forcefully cutting or destroying "Do not Operate" tags must be attached to the gear and its power sources where applicable. The tags should be replaced when they become unreadable.

When the job is complete and the equipment or circuits are ready for testing or normal service, check the equipment and/or circuits to ensure that no one is exposed. Before energy is restored to the equipment after lockout, the work area shall be inspected to ensure that tools and parts have been removed, guards restored, relief valves closed, and the equipment components are operationally intact.

In situations where maintenance of equipment needs to be energized for testing, the above actions shall be taken prior to the removal of locking devices and energizing.

Equipment back to normal

After work has been completed and the equipment is ready for normal operation, the Responsible Officer should ensure that everybody is kept clear of the machinery or equipment, all tools have been removed from the work site, guards have been replaced and any operating controls have been placed in the "neutral" or "off" position. The Responsible Officer should then remove the lock-out/tag-out devices and restore power to the machinery/system or equipment.

An effective LOTO system / procedure protects seafarers from unnecessarily exposure to hazardous energy sources during servicing, maintenance, or setting up equipment. Accidental start-up of machinery or unintended release of stored energy may lead to catastrophic risks including and cause serious physical injuries or death to seafarers, equipment damage or fire accidental ignition. Proper implementation of an effective LOTO procedure may reduce such effects.

Three Safety Tips for Locks and Tags

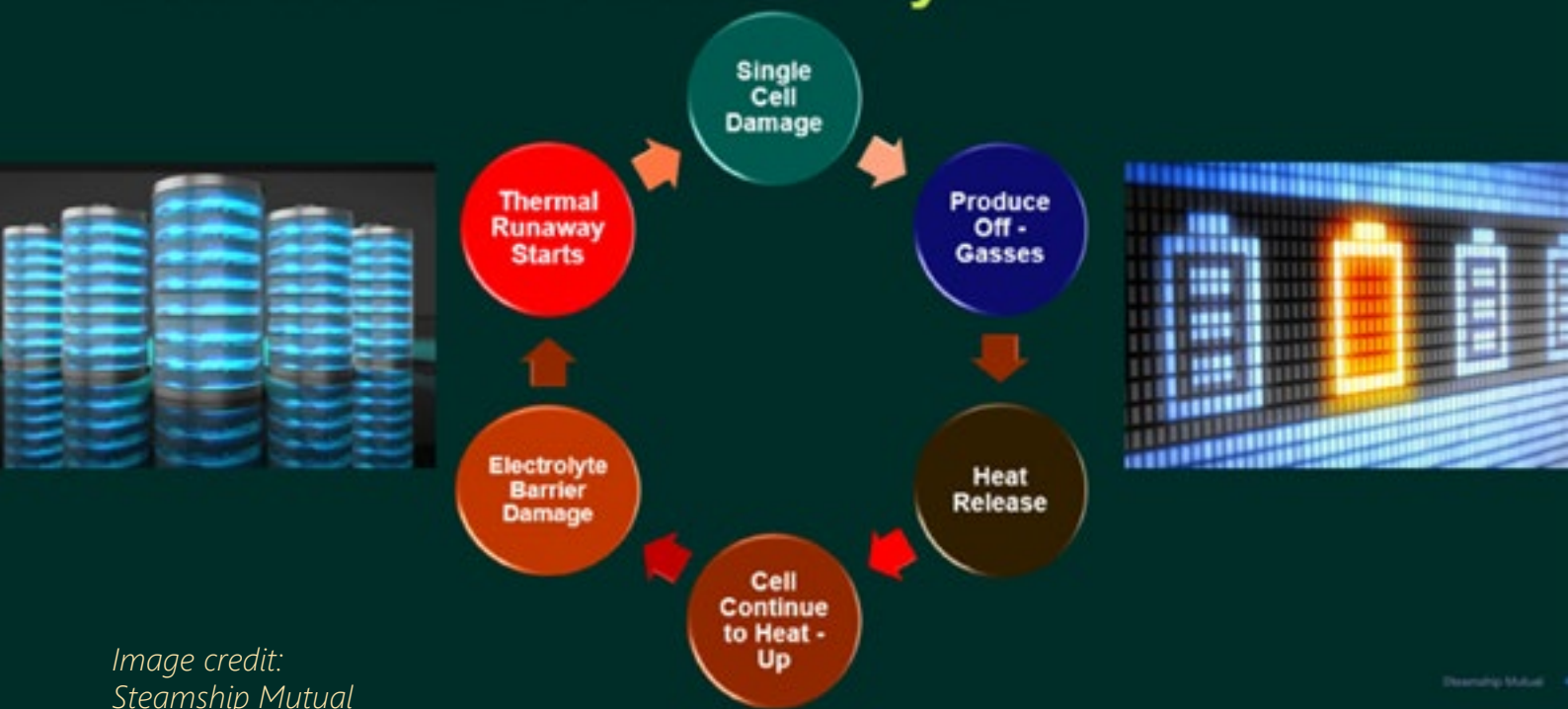
1. Never remove a lock or tag that is not yours.
2. Never attempt to restart, or restore energy to, a machine, circuit, or any equipment that is locked or tagged.
3. Never attempt to bypass equipment that is locked or tagged



The carriage, stowage, and safety of electric vehicles

Safe Carriage and Stowage of EVs

Behaviour and Reaction Cycle



By **Taslim Imad**,
Manager Loss Prevention Department, Steamship Mutual

During the 2023 SAFETY4SEA Limassol Forum, Taslim Imad, Manager Loss Prevention Department at Steamship Mutual, gave a presentation on safety measures of the carriage and stowage of electric vehicles, from a P&I perspective.

Electric vehicles shipment growth

People are attempting to alter their habits since climate change and global warming are serious challenges. As a result, the export of hybrid and electric vehicles (EVs) powered by Lithium-ion (Li-Ion) batteries has increased significantly. Electric vehicles are completely safe, according to some parties in the business, and they are partly right. Yet, the dangers are greatly increased in the event of a thermal runaway.

Risks of carrying EVs

Electric vehicles can be transported on a variety of vessels (ferries, Ro-Ros, car carriers, container ships, general cargo etc.). The main issue with these vehicles is that they use Li-ion batteries.

Causes of damage to Li-ion batteries

- They are overcharged or over discharged
- They are overheated
- Mechanical, physical, or saltwater damage

Thermal runaway

Even if one cell is damaged, the cycle can start. There is a chemical reaction that initiates in the damaged cell which produces off-gases and heat inside of it. The heat produced inside these batteries is more than the amount that can be vented. This in turn causes the electrolyte barrier, which is a flammable liquid, to be damaged. The battery then short-circuits and starts a thermal propagation that spreads to the other cells, damaging them. The thermal

runaway caused by this vicious cycle will lead to a rapid self-heating fire that can cause an explosion and produce toxic gases in car decks. To this day, there is no medium to stop the process.

This sequence of events could, for example, occur on a ferry carrying thousands of people and hundreds of electric vehicles. The outcome is not difficult to imagine.

Furthermore, new electric vehicles are frequently placed in car carriers with bumper-to-bumper spacing of 30 centimetres and mirror-to-mirror spacing of only 10 centimetres. As a result, in a carrier with thousands of vehicles, accessing the car with thermal runaway would be very difficult if not impossible, particularly if it is located in the middle of a stow.

Similarly dangerous situations can arise when cars are transported as regular cargo in containers. For instance, a container with an EV could be placed next to a container with IMDG Code (International Maritime Dangerous Goods) cargo such as flammable gases or liquids.

Current regulations in terms of ship design and safety equipment

The current regulation does not specify any additional equipment or specific vessel requirements for shipping EVs. SOLAS Ch. II-2 Reg. 1, 2, and 3 contain all relevant regulations. The International Maritime Organization (IMO) is working to create a better regulatory environment, but this will most likely take several years. Even if the IMO agrees on new regulations, they may only apply to newbuilds and not to existing ships.

As a result, shipowners are strongly advised to assess their procedures

and implement proactive measures to improve their own safety.

Crew training

Another issue is the lack of proper crew training. The requirements as per STCW (Standards of Training, Certification, and Watchkeeping) are minimum. It only deals with general emergency, fire emergency and some special cargoes like gas.

Thermal runaway is considered as being just a normal fire. STCW needs to update crew training so seafarers can understand these batteries, thermal runaway, and its consequences.

Furthermore, a detailed risk assessment by experts could help establish onboard equipment requirements additional to statutory equipment, as some statutory equipment is not suitable or appropriate.

Additionally, shipowners frequently bring up the subject of manning levels, another area that requires investigation.

Commercial pressure and impact

Ferries

According to my anecdotal research on ferry companies' websites, when you book a ferry, the company does not inquire whether the vehicle transported is electric or not. Passengers also reported that they were not asked about the state of their EV batteries or informed whether they could charge them onboard prior to boarding.

The option of charging could be a good selling point for some businesses to invest in. However, it appears that there is currently no marine type of equipment, either

by class or flag. As a result, before investing, shipowners should ensure that the equipment is compatible with their vessels and the vehicles being carried. In addition, the CII (Carbon Intensity Indicator) regulation should be considered before making any moves as onboard charging capability could impact the CII rating.

Car carriers

Shipping companies transport major brand orders on their large PCTC carriers. EVs are typically charged between 30% and 50%. However, a few OEMs (Original Equipment Manufacturers) require that their electric vehicles be fully charged due to a fear of the battery draining on passage with resulting damage to their EVs. This puts a lot of pressure on the shipowners, but shipowners must communicate their concerns in order to establish mutually agreed safety regulations and protocols to minimise risks.

Container ships

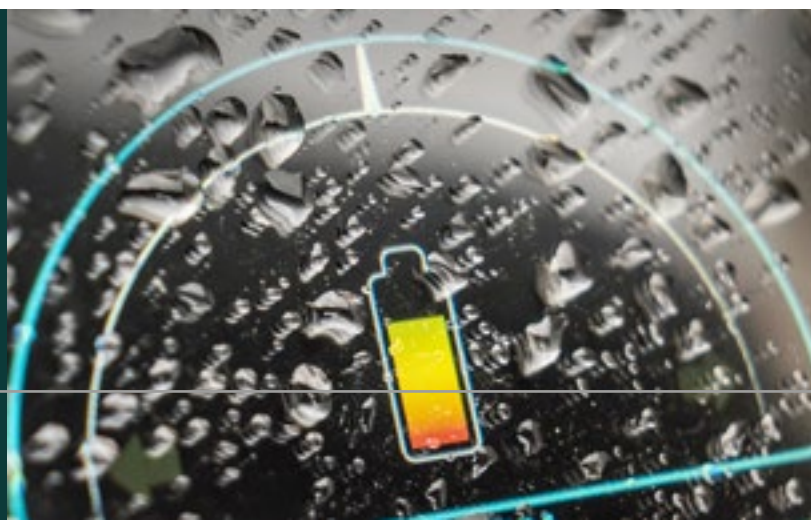
As previously mentioned, EVs are loaded as general cargo which proposes serious threats if they are placed next to IMDG cargo. Shippers and shipowners need to communicate with each other in order to avoid this phenomenon.

Additional measures to be considered

The boards below present additional measures in accordance with each vessel type. The x demonstrates whether said measure should apply to said vessel.

This article, which first appeared on the SAFETY4SEAS website, has been edited from Mr. Taslim Imad's presentation during the 2023 SAFETY4SEA Limassol Forum.

You can watch Taslim's presentation at <https://youtu.be/vkUI61NQjZw>.



Additional Measures	Ferries	Car Carriers	Containers
Dedicated stowage positions for EVs or parcels containing EVs (Where all cars are EVs a reduction in volume should be considered)	X	X	X
Additional monitoring equipment such as fixed infrared/thermal imaging cameras, gas monitors, smoke detectors, heat detectors (particularly at low levels.) (In addition to current statutory requirements)	X	X	
Additional fixed firefighting equipment near dedicated EV bays to provide efficient cooling effect in efficient manner without risking crew (in addition to current statutory requirements)	X	X	X
Enhanced Crew training to deal with potential EV emergencies	X	X	X
Additional portable safety equipment, such as portable infrared/thermal/night vision cameras and gas monitors for monitoring of cargo, light weight fog blankets which can be directed under an EV, hydropen, large fire blankets etc	X	X	X
Charging station - Marine type approved (Flag and Class) equipment, compatible with EVs and integrated with ship's electrical system.	X		
Ship's electrical system capable of coping with additional requirement.	X		
Charging station properly maintained at appropriate interval by an approved service provider.	X		
Crew trained/certified in use of charging station.	X		
Risk assessments and contingency plans (EV Specific) to deal with all possible incident scenarios (in addition to the statutory requirements)	X	X	X
Review Manning Levels	X	X	X
Shipper's Declaration (legal document) confirming that second hand EVs are inspected prior to the loading and securing inside containers.			X



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The marine carriage of nurdles will be regulated **but how and when is the question.**



By Kim Jefferies - Special Adviser, Arendal

To reduce the risk of large nurdle spills experienced in recent years, the regulatory work is now focussing on packaging requirements for plastic pellets within the freight container; notification to the carrier so that containers containing plastic pellets can be identified quickly to aid recovery, and stowage requirements for containers containing plastic pellets.

Sri Lanka proposed designating pre-production plastic pellets, often called “nurdles”, as a dangerous cargo following the catastrophic spill from the X-Press Pearl in 2021. The IMO Pollution Prevention and Response Sub-Committee (PPR) met a year ago (PPR 9) to discuss Sri Lanka’s and additional proposals to regulate the carriage of nurdles. The key difference between the various proposals was whether to classify nurdles as a dangerous cargo subject to the IMDG Code and regulate accordingly or to continue to build on voluntary industry-initiated programs, essentially Operation Clean Sweep.

The outcome of PPR 9 was to send the various proposals to a correspondence group for refinement and to report back to the PPR 10, set to meet 24-28 April. In a previous article we outlined the environmental impact of nurdle spills, the current

regulatory framework for clean-up and compensation and the proposals for regulation of carriage. In this follow-up article we outline the various approaches set out in the Correspondence Group report and discuss the pros and cons of the differing approaches.

A brief refresher on nurdle spills

Nurdles are about the size and shape of a lentil and are the building blocks of nearly all plastic products. Petrochemical companies produce nurdles from oil and gas resulting in various polymers that can be melted and then moulded or extruded to form products ranging from plastic bags and food packaging to plumbing pipes and much of the interior of airplanes. Nurdles are transported from the manufacturing site by truck, train and

ship to distributors or plastic product manufacturers. Marine shipping is by container (although there is no current restriction to carriage in bulk). Like all plastic litter, most nurdles reach the sea from land sources. Spills at sea do occur when containers are pierced or lost overboard due to casualties. In 2020 about 13 MT of polypropylene nurdles spilled from a single damaged container aboard the ro-ro vessel Trans Carrier affecting to varying degrees about 1,000 km of the coastline in Norway and Sweden. Clean-up took more than a year. Also in 2020, – six containers of low-density polyethylene nurdles were lost off Cape Agulhas in South Africa. Dispersed in the strong Agulhas current, the spill affected some 1,600 km of coastline.

By far the worst nurdle spill occurred in May 2021 off Colombo,



Sri Lanka after the X-Press Pearl caught fire and partially sank. The vessel was coming from India to Sri Lanka with 1,377 containers on board, 422 of which contained nurdles of various polymers. The nurdles, included burnt and melted nurdles dispersed over 300 kilometres of the Sri Lanka coastline. The clean-up is on-going with the high concentrations already removed.

Once in the ocean, low density nurdles (polypropylene polyethylene) float on the surface, allowing them to spread over large areas by wind and currents. Some will wash up on beaches, others will continue to circulate in ocean currents. The impacts on marine life are wide, the main ones being ingestion, leaching of additives and acting as vectors for persistent organic pollutants, microbes and invasive (micro) organisms. Nurdles, like all plastics, persist in the environment. Their small size and dispersion over large areas makes clean-up laborious and expensive. It is accepted that only a portion of spilled nurdles can be found and removed despite best efforts. The persistence of nurdles and impossibility to completely remove them from the environment

clearly supports regulating carriage conditions to reduce the risk of spills.

The work of the PPR Correspondence Group on plastic pellets

Norway led the Correspondence Group (CG) through three rounds of discussion and commentary. The main discussion points in the third round included:

- Refinement of the wording of packaging, notification, and stowage recommendations to be issued as a Circular by the Subcommittee on Carriage of Cargoes and Containers (CCC) as an immediate and interim measure.
- Whether to make carriage conditions mandatory and how to do so. Three options for mandatory regulation were discussed and participants were asked which option they favoured.

Draft interim guidelines – discussion of the elements of the proposed CCC Circular

The CG as a whole strongly supported recommendations that would be immediate and temporary pending mandatory requirements. The recommendations are intended to be issued as a Circular by the IMO Subcommittee on Carriage of Cargoes and Containers and the CG work was to prepare a draft to be further discussed within a PPR 10 working group and subject to changes that may be made by the CCC.

Following the first and second rounds, the primary measures to reduce risk of spills were widdled down to:

- Packaging requirements/ recommendations for plastic pellets within the freight container;
- Requirements/ recommendations for notifying the carrier so that containers containing plastic pellets can be identified quickly to aid in recovery;
- Stowage requirements/ recommendations for containers containing plastic pellets.

First order of business – defining nurdles subject to the carriage recommendation

The European Chemical Industry Council (CEFIC) representing the European petrochemical segment proposed a definition of nurdles:

“Plastic pellets means [(a) solid polymeric substances, or blended mixtures (consisting of polymers and other substances of varying percentages), that are insoluble in water and transported in granule or nurdle form, or as powder or flakes; that (b) have a diameter of 5 mm or less. Plastic pellets include, but are not limited to, polymers such as polyethylene, polypropylene, polystyrene, polyethylene terephthalate, or polyvinyl chloride including a size limitation to 5 millimetres which is boundary for microplastics.”

While CG participants agreed with including a definition, many took issue with the proposed size limitation. The 5mm size is a generally accepted limit for microplastics, but many pointed out that a spill of 5.5mm or 6mm pellets would cause just as much environmental harm and be just as difficult to clean-up as a marginally smaller pellet size. And as the primary measures set out in the recommendations would likely be the template for mandatory regulation, a size limitation would be an invitation to avoid regulation by slightly increasing the size of the nurdles manufactured.

The debate over packaging

In the third round, the CG participants commented on wording: “Plastic pellets should be packed in good quality packaging/bags with a maximum mass of [25 kg] per package/bag. The use of single bags should be avoided”. “Single bags” refers to using a single plastic liner within the container. When the steel container is pierced, so is the plastic liner resulting in spill of nurdles even when the container itself remains on board as was the situation in the Trans Carrier spill.

CEFIC argued that there should be no packaging recommendation and to maintain the options currently in use by shippers “bags, boxes, drums, supersacks, gaylords, Octabins and lined bulk containers” arguing that the root cause of nurdle spills was not packaging within the container but instead loss of the containers, fires, or other casualties. CEFIC argued that the packaging in use was satisfactory for normal carriage situations and shippers should not be required to do more. At the other end of the spectrum was the environmental NGO Clean Shipping Coalition who maintained that packaging within the container should be required to withstand loss of the container and to remain intact for better odds of retrieval.

Notification and stowage requirements

The recommendation is that “transport information should clearly identify, as an addition in the cargo information required by SOLAS Regulation VI/2, those cargoes containing plastic pellets.” The intent of notification is to more quickly identify containers with nurdles to aid in retrieval should they be lost and also to initiate clean-up and contingency planning earlier. How notification is to be made – by an IMDG code or a new process based on the bill of lading is part of the discussion about the options for mandatory regulations.

Following discussion within the three rounds, Norway reports the draft stowage recommendation as:

“Freight containers containing plastic pellets should be properly stowed and secured so as to minimize the hazards to the marine environment without impairing the safety of the ship and persons on board. Specifically, freight containers containing plastic pellets should be stowed:

- under deck wherever reasonably practicable; or
- inboard in sheltered areas of exposed decks.

Underdeck stowage is recommended by the plastic industry initiative Operation Clean Sweep and the recommendation was broadly supported. A possible difficulty is volumes shipped and whether stowage underdeck would displace other more dangerous cargos.

Broad(er) support for mandatory regulation

Looking at the regulatory proposals, almost all of the correspondence group participants including CEFIC, supported some form of mandatory regulation. In the submission to PPR 9, CEFIC opposed mandatory regulation and proposed continued plastics industry self-regulation though Operation Clean Sweep. In the second round of the correspondence, CEFIC proposed a new regulatory solution by adding a new chapter to MARPOL Annex III. This new proposal was subject to comments by the participants in the third round.

The Correspondence Group Report does not recommend a preferred instrument but lays out the three proposals:

- an assignment of an individual UN Number (class 9) for plastic pellets transported at sea in freight containers;
- an amendment to Appendix I of MARPOL Annex III that would recognize plastic pellets as a harmful substance and
- a new chapter to MARPOL Annex III that would prescribe requirements for the transport of plastic pellets in freight containers without classifying the cargo as a harmful substance/dangerous goods.

Assigning a new UN number allows for closely tailoring of requirements to nurdles but the process takes longer because the number must be assigned by the UN Sub-Committee of Experts on the Transport of Dangerous Goods on application by the IMO. The option of amending Appendix I to MARPOL Annex III

in order to recognize nurdles as a hazardous substance can be implemented quicker and within the IMO by using an existing number but does not allow for tailoring of requirements to nurdles. In round 3 of the CG, Norway, several other national participants and the Clean Shipping Coalition preferred amending Appendix I while the marine insurance industry as represented by the IG Group and IUMI preferred a new UN number.

The proposals to create a new UN number and to amend Appendix I of MARPOL Annex III both result in classification of nurdles as a dangerous and hazardous substance. An IMDG designation fits within carriers' existing logistics systems. Both options would also make spills subject to the Hazardous and Noxious Substances Convention should it come into force. The HNS Convention follows the same model as the CLC and Fund Conventions (covering spills of oil from tankers) strict shipowner liability for spills, mandatory insurance, a liability limit for the shipowner and a fund in excess of the shipowner's limitation to respond to clean-up and compensation in the event of a spill.

P&I Clubs cover pollution liability under the law applicable in the jurisdiction of the spill. Clubs prefer certainty under a uniform liability and compensation regime setting a level playing field on an international basis for a trans-national industry.

CEFIC speaking for the European plastics manufacturers opposes classifying nurdles as dangerous or hazardous and therefore subject to the HNS Convention stating as one reason that the compensation fund that would apply in excess of the shipowner's limitation would come from the receivers of the cargo which CEFIC considers not in line with the polluter pays principle.

The next steps

The Correspondence Group asks the Pollution Prevention and Response Sub-Committee to establish a working group to take the proposals

forward including in the short term to further develop the carriage recommendations. The CG further invites the IMO Marine Environment Protection Committee (MEPC) at its meeting in July (MEPC 80) to instruct CCC 9 to review and finalize the draft circular with the view to issuing a CCC Circular before MEPC 81 which would mean before the end of this year.

In the submissions before PPR 9 in April 2022, the carrier side as represented by the World Shipping Council and the International Chamber of Shipping as well as NGOs like Friends of the Earth supported proposed mandatory regulation of carriage conditions as proposed by Norway and others. Insurers (IG and IUMI) also support mandatory regulation and although the regulatory path is different the overall result would be similar. Last year the plastics industry as represented by CEFIC opposed mandatory regulation yet now favours mandatory regulation in principle (although opposes designation of nurdles as a dangerous cargo). From last year's debate over mandatory vs. status quo self-regulation we are now looking at three regulatory options. This is progress.

Parallel initiatives

The Maritime Research Institute of the Netherlands (MARIN) is leading a joint industry project, Top Tier, to investigate what is needed to drastically reduce losses of containers from container vessels. The participants in the three-year project include container shipping lines, class societies, international authorities, insurers, research institutes and other stakeholders. The International Group of P&I Clubs is a participant.

Norway, South Africa, the International Group of P&I Clubs and ITOPI have submitted to PPR 10, a draft of best practices for the clean-up of nurdle spills. Clean-up can be effective for concentrated areas and maximizing clean-up using best practices is important, but it must be remembered that even using best

practices, only a portion of nurdles can be found and removed.

According to manufactures organization Plastics Europe, about 40% of plastic is used for packaging. Much of consumer packaging starts life as nurdles made from polypropylene and polyethylene which float and distribute widely if spilled. There are many national and regional bans in place or coming into place for single use items such as plastic bags. Bans of single use plastic where alternatives are available should be encouraged on the national, regional, organizational and personal levels. Recycling while important for waste management, is not an answer to preventing nurdles spills because the end result of the recycling process is nurdles which are then transported for use in products that incorporate recycled plastic.

In 2022, the UN Environmental Assembly adopted an historic resolution to develop an international treaty on plastic pollution including pollution in the marine environment. The terms are now in negotiation and will include the entire life cycle of plastic polymers, so will include nurdles. Stakeholders in marine transportation have the opportunity within the IMO to press for measures fit for purpose and should not wait for a treaty as action to reduce the risk of nurdles in our marine environment is needed now.

DISCLAIMER:

The International Union of Marine Insurance (IUMI) and the International Group of P&I Clubs (IG) each have working groups that provided comments to the Correspondence Group as summarized by Norway in the submissions to PPR 10. The author was not involved with either the IUMI or the IG contributions, and does not speak for IUMI or the IG.

Legislation remains a key driver for shipping's energy transition



The maritime industry is continuing its efforts to address the energy transition and commit to a net zero future before the deadlines, even as the most recent IPCC Climate Change report underlines the need for urgent climate policies toward a more sustainable future.

IMO updates

The IMO's Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 14) met 20-24 March 2023 with the aim to progress work on revision of IMO climate strategy. Although the outcome left up a wide range of possibilities for crucial components of the modification of the GHG reduction strategy, many of the specifics are still uncertain.

Whilst ISWG-GHG 14 was another point in the process of trying to achieve convergence, it was not a decision point on either strategy or policy measures, UMAS highlighted. The meeting, however, provided some useful insights into how the debates might conclude at MEPC 80, although the details will remain in

flux until the final adoption. MEPC 80 will be a critical moment for the IMO because it coincides both with the adoption of a Revised GHG Reduction Strategy as well as being the point for a set of policy measures key for enabling that strategy.

When ISWG-GHG 14 came to an end, the International Chamber of Shipping (ICS) expressed its disappointment with the levels of ambition discussed at the meeting. 'We remain optimistic that a deal can still be stuck at the crucial MEPC meeting in July. More positively, governments are increasingly understanding the value of the ICS Fund and Reward proposal to accelerate the production and uptake of low and zero-carbon fuels,' said Guy Platten, the Secretary General of the International Chamber of Shipping

Where we stand with EU ETS

On 22nd of March, the EU agreed to the world's first green shipping fuels law in favour of at least 2% mandate for green shipping fuels by 2025, compared to the latest agreement of a mandate by 2030. Negotiators agreed new targets for shipowners to reduce the greenhouse gas intensity of the energy they use onboard by 2% from 2025 and 6% as of 2030. Ships will be required to increasingly switch to sustainable fuels and at least 2% of the bloc's shipping fuels will need to come from e-fuels derived from renewable electricity by 2034 at the latest.

As stated by ESPO, the agreement provides the shipping sector with a framework to accelerate their green transition through reduced

emissions during navigation and at berth. The ambitious requirements for ships to reduce emissions starting in 2025 will help drive the uptake of alternative fuels in shipping, as well as help ensure the use of shore side electricity (SSE).

Green Corridors are taking off

As international cooperation is needed, the maritime industry is setting up 'green corridors' with coalitions of other ports, container carriers, forwarders, fuel suppliers and other stakeholders in order to make supply chains sustainable.

In late February, Global Spatial Technology Solutions (GSTS) said it will collaborate with the Montreal Port Authority (MPA) in providing a Green Shipping Corridor capability using their Artificial Intelligence platform.

In March 2023, the United States of America, the Republic of Fiji, the Republic of Panama and the Pacific Blue Shipping Partnership announced their intent to engage in technical cooperation to help facilitate the establishment of green shipping corridors.

On March 15th, California and Japan signed a letter of intent with the aim to establish green shipping corridors.

Global Maritime Forum had said that a new consortium will explore the options for developing a maritime green corridor for the zero-emission shipping of iron ore between South Africa and Europe.

On March 23rd, a Memorandum of Understanding (MoU) was signed by DFDS ferry operator, the Port of Dover, the Port of Boulogne Calais and the Port of Dunkerque to work together to decarbonize maritime trade in the Dover Strait.

The conflict over alternate fuel is ongoing

There is currently a competition between Korean and Chinese shipbuilders about which is taking more shipbuilding orders, as methanol-powered ships are rapidly emerging as next-generation eco-friendly ships. In March 2023, ONE announced that it has ordered ten new container vessels to be ready for methanol and ammonia, outfitted

with a bow cover and other energy-saving technologies.

During the 2023 GREEN4SEA Athens Forum, experts had the opportunity to share their perspectives on the different alternative options that exist. When it comes to ammonia, "technological maturity at the present is at the baby-teething phase since there are no engines commercially available to burn ammonia", noted Dr. John Kokarakis, Technical Director South East Europe, Black Sea & Adriatic Zone at Bureau Veritas. Although ammonia is promulgated as one of the fuels in the future multi-fuel society, a major stumbling block is the IGC Code of IMO which prevents the carriage and utilization of toxic fuels, he said. It appears that ammonia will be more utilized as a carrier of hydrogen in a future hydrogen ecosystem.

According to Grieg Star, green ammonia is seen as one of many possible fuels for shipping in the future. "Currently, it seems more viable for multifuel-ready new buildings than for retrofitting current ships. We need changes on a political and regulatory level to make the change for the existing world fleet.", said Managing Director of Grieg Star,

Atle Sommer. Ammonia, hydrogen, ethane and Dimethyl Ether (DME) are among the "alternative" marine fuels which may need future regulatory work, IMO said in March following a recent assessment which is the result of a regulatory mapping exercise conducted by Low Carbon GIA, with inputs and contributions from ICS.

The shipping industry is increasingly turning to a basket of technologies that can harvest an abundant, zero-emissions energy source that is available globally today, i.e. the wind. "Wind propulsion has been extensively researched, tested, discussed, piloted and by some, dismissed throughout the last decade", noted Mr. Gavin Allwright, Secretary General, International Windship Association (IWSA) during the GREEN4SEA event. "2023 is a pivotal year for shipping, as we head into IMO discussions at MEPC80, and we have an opportunity to tackle multiple challenges at once, setting ambitious decarbonisation targets that also address the need for a just transition and build the foundations for a resilient, sustainable maritime sector." added Mr. Andrew Stephens, Executive Director, Sustainable Shipping Initiative.



BLACK CARBON:

The 'low-hanging fruit' for cleaner shipping



Stronger regulation could eliminate soot from ship exhaust, which is accelerating warming, particularly in the Arctic, writes Isabelle Gerretsen.

Isabelle Gerretsen is a reporter for Climate Home News. She previously covered climate for CNN International and has written for national and international publications including The Independent, the BBC, Reuters and Newsweek.



Shipping is a highly polluting industry. Between 2007 and 2012, it was responsible for roughly 3% of global greenhouse gas emissions from fossil fuel use and industrial processes, or around one billion tonnes of CO₂ equivalent per year. Ship exhaust may also contain "black carbon" – sooty particles that absorb sunlight and trap heat in the atmosphere, contributing to global warming. Black carbon rapidly accelerates ice melt when it lands, by darkening surfaces and thus reducing how much sunlight they reflect. At the same time it poses a serious health risk to coastal communities. Environmental groups say this climate and health threat could easily be eradicated if ships were forced to use cleaner fuels.

THE IMPACT ON WARMING

Black carbon is produced when ships burn heavy fuel oil, which is "a hazardous, toxic tar-like fuel", says Andrew Dumbrille, an advisor to both the Clean Arctic Alliance, a group of 20 non-profits, and to the Inuit Circumpolar Council, which represents all Inuit from Alaska, Canada, Greenland and Chukotka on internationally important matters. "It is literally the stuff at the bottom of the barrel," he says.

"You have to heat it up to use it... it's like burning tar, one could walk on it," he says. "Our global trade system is enabled by this highly polluting by-product fuel."

Black carbon emissions are responsible for around 20% of the shipping industry's climate impact over a 20-year period, according to the Clean Arctic Alliance. It is "especially damaging, and has a disproportionate impact, when it is released in or near the Arctic," says Sian Prior, lead adviser to the alliance. The Arctic is already warming almost four times faster than the global average, at 0.73C per decade compared to the global average of 0.19C per decade between 1979–2021, according to a 2022 study by Finnish researchers. "When black carbon settles in the polar environment... the surface starts

absorbing more and more heat because it's dark," says Prior. "So you lose the albedo effect, which is the reflectivity of the snow and the ice."

This leads to a vicious cycle of warming. Less sea ice means more open, dark ocean which absorbs more heat and accelerates temperature rise, not just in the Arctic but worldwide.

"Some of that warming is going to be transported further south," says Pam Pearson, director of the International Cryosphere Climate Initiative. "So, a warmer Arctic also translates into warmer mid-latitudes because of black carbon." If the Arctic sea ice melts completely during the summer, there is going to be "so much more sea level rise and extreme weather globally," says Pearson.

A 2021 report by the Climate Crisis Advisory Group warned that the Arctic is "ground zero" for cascading climate impacts across the planet. Rising temperatures there are leading to warmer ocean temperatures and shifts in atmospheric circulation, and are expected to weaken the jet stream, leading to more extreme weather.

THE IMPACT ON ARCTIC COMMUNITIES

"The melting of sea ice is [causing] global climate disruption, but also local, cultural disruption," says Dumbrille. Black carbon's impact is already being felt by indigenous communities living in the Arctic. There are serious health risks associated with exposure to black carbon. A component of fine particulate matter, black carbon has been linked to lung and heart disease and can impair cognitive and immune functions.

"Black carbon is changing our culture," says Lisa Koperqualuk, vice president international of the Inuit Circumpolar Council. She explains that the rapid melting of ice is drastically changing the Inuit way of life by delaying harvesting seasons and making it more difficult for communities to travel. "We call the ice our highway," she says. "We use it to travel and to go hunting on the edge of the sea ice."

There are concerns that black carbon could contaminate the main food source for Inuit communities, seafood, according to Koperqualuk.

"The migration patterns of animals could also change [as the ocean warms] because there are some marine mammals that follow colder waters," she says. "The Arctic is a very important area to protect and to keep as pristine as possible, not only for our culture, but for the [entire] world," says Koperqualuk. "The Arctic is linked to the rest of the globe. So protecting it is protecting the world as well."

THE RISE (AND FALL?) OF BLACK CARBON

Between 2015 and 2019, the Arctic saw an 85% rise in black carbon due to increased shipping traffic. "Black carbon emissions are increasing because there are more and more ships going to the Arctic. In recent years, there have been more oil tankers and bunker carriers going to the Arctic," says Prior.

Maritime traffic grew by 25% between 2013 and 2019, while the distance covered by ships in the region increased by 75%. The increase in shipping traffic in the Arctic is "very much related to the loss of sea ice," says Prior. The ice is also "forming later in the year and melting earlier," she says. This means that more ships can sail for longer periods in the Arctic region. It's leading to a "really nasty feedback loop," says Pearson. "As you lose more sea ice, you get more ships, more emissions, [and] less sea ice."

There is an easy way to rapidly cut black carbon emissions, according to environmental groups. If all ships using heavy fuel oil were to switch to a cleaner distillate fuel (similar to diesel) there would be an immediate reduction of around 44% in black carbon emissions from these ships, according to the Clean Arctic Alliance. If all ships also installed diesel particulate filters, which capture soot, black carbon could be reduced by over 90%.



BLACK CARBON COULD RAPIDLY DISAPPEAR FROM THE ATMOSPHERE IF REGULATIONS WERE INTRODUCED

Black carbon is a short-lived climate pollutant with a lifespan of just a few days or weeks, whereas CO₂ can remain in the atmosphere for 300 to 1,000 years. This means that black carbon could rapidly disappear from the atmosphere if regulations were introduced. "Black carbon could be resolved very quickly, which is why we call it the 'low hanging fruit'," says Prior. "Whereas with carbon dioxide you've got a very potent warming gas that is staying in the atmosphere for hundreds of years."

If the European Union required ships sailing in the Arctic to switch from bunker fuels to cleaner distillate fuels, it would reduce their black carbon emissions in Arctic waters by 50–80%, according to analysis by the International Council on Clean Transportation (ICCT). Technically, it is easy for ships to make the switch. "It's seen as an overnight solution, because ship engines can run, and already do run, on both heavy bunker fuel and lighter distillate fuel," says Dumbrille.

"Most engines can just switch between the fuels. In fact, they often do already," says Prior. "Ships often use the lighter diesel fuels in the coastal waters, and then switch over to the heavy fuels when they're offshore."

But uptake of distillate fuels is lagging due to cost. They are more expensive due to higher demand (especially from road vehicles) and because they require more refining, says Dumbrille.

"It's about twice as expensive to use the cleaner fuel," says Bryan Comer, who leads the marine programme at the ICCT.

THE NEED FOR STRONGER REGULATIONS

Regulations are needed to force ship operators to switch to distillate fuel. In November 2021, the International Maritime Organization (IMO), the UN body overseeing shipping, adopted a resolution urging ship operators to switch to cleaner fuels in the Arctic in a bid to reduce black carbon emissions. But it was a voluntary measure, which relied on governments to introduce supportive policies. Environmental groups are calling for mandatory regulations to drastically slash black carbon emissions in the Arctic.

Regulations are already in place around the North American coastline, where the IMO introduced an emission control area (ECA) in 2012, requiring ships to limit their nitrogen oxide (NOx), sulphur oxide (SOx) and particulate matter pollution. This regulation has incentivised many ship operators to switch to distillate fuel. ECAs have also been established in the Mediterranean, the North Sea and Baltic Sea.

ENVIRONMENTAL GROUPS WOULD LIKE THE NORTH AMERICA ECA TO BE EXTENDED TO THE ARCTIC.

"Arctic communities were overlooked when the North America ECA was established," says Comer. "Some would argue that's environmental injustice and environmental racism." It is important that existing loopholes, which enable ship operators to continue using heavy fuel oil, are removed from new IMO regulations, experts argue. Currently, many ships in the ECA use scrubbers to remove their exhaust fumes from the atmosphere and comply with regulations, without having to switch to a more expensive distillate fuel.

"There are loopholes within the ECA... so you can still carry on using heavy fuel oil but install a scrubber to reduce your sulphur emissions," says Prior. Although scrubbers reduce air pollution, they are still incredibly polluting as they dump the chemicals removed from the

exhaust directly into the ocean. By using scrubbers, "you are taking an atmospheric pollution problem and turning it into an ocean pollution problem," says Prior.

If the North American emissions control area is extended to the Arctic "you'd want to see that high sulphur fuels would not be allowed, even if ships have a scrubber," says Comer. "Instead, they should be required to use distillate fuels." A proposal to extend the ECA is likely to be brought to the IMO this year, but it won't get much air time until 2024, says Comer. This year the IMO is set to review its long-term emissions reduction strategy and decide whether to adopt a net zero by 2050 target.

The current IMO target, which campaigners say is woefully inadequate, is to halve shipping emissions by 2050. Without further action, shipping emissions are projected to reach 90-130% of their 2008 levels by 2050. "It is very inadequate," says Dumbille. "To be aligned with the Paris Agreement, [the target] needs to be at least 100% by 2050, ideally 100% by 2040, and 50% by 2030."

"If you're thinking about a 50% reduction in greenhouse gas emissions by 2030, dealing with black carbon should be at the top of your list," he says.

"I'm not holding my breath at the moment... it's going to take a couple more years," says Prior, noting that there is still quite a lot of opposition within the industry. "It's frustrating when [tackling black carbon] should be low-hanging fruit, especially compared to what needs to happen to decarbonise the whole sector."

This article was first published on the China Dialogue Ocean website and is republished here with our thanks. IIMS has been unable to fact check the numbers quoted for accuracy, but we felt it an important and thought-provoking article to share with readers to showcase the arguments being made by those keen to protect the environment.





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New Scott Base research station set to sail for Antarctica in 2027



*Impression of the redeveloped Scott Base
(Photo credit: Hugh Broughton Architects)*

The date has been set and the ship booked for the new Scott Base research station's completion and 3720-kilometre journey to Antarctica.

The New Zealand government, through the Antarctica New Zealand institute, is set to establish a new research station on Antarctica in January 2027, 70 years after the original station commenced operations in 1957 during Sir Edmund Hillary's expedition to the frozen continent.

Project director for the Scott Base redevelopment and former Royal Air Force Air Commodore, Jon Ager, says the new base will "safeguard New Zealand's world-leading scientific research programme and presence in Antarctica" for another 50 plus years.

"We're delighted to be working with Leighs Construction to harness the knowledge and expertise of BigLift Shipping and Mammoet," Ager said.

Photo credit: Antarctica NZ
Swiss engineering company Gurit has been charged with the construction of the new Scott Base in cooperation with UK-based Hugh Broughton Architects (HBA). The facility will be of modular construction to allow for ease of transport and re-assembly at the site some 3,720 kilometres south of Christchurch. Durability features will ensure the station can withstand

harsh conditions such as outside air temperatures of as low as minus 60 degrees Celsius and wind speeds of up to 140 knots. The redevelopment of Scott Base will replace the existing base with three interconnected buildings and upgrade the Ross Island Wind Energy system.

Ager said BigLift will sail the prefabricated base from Timaru to Pram Point, Ross Island on the back of a 20,675 metric tonne, 173-metre-long MC-Class vessel in four years' time.

"Construction will begin at PrimePort Timaru mid-2023, allowing three and a half years to build, test and commission the new base before its journey south.

"The landmark voyage will echo New Zealand's Antarctic history: the original Scott Base consisted of prefabricated buildings delivered on the HMNZS Endeavour when the research station was established."

The MC-Class vessel is an ice-strengthened heavy module carrier, specifically designed to operate in remote and inaccessible areas, like Antarctica. BigLift Shipping commercial and business

development manager Mark van den Berg says the company is pleased to be contracted for the ocean transportation of the modules for the new Scott Base.

"We look forward to working with all partners of the Scott Base redevelopment to make this interesting and challenging project a success," van den Berg said.

The vessel will bypass the usual offload point at McMurdo Station and sail directly to Pram Point, where Scott Base is situated – it's the first time that a ship of this size will moor at Aotearoa's only Antarctic station. Mammoet is the company providing self-propelled modular transporters (SPMTs) that will move the new base onto the ship in Timaru and off again in Antarctica. The three interconnected buildings will be separated into eight modules (each about 800 metric tonnes), sealed, and welded onto the vessel for the journey. The first chartered vessel for the redevelopment, BigLift's Happy Delta, arrived in McMurdo Sound recently to deliver around 870,000 kg of cargo for the redevelopment.

"Delivery of heavy plant and machinery is a major milestone for



Photo credit: Antarctica NZ

the project,” Leighs Construction project director Iain Miller said.

“After years of design and planning, it is great to be moving into the most exciting phase of the project for Leighs Construction – the physical works.”

Infrastructure, machinery and equipment were offloaded at McMurdo Station with the support of the United States Antarctic Program and the New Zealand Defence Force.

A comprehensive environmental monitoring programme is under way to ensure any impacts to the environment are minimised through the redevelopment.

What the redevelopment entails:

The redevelopment of Scott Base will replace the existing base with three interconnected buildings and upgrade the Ross Island Wind Energy system.

The redevelopment will provide a safe, fit-for-purpose, environmentally sustainable scientific research base that will support New Zealand’s presence in the Ross Sea region of Antarctica for the next 50 years.

The new facility will be fitted with wet and dry laboratories, science workspaces, biosecurity facilities, event staging, and storage areas.

There is also an external deck for testing equipment or preparing samples for shipments and a roof deck for science.

In Budget 2021, Antarctica New Zealand was awarded \$344 million of funding to redevelop Scott Base and upgrade the Ross Island Wind Farm.

The new base can accommodate up to 100 people and will consist of an accommodation, dining and welfare building, a science and management building, and an engineering and storage building.

It will be built in the same location as the existing base on Ross Island.



*Aerial view of the Scott Base as it is today.
(Photo credit: Hugh Broughton Architects)*

A UNIQUE INTERNATIONAL MARITIME COLLECTION GOES ONLINE

*Dunedin (pictured) was
an iron sailing ship of
1,320 tons built in 1874
in Glasgow by Robert
Duncan and Co for the
Albion Ship Co.*



Over one million maritime archival records, documenting nearly 100,000 ships, are now available online for the first time following a five-year digitisation programme by the Lloyd's Register Foundation Heritage and Education Centre (HEC).

The collection includes maritime technical records such as ship plans and survey reports for famous ships including the Carpathia – the Cunard passenger liner that rescued survivors of the Titanic – and other material such as wreck

data, correspondence, photographs and certificates. Alongside the digitised collection of Lloyd's Register of Ships from 1764 to 2000, it provides a fascinating insight into the history of maritime safety, the development of Lloyd's Register, and the working lives of surveyors, shipbuilders, engineering firms and associated trades throughout the last two centuries. The material is also of unique interest to family historians through the inclusion of the names of shipowners, builders, surveyors and masters, all of which are searchable via HEC's online research tools.

At the height of the project during the pandemic, 40 conservators, numberers, capturers, and quality assurers from digitisation and digital archiving services specialist Max Communication Ltd worked with HEC to keep the £5,000,000 initiative on track. Meticulously cataloguing the entire historic collection, it measures more than 2,000 metres of shelf space – the equivalent to over 18 football pitches end to end. More than 4,000 boxes of material were examined, specialist repairs made where needed, and the records were subsequently uploaded to the digital platform. From here, catalogued and digitised records can be accessed through the online system, studied, and high-resolution imagery downloaded directly to a device.

Archivist for the centre Max Wilson said: "It's extremely unusual for such an extensive private sector collection such as this to be digitised unless it's a statutory requirement. It captures a wealth of maritime history including from Lloyd's Register, the world's first maritime classification society which was created more than 260 years ago to improve the safety of ships.

"Now accessible to online visitors from around the world, the collection offers an invaluable resource to experts, family historians, schools, and general enthusiasts to nurture their interest and intrigue in maritime history. Collections such as these are a powerful tool to not only learn from the past but to help us shape a safer maritime future."

Barbara Jones, the Lloyd's Register Foundation's Curator of Maritime History adds: "During the pilot project, First & Famous, at the end of 2014, it quickly became evident that digitising and sharing all our historic plans and reports would provide huge benefit to people worldwide. It's such a unique collection and it's been a pleasure to see thousands of people worldwide making use of it in so many interesting ways."

"It has been a pleasure to work on this project and to now see so many thousands of people worldwide making use of it in so many interesting ways.

Each day brought something special, whether it was looking at a plan like

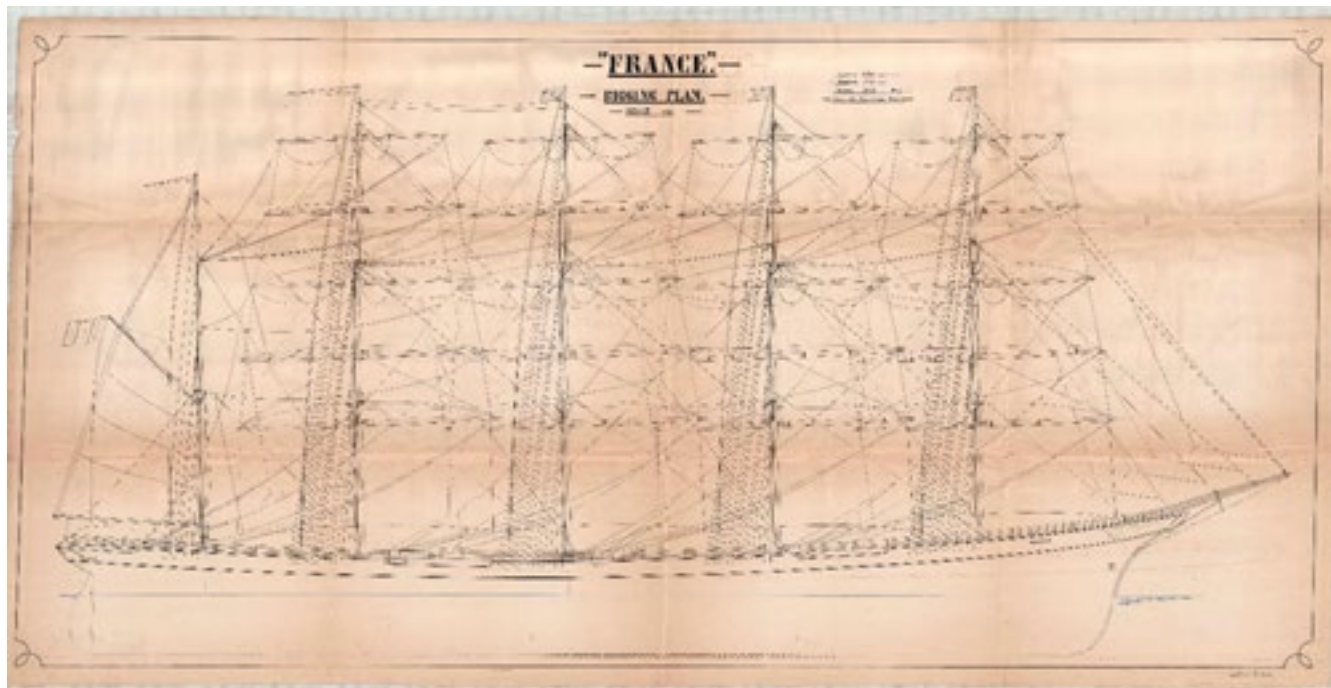
that for the Banshee and working out that the draughtsman had not only drawn an engineer to scale in the inspection shaft, but that he was also carrying both an oil can and a candle, to finding odd "lost" items that surveyors had lost amongst their reports, and here we were 100 years later finding their railway timetables, cycling shoe brochures and even a .22 round from a gun!"

While a UK-based archive, the collection includes tens of thousands of documents and records created from around the world, as well as records created for ships built in the UK for overseas clients. Using the online research tool bespoke datasets can be downloaded for wide-ranging searches from ship types, specifications, shipbuilders, time periods or locations.

As the largest and oldest collection of its kind these archives present fresh insight into the development of maritime technology, engineering, and science. Through the provision of unparalleled raw data this resource also underlines the legacy of and continued importance of safety for the future of the ocean economy.

The online collection is freely available via the Lloyd's Register Foundation Heritage and Education Centre's website and can be viewed at <http://bit.ly/3K8dmaZ>.

ABOUT THE SHIP PLAN AND SURVEY REPORT COLLECTION



Of particular interest for marine surveyors is likely to be the collection of ship plans and survey reports.

The unique ship plan and survey reports section hold a wealth of information concerning vessels classed by Lloyd's

Register. Dating back to the 1830s, the collection offers an insight into the design, construction and servicing of ships throughout their career. From correspondence, to telegrams, and midship sections.

Please be aware there may be material within the Collection that contains imagery or information that some may find upsetting. The documents were produced within the context of the time and do not reflect the views or opinions of Lloyd's Register or the Lloyd's Register Foundation today.

Traditional wooden boatbuilding now an endangered craft reveals new survey

Traditional wooden boat building has been added to the endangered list of crafts, according to a new study and survey by Heritage Crafts. The organisation's research is an ongoing project to track traditional craft skills on the verge of extinction in the UK. Its previous results were announced in 2021.



Image Credit: The Boat Building Academy, Lyme Regis

The research, which was funded by The Pilgrim Trust and sponsored by The Royal Mint, found that the energy crisis and inflation has exacerbated the issues faced by the UK's most at-risk skills, building on the cumulative effect of Covid-19, continuing uncertainties around Brexit and structural issues relating to the funding for skills transmission.

Crafts classified as newly endangered (traditional wooden boat building, canal art and barge painting), now sit alongside quite a collection of previously (and still) endangered craft makers in the areas of ropes, sails, fenders, coracles... and oar, mast, spar and flagpole making. Also in the same category are crafts such as wooden pipe making, and Orkney chair making.

Compass and navigational instrument making sits in the critically endangered bracket. Boat building (modern wooden) is classed as 'currently viable' although Heritage Crafts notes that, among other challenges, the industry does not invest in itself, warning 'it wants qualified boatbuilders but does not invest in their training,

and boatyards do not subsidise the training of boatbuilders. It is this lack of investment that will cause the craft to die.'

Endangered trades, like traditional wooden boat building, are classed as those which currently have sufficient craftspeople to transmit the craft skills to the next generation, but for which there are serious concerns about their ongoing viability. This may include crafts with a shrinking market share, an ageing demographic or crafts with a declining number of practitioners.

The Traditional Boat Building Survey 2023, which defines itself as 'the building, restoration and repair of boats made from wood using planked construction or skin-on-frame, mechanical fixings and traditional finishes', found that there was a particular concern about the loss of regional boat types and that skilled practitioners were heavily concentrated in the south of England. There is concern for boat builders based in Scotland (with references to practitioners on Orkney and East and West coasts) and other parts of the UK.

73 per cent of survey respondents described traditional wooden boat building as either 'endangered' or 'critically endangered'. Of the remainder, 20 per cent described the craft as viable, with the rest suggesting it's viable depending on location and which skills are being considered. The survey garnered 90 responses.

But David Johnson from Wessex Resins says there are "a notable number of traditional yards countrywide – on the east coast through Essex, Suffolk and Norfolk stretching up to the east coast of Scotland, the Lake District, Gloucester, and also along the Thames," where he says there are a plethora of wooden boat builders who do a lot of repairs. There is a huge number of authentic restorations with skilled shipwrights / boat builders. There is business there and it is countrywide." (Johnson and the wider team support boat building across the UK (and further), training students and professionals from large

companies like Spirit Yachts to small one-person endeavours in the use of products such as West System epoxy which it makes under licence from Gougeon Brothers.)

The Heritage Crafts' Traditional Boat Building Survey 2023 indicates that the current number of professionals who earn their main income from the craft is 21-50 (boat builders who carry out all aspects of traditional boat building including building new boats as their full-time occupation), with 50-100 professionals who utilise the craft as a side line to a main income.

It estimates there are 50+ trainees at boat building schools (like the Boat Building Academy in Lyme Regis), studying traditional boat building alongside contemporary techniques such as laminated wood and GRP. It suggests there are 11-20 serious amateur makers with the current total number of leisure makers not known as there is a keen interest in wooden boat building amongst retired and hobby makers.

Heritage Crafts' collective summary of findings from the Symposium on Traditional Wooden Boat Building 2022 and the latest survey says due to market pressures and efficiency, most boat builders will (understandably) carry out both traditional skills and modern construction methods. However, this could lead to some skills such as 'building by eye' and other hand skills becoming increasingly scarce.

Plenty of work in the wooden boat building world

Will Reed, director of the Boat Building Academy, says he wants to emphasise the point that "although some elements of traditional wooden boat building and particularly 'building by eye' are endangered, there is plenty of work in the wooden boat building world and it's an exciting, rewarding career to train for.

"There is clearly a market for people training up in traditional skills as many people own and

love traditional wooden boats. By following the fully traditional route, you are supporting an industry which is crying out for skilled craftspeople and there is plenty of work. Of course, at the BBA we teach modern and traditional wooden boat building to an exceptional world-leading standard."

Shipwrighting and the restoration of large boats was cited as an area of concern by Heritage Crafts, with most of the skills concentrated in one or two businesses. It was felt that this, in addition to the loss of regional boat types, could pose an ongoing threat to the maritime cultural heritage of the UK. A lack of government commitment to heritage skills and intangible cultural heritage in the UK exacerbates the situation. Plus, there is an increasing market for restoration and repair, rather than building new boats, says the survey.

According to organisation, boat building is well served for college based training with a healthy number of graduates. However, it feels these opportunities are not available to everyone and that there is a limited amount of funding to support those on lower incomes. The organisation suggests there could also be more options for training including more apprenticeships and practical 'hands-on' work experience. It bemoans the lack of practical education in school.

Other factors which have contributed to traditional wooden boat building moving to the endangered list include sourcing raw materials (made worse by Brexit), business costs / overheads, a shrinking market (only the very wealthy can afford traditionally made boats), loss of boatyards (waterside frontages are prohibitively expensive the organisation reports) and recruitment and retention. The research suggests that recruiting people with the necessary skills, experience and the ability to work to a commercial timescale is becoming a problem. Difficulty in recruiting apprentices was also cited as an issue. Low rates of pay can mean that it is difficult to make it a viable occupation, particularly in the south of England where accommodation and cost of living are expensive.



Gorran Haven Crabber built by Debbie Purser in October 2020

Increased market for restoration/repair

"While there are a great many financially successful boatbuilders/repairers/restorers, there are fewer successful traditional wooden boat builders," says Johnson.

He says there is a place for West System epoxy products even in the most traditional of wooden boat building companies and, like Heritage Crafts, bemoans the lack of practical education. "Boatbuilding in general has little coverage in education yet it encompasses design, engineering, art, maths," he says, "let alone the hands-on training that can lead to expertise.

"The ability to loft, measure, scribe, cut and use the correct tools to machine accurately are skills that are imperative to the successful

traditional wooden boat builder, expertise that translates well for GRP or modern composite constructed vessels."

Johnson says he is witnessing the increasing market for restoration/repair but says: "The skills required of a sound seaworthy repair, or an outstanding restoration are those of a well-trained and skilled traditional wooden boatbuilder. The ability to build a new boat reflects entirely on the techniques required to repair."

Mary Lewis, who led the overall research project on behalf of Heritage Crafts, says: "The effect of the energy crisis, inflation, Covid-19 and Brexit have been tough on everyone, not least the craftspeople who possess our most fundamental craft skills.

"We know that heritage craft skills operate like an ecosystem; if we lose one part it can have devastating

consequences on other parts of the system. If we allow endangered crafts to disappear then we seriously diminish the opportunities for future generations to create their own sustainable and fulfilling livelihoods and deal with the challenges of the future."

Whilst the UK has been a world-leader in the preservation of tangible heritage (museum collections, buildings and monuments), it has fallen behind the rest of the world when it comes to the safeguarding of intangible heritage (knowledge, skills and practices). Of 193 UNESCO members, the UK is one of just 12 that have not yet ratified the 2003 Convention on the Safeguarding of Intangible Heritage, and government responsibility for heritage crafts falls in the gap between agencies set up to support arts and heritage.

Read the survey findings in full at <https://bit.ly/3Bt0Eym>.

The Boat Building Academy in Lyme Regis offers a selection of practical courses in traditional skills, including wooden boatbuilding. More information is available at <https://boatbuildingacademy.com/>



NEW PRODUCTS

New electric power cat launched

The first power catamaran fitted with Molabo electric drives has been built, in partnership with New Zealand company Earthling. The E-40 power catamaran is a serial hybrid powered by two autonomous Molabo electric drives, one for each hull.

The catamaran has four 11kWh lithium-ion battery modules (two on each side), located in the centre of the vessel. The batteries can be charged by a coach roof-mounted solar array which is supplemented by two 8.5kW DC charge genverters. The system components are dual redundant and cross-connected for reliable performance.

The catamaran can travel up to 40 nautical miles with a full battery charge, powered by battery alone at slower speeds. At 8 knots, the range is around 30 nautical miles. The backup genverters will automatically start to maintain a 20% battery capacity. When at anchor under sunny skies, the Earthling's batteries can fully recharge from the solar panels in approximately three days.

Far East Boats launches new electric catamaran

Far East Boats, one of the biggest sailboat builders in China, has launched its new ePropulsion-powered electric catamaran.

The Fareast 42C measures 42ft and is powered by a pair of ePropulsion 20kW electric motors. It is the first all-electric catamaran developed by the company and the first mass-produced catamaran powered by ePropulsion's integrated propulsion system solution.

Designed by Simonis Voogd Design, the yacht features a spacious living area and uses extra-long, built-in plexiglass portholes to allow passengers to enjoy a 360° unobstructed view in the saloon and greater natural light in the cabin. The deck layout can be selected from a sports version or a charter version.

Equipped with ePropulsion's battery, electric propulsion, and control and management systems solution, the catamaran boasts the advantages of all electric motors – quiet performance, zero-emission, and efficient propulsion.



New deep cycle starter battery

RELiON's latest lithium starter battery is the B100-HP. The battery is a Group 31 12V, 100Ah deep cycle lithium-Ion battery built for starting and cycling of marine and RV applications. The RB100-HP has increased peak amps for starting motors, electric start generators and other high-amp-draw devices. It can also double as a house battery, powering peripherals, accessories and more.

The new enhanced version features six terminals versus the two on standard batteries, offering users more flexibility when connecting electronics to the battery. Other improvements include an atmospheric vent added to the top of the case that equalises pressure while preventing contaminants from entering the battery; glue channel to ensure IP67 seal; screw latched closure to ensure seal longevity; and tied rope with handle guides that replace ultrasonically welded straps to improve durability.



NEW PRODUCTS

Rocna Anchors launches new Rocna Mk II Anchor

*Rocna Mk II
anchor ©
Peter &
Craig Smith*

The Rocna Anchors range of popular boat anchors has been expanded with the development of a new improved version of the original Rocna anchor. The Rocna Mk II anchor is based on the same design pattern as the Rocna Original but refines and upgrades all elements for increased holding performance and strength.

Peter Smith, lifetime sailor, boatbuilder, and designer of the Rocna Anchors range, has been working on his new anchor development for years. "I want to keep improving anchoring for boaters, by applying good engineering fundamentals and taking advantage of the more sophisticated manufacturing methods we have access to now", said Smith. "The original Rocna is a superb anchor and now well proven with great adoption - the question for me was always could we improve on it?"



Axiom 2 XL Group © Raymarine



Raymarine delivers Axiom 2 XL Glass Bridge Chartplotters

Raymarine has announced the availability of Axiom® 2 XL, a sophisticated line of glass bridge chartplotters for premium yachts and integrated helm solutions. The largest and most powerful navigation displays in the award-winning Axiom family, Axiom 2 XL offers superior performance and the elegant simplicity of Raymarine's LightHouse operating system.

Designed to grace the helms of luxury cruisers and premium sailing yachts, the Axiom 2 XL portfolio is available in 16-, 19-, 22- and 24-inch sizes. Each display features Raymarine's exclusive HydroTough™ nano-coated display technology that repels water and oils for reliable touchscreen operation in the most challenging conditions.

Axiom 2 XL screens are designed around a new six-core processor, offering responsive performance and a 30% increase in navigation chart speed and rendering. For customers looking to create a glass bridge helm solution, Axiom 2 XL offers extensive networking and video options, including NMEA2000 and three Power-Over-Ethernet ports for integrating multiple Axiom displays, video cameras, radar, and sonar modules. These high-performance chartplotter displays also feature extended multimedia capabilities, including analogue audio output, HDMI input/output, and touchscreen pass-through for integrating onboard PC applications, engine interfaces, and digital switching solutions.

Water automation hits new heights

Water Freedom's new Smart system builds on the company's OneTouch system, designed to take the automation of water management and the filtration process to a new level. The product has a touch screen display that can be programmed to show the estimated number of days or litres before a filter change is needed, as well as alert the user when a problem is detected.

"The system can be set to run during acceptable hours," explained John Howard, head of Water Freedom.

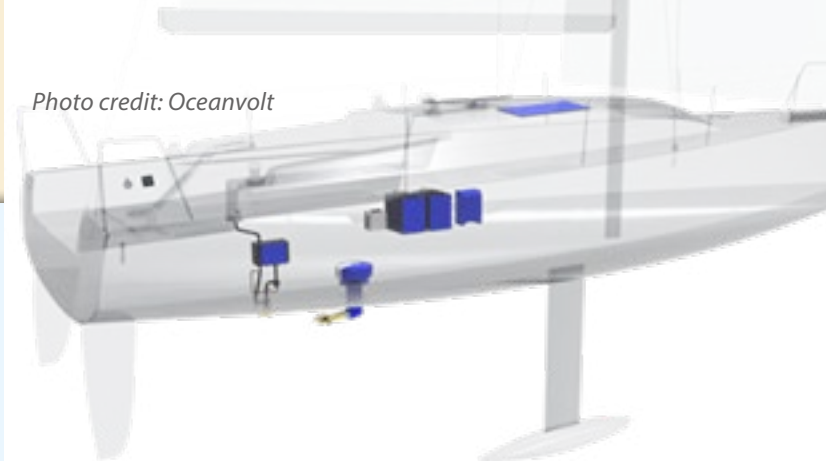
"It could be that users only want the system to run early morning or when the boat is in a power neutral fashion. It can be programmed to whatever choices the users want."

The system has flow sensors that keep track of water flowing to and from the water tank as well as the real-time water production rate. The sensors also enable the system to automatically replenish the tank whenever the specified quantity of water has been used.

The system also incorporates safeguards that have been built into the software to prevent flooding and to protect the domestic battery bank.



Photo credit: Oceanvolt



NEW PRODUCTS

An electric boat motor that recharges using renewable power

The new Oceanvolt ServoProp saildrive has a regeneration feature that efficiently charges up an electric boat's batteries while sailing offering a much greater range. Saildrive motors are an innovative propulsion system for modern sailboats, offering a compact and efficient alternative to traditional shaft-driven inboard engines. They are designed with a sleek, low-drag profile which is integrated into the hull. This configuration not only reduces environmental impact, vibrations and noise, but also minimises the complexity of installation and maintenance.

Electric saildrive motors have the benefit of offering hydro-regeneration – a unique advantage that can help recharge an electric sailboat's batteries. When sailing under wind power, the electric motor is actually forced backwards by the water moving over the propeller. That turns the motor into a generator that can send energy back into the batteries to be used later.

Oceanvolt's newest HighPower ServoProp 25 is the most powerful model in its lineup to date, capable of regenerating 5kW of power while traveling at around 10 knots. The saildrive is suitable as a propulsion motor for boats up to 70 ft in length and weighing up to 25 tonnes. But it can also be used as a hydro-regenerator alone in considerably larger vessels.

Caudwell diesel outboard to be delivered in 2024

The UK's Caudwell Marine has announced that its new 300hp, V6 turbo-charged diesel outboard will be delivered in early 2024. It features a patented integrated steering system known as an Axis Drive and is expected to appeal especially to commercial and military markets. However, the company also sees opportunities in the recreational market, where fuel economy, performance and reliability are an important requirement.

"We know that the market is desperate for a solid and reliable diesel outboard, which delivers the highest level of performance," says Caudwell commercial director, Peter Ordway. "We are completing our programme of very challenging product testing, so that we are sure to deliver a

market ready product that will perform 'out of the box', succeeding where others have failed."



Ocean Safety introduces new commercial liferafts

Marine safety equipment specialist, Ocean Safety, is launching its new 14 and 16 person ISO 9650 Type 1 compliant commercial liferafts at Seawork, 13-15 June 2023. With recent changes to the ISO 9650 regulations allowing for a maximum capacity of up to 16 people, Ocean Safety has expanded its popular Ocean ISO liferaft range to include these larger capacity rafts.

"We're delighted to be presenting these new additions to our ISO compliant commercial liferaft range which are ideal for UK registered small commercial craft," says Alistair Hackett, managing director at Ocean Safety.

"The regulation changes mean that a vessel approved to carry 12 passengers and two crew can now carry a single 14-person liferaft with SOLAS B pack, where previously it would have had to carry two liferafts, therefore reducing stowage space required, decreasing capital outlay and ongoing servicing costs."



Youth development sailing charity announced as this year's IIMS President's Charity

Tall Ships Youth Trust (TSYT) has been announced as the International Institute of Marine Surveying (IIMS) President's Charity this year.

TSYT is a youth development and outdoor learning charity that has been providing transformational voyages to young people aged 12-25 years from across the UK since 1956. The trust, which has a particular focus on young people from disadvantaged backgrounds, delivers its life-changing residential voyages all year round via its fleet of four 72ft Challenger yachts and a 55ft ketch.

This year the charity has launched a five-year strategy for 2023 to 2028, which sets out its plans to support even more young people, including the implementation of its new three-voyage programme of Exploration, Empowerment and Leadership. The three-year programme is designed to support young people on their journeys into adulthood and in the long term to sustain them throughout their lives.

TSYT CEO, Alastair Floyd, said: "Each voyage experience encourages and challenges our young people to create better outcomes for themselves and their communities. On our voyages we can identify and develop future leaders, offering clear pathways into our volunteering roles and for those who want it, careers in the maritime sector and the ocean environment."



As part of the strategy work, TSYT has also refreshed its values to ensure its youth development offering is nurturing and inclusive, positive and challenging and striving for social change.

As well as this, TSYT voyages also have a strong focus on sustainability as the charity is passionate about protecting and sustaining the ocean environment, and works hard to ensure that its environmental impact is minimal both on and offshore.

Alastair adds: "Our voyage experiences deliver highly effective personal and social development, offering young people the chance to embrace a healthier more active lifestyle and consider their environmental impact, while opening their minds to a newfound passion for sailing."

TSYT is one of the UK's largest issuers of Royal Yachting Association (RYA) certificates, awarding more than 500 each year. In addition, up to 20% of the young people who sail with the trust are recommended to return and train as a volunteer member of the voyage crew, giving them the opportunity to support others and work towards a career in the maritime sector. E.g., through work experience placements and community project collaborations, such as apprenticeships.

Over the years, the charity has supported many young people who have gone on to pursue careers in various different fields, such as harbour management, the Royal and Merchant Navy and even yacht design. The skills they acquired while sailing with TSYT have helped them to navigate their maritime careers.

Jo Cox, Chichester Harbour's brand-new Harbour Master, first sailed with TSYT in 1995. She said: "From the first moment of stepping onboard I was hooked. I was invited back to sail as a Watch Leader and as I did more trips, I met more people with maritime backgrounds and began to investigate a career at sea."

Each year, TSYT gives around 1,200 youngsters a life-changing experience, approximately 75% of whom are from disadvantaged backgrounds. The young people TSYT supports are facing a range of challenges including being in the care of local authorities, taking on caring responsibilities themselves, they could be in foster accommodation, or from ethnically diverse backgrounds. Often, they are not in mainstream education, but some alternative form of education, such as a Pupil Referral Unit.

Riley (21) has recently completed a Voyage of Empowerment, which is the second stage of TSYT's new three-voyage programme.

Riley said: "Voyaging with Tall Ships Youth Trust has helped me to understand and process the person I actually want to be.

"It's allowed me a space to open up to people and work as part of a team to release any stress through practical sailing activities. I've gained so much confidence too and stopped judging myself so harshly. I've allowed myself to relax and just enjoy the time I have with TSYT."

By blending youth development, outdoor learning and sail training, TSYT voyages provide a unique environment that enables young people to develop not only their sailing skills, but also life skills, which can be transferred to their day-to-day lives and future employment, such as teamwork, communication skills and resilience.

The charity is in the process of developing regional hubs to increase its reach into other parts of the UK away from its Portsmouth base. To do this, the charity is working in collaboration with local organisations and ports in Whitehaven, Greenock, Belfast, Ipswich, Newcastle, and Plymouth.

The aim of the hubs is to reach even more young people by voyaging from locations around the UK, with a deliberate focus on areas in the greatest need of support. Thanks to the generosity and dedication of the charity's supporters, TSYT can provide young people with further support to join its voyages through its bursary programme, which provides extra financial support to those who may need it. Bursaries are funded via grant-making trusts, individual donations and the proceeds from its sailing experiences for adults.

To learn more about Tall Ships Youth Trust and its vital youth development work, visit www.tallships.org.



IIMS President, Peter Broad FIIMS, has chosen the Tall Ships Youth Sailing Trust as his charity for 2023. Having read this article if you would like to support his charity, you can make a donation by going to <https://bit.ly/3My4jzK>



A member of the Institute since 2007, Des Kearns MIIMS, will reach a milestone when he turns 80 in 2024. Not only is he a highly experienced marine surveyor, but he is also a published author. These days he lives in Thailand, but over his career, he has been located all over the world. Des is a member of the Honourable Company of Master Mariners and also of the Singapore Institute of Marine Arbitrators. In this interview, Mike Schwarz poses the questions for Des to answer.



Q1 & Q2. Let's start by going back in time. What was the appeal of the surveying profession and how did you make your mark as a marine surveyor when you arrived on the stage? What training did you need to help you develop your skills as you moved from your career at sea into a new role and did you have a mentor?

I was still a teenager when I sailed around the world in a thirty-foot sloop. Then I spent two years chasing large schooners and square-rigged ships working for no wages with the sole purpose of learning seamanship. This background sparked my interest in pleasure craft surveying. In the early years as a surveyor, I learnt by jumping in the deep end, mainly because no training was available.

Small craft surveying and my commercial career ran parallel. In 1982 I was running an icebreaking,

anchor handling tug in the Arctic Beaufort Sea. Eight tugs were involved mating a 270,000-ton super tanker with a 200,000-ton 'steel island' to form a hybrid mobile oil exploration drilling unit capable of withstanding the global forces exerted by winter ice.

Capt. Mike Jacobs from the prestigious survey firm of Noble Denton was the warranty surveyor. I mention this because that event, that day, was my career turning point. I developed a burning desire to become a marine warranty surveyor like Mike Jacobs. Fear also crept in. I did not know whether I could fill his shoes. Regardless, I wanted in.

Later when I became an Arctic drillship captain, Mike Jacobs representing Underwriters attended with me during rig moves. He became my mentor and window of opportunity to become a Noble Denton surveyor.

During my 1988 job interview in Singapore Capt. John Killick with a pair of half glasses perched on the end of his nose said to me.... "If you want to be a Noble Denton surveyor you will meet challenges requiring you to draw on inner strength. We want men who make shit happen, even the seemingly impossible. You must possess a knack for breaking down overwhelming projects into chewable pieces, find solutions and appreciate lessons learned, even in failed attempts. You must be able to hold your ground. Never bend to commercial pressure. If you believe you are right, you must stand on the platform of right. I am of course talking about moving the world's largest oil structures on the oceans which is what we do here."

Those words inspired me for the next 16 years.



Q3. During your career you will have seen many changes in the maritime sector and the marine surveying profession. Going forward what do you think, in your opinion, the surveying profession needs to do to enhance its image?

The biggest change I've witnessed comes from mergers and acquisitions. Proud professional companies of engineers and master mariners who once provided high-end technical services to clients lost their identity when taken over by larger companies. Corporate platitudes aside, our opinion was the new mega-companies were nothing more than a giant melting pots of mediocrity where surveyor's technical expertise/recommendations were frequently squashed in favour of commercial interests.

Underwriter's attitude is the second point. Underwriters have become profit driven while making it difficult for the Insured to get Cover. The current marine insurance market can be described as 'risk averse'. This especially applies to the traditional western insurance companies and syndicates whose Underwriters are under considerable pressure from their capital providers to show good profits year after year.

Their financiers seem to forget insurance is a risk business.

This has resulted in reduced capacity being offered and Underwriters only accepting risks that 'fit the box' relating to a narrow range of parameters provided by their actuaries who only look at the numbers and the past records. Stepping outside these parameters becomes a serious

personal risk for the underwriter. As the yacht insurance market has many parameters influencing 'risk', the number of underwriters now willing to insure in this area has dropped substantially which has reduced competition and given them more ability to be selective and charge higher premiums.

The surveyor must now work his way through this quagmire.

Q4. When you look back over your business life of many decades, what two achievements give you the most pleasure and satisfaction?

The 30-foot yacht on which I sailed around Cape Horn had no roller furling, no anchor winch, no self-steering, no fridge, no toilet, no radio, no electronics. We had a sturdy watertight hull. Stout rig. Good sails. A place to cook, a place to navigate and a place to lie down. Good anchor gear when we got close to land. That experience opened up the world for me.

My second achievement was becoming a master mariner which opened career doors - and is still opening doors.

Q5. I'd like to ask you about the onslaught of modern technology, including report writing software and remote surveys amongst them. What are your views on this matter – a boon or not?

I am an old school surveyor with no experience with report writing software or remote surveys but here are my thoughts.

Our profession does appear to be leaning in this direction. Will this new technology be a good servant or a bad master? Theoretically, it is feasible option. In worst case remote surveys could put us out of business. Whether we agree or not, this new technology is already with us and brings with it a set of circumstances we must deal with but are not prepared for. The process has not been thought through. Remote surveys could be subject to abuse. The biggest danger I see is that remote 'attendance' could lead to mistakenly determining the safety of a vessel, and that in turn involves people's lives.

Q6. Where the next generation of marine surveyors as well as seafarers will come from is taxing everyone's minds. What are your thoughts on this?

I honestly do not know.

Q7. Given your broad range of experience you are uniquely placed to offer advice to the new generation of surveyors. What advice might I persuade you to pass on?

The International Institute of Marine Surveyors clearly states in their Code of Ethics:

"A Surveyor member will discharge his professional responsibility with integrity and shall at all times advise or report in a fair and factual manner without prejudice or favour."

Stick to that code and never waver even one millimetre off the line. Ever.

Q8. What are the main attractions of living in Thailand and how does it compare with other countries you have lived in?

Thailand is not hassle free but if you follow the law, it is freer than most western countries. It is certainly more flexible. Thailand runs on a platform of respect. Thai people respect each other, particularly the elderly. Across the board politeness is expected. Finally, good sailing conditions, turquoise water and fabulous food rounds off the package.

Q9. I read about your involvement with the renovation of Cariad, which sounds like an extraordinary project. Indeed, you have written an article in this edition. But in brief what would you like to say about your involvement?

My involvement began 33 years ago when I carried out a routine survey on Cariad in Singapore. 16 years later in 2006 I was asked to carry out a follow-up survey while the vessel lay abandoned and derelict off the port of Bangkok. It took 30 seconds to sum up that she was uninsurable. The potential buyer, a British businessman, said he would purchase her anyway and accept the cost and challenge to restore this piece of British maritime history. I accepted his invitation to project manage the restoration.

In 2008, fifty-five people and 3 million dollars later, we launched a perfectly restored Cariad. Unfortunately, this coincided with the world financial crash and the owner was forced to sell.

The new owner treated her like a trophy on a shelf. He carried out almost no routine maintenance, inclusive of 13 years without drydocking the timber hull. Teredo worms chewed up her beautiful new planking. She also rotted from the inside because the caretaker never ventilated. She partially sank three times, completely submerging the engine room each time.

In 2021 Cariad was purchased by Tim Hartnoll, CEO of X-Press Feeders Shipping Line, a man with the passion and money to restore Cariad to former glory.

In January 2022 we again inherited a derelict vessel. We rounded up the same team and started the heart-breaking process of restoring Cariad for the second time. Currently we are already 16 months into the project and hope to re-launch in August this year.

Q10. As a fellow wordsmith, I am interested to know what motivated and inspired you to write 'World Wanderer - 100,000 miles under sail' and the follow up 'Beyond Boundaries'. Please tell me.

When I circumnavigated in our 30-foot sloop these were early 'cruising' days. When I arrived home, there was a book inside my head wanting to get out. I typed the manuscript on an old Olivetti typewriter – the one if you made a mistake, you had to redo the whole page.

In November 1969, typewritten manuscript under my arm entitled, World Wanderer –100,000 Miles Under Sail, I sheepishly entered the lobby of the Angus & Robertson publishing house on Sydney's Castlereagh Street, an Australian flagship institution. I left the manuscript with a pleasant receptionist. Five days later I received an invitation to attend a meeting at the publishing house. My manuscript had been separated into sections along with photos, which now covered a polished table. I was in a state of shock because I was a 25-year-old youth off the streets but was treated with respect, politeness, courtesy and enthusiasm. The book quickly went into print.

In 2019, forty-eight years later, my second book Beyond Boundaries was published. The first half of Beyond Boundaries details becoming a surveyor; the second half as a Noble Denton surveyor; then latterly returning to my roots as a yacht surveyor.

Q.11 What hobbies do you most enjoy?

Sailing.

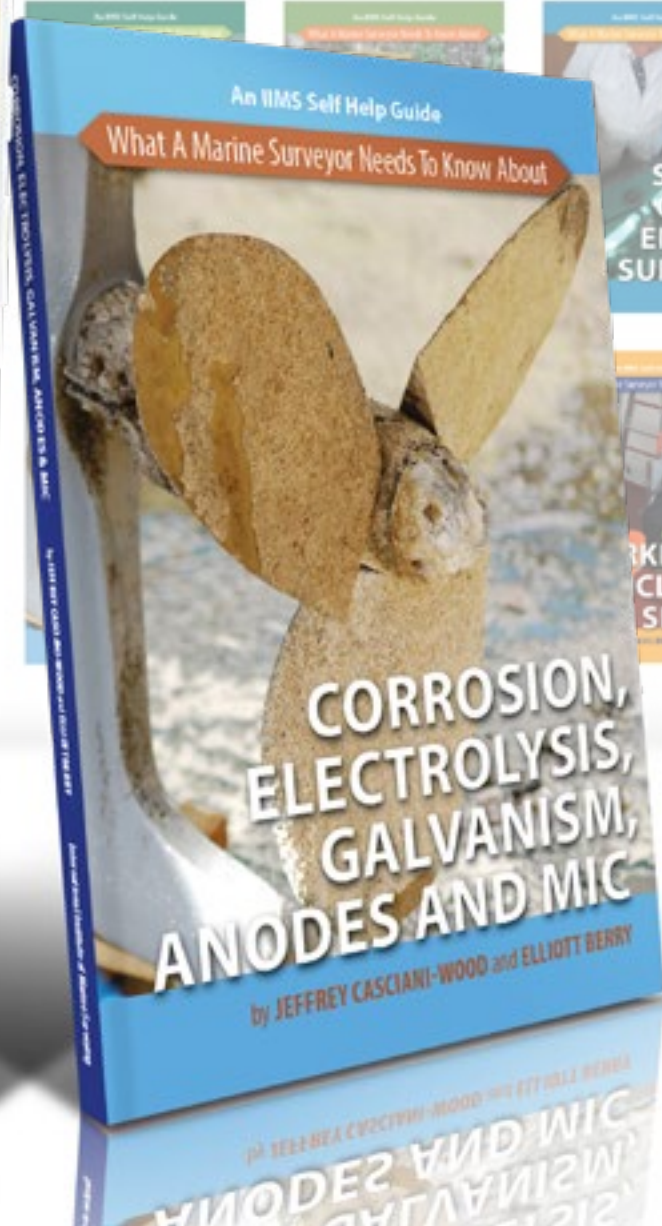
Q12. If you could change one aspect of your life if you were able to live it again, what would it be?

I would change nothing.



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