

THE REPORT



DEC 2024 | ISSUE 110

The Magazine of the International Institute of Marine Surveying

ISM CODE - THE MARITIME SCAM OF THE CENTURY?

**THE HAGUE RULES:
100 YEARS OLD**

**HOW A NAVY DOCTOR
REVOLUTIONIZED HIGH
SPEED BOAT SAFETY**

**CONTAINER SHIP FIRES
ON THE RISE AGAIN?**

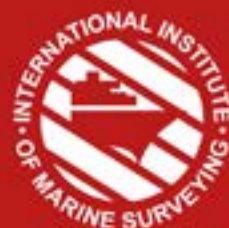
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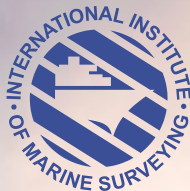
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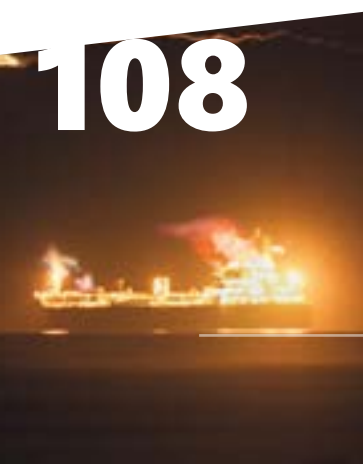
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EDITOR'S LETTER

Dear Member and Fellow Maritime Colleagues

Welcome to edition 110 of the Report Magazine. This one, like many before it, covers the widest range of topics imaginable, and as the change in the maritime industry continues to gather pace, I have devoted plenty of space to some of the more on-trend topics affecting our industry which are new to many and will promote debate I am sure.

The ISM code has often been derided by some in the industry and therefore I decided to make this the lead article. I am pleased to give IIMS past President, Capt Bertrand Apperry, who as you will read, has some particularly forthright views on the code the opportunity to voice his opinions. Whatever your thoughts on this code, it will certainly get you thinking. In his article '*ISM code: The maritime scam of the century?*' on page 94, he argues that the bar has been set too low.

One of the subjects and 'buzz word' phrases relating to a changing maritime sector I mentioned is carbon capture, an activity some may not be familiar with. It is a subject that is not mainstream marine surveying, but nevertheless it impacts the sector. Read the article entitled '*Accelerated uptake of carbon capture unlocking shipping opportunity*' on page 81.

The fallout and learnings from the MAIB's accident investigation report into the fatal Seadogz tragedy have been significant. The article on page 57 – '*Small craft sector must inform and educate customers of dangers to avoid passenger injury says MAIB*', is a big wake up call for the sector and one that must be heeded by those involved.

Articles about safety issues that could affect marine surveyors always have an important place in this magazine and this edition is no exception. '*Bad ladders are a major issue for marine pilot safety*' (page 90) and '*Asphyxiation in cargo hold due to oxygen depletion*' (page 76) deserve your attention and are recommended reading.

The article entitled '*Carrying electric vehicles and lithium-ion batteries at sea and the fire risks*' keeps this vexing subject firmly in the spotlight - see page 62.

This edition features several articles that are technical in nature. '*Compliance with ships' lifting appliances: A best practice guide*' is one and '*Raising the focus on cyber security for LNG carriers*' is another. However, the one that caught my eye is the story called '*Re-evaluating gas turbine engines for future maritime propulsion*' on page 67, surprisingly relevant it seems when considering future maritime propulsion systems.

One of the most inspiring accounts I have read recently can be found in the story '*How a Navy doctor revolutionized high-speed boat safety*' - see page 117. Repeated slamming impacts from rough seas caused serious injuries, many of them life-altering and this was noticed by Dr Johan Ullman, a medical officer in the Royal Swedish Navy. He saw these challenges not as an unavoidable consequence, but as a problem that could be solved. His solution? A seat that would change the course of high-speed boat safety. His story deserves to be heard.

The end of another year approaches and one which, for me, has presented a number of challenges. The hardest thing we have to do in business is effectively managing human resources. I have attempted to chronicle life at IIMS over the past year in an open and honest fashion, and you can read my Review of the Year entitled '*2024: The good, the bad and the indifferent*' on page 50.

If you celebrate Christmas, may I wish you the merriest of yuletide greetings! Who knows what awaits us in 2025, but I wish you good luck and good fortune for the new year.

Survey well, etc

Mike Schwarz
Chief Executive Officer



PRESIDENT'S COLUMN

Dear Fellow IIMS Members and Industry Colleagues,

As the year draws to a close, it's a good time to reflect on the dynamic landscape of our profession and the exciting developments within IIMS. From embracing new technologies to fostering the next generation of surveyors, we continue to navigate the evolving currents of the maritime world.

Investing in the Future: Expanding Our Reach

I'm delighted to share that our Professional Qualification in Commercial Ship Marine Surveying program in Bangladesh now has 11 enrolled students. This unique initiative underscores our commitment to providing world-class education and expanding our global footprint.

Furthermore, we recently held our first-ever Introduction to Marine Surveying hybrid seminar in Palma

Mallorca, attracting over 20 eager participants. This innovative approach to training highlights our dedication to cultivating the next generation of marine surveyors.

Navigating the Technological Tide: Seminars and Insights

This quarter saw me participating in several key events that emphasized the growing importance of technology in our profession. At the Mariners Trainers Guild (MTG) seminar in Mumbai, I had the opportunity to showcase the success of our IIMS Continuous Professional Development (CPD) program. It's clear that CPD, with its focus on ongoing learning and adaptation, is crucial for ensuring competency in an increasingly digital maritime world.

The Wärtsilä seminar, also held in Mumbai, provided a fascinating glimpse into the future of maritime training and simulation standards,

especially regarding decarbonisation and the use of future fuels. The event highlighted the need for advanced training solutions that keep seafarers abreast of the latest technological advancements. But it also highlighted the need to remain motivated, which can be challenging. The IMO's ambitious initiatives to reduce shipping's carbon footprint, while vital, come with a stark paradox. Shipping accounts for only 2-3% of global greenhouse gas emissions, yet we are expected to meet some of the most stringent environmental targets. To put this in perspective, emissions from bulk carriers alone have been reduced by nearly 5 million tonnes since early 2021. Meanwhile, global conflicts such as the ongoing Ukraine-Russia war, now joined by tensions involving Hezbollah, Israel, and Iran, see missiles and bombs exchanged daily - manufactured and supplied by some of the world's most developed



nations. One wonders: are these "green-certified"? To add to it, when we celebrate Diwali, we are warned against firecrackers by no less than the Supreme Court, and yet here we are, dedicated to decarbonization efforts. It's a paradox, isn't it?

International Collaboration: SAMS IMEC

My recent trip to New Orleans to represent IIMS at the SAMS IMEC conference was a truly memorable experience, despite the unexpected arrival of Hurricane Francine! The conference provided valuable insights into the unique challenges faced by surveyors specializing in small craft. The presentations from the Mississippi Pilots Association were particularly fascinating, offering a firsthand look

at their crucial role in navigating the intricate waterways of the region.

The conference also delved into a range of small boat claims, with sessions focusing on issues such as paint failures and fire investigations. These discussions highlighted the diverse expertise required of small craft surveyors and the importance of staying up-to-date on the latest industry trends and best practices. Of course, the looming presence of Hurricane Francine added an unexpected layer of excitement to the event, reminding us of the unpredictable nature of the maritime environment and the importance of preparedness.

Embracing Change: A Call to Action
As our CEO, Mike Schwarz, has highlighted in his year-end review, 2024 has been a year of change and adaptation. From navigating

staffing transitions to embracing new technologies, IIMS has demonstrated its resilience and commitment to continuous improvement.

Looking ahead to 2025, I urge all members to embrace the spirit of innovation and collaboration. Whether you're a seasoned surveyor or just starting your journey, your contributions are vital to the success of IIMS and the safety of the maritime industry.

Thank you for your dedication to our profession and your unwavering support of IIMS.

Sincerely,

Capt Ruchin Dayal

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Classification societies join forces to form YSEC: Yacht Safety and Environmental Consortium

Leading global classification societies Lloyd's Register (LR), RINA, DNV, Bureau Veritas (BV) and ABS, announce the establishment of the Yacht Safety and Environmental Consortium (YSEC) at the Monaco Yacht Show 2024. The new consortium is committed to driving forward the safety and environmental performance of yachts, promoting and advising on achieving the best practices in the industry.

The yacht sector has a considerable need for a unified consortium of class societies, as yachts are not covered by the International Association of Classification Societies (IACS) in the same way other vessels are. The consortium aims to focus on safety and environmentally conscious behavior of commercial and pleasure yachts of over 24 metres in length. The consortium will utilise the collective expertise of its members to support the yachting industry tackling challenges during yacht design and operation by promoting best practices in safety and sustainability, to advising on industry standards and fostering collaboration.

By leveraging the collective expertise and experience of LR, RINA, DNV and BV, the consortium will play a pivotal role in shaping the future of yacht safety and environmental performance through increased collaboration.



Greenwashing means a company giving a misleading impression of its environmental credentials. The findings of the Stichting Reclame Code (SRC) do not carry any penalty beyond recommending the claims are not repeated. Environmental groups, led by Fossil Free Netherlands that brought the complaint, say slogans and ads used by the firm such as "#SavetheSea", and "sailing to the future in a responsible way" help tourists rationalize using a service that is powered by fossil fuels and contributes to global warming.

Much of the decision focused on MSC's advertising of its use of liquefied natural gas (LNG) in some of its ships. The company says LNG is less carbon dioxide emitting than alternatives such as heavy fuel oil or marine diesel. While allowing that may be true, the board said MSC had not considered LNG's broader environmental impact and it was wrong to bill it as "one of the cleanest" fuels.

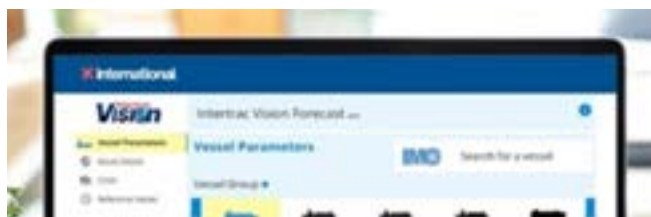
AkzoNobel unveils new updates to Intertrac Vision coatings performance prediction tool

AkzoNobel's International marine coatings brand has announced a series of updates to Intertrac Vision, its "big data" tool designed to provide accurate and transparent predictions on the fuel and CO2 savings potential of fouling control coatings.

The latest enhancements include CII rating prediction, EU ETS cost impact and detailed breakdowns of cost savings across multiple drydockings, all designed to further support data-driven decision making. Intertrac Vision analyzes insights from more than 200,000 drydocks and 10,000 vessel operators. Pairing this track record with machine learning modeling, the tool forecasts the contribution of coating performance for a vessel's in-service period and evaluates the return on investment based on the specified vessel type and operational scenarios. The tool enables vessel operators to make more informed decisions on fouling control coatings which can help contribute to lower fuel consumption and reduced CO2 emissions. The total cost of ownership summary has also been implemented in this recent update, providing insight into the return on investment as well as giving detailed cost contributions for each element of the drydocking cycle.

A recent Lloyd's List survey found that more than 59% of shipowners consider coatings to be one of the best decarbonization measures they can take to comply with the International Marine Organisation's Carbon Intensity Indicator and Energy Efficiency Existing Ship Index.

"Intertrac was developed to empower shipowners and operators with bespoke insights to help make more informed decisions on vessel performance," says Barry Kidd, vessel performance manager at AkzoNobel. "Our technical experts understand how fouling challenges and vessel operations vary across trading routes.



MSC Cruises upset the Dutch advertising standards over greenwashing claims

Sustainability claims by MSC Cruises, including that it targets "net zero by 2050" do not meet standards, the Dutch advertising board found in one of the first decisions against a cruise operator following a greenwashing complaint. MSC, a privately held Swiss-Italian firm that is among the world's largest cruise operators, said in a reaction it welcomed some parts of the decision and had "already implemented most of the changes advised".

Smugglers' ship sunk to form Ireland's first artificial reef



Image credit: Ocean Sands Hotel/YouTube

A former smugglers' ship, MV Shingle, has been sunk off the coast of County Mayo to form Ireland's first artificial reef. The 60-metre vessel, which was seized by Irish authorities in 2014 after being intercepted with 32 million cigarettes and tonnes of tobacco aboard, was scuttled in Killala Bay. The sinking aims to enhance marine biodiversity and boost tourism by attracting divers to Ireland's west coast to explore the wreck site.

The MV Shingle was part of a Europe-wide cigarette smuggling operation when it was seized near the port of Drogheda. Since then, it had been berthed in Dublin Port and later New Ross, Co Wexford, costing the Irish Revenue around €2 million in fees, maintenance, and asbestos removal, according to the Irish Times. The vessel, rusting and no longer seaworthy, had proven difficult to sell or scrap.

The idea to sink the ship for environmental and tourism purposes was spearheaded by Killala Bay Ships 2 Reef, a campaign group led by Mayo County Councillor and seasoned diver Michael Loftus. Loftus said the project was a long time in the making, with planning beginning as early as 2008.

Maersk moves closer to gender equality at sea

Maersk has achieved a key milestone in its 'Equal At Sea' initiative, with 45% of women cadets in its Nautical and Engineering programs in India by 2024. The accomplishment gets the company closer to meeting its ambitious 2027 target of equal gender representation among its cadet intake.

The 'Equal At Sea' initiative, launched in 2022, aims to address women's historical underrepresentation in the maritime sector by establishing an environment that promotes gender diversity. The program has promoted collaboration among many stakeholders by providing a platform for exchanging ideas, addressing challenges, and implementing best practices.



An autonomous underwater vehicle inspects offshore wind farm in world first

Beam, which provides high-tech offshore wind services, has deployed the world's first autonomous underwater vehicle driven by AI or Artificial intelligence. The technology was used to inspect jacket structures on the Seagreen offshore wind farm in Scotland, a joint venture partnership between SSE Renewables, TotalEnergies, and PTTEP.

Though such inspections are usually manual and time-consuming, AI helps perform complicated tasks without human intervention, boosting the efficiency and cost-effectiveness of surveys and underwater inspections. It also improves inspection data quality, is more precise and allows for 3D reconstruction of structures along with getting visual data.

Brian Allen, CEO of Beam, said that this technology has massive potential and wouldn't be possible without clients like SSE Renewables.

Australia's National Recreational Boating Survey

The Boating Industry Association (BIA) has rolled out a survey designed to improve understanding of the social and economic benefits of recreational boating across Australia. BIA CEO Andrew Scott said the survey was part of a wider project to develop a more complete picture of the impact and value of boating.

"The BIA reported industry national turnover last year of \$10.12 billion with more than 35,000 people employed across the nation in mostly family businesses, employing local workers and supporting local communities," Scott said.

"Research shows around 1 in 5 Australians participate in some form of recreational boating activity on at least an annual basis but there are gaps in our understanding of peoples' boating habits."

"While basic information is known about the number of registered vessels and the number of people who hold a boat or Personal Watercraft (PWC) licence, there is very limited knowledge about how often people go boating, where they go, who goes with them and what they like to do while enjoying time on the water.



BIA believes building a more complete picture of the social and economic benefits of boating will help policy makers and investors make better informed decisions about an activity that matters to many Australians, and is proven to deliver mental and physical health benefits.

Fincantieri launches its second LNG cruise ship in Monfalcone

The Star Princess, a liquified natural gas (LNG) cruise ship, was officially launched at the Fincantieri shipyard in Monfalcone on September 26, 2024.

This is the shipyard's second LNG cruise ship for Princess Cruises. The launching ceremony was attended by the President of Princess Cruises, John Padgett, and the Director of the Monfalcone Shipyard, Cristiano Bazzara.

The Star Princess, with a gross tonnage of about 1,78,000, is the sister ship to the Sun Princess, which was delivered earlier this year.

The vessel is the second largest cruise ship ever built in Italy, representing Fincantieri's continuous commitment to LNG-powered technology.



Image credit: Fincantieri

Digitalization causing bridge alarm rates to soar

Digitalization of maritime operations has led to the number of vessel bridge alarms increasing by 197 percent in less than two decades, which may be contributing to poorer decision making, according to new research from Lloyd's Register (LR).

The report calls for the number of alarms on ships to be rationalized to ensure they support officers' and watchkeepers' operational decision-making capabilities and are not a distraction or irritation.

Bridge alarm data analysis highlighted a 197 percent increase per hour in alarms while a vessel is in open sea compared to nearly two decades ago. The investigation also revealed that there are 70 percent and 6 percent more alarms in coastal waters and confined waters, respectively, compared to 20 years ago.

On the ship's bridge, peak rates were found to be 74 alarms per hour in a situation requiring high levels of concentration from the navigating officers. For engine room alarms, certain ship segments were experiencing an average of 2,500 machinery alarms per day, with peak daily rates of up to 22,500.

IBEX winners of the 2024 Innovation Awards announced



The International BoatBuilders' Exhibition and Conference (IBEX) has announced the winners of the 2024 IBEX Innovation Awards Programme. Managed by the National Marine Manufacturers Association (NMMA) and judged by Boating Writers International (BWI), the awards recognise 13 Innovation Award winners and five honourable mentions selected from over 80 submissions by exhibiting marine industry companies. The awards were presented at the annual industry breakfast, keynote, and Innovation Awards event, held on 1 October 2024.

IBEX 2024 Innovation Awards winners

Boat care and maintenance (dual winners):
CMP Group Ltd., SMartyr SCP Anode and Arthur Edison, LLC, CLiX

Boatbuilding methods and materials:

Supersede, Supersede Marine Board

Deck equipment and hardware: Commercial Sewing, Outer Armor Self-Booting Power Bimini

Electrical systems: Egis Mobile Electric, XD Series Flex N2K Remote High Amp Relay

Furnishings and interior parts: Quality Mark, Inc., XPower Seat

Mechanical systems (dual winners):

PHIBER Systems, PHIBER Systems and WIF-Pro, WIF-Shield by OhNoH2O

OEM electronics: Tocaro Blue, Proteus Hub

Outboard engines: Honda Marine, Honda BF350 V8 outboard motor

Propulsion parts, propellers: Navico Group, Lenco Pro Control

Safety equipment: Banshee Marine Audio, Banshee VA1

Trailers, parts and trailer accessories: Quality Mark, Inc., Bow Step G2

The Boat Works caters to career progression through training

Photo credit: The Boat Works

The 2024 Gold Coast Marine Jobs & Careers Expo held at the Marine Precinct in September, shone the spotlight on the huge number and variety of opportunities in the boating industry.

The Boat Works is a central hub of the marine precinct, home to 100+ marine businesses on-site and with around 2,000 people working on the visiting vessels on any given day. Based at The Boat Works are several marine training groups, providing instruction and courses for all levels in yachting: from accredited training for commercial Captains and crew to courses for recreational boaties and those who aspire to enter the industry. Taking advantage of their vessel's yard time at The Boat Works, crew can upskill or renew certification on their days off.



Florida county signs deal to turn idle liner into reef

Image credit: SS United States Conservancy



A historic ocean liner that once ferried immigrants, Hollywood stars and heads of state may soon find its final resting place at the bottom of the Gulf of Mexico, after a Florida county inked a tentative deal to turn the ship into the world's largest artificial reef.

The contract by officials in Okaloosa County is contingent upon the resolution of court-imposed mediation, after a judge ordered the storied but ageing ship to vacate its berth at a pier in Philadelphia following a years-long dispute over rent and dockage fees. The largest passenger ship ever built in the US, SS United States shattered a record for the fastest trans-Atlantic crossing by a passenger liner on its maiden voyage in 1952, The Associated Press reported from aboard the vessel.

But the ship has been in a race against time to find a new home, with conservationists scrambling to find an alternative to scrapping the massive ocean liner. The solution: Sink it on purpose and create what supporters hope will be a barnacle-encrusted star in Okaloosa County's constellation of more than 500 artificial reefs, making it a signature diving attraction that could generate millions of dollars a year in local tourism spending for scuba shops, charter fishing boats and hotels.

First Saudi Red Sea Authority yachting regulations released

Saudi Red Sea Authority yachting regulations have been written and published for the first time by the authorities.

The new Saudi Red Sea Authority yachting regulations outline the necessary requirements and conditions for the use of yachts in Red Sea waters, as well as overseeing the issuance of tourism and leisure licenses and permits, the Saudi Press Agency reported. They outline the conditions and procedures for issuing technical licenses for leisure tourism, and the required criteria for yacht owners or authorized tourism maritime agents.

The regulations will also ensure environmental protection for coastal areas, and an adherence to sustainability practices and all safety requirements as part of Saudi Red Sea Authority's role in developing the coastal tourism sector.

They will specify the requirements for obtaining a tourism trip permit within Saudi Arabia's Red Sea waters, including mandatory documentation such as passenger information, sailing destinations, and chartering contract.

The issuance of the new regulations coincides with the launch of Saudi Red Sea Authority's awareness campaign More Than a Sea, through which the authority highlights its role in developing the coastal tourism sector.

To read the regulations go to <https://bit.ly/4dQUJvc>.





SIRE 2.0 inspection program goes live

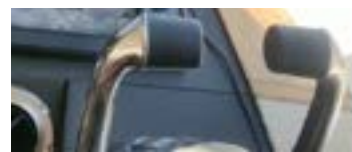
The Oil Companies International Marine Forum (OCIMF) has successfully transitioned the marine industry to its digitalised version of the Ship Inspection Report Programme (SIRE 2.0).

OCIMF highlights that vessel operators are now only able to request tanker

inspections that use the SIRE 2.0 Compiled Vessel Inspection Questionnaire (CVIQ) which are completed on a tablet device by accredited SIRE 2.0 inspectors. The move to the digitalised inspection programme means that every tanker inspection will be tailored to the individual vessel and its risk-profile.

These inspections will require vessel operators and their crew to be prepared to respond to any potential inspection questions from the SIRE 2.0 Question Library. SIRE 2.0 inspection reports contain marine assurance data and provide feedback on all aspects of vessel safety including hardware, processes and human factors. As a result, these inspection reports will enable marine assurance teams to conduct more in-depth assessments of the quality of a vessel and its crew.

Now that SIRE 2.0 has permanently replaced VIQ7 and has become OCIMF's only available tanker inspection tool, no further VIQ7 inspection requests will be permitted. Submitted VIQ7 reports will remain available for download for 12 months from their dates of publication.



USCG alerts to recall of faulty Cummins marine throttles due to failure risk

The United States Coast Guard (USCG) issued Safety Alert 05-24 regarding the urgent recall for Cummins marine engine throttles.

A recent incident involving a small passenger vessel highlighted a critical issue with marine engine throttles. The throttle power head malfunctioned, resulting in a loss of propulsion. An investigation revealed that the throttles in question had previously been recalled due to a high risk of intermittent failure.

The recall affects marine engine throttles with the following part numbers:

5563449
5563448
5563447

These throttles were either sold individually or installed in specific Cummins B, C, L, and M marine engines.

Hazards:

- **Throttle Malfunction:**
Affected throttles may become unresponsive. This can result in the vessel remaining in gear when the neutral position is desired, or prevent the engines from restarting.
- **Risks:**
These failures increase the risk of personal injury or property damage, especially if the vessel's propeller remains active or if the engine fails to restart in critical situations.
- **Operational Precautions:**
Until the recall process is completed, vessel operators should exercise extra caution, particularly during docking maneuvers and when near the propeller, to prevent accidents.



Greece exempts small pleasure boats from shipping and luxury taxes

Owners of small pleasure boats in Greece are now exempt from two taxes, the Ministry of Economy and Finance has announced. The announcement follows an amendment to the ministry's bill titled "New Development Program of Public Investments and Supplementary Provisions."

According to the amendment, pleasure boats (Class B) under 7 meters are exempt from both the special shipping tax and the luxury living tax.

The ministry clarified that the tax exemption is retroactive, meaning that owners of Class B vessels (personal, non-commercial watercraft used for leisure activities) up to 7 meters will not be required to pay taxes for the years 2020, 2021, 2022, and 2023. Owners who have already paid these taxes are entitled to a refund.

Methanol Institute becomes IMO contributor on fuelling



www.methanol.org

The International Maritime Organisation (IMO) has granted "consultative status" to the Methanol Institute (MI) – an energy sector trade body that represents methanol producers and distributors. The status means MI can "contribute [its] expertise to the development of regulations for the shipping industry". The category is reserved for non-governmental organisations that offer "substantial" contributions to the shipping sector, the IMO explained.

The MI said it intends to use its new position to work closely with industry to develop regulations and safe working practices with methanol as a maritime fuel.

"Using its global perspective and expertise, MI aims to use its consultative status to work more closely with member countries to establish robust regulatory frameworks for low-carbon shipping fuels, develop standards for the safe design, operation, and bunkering of methanol, and create market-based measures to support the introduction of low-carbon and renewable methanol," it said.



HiX system transforms helideck inspections

The Helideck Certification Agency (HCA) has introduced a transformative advancement in helideck inspection and certification. With the unveiling of the HiX system, HCA is setting new standards in operational efficiency, transparency, and communication within the certification process.

What is HiX?

HiX is a state-of-the-art, web-based platform that modernises helideck inspections using an app-based system, specifically tailored for use on iPads. This innovation allows HCA inspectors to conduct helideck inspections, upload real-time data, and seamlessly manage certification workflows. HiX offers clients enhanced access to inspection data and simplifies interaction with inspectors.

How HiX Works:

- Inspection and Data Upload: HCA inspectors use the HiX iPad app to capture and upload inspection data directly to the cloud.
- Customer Portal Access: Clients can view real-time inspection results and manage follow-up actions via the HiX customer portal.
- Action Management: The portal enables clients to submit evidence of completed actions, accelerating the final certification process.
- Final Reporting: HiX generates a detailed Helideck Inspection Report, including a full audit trail once all issues are addressed.
- Certification: Clients can download their Helicopter Landing Area Certificate and Information Plate directly from the portal.

New CEO of South Africa's Maritime Safety Authority



Captain Rufus Lekala is the first permanent SAMSA chief executive officer following several years of multiple acting CEOs. Lekala was appointed by Cabinet for a five-year term. SAMSA oversees several areas of compliance with International Maritime Organisation (IMO) regulations, including safety certification.

"We welcome the permanent appointment of a SAMSA chief executive and look forward to stability within the maritime safety authority," commented South African Boat Builders Export Council (SABBEX) executive head Vanessa Davidson. "It will ensure ongoing compliance with South Africa's IMO obligations."

South Africa currently enjoys IMO 'white list' status after SAMSA successfully addressed various challenges highlighted by the IMO in 2019. Maritime stakeholders this week said a permanent CEO would help entrench South Africa's white list status.

AMSA launches a lifejacket safety initiative

The Australian Maritime Safety Authority (AMSA) is urging all recreational boaters and commercial vessel operators to prioritize safety by wearing lifejackets, as part of a new initiative aimed at reducing drowning deaths. Lifejackets save lives, but only if they are worn. There is no excuse that will ever be good enough for grieving families left behind after losing a loved one at sea who wasn't wearing a lifejacket and drowned.

Research from Royal Lifesaving Society Australia and AMSA continue to report drowning deaths involving people going overboard during recreational boating and commercial vessel operations. The majority of people that lose their lives as a result of going overboard are not wearing lifejackets.

David Marsh, AMSA National Operations Manager – Regions, said, "A lifejacket substantially increases your chances of survival if you go overboard suddenly— if you aren't wearing a lifejacket at the point of going overboard, chances are you're not going to have time to put one on."

Marina of the Year winners announced at New Zealand Marinas and Boatyard Conference



Photo credit: New Zealand Marina Operators Association

Half Moon Bay Marina in Auckland has been named New Zealand's Marina of the Year for 2024. The boatyard at Bay of Islands Marina was awarded Boatyard of the Year, while Waiheke Marina and Heron Construction Company each took top honours for innovation. Tom Warren received recognition for his long-term contribution to the industry.

Organized by the New Zealand Marina Operators Association, these awards were established in 2018 to recognize and celebrate excellence in the marina industry.

Of Half Moon Bay Marina, judges noted that the recently expanded facility, which now hosts 580 boats and employs 22 staff, has achieved full maturity, realising its potential while addressing rising boating costs and delivering operational excellence across the board.

Design Innovation Award winners announced at Genoa International Boat Show



The winners of the fifth Design Innovation Award were unveiled at a gala event at the 64th Genoa International Boat Show, celebrating innovation, design prowess, sustainability and social impact. Established by the Italian Marine Industry Association – Confindustria Nautica and Saloni Nautici in 2020, this year the jury selected winners from more than 100 applicants and awarded ten categories along with special mentions and an outstanding achievement award.

Genoa International Boat Show sees visitor increase and boost to Italian industry



The Genoa International Boat Show has reported a 2.19 per cent increase in visitors over last year, with 120,864 delegates attending the Italian boat show.

Some 1,052 brands and 1,030 boats were on display with 85 per cent of the show hosted outdoors, plus, more than 100 new products were presented along with 30 premieres, and 125 conferences and workshops.

As part of the Boating Economic Forecast conference, the Italian Marine Industry Association's Market Intelligence and Research Department confirmed the Italian boating industry continued a double-digit growth in 2023, reaching a record €8.33bn turnover.

The International SeaKeepers Society Partners with Pantaenius



Image credit: Pantaenius Yacht Insurance

The International SeaKeepers Society (SeaKeepers) is proud to announce a new partnership with Pantaenius, a leading yacht insurance specialist, to bolster the SeaKeepers' Global DISCOVERY Yacht Programme, dedicated to ocean conservation and stewardship.

The DISCOVERY Yacht Programme is a multifaceted initiative that includes a wide range of initiatives, including Scientist-Led Expeditions, Citizen Science projects, Educational Outreach, and Community Engagement. SeaKeepers is committed to advancing responsible marine practices through its Green Marine Programme and advocating for an ocean-conscious future, in collaboration with industry partners and members around the world.

Since its inception in 2014, the DISCOVERY Yacht Programme has successfully completed over 150 scientific expeditions aboard DISCOVERY Yachts. These efforts have directly engaged more than 2,700 students in ocean conservation discussions and indirectly impacted over 85,000 students through research and educational outreach. The success of these initiatives has been made possible by the unwavering support of industry partners and private vessels globally, which serve as platforms for SeaKeepers' programming.

Global charity requests archival material donations for historic maritime collection

Lloyd's Register Foundation's Heritage and Education Centre (HEC) is seeking donations of archival material and artefacts from businesses and the public to enhance its already extensive maritime history collection. This request follows the completion of a major project to digitise and catalogue the centre's extensive Ship Plan and Survey Report Collection.

This collection, which spans from the 1830s to the 1970s, includes over 1.15 million records related to the design, construction, and maintenance of ships classified by Lloyd's Register, which is a leading provider of compliance and classification services to the marine and offshore industries.

The collection contains records of well-known vessels and innovative designs, such as the Carpathia, the Cunard passenger liner that rescued survivors of the Titanic, and the Cutty Sark, one of the fastest tea clippers ever built, now displayed at Greenwich, London. It also documents significant milestones in the shipping industry, including the shift from steam to motor vessels and the adoption of new shipbuilding technologies. Additionally, wreck data, correspondence, photographs, and certificates have been digitised.

HEC is now encouraging businesses and individuals to make contributions. The focus is on items related to maritime technology, engineering, safety and Lloyd's Register's history. All donations must meet the collecting criteria outlined in the centre's acquisition and disposals policy. These criteria include records or objects connected to significant individuals associated with Lloyd's Register, material related to ship and yacht building from the 18th century onwards, and items that highlight milestone events in the history of Lloyd's Register.

In addition, HEC plans to open its archive and library collections to the public next spring in newly created reading rooms at Lloyd's Register's historic offices at 71 Fenchurch Street, London.

The HEC team welcomes anyone with an archive collection, and would like to donate it to the maritime history collection, to get in touch at <https://hec.lrfoundation.org.uk/about-us/contact-us>



Image credit: Lloyd's Register Foundation's Heritage and Education Centre



Image courtesy of Accessible Boating Trust

New wheelchair-accessible boats launched on River Thames and in Manchester

UK charity The Wheelyboat Trust has celebrated two recent launches of wheelchair-accessible boats. Both projects were spearheaded by the charity in collaboration with local partners and aim to provide greater opportunities for individuals with disabilities to engage in boating and other water-based recreation.

On September 10 2024, Accessible Boating Thames (ABT) launched a new Coulam V20 Wheelyboat on the River Thames at Bisham Abbey, near Marlow. The new boat is designed to accommodate wheelchair users and individuals with other mobility impairments, ensuring they can board and operate the boat safely and independently. The V20 model features a spacious cockpit and a hydraulic bow door that lowers to form a ramp, facilitating roll-on, roll-off access from a jetty or pontoon. The boat also includes a drive-from-wheelchair console, allowing users with severe disabilities to drive the vessel.

Gavin Tisshaw, chair of ABT, describes the launch as a significant milestone for the charity, which has been providing water-based activities for individuals with disabilities for many years. "This is a momentous occasion for ABT – securing our own Wheelyboat will make such a difference and ensure we can continue to help those that need our services," he says. The boat was funded through a £68,000 fundraising campaign, supported by the Greaves and Withey Foundation and The Wheelyboat Trust, among other contributors.

MDL Marinas reports influx of superyachts following Brexit

MDL Marinas, the UK's leading marina and water-based leisure provider is reporting a significant increase in the number of superyachts choosing its Ocean Village Marina in Southampton, UK. This, the company says, is thanks in part to the VAT advantages post-Brexit, as well as the marina's recent investment in enhancing its facilities for larger vessels.

Since the United Kingdom's exit from the European Union, non-UK flagged superyachts visiting British marinas have enjoyed substantial VAT reductions, positioning the UK as an increasingly appealing stopover for yacht owners and captains.

MDL's Ocean Village Marina has seen a rise in superyacht visits as these financial incentives, coupled with the marina's premium services, make it an ideal destination for yachts transiting through Europe.

Fairline scoops Best Interior Design award for Squadron 58

British luxury motor yacht manufacturer Fairline Yachts has been awarded Best Interior Design for its Squadron 58 in the 2024 World Yachts Trophies awards announced during this year's Cannes Yachting Festival. The event, including a gala dinner, rewards the best motor boats and yachts from 13m - 140m launched during the year and is followed by a unique Yachts Parade, showcasing the most beautiful yachts in the Bay of Cannes.

Miles Moorhouse, Head of Marketing at Fairline said of the win: "This is another great win for Fairline and for a yacht which has been so well received since its debut at Southampton International Boat Show in 2023. It's great to be recognised internationally at such a landmark event which celebrates the beauty of the yachting world. The Fairline team can be proud of a great record in these prestigious awards including wins in 2017, 2018, 2019, 2022 and now 2024.

In a British builder first for yachts under 80ft, the Squadron 58 boasts large hydraulically powered balconies to both sides, and an innovative bathing platform which doubles in size. Teamed with the already large cockpit, the Squadron 58 has an aft, outdoor entertaining space to give the feeling of a much bigger boat but with the running costs of something much smaller.



Work to restore the Anderton Boat Lift is underway

Essential work has begun on the programme to revitalize the instantly recognizable and iconic Anderton Boat Lift, one of the seven wonders of Britain's canal network. The Canal and River Trust has appointed specialist engineering firm JN Bentley to conduct initial investigations on the world's first commercial boat lift, with hopes of undertaking the refurbishment in the autumn of 2025.

Dating back to 1875, and last fully refurbished at the turn of the millennium, the structure now needs a major upgrade to remain operational. Blast-cleaning, repairs and a repaint are required, the timber control cabin needs replacing, and the IT operating system must be updated.

The first phase of the Engineering the Future initiative includes investigations and surveys around the lift's grounds and the lift itself, identifying high-priority repairs, and confirming design elements. This information will be used in the main programme due to take place next year, following the lift's 150th anniversary celebrations in July.



First new pilot boat for decades arrives at Dover Harbour Board

The UK's Port of Dover has taken a significant step forward in modernising its fleet by launching its first new pilot boat in nearly two decades. The new vessel, named DHB Diligent, was developed in partnership with Holyhead Marine. Powered by HVO diesel and equipped with advanced technology, DHB Diligent is designed to improve fuel efficiency and reduce emissions, aligning with the port's sustainability goals.

"Diligent is a brilliant addition to our critical fleet of pilot vessels, and we are extremely proud to see her officially begin operations," said Steven Manser, Harbour Master at the Port of Dover.

"Brand new and packed with the latest features, she will provide exceptional assistance to our pilots, who do a great job escorting vessels into berth, even in challenging weather conditions."

After extensive testing and trials DHB Diligent is now fully operational and the new workboat will help guide a wide variety of ships, from cargo vessels to leisure boats, safely into the port, which operates in one of the world's busiest shipping lanes.





Coroner rules pleasure cruiser not linked to Bournemouth drownings

A coroner has ruled that the pleasure cruiser Dorset Belle was not involved in the deaths of two young people who drowned off Bournemouth beach, on the UK's south coast, on 31 May 2023.

Joe Abbess, 17, from Southampton, and 12-year-old Sunnah Khan, from High Wycombe, died after they were caught in a rip current near the pier at the Dorset seaside resort. Eight other people were treated by paramedics at the scene.

Following the incident, Dorset Police impounded the Dorset Belle, which ran trips from Bournemouth Pier, and arrested a man in his 40s on suspicion of manslaughter. However, after consulting an expert as part of their investigation, the police determined that the boat's movement did not contribute to the dangerous sea conditions and the man faced no further action.

An inquest into the deaths of the two schoolchildren opened in September 2024. During a pre-inquest review, coroner Rachael Griffin confirmed that the Dorset Belle was not a factor in the deaths of Joe and Sunnah. "I have ruled out the involvement of the Dorset Belle and it being a causative and contributory factor in Joe and Sunnah's death," Griffin says. "It would be speculative to link that boat to the deaths, but also, it's important that within the evidence there may be reference to previous incidents. There is no evidence that the boat was previously involved in previous incidents, again that is speculative to say it was."

Fund British Waterways urges government to stop dithering



Fund Britain's Waterways (FBW) is concerned by the recent UK budget, which made no mention of public investment to safeguard Britain's inland waterways, despite much talk by the government about rebuilding the country through increased public investment.

FBW, a coalition of organisations representing hundreds of thousands of users and supporters of inland waterways, says it made strong representations to the treasury that highlighted the widely acknowledged benefits that Britain's rivers and canals provide.

"The minimum that FBW is asking for is that the new Labour government commit to reviewing future funding for all inland waterways," said Les Etheridge, chair of FBW. "This includes the specific funding planned for the Canal & River Trust from 2027 as announced by the previous government, as it is simply insufficient."

The increasing fragility of the 250-year-old infrastructure, combined with ever more frequent episodes of extreme weather, means there is now an urgent need to invest to save the network.

"The government must intervene to help reverse the current deterioration of Britain's inland waterways, which is increasingly impacting businesses up and down the country," says Etheridge. "Unless funding arrangements are reviewed and improved, we fear that Britain's inland waterways and the many benefits they provide will be in serious jeopardy."

Tritex NDT Multiple Echo Ultrasonic Thickness Gauges



The Drone Thickness Gauge
MultigaUGE 6000



The Underwater Thickness Gauge
MultigaUGE 3000



The ROV Thickness Gauge
MultigaUGE 4000



The Surveyors Thickness Gauge
MultigaUGE 5650

Tritex NDT specialize in the manufacture and supply of Multiple Echo Ultrasonic Metal Thickness Gauges, used for verifying corrosion levels and measuring metal thickness from one side only, without removing any protective coatings. The MultigaUGE 5650 Surveyor Gauge can measure both metal and GRP, in one gauge, and also switch from Multiple Echo to Echo - Echo with the simple press of a button, using the same probe.

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Updated guidelines for steel cargo pre-load surveys

In Circular 23/14 entitled Steel Cargo Pre-Load Surveys: An Update, the American P&I Club has revised its extensive recommendations in regard to the conduct of precautionary surveys of certain steel cargoes to minimize the prospect of spurious steel cargo claims.

General considerations

To minimize the risk of exposure to such claims, the Club requires that Members appoint an experienced surveyor at the port(s) of loading steel cargoes to conduct a precautionary pre-load survey to:

- Assist the Master in recording the apparent condition of the cargo prior to loading so that, where appropriate, mate's receipts and bills of lading can be claused correctly as necessary; and
- Verify that the vessel's cargo hatch covers and other openings in way of the hold spaces are in sound condition.

The Club would like to reemphasize that any failure to complete such a steel pre-load survey will prejudice the Member's coverage for any cargo claims that are asserted against it and its vessel in connection with the subject shipment(s).

If a Member fails to comply with this required practice and a claim in respect of cargo is subsequently asserted where the condition, nature or quantity of cargo would have been discovered during a precautionary steel pre-load survey, the Managers, in their absolute discretion, are authorized and entitled to (1) apply a double deductible for any cargo or other claim arising in connection with the shipment in question; and/or (2) to deny the coverage or reimbursement of any such claims, either in whole or in part.

Prompt notification to the Managers

The Managers must be contacted in advance to assist in the pre-load survey arrangements and surveyors to be employed must be approved in advance by the Managers. Members should not go directly to surveyors or through the network of correspondents to select the surveyor for the steel pre-load surveys even in areas which are sufficiently covered by approved steel pre-load surveyors. Insureds should kindly note that correspondents are not necessarily approved surveyors for steel pre-load surveys.

To ensure that clear and concise instructions are given to surveyors appointed to assist the Master in clausung bills of lading, or to survey cargo upon discharge, timely requests for a surveyor's attendance should be made directly to the Managers. This notification should include:

- the vessel's estimated time of arrival at the loading port;
- the exact nature (types) and approximate quantity(ies) of steel cargo(es) to be loaded; and
- the name and contact details of the vessel's local agents at the load port.

Download the Guidance at <https://bit.ly/4epdTSs>.



REPORT bites

Sanlorenzo has been issued the world's first "Digital Yachting" certification by RINA. This certification marks a new chapter in the company's ongoing commitment to innovation and digital transformation within the yachting industry.

The Canadian coast guard's Marine Environmental and Hazard Response unit of Haida Gwaii has acquired the first-ever autonomous surface vessel within the Canadian coast guard.

Associated British Ports recently confirmed its expansion masterplan for the Port of Barrow in the UK, which is designed to strengthen the local economy in response to a wave of significant future investment.

The Wellington Trust Board of Trustees announced that HM the King has approved the name change from HQS Wellington to HMS Wellington (1934).

Hempel has introduced a new two-layer hull coating system called Hempaguard Ultima. It combines the company's proven Hempaguard X7 with a new biocide-free silicone topcoat, Hempaguard XL, to prevent the growth of marine organisms.

UK's Offshore Wind Growth Partnership has launched a new Manufacturing Facility Support Programme, as the country targets to boost domestic wind manufacturing capacity.

Yanmar Marine International has unveiled its E-Saildrive series, confirming the engine maker's entrance into the electric propulsion market.

Nine British sailors have been awarded the prestigious Merchant Navy Medal for saving lives at sea and championing mental health.

Amogy, a company specialising in ammonia-to-power solutions, has announced the successful maiden voyage of the world's first ammonia-powered vessel, a tugboat named NH3 Kraken.

The International Council of Marine Industry Associations, ICOMIA is delighted to announce the formation of a strategic partnership with the Saudi Red Sea Authority.

Rolls-Royce announced that its popular mtu Series 1163 and 8000 large engines now offer full compatibility with HVO and are fully compliant with IMO III emissions standards when equipped with an SCT system.

Italian yacht paint expert Boero YachtCoatings has expanded into the Spanish market.

Updated guidance for MGN 436 (M+F) issued by the MCA on mitigating against the effects of shocks and impacts on small vessels



Maritime & Coastguard Agency

MGN 436 (M+F) Amendment 4 gives guidance for operators, managers, owners and builders of small vessels on mitigating the risk of injury from whole body vibration (WBV) on small vessels, and in particular severe and repeated shocks (RS) as a result of impacts.

There have been a number of incidents involving small craft, travelling at a wide range of speeds, receiving predominantly vertical shock impact when coming off a wave, resulting in injury to one or more persons on board. The effects of crossing seas and side-on waves can also cause injury. Incidents have occurred on inland waters and estuaries as well as at sea, and to a wide range of people. Injuries sustained include spinal compression injuries, serious damage to joints and fractures in the leg and feet. When such injuries occur, they can be life-changing for those affected.

People that spend long periods on vessels that experience repeated low-level impacts, may not receive a serious, acute injury on any single voyage but, over time, the cumulative effects of whole-body vibration exposure can result in chronic musculoskeletal injuries. Vessel operators should have a strategy for mitigating risk from exposure to whole body vibration and shocks, which should be specific to operational needs, the vessel and equipment used, and the people involved.

This guidance is provided to assist in improving the design of vessels to reduce the severity of the impact and to provide a suitable postural position for those on board to enable them to brace effectively. There is also guidance for operators on reducing the risk of injury through training, pre-departure briefing and ensuring that the vessel is operated considering vessel design, sea conditions and the health and experience of those onboard.

The documentation can be found at <https://bit.ly/470Ac1x>.

SAFETY Briefings

Key steps to avoid tugboat girting

Britannia P&I Club has issued loss prevention guidance to the maritime industry about tugboat girting. Girting is a situation whereby a tug is towed broadside by a towline and is unable to manoeuvre out of this position. Deck-edge immersion then occurs, quickly followed by flooding and capsizing, unless the towline is released in good time. This can happen very quickly and does not allow the tug crew enough time to abandon the tug before it capsizes.

Training: The vessel's crew must be properly trained in the causes and possibility of tugboat girting. Avoiding excessive loads and ensuring proper weight distribution can minimise the risk of overturning. Ensuring proper weight distribution can minimise the overturning moment of the towing gear and avoid excessive loads. Tug crews should develop and practice their emergency response procedure for the possibility of girting and subsequent capsize.

Quick release: In the event of a tugboat girting it is crucial to have a reliable quick-release mechanism in place. This mechanism should be easily activated from both the local area and the wheelhouse to ensure a swift response in case of emergencies. Regular and competent maintenance of the equipment is vital to ensure its proper functioning.

Watertight integrity: During towing operations, it is important to keep all openings closed to prevent water ingress and maintain stability, including watertight doors. A checklist that includes a verification of closed arrangements should be utilised. In the event of tension in the towline causing the tug to tilt and the deck edge to be submerged, having watertight integrity on the weather deck will provide a crucial delay in down flooding. This delay allows for the activation of the quick release mechanism, manoeuvring the tug to reduce tension in the towline, and enabling personnel to safely escape from the engine room and accommodation area to the deck. To ensure the effectiveness of these safety measures, regular inspection and testing of watertight and weathertight doors, hatches, vents, windows, ports, side scuttles, seals, securing devices, and automatic closing devices on ventilators should be included in the tugboat's planned maintenance system.

Use of gog/gob wire: Using a gog/gob wire can provide additional stability and control, further enhancing the safety of tugboat operations. This arrangement should be adjusted correctly in accordance with industry standards, and often the gog wire should not exceed half the distance between the bulwarks or crash rails. In cases where a central securing point is not available, gog wires may be connected to padeyes on both sides of the main deck aft. This can help limit the transverse movement of the towline, ensuring safer towing operations.



REPORT bites

In advance of an all-electric Miami water taxi shuttle service scheduled to open in 2025, startup E-lixr is launching a 'pre-lectric' service to pave the way for their new electric boat solution to the city's urban congestion.

Germany's Waterways and Shipping Authority reported the salvage of the Verity, a North Sea cargo ship, was completed nearly a year after the vessel was lost in a collision.

The MV Canopée, the world's first hybrid propulsion commercial cargo vessel, made its inaugural U.S. visit to Port Canaveral, delivering a crucial component for NASA's upcoming Artemis III mission to the moon.

India has officially joined the Global Ocean Treaty, also known as the Agreement on Biodiversity Beyond National Jurisdiction (BBNJ).

In admitting its frustration with the shipping's slow green path, Germany's Oldendorff Carriers has announced it is setting up a research centre for maritime sustainability with the University of Strathclyde in the centre of Glasgow.

The second of seven vessels in the new fleet of next-generation Parramatta Class ferries designed by Incat Crowther has arrived in Sydney, Australia, and is now in service.

ClassNK has issued the world's first approval in principle (AiP) for the building of an LNG carrier installed with Wind-Assisted Propulsion System.

The "Star Princess", a liquified natural gas (LNG) cruise ship, was officially launched at the Fincantieri shipyard in Monfalcone.

The shipwreck of a French steamship that sank nearly 170 years ago has been discovered following what has been described as a "hit-and-run" collision off the Massachusetts coast.

The authorities in the Canary Islands responded after the pilot working an arriving containership reported that the captain of the vessel appeared to be intoxicated.

Scotland-headquartered search, rescue and recovery specialist Zelim reports that its SWIFT man overboard recovery device has received full type approval from classification society Lloyd's Register.

IGY Marina Cabo San Lucas has proudly achieved its 8th consecutive year of 5 Gold Anchor status.



ClassNK releases updated Guidelines for Liquefied Hydrogen Carriers

ClassNK has released its Guidelines for Liquefied Hydrogen Carriers (Edition 3.0), which covers essential details to examine the safety of carriers to spur related technological developments.

To construct a supply chain for hydrogen, which is expected to be a clean energy source in a decarbonized society, the development of liquefied hydrogen carriers that enable large-scale and efficient transportation is progressing actively.

IMO has worked on establishing safety requirements for liquefied hydrogen carriers that must keep cargo at an extremely low temperature of minus 253 degrees celsius, and Interim Recommendations for Carriage of Liquefied Hydrogen in Bulk was adopted in 2016. Subsequent development of liquefied hydrogen carriers led to the construction project of a larger-scale liquefied hydrogen carrier with cargo containment systems of different designs from a prototype liquefied hydrogen carrier. In response to this, at the IMO, discussions for the revision of the interim recommendations have been underway since 2021 and ClassNK has been contributing to these discussions as an expert on the conventions and regulations.

In light of the revised interim recommendations being adopted, ClassNK updated the guidelines as edition 3.0, reflecting the changes in the interim recommendations and the knowledge gained through related projects. In this update, new safety requirements for cargo containment systems with different designs from an existing prototype liquefied hydrogen carrier were added, and the guidelines' structure was reformed in anticipation of a future expansion of the applicable scope. Furthermore, to clarify the selection criteria for metallic materials suitable for liquid hydrogen carriers, an annex of guidance for the selection of metallic materials for hydrogen equipment was also newly implemented.

Class NK says it's believed the safety of liquid hydrogen carriers is adequately ensured through compliance with each safety requirement and implementation of safety measures based on risk assessment, in accordance with the provisions of the guidelines.

You can download the guidelines on ClassNK's website after registering a free account at <https://bit.ly/4dmxbqe>.

Preventing cargo damage through hatch cover maintenance

According to the American P&I Club, the ingress of seawater through leaking hatch covers remains one of the most significant causes of cargo damage aboard dry cargo vessels. Cargo damaged by water leaking through hatch covers can result in large claims and affect Members' claims records. Most leakage problems occur because of poor maintenance. Hatch covers will leak if:

- compression surfaces are not aligned correctly due to worn bearing pads, locator and/or stoppers;
- gasket sections are damaged, missing, worn, over compressed or inserted in short lengths;
- there are cracks or holes in the plating; or
- there is permanent overall distortion of the hatch covers.

Members have an obligation to exercise due diligence in ensuring that hatch cover maintenance and regular weathertightness testing is conducted on board their vessels as an integral part of each vessel's planned maintenance system. This should include the following steps:

- The creation of a detailed shipboard maintenance plan based on the hatch cover manufacturer's build, operation and maintenance specifications.
- The provision and upkeep of adequate spare parts and seals.
- Crew training to ensure the proper implementation of the shipboard maintenance plan.
- Shore based management's commitment for close follow-up of the maintenance plan and its implementation.
- Regular testing, and logging results, of hatch weathertightness by the vessel's crew and/or independent surveyors using high-pressure hose testing, or preferably by testing with approved ultrasonic hatch leak detection instruments. In reference to step 5 above, although high-pressure hose testing before loading cargo in combination with chalk imprint testing are helpful indicators of hatch covers' weathertightness, the exact location of any leaks that may occur are almost impossible to pinpoint and repair due to the tendency of water to travel laterally from the point of ingress.

In addition, a hose test can show whether the physical contact between rubber packings and their mating surfaces are satisfactory in static conditions. With the hose test, however, the compression of the rubber packings cannot be assessed. When the vessel is at sea, and in dynamic conditions, even in a case of light movement, only a small distortion of the hatch covers could result in the hatch cover panels flexing, and under these circumstances the water may find its way to the hold.

On the other hand, an over-compressed rubber packing may also lose its sealing capability while in dynamic

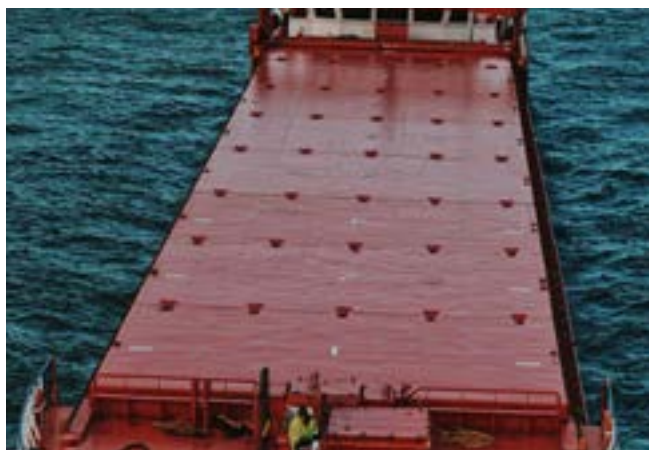
conditions at sea, since its rigidity will not be able to compensate for the vessel's movement. Accordingly, a chalk test or hose-test cannot guarantee the weathertight condition of the hatch covers and may affect various cargoes that are sensitive to water contamination, wetness or even moisture content in the air.

Ultrasonic equipment uses sounds with frequency above 20 KHz that cannot be heard by the human ear. It can more reliably indicate the integrity of the packing rubber and its ability to compensate for movement between the panels and the hatch coaming (as well as in between adjacent panels) when the vessel is at sea, and in dynamic conditions. This is crucial in preventing water ingress.

The ultrasonic emitter is placed in the centre of the cargo hold tank top with hatch covers open, activated and the operator of ultrasonic testing (UST) equipment then measures the open hatch value (OHV). Then vessel's crew close hatch covers, and the operator of the UST equipment checks for ultrasound signals passing through the rubber packing and compression bar interface of the hatch covers and records the location of any leaks for subsequent repair or adjustment of the packing. The acceptable range of leakage is less than 10% of the OHV. Any discontinuity in the seal (e.g., missing or damaged rubber packing) or area with lack of compression (e.g., wavy or deformed compression bar) will allow ultrasound to pass and the leaky spot identified as an area of concern.

The ultrasound tightness testing of the hatch covers is an accurate, non-destructive method, which can be used under all weather conditions without the risk of damaging the cargo during testing, allowing easy detection of the defected areas/points, thus facilitating appropriate repairs, if required.

The Club recommends that Members equip their dry cargo vessels with ultrasonic hatch cover leak-detection instruments to be used by the vessel's crew to regularly check for weathertightness. The cost of such prudent investment will amount to far less than any potential cargo claim that could have been avoided by detection and repair of leakage areas prior to potential water damage.



REPORT bites

Sweden's Port of Gothenburg has inaugurated a new 144,000-square-metre port terminal. This becomes the port's largest expansion in 40 years, delivering more capacity to meet increased cargo volumes from the Swedish industries.

South Korea's first containership with an integrated automation system completed installation and testing and is now ready for international operations.

Ethical Yacht Wear, a company dedicated to sustainable yachting practices, has proudly achieved a significant milestone - sponsoring the removal of the equivalent of one million plastic bottles from our oceans.

HMM will spend \$17.5 billion over the next five years, more than half of that investment on new container ships and equipment.

KiwiRail, the operator of RoRo ferries between New Zealand's north and south islands, was ordered to pay US\$266,000 in fines and costs after a 2023 incident that endangered the lives of more than 800 people aboard the company's ferry Kaitaki.

Mediterranean Shipping Company (MSC) has maintained its dominant position in the container shipping industry through an unprecedented buying spree of second-hand vessels.

Montreal, Canada-based Vision Marine Technologies has announced E-Motion 180 horsepower electric outboard will now be offered in an inboard version.

On September 9th, a settlement exceeding \$16 million was reached in a lawsuit stemming from the fire aboard the Hoegh Xiamen.

A Global Centre for Maritime Decarbonisation led consortium has conducted ship-to-ship transfers of ammonia at anchorages within the Port of Dampier in Australia's Pilbara region.

California's legislature has approved Assembly Bill 1122, a significant step towards improving mariner safety and port operations stability on the state's waterways.

A 51-year-old commercial licence holder from Darwin has been ordered to pay more than \$214,000 for offences related to the collection and recording of marine aquarium fish off the Kimberley coast.



Preventing fatalities in enclosed spaces on vessels

The Republic of Liberia has issued guidance to prevent fatalities in enclosed spaces, and highlight the need to establish detailed safety requirements and recommendations for entering enclosed spaces onboard vessels where there may be an oxygen deficient, oxygen-enriched, flammable and/or toxic atmosphere and ensure proper training of all crew on this subject.

The Administration is in the process of finalizing its investigation into a recent Deck Trainee fatal incident on board a vessel related to entry into a cargo hold bilges:

- The vessel completed discharge of high-sulphur coal cargo and the Deck Trainee was assigned to check the cargo residues in the bilges before the cargo hold cleaning operation.
- The victim Deck Trainee was later found lying face down in about 10 cm of water without a pulse.
- The autopsy revealed that the cause of death of the victim Deck Trainees was Toxic Gas Inhalation, which most likely was hydrogen sulphide.
- The investigation has noted a lack of awareness of the hazards associated with enclosed space entry, lack of supervision, and not considering the cargo hold, and/or cargo hold bilges as hazardous enclosed space after the hazardous cargo was discharged, with no necessary precautions taken prior to entry.

Download the guidance at <https://bit.ly/3BpLqNT>.

CINS releases Comprehensive Guidelines for Carriage of Charcoal in Containers

The Cargo Incident Notification System (CINS) explains that charcoal is a widely used material for various purposes, including cooking, heating, and industrial processes and it is often transported in shipping containers. The carriage of charcoal in containers poses significant fire risks due to the potential for self-heating and spontaneous ignition.

Charcoal is described in the IMDG Code as "Black material originating from organic sources. Particularly includes carbon blacks, of animal or vegetable origin other non-activated carbon materials and charcoal produced from materials such as bone, and bamboo, coconut shell, jute and wood."

SAFETY Briefings

It is estimated that global production of charcoal for domestic and export markets is over 50 million tonnes per year. From the incident records created by CINS members, it is known that there were at least 68 fire incidents on board ships during the period between January 2015 and December 2022. These CINS data are incomplete, but have exclusively involved consignments of charcoal that were produced to be used as a fuel intended for burning. Most of these incidents also arose from consignments that had been misdeclared and therefore the carrier was not aware of the hazards presented.

The practices set out in this guidance document are intended to improve safety during the carriage of charcoal and to ensure that it is properly prepared, declared, packaged and carried. Factors contributing to the carriage of charcoal in containers risk include improper packaging, inadequate ventilation, and failure to adhere to International Maritime Organisation (IMO) regulation of Dangerous cargo as codified in the IMDG Code.

CINS in conjunction with the International Group of P&I Clubs and the TT Club has released comprehensive guidelines for the carriage of charcoal in containers. The guidelines include a description of the risks involved in carriage of charcoal, the relevant provisions of the IMDG code, recommendations for container selection, requirements for packing, container stowage and segregation and documentation.

Download the guidance at
<https://bit.ly/3XJCr1r>.



TSB releases investigation report into capsizing and sinking of passenger vessel Island Bay

The Transportation Safety Board of Canada (TSB) has released investigation report M22P0259 into the capsizing and subsequent sinking of the passenger vessel Island Bay in Carpenter Bay, Haida Gwaii, British Columbia (BC).

On September 10, 2022, the Island Bay was proceeding towards sheltered waters within Carpenter Bay to avoid heavy weather when a combination of forces from wind, waves, and the tide caused the vessel to heel significantly and start taking on water. The two crew members and five passengers on board subsequently evacuated the vessel and were rescued from shore later that afternoon. The Island Bay then capsized, partially sank, drifted aground, and was later salvaged and transported to Prince Rupert, BC.

The investigation determined that a series of modifications were made to the Island Bay, such as an extension at the stern and to the deckhouse, and additions of permanent storage, equipment, and gear. The cumulative effects from these modifications raised the vessel's centre of gravity, compromising its ability to right itself when heeled by the external forces, making it susceptible to downflooding and capsizing, as seen in this occurrence.

Additionally, documentation about the previous owner's modifications had not been passed to the owners at the time of the occurrence, nor were the modifications reported to Transport Canada, and no stability assessment had ever been conducted. Consequently, the authorized representatives, in this case the operators,

were unaware of the extent of the modifications, did not understand how these affected the vessel's initial stability, and were making operational decisions without knowledge of the Island Bay's stability limits.

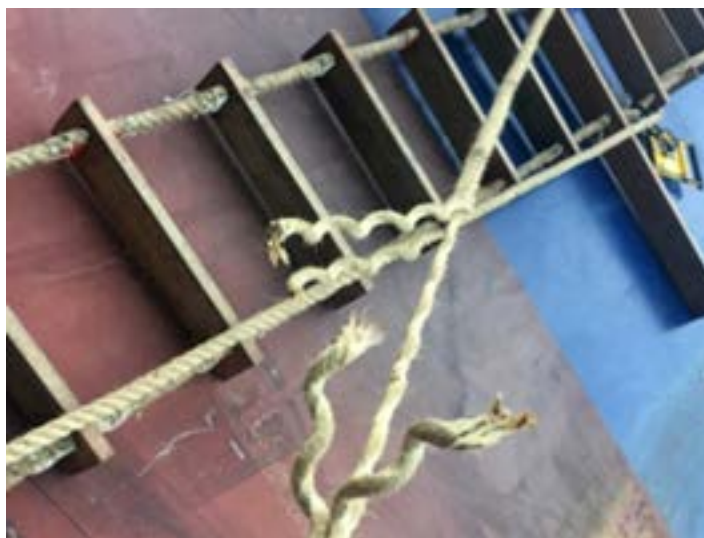
Several TSB investigations into small commercial vessels have resulted in the Board issuing recommendations related to major modifications, regulatory surveillance, current and accurate vessel registration, and stability information. Although these recommendations were

made about fishing vessels and tugs rather than passenger vessels, this investigation found that the same issues were present in this occurrence involving the Island Bay. If Transport Canada's oversight and programs for commercial vessels that are not required to be certified continue to be insufficient to support authorized representatives in understanding their responsibilities, there is a risk that they will operate without an adequate level of safety.

Download the report at <https://bit.ly/3Brawfa>.

Always inspect all pilot and embarkation ladders to ensure they are genuine

The Liberia Maritime Authority (LISCR) has published a notice to provide guidance to vessel owners, operators and managers on compliance and maintenance of pilot and embarkation ladders, including notification on counterfeit products and the latest developments from IMO. The Flag Administration says that several advisories have been issued recently concerning counterfeit pilot and embarkation ladders. In one case, a company copied a certified product and created their own counterfeit certificate for their pilot ladder and then sold the counterfeit product to customers who thought they were purchasing the genuine item.



In another case, a failed embarkation ladder, which caused serious injury to a surveyor, was found to be counterfeit and included incomplete markings and the use of step fixtures of poor quality.

With regards to pilot transfer arrangements with embarkation ladder and trapdoor system, LISCR notes the following:

- Where the distance from the surface of the water to the point of access to the ship is more than 9 meters, an arrangement consisting of an accommodation and pilot ladder shall be carried on each side, unless the equipment is capable of being transferred for use on either side.
- When an accommodation ladder lower platform with a trapdoor system is used, the pilot ladder shall extend above the lower platform of the accommodation ladder, to the height of the handrails.
- Trapdoor systems where the pilot ladder extends to only the height of the accommodation ladder lower platform will not be accepted.

IMO has recently put the topic of pilot transfer arrangements in the spotlight. In particular, during the eleventh meeting of IMO's Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) draft amendments to regulation 23 of Chapter V of SOLAS, along with a draft MSC Resolution for "Performance Standards for Pilot Transfer Arrangements", were agreed.

These amendments will make the current recommendatory requirements for pilot transfer arrangements mandatory under SOLAS. It is anticipated that these amendments will come into effect on 1 January 2028, subject to approval and adoption by IMO's Maritime Safety Committee. The draft mandatory performance standard includes a requirement for pilot ladders including spare ladders and man ropes to be removed from service, either:

- (i) at any time they are found not to be complying with the performance standards, or,
- (ii) within 36 months after the date of manufacture, or,
- (iii) within 30 months after the date of being placed into service, whichever comes first.

The draft mandatory performance standard also includes requirements for periodic maintenance and inspections to be carried out for pilot transfer arrangements, instructions to be supplied for the care, maintenance, inspection and stowage of pilot ladders, manropes and all associated equipment, and that a maintenance plan be developed and available for inspection.

Hazards when transporting biological liquid cargo

The Norwegian Maritime Authority (NMA) has issued an update for transporting biological liquid cargo following explosion after hot work was carried out near a vent from a tank containing fish silage. Fish silage is fresh fish residue and formic acid. The acid conserves the residue and delays the process of decomposition. When organic material decomposes in environments where there is little air, hazardous gases may form.

In an accident in the summer of 2024, work was carried out with an angle grinder near a vent from a tank containing fish silage. Silage had been stored in the tank in warm summer weather for a couple of weeks. Sparks from an angle grinder then most likely ignited a gas developed in the cargo. This led to an explosion where the hatch was torn loose and thrown many metres up in the air before it landed in the sea behind the boat. Thankfully, none of the crew members were badly injured.

Fish silage that is conserved correctly should not be a hazard to the ship or crew. If the conservation is not done correctly, however, explosive and toxic gasses may form. A decomposition process of the silage may also start if the temperature is right in the tank. The consequences may be lethal.

The development of hazardous gases is not limited to fish silage and should be considered when carrying all types of liquid cargo from a fish farm or fish-processing plant. If the gas is exposed to heat from welding, cutting

torches or angle grinders, it can easily be ignited, and the tank will explode. If anyone enters a tank or other spaces where gas may gather, they could be poisoned and die.

Hot work

- Always carry out a risk assessment when planning and carrying out hot work.
- Keep an overview of the cargo on board and any relevant hazards, such as the formation of gas.
- Make sure that the work area is safe considering sparks, the location of cargo tanks, etc.

Correct information about liquid biological cargo

- The shipper must provide the master with correct information on the contents and qualities of the cargo. Some of the factors to be documented include
 - the correct product name for carriage in bulk
 - that the cargo is stable
 - any conditions for the cargo to remain stable
 - dangerous situations that may occur if the cargo becomes unstable, etc.
- The product name must be listed in chapters 17 or 18 of the IBC Code or in MEPC.2/Circular. Before the cargo is taken on board, the master must ensure that this information is received and that the vessel is certified to carry a cargo with the product name listed in the shipper's documentation.

Work in tanks

When employees plan to work in a tank that may contain silage remains, it is important to ensure that the atmosphere in the tank is safe before commencing the work.



Essential guide to tanker ship coatings

According to Britannia P&I Club, who have produced this essential guide to tanker ship coatings, tanker ships rely on specialized coatings for their onboard tanks to safeguard against corrosion and contamination. The Club has published a guidance tanker ship coatings which explores the different types of coatings, including stainless steel and pure epoxy, giving details of their properties, advantages, and limitations.

A reliable and effective tank coating prevents water and corrosive agents from coming into direct contact with the metal surfaces, reducing the likelihood of structural damage and preventing cargo contamination during transportation. Therefore, it is essential to understand the significance of tank coatings and how they can impact claims and risk management.

Overall, tanker ship coatings systems demand vigilant monitoring over time and are not to be neglected after application. The demanding environment and harsh conditions to which coatings are subjected to require a continuous and thorough monitoring regime to detect any issues at an early stage. Owners and crews should have a clear understanding of the practical properties and constraints or limitations of the coating system applied. By treating the coating system with care, the risk for coating-related cargo contaminations and associated claims can be minimised. Furthermore, such attentive care contributes to extending the lifespan of the coating system and will therefore be cost effective.

Download the guidance at <https://bit.ly/3Y6Og2Q>.

REPORT bites

A new report from the National Transportation Safety Board (NTSB) suggests that a loose wire aboard the container ship Dali may have caused the blackout that led to the ship crashing into the Francis Scott Key Bridge.

THE UK's Lowland Canals Association is exploring corporate Inland Waterways Association membership after a decision to form an alliance with the IWA.

The Association of Yacht Support Services, the world's only global superyacht support network, has announced the launch of its new drone video competition, "Love From Above," aimed at superyacht captains and crew.

China has commissioned a pair of all-electric container ships, marking a bold step toward cleaner maritime transport.

Beam, which provides high-tech offshore wind services, has deployed the world's first autonomous underwater vehicle driven by Artificial Intelligence. The technology was used to inspect jacket structures on the Seagreen offshore wind farm in Scotland.

India's prominent Shipbuilder, Cochin Shipyard Ltd (CSL), will construct 65 ships fuelled by green energy for Indian and international clients, including the Indian Navy.

The Washington State Department of Transportation has allocated \$26.5 million in capital improvement grants under the Port Electrification Program.

Kentucky Governor Andy Beshear announced \$5.5 million in state investment in 16 Kentucky public riverport projects.

REACH REMOTE 1, an uncrewed surface vessel designed and delivered by Kongsberg Maritime to REACH Subsea ASA, has been awarded the prestigious Skipsrevven "Ship of the Year 2024" award.

Zhik, the Australian manufacturer of technical sailing apparel, has signed an agreement with Circular Flow in order to bring neoprene recycling to the UK and Europe.

Dartmouth hosted an historic meeting of the UK's only two operational paddle steamers. To celebrate the 100th Anniversary of the Dart's own PS Kingswear Castle, Waverley was welcomed to the river.

Safety warning issued following man overboard from potting vessel Kingfisher with loss of one life

On 12 July 2024, the crew of the potting vessel Kingfisher (DH110) were engaged in manually shooting a string of creels. A deckhand became entangled in a creel's leg rope and was pulled overboard, where his personal flotation device (PFD) inflated on immersion. Using the hauling winch, Kingfisher's crew retrieved the backrope and recovered the now submerged deckhand on board within seven minutes. Despite the efforts of the vessel's crew, members of a Royal National Lifeboat Institution lifeboat, a paramedic from a His Majesty's Coastguard rescue helicopter and crew members of an attending wind farm guard vessel, the deckhand could not be revived and was declared deceased.

Safety Issues

- the deckhand inadvertently threaded the creel toggle through his PFD's safety loop while connecting the toggle to the eye of the leg rope
- the PFD safety loop was a snagging hazard that had not been identified
- the vessel's onboard risk assessment had not identified the unsuitability of the lifejacket for the work being carried out

Recommendation

The MAIB has issued the following recommendation (S2024/129M) to the Home and Dry Safety Forum to immediately communicate through its members the need for owners and crew of creel fishing boats to review their deck working risk assessments to ensure that:

- hazards associated with shooting or recovering creels, such as risk of entrapment in a running backrope, are fully mitigated
- when provided, PFDs are of the required standard and are appropriate for work undertaken
- when new hazards are identified, the information is shared promptly among the crew and alternative PPE is sourced as soon as possible.

Download the safety bulletin at <https://bit.ly/4dib5Fa>.



Flooding and partial sinking of towing vessel Uncle Blue: Investigation report

The National Transportation Safety Board (NTSB) has published an investigation report on the flooding and partial sinking of towing vessel Uncle Blue that took place on March 26, 2023. The towing vessel Uncle Blue was towing one empty barge on the Lower Mississippi River in Ascension Parish, Louisiana, when the vessel began flooding. The six crewmembers aboard attempted to pump out the vessel but were unsuccessful, and they evacuated to the barge. Damage to the vessel was estimated at \$500,000.



Analysis

While pushing a single barge on the Lower Mississippi River, the Uncle Blue flooded and partially sank near mile 184. During salvage, investigators discovered numerous wastage holes in the hull on the port side of the lazarette. They also discovered doubler plates installed on the hull near the wastage holes. Doubler plating can be used as a temporary repair solution; however, because doubler plate repair can lead to increased stress concentrated in the area of the repair, doubler plates are not suitable as a permanent repair for sections of the hull. Given the vessel's age, the holes found in the hull, and the presence of the doubler plates, the vessel's hull had not been adequately maintained. Investigators did not identify other potential sources for the flooding; therefore, the wasted steel hull plating in the lazarette was the initial source of the flooding.

Pipe runs (conduits) inside the hull, which had previously been used to allow rods to run the length of the hull, were either corroded or missing where they passed through the voids. These openings allowed water from the lazarette to flood through two voids and, eventually, into the engine room. Thus, the conduits allowed for progressive flooding, which resulted in the partial sinking. The Uncle Blue had only one bilge high-water level sensor, located at the forward end of the engine room. Because the vessel sank by the stern, the float on the sensor would not have lifted until the lazarette and two voids were filled and the aft end of the engine room was inundated with water. Therefore, as it was configured, the bilge high-water level alarm system was ineffective as a means to alert the crew. Had an additional sensor been installed in the lazarette, the crew would have had an earlier indication of the flooding and may have been able to act to address it.

Lessons Learned

Inspecting and Repairing Steel Hulls

Steel hulls are susceptible to corrosion, erosion, and damage over time. To avoid flooding or weakening of the hull, it is good marine practice for owners to conduct regular oversight and maintenance of hulls, including between drydock periods. An effective maintenance and hull inspection program should proactively address potential steel wastage, identify hull and watertight integrity deficiencies, and ensure corrosion issues are repaired in a timely manner by permanent means.

Using Doubler Plates for Hull Repairs

Although doubler plating can be used as a temporary repair solution, it is not generally suitable as a permanent repair for a vessel's hull. Vessel owners should crop out wasted steel on the hull and replace it by inserting new plating instead of covering it up with doubler plating.

Download the report at <https://bit.ly/4eFpGwd>.



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Obituary: Des Kearns MIIMS

News of the passing of Des Kearns MIIMS aged 80 has reached IIMS head office. A master mariner, Des was a man who lived a full life and, as he once said, he would have changed nothing. As well as being a respected marine surveyor he was a twice published author and was especially proud of those achievements.

Mike Schwarz, IIMS CEO, said, "Whilst I never met Des in person, we were in semi-regular email contact over many years. He was an ardent supporter of the Institute and had a fascinating back story to tell, some of which he shared with me. I featured Des as the subject of 'A Day in the Life of' in the June 2023 Report Magazine. When I asked him about his publishing exploits, this was his response."



"When I circumnavigated in our 30-foot sloop these were early 'cruising' days. 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 and 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.

"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."

Des Kearns

Veteran surveyor, Mike Wall, who was a friend of Des paid this glowing tribute to him. "Des Kearns passed peacefully on the morning of 16 September 2024. He was 80 years old. He was a professional mariner, surveyor and author being well respected in our profession and the yachting industry. He was a modest man and quietly spoken but did not suffer fools gladly. He had been in bad health for some time, but it was Covid from which he never really recovered.

"Des was born in Australia on 4 August 1944. He was educated at Epping Boys High School in Sydney, King Edward VII Nautical College in London and the Pacific Marine Training Institute in Vancouver. It was his worldwide travels and circumnavigations from which he learned most.

"I first met Des 10 years ago. He had bought a couple of my books and was just finishing off his life story 'Beyond Boundaries - A Lifetime of Adventures Beyond the Ordinary'. He was always prepared to talk to, and learn from others, asking for help with his layout and formatting. I attended the release of the book at the Royal Phuket Marina where we became instant friends, often spending long periods chatting on WhatsApp about our profession and experiences.

"Over the last several years we talked frequently as he was involved in two major yacht renovations, the last one 'Cariad' being completed around six months ago. The Cariad project was feted by many who visited the rebuild site in Satun, southern Thailand. Consequently, it was unsurprising that it won the Classic Rebuilt Yachts category award at the 2024 World Superyacht Awards in Venice in May this year for being 'tremendously faithful to her original design'. Sadly, Des never got to receive the award as it went to the owner, Des being too ill to travel.

"So, what made his book and Des so special? As I said in my review then "Writers are called 'word smiths' and Des has perfected his craft – wielding his hammer skilfully to shape his words on a paper anvil." His book is one which cannot be put down once you have started. His stories are interesting and exciting to read. One moment you will be gripping the edge of your seat and the next falling off it laughing. The range of emotions stirred up is wide with the last chapter leaving the reader in tears, as I am now - thinking of my old friend."

Mike Wall

Enhancing your knowledge about large and superyacht paint coatings projects

5 project management tips on tackling paint projects.

Coating projects are complex. From paint systems to conflict management, repainting a large or superyacht can be an expensive and a painstaking process. Whether you work in a refit and repair shipyard, as a captain of a yacht or within the marine insurance sector, the pressure to reach a client's high standards can be intense. Understanding the varying different aspects involved in the process of a large or superyacht paint project can help ensure a satisfied client.

That's where IIMS can help you navigate the intricacies and challenges you'll face. We know the importance of paint applications. That's why we worked with ICOMIA, SYBAss and other stakeholders to launch the Registered Marine Coatings Inspector (RMCI) qualification 10 years ago.

But there's more to a coating project than just paint – so here are 5 project management tips on handling coating projects:



1 Roles & Responsibilities

Yard management teams, application teams, captains, crew and coatings inspectors. Everybody has a role to play. Understanding the various parties involved in a complex project team and what their responsibilities are is crucial for a successful outcome. Knowing who does what and why - not just how you contribute - can help smooth the whole process.

Jay Lidstone
International Superyacht Coatings (ISC)

"This course gives a great insight into the world of yacht painting. Being a project manager of a yacht painting company, the information I received gave me a wider perspective and understanding of the roles and responsibilities of the other parties involved in the projects we take on."

"Very informative, the lecturers were enthusiastic and engaging. I would definitely recommend this course to anyone involved with superyacht building and refits."



2 People & Relationships

Conflicts are commonplace within the yacht painting industry for a number of reasons. Reducing the number of complaints that can come about in a paint project is in everybody's best interest. Understanding relationships, contractual chain and managing expectations are ways you can prevent disputes. Knowing where and how disagreements happen in the process is key to conflict management.

Manu Ayme
Sales Director, GY Group/Pinmar

"I thoroughly enjoyed the course. Rory and Ken made talking about paint as fun as it possibly can be. It was nice to be able to debate on certain points as a group. The variation of skill sets in the group made it all that more interactive."

"I would recommend this course to yard management teams in particular."

3 Projects & Planning

Getting everyone to work together effectively is a tough task to achieve. This means everybody needs to understand why contracts and specifications and acceptance criteria are essential.

Nic Clarke
Owner, PURE Superyacht Refit

"I feel everybody in the room, including some very experienced yacht paint applicators, learnt something. Having a tutor as a recognised paint surveyor/inspector also added a lot of merit and credibility to the course and some valuable insight."

"I think it gave others attending the course a more informative and deeper look into the logistics, management, pitfalls, etc of paint application projects."

4 Paint Systems

Now we're getting to the nitty-gritty of paint application itself. How much do you know about vessel construction, surface preparation, large and superyacht coatings, the application process, or their performance and care?

Jack Barratt
Client Engagement Executive,
Viking Maritime

"I would highly recommend to anyone in this field to undertake the course. I certainly learned a lot from my two days with the group and have a real appreciation for all stakeholders involved in decision making and application of the coatings on yachts."

5 Yacht Coatings Technical Insight course

Conflicts are commonplace within the yacht painting industry for a number of reasons. Reducing the number of complaints that can come about in a paint project is in everybody's best interest. Understanding relationships, contractual chain and managing expectations are ways you can prevent disputes. Knowing where and how disagreements happen in the process is key to conflict management.

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We host our YCTI courses around the world, including the UK, throughout Europe, the USA and Australia. We're currently organising future courses and you're more than welcome to register your interest: <https://bit.ly/3OuDUnx>.

Have a question? Sharon will be happy to answer it at msacourses@iims.org.uk.

You can find out more, including when we release our 2025 schedule, at <https://bit.ly/3ZzHOR3>.

IIMS announces important administration change for members

Mike Schwarz, IIMS CEO, has released the following statement. "The 2025 membership fee invoices were emailed to members during November. I thank you for your continued support. If you have not seen your membership invoice yet please check your spam folder just in case. These days we have migrated to a fully automated process that we have perfected. As soon as you have paid your invoice for the coming year using our secure online servers, the software system will immediately send you a payment receipt. If you stored last year's membership card in your digital wallet, there is nothing further to do and your card will automatically be updated with the new date within 24 hours. But I am aware that a few people still choose to pay head office manually and some pay to a local branch. If you pay that way, your card will be held until payment confirmation is received.

"I know from discussions with many members that in certain parts of the world, a physical plastic card is still required to gain access to ports and marinas. If you need one, please let my colleagues know and we will send you one at no charge. If you have any problems following this automation, please email my colleagues at IIMS HQ at membershipsupport@iims.org.uk and we will be pleased to assist you."



Recent new IIMS members and upgrades

Full members

Barry Burnell	MIIMS	UK
Alexander Damaskinos	MIIMS	Cyprus
Jeremy Fielding	MIIMS	Australia
Muhammad Tariq Iqbal	MIIMS	Canada
Michael Kardasis	MIIMS	Greece
Timothy Martin	MIIMS	Canada
Philip Rock	MIIMS	Australia
MD Abul Bashar	MIIMS	Bangladesh
Amr Fathy	MIIMS	Saudi Arabia
Serkan Goksu	MIIMS	Turkey
Andrea Preden	MIIMS	Italy
Paul Shannon	MIIMS	Gibraltar
Mohammed Ahmed Hassan	MIIMS	Saudi Arabia

Affiliate members

Jeremy Greenwood	AffiliIMS	UK
Ben Sturrock	AffiliIMS	UK
Javier Romero Cruz	AffiliIMS	Spain
Mark Gilbert	AffiliIMS	Canada
Sai Krishna Murari Kakita	AffiliIMS	UK
Rick Rodriguez	AffiliIMS	USA

Technician members

Damian Lockie	TechIIMS	UK
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Associate members

Philippe Dourlet	AssocIIMS	Canada
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Graduate members

Marius Hermenean	GradIIMS	Romania
Peter Jericevic	GradIIMS	Croatia
Eduard Smyrnov	GradIIMS	Montenegro
Derek Bottles	GradIIMS	USA
Alberto Rossi	GradIIMS	Italy

IIMS congratulates Marius Hermenean, Peter Jericevic, Eduard Smyrnov, Derek Bottles, Alberto Rossi, and Alper Gunoral for completing their studies in the IIMS Professional Qualification in Yacht and Small Craft Marine Surveying.

New vessels review



Baltic Yachts ventures into multihull projects

The Finnish sailing yacht builder reports the contract for Baltic 107 was signed in June 2024, and the design and engineering phases are well underway. The yacht is expected to be delivered in summer 2027. It's the first foray into multihulls for Baltic Yachts, which specialises in high-performance composite monohull yachts. The yard says the yacht is designed for long-range exploration, offering stability, comfort, and high sailing performance, particularly in light winds.

"With the Baltic 107 Catamaran, Berret Racoupeau Yacht Design is particularly proud to bring the multihull into the world of the superyacht," says Racoupeau. "Our passionate and experienced team immediately recognised the values of Baltic Yachts. With a wealth of experience in multihulls, it was natural for us to design this exceptional 33 metre catamaran, sharing the same vision with her owner of elegant lines and performance with volumes that will give access to any destination worldwide in the greatest comfort."



Photo credit: AAM

AAM delivers new CDFW catamaran patrol vessel

A recent delivery from Bellingham based All American Marine (AAM), is a state-of-the-art 74- by-27.5 foot hydrofoil catamaran patrol boat ordered by the California Department of Fish and Wildlife (CDFW).

Built to enhance CDFW's capabilities in coastal and marine law enforcement, its missions will include multi-day patrols, commercial gear inspection and recovery, fishery enforcement, and marine protected area patrols.

The vessel features Teknicraft's advanced dynamic hydrofoil system to minimize drag, enhance fuel efficiency, and provide superior stability and passenger comfort. Powered by two Cat C-18 diesel engines, each delivering 800 horsepower, on trials the boat achieved a fully laden cruise speed of 24.5 knots, with a top speed of 27 knots.

Bayliner launches redesigned D-Series deck boat

Bayliner, a leading manufacturer of fiberglass fishing and day boats today announced the release of the redesigned D-series deck boat. The new D-series is a sportier version of the former DX model and is expertly crafted for everything from cruising to watersports with notable smart upgrades like a sleek new hull, elevated bow, and modern exterior graphics. With length options from 20 feet to 22 feet, the new models are exclusively powered by Mercury Marine propulsion, both outboard and sterndrive.



New vessels review



Spanish builder launches 8m electric 'llaüt'

What it calls the “definitive electric ‘llaüt’” has been launched by Spanish company reBot Yachts. The new vessel, styled in the traditional Mediterranean style, can accommodate up to 10 people and offers eight hours of autonomy. The 100% electric reBot 8 llaüt, designed and manufactured in Menorca, is already sailing around the island. The boat combines elements of Menorcan tradition with contemporary design and the most advanced electric technology.



Parker Offshore announce the launch of two new models, the 21SE and 23SE.

The new 21SE is designed for those who “demand performance and reliability in an easy-to-trailer package”, the company says. This model offers all the features Parker Boats is known for, including robust construction and a practical design, making it the ideal choice for both serious anglers and family outings.

In contrast, the new 23SE takes everything great about the 21SE and expands it into a larger frame, providing even more space and power. “This model is perfect for those who seek a boat that can handle offshore excursions while still being versatile enough for inshore adventures,” says Parker Offshore. “With its expanded deck space, ample storage, and powerful engine options, the 23SE ‘ensures that every trip is both thrilling and comfortable.’”

De Antonio Yachts launches new model

Barcelona-based yard De Antonio Yachts has launched a new 8m for 2025 in the shape of the D29, inspired by its iconic D28 model. Featuring a high-performance hull, designed, the builder says, to provide exceptionally comfortable and efficient cruising, with engine options of 300, 350 or 400hp outboard single engine, or 200hp twin engines. The “walk around” model is available in hardtop and softop versions and offers multiple customisation options.



New vessels review



New Zealand's newest marine research vessel sails on maiden operational voyage

A new research vessel recently handed over to the National Institute of Water and Atmospheric Research of New Zealand (NIWA) has sailed on its maiden operational voyage.

In addition to conducting daytime surveys, scientists will work during the night to capture images of fish sleeping on the seafloor and the nocturnal species that use the dark to forage. The vessel's underwater cameras are equipped with powerful lights, which will appear from the shore as lit up domes in the water in shallower areas.



Evoy partners with Axopar on new electric boat brand

Norwegian electric motor specialist Evoy has teamed up with Axopar Boats to launch the AX/E sub-brand of fully electric adventure boats. The new AX/E line made its debut at the Cannes Yachting Festival. The AX/E 22 delivers a top speed of 36kt with a range of over 50Nm on a single charge at slower speeds

Within the AX/E line are two series-production electric boat models: the AX/E 22 powered by an Evoy Outboard Breeze 120+ hp motor system and the AX/E 25 powered by an Evoy Storm 300+ hp motor system.

"Our collaboration with Axopar on the AX/E line brings our vision of 'irresistible boating' to life – delivering an electric experience so thrilling that heading back out on the water becomes a must," says Leif Stavøstrand, CEO of Evoy.

Strategic Marine delivers fast crew boats

Strategic Marine has delivered two 42m Fast Crew Boats (FCBs) to ADNOC L&S. Designed to meet the rigorous demands of offshore operations, the vessels are equipped with technology such as Gyro-stabilisation and hybrid systems for carbon emission reduction and increased efficiency. The hull design is optimised for enhanced speed and fuel efficiency and on board are advanced navigation and communication systems. For crew comfort, the vessel has ergonomically designed accommodations for improved comfort and safety, and a bespoke aft landing for specific operational requirements.



New vessels review



ACI Boats delivers new whale-watching, eco-tour boat to Washington

ACI Boats has delivered a new whale watching, eco-tour boat, Blackfish VI, to Outer Island Excursions. Designed by the shipyard and Coastwise Corp., Anchorage, Alaska, the new boat will operate in Washington state's San Juan Islands. The USCG-classed, Subchapter T, 80-passenger vessel, with a draft of 1.9' light, is an all-aluminium symmetrical planning catamaran whose upper cabin will feature four dinettes, bench seating, and an enclosed helm station, and accommodate up to 16 passengers. The main floor is designed to accommodate 54 passenger seats, three dinettes, a galley, and two head compartments. Main propulsion comes from six (two clusters of three engines) 450-hp Yamaha XTO outboards with stainless steel props. Yamaha also handled the control — Yamaha Helmmaster EX with joystick manoeuvrability — and steering system — Yamaha helm and helm follower system — responsibilities.



Tiara Yachts has announced their largest outboard powered model

The all-new 56 LS coming in 2025 is a luxury-laden design that will become part of Tiara's Luxury Sport (LS) series, which also includes the 34, 38, 43, and 48 foot models. The move comes as Tiara has been increasing both the size and capability of their lineup. They launched their largest ever inboard model in 2022, the EX 60, before following up with the EX 54 in late 2023.

"The Luxury Sport formula has been a successful one for Tiara, elevating the day yachting experience with versatile social zones and luxurious amenities. The 56 LS builds upon that foundation. Everything is amplified on this boat," said Tiara Yachts CEO Tom Slikkers in a press release.

First Orca heavy lift vessel launched

The first of five Orca heavy lift vessels, Elise, was launched at Wuhu shipyard. The Orca project, a collaboration between Harren Group and SAL Heavy Lift, represents a significant advancement in the field of heavy-lift shipping. These ships are designed to set new standards in terms of emissions and technical capabilities, making them some of the most advanced heavy-lift vessels in the world.

The Orca Class vessels are equipped with hybrid drive systems and are methanol-ready, allowing for reduced emissions and a smaller environmental footprint. They feature two fully electric cranes with a combined lifting capacity of 1,600 tonnes, making them ideal for handling large and heavy cargoes, such as offshore wind turbine components.



New vessels review

Hanse 590 sailing yacht premiered at Cannes

The world's second largest manufacturer of sailing yachts, HanseYachts, launched its biggest model yet – the Hanse 590 – at the Cannes Yachting Festival. The design of the 590 with her typical Hanse chines not only provides stability and performance, but also an enormous amount of space and therefore an unusually high level of comfort, the company says.

The tall and sporty rig of the Hanse 590 with its generous sail area of 151m² upwind and up to 326m² downwind ensures high performance potential. The bowsprit with integrated anchor arm and second forestay makes it easy and convenient to select the most suitable headsail for the wind and weather conditions at any time.



Image credit: HanseYachts AG

Crestliner pursues affordable aluminium design with new Fish Hawk models

Minnesota, US-based aluminium fishing boat builder Crestliner Boats has announced the release of updated Fish Hawk models for the 2025 model year intended to compete on a combination of amenities and affordable performance. The company's newly refreshed Fish Hawk 1750 and Fish Hawk 1850 models debut with Crestliner's advanced AP-X hull design for a smoother, drier ride and a range of advanced technology features in hulls intended to retail starting at just over US\$40k.



Indian Register of Shipping classed tanker MT Elgon delivered

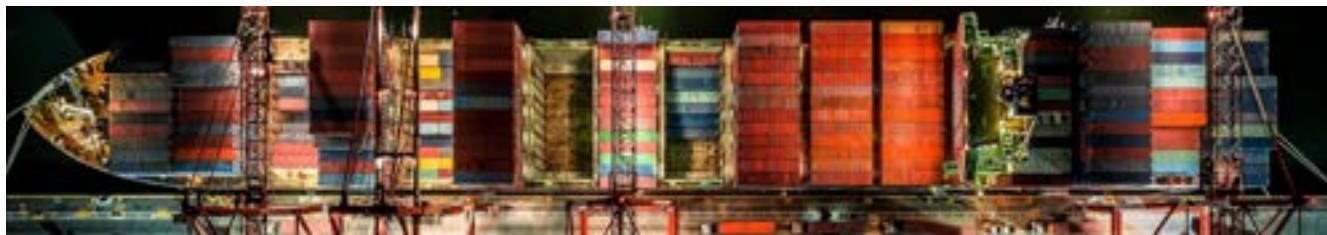
The Indian Register of Shipping (IRS) has announced the successful delivery of the Double Hull Oil Tanker MT Elgon. The vessel, built by Mahathi Shipyard Uganda Ltd, under the stringent classification standards of IRS, commenced operations in Lake Victoria, serving the surrounding nations of Uganda, Kenya, Rwanda, and Tanzania.

MT Elgon is a modern tanker featuring double hull steel construction, and utilises a conventional twin-screw propulsion system, allowing it to reach speeds of up to ten knots. The vessel is designed with dedicated machinery and pump room spaces to ensure optimal performance during operations and will have a complement of 18 crew members.

KingFisher Boats introduces next-generation 3025 XRS and 2725 XRS offshore models

KingFisher Boats, renowned for their rugged and versatile adventure boats, proudly announces the launch of their latest models – the 3025 XRS and 2725 XRS. These new additions to the Offshore Series epitomize innovation, performance, and luxury, setting a new benchmark in the world of welded heavy-gauge aluminium boats. The KingFisher 3025 XRS, with its length of 30'5" and beam of 9'6", supports a maximum horsepower rating of 500 hp, ensuring powerful and smooth navigation.





IMO updates SOLAS updates announced by IMO: New amendments on emergency towing, fire safety, and container reporting

The International Maritime Organization has issued resolutions MSC.549(108) and MSC.550(108), which amend the Safety of Life at Sea (SOLAS) Convention.

Resolution MSC.549(108) amends SOLAS Chapter II-1, with the changes set to take effect on January 1, 2028. This resolution introduces a new section to Regulation 3-4 that addresses emergency towing arrangements for ships other than tankers. Specifically, ships of 20,000 gross tonnage or more, built on or after January 1, 2028, must have emergency towing arrangements. These arrangements need to be capable of quick deployment even without main power and should easily connect to a towing ship. They must also be strong enough to handle adverse weather conditions, with their design and testing approved by the relevant authorities according to IMO guidelines.

Resolution MSC.550(108) amends SOLAS Chapters II-2 and V, with these changes coming into effect on January 1, 2026.

For Chapter II-2:

Part B: **Prevention of Fire and Explosion**

Regulation 4 now requires that oil fuel used on ships must not compromise the safety of the ship,

the performance of machinery, or the health of personnel.

Part C: Suppression of Fire

Regulation 7 specifies that for passenger ships, fixed fire detection and alarm systems must cover service spaces, control stations, and accommodation areas, but not private bathrooms or galleys. For cargo ships, fixed fire detection systems or sprinklers must be installed in accommodation and service spaces based on the chosen protection method, with detailed requirements for each method. Regulation 9 has removed some paragraphs related to cargo space fire containment and renumbered the subsequent sections.

Part G: Special Requirements

Regulation 20 now includes vehicle, special category, open and closed ro-ro spaces, and weather decks for vehicles. It introduces new compliance deadlines and requirements for fixed fire detection systems and video monitoring for passenger ships constructed before January 1, 2026.

Structural Fire Protection

Regulation 5 requires that bulkheads and decks have specific fire ratings based on the type of space and associated risks. It also ensures that openings in ro-ro and special category spaces are safely protected with fire-resistant materials.

Fire Extinction

Regulation 6 introduces new requirements for fixed water-based fire-extinguishing systems on weather decks for vehicles, including details on drainage and system specifications. For passenger ships built before January 1, 2026, there are specific requirements for fire-extinguishing systems.

Decision-Making and Safety Centres

Regulation 7 requires passenger ships to have clear signage and markings for fire-extinguishing systems, especially in vehicle and ro-ro spaces. Regulation 23 has been updated to include fire detection and alarm systems in safety control and monitoring procedures for passenger ships.

For Chapter V:

Regulation 31: Danger Messages

This regulation mandates that the master of a ship losing freight containers must promptly inform nearby ships, the nearest coastal State, and the flag State with detailed information. If the ship is abandoned or if the report is incomplete, the ship's company must assume the reporting responsibilities. The flag State must report the incident to the IMO. Additionally, if a ship observes drifting containers, it must report this to nearby ships and the nearest coastal State.

Regulation 32: Information Required in Danger Messages

Initial reports of lost containers should include ship details, time, date, and an estimate of the number of lost containers. Subsequent reports should confirm the exact number of lost containers and provide details such as position, type, number, and whether they contain dangerous goods. Additional information, including cargo description, sea conditions, and drift direction, may also be included. For observed drifting containers, reports should include the time, position, number, and details like container dimensions, type, and sea conditions.

Guidance for vessels loading grain, concentrates, and timber in Canadian ports

Transport Canada has released Ship Safety Bulletin No. 22/2024 providing crucial guidance to Masters of vessels that are preparing to load specific high-risk cargoes—grain, concentrates, and timber on deck—at Canadian ports.

Purpose:

The bulletin is designed to inform stakeholders about new guidance documents, specifically:

- TP 15611E: Guidance for loading grain in bulk.
- TP 15612E: Guidance for loading concentrates in bulk.
- TP 15613E: Guidance for loading timber on deck.

These documents aim to assist ship Masters in preparing for mandatory inspections, ensuring compliance with Canadian regulations, and saving time and effort during the loading process. Notably, the older TP 215 - Instructions to Masters of Vessels Loading Grain in Canada remains in effect for calculating grain stability.

Scope:

This bulletin is relevant for Masters of vessels visiting Canadian ports who intend to load any of the three high-risk cargoes—grain, concentrates, or timber on deck. These vessels are subject to inspection under the CFTR, specifically under application sections 107, 122, or 131. Non-compliance may result in delayed clearance, affecting the ship's schedule and the safety of the cargo, crew, and environment.

Background:

The safe loading, stowing, securing, and carriage of cargo is critically important for any vessel's voyage. Improper handling of cargo such as grain, concentrates, or timber on deck can increase the risk of accidents due to their potential to shift during transit or exhibit specific chemical reactions. These cargoes also account for a large volume of Canada's exports, making safety in their transport a priority for both economic and environmental reasons.

Following several major maritime accidents involving ships leaving Canadian ports in the 1990s, Canada implemented a mandatory inspection program for vessels loading these types of cargoes. This inspection program ensures compliance with national and international safety standards, ultimately resulting in the issuance of two key certificates for compliant vessels:

- Certificate of Readiness to Load (RTL)
- Fitness to Proceed Certificate (FTP)

Non-compliant vessels will receive a Written Statement, indicating that they do not meet the required safety standards.

Modernization and Guidance:

As part of Transport Canada's modernization of the marine sector, this newly published guidance is designed to further assist Masters in preparing their vessels for inspection. It focuses on ensuring that vessels are ready for the safe and efficient loading, stowing, securing, and carriage of these high-risk cargoes.

What Masters Need to Know

Concentrates:

Masters of vessels loading concentrates in bulk must ensure that their ships comply with the International Maritime Solid Bulk Cargoes (IMSBC) Code and any applicable parts of the International Convention for the Safety of Life at Sea (SOLAS). Under CFTR section 108, vessels loading concentrates are required to undergo inspections to ensure safety compliance.

Grain:

Masters of vessels loading grain in bulk must ensure compliance with the International Code for the Safe Carriage of Grain in Bulk (International Grain Code) and any relevant parts of SOLAS. These regulations, referenced in CFTR section 123, necessitate vessel inspections to confirm that they meet stability and safety standards when transporting bulk grain.

Timber on Deck:

Vessels loading timber on the uncovered part of a freeboard or superstructure deck must adhere to the requirements of the Timber Code and SOLAS. Under CFTR sections 132-133, these vessels must undergo inspection to verify compliance with safety standards for securing and stowing timber on deck.

Inspection Program:

The inspection process is mandatory for all vessels loading these cargoes in Canadian ports and is carried out in accordance with the CFTR. The inspections are designed to mitigate the risks associated with transporting these high-risk cargoes and to safeguard the vessel, crew, cargo, and environment.

- Compliant vessels are issued the Certificate of Readiness to Load (RTL) and Fitness to Proceed Certificate (FTP).
- Non-compliant vessels receive a Written Statement, which may delay their loading operations or clearance to depart.

This inspection program was implemented after a series of serious maritime accidents in the 1990s, underscoring the risks involved in transporting these cargoes.

Click to read the guidance at <https://bit.ly/3BDs1J2>.





MLC amendments set to enter into force in December 2024

The 2022 amendments to MLC 2006, adopted at the ILO 110th session in Geneva, are expected to come into force from 23rd December 2024. Here is a brief overview.

Regulation 1.4 –

Recruitment and placement

Further protection for seafarers if a recruitment or placement agent fails to meet its obligations under the seafarer's employment agreement. Seafarers should be informed of their rights, prior to or in the process of engagement.

Regulation 2.5 – Repatriation

Flag and Port states must be proactive in facilitating and assisting seafarers who require repatriation, including those deemed abandoned. This includes replacement seafarers, who shall be afforded the same rights under the MLC 2006. Responsibility for replacement seafarers shall be on Port state, flag state and labour supplying states.

Regulation 3.1 – Accommodation and recreational facilities

Appropriate recreational facilities, amenities, and services, including telephone and internet services shall be provided. Any charge for the use ship to shore telephone or internet should be reasonable in amount.

Internet access should also be provided by States to seafarers on-board ships in their ports and at anchorage, with any charge for same again being reasonable in amount.

The ILO hope that this amendment will have a positive impact on seafarer's mental health.

Regulation 3.2 – Food and catering

Adequate supplies of food and drinking water shall be on board,

considering the number of seafarers on board, religious requirements, and cultural practices. The duration and nature of the voyage shall be suitable in respect of quality, nutritional value, variety and shall be provided free of charge during the period of engagement. Organisation and equipment of the catering department shall be as such to permit meals to be prepared and served in hygienic conditions.

Regulation 4.1 – medical care on board ship and ashore

States to ensure prompt disembarkation of seafarers in need of immediate medical care and access to medical facilities ashore. Where a seafarer has died on board, the State in whose territory the death has occurred (including its territorial waters) or into whose territory the ship next enters, shall facilitate the repatriation of the remains.

Seafarers should not be prevented from disembarking for public health reasons and ships should be permitted to replenish their stores, fuels, water, food and supplies.

Regulation 4.3 – Health and safety protection and accident prevention

There should be provision for appropriately sized personal protection equipment and measures in place to reduce the risk of exposure to harmful levels of ambient factors and chemicals.

All deaths of seafarers should be adequately investigated and recorded by the flag state of the ship and reported on an annual basis to the ILO.

Amendments to Appendices relating to financial security provisions

It is sufficient for MLC Certificates of financial security to name only the registered owner of the ship.

Read the MLC amendments in full at <https://bit.ly/3AP816j>.

Updated IMO fuel oil sampling guidelines

The International Maritime Organisation (IMO) has published a joint circular updating the fuel oil sampling guidelines for compliance verification with MARPOL Annex VI and SOLAS Chapter II-2.

MSC-MEPC.2/Circ.18, issued on 11 July 2024, extends the use of the MARPOL Delivered Sample to also be available for checking the flashpoint requirement under SOLAS Regulation II-2/4.2.1.

This joint circular revokes the previous MEPC Resolution 182(59) titled "2009 Guidelines for the sampling of fuel oil for determination of compliance with the revised MARPOL Annex VI".

Lloyd's Register has shared the changes to note in the updated guidelines, including:

- Minimum sample size: The basic requirements (as given by the 2009 Guidelines regarding the sampling location, arrangements and procedures for what the joint circular refers to as the "Representative
- Sample") are unchanged apart from the minimum sample size being increased from 400ml to 600ml. Also unchanged are the sample labelling and sample storage aspects.
- Fuel oil definition: For the purpose of these Guidelines, and for the application of SOLAS Regulation II-2/4.2, oil fuel is as defined in Regulation 2.1.14 of MARPOL Annex VI, including oil fuel as defined in
- Regulation 1 of MARPOL Annex I.
- Sampling and preparation: There are now explicit references in the circular to the need for personnel undertaking this sampling and the subsequent MARPOL Delivered Sample preparation to

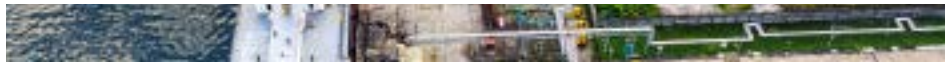


be familiar with the use of the equipment and the Guidelines. Also, that the sampling operation itself should be witnessed by representatives of both the ship and supplier.

- New Section 10: The one notable addition is the new Section 10. This covers the procedures and documentation requirements in those instances where the fuel oil's flashpoint is to be checked. This in no way impacts on the MARPOL Annex VI Appendix VI requirements in respect of the sulphur verification procedures, which are unaltered.
- Tracking of Delivered Samples: With regard to the key point of keeping track of these MARPOL Delivered

Samples, this is now given as being the company's responsibility rather than the responsibility of the ship's master, as previously stated in the 2009 Guidelines. This will be important where samples are taken off the ship for testing, but the remaining material is not subsequently returned.

The MARPOL Delivered Sample should only be used by a Party to either MARPOL Annex VI or SOLAS, to test for compliance with the convention requirements. The MARPOL Delivered Sample should not be used for any other purposes such as the resolution of commercial quality disputes. Download the IMO circular: MSC-MEPC.2/Circ.18



IMO amendments to the ESP Code: Certification by hull inspection firms

The International Maritime Organization has issued resolution MSC.553(108) with amendments to the 2011 ESP Code. The amendments will come into force on January 1, 2026.

These changes specifically focus on the approval and certification processes for firms that conduct thickness measurements of hull structures. Hull thickness measurements are essential for determining the structural integrity of ships and ensuring their safe operation. The amendments apply to different types of bulk carriers and oil tankers, and aim to ensure that the firms responsible for these inspections are properly certified and audited.

1. Amendments to the ESP Code for Bulk Carriers: The changes are divided into two sections based on the type of bulk carrier:

- Part A covers bulk carriers with single-side skin construction.
- Part B deals with bulk carriers with double-side skin construction.

Both sections update Annex 5, which outlines the "Procedures for Approval and Certification of a Firm Engaged in Thickness Measurement of Hull Structures."

The key change is in Paragraph 2.2, which now specifies the process for auditing firms:

- After a firm submits documents (such as qualifications, procedures, and resources) to the maritime authority, these documents are reviewed.
- If the documents are approved, the firm is audited by the maritime authority to ensure it is:
 - a) Properly organized and managed, as reflected in the submitted documentation.
 - b) Capable of conducting accurate hull thickness measurements for bulk carriers.

These updates ensure a consistent and standardized process for certifying firms that inspect hulls, enhancing the safety and reliability of bulk carrier inspections.

2. Amendments to the ESP Code for Oil Tankers:

Similar to bulk carriers, the amendments for oil tankers are divided into two sections:

- Part A covers oil tankers with double-hull construction.
- Part B addresses oil tankers with other types of hull configurations.

The amendments modify Annex 8 (Part A) and Annex 7 (Part B), which also detail the procedures for approving and certifying firms involved in thickness measurements for oil tanker hulls.

Two key changes were made:

Submission of Documents

Paragraph 2.1 was updated to clarify the types of documents firms must submit for approval. These documents generally include details about the firm's organizational structure, technical abilities, and personnel qualifications.

Auditing of Firms:

Paragraph 2.2 was replaced to match the changes made for bulk carriers. After a firm's documents are reviewed and approved, the firm is audited by the maritime authority to verify:

- The firm is properly organized and managed according to its submitted documents.
- The firm has the capability to conduct hull thickness measurements on oil tankers.

Purpose and Impact of the Amendments

The purpose of these amendments is to:

- Standardize the approval and certification process for firms across different ship types (bulk carriers and oil tankers) and hull configurations (single-side, double-side, and double-hull).
- Strengthen oversight of firms to ensure they are qualified and capable of performing critical hull inspections.
- Enhance maritime safety by ensuring reliable thickness measurements, which are vital for evaluating the structural integrity of aging ships and preventing accidents.

Key focus on planned vessel maintenance: AMSA notice

The Australian Maritime Safety Authority (AMSA) has issued marine notice 2024/08 concerning planned maintenance on ships.

Purpose:

This notice emphasizes the critical role of planned maintenance in ensuring the safe operation of vessels, particularly during port State control (PSC) inspections by the Australian Maritime Safety Authority (AMSA). Recent incidents highlight the risks associated with inadequate maintenance of main engines and power systems.

Key Points:

Importance of Maintenance: Effective maintenance is crucial for crew safety, vessel integrity, and environmental protection. AMSA will increase its scrutiny of planned maintenance during inspections.

ISM Code Compliance:

The International Safety Management (ISM) Code mandates:

- Regular maintenance inspections.
- Reporting non-conformities and taking corrective action.
- Keeping detailed records of maintenance activities.
- Identifying critical equipment that could cause hazards if it fails and ensuring reliability through regular testing.

Global Supply Chain Challenges:

Operators are urged to proactively manage supply chain issues, especially post-COVID-19. They should plan maintenance to mitigate risks from potential spare parts shortages and consult with manufacturers and classification societies if parts are unavailable.

Inspection Focus:

AMSA will prioritize the inspection of propulsion and auxiliary equipment. Compliance actions may include requiring surveyors from classification societies to verify critical equipment conditions. This approach is part of a long-term focus on maintenance rather than a temporary inspection campaign.



IMO issues amendments to lifeboat maintenance and inspection requirements

The International Maritime Organization (IMO) has issued resolution MSC.559(108) amending the requirements for the maintenance, thorough examination, operational testing, overhaul, and repair of lifeboats, rescue boats, launching appliances, and release gear.

The amendments aim to keep safety protocols current, particularly concerning ventilation systems for totally enclosed lifeboats. This is in response to advancements in safety practices and lessons learned from past incidents.

The resolution recalls previous decisions, notably Resolution MSC.402(96), which set forth the initial requirements for the maintenance and examination of lifesaving equipment. The amendments align with updates made in Resolution MSC.535(107) regarding ventilation.

Specific amendments to requirements

The amendments include detailed procedures for annual inspections and operational tests. Key aspects of the new inspection protocols for lifeboats and rescue boats include:

- Structural Examination: Inspecting the boat structure, including both fixed and loose equipment, and conducting visual checks of void spaces where possible.
- Engine and Propulsion System: Assessing the condition and functionality of the engine and propulsion systems to ensure safe operation.
- Safety Systems: Checking installed systems such as sprinklers, air supply, and maneuvering systems to confirm they are operational.
- Power Supply: Evaluating the power supply systems to ensure reliability in emergency situations.
- Bailing and Fender Systems: Inspecting the bailing systems and fender/skate arrangements for effective water management and stability.
- Righting System: For rescue boats, ensuring that the righting systems are functioning correctly, which is vital for crew safety.
- Ventilation System: Assessing ventilation systems to ensure they are in good working order, particularly for enclosed lifeboats.

The IMO amendments will come into force on 1 January 2026.



The EU Blue Economy Report 2024

The sixth edition of the EU Blue Economy Report continues to analyse the scope and size of the Blue Economy in the European Union. Its main objective remains to provide support to policymakers and stakeholders in the quest for a sustainable development of oceans, coastal resources and, most notably, to the development and implementation of policies and initiatives under the European Green Deal in line with the new approach for a sustainable Blue

Economy. Through its economic evidence, the Report also seeks to serve as a source of inspiration to investors.

The blue economy encompasses all economic activities based on or related to the ocean, seas and coasts. This includes a large variety of economic sectors such as fisheries and aquaculture, coastal tourism, shipping, ports, and marine renewable energy.

The EU blue economy is in good shape, with emerging sectors like ocean energy, blue biotechnology, and desalination leading the way and creating new business opportunities. The latest data released by Eurostat and referring to 2021, show that the EU blue economy at large

- employs 3.6 million people (+17% compared to 2020);
- has a turnover of nearly €624 billion (+ 21% compared to 2020);
- accounts for €171 billion in Gross Value Added (+35% compared to 2020).

Key trends

The report highlights the evolution of the blue economy sectors since 2009, with a special focus on key socio-economic trends between 2020 and 2021. Despite the negative impact of the COVID-19 pandemic and the spike in energy prices caused by the unprovoked Russian invasion of Ukraine, most of the EU blue economy sectors improved their economic performance, except for coastal tourism, still in recovery in 2021.

In terms of employment, coastal tourism was also by far the largest blue economy sector (54%). But, it was also the most affected sector by the COVID19 crisis and did not fully recover in 2021.

Maritime transport is the second largest blue economy sector in turnover, generating nearly a quarter of the EU blue economy GVA in 2021. The marine renewable energy sector (mainly offshore wind) also experienced growing trends, with gross profits estimated at €2.4 billion and GVA of €3.3 billion in 2021, marking a 45% increase compared to 2020.

The marine living resources sector (fisheries, aquaculture, processing and distribution of fish products), saw a 24% rise compared to 2020, with gross profits valued at €9.7 billion in 2021.

Download the full report in pdf format at <https://bit.ly/3XelvRH>.

ABS Port State Control Annual Report 2023

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. Having a checklist goes a long way.

The ABS Report on Port State Control (PSC) provides information to Owners/Managers on deficiencies identified during inspections carried out by the various PSC regimes globally during year 2023.

Download the report at <https://bit.ly/3X9DnMa>.





IG P&I Clubs Sustainability report: Advancing maritime decarbonisation

The International Group of P&I Clubs has published its Sustainability report, following the first one issued in 2022. This report underscores the Group's commitment to advancing the maritime industry's transition towards low and zero-carbon fuels through collaborative pooling arrangements and robust insurance frameworks.

Pooling of vessels using alternative fuels

The Group recognises the role that its claims sharing (pooling) arrangements and reinsurance programme can play in facilitating the industry's transition to low or zero-carbon fuels. The Group Clubs have historically sought to meet and support the needs of shipowners by adapting to changing demands and adopting an inclusive approach to cover within the mutual system. The same approach to pooling will apply to any changing insurance needs from low or zero-carbon fuels.

Supporting shipping's role in global decarbonisation

Because the Group Clubs insure shipowners against liabilities arising from cargo carried on board ships, the Group has had experience insuring liabilities arising from alternative fuels to the extent that such fuels have been carried as cargoes for some time, e.g., carriage of ammonia for the agriculture industry. In order to decarbonise the global economy, it will be necessary for new low or zero-carbon fuels and technologies (or the ingredients required to make them) to be transported in large volumes over long distances.

Shipping will have an important role to play in supporting the transition through the safe and efficient transportation of such fuels and technologies from source to market. This role is in turn supported by the Group Clubs through the provision of high levels of liability cover. This gives shipowners and operators confidence to invest in new technologies and infrastructure and provides governments and businesses around the world is confidence that there is a robust insurance regime, ready to respond if required.

Building legal infrastructure for sustainable fuels

The journey to 'net zero' will require more than simply developing the technology for ship propulsion using alternative fuels. There will need to be the technical, logistical and legal infrastructure in place internationally to support shipowners who invest in ships operating using alternative fuels. This will take time and planning plus access to sufficient fuels to support the transition.

Download the report at <https://bit.ly/3BdEV0b>.

Maritime Battery Forum joint whitepaper published

CIMAC and the Maritime Battery Forum have published a joint white paper on the environmental impact of batteries in deep-sea shipping. The paper demonstrates that there is still potential for battery usage within the industry to support decarbonization. While it is evident that a fully battery-powered, zero-emission application is not available, battery usage may also be enhanced by the rise of alternative fuels, depending on needs based on changing design and sizing choices.

Key findings

- Potential for emission reduction: Batteries on ocean-going cargo ships can reduce emissions, but the industry is still in early stages of adoption, with only 18 ships currently equipped with batteries.
- Diverse performance: Battery performance varies across different ship types, operational profiles, and propulsion configurations, indicating a need for more optimized use and tailored solutions.
- Limited shore power infrastructure: The slow adoption of plug-in hybrid ships is partly due to the limited availability of shore power installations and standardized charging systems.
- Environmental benefits of grid charging: Charging batteries from the grid can have a low environmental impact, depending on the local electricity mix. Expanding shore power installations and standardizing charging systems could enhance the benefits of onboard batteries and accelerate their adoption.
- Integration challenges: Integrating batteries into newbuild ships is currently easier than retrofitting existing ships. However, finding smart, easy, and affordable retrofitting solutions is crucial for meeting IMO emission reduction goals.
- Technological and economic feasibility: Various application schemes for batteries are technically and economically feasible today. Improvements in battery technology and smart integration methods will likely increase the number of battery-equipped ships.
- Impact of alternative fuels: Adoption of alternative fuels could increase the number of ships with batteries, although it may affect battery design and sizing to align with the requirements of different fuel systems.

Download the whitepaper at <https://bit.ly/3z0mCLr>.

NEW marine reports and guides



Maritime Anti Corruption Network 2023 Annual Report

Maritime Anti Corruption Network (MACN) provides a unique global forum for businesses to contribute to the elimination of corrupt practices in the maritime industry. MACN is composed of vessel-owning companies and others in the maritime industry, including cargo owners and service providers. The organisation

was established in 2011 as an industry-led collective action initiative, with a goal of stamping out corruption in the maritime industry and promoting inclusive trade.

With over 200 companies across the maritime industry, making up over 50% of global tonnage, MACN has become one of the preeminent examples of an industry-led collective action network taking tangible steps to eliminate corruption across the supply chain. By working in partnership with the industry, governments, and civil society MACN has been successful in addressing corruption risks through country-specific actions in locations as diverse as Nigeria, Indonesia, Egypt, India, Ukraine, and Argentina.

MACN's initiatives have been welcomed by stakeholders and have resulted in measurable outcomes such as the removal of trade barriers, strengthened governance frameworks, and substantially reduced corruption risks in maritime trade.

MACN's anonymous incident reporting system enables maritime players to submit reports on corrupt demands they have faced during port operations. The outputs of the anonymous incident reporting allow members to learn from each other to potentially avoid similar incidents in their own operations. The use of the mechanism has significantly increased over the years. To date, MACN has collected more than 60,000 reports of corrupt demands globally.

MACN uses this data to analyze trends in the frequency of incidents, allowing MACN to target collective action efforts and engage with governments. It has been a successful way to facilitate constructive dialogue in meetings with governments and other stakeholders. Reporting is anonymous and non-attributable: It is not possible for anyone to identify who has submitted a report, and the report does not include details that would identify ships or individuals.

Download the report at <https://bit.ly/47gC6rt>.

ICS Maritime Barometer Report 2023-2024 published

The ICS Maritime Barometer Report 2023-2024, identifies that the maritime industry's future, hinges on navigating political instability, cyber threats, and evolving decarbonization demands, with clear regulations and strong collaboration between industry, governments, and regulators being critical to maintaining progress amid growing complexity and uncertainty.

Political instability overtakes pandemic as leading risk in maritime sector

The maritime risk landscape is increasingly shaped by key factors that act as risk multipliers, influencing how industry leaders perceive and respond to various challenges. In recent years, the dominant risk has shifted from the pandemic, which defined the 2020-2021 period, to political instability, now the leading concern. This change has triggered a rise in protectionism and eroded confidence in critical areas such as public funding, traditional shipping routes, and the progress of decarbonization efforts. As a result, fossil fuels are expected to maintain their dominance in maritime energy for the foreseeable future.

Cyber and physical attacks surge amid growing geopolitical uncertainty

This political instability is also tied to the rise in cyber attacks by both state-sponsored and non-state actors, which have increasingly threatened maritime's expanding digital infrastructure. These cyber threats now rank as the second highest risk for the industry this year.

Additionally, geopolitical upheaval has brought malicious physical attacks into the forefront of concerns for the first time, surpassing financial instability.

Geoeconomic confrontation and the accompanying protectionism have also emerged as key drivers behind the trends of nearshoring and friendshoring among businesses.



Download the full report at <https://bit.ly/3V0ekL7>.

Alternative Fuel Pathways and Timelines

As part of their 2024 Outlook, Beyond the Horizon: Carbon Neutral Pathways and Transformational Technologies, ABS developed the Greenhouse Gas (GHG) Abatement Cost (GAC) index to statistically assess the trade-offs between cost and GHG emission savings, specifically focusing on the well-to-wake approach. Based on the GAC analysis of the three developed scenarios (e-fuels high uptake, bio-fuels high uptake and blue fuels high uptake), a projected ranking of the different fuel pathways' cost-effectiveness in 2050 was calculated. According to ABS' GAC methodology and current fuel prices, biofuels and blue fuels will have a lower carbon abatement cost compared to others.

- The majority of the e-fuel production paths are currently moving from the demonstration stage to system commissioning, with full commercial operation expected in the mid-2030s.
- Biofuel pathways are ahead of e-fuels in terms of technology readiness level (TRL), and they are projected to reach full commercial operation stage in the early 2030s.
- Blue fuel pathways are expected to reach fully commercial TRL before e-fuels. Blue fuel pathways depend on the maturity level of the carbon value chain. While land-based carbon capture and storage technologies have been commercialized, their cost for large-scale blue hydrogen and ammonia production are challenging for full maturity development.



To learn more about the fuel pathways and timelines to implementation to meet the IMO's emissions reduction targets, download your copy of Beyond the Horizon: Carbon Neutral Pathways and Transformational Technologies online in eReader format at <https://bit.ly/47pVYbA> with an option to download the pdf version.



Assessing the risks and liabilities of hydrogen fuel

As the maritime industry accelerates its pursuit of sustainable energy solutions, hydrogen has garnered significant attention as a potential alternative fuel, particularly in its compressed and liquefied forms (LH2).

The International Tanker Owners Pollution Federation (ITOPF), as part of the International Group of P&I Clubs' Alternative Fuels Working Group, has undertaken the task of examining the implications of using hydrogen as a marine fuel.

According to the report titled "Fate, behavior and potential liabilities arising from a spill of hydrogen into the marine environment" the use of hydrogen as a fuel for shipping can be used in multiple states, such as liquefied or compressed hydrogen within internal combustion engines or using LH2 within fuel cells. Due to the economic and technical barriers facing hydrogen technology and infrastructure development, the industry is immature when compared to other marine alternative fuels and therefore these technologies may develop in the future, with one format potentially being more technically viable than others.

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Claims from clean-up and preventive measures are expected to arise from different measures, such as source control, fire-fighting measures, monitoring via expert modelling or sensors mounted on UAVs/ROVs and possible bunker fuel removal. Traditional clean-up measures will not be possible and therefore, claims from a protracted spill clean-up operation will not arise. However, personal injury and loss of life claims may be significant. Risks from fire, explosions, cryogenic damage and asphyxiating vapours could lead to death or life-altering injuries to crew, passengers, nearby operators and members of the public.

Download the report at <https://bit.ly/3TlrjX1>.

NEW marine reports and guides



White paper highlights urgent need for data standardisation in offshore sector

Opsealog has published a new white paper that underscores the urgent need for data standardisation across the sector.

Analysing ongoing industry initiatives in the marine offshore sector, the report found that data standards can play a central role beyond reporting requirements under IMO and EU regulations and will be essential to maximise the value delivered by onboard digitalisation to boost operational and environmental performance.

Titled "Creating Value from Data Standardisation", the white paper calls for the development and implementation of data standards as a much-needed revolution, comparable to how the shipping container transformed cargo handling in the 1950s. It lays out how this change is already under way through industry initiatives such as the Smart Maritime Council and Energy LEAP, which have both made strides in creating standardised datasets for vessel reporting and emissions tracking, respectively.

The report highlights how a more standardised data environment is an opportunity to bring about a new level of transparency between owners and charterers that will change the bidding process, support the monitoring of contractual obligations, and improve conflict resolution. Furthermore, as companies face increasing pressure to report their environmental, social, and governance (ESG) performance, unified reporting standards will provide the tools needed to meet these demands efficiently and effectively.

Download the white paper at <https://bit.ly/3TPT3U0>.

Canal & River Trust 2023/24 Annual Report & Accounts published

It was a year of record spend on charitable activity, but one that saw the continued effect of climate change taking its toll on the Trust's ageing canal infrastructure. The waterways movement came together to raise the profile of the considerable benefits to society delivered by the Trust and its historic canal network following an announcement about future funding cuts by government.

Work to repair and strengthen the resilience of the canal network during the year included almost 450 planned engineering projects, at a cost of around £70 million. Delivering statutory safety measures at the charity's large reservoirs, critical for navigation and in protecting the communities around them, continued to dominate expenditure, with over £27 million spent on resilience works at 19 of the Trust's 71 large reservoirs.

Reflecting the continued impact of climate change on the ageing canal network, the Report details how, following prolonged hot dry weather the summer before, a succession of winter storms caused significant damage, with an aggregated impact of £9 million in emergency works.

The rising cost of looking after the Trust's 2,000-mile canal network is reported, with two years of high inflation significantly pushing up many of the Trust's maintenance costs. This underscores the challenge presented by the Government grant settlement, announced in July 2023, with steep funding cuts to be applied from 2027. Coming after a six-year period when the grant has been frozen (and hence its value has already fallen by over 30% in real terms), the Trust reports that this presents a very challenging prospect, putting the future of the canal network in jeopardy.

Richard Parry, chief executive of the Canal & River Trust, comments: "A key part of the Canal & River Trust's long-term plan is to continue to reduce dependency on government funding by further developing and growing alternative sources of income. During the year ended 31 March 2024, our commercial income was £97.1m, 12.2% higher than in the prior year. It now represents 41.0% of our total income (2022/23: 38.1%)."

Click to download the accounts at <https://bit.ly/4eFMbRI>.



2024: The good, the bad and the indifferent



By **Mike Schwarz**, IIMS
Chief Executive Officer

“Business life is not a matter of holding good cards always, but sometimes is a case of playing a poor hand well.”

Overview

The year 2024 has proved to be something of a challenge, a strange concoction of highs and lows. Good business planning is essential, but it has been a year that took me by surprise, not that most people outside the IIMS head office will have noticed, I hope. Any thoughts I might have had of this being a celebratory year - an easy ride as one might say - given it was the tenth anniversary of my arrival at IIMS, were dashed and swept away soon into the year.

IIMS has had a very settled and committed team for six years, but this

started to unravel with a number of departures and the pattern continued until mid-year. There were various reasons for this exodus, but it meant that much of the first half of the year has been spent recruiting, which as you may know can be a time-consuming and sometimes thankless task! As a consequence, the dynamics of the business have changed, which is by no means a bad thing necessarily. New faces bring fresh vitality, new ideas and see things differently to their predecessors. Ultimately any business is a reflection of its people and is shaped by them. We can have the best products and services, but until AI fully takes over and people are no longer needed(!), they remain the essential ingredient.

As well as replacing departing staff, two new positions have been created to cater for the changing needs of the business, bringing our team to 12 people - yet more recruiting! Firstly, Frances Birkett joined the Institute as Marketing & Publishing Executive, and she has taken some of the essential workload off my shoulders. It means we have been able to further increase our marketing reach.

Our Certifying Authority has experienced rapid growth in the past year, especially in the area of tonnage processing. Erin Kelsey has joined IIMS to handle that work, but also to understudy David Parsons in his work as Certifying Authority administrator. More on that later.



Key achievements

Despite these aforementioned challenges, it has been business as usual (even if it did not seem like it sometimes) and there have been some notable highs for the business in 2024. I would select two specific examples that have really stood out for me.

Immediate Past President, Peter Broad, drove the agenda towards gaining ISO 9001 certification. It is fair to say there was some initial skepticism and push back from others on the management board. Gaining certification proved to be no easy task and time consuming. The scope we chose was 'Training services in marine surveying'. My colleague, Camella Robertson, embraced the project and worked tirelessly to ensure a successful audit. It was with real pride (following that external DNV audit) that we were invited to their HQ in London to receive our certificate. The next challenge is to ensure we get through next year's audit!

The other milestone was achieved in a completely different area of the business, proving just how complex IIMS has become over the years with many strands to it. In the summer, the Marine Surveying Academy (a division of IIMS) received its 1,000th application for eCMID Accredited Vessel Inspector certification since launch in 2015. That felt like a remarkable achievement. It took me back to the time in mid-2014, when I sat in IMCAs (International Marine Contractors Association), London head office. The challenge the industry faced, they said, was that no one had a clue who was boarding complex offshore vessels to carry out audits and inspections and what their qualifications were (if any). This felt wrong and clearly was. So, the process we developed was to objectively assess and match experience and competency against certain vessel types. The eCMID AVI scheme has made a huge difference in the offshore inspection arena and many key players in the sector will not accept an inspector onboard unless they carry the eCMID card. This scheme remains something I am hugely proud to have been instrumental in helping to develop and deliver.

Membership

New membership applications have been steady across the year, split equally between small craft and commercial shipping, with something of a spurt as we entered the final quarter. Of interest to me increasingly is reading the box where applicants tell us how they heard about IIMS and what prompted their application. Word of mouth remains a strong reason, or recommended by someone in their peer group, but increasingly the sources are far and wide with LinkedIn being mentioned, internet search and one even saying that his insurer had recommended he apply!

Capt Chris Kelly FIIMS (Chair of the Professional Assessment Committee) and his team do a detailed and thorough review of each application. Not all applicants are offered membership, some do not achieve the grade they applied for, and many are not granted all the specialisations they seek due to lack of objective evidence being supplied.

Mentoring remains a key challenge and one that IIMS has yet to successfully resolve. But new impetus is underway to tackle this issue and much of the latter part of 2024 has been assessing how best to do this. Watch this space for more news coming soon.

As I reflect on the past decade, I realise I used to think that growing membership was the be all and end all. And indeed, over that time the Institute has grown its membership base strongly. But all membership organisations (and not just those in the maritime sector) have faced challenges gaining new members and then holding on to them. Even my tennis club has had a similar experience trying to recruit new players. The membership retention at IIMS is high, in excess of 95%. But my thinking has changed over time. Yes, we encourage new members and always want more, but increasingly I am motivated knowing that IIMS can raise

Rachel Moores was due to return from maternity leave in the summer, but decided not to come back, only to have a change of heart. She is now providing valuable support to Membership Secretary, Camella Robertson. Our Management Accountant, Jen Argent, departed to be replaced by Alison Hare, but it proved not to the right role for her. Jen Argent has now returned!

And Sharon Holland and Elly Bryant - both highly valued and long-standing members of the team, have been promoted to more responsible positions.

It has certainly been an eventful year!

the standard of marine surveying across the surveying profession, no matter their allegiance to any particular membership organisation. The fact is most marine surveyors are not a member of any! It might be a fanciful goal, but one that I believe in and in which IIMS is increasingly playing its part.

Education & Professional Qualifications

Under the direction of Vicki Loizides, we made some significant changes this year, moving the student intake from a set quarterly date to an on-demand basis. Our student intake numbers are slightly down year on year, so it is hard to know if this has played a part in that or not. We will continue to monitor the situation.

For various reasons, we withdrew our marine corrosion professional qualification following a review. This has now been completely reviewed and reauthored. Expect to see this essential qualification brought back to market on an on-demand basis in 2025.

The IIMS Professional Qualifications are currently being studied on a distance learning basis by over 200 students around the world.

One great success this year has been the roll out of the IIMS Professional Qualification in Commercial Shipping in Bangladesh. Following my visit to the country last year where I met the Director General Shipping, he was keen to put his weight behind our initiative to train locally. The result is we have 11 students enrolled locally and the education programme is being delivered on a hybrid basis.

Training initiatives

There has been no let up in the volume and variety of training offered and delivered across the year. More attend as online delegates these days rather than in-person, but that is in keeping with the modern world. The network opportunities offered by coming in-person and spending time with other surveyors cannot be matched, however.

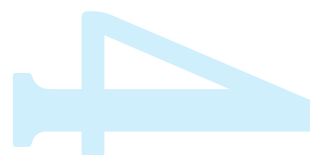
The first half of the year was exceedingly busy. After a lengthy absence of five years, I returned to Ireland with John Walker FIIMS and Geoff Waddington HonFIIMS accompanying me to deliver a two-day mix of theory and practical surveyor training to a larger than expected, enthusiastic audience. The Guinness was exceptionally good too, as it always is in Ireland. Our annual conference in Baltimore was once again well attended and attracted some first-class speakers.

Although only a small group, our UK inland waterways surveyors met for what proved to be something of a key gathering given the challenges that sector is currently facing.

Paul Homer HonFIIMS and I have continued to deliver quarterly online writing report writing seminars. Audiences have exceeded forty plus delegates at times and the content is well received.

The annual small craft training event in Palma, Mallorca also proved to be a great success with a diverse range of topics (some controversial) being covered, as was a later visit back to the island to deliver a one-day programme entitled *'An introduction to Marine Surveying'* to entice and capture the next generation of surveyors.

In recent weeks we have concluded our autumn programme which has taken me to Scotland for our popular two-day annual event. The other training initiative of note to report was our second residential practical surveying course, held at





the Boat Building Academy, Lyme Regis. This year's course was full. Delegates had the opportunity to forensically survey one boat a day (three in total) under the expert guidance of three highly experienced IIMS members. On the final day, I spent some time giving a lecture on how to prepare and present a good quality report before the delegates headed home to complete their writing task. Bridging the gap between theoretical learning and actually doing the job remains one of the key challenges and this course goes a long way in helping to achieve that goal.

We are now doing final testing of our soon-to-be-launched on-demand training portal. This is the modern way for professionals in all industries to learn, gain new knowledge and develop new skills. As they say, "every day is a school day" and continuing professional development should be important for all of us. Very soon marine surveyors will have their own training portal where they can log in at their convenience and choose some training to suit their needs. We are now starting to build the portal content. Watch out for notification of this development and launch.

Certifying Authority

One of the year's bright spots has been the performance of the IIMS Certifying Authority (CA) as I mentioned earlier. David Parsons does a great job leading the department, ably supported by Erin Kelsey. Further evidence of this came at our recent external audit by the UK MCA, who were only able to unearth just a handful of minor findings.

We remain a small CA by comparison to others, but modest growth is occurring, and we pride ourselves on the quality service and quick turnaround we provide, both to our coding examiners and vessel owners. The same growth cannot be said for tonnages, which has spurred on and we have processed many hundreds during the year.

A number of new coding examiners and tonnage measurers have been assessed and approved, some coming to us from rival CAs. A new MCA contract has been mooted for some considerable time, which will impose a greater expectation on each CA to ensure coding examiners are effectively trained and this will be monitored at external audit. Finally, the contract is available and ready for signing.

We have continued to sit as part of the MCAs technical working group which led to the launch of the Workboat 3 code last December. It has taken time for this regulation to bed in and there have been regular interpretation meetings since with the MCA. Alongside this is the new Sport & Pleasure code which would have been out for consultation earlier this year had it not been for the UK general election. The proposed code is expected for consultation imminently and likely to hit the statute books in mid-2025. It will be a significant change, imposing new regulations and will require us to develop and deliver some quality training to bring code examiners up to speed with the new requirements.

AGM, Conference & Dinner

This year's AGM, held at Southampton in June, saw the changing of the guard. After completing his two-year term, Peter Broad stepped down, passing the IIMS Presidency to Capt Ruchin Dayal. Mike Proudlove has moved up to become Vice President with David Pestridge becoming Deputy Vice President.

Most who attended the AGM did so in an online capacity. It is becoming increasingly tough to put on an annual conference and dinner for the very reason mentioned above. Sometimes it is important to accept that things have changed. Therefore, moving ahead, IIMS is unlikely to be holding a

formal dinner anytime soon. Next year's AGM will be broadcast from our offices in June. And our big ship members have mooted a one-day conference to be held in central London. Watch for more details.

Business performance

Despite a churn of staff, the Institute has performed satisfactorily, recording a modest profit for the year. Over recent years we have built up strong financial reserves to withstand poor trading years and the liquidity in the business remains solid.

The management board voted on a recommendation presented earlier in the year to close the Marine Surveying Academy Ltd (MSA) and agreed unanimously to back the plan. It made no sense to run two companies incurring two sets of accounting and auditing fees. The MSA products have been seamlessly transferred to IIMS and going forward it will be known as a division of the Institute to the outside wider world. MSA Ltd will live on as a non-trading company under my directorship and we will file a simple nil return annually. Having spent a decade establishing the brand, it was decided to keep it to ensure a competitor could not muscle in and acquire the trading name.

Streamlining some of the processes of the business has been an important activity this year, which has taken place quietly behind the scenes. Over the years, we have done a lot in integrating technology to make the business more efficient. The biggest bit of work we have done, for example, is to automate the annual renewals of the eCMID accreditation scheme and, so far so good.

The Report Magazine & Handy Guides

Editing the Report Magazine remains a privilege and one of the most enjoyable aspects of my role. This year we have covered a number of topical issues such as lithium-ion battery technology and the onslaught of AI technology. The content has been far reaching and I am grateful to those who have contributed.

There is never any shortage of material to publish in the magazine but getting the right editorial mix between industry news and comment, entwined with technical and opinion articles is a knack. I am most grateful when people take the time to tell me what a first-class publication it is and we as an Institute should be proud of it.

This year we have been averaging over 140 pages per edition and I am often asked how many copies are read. That is a tricky question and one I cannot answer accurately, particularly as the magazine is predominantly available electronically. But what I do know is that downloads we can track using our various reporting software suggest in excess of 10,000 copies each quarter are accessed.

I must once again single out Craig Williams, our in-house graphic designer. He does an amazing design job on each publication and our finished product is as good, if not better, than some of the publications you will find on the newsstands!

Our range of handy guides continues to sell well in both pdf and paperback formats. We have launched a couple of new publications this year and more are planned for 2025.





Communications strategy

IIMS has continued to build its communication strategy and to grow its various databases and audiences. The days of just disseminating content to Institute members have long since passed. These days we also number senior P&I Club executives, marine underwriters and insurers, brokers, vessel operators and captains amongst our audience.

The News Bulletins, which are rich in content, have become a mainstay of our monthly publishing output. Bearing in mind IIMS is an organisation with 1,000 members, it is not uncommon for the bulletin to be opened by more than 10,000 recipients and we average nearly 9,000 opens per month.

A similar trend has emerged with the Mid Month Marine Communiqué, which is now almost 2 years old. An email with links to essential information including podcasts, technical articles, marine events and newsletters, it is achieving on average 6,500 opens monthly.

The other publication I must mention is the annual Safety & Loss Prevention Briefings Compendium. In the coming weeks we will publish Edition IV. It is essentially a round up - and a shocking one too - of some of the tragic maritime events that have shaped the year. The most recent edition has been downloaded and read by thousands of people. However, given the sheer number of accidents and incidents (many of which go unreported), the reality and statistics suggest that things are not improving, despite the best efforts of all of us in the industry.

Download last year's compendium at <https://bit.ly/48svS7b>.

Podcasts

Earlier in the year, I started playing around with podcasts as a medium, a format that seems to have become increasingly popular in the world we live in today. It turned out we already had the software and producing a podcast was actually remarkably simple. The real skill lies in preparing the script for the spoken word, which Frances seems to have mastered!

Based on a comment made by a member at a training event in Scotland, we made the decision to separate small craft from commercial shipping news. The result is two podcasts each month typically running about 25 minutes each. We are now seeing around 3,000 listens a month and it is growing.



Below the line digital marketing

You will never see IIMS advertising in print media and that has been the case for many years. Our marketing expenditure is meticulously planned and implemented by digital specialists, Vertical Leap. Their targeting is precise and their tracking stats remarkable. Last year IIMS achieved around 1 million impressions from its planned social media campaigns, which are used to drive interest in membership and studying for one of the Institute's Professional Qualifications. Honestly, I struggle to understand some of the jargon and advanced techniques they use, but what I do know is how effect they are.

Websites & Social Media

This year, IIMS has made a big investment in rebranding and redesigning its regional websites which are supported and underpinned by the mountain of content available on the main site at iims.org.uk. Rosie Burton at IIMS HQ has been heavily involved in this work together with our outsourced web developer, Steve Welsh. Two new sites have been added for the US and Asia regions.

The principle aims of the regional sites are to promote the work and objectives of the Institute, to provide local maritime related news and to offer an enhanced local surveyor search facility. The eight regional sites have all been well optimized for search engines and are achieving high rankings in Google search.

IIMS continues to be active on social media platforms, predominantly LinkedIn. Followers of the IIMS LinkedIn channel have passed the 10,000 mark this year. A new LinkedIn monthly subscriber newsletter (open to all) was launched earlier this year and has attracted over 3,000 subscribers.

Marine Surveying Academy

The enforced staff changes this year have presented great opportunities for Elly Bryant and Sharon Holland, both of whom have been with the business for many years. Elly has been promoted and is now running and managing the successful eCMID Accredited Vessel Inspector scheme. More details at <https://bit.ly/3Ykv7t8>.

Sharon also took on a new role managing a range of specialist courses we run. She is responsible for organising and arranging a quarterly series of events for our eCMID community of inspectors which are usually full. New entrants are coming into the scheme all the time and there is a mandatory requirement to attend training.

In addition, Sharon has been instrumental in planning and overseeing our latest training offering, the Yacht Coatings Technical Insight course or YCTI for short. Following a couple of pilot courses, we successfully rolled this programme out earlier in the year and have conducted six courses at various European locations. The aim of the YCTI course is to give those who need to know more about coatings projects (and not just the technical paint information), without turning them into experts. The feedback we have had has been plentiful, strong and hugely positive. More information at <https://bit.ly/3ZzHOR3>.

It is clear that there are major issues with coatings projects the world over and we are pleased to be able to play an important role in educating those who need more knowledge through an expert tutor team of the highest quality.

And finally, my personal thanks...

As always I must reference the many people (apart from my colleagues at IIMS HQ) who keep the wheels turning smoothly – I can't possibly name check them all.

We have a number of committees - the Certifying Authority committee, the Education committee and the Professional Assessment committee to say nothing of additional committees at branches and in the regions. All do invaluable work. Thank you. Thanks also to our Regional Directors and in country reps, all of whom do great work in spreading the word to their networks locally.

I am grateful to the company's executive directors and the wider management board for their ongoing commitment and support, especially during 2024 which has been a turbulent year.

And I would add that we are always looking to add new faces to our various committees as part of our succession planning. If this is something that interests you, I'd be pleased to hear from you.

And finally, a big thank you to our members because you make it all possible and what we do worthwhile - and without you we are nothing!

So, there you have it, a brief and honest overview of life at IIMS this past year. Yes, we are a complex business serving many areas of the maritime sector.

It only remains for me to wish you good luck for 2025.

Mike Schwarz
Chief Executive Officer



Small craft sector must inform and educate customers of dangers to avoid passenger injury says MAIB

Poor posture, inadequate seating and a host of other factors can lead to life-changing injuries on RIBs as passenger safety is pulled sharply into focus by recent events in the small craft sector. If the sector's reputation is to survive accidents like Seadogz, owners and operators need to start owning best practice, controlling the risks and demonstrating that their trips are safe, says MAIB (Marine Accident Investigation Branch).

When you are trying to promote the fun element of an activity, telling your customers that it can be hazardous might appear counterproductive. This could explain the reluctance of the 'small-craft passenger/experience ride' industry to acknowledge and take action on the findings from recent accident investigations.

However, until the lessons are acknowledged and appropriate actions taken, passengers will continue to suffer life-changing injuries and possibly death as the MAIB investigation report into the RIB Seadogz accident illustrates. If this sounds like a hard-hitting message, it is meant to be.

MAIB has investigated numerous accidents involving RIBs over recent years, many of which are referred to in this article. While the early investigations focused on the usual crop of collisions and groundings, it was not until the investigation into the heavy landing of the RIB Celtic Pioneer in 2008 that passenger vulnerability to injury came into focus.

That investigation report drew on recent academic and practical research to highlight the importance of good seating, posture and handholds to help mitigate against spinal injuries. The particularly vulnerable part of the spine was found to be the lower lumbar region (L1 to L3), which could suffer wedge compression fractures, but other spinal injuries were not uncommon.

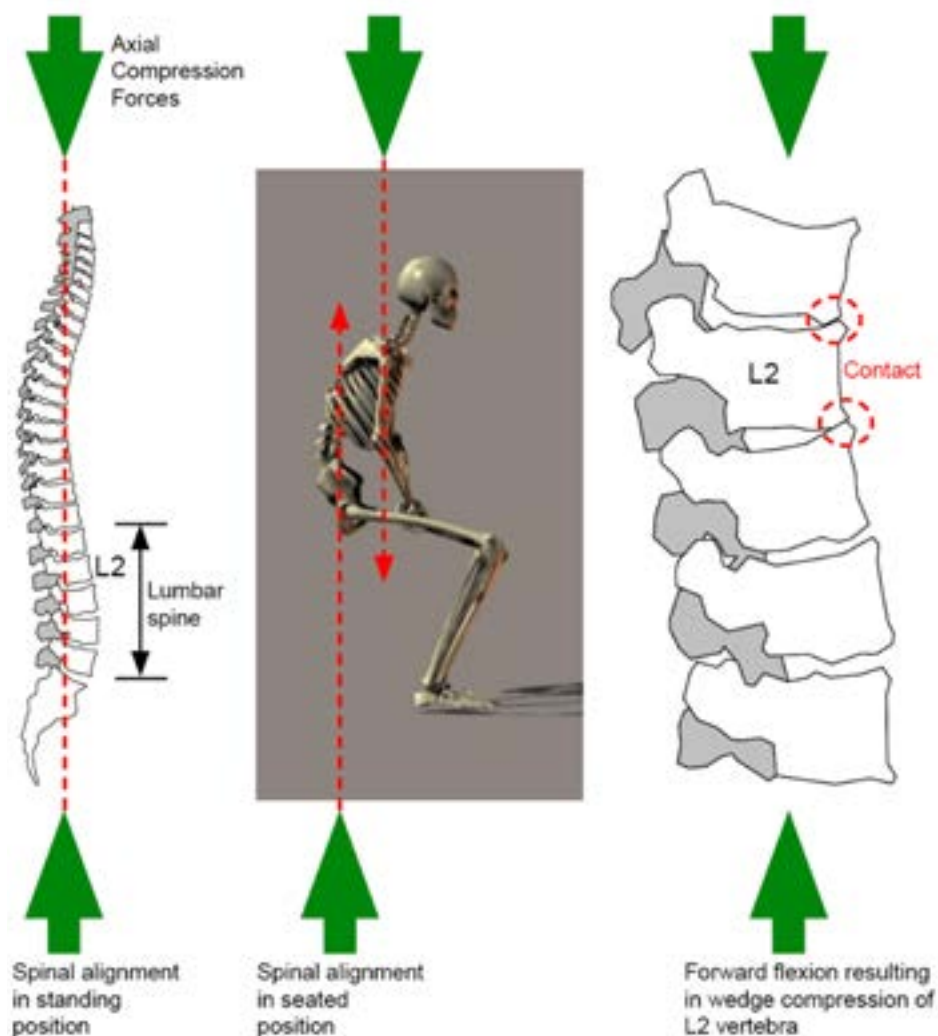


Image courtesy of ST Research

Fortunately, passengers suffering less damaging injuries often walked off the RIB with a sore back, but if the pain persisted they would see their doctor a few days later, by then the link between the injury mechanism (the RIB ride) and the injury had been lost. Consequently, MAIB was only aware of those accidents where the emergency services were called to extract the injured party. This resulted in a skewed picture of the actual injury rate.

Nonetheless, there were still sufficient accidents being reported for the branch to heavily warn against the consequences of poor posture and inadequate seating.



Image courtesy of ST Research

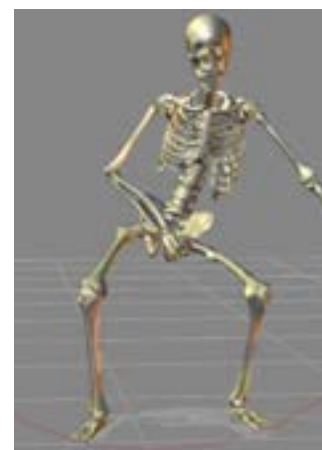


Image courtesy of ST Research

Unfortunately, the messages were not getting through and a short while later a person travelling to work on the River Thames suffered a very serious back injury when the RIB they were travelling on crossed the wake of another vessel at about 30 knots. The worker was sitting on top of a locker with no padding or handholds and had their rucksack across their chest.



Image courtesy MAIB

The combination of the hard seat and poor posture resulted in the victim suffering anterior wedge fractures of the first and third lumbar vertebrae (L1 and L3). The victim was fitted with an external body brace in hospital and remained off work for more than four months while recovering, though was still receiving physiotherapy treatment eight months after the accident.

In response to MAIB's recommendations, the industry produced two voluntary codes of practice for RIB operators, but initial take-up was patchy.

The collision between Osprey and Osprey II that left a passenger with life-changing injuries highlighted how vulnerable passengers in small boats were to side impact injuries. Accidents involving small race boats had shown how easily one boat hitting the other side-on could ride up and over it, and that the passengers in the receiving boat had little or no protection. RIBs were particularly vulnerable as the shape of the tubes helped lift the bow of the colliding boat so it crossed the seating area, and any passengers seated on the tubes could take the full force of the impact. Not only was it impossible to maintain a good posture when seated on a tube, but the added risks from side impact were considered too high and MAIB recommended that

when the Maritime and Coastguard Agency (MCA) updated the small commercial craft codes it included a requirement that every passenger in a commercially operated passenger-carrying RIB had a suitable seat.

The Osprey RIBs accident also highlighted the hazards of fast/high-speed craft operating close to each other where, unless their manoeuvres were well coordinated, the risk of collision could be high. Although the two RIBs usually passed each other during a scheduled high-speed turn, on the day of the accident their start positions were reversed. As the RIBs approached each other head-on, the skippers were confused as to whether they should pass 'as normal' or follow the COLREGs and each alter to starboard. Although both skippers reduced speed the RIBs collided, crushing a passenger against the console. Had the risk of collision during the turn been considered before the trip, risk mitigation measures could have been planned.

Head-on impact risks for passengers on RIBs

On 22 August 2020, the commercially operated RIB Seadogz hit a navigation buoy at high speed in Southampton Water. The skipper and the 11 passengers suffered impact injuries. Two passengers were thrown into the water and 15-year-old Emily Lewis, who was sitting in the middle of the bench seat, sustained fatal injuries.

MAIB's investigation concluded that the skipper did not see the buoy in sufficient time to avoid it as he had lost positional awareness, most likely due to the high mental workload of operating the RIB alone and at high speed. Furthermore, the seating and handholds on the RIB afforded little protection to the passengers during rapid deceleration, the operator's safety management procedures were cursory and generic, and the current regulations for such operations needed updating. Other safety issues were also identified. Two of the passengers were ejected into the water, one of whom started to panic as their lifejacket rode up on inflation as it had not been fitted properly. From the helm position, the bow-up trim of the RIB and the passengers' heads combined to limit the skipper's forward visibility.

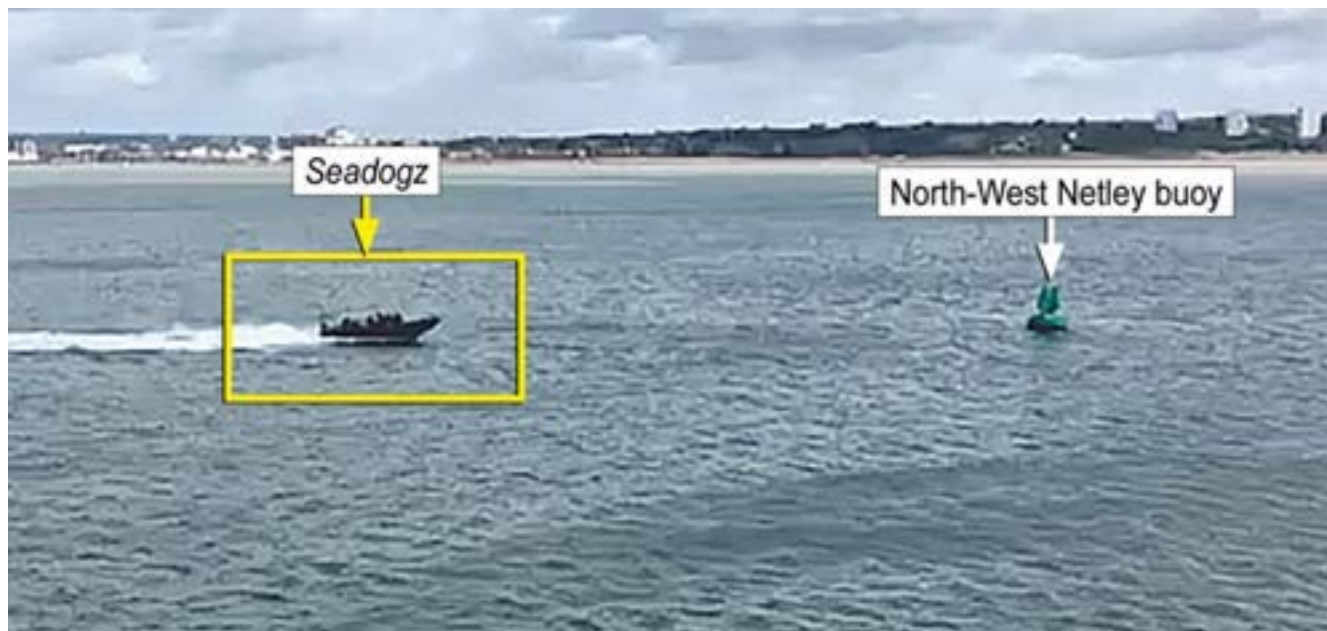


Image courtesy: H Tuck

RIB ride fell short of 'good practice'

Most worrying, the conduct of the trip fell short of 'good practice' in many ways. The tight figure-of-eight turns carried out at speed introduced the risk of a 'hook'; the RIB was being jumped over wakes, and the frequent close passes to the large navigation buoys desensitised the passengers to the risk of collision. When Seadogz was heading directly towards North-West Netley lateral buoy it is likely that most of the passengers expected the RIB to turn away at the last minute. When that did not happen, it was too late to warn the skipper of the impending collision.

In response to the accident, the Royal Yachting Association (RYA) has started to update the Passenger Safety on Commercial High Speed Craft and Experience Rides – a Voluntary Code of Practice, and MAIB has, again, made a number of recommendations.

The investigation report recommended that the MCA introduce updated guidance (the Sport and Pleasure Vessel Code) as soon as possible. However, noting the risks to passengers from vertical impacts and side impacts already identified in previous investigations, MAIB also recommended that the MCA carry out a full anthropometric assessment of the risks to passengers travelling in small high-speed craft, the results from which

should be reflected in the new code as soon as possible. The port and harbour associations were also recommended to provide guidance to harbour authorities on how they should oversee the activities of small commercial craft operating in harbour areas.

Operators need to understand and apply lessons for passenger safety on RIBs

Initial feedback is that many operators seem to be distancing themselves from the Seadogz accident by saying that the lessons do not apply to their operation: Sea safaris and wildlife sightseeing trips are not high-speed/thrill rides, 'so we can carry on as normal'. Perhaps too much focus has been put on 'high speed', but the reality is that passengers in RIBs can suffer horrific injuries at even slow speeds. The collision between Osprey and Osprey II occurred at relatively slow speed, but these large RIBs each weighed several tonnes so the crushing force was significant. And, last summer, a passenger on a sea safari RIB suffered life-changing spinal injuries when the RIB, travelling at quite slow speed, fell off a wave into a deep trough. Time will tell whether the public will shun RIB rides as a result of the Seadogz accident, but the industry can be certain that those taking trips do not expect to spend the rest of their life in a wheelchair because of an injury sustained during the trip.

Strong market for RIB rides if owners 'own' best practice

RIB rides are accessible and fun when conducted well and there is a strong market for them. However, while the Sport and Pleasure Vessel Code is coming and the Passenger Safety on Commercial High Speed Craft and Experience Rides – a Voluntary Code of Practice is being updated, there is no need to wait for these before improvements are made. If the sector's reputation is to survive accidents like Seadogz, owners and operators need to start owning best practice, controlling the risks and demonstrating that their trips are safe.

Operating procedures with passenger safety focus for RIBs

Good practice is being taught during RYA training, and there is plenty of guidance available in the Commercial High Speed Craft and Experience Rides Code and on the RYA's website. However, it is worth reiterating a few key points. Operators should be clear about the sort of trips they are offering, assess the hazards, and ensure that suitable mitigating measures are in place. If the mitigations cannot be delivered, the trip should not be offered.

Particular attention should be paid to feedback. If someone has been injured in the past, the trip/route should be adjusted to prevent it happening again.

Briefing. All helms should be briefed on what they should be doing and what is off limits. If, for example, the RIB's seating does not provide shock mitigation, then strict speed and sea state limits need to be set and adhered to. If the trip involves high-speed manoeuvres, is a second crew required to help keep a lookout and an eye on passenger safety while the skipper is concentrating on helming?

Pre-departure briefing. There is a lot to fit in to a good pre-departure brief besides telling the passengers what they are about to experience. Lifejacket operation must be explained and their fit checked; passengers need to know how to sit correctly, brace themselves and hold on; each passenger must be allocated to a seat suitable for them and checks made to ensure their feet can gain firm purchase on the

floor, their backs can rest on the back support, and they can grip the handholds correctly.

Signalling. The means of signalling concern or a problem needs to be both understood and achievable. Passengers are unlikely to raise their hands if they are clinging on for dear life. All this takes time, so scheduling must allow for it, or other staff used. Carrying out the brief while walking to the boat or donning lifejackets while underway might save time, but it will not save lives.

Conduct of the trip. The trip should always be operated in line with the offering made. If passengers have booked on a wildlife sea safari ride, they might not expect to be subjected to a thrill ride involving tightly banked turns at speed or wave and wake

jumping. Even thrill-seeking passengers might find manoeuvring at 25 to 30 knots exciting so operating at 40 to 50 knots could stray into a terrifying experience.

It is worth remembering that skippers can easily become insulated from the experience on offer. If the RIB has an aft helm position, then the motion experienced by the crew will be much softer than that affecting passengers near the bow. The skipper is looking ahead and helming so they can anticipate the boat's motion, they are experienced at bracing themselves and, of course, they have done the trip multiple times before. A passenger RIB ride is not the time to start exploring the operating limits of their boat; whatever the experience on offer, the skipper's prime concern must be to return their passengers safely ashore uninjured.

This article was first published in Powerboat & RIB Magazine and is published here with our gratitude. Visit <https://powerboatandrib.com>.

The opinions expressed in this article are not necessarily those of the IIMS.

Further reading

MAIB report: Heavy landing on rigid inflatable boat Celtic Pioneer with 1 person injured.
Go to <https://bit.ly/3XIDn7x>

MAIB report: Heavy landing on a rigid inflatable boat with 1 person injured.
Go to: <https://bit.ly/4d44UV5>

MAIB report: Collision between rigid inflatable boats Osprey and Osprey II resulting in serious injuries to 1 passenger.
Go to <https://bit.ly/4gnpSBc>

MAIB report: Heavy contact between the high-speed passenger craft Seadogz and a navigation buoy with loss of 1 life.
Go to: <https://bit.ly/4ejlYri>





Carrying electric vehicles and lithium-ion batteries at sea and the fire risks

By **Paul Crane**, Penningtons Manches Cooper
and **Reema Shour**, Hill Dickinson.



(This article was written when both worked at the now defunct Ince & Co.).

In its **Shipping and Safety Review 2023**, Allianz Global Corporate & Specialty reported that the second top cause of loss of vessels in 2022 was fire or explosion. There were 209 ship fires reported during 2022, the highest in a decade and 17% more than in 2021. Of those fires, 13 occurred on car carriers. Fire was also reportedly the most expensive cause of marine insurance claims.

According to the Allianz report, a combination of causes is increasing the risk of fires at sea. Decarbonization, while a positive global development, has led to new types of cargo such as electric vehicles (EVs) and the prevalence of lithium-ion (Li-ion) batteries which pose a growing risk for container shipping and car carriers. The Li-ion market is expected to grow by over 30% annually over the next decade. Nearly 10% of global car sales were electric in 2021, four times the market share in 2019.

In March 2023, the European Maritime Safety Agency (EMSA) published its CARGOSAFE study, which assesses the risks associated with fires on container ships and evaluates prevention, detection, firefighting, and containment measures. The study indicated that the main cargo types identified as responsible for a large share of cargo fire accidents included Li-ion batteries.

Furthermore, the cause of many cargo fires can be attributed to mis-declared dangerous goods. By way of example, in August 2021, a container loaded with discarded Li-ion batteries, intended to be loaded on board a container ship bound for China, caught fire whilst being transported to the port. The bill of lading listed "computer parts," not Li-ion batteries. The Cargo Incident Notification

System (CINS) indicates that nearly 25% of all serious incidents onboard container ships can be attributed to mis-declared cargo.

THE HAZARDS

One of the main hazards of Li-ion batteries is 'thermal runaway', rapid, uncontrolled self-heating that can lead to fire and can cause an explosion. The main causes of Li-ion fires are said to be defective manufacturing or damaged battery cells or devices, over-charging, and short-circuiting. Fires in EVs with Li-ion batteries are hotter, take longer to extinguish, and can spontaneously reignite. They can also release poisonous, irritating or corrosive gases that cause an explosion in a confined space.

SOME RECENT SHIPPING FIRE INCIDENTS

In July 2023, a fire broke out on board the Panamanian-registered car carrier Fremantle Highway off the Dutch coast. The vessel was en route from Germany to Egypt. One crew member died, and many others were hospitalised. The fire took several days to bring under control. The industry press reported that almost 500 of the cars on board (over 3,700 in total) were EVs.

At the time of writing, an investigation had been launched by the Panamanian authorities and the Netherlands was assisting with the inquiry. While the cause of the fire remained unconfirmed, there was some suggestion in the industry press that the fire started in the Li-ion battery of one of the EVs. In February 2022, the Japanese RoRo cargo ship Felicity Ace was carrying thousands of luxury cars from Germany to the USA but sank off the coast of the Azores after a fire broke out onboard. The fire burnt for about two weeks, after which the vessel sank. The Panamanian Maritime Authority reportedly submitted its report to the International Maritime Organisation (IMO) in May 2023, but the findings had not yet, at the time of writing, been made publicly available. However, within the industry, the cause of the fire is suspected to be the EVs that were onboard.

In June 2020, the Hoegh Xiamen caught fire in Jackson, Florida. It was carrying almost 2,500 used vehicles on board. The fire took over a week to extinguish and there was a total loss of the vessel and cargo. The US National Transportation Safety Board (NTSB) investigation indicated that the fire started due to an electrical fault from an improperly disconnected battery in a used vehicle.





In May 2019, two fires broke out on board the *Grande Europa* while the vessel was off the Spanish coast. The owners' preliminary investigations suggested that the two fires started in two new vehicles stowed on board and then spread to other vehicles.

In March 2019, a fire broke out on board the *Grande America* while on a voyage from Germany to Morocco. The cargo included over 2,000 new and used vehicles. The vessel subsequently sank. The owners have submitted a report to the IMO, but the findings are not at the time of writing publicly available. However, it has been reported that fire teams found sparks coming from a truck on a vehicle deck.

Industry guidance and engagement
In March 2023, CINS – in collaboration with the International Group (IG) of P&I Clubs, the TT Club and the International Cargo Handling Coordination Association – published revised guidelines for the carriage of Li-ion batteries in containers. The guidelines identify risks and prevention measures, with recommendations for all stakeholders in the supply chain to enhance safe carriage. Among other things, the guidelines cover cargo issues; container selection; cargo container packing; Li-ion battery stowage on the ship; fire detection and loss prevention.

Additionally, in March 2023, the IG, CINS and the TT Club jointly hosted an industry conference in London entitled "Lithium-ion batteries in the logistics supply chain". This was attended by representatives from regulators, container and vehicle carriers, as well as fire investigation and fire-fighting experts among others.

In November 2022, the TT Club, the UK P&I Club and Brookes Bell issued a Lithium Batteries White Paper highlighting the safety risks of transporting Li-ion batteries. The paper includes background science on Li-ion batteries, the dangers associated with transporting them and why they arise, battery testing and correct declaration. It also reviews the applicable provisions of the International Maritime Dangerous Goods (IMDG) Code and other relevant regulations.

In May 2022, EMSA published Guidance on the Carriage of Alternative Fuel Vehicles in RoRo spaces of Cargo Ships and Passenger Ships. This covers among other things: risk evaluation; stability checks; precaution against ignition; detection; and fire suppression.

In 2021, the UK Maritime and Coastguard Agency (MCA) published a marine guidance note (MGN 653(M)) on "Electric Vehicles onboard Passenger RoRo Ferries".

MGN 653(M) notes that, at the time of publication, there were no requirements from the IMO specific to the carriage of EVs on passenger or cargo RoRo ships.

In 2017, the UK P&I Club – in conjunction with SOLIS and Richards Hogg Lindley – published "Car Matters: Car Carriers, Ro-Ro and Ro-Pax Ship Safety – A Guide for Crew." This covers among other things operational best practices and general safety precautions.

There are also technological developments underway. In February 2023, the Cargo Fire & Loss Innovation Initiative was launched by Safetytech Accelerator. This is a technology acceleration initiative in collaboration with Evergreen Line, HMM, Lloyd's Register, Maersk, the Offen Group, ONE and Seaspan that is aimed at reducing cargo fires and losses overboard. The initiative is particularly focused on challenges caused by the increasing carriage of Li-ion batteries either in containers or within EVs on car carriers.

REGULATION

The relevant regulations are contained in the IMDG Code and are based on the UN Model Regulations on the Transport of Dangerous Goods, adopted and adapted as

appropriate. The UN Regulations cover requirements for the construction and testing of batteries, classification and declaration of shipments, packaging and stowage.

Li-ion batteries are classified as Class 9 goods in the IMDG Code due to the hazardous properties associated with their chemical and electrical content. Pursuant to the Code, the shipper must provide the vessel with a completed Dangerous Goods (DG) cargo declaration. Furthermore, each vessel has a Document of Compliance for dangerous cargo (DOC), which indicates where the batteries can be safely stowed onboard. However, under Special Provision (SP) 188 of the UN Regulations, where Li-ion batteries meet eight specified requirements (essentially relatively small batteries), they are not considered DG and do not have to be specially declared. One concern is that SP188 may encourage shippers to mis-declare cargo.

A prevailing view within the maritime industry is that the IMDG Code needs to be amended to bring it into line with the challenges arising from the carriage of EVs and Li-ion batteries. It has been suggested that Li-ion batteries are not properly categorised as Class 9, which covers the lowest-risk DGs. Under this classification, the batteries can be stowed above and below deck, and with other dangerous goods. It has been proposed instead that they should be reclassified to Class 4.3 - flammable solids (which, when in contact with water, emit flammable gases). This

would subject them to much more stringent segregation requirements.

EVs are also categorised as Class 9 unless they come within SP 961. SP961 disappplies the Code to EVs carried in the vehicle and RoRo spaces when certain conditions are met. In such cases, the carrier will not usually know how many EVs are onboard or where they are located on the vessel. The White Paper referred to above has recommended revoking this exemption to allow carriers to plan stowage locations and the monitoring of EVs during the voyage in greater detail, with a view to developing early detection, evacuation and/or firefighting procedures.

Onboard charging of EVs on RoRo passenger ships is currently unregulated. This poses a risk of over-charging, which can trigger thermal runaway. Furthermore, there are currently no regulations dealing with the state of charge for Li-ion batteries on ships. A recommendation made to the IMO is for a 30% limit for EVs.

Used batteries may also qualify as hazardous waste under the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal. In May 2022, the UN provided a draft of practical guidance on the classification of waste batteries containing lithium. Carriers will need to ensure that shippers provide all the necessary export and clearance documentation for the batteries and/or a written declaration that they

are not considered waste under the Convention. Otherwise, problems may be encountered at the discharge port.

In 2021, at the 103rd session of the IMO's Maritime Safety Committee (MSC 103), it was agreed that changes should be made to the SOLAS (Safety of Life at Sea) Regulations for better fire detection, containment, and suppression on container ships. The work on this is expected to be completed by 2025, with any amendments however coming into force at the earliest 1 January 2028.

In June 2023, MSC 107 approved draft amendments to SOLAS and related instruments to enhance the fire safety of RoRo passenger ships. The draft amendments are expected to enter into force on 1 January 2026. There have been reports that the IMO is considering a special code for EVs. However, at the time of writing, the position remained unclear.

LEGAL ISSUES

The Hague/Hague-Visby Rules are likely to apply to the contract of carriage. Pursuant to Article III Rule 1, the carrier has a due diligence obligation to make the vessel seaworthy and to properly man, equip and supply the vessel. Article III Rule 2 sets out the carrier's obligation to take reasonable care of the cargo. This obligation is subject to certain exceptions set out in Article IV, including the fire exception in Article





IV Rule 2b. Article IV rule 6 provides for the shipper's indemnity in the case of dangerous goods, where that have been shipped without the carrier's knowledge or consent.

A number of issues can arise with regard to unseaworthiness, including that: dangerous cargo can, of itself, make a vessel unseaworthy; faulty systems can make a vessel unseaworthy; and crew without proper training can make a vessel unseaworthy. Whether the carrier acted as a prudent owner can be a complex question because it may not be clear before or at the commencement of the voyage that a battery forming part of the cargo was defective and the carrier will not usually check on the contents of a container itself. Instead, it will rely on the documentation provided by the shipper. Nonetheless, in the context of unseaworthiness, hidden dangers are relevant.

As to the exercise of reasonable care in taking care of the cargo, given that the current regulatory regime for the carriage by sea of EVs and Li-ion batteries is arguably inadequate, complying with the regulations may

not be enough. Query whether a prudent owner should refuse to carry EVs/Li-ion batteries at all, although this may not be a realistic option given their increasing use and the continuing growth of the market.

Instead, a carrier may focus on ensuring it keeps up-to-date and complies with industry guidance, obtains expert risk assessments and establishes internal processes for identifying the contents of containers and where to stow EVs and Li-ion batteries. It has also been suggested that carriers should not allow onboard charging, although they will come under a lot of pressure from charterers/shippers if they do not. An owner may also wish to liaise with its P&I Club on appropriate measures to ensure that its cover remains in place.

The shipper's liability for shipping dangerous goods without the carrier's knowledge or consent is a strict one. However, the indemnity will not be engaged where the loss has been caused by the carrier's failure to exercise due diligence. It is, therefore, in the shipper's interest to provide all the relevant documentation and make the

relevant declarations with regard to the cargo. This may minimise its exposure as to lack of carrier knowledge/consent and will allow the carrier to stow the goods appropriately and take any necessary precautionary measures.

COMMENT

It is to be hoped that Li-ion fire risks will reduce over time as manufacturers, carriers, and regulators address the current challenges. In the meantime, there is an ongoing debate in the maritime industry about whether there should be dedicated RoRo vessels for EVs. This is something that insurers say they would like to see.

Another future consideration is how the risks associated with the carriage of EVs and Li-ion batteries will be dealt with on autonomous ships. Where there are no, or few, human crew onboard, will this make it harder to fight any resulting fires? Technological advances in shipping are to be welcomed and are the way forward, but they do present the industry with novel challenges.



Aeroderivative turbines in ship's engine room (Photo credit: GE Power)

Re-evaluating gas turbine engines for future maritime propulsion

By Harry Valentine

The combination of advances in engine management technology, in the design of heat exchange technology and the chemistry of high-temperature ceramic materials and compounds provide the basis of enhancing the efficiency and market competitiveness of open-cycle and closed-cycle gas turbine engines, including in ship propulsion.

Introduction

Traditional open-cycle gas turbine engines flow atmospheric air through a compressor, combustion chamber and power turbine. Peak fuel efficiency occurs when operating at maximum power output while the turbine spins at maximum RPM and maximum combustion temperature. Engine efficiency decreases as power output decreases, with half the efficiency available at 25% of output for a single-shaft engine. Externally heated closed-cycle engines continuously recirculate the same gas through compressors and turbine can deliver high efficiency at 25% of power output. However, the materials of which heat exchangers were made incurred temperature restrictions that restricted both peak efficiency and peak power output.

The complex-cycle gas turbine engine was an open-cycle, triple-shaft engine that combined 2-compressors with 3-turbines, 2-combustion chambers and 2-heat exchangers. Both high-pressure turbine and power turbine spun on separate shafts and had their own combustion chamber. During an earlier era, it

was difficult to accurately control air-fuel ratios manually for each combustion chamber that operated in series, upstream and downstream of each other. As a result, in real world operation the complex-cycle gas turbine rarely delivered peak efficiency over a range of power output. However, modern technology offers possibility to both the complex-cycle and closed-cycle gas turbine engines.

Modern advances

Modern reciprocating internal combustion engines operate with such technology as mass-flow rate sensors, air-fuel ratio sensors, air temperature sensors and computer managed fuel injection that have greatly improved fuel efficiency. There is theoretical potential to adapt such technology to the old classical complex-cycle gas turbine engine, along with the possibility of introducing new generation heat exchanger technology that operates at much higher effectiveness than earlier generation technology. Modern annular counter-flow heat exchangers developed by



Ed Proeschel offer heat transfer effectiveness of over 90% compared to 80% for earlier generation counter-flow heat exchangers.

The annular counter-flow heat exchanger can be adapted for operation in both open-cycle and closed-cycle gas turbine engines. Modern turbine blades made from ceramic material retains mechanical properties at 1400-degrees C or 2550-degrees F and allow combustion temperatures of 1200-degrees C without need to cool the turbine blades. While earlier generation heat exchangers were made from steel or stainless steel, there is evolving possibility of being able to make future heat exchangers from materials such as aluminium nitride and high-purity boron-arsenide that offer higher coefficients of thermal conductivity than that of steel, at much higher temperatures.

Upgraded Complex-Cycle Engine

An upgraded complex-cycle gas turbine engine would include annular counter-flow heat exchangers installed downstream of both the low-pressure and high-pressure compressors, with computer-controlled fuel injection into combustion chambers placed upstream of both the high-pressure as well as power output turbine. The high-pressure turbine would operate on computer-controlled ultra-lean burn air-fuel ratio to assure sufficient oxygen in its exhaust gas to assure additional combustion to sustain operation of the power output turbine. Sensors connected to the

computer would continuously monitor properties of gases flowing from the high-pressure turbine, to assure optimal overall engine performance.

The power output of a future computer-monitored and computer-controlled complex-cycle gas turbine could rival that of the largest maritime diesel engines rated at over 100,000-horsepower and up to 50% thermal efficiency. To assure optimal turbine engine efficiency in cargo ship propulsion, the power output turbine could drive a variable pitch marine propeller via a planetary reduction gear system. While an optional electrical power transmission between power turbine and propeller would incur a reduction in overall engine efficiency, such a layout would be suitable for passenger cruise ship operation.

Bottom-cycle Steam Engine

The complex-cycle gas turbine engine has 2-sources of reject heat to assist in the operation of a steam engine, preheating water flowing from the water pump to the boiler. Reject heat from the inter-cooler for the low-pressure compressor would provide primary preheating while turbine engine exhaust gas would provide a secondary source of heat that would further raise water temperature. Combustion of liquid or gaseous fuel would convert the preheated water to steam to operate a steam turbine engine at the equivalent of an elevated level of efficiency.

If a gas turbine engine of 100,000-horsepower operates at near 50% thermal efficiency, its inter-cooler and exhaust would release the equivalent of 100,000-horsepower of thermal energy to preheat water to operate a bottom-cycle steam engine. A combined-cycle engine could operate at the equivalent of between 60% and 70% overall thermal efficiency on either liquid or gaseous fuel. The open-cycle turbine engine offers greater flexibility than a reciprocating engine, in the variety of competitively priced fuel that could sustain its operation. Higher overall thermal efficiency combined with lower fuel cost enhances the engine's marketability.

Closed-Cycle Engine

Externally heated closed-cycle gas turbine engines continuously recirculate the working gas by cooling it after leaving the power turbine. It replaces the combustion chambers of open-cycle engines with high-temperature heat exchangers, with low-pressure and high-pressure compressors and turbines rotating on a common shaft that drives either an electrical generator or reduction gearbox. Closed-cycle engines can be designed to operate with wide variation in the mass of gas that recirculates within the closed system. Such operation maintains high efficiency over a range of power output as turbines spin at maximum design RPM, with gas entering turbine at maximum temperature. A closed-cycle engine that delivers 40,000-horsepower with mean-average internal system



pressure at 5-times atmospheric pressure (5-ATM) would deliver 8,000-horsepower at comparable thermal efficiency with mean system pressure reduced to 1-ATM. During operation, some exhaust heat will be reintroduced into the engine downstream of the high-pressure compressor. The combination of heat rejected from the low-pressure compressor inter-cooler and residual exhaust heat would partially sustain the operation of a bottom-cycle steam engine. Future development of high-temperature heat exchangers made from compounds such as highly purified boron arsenide with high thermal conductivity promise to assure engine efficiency.

Stored Thermal Energy

Solar thermal power stations use stored thermal energy to generate several hours of electric power after sunset. The thermal storage medium is low-cost salt compounds of sodium and potassium that melt at sufficiently high temperature to generate steam. Advances in high-temperature ceramic chemistry have produced corrosion-resistant compounds that maintain constant mechanical properties up to 1400-degrees C (2550 F). Open-cycle gas turbine engines require heated air or gas to enter the power turbine at temperatures to 1200-degrees C, while single-shaft, closed-cycle turbines with single compressor and single turbine can operate with air heated to 900-degrees C.

Sodium fluoride (NaF) that historically was a waste byproduct of the aluminium smelting industry, melts at just under 1,000-degrees C (1800 F) with heat-of-fusion of 300-BTU/pound. The aluminium industry mixes the mineral cryolite (Na_3AlF_6) from Iceland and Greenland with bauxite (Al_2O_3) to produce aluminium. A mixture of aluminium oxide (Al_2O_3) and cryolite can melt at under 1200-degrees C (2,200 F) with heat-of-fusion at some 400-BTU/pound, with usable life expectancy of 1-million deep-drain cycles. Future research offers the possibility of closed-cycle gas turbine engines operating from stored thermal energy in both stationary land-based applications and in future maritime propulsion.

Thermal Recharge

Much advancement has occurred over the past decade in the development of micro and mini-nuclear power conversion. One future possibility would involve a micro or mini reactor being brought to quayside on a railway carriage, then transferred on board a ship for the purpose of replenishing the onboard thermal storage supply that would sustain ship propulsion for several hundred nautical miles. A fleet of ships assigned to short-sea shipping service could operate between ports located within the operating range of each ship, allowing a small number of micro or mini reactors to sustain the operation of a fleet of ships.

Conclusions

A 3-shaft open-cycle gas turbine engine using modern electronic engine management technology installed in duplicate or even triplicate, would operate efficiently and reliably over a wide range of power output, even for extended duration cycles. Likewise, a single-shaft closed-cycle gas turbine engine using modern and evolving ceramic-based, annular configuration heat-exchange technology could operate at competitive levels of efficiency using a wide range of fuels, including stored thermal energy. The exhaust heat of both types of engines would sustain the operation of a bottom-cycle steam engine, allowing the combined-cycle engine to deliver very competitive levels of thermal efficiency.

While reciprocating marine engines require massive volumes of lubricating oil, turbine engines require a fraction of the amount of lubricant to assure proper operation of engine bearings. Turbine engines also avoid the problem of internal friction and engine wear caused by piston rings sliding on cylinder walls, thereby extending usable service life. While turbine engines are compact, the heat exchangers attached to them will occupy a substantial amount of volume, which would likely be available inside the hull of a ship. The combination of gas turbine engine with steam bottom-cycle engine represents a future propulsion option for large ships.

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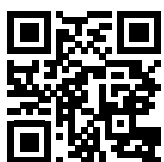
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Swiss Cheese?

Improving Survey Practice and Process

Article by Nick Parkyn

"The world is powered by increasingly intricate systems working behind the scenes to integrate countless moving pieces into a meaningful whole"

— Prof. Edward Crawley (MIT Open Learning)

"One of the characteristics of the 21st century is that we're investing more in complexity, and things are just getting damn complicated,"

says Professor Edward Crawley, Ford Department of Engineering, Department of Aeronautics and Astronautics, MIT.

"There's so much talk about the system. And so little understanding".

— Robert Pirsig, *Zen and the Art of Motorcycle Maintenance*

"While the duties of a marine surveyor are broad in nature, the essential function is to assess the entire marine venture to determine the potential risks."

— Merrimac Marine Insurance LLC

"A marine survey can uncover potential safety hazards, mechanical problems, or other issues that may not be visible to the untrained eye. By identifying these issues early on, boat owners can take the necessary steps to address them and ensure the safety and seaworthiness of their vessels."

— SeaWorthy Inspections™

Today we find ourselves in possession of stupendous know-how, which we willingly place in the hands of the most highly skilled people. But avoidable failures are common, and the reason is simple: the volume and complexity of our knowledge has exceeded our ability to consistently deliver it - correctly, safely or efficiently.

— Atul Gawande

A system is a set of things ... interconnected in such a way that they produce their own pattern of behaviour over time. ... But the system's response to these forces is characteristic of itself, and that response is seldom simple in the real world

— Donella Meadows

Most marine craft represent Systems of Systems (SoS) and are an ensemble of complex systems, which have the potential for an extraordinary amount of structural and technical complexity.

Because of this, a SoS can be vulnerable to sudden catastrophic collapse because of small and insignificant partial functionality losses in one of the constituent systems.

System Thinking

Unanticipated failures find more potential and more pathways to their occurrence when interventions in SoS operations, standards or processes are conducted without enough insight or understanding and without consideration of the fundamental nature of the complexity of the System of Systems (SoS).

1. **Avoidance:** is the prevention of a disruption. Avoidance goes beyond traditional system safety considerations (Madni and Jackson, 2009) in that it encompasses the anticipation of a mishap based on the ability to detect 'drift' towards system brittleness, a harbinger of potential accidents.
2. **Survival:** is the ability of a system to resist destruction or incapacitation in the face of a disruption.
3. **Recovery:** is the ability of a system to survive a major disturbance even with degraded performance.

Given these definitions, one can argue that if avoidance is achieved, then the need for survival and recovery are indeed reduced. However, avoidance is achieved through intervention, namely detection and isolation of threats/errors/failures, so as to avoid their propagation.

The marine surveyor is a key enabler of avoidance, by applying systems thinking, a marine surveyor would be better equipped to contribute to avoidance by understanding critical systems and seeking out critical faults ahead of time and ensure resolution preventing cascading failure of systems in the System of Systems.

"System thinking is simply thinking about something as a system: the existence of entities-the parts, the chunks, the pieces-and the relationships between them.

— -Professor Edward Crawley, MIT.

Improving Practice and Process

Typically, there can be two main modes of operation for marine surveyors depending on whether their primary objectives are proactive or reactive.

Proactive role

- Aim to identify problems before they occur.
- They are generally responsible for assessing vessels before purchase or during routine checks. In case any flaw or damage is located, a potential mishap is averted. Hence, these surveyors are considered to be proactive as the attempt to avert problems or mishaps.

Reactive role

- Are called in after some incident has occurred.
- They assess the problem or damage to the vessel

Since they assess the vessel as reacting to some occurrence, they are referred to as reactive surveyors.

The survey process

To carry out a survey on a vessel a marine surveyor:

- Follows a standardised practice that they have developed
- Follows a standardised process that they have developed
- Use checklists to ensure coverage of all items to be inspected

How good are your processes & checklists?

The Theory of Active and Latent Failures was proposed by James Reason in his book, Human Error.^[1] According to Reason, accidents within most complex systems caused by a breakdown or absence of safety barriers.

The checks in our checklists create these safety barriers.

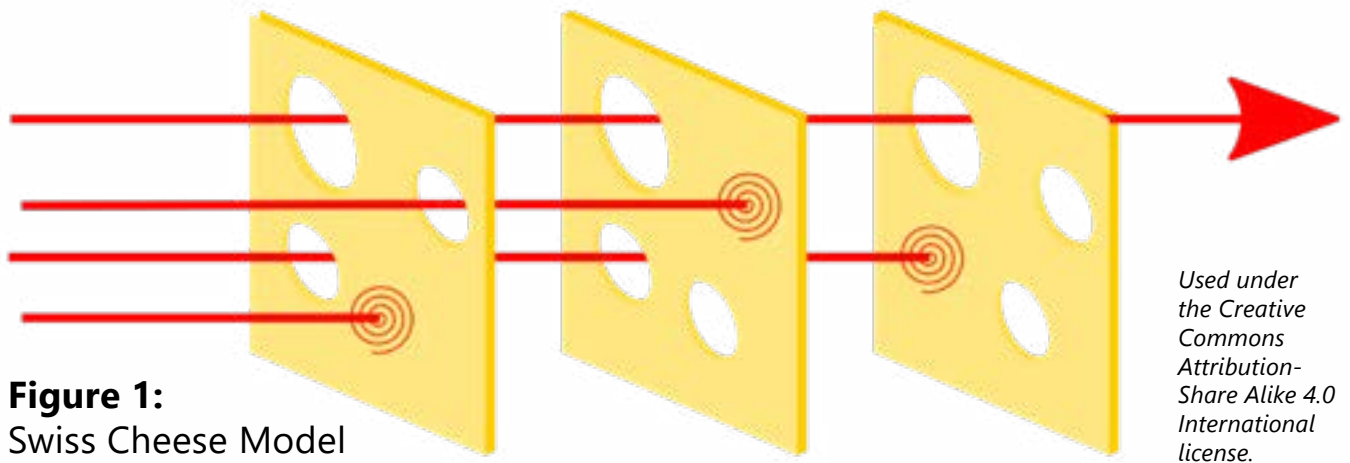


Figure 1:
Swiss Cheese Model

The Swiss Cheese model (figure 1) the model describes the chain of an accident opportunity as many little deviances or omitted checks that, by themselves, are small but if all those little 'holes in the "Swiss Cheese" line up then an unforeseen problem or accident can occur.

The holes in the cheese slices represent individual weaknesses in individual parts of the system or process and are continually varying in size and position in all slices. The process fails when holes in all the slices momentarily align, permitting "a trajectory of accident opportunity", so that a hazard passes through holes in all the defences (checks), which can lead to a problem or accident.



This Swiss Cheese Model is directly applicable to marine surveying in particular:

- the process and associated checklists used in marine surveying
- errors by the practitioner that can occur.

In the diagram (figure 2), as part of the survey process, we are carrying out inspections or checks which could alert us to the potential for a possible problem / accident.

Used under the Creative Commons Attribution-Share Alike 4.0 International license. Figure 1: Swiss Cheese Model

From the diagram (figure 2) it is clear that Oversight / Accident Opportunity 1 would not be seen (caught) by our process and checklists.

It is also errors in the execution of the process and violations that could create the potential for a possible problem / accident which in the marine surveying discipline could include:

Errors which Include:

- **Decision Errors:** Goal-directed behaviour that proceed as intended, yet the plan proves inadequate or inappropriate for the situation. These errors typically result from a lack of information, knowledge or experience.
- **Skill-based Errors:** These "doing" errors occur frequently during highly practiced activities and appear as attention failures, memory failures, or errors associated with the technique with which one performs a task.
- **Perceptual Errors:** Errors that occur during tasks that rely heavily on sensory information, which is obscured, ambiguous or degraded due to impoverished environmental conditions or diminished sensory system.

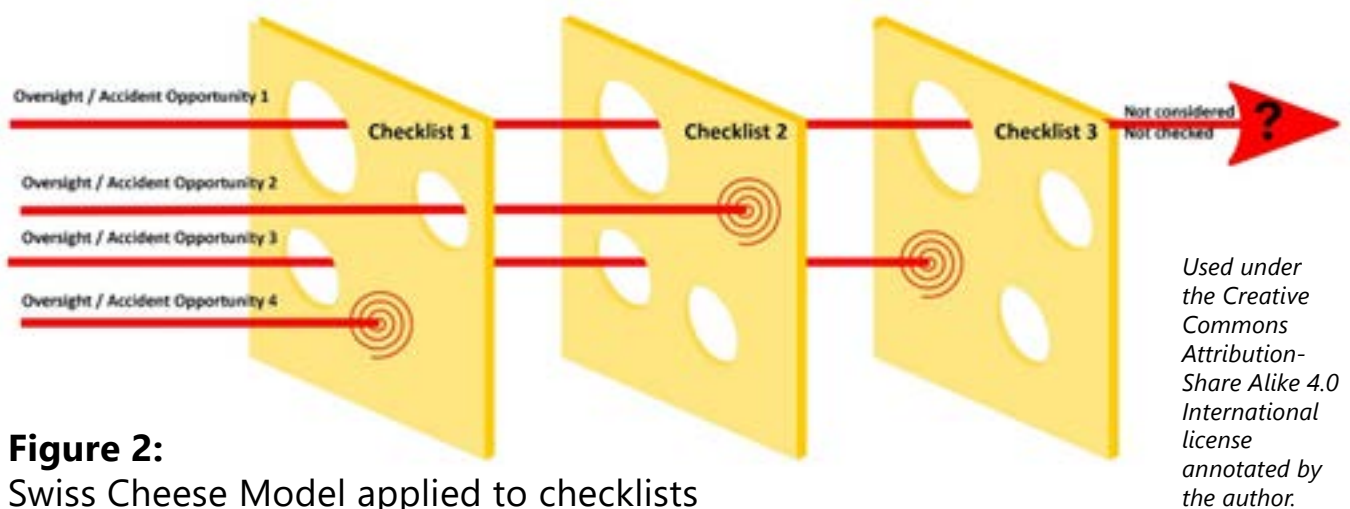


Figure 2:
Swiss Cheese Model applied to checklists

Violations which Include:

- **Routine Violations:** Often referred to as “bending the rules,” this type of violation tends to be habitual by nature, engaged in by others, and tolerated by supervisor and management.
- **Exceptional Violations:** Isolated departures from authority, neither typical of the individual nor condoned by management
- **Skill-based Errors** can occur as marine surveying is a broad field and not all surveyors have all the necessary skills or depth of skills.
- **Routine Violations and Exceptional Violations:** How many marine surveyors are guilty of skipping what they consider some less important checks because they are in a hurry to get the job done?

How many less experience surveyors make isolated departures from authority, which are not typical nor condoned by management?

Does a marine surveyors evaluate all his checklists in terms of coverage to ensure that the alignment of holes is the “Swiss Cheese” model is less likely to occur?

Have industry standards bodies encouraged comparison of checklists and validation of checklist coverage?

Checklists

As indicated, checklists are an essential tool for marine surveyors to ensure structure and comprehensive coverage of the craft being surveyed.

Bad checklists do not spell out every single check and are:

- Impractical
- Vague
- Imprecise

Consequently, bad checklists promote holes in the Swiss Cheese and creates opportunity for deviation.

Good checklists, on the other hand, are:

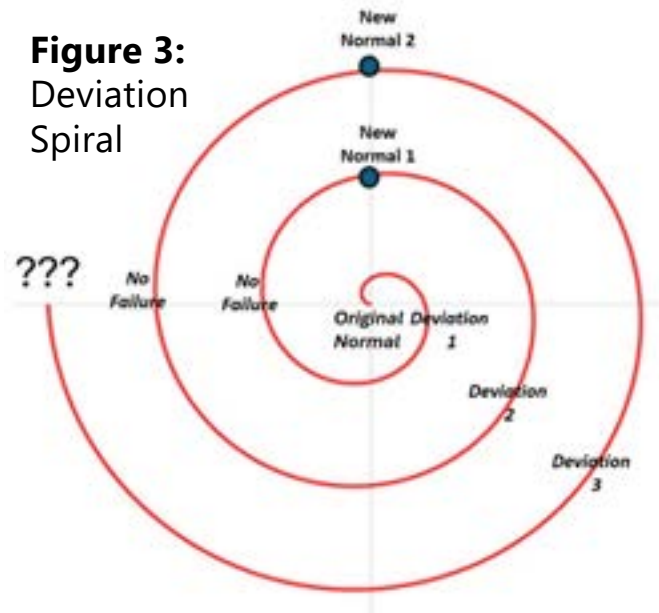
- To the point
- Precise
- Efficient
- Easy to use in the most difficult situations.

Deviations from the process or checklist

Skill-based Errors, Routine Violations and Exceptional Violations can cause deviation from the required practice which introduces us to the deviation spiral.

Normalisation of deviance is the gradual process through which unacceptable standards or practice become acceptable. The process of normalisation of deviance can be seen in the “Deviation Spiral” (figure 3) where you can see a deviation from the original normal causes a new normal which, again, can be deviated from, causing another normal. Each of these deviances need only be small but the gradual acceptance of each, and subsequent “getting away with it” teaches us that the deviance is acceptable – until a problem / accident occurs.

Figure 3:
Deviation
Spiral



Good checklists prevent holes in the Swiss Cheese and provide clarity that limits opportunity for deviation particularly unintentional deviation.

The marine surveying discipline should increasingly apply a systems-thinking lens that allows us to:

- hone our abilities to understand parts
- see interconnections,
- ask “what-if” questions about possible future behaviours
- be creative and courageous about process and practice redesign.

The techniques covered in this article are actively and successfully used in other disciplines and I believe are just as applicable to our own discipline.

“Blame is the enemy of safety. It misses opportunities to learn.”

— *Captain Chesley Sullenberger (aka Captain Sully), Pilot (SafetyCulture Virtual Summit)*

“I like to encourage people to realize that any action is a good action if it’s proactive and there is positive intent behind it.”

— *Michael J. Fox*

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CASE STUDY: Asphyxiation in cargo hold due to oxygen depletion



Britannia P&I Club has published a case study focusing on an incident onboard a bulk carrier nearing the completion of loading corn cargo, which caused the asphyxiation of two fumigation contractors, one of whom died.

On 3 December 2021, a 33,000 GT bulk carrier arrived in Chennai, India, to load 53,000 tonnes of yellow corn. Fumigation contractors boarded to install ducting for fumigating the cargo. Loading began that day but was intermittently halted due to rain. By 15 December 2021, cargo hold four was loaded and its hatches and accessways were sealed. Loading continued in other holds as weather allowed.

On 21 December 2021, as loading neared completion, 21 fumigation contractors boarded at 0948. While their equipment was being loaded using the ship's crane, a team of four contractors prepared to fumigate cargo hold four. At 1212, two workers entered the booby hatch of hold four with gas masks and a phosphine gas detector. Shortly afterwards, worker A emerged onto deck feeling breathless and noticed that worker B had fallen over within the cargo hold. He re-entered to assist. Other team members, realising the danger, attempted to help but quickly retreated due to breathlessness. One team member then informed the ship's crew at the gangway. At 1217, the officer of the watch alerted the master, who then called for an enclosed space rescue via the public address system. The chief officer, upon hearing the call, rushed to the booby hatch. Upon seeing the two collapsed workers inside the hold, he donned an emergency escape breathing device (EEBD) and entered the hold, retrieving worker A at 1222. He re-entered (still wearing the EEBD) and, using a rope, retrieved worker B onto the deck. Both workers were given first aid and oxygen until 1240 when they were transported to a local hospital by car. Worker A was declared dead at 1425, while worker B recovered. Toxicology reports indicated no gaseous poison in the blood or lungs of either worker.

The investigation and case study identified several contributing factors and lessons learned. These are based on the information available in the investigation report and are not intended to apportion blame on the individuals or company involved.

As per Section 10.5 of Resolution A.1050(27), grain cargoes (e.g. corn) can cause oxygen depletion. Corn kernels absorb oxygen and excrete carbon dioxide, which can cause oxygen depletion in a cargo hold that is closed for a long time. The Occupational Safety and Health Administration (OSHA) considers any atmosphere with an oxygen content below 19.5% by volume to be oxygen-deficient and immediately dangerous to life or health. After the incident, tests of the atmosphere in cargo hold 4 showed an oxygen content of 2.6% by volume.

The cargo hold was not considered as a dangerous space. An enclosed space is defined in the International Maritime Organization (IMO) 'Resolution A.1050(27) Revised Recommendations for Entering Enclosed Spaces Aboard Ships' as follows:

Enclosed space means a space which has any of the following characteristics:

- Limited openings for entry and exit;
- Inadequate ventilation; and
- Is not designed for continuous worker occupancy, and includes, but is not limited to, **cargo spaces**, double bottoms, fuel tanks, ballast tanks, cargo pump-rooms, cargo compressor rooms, cofferdams, chain lockers, void spaces, duct keels, inter-barrier spaces, boilers, engine crankcases, engine scavenge air receivers, sewage tanks, and adjacent connected spaces. This list is not exhaustive, and a ship-specific list should be produced to identify enclosed spaces.

Unauthorised entry into cargo hold

The cargo hold had been shut for six days, and the oxygen in the hold had been depleted by the corn cargo. Therefore, the cargo hold should have been considered an enclosed space. The involved parties did not recognise the danger of the cargo hold, loaded with grain and closed for a long time, so they did not consider it an enclosed space. Entry into an enclosed space should only occur after the ship's master authorises it and completes the entry permit system. Although the booby hatch for accessing the hold could be locked to prevent unauthorised entry, it was not locked, possibly because the final loading was incomplete, and they did not anticipate oxygen depletion or unauthorised entry. Since 21 fumigation contractors boarded the ship, the crew could not monitor every action of the contractors.

Impulsive rescue

Enclosed space incidents regularly involve a person entering or re-entering a dangerous space to rescue a fallen colleague and then subsequently becoming unwell and also requiring rescue. Worker A's attempt to help his colleague cost him his life. The chief officer's action to rescue contractors was brave, and he managed to save the life of one worker, but he jeopardised his own safety. As per paragraph 8.5 of Resolution A.1050(27), 'only properly trained and equipped personnel should perform rescue operations in enclosed spaces.' The chief officer was not properly equipped to enter the space for rescue as the EEBD worn by him supplies only 10-15 minutes of air and is designed to be used for escape from a compartment with a hazardous atmosphere. It should not be used for fighting fires, entering oxygen-deficient voids or tanks, or worn by firefighters. Instead, a self-contained breathing apparatus (SCBA) should be used.

Equipment and training for fumigation contractors The fumigator's unauthorised entry into the cargo hold suggests they were not trained on the hazards of cargo holds and general conduct on board. Due to the nature of their work, fumigators should have been trained on the dangers of oxygen deficiency and the presence of other toxic gases that can be present in cargo holds. External visitors should not have entered any cargo space or other space on board without authorisation from the ship's crew. They should ensure that the atmosphere is tested, safe to enter, and that all necessary precautions are in place. The contractors were carrying a phosphine detector and a gas mask, anticipating hazards relating to phosphine; however, all contractors tasked with entering the cargo hold to set up fumigation arrangements should have been provided with a personal multi-gas detector. This would have enabled them to swiftly identify the lack of oxygen in the hold and exit quickly.

Enclosed space training and drill

The circumstances that led to this incident and the shortcomings in the rescue operation highlight the need for continuous and ongoing training on enclosed space entry, emphasising the points from IMO 'Resolution A.1050(27).' SOLAS Ch III regulation 19 states, 'crew members with enclosed space entry or rescue responsibilities shall participate in an enclosed space entry and rescue drill to be held on board the ship at least once every two months.' Regular enclosed space rescue drills should be conducted in a safe and realistic manner. The master should conduct drills in all enclosed spaces on the ship to practice and address the specific procedures and equipment needed for each space.

Conclusion

Enclosed space-related accidents on board ships are mostly caused by insufficient knowledge or disregard for necessary precautions, rather than a lack of guidance. Shortcomings in the attempt to rescue and the use of improper equipment highlight the need for more awareness, training, and drills. When a large number of shore workers board, it is difficult for the ship's crew to monitor all their actions. However, this should be discussed with the person in charge of the shore workers, and a system should be agreed upon for control of work. Access control to all dangerous spaces on board is paramount. In an emergency rescue, the atmosphere of an enclosed space should be considered unsafe unless confirmed otherwise, and proper procedures should be followed. Rescue operations should only be conducted by properly trained and equipped personnel.

Our thanks to Britannia P&I Club for sharing this incident case study. The case study is available to download in PDF format at <https://bit.ly/3Z2S9ag>.

Raising the focus on cyber security for LNG carriers

As liquefied natural gas (LNG) plays an increasing role in global gas trading to secure energy supply...

...there is growing awareness of the need to understand and protect the value chains of which it is a part.

LNG value chain has many critical maritime stakeholders

In the maritime context, the chain includes Floating Storage Regasification Units (FSRUs), LNG carriers, related onshore infrastructure at ports and terminals, and suppliers of IT and operational technology (OT). Ultimately, cyber security that protects the uninterrupted supply of gas to transmission and distribution networks is an energy security issue.

Balancing energy transition and cyber security

"Gas transported ashore from FSRUs has been supporting the energy transition in Europe in recent years and DNV services have been supporting cyber-security initiatives for these regas units as critical infrastructure," says Martin Cartwright, Global Business Director, Gas Carriers & FSRUs at DNV. "However, our experience leads us to question whether maritime is giving as much focus as it should to cyber risks that may come through LNG carriers uploading LNG to FSRUs," he adds. "Where this connectivity includes IT and OT, what cyber-risk interface does it create, and how can we stop malicious hackers exploiting that?"

Cyber-security regulations: FSRUs vs LNG carriers

Newbuild and existing FSRUs are impacted by regulations, not only as vessels but also as elements of critical infrastructure underpinning energy supply. Yet comparing

cyber-security regulations for FSRUs (usually modified LNG carrier designs) and LNG carriers reveals a gap.

Recently implemented new regulations affecting FSRUs have come from the International Association of Classification Societies (IACS, of which DNV is a member); the IMO; the EU Network and Information Security directives (NIS1, NIS2); the Oil Companies International Marine Forum (OCIMF) programme SIRE 2.0; the US Securities and Exchange Commission (SEC); DNV Cyber secure class notation (July 2024); and country-specific laws and requirements.

Recent regulations and protocols

Year introduced	Regulations, etc.
2021	IMO Resolution MSC.428(98)
2023 (start of 4 phases)	OCIMF SIRE 2.0 inspection programme
2023	US SEC rules for private foreign companies
2024	1: IACS Unified Requirements E26 and E7 2: DNV class notation Cyber secure becomes mandatory for most vessel types contracted on or after 1 July 2024
2024	EU NIS2 Directive from October 2024 (NIS1 already applies)
Various dates	Country-specific laws and requirements

However, whilst the IMO and IACS requirements apply equally to both FSRUs and LNG carriers, the NIS2 Directive applies to FSRUs as critical gas production and storage systems, but not to LNG carriers.

"There's a marked contrast here between the regulatory position impacting FSRUs and LNG carriers," says Cartwright.

The LNG value chain is digitally connected

The chain from liquefaction through transportation on LNG carriers, reception at FSRUs, regasification and onward transport involves complex IT, OT and communications networks that are themselves interconnected.

Hence, a cyber attack on one part could potentially jeopardize seafarers, individual vessels and larger fleets, terminals, ports and the containment of the deep-cooled LNG itself.

Do LNG carriers need higher cyber-security standards?

DNV's report 'Maritime Cyber Priority 2023' reveals that the vast majority of maritime professionals think it is likely that cyber attacks will disrupt ship and/or fleet operations in 2024 or 2025.

Probability of cyber attacks

"Whilst these findings from our Cyber Priority 2023 study are for all types of vessels, the key takeaway message is relevant to both FSRUs and LNG carriers," comments Svante Einarsson, Head of Advisory Cyber Security Maritime, EMEA & APAC at DNV.

New regulations can appear rapidly

High-profile cyber incidents involving LNG carriers, especially those affecting gas supply, would also increase pressure for new or further regulations to prevent reoccurrence.

International regulations through the IMO can take up to a decade to be agreed on and enforced. However, if a major flag state decides to regulate, other jurisdictions may follow suit quickly.

"For example, when the US Coast Guard acts, other flag states may follow with similar cyber-security requirements," Einarsson explains.

Tougher regulation looms in the US and EU

President Biden issued an Executive Order in February 2024 proposing to expand US Coast Guard (USCG) powers to require vessels and waterfront facilities to mitigate cyber conditions that may endanger the safety of a vessel, facility or harbour.

Einarsson adds: "The IMO's Maritime Safety Committee accepted the EU's proposals for enhanced ship and operation cyber security in May 2024, with the IMO Facilitation Committee set to follow in 2025. So there is momentum in the industry towards greater regulation of the cyber security of newbuild and existing ships in general, and of operations."

Balancing cyber requirements and practicality in modern vessel design

Consideration of the gap between what is required regarding cyber security for FSRUs and LNG carriers also includes how to ensure that both newbuild and existing vessels can be compliant now and in the future.

"Another question to reflect on is whether the highest cyber-security protection available is practical on board a ship in operation," Cartwright points out.

"In principle, if there's no business purpose for a particular connectivity for which a customer has a specific digitalization capability, it's best to disable it as it represents an additional surface of attack. However, this principle can be complicated by newer vessel designs featuring more IP-based connectivity as standard without an opt-out. Designs are becoming more digitalized, not by option but by development," Einarsson explains.

When LNG carriers upload LNG to FSRUs, the two vessels communicate with each other electronically, creating a new cyber risk for both.



Supporting cyber risk mitigation for LNG value chains

DNV assists the LNG industry by combining deep knowledge and expertise, not only of maritime cyber security but also of vessel operations, equipment, control systems and connectivity.

Our services and solutions for managing cyber risk in maritime IT and OT include risk assessment and testing; preparation for compliance; enhancing cyber security; validation of systems and procedures; training; third-party verification of cyber-security requirements throughout a vessel's life cycle; and certification against international standards.

Managing cyber security amid complexity and uncertainty

"We also explain the complexities and what mitigation solutions we can provide given today's regulatory environment," says Guillaume Leleu, Senior Maritime Cyber Security Consultant at DNV.

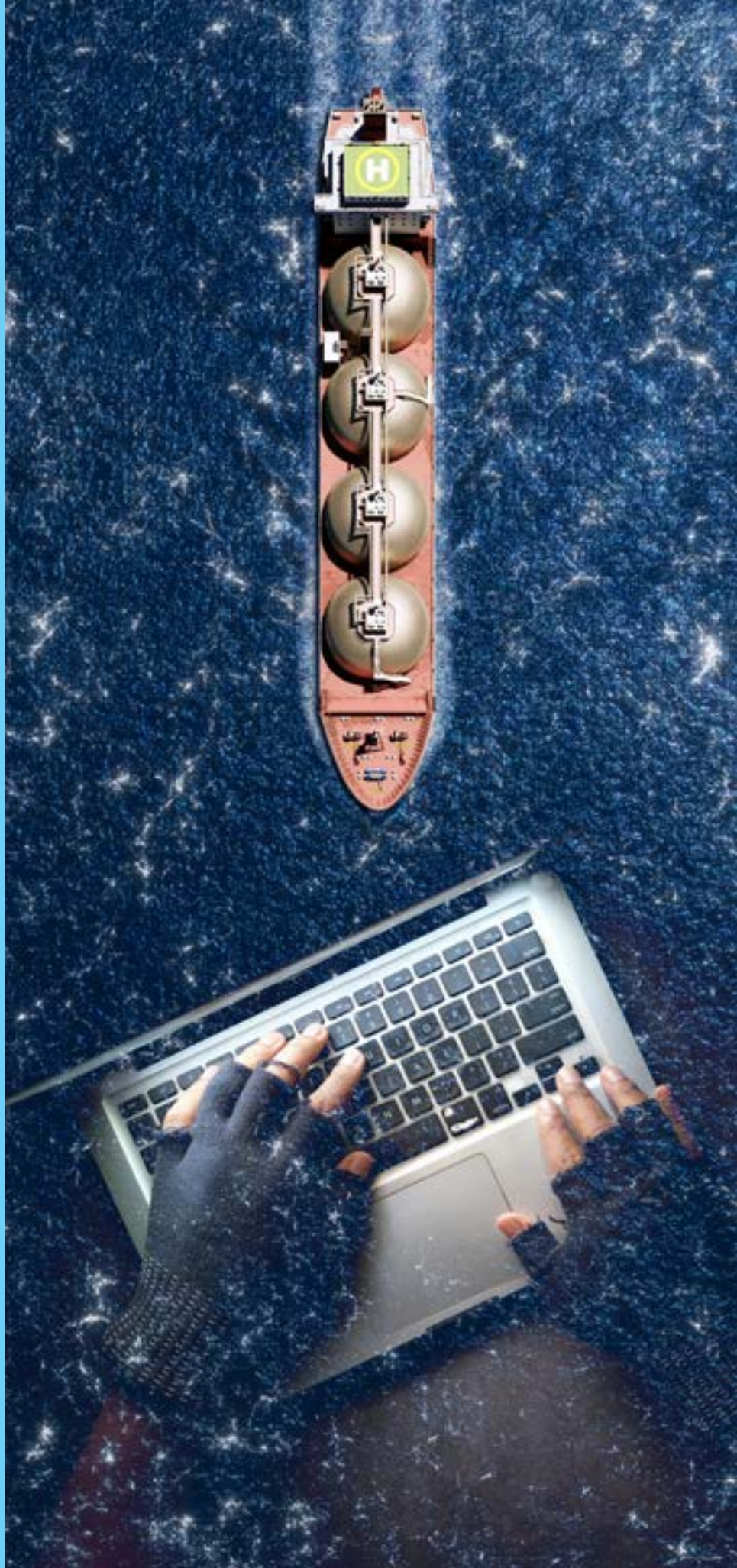
"Part of today's complexity comes from connecting existing ships that are not designed to meet higher cyber-security requirements to critical infrastructure that must meet such requirements. This is why complex projects need expertise that understands the specifics of each system, its cyber vulnerabilities and what it's capable of."

Leleu adds: "We've observed huge demand for our cyber-risk management services and solutions from shipowners and operators. Some of the most frequent issues of interest to them are assessing compliance to requirements, shaping cyber-security incident management process, supporting cyber-security management system development and training the teams on cyber security."

Finding practical regulatory solutions
"Due to DNV's expertise in cyber technology, comprehensive knowledge of marine assets and alignment with stakeholders' business goals, regulators frequently ask our experts to review and comment on proposed new rules on maritime cyber security," Einarsson relates.

"This combination means we can advise regulators on what's practical to do for a newbuild or existing vessel to comply on cyber security, and on the best way of achieving it within constraints that customers face."

This article was first published on the DNV website and is republished here with our thanks.



Accelerated uptake of carbon capture unlocking shipping opportunity



To the uninitiated, the concept of carbon capture and storage (CCS) can be hard to understand, complex, and remote even though it has been used effectively in the US energy business since the 1970s and in Norway since 1996 at the Sleipner field.

According to the Global CCS Institute, there are 41 CCS facilities in operation globally today at sites including gas power plants and chemical refineries manufacturing products such as ethanol and ammonia. And there are more than 350 new CCS facilities under development across the world, many of which are due to come online over the next few years.

And uptake is set to grow because “it’s an obvious thing to do,” John Pearson, Chief Operating Officer of Energy Transition Projects at Petrofac says. “Many sectors need CCS, but to different degrees and at a different pace, depending on what is economically viable. But if you can capture carbon at source, particularly for those hard-to-abate sectors such as cement manufacturing and waste to energy facilities, it’s a very positive process.”

Middle East oil producers

The US may have been a pioneer in CCS half a century ago, but the technology is being adopted across the world, notably by oil producing nations in the Middle East presently operating 3 facilities in the region. Last October, for example, Petrofac won a contract worth more than \$600 million from Abu Dhabi National Oil Company (ADNOC) to deploy CCS infrastructure at the Habshan gas processing plant.

It is the latest in a series of CCS projects in which Petrofac is involved and will triple ADNOC’s carbon capture capacity to 2.3 million tonnes a year. The energy major has committed \$15 billion to decarbonisation projects as it aims for net zero by 2045. Petrofac is also engaged in various other CCS projects globally, at different stages of engineering, such as for a cement facility in the UK, a waste to energy plant in Finland and a gas plant in Oman.



CCS projects vary widely in terms of complexity. The early circular systems in the US, for example, were relatively easy: oil and gas were piped to a gas processing plant where carbon dioxide was separated, pumped back along the parallel pipelines, and injected back into the oil and gas field to enhance oil & gas production.

However, not all projects are as straightforward. In the UK, there are plans to capture 20-30 million tonnes of carbon dioxide by 2030 and 50 million by 2035. This could rise to as much as 180 million tonnes by 2050. There is close to 80 billion tonnes of storage capacity on the UK Continental Shelf, sufficient to store hundreds of years' worth of carbon dioxide but there are challenges as some of the subsea aquifers are located offshore and relatively far away from the industrial clusters where the carbon dioxide is collected and sequestered before going offshore for storage. For this, transport is required, either by pipeline or ship. And this combination of requirements, Pearson says, is where the economics become complicated.

EU ETS a key driver

For a successful project, a series of unlinked but interdependent organisations and companies must do their own sums and establish a sound and profitable business model for capturing and sequestering carbon dioxide. Only then can a final investment decision be taken. And of course, the simpler the chain, the easier the projects are to progress. The cost of carbon is a prime factor too and in Europe, the EU Emissions Trading System will play a key role.

Dr Chet Biliyok, Petrofac's Technical Director, Energy Transition Projects, compares the backdrop in Europe with that of the US. There, he says, for industries with highly concentrated carbon dioxide streams, coupled with a short distance from the carbon capture facility to the subterranean

storage site (typically a depleted oil and gas reservoir), a carbon dioxide cost as low as \$25 a tonne can be realised. In Europe, however, where carbon dioxide will mostly be stripped from sources where it is more diffuse, the distances to storage sites are greater and there is no existing infrastructure, the challenge is starting from scratch. The cost could be as much as \$200 a tonne.

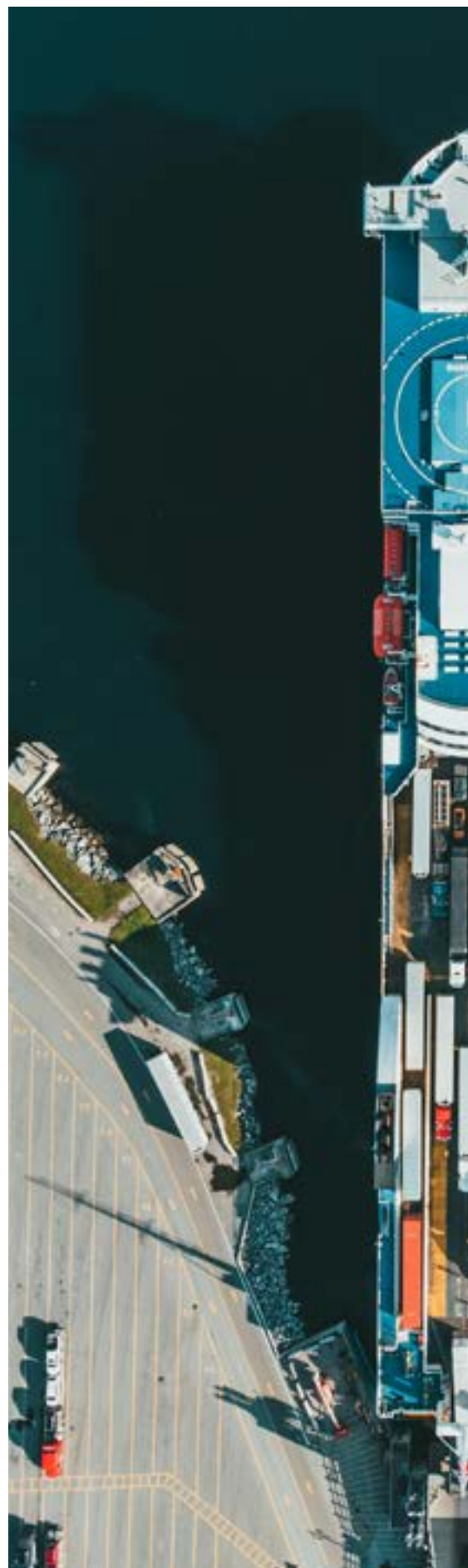
"So in this case, we need the Emissions Trading System, with meaningful emissions allowance prices, to make the economics work," he adds.

Shipping potential

Biliyok notes a range of exciting opportunities in shipping. There has been some talk around deploying carbon capture units on vessels to strip out carbon dioxide from exhaust gases during transit, which can then be offloaded at ports. Yet, daunting hurdles such as the limitation of space onboard exist, along with the results of a recent study from SINTEF in Norway showing that ship fuel consumption will double to accommodate the weight of the additional capture system. This limits the deployment of onboard carbon capture to a non-competitive slugfest with low carbon or zero emission fuels.

However, one undeniable opportunity is the merchant transport of carbon dioxide by sea and inland waterway, which will be a key element of decarbonisation in Europe. There's little technical challenge here, he says, because there is already a wide body of knowledge in cryogenics and the sea transport of gases in liquid form.

LNG, for example, is shipped by sea at -162°C. LPG carriers, on the other hand, use a combination of pressure and temperatures to carry cargoes typically at about -45°C to -30°C. A similar arrangement would be required to ship carbon dioxide at scale, with gas carriers transporting carbon dioxide at slightly elevated pressure but





similarly low temperature, to keep it in liquid form and prevent it converting from a gas into a solid as it expands – dry ice.

In the Northern Lights CCS project in Norway, for example, which is due to start operating this year, three 7,500 m³ gas carriers currently under construction at Dalian Shipbuilding Offshore will deliver liquid carbon dioxide to a receiving terminal in on Norway's west coast. It will be stored there and piped to an aquifer 2,600 metres below the seabed of the North Sea.

In another context – this time focusing on utilisation rather than storage – Biliyok highlights the scope for manufacturing methanol which, he points out, is becoming a favoured fuel for shipping. Initially, CCS can be implemented on grey methanol facilities, converting it to blue or low-carbon methanol, producing shipping fuel with significantly reduced emissions. Ultimately, green hydrogen can be combined with bioenergy with carbon capture and storage (BECCS) – where carbon dioxide is captured from biomass – to produce green methanol, a near-zero emission shipping fuel.

Summing up, Pearson explains: “I look at the energy transition as one of the best business opportunities I can ever remember. It's not a threat. It's the best moral imperative too because we're looking after the planet and we're providing energy security and affordability for society. But we do need to find ways to collectively accelerate our progress.”

Quantifying the costs and sizing up the opportunity

Shipping of CO₂ affords an important opportunity to rapidly build CO₂ transport networks and accelerate the development of carbon dioxide storage to enable the decarbonisation at-scale of large carbon intensive industries such as cement and steel production.

According to Philippa Parmiter, CEO of NECCUS, an industry alliance that promotes and champions industrial decarbonisation across

Scotland through co-operation and collaboration, the estimated costs of offshore storage in Europe ranges from Euro2-Euro20 (according to the EU Zero Emission Platform) depending on the type of store – saline aquifer, or depleted oil and gas field and the ability to reuse existing O&G infrastructure.

When transport costs are included, these costs will be higher if there is no adjacent storage with onshore storage being generally cheaper. Costs of carbon capture and storage rise when capture is factored in as costs depend on the percentage of CO₂ in the gas stream, and can vary between Euro20-Euro100 or more.

Europe is exploring various policy measures to enable CCS development including the ETS, carbon storage obligations, and a carbon border adjustment mechanism (CBAM) – to reduce the import of high carbon footprint, cheap goods; and has found ways to enable shipping between individual countries, despite the lack of signatories to the London Protocol, Parmiter explains.

For the UK to avail itself of this opportunity, the UK and EU ETS need to be aligned. The UK is developing business models to enable the decarbonisation of industrial clusters through CCUS, whereas in the USA, CCUS development is being driven by tax credits for capture, utilisation and storage – under section 45Q – which has been enhanced recently through the Inflation Reduction Act (IRA).

CO₂ shipping offers a great opportunity, providing resilience (if one store is not operating you can ship to another, whereas pipelines are point-to-point fixed transport), rapid access to storage (whilst pipelines are being built), and equitable access to stores for those who don't have them, enabling the growth of CO₂ storage markets, she concludes.

This article first appeared on the Lloyd's Register website and is republished here with our thanks.



Guidance on the carriage of grain and seed cargoes

Fuel consumed on board a ship requires heating to pump it from its storage to its settling or service tanks. However, some cargoes are extremely heat sensitive and therefore heating of tanks adjacent to cargo holds should be done with caution. The International Maritime Solid Bulk Cargoes Code (IMSBC) identifies the following as heated ship structures:

- steam pipes;
- heating coils;
- top or side walls of heated fuel and cargo tanks, and;
- bulkheads of machinery spaces.

A heated ship structure is where the surface temperature is liable to exceed 55°C.

That said, certain types of agricultural cargo suffer heat damage even at lower temperatures of around 40°C to 55°C. When steam is supplied to fuel oil tanks, the temperature within the tank rises and heat is either transferred by a conduction process or radiated from the tank to the adjacent cargo holds.

A significant number of claims have been linked to heat-sensitive agriculture products such as soya bean, wheat, maize, corn, barley,

sunflower pellets, canola, bananas, flower bulbs, soybean meal and fish meal. Processed cargoes have an even higher moisture and oil content, making them more susceptible to microbiological activity and self-heating, which can lead to severe heat damage with the feed cargoes. The extent of cargo damage may differ due to the extent of the exposure period, properties and/or inherent temperature of the cargoes within the hold. Heat transfer mostly accelerates the self-heating

process which often leads to cargo deterioration and can result in heavy economic losses to the carriers and shippers. Soya bean, as a high-value cargo, has amounted to more than half of those claims in recent years. Since agriculture products are heat-sensitive cargoes, the master and chief engineer should consider the location of heated fuel oil tanks and fuel consumption sequences as part of their cargo stowage planning alongside the ship's stability.

Self-heating damage and risks associated with fuel tank heating

The moisture and oil content within agriculture cargoes dictates the speed of naturally occurring microbiological activities which can lead to mould, fungal spores, bacteria and yeast cells forming. This can cause germination, fermentation or putrefaction. However, drying the cargo prior to loading can slow these microbiological activities down so the deterioration is less likely to occur during the voyage. When agriculture cargoes are loaded with sufficiently high moisture content, it usually promotes the migration of moisture from higher to lower temperature areas within the cargo. When moisture content and temperature are mostly uniform, the rate of moisture migration is usually low. Therefore, greater temperature differences within the cargo favour mould development and exacerbate microbiological self-heating. This self-heating is usually slow to begin with, but the heat from the vessel or fuel oil tanks could aggravate the process. Further self-heating could then cause the bulk temperature of the cargo to rise to a point where the residual oil in the cargo begins to oxidize. This promotes possible spontaneous ignition and may even result in rancidity, discoloration or blackening of the cargo. The cargo's deterioration could get worse with long sea passages or when vessels encounter any delays at the discharge port. When the cargo becomes mouldy it often emanates malodour and forms long filaments that intertwine, creating visible layers of agglomeration (caking). This contributes to product quality degradation, storage instability and impacts the nutritive value of the cargo.

One of the mitigation processes is to dry the cargo prior to loading to slow down the thermal conductivity which in turn slows the heat transfer within the cargo. The smaller the chance of moisture migration means cargo deterioration will be less likely to occur during the voyage. However, this may not be within the control of the vessel. The vessel should communicate with the shippers at load port and/or employ surveyors to conduct quality cargo control inspection. Sometimes, it is not possible to detect whether the cargo is dry or wet at load port. In such instances, the master could

request for the moisture content and temperature of the cargo to be recorded in the certificate of quality. This may be beneficial against future claims and will also give clarity to the master when it comes to ventilation practices during the voyage. In one instance, soya bean loaded from Brazil destined for the Far East did not result in dispute during the initial lightering process. However, subsequent weeks of delays at the anchorage had exacerbated microbiological deterioration of the remaining cargo on board and partial cargo was eventually rejected by the receiver. Therefore, it is very important to communicate with the receiver about the berthing schedule and report the condition of the cargo to the shipper whenever there is a delay.

The cargo's insulating properties will at some point prevent the heat from dissipating further. Surface cargo may appear to be in good condition whereas some of the cargoes at deeper levels, especially those near the cargo hold bulkhead or tank top may already be burnt. As the damage is caused by microbiological processes within the cargo, it may extend well beyond the heat penetration from fuel tanks. Consequently, the cargo may be discoloured and scorched up to several metres in depth when it is immediately above the double-bottom fuel oil tanks. This will be apparent during discharging.

Case study

In another recent claim, the heating of the aft double-bottom fuel oil tank below the cargo hold resulted in significant heat damage to the soybean meal. As the vessel received last-minute instructions from the charterer to plan for the loading of soybean meal, the chief officer then decided to load the parcel in no.7 hold due to the availability of space. The cargo hold is directly above the fuel oil tank and situated in front of the engine room bulkhead.

Furthermore, the constant heat generated from the exhaust gas economizer (EGE) was recirculated back to the fuel oil tanks to disperse excessive heat energy. The ship's crew members did not monitor the temperature of the fuel oil tank heating throughout the voyage even though the tanks were fitted with temperature sensors. On discharge, some 3,500 metric tons of cargo was allegedly found damaged by heat and rejected by the receiver. The claim was estimated at a value of a quarter of a million dollars.

The service and settling tank temperature can heat up to more than 80°C in the process of fuel transfer. This means the cargo hold situated in front of the engine room bulkhead will be exposed to heat radiation if the bulkhead is not properly insulated. Some modern



vessels are designed with cofferdams and insulations between the cargo hold bulkhead and the engine room. Therefore, vessels without this design should plan their stowage of valuable yet vulnerable cargo with this consideration in mind and/or prioritize the loading of non-agricultural products in this after-hold.

Some post-incident investigations also revealed that crew members did not maintain any temperature records of the cargo holds and fuel oil tank heating. This could prove counter-productive in defending claims against the vessel's owners. Very often, recipients at discharge ports may reject the whole parcel of the cargo when they find alleged heat-damaged cargo has been mixed with sound cargo. This can result in substantial claims of up to several hundred thousand dollars and some ports may even refuse to discharge these unsound cargoes in the discharge port. Subsequently, the vessel may have to proceed to another nearby port to dispose of the cargo as their last option, which may result in additional cost and delays.



Conclusion

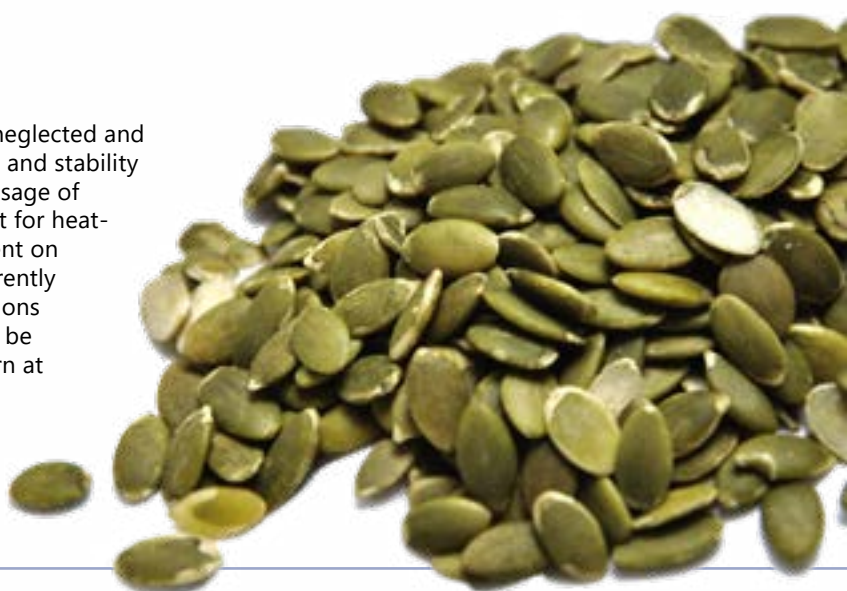
By and large, bunker management is often neglected and may not always be included in cargo stowage and stability planning processes, especially prioritizing the usage of fuel tank sequences. This is particularly important for heat-sensitive agriculture products. In short, management on board the vessel should plan cargo stowage concurrently with fuel management and conduct proactive discussions to better understand the characteristics of the cargo to be loaded. Finally, the goal is to achieve a claims-free outturn at discharging ports.

Preventative measures

It is important for the master, or their representatives, to inspect the cargo condition at load port and the following recommendations may provide some assistance to the master in planning and transportation of these types of cargoes:

- Vessels should consult the provisions scheduled by the IMSBC Code for stowage precautions, especially for temperature-sensitive cargo during the planning stages.
- High-value yet temperature-sensitive cargoes should be loaded away from the fuel oil tanks and/or uninsulated engine room bulkhead. It is preferred to load these cargoes adjacent to non-essential fuel oil tanks as heat from fuel tanks may trigger rapid deterioration even if the cargo would be otherwise suitable for carriage.
- When planning fuel storage management for a voyage, the master and chief officer should liaise with the chief engineer about the nature and type of cargo prior to loading and discuss fuel oil management for the voyage.
- Prioritise fuel consumption for fuel oil tanks that are not adjacent to the cargo hold with heat-sensitive cargo.
- Consider using lower viscosity fuel oil when carrying temperature-sensitive cargoes as low viscosity oil requires lower temperature heating.

- Carry out fuel heating gradually by increasing the steam capacity in the steaming coil, limiting the rise in temperature to a minimum extent, until it is sufficiently heated but not unnecessary (ideally tanks should not be heated more than 40°C).
- Remember that the heating lines exposed above the surface of the fuel in the storage tank may transfer heat to tank top plates even faster than if they were submerged. To minimize the heat transfer, leave a sufficient amount of slack fuel in the tank.
- Ensure effective working conditions for the heating coils in the fuel tanks and shut-off valves, steam traps and temperature sensors in the bunker tanks as per the vessel's Planned Maintenance System (PMS).
- Update the PMS maintenance records thoroughly as these may serve as valuable evidence in the future.
- Ensure the steam supply valves are shut when emptying fuel oil tanks.
- Retain temperature records of heating fuel oil tanks carried out throughout the voyage.
- If accessible, carry out temperature monitoring inside the cargo holds and ventilate as practiced by relevant temperature rules.
- Be aware of surplus steam from the Exhaust Gas Economiser (EGE) being recirculated to the fuel oil tanks.



Australian shipbuilder Austal, commits to sustainability with LocAl® Low Carbon Aluminium

Austal, the well-known Australian shipbuilder has committed to using LocAl® lower-carbon Aluminium supplied by Capral to support their initiatives in sustainable manufacturing and responsible procurement.

Renowned for developing defence and commercial vessel platforms, the Austal product range includes vehicle passenger ferries, patrol boats, high-speed support vessels, surface combatants, and revolutionary, multi-role vessels. Capral has been a long-term supplier to Austal, providing proprietary aluminium extrusions and rolled products to support their diverse manufacturing needs.

With a clear focus on integrating sustainable development priorities into the organisation's operations, business planning, and investment decision-making, Austal is taking great strides in aligning its business strategies and operations with the interests and needs of its stakeholders, customers and communities.

Early in 2023, Austal committed to switching their locally extruded aluminium to the LocAl® Green offer introduced by Capral in late 2022 where practical to do so. LocAl® Green, with carbon emissions of 8kg CO₂e/kg Al*, offers significantly lower carbon emissions than traditional aluminium, delivering Australian manufacturers a cleaner, green option for extruded aluminium.

Shipbuilding produces vessels with a typical expected life span of 20 to 30 years. Austal recognises that understanding the influences and opportunities to reduce GHG emissions over this long period is critical to successfully achieving a sustainable business model. Sales Operations Manager Matthew Klingberg comments, "Austal has made a public commitment to achieve a reduction of embodied emissions, and this includes Scope 1, 2 and 3-upstream."

"In selecting materials for incorporation into our products, we consider material longevity, durability, and repairability to ensure the vessels we construct are of high quality as well as efficient and long-lasting. Our aim is to manufacture vessels that are highly economical and sustainable over their lifecycle.

"Aluminium suffers from little to no corrosion. Marine-grade aluminium ensures that protective coatings are not required on all hull surfaces, limiting materials used to construct our ships. Correctly designed aluminium structures will operate effectively for up to 30 years without any structural issues or needing a single coat of paint."



*Cape Class Patrol Boat.
Photo by AUSTAL:
austal.com/image-library/*

"Furthermore, aluminium is highly economical to recycle. We recognise, however, that producing aluminium is energy intensive when compared with steel," he concluded.

Aluminium is often touted as the "sustainable metal", its versatility and recyclability earning it this reputation. However, there are significant variations in the carbon emissions generated by smelters during the production of primary aluminium – one might argue that some aluminium is considerably more sustainable than others.

The main contribution to the carbon emissions of aluminium comes from the electrolysis process used in aluminium smelting. Around 60% of the aluminium sector's GHG emissions are from the production of electricity consumed during the aluminium smelting process.

A salient fact that may surprise some is that combined, the four Aluminium Smelters producing primary aluminium within Australia consume approximately 10% of the national energy grid.

The carbon emissions in primary aluminium production range from under 4kg CO₂e/kg Al to over 20kg CO₂e/kg Al, largely dependent upon the energy sources used. The current global average carbon emission for primary aluminium is approximately 12.4 kg CO₂e/kg Al.

Such environmental impact is accounted for in Austal's upstream Scope 3 GHG emissions, while the benefit of lower-weight aluminium in reducing diesel consumption

is reflected in Austal's downstream Scope 3 emissions. Matthew Klingberg explains, "Austal's downstream Scope 3 emissions are also our customers' Scope 1 emissions. When we actively make decisions to reduce the emissions associated with the materials we use to construct our vessels, by sourcing LocAl® Green aluminium from Capral, we are delivering a far more sustainable solution to our customers."

Austal is committed to reducing the footprint of the aluminium used in its vessels, including through sourcing "green aluminium", noting that sourcing flexibility is restricted due to Austal's requirement for specific grades of marine quality aluminium.

"When we introduced LocAl® Green Aluminium in October 2022, we knew that organisations like Austal had a requirement for more sustainable aluminium options supplied locally within Australia. At eight kilograms of carbon emissions per kilogram of aluminium, the LocAl® Green offer has substantially lower carbon emissions than the current global average for primary aluminium. It gives Australian shipbuilders like Austal an important opportunity to make more responsible procurement decisions when they source extruded aluminium," adds Luke Hawkins, Division General Manager of Industrial and Supply Chain.

Austal understands that sustainability goes beyond material choices and extends to every aspect of its operations. The company has implemented various initiatives to reduce carbon emissions and promote energy efficiency in its manufacturing processes.

Additionally, Austal has invested in energy-efficient equipment and technologies to optimise its manufacturing processes. By adopting advanced technologies and innovative practices, the company minimises waste, reduces energy consumption, and improves overall operational efficiency.

"Implementing environmental stewardship is increasingly important to align with regulatory requirements, safeguard our business reputation and address our stakeholder expectations. Austal seeks to manage the environmental impact of our operations and products and contributing to the global transition to a low-carbon economy," states Neil Formosa, Strategic Procurement Manager.

In addition to the lower carbon content of LocAl® supplied by Capral, responsible sourcing is also important to Austal. In 2023, Capral became the first Australian aluminium extruder to be certified under the ASI Performance Standard V3 and Chain of Custody (CoC) V2 for the extrusion, warehousing and distribution of aluminium products and services. The certifications apply to all of Capral's 26 facilities, which are composed of mills, distribution centres, and trade centres, and are spread across every state and territory in Australia.

These certifications recognise Capral's commitment to responsible production, sourcing, and management of aluminium products.

"Capral's ASI certification provides us assurance that the materials we source from them have been responsibly produced at every stage in the value chain," adds Neil.

A wide-angle photograph of a large ship hull under construction inside a massive industrial building. The hull is white and has a distinctive V-shaped cross-section. Several blue scissor lifts are positioned around the hull, with workers visible on them. The building has a high ceiling with a complex steel truss structure. The floor is concrete and there are various construction materials and equipment scattered around.

Austal's Next Generation 102m trimaran under construction.
Photo by AUSTAL:
austal.com/image-library/

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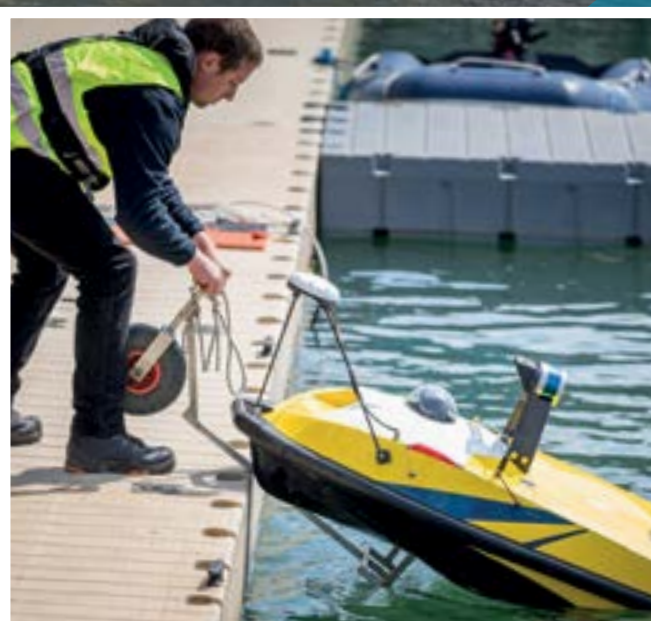
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Bad ladders are a major issue for marine pilot safety

By **Arie Palmers**



Arie Palmers AFNI is a Dutch marine pilot and is closely involved in efforts to tighten pilot ladder safety. In this case, Palmers shows how one bad ladder can illustrate the dangerous gap between international requirements and real-world industry practice. Arie is also a CHIRP ambassador.

At least eight people died in boarding accidents last year, and bad ladders are part of the problem.

Recently I was involved in a case with a non-compliant and dangerous pilot transfer arrangement on a bulk carrier heading to Vlissingen anchorage for partial discharging.

On the 17th August around 2324 local time the first pilot boarded the vessel at Wandelaar pilot station via the SWATH pilot vessel. The ladder that had been rigged was not used because the servicing pilot had been put on board via the retractable gangway of this boat, and therefore was able to step directly onto the deck of the vessel.

The agent asked me for an English explanation on why this ladder would not be safe. I considered it interesting enough for educational purposes to extend my reply a bit and share it online.

At 0219 local time the next morning (18th August) the vessel arrived at Flushing roads to change the pilot. During this procedure it was established that the ladder did not meet international standards, regulations and requirements and was therefore not safe to use in accordance with SOLAS ch. V reg. 23 rule 2.1. And 3.1. The non-compliances that were noticed at that time were:

- All wooden steps were loose. (pictures and videos were made). No inspection or maintenance had been carried out in accordance with ISO799-2:2019 ANNEX A. Question: is pilot ladder maintenance and inspection implemented in the SMS system as required?
- All wooden steps were varnished, which is not in accordance with IMO A.1045 rule 2.1.2.4, ISO799-1:2019 rule 4.1 and is also mentioned in the well-known pilot ladder poster issued by IMPA in cooperation with the IMO (slippery and therefore a tripping hazard).
- No identification tag under the bottom spreader as per regulations ISO799-1:2019 rule 8.1
- Ropes seizings not as per regulations mentioned in ISO799-1:2019 rule 4.7
- Spreaders are not of a one piece construction as per ISO799-1:2019 rule 5.14

The most hazardous issue with this specific ladder was the fact that all steps were loose, in combination with the fact that those steps were also varnished. Steps will tilt when weight is put on them, and the varnish will cause a slipping/tripping hazard. Last year eight people, of which I know, have been killed attempting to board a vessel.

During the attempted transfer, a picture of the pilot ladder certificate was asked at 0223 and received at 0239. According to the provided certificate it appeared that the ladder had been built in December of 2020. A ladder needs to undergo a strength test or to be replaced after 30 months as per ISO799 - 1:2019 rule 10.4. Later it became clear that the provided certificate did not match with the presented ladder. This could not be checked at that time because there was no identification tag under the bottom spreader as per regulation (that is the reason a tag must be placed under the bottom spreader). The certificates belonging to the pilot ladder in use were never presented.

The combination of these deficiencies combined with the provided certificate led to an initial rejection to use this ladder to board the vessel. At 0515 the Dutch pilot launch was called away from Steenbank pilot station to Flushing roads to provide the pilot with access to the vessel without having to use the pilot ladder. During this time the agent had been informed to deliver new ladders to the vessel that would comply with international law. Unfortunately, the agent did not answer the phone at that time, so a voicemail message was sent by the chief pilot in the Scheldt Coordination Centre.

Upon boarding at 0515 the pilot (me) informed the captain of the deficiencies that were observed and that a new ladder was required to provide safe access. Images and videos were shown to the captain, and a video was shared with the captain on an iPhone.

Meanwhile the crew was busy to try and solve the problem of the loose steps. Upon arrival of the agent, he was told new ladders were to be provided. He told me the ladder was only one year old, which I later could check by having a look at the tag that was only present under the top step of the ladder.

Despite the fact that the ladder was only one year old, it was in a deplorable condition. The deck crew had been busy with the ladder for several hours. I could not check if the required repair rope had been used (three-ply tarred Marline of a minimum breaking strength of 800N and with a minimum diameter of 4mm or other suitable material of equivalent strength and diameter as per ISO799-1:2019 rule 4.7).

After these repairs, several people boarded and left the vessel again via this ladder. I therefore deemed it safe enough to conduct a pilot change in sheltered waters with the vessel not making way through the water (my mistake). Once I was on the pilot ladder to disembark, which I was not able to test with my weight on it before that time, I noticed the steps were still loose.

Port state control has been informed about the situation and has asked the agent to provide new ladders. Just to check, I asked a reputable manufacturer for an appraisal on a ladder with a length of 14 meters and 43 steps, and the costs of that would be: 965 euros. It is possible to order a ladder directly from various manufacturers in the region. The class of the presented ladder has been asked why they certified this product, due to bad seizings, varnish etc., and they are investigating this case.

The vessel has no blame for having a ladder onboard that is not constructed as per international regulations: vessel orders a ladder, a ladder is delivered, and the crew should be able to rely on the fact that a proper piece of equipment had been purchased - but

unfortunately a substandard quality ladder was delivered.

The vessel is however responsible for maintenance to be carried out on the ladder, especially when the ladder is constructed with whippings that will loosen over time. Purchasing a ladder where clamps are used, erases that problem. Equipment like pilot ladders need to be in the vessel's SMS system so it is assured that proper maintenance and care will be executed. ISO799 provides you with the correct tools to do so. Also, some manufacturers attach a maintenance record booklet to every ladder they supply, which is a good basis to implement it in the SMS system. It will definitely save lives when done the proper way.

I'll end this article with some questions that are open for discussion:

- Why did the pilots in the port of departure consider this arrangement up to standards?
- Why did a class association, connected to IACS, approve a ladder that presumably was built under ISO799 standards? We can all see this ladder was way below any acceptable standard.
- Who is checking the quality of the certifying bodies?
- Why would an agent refuse to provide a new ladder (965 euros, remember)?
- Why does the flag state approve these practices?
- Who checks the SMS on every vessel?

The workgroup I am a part of is finishing the process of writing new and clear regulations on ladders, which will pass the IMO MSC this December. The same goes for the pilot ladder poster, which has been fully revised and redesigned.

Should you want to obtain more information regarding pilot ladders, I would like to point out the website www.pilotladdersafety.com. It has a lot of information on ladders and also good instructions that can be used in toolbox meetings.



By **James Herbert**



Professional salvors keep marine trade flowing

James Herbert is Secretary General of the International Salvage Union, the organisation serving as the global voice of the marine salvage industry with a membership of some 55 marine salvage companies from more than 30 countries.

The drive for transparency should be at the heart of all industry. Ensuring that stakeholders know about, and understand, your work and views builds trust and confidence. But it can be argued that the shipping industry - so vital for world trade, but less visible to the wider public - has not had to attend to transparency to the same degree as, for example, the energy industry. To meet its commitment to openness, the International Salvage Union (ISU, the global trade association representing the interests of professional salvors, publishes an Annual Review describing its activities and reporting on the performance of the salvage industry.

The spotlight of public scrutiny now shines on shipping more and more. But it is only in the last few years that the letters "ESG" have become mainstream for shipping and owners and managers have started to publish reports. Much of the focus relates to requirements for carbon emissions reduction in motive power. But the traditional concern in the operation of maritime trade has been pollution and potential damage to the marine environment following vessel casualty and that has not gone away.

The reduction in incidents involving oil spills is well documented and it is indeed rare to see major disasters. But the threat remains and has shifted to other trades including containerships

which carry a huge variety of potentially hazardous and polluting products. It includes plastic nurdles (tiny pellets) which, if spilled to the ocean, are both devastating and extremely hard to deal with including in beach clean-up operations.

And containerships are difficult to deal with as casualties. In the largest classes the sheer scale is overwhelming, and the challenge for salvors is great. The recently published 2023 ISU Annual Review sets out the results of the association's annual pollution prevention survey. It shows that ISU members – professional, commercial salvors from around the world – provided services to boxships carrying nearly half a million tonnes of cargo.

The same survey also identifies the threat from bunker fuel, with our members handling casualties with nearly 100,000 tonnes of bunkers which included a number of cases where the individual vessel had more than 2000 tonnes of fuel on board. The case of the wrecked Capesize bulker *Wakashio* is a clear

demonstration of the very real risk – she spilled about 1,000 tonnes of fuel when she grounded off Mauritius in 2020 causing an environmental disaster. The intervention of salvors prevented the rest of the fuel – at least another 2,000 tonnes – from spilling.

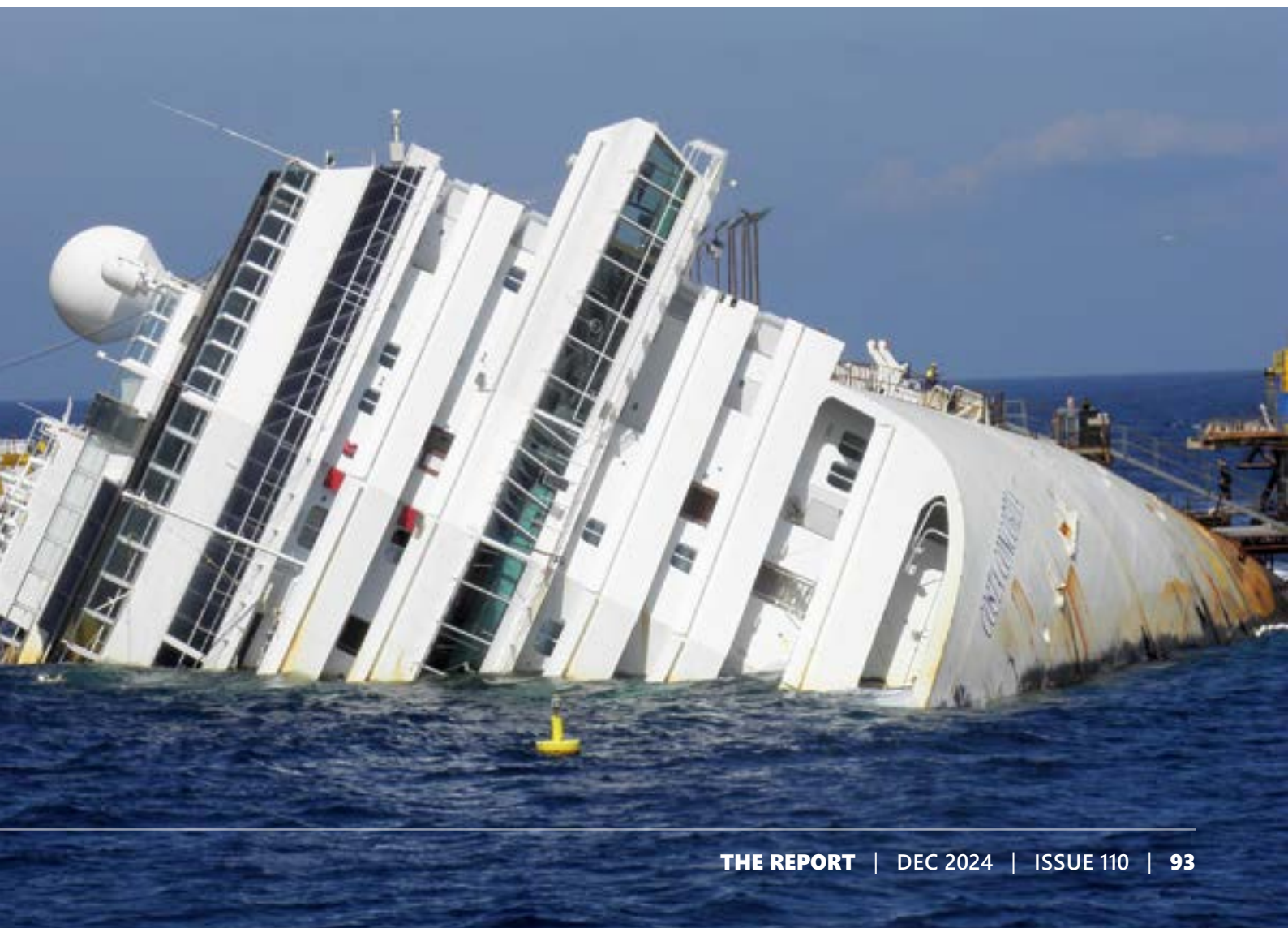
In most situations it is only the professional salvors that stand between a casualty and an environmental catastrophe. Typically, our members provide services each year to vessels carrying more than one and a half million tonnes of potential pollutants. In an era where, rightly, one tonne of bunkers over the side is unacceptable this is a huge contribution to environmental protection, to say nothing of the huge costs and reputational damage that might otherwise be incurred.

And this reinforces the key priority of the ISU which is to ensure that the industry remains adequately funded. The ISU position is that salvage awards under Article 13 of the Salvage Convention (based on the success of the operation, the values preserved and with additional encouragement) must remain the

cornerstone of the industry to fund the investment in people, training and equipment that is needed to continue to provide professional services around the world. At the same time, we recognize that our members are free to contract how they wish and many services are provided, for example, under variants of BIMCO wreck contracts, towage contracts and on commercial terms.

We know that our key stakeholders—shipowners, property and liability insurers—recognize the importance of the salvage industry because they say so publicly and all of us agree that the salvage industry needs to be sustainable economically. When there are tensions around the cost of salvage, we ask that, when considering awards, owners and insurers celebrate the value preserved by our services and do not focus on the cost.

In concluding, I think we can be very proud of our industry and the services that it provides and I never find it difficult to make the case for the professional salvor.



ISM CODE: THE MARITIME SCAM OF THE CENTURY?

An opinion article by **Bertrand Apperry**,
HonFIIMS, IIMS Past President



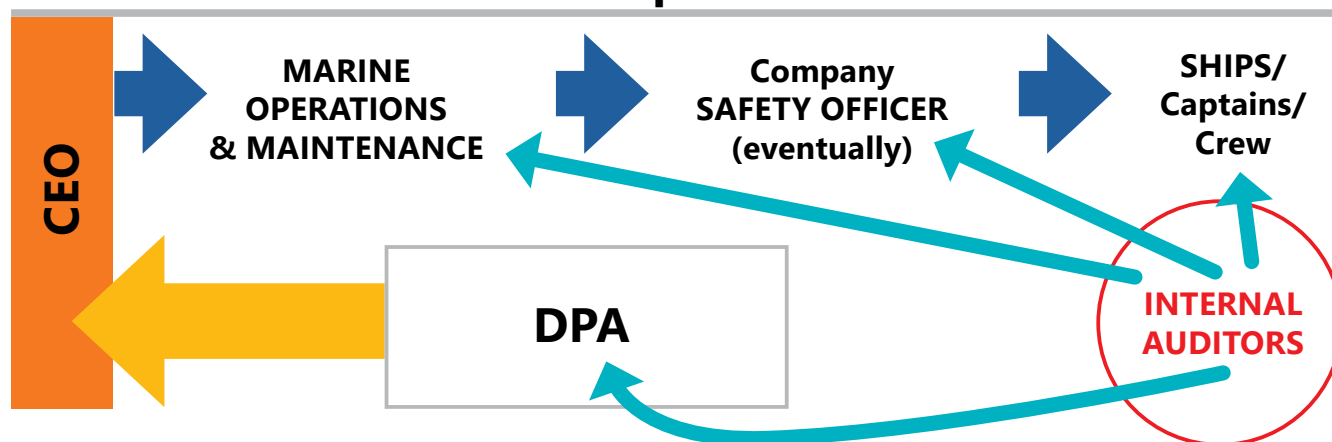
The opinions expressed in this article are those of the author alone and are not necessarily those of IIMS.

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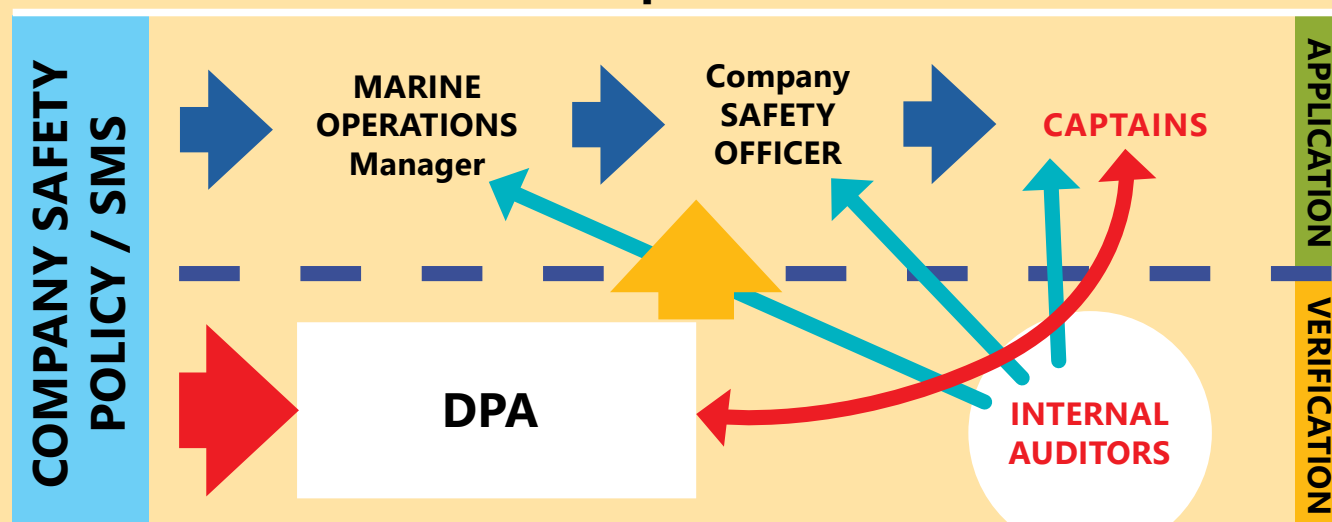
Introduction: Why have we created the ISM Code?

Created by a strong desire to "do something" after the disaster of the Townsend Thoresen ferry "HERALD of FREE ENTERPRISE" (**HOFE**), the ISM code was originally issued as a self-management system of a voluntary nature for maritime safety within shipping Companies and aboard ships.

Internal audit process in a SMS



SMS Implementation



It is true, at the trial of the accident, we found the Townsend Thoresen company "was working very poorly from a safety point of view" (Lord Justice SHEEN dixit) while at this time this ferry company was seen by all of us (European ferry officers) as one of the best in the world in its field. Incredible!

Designed on an existing ISO 9002 skeleton and adapted to an organization/management of safety/pollution prevention for a shipping company and its ships, the ISM code focuses on the application of existing rules and recommendations, particularly on the preparation of the company, their ships and crews to deal with normal conditions and emergencies. Today it's true, by requiring shipowners to apply mandatory rules and taking into account the recommendations of the sector and especially those coming from experience of accidents in our industry, being at *almost 30 years of adolescence*, we would think that the "adult ISM philosophy" is now fully understood and applied effectively!

Finally, NOT at ALL

New in the approach to maritime safety and orphan of a concomitant specific training, the mandatory ISM code is too often misunderstood and therefore poorly applied by companies, captains and seafarers while they continue to work apparently around the world and we sometimes wonder, if this imperfect functioning could ultimately be ... voluntary?

Why are we at this point?

Firstly, as an official text, no matter how perfect it is, it always includes some mistakes or dark areas, which we try to rectify step by step. So, the ISM code has unfortunately some weaknesses and fortunately some strengths but, some parts are still fuzzy ... could they be voluntarily fuzzy?

So, to understand we're going to analyze a completely unbearable situation that could perhaps reveal a "scam"...

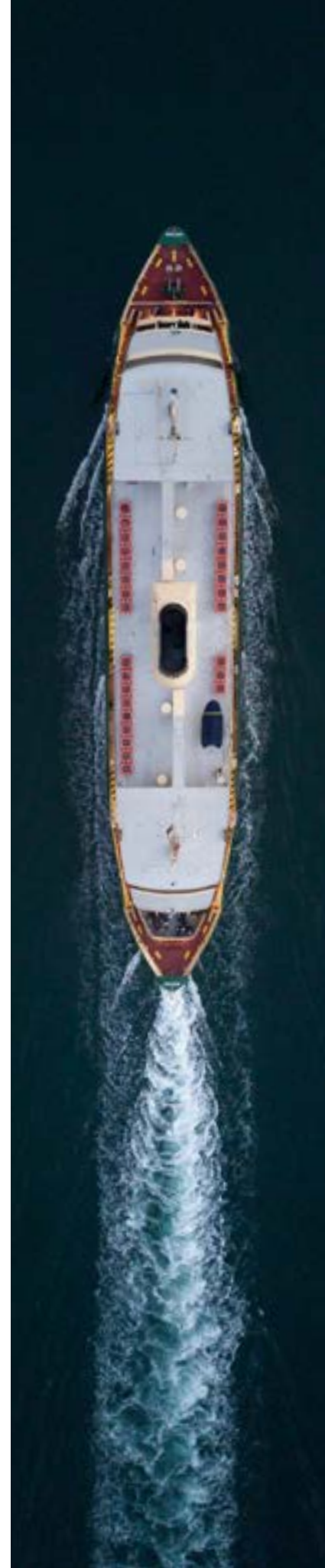
2. The most significant strong points of the ISM Code

In its preamble, the code reminds us that IMO has called governments to take the necessary measures to protect the ship's Master in the proper exercise of his/her responsibilities for safety and protection of the marine environment on board his/her ship.

- ISM is an international code for organizing and managing safety of ships in a standard format with clearly stated objectives and measures to attain them.
- The Code has to ensure, at a minimum, compliance with mandatory rules and regulations and take into account, as far as *possible* and *reasonable*, other recommendations of our industry including those coming from feedback analysis.
- The Code is a norm written in general terms which allows a necessary adaptation as the safety of modern vessels evolves rapidly.
- For the first time accident feedback analysis is required in our industry!
- The Code is a complement to the requirements of SOLAS that company and ship being ready at all times to respond to emergencies which includes all those possible ... depending on the type of ship and its operations of course.

The DPA system (Designated Person Ashore) - unique in the industry - was designated to "monitor" safety in the operation of the Safety Management System (SMS), with the help of the Master on board *independently of its application* by the usual executives of a shipping company who are superintendent, fleet director, technical director or other safety manager.

All anomalies, concerning safety or environmental protection must be communicated to the DPA which has a direct link with the highest level, are in theory communicated to all the management of the company, which will no longer be able to take advantage of "non-knowledge" (legally speaking) in the event of an accident resulting from these anomalies. This person, designated by top management itself, theoretically avoids possible blockages between the needs of the ship and the resources allocated by the company by informing management in a direct and safe manner!





Who says "aware" for a boss says, legally speaking, "responsible" (see *).

- Finally, all anomalies concerning safety or protection of the environment are communicated to the company top management who will no longer be able to avail themselves, in front of the court, of a "no knowledge" in the event of an accident.
- In addition to the traditional inspections, an internal ISM audit process allows independent persons to detect and analyse malfunctions in an area or in the SMS itself (including therefore the monitoring carried out by the DPA) and to find solutions with operators to avoid accidents. This is a kind of double check in the *pro-active side of the ISM code*.
- For the first time on merchant ships, the criticality of an engine must be studied in order to be able to increase its reliability and, as a corollary, the operation of the ship in degraded mode is prepared upstream i.e. first step towards the "*safe return to the port system*". In addition, regular tests of stand-by devices are also required (FFS & LSA devices) to be sure of their correct operation, the day we need them.
- Self-management of safety in the company is organized with periodic analyses of efficiency and improvement which are then communicated to the personnel involved rather than waiting for the controls of the Flag Administration.
- The code requires a clear definition of the responsibilities of all personnel involved in the safety of the ship, its operations and the resulting environmental protection from the top to the bottom of the company.
- The Code focuses on the Master's responsibility and his/her special power to decide in matters of safety or security.
- The standardization of management of safety in a form of mandatory system allows a "comprehensive" analysis for our industry, which is international, by definition.

3.

The weak points of the code and its application

After 30 years of existence, today we know well the weaknesses of the ISM code whether in its design or in its application:

- The protection of the ship's master provided for in the preamble was only a rather timid "invitation" and was therefore almost everywhere completely forgotten, whether voluntarily or not.
- In many paragraphs of the code, from §5 to §12 exactly, all articles start with "the company should" and only Chapter IX of the SOLAS turns this conditional into obligation. That's still a dark point for some people.
- ISM Compliance certification is possible by ROs (Recognized Organizations) instead of Flag Administrations, business for them certainly, without too much trouble for the shipowner of course who is still a customer.

* Important legal element that all bosses know well. This aspect of liability of the Company's CEO has been underpinned years ago by Phil ANDERSON in his book "*ISM code practical guide to the legal and insurance implications*" in the chapter "*self-incriminating evidence*" page 191. Much more, at the HOFFE trial the president of the court is said to have said to the President of P&O: *I cannot put you in jail, because the law does not exist, but I regret it!*

- There is no willingness from the ROs to see the companies putting in place an effective internal audit system that would take away any usefulness from the RO and some power from the Flag Administration.
- We use more and more heterogeneous crews than ever, for cost reasons firstly, so significant difficulties to apply a company safety culture appear (M/S COSTA CONCORDIA Syndrome).
- Procedures are always unknown by crew members. At every accident there is always a lack of knowledge of the procedures, which is not explained, except to suspect officers to "keep them to themselves" and to leave the Filipino or Indonesian "rating" away (M/T BOW MARINER Syndrome).
- The "reporting" required by chapter 9 of the code is never encouraged in a company's SMS, perhaps to reduce paperwork - except in the offshore and oil industry, however with sometimes a rather strange obligation of a minimum number of "near-misses" per month? Or maybe there is another more subtle reason? (See later).
- ISM training still does not really exist. It is rare for the DPA, absent for internal auditors and crew members, weak in training schools and almost absent elsewhere, even at the Master's level. What's the reason? The cost perhaps. (LOW-COST Syndrome).
- An SMS can lead to false confidence because the shipowner thinks he is getting away with issuing a large number of technical manuals to help the crew to apply the procedures, except that the crew never reads them and therefore doesn't apply them! So, we often still work as before.
- Continuous training, essential for the maintenance of knowledge, is generally poorly organized and it was even necessary to wait until 2017 in some countries to realize the revalidation of the essential knowledge of the sailor - all knowledge, except those on the ISM of course! This is finally a major non-conformity with the SOLAS convention.
- The company's and crews' preparations for responding to any emergency have remained at a basic SOLAS level which appears at each accident as the major cause of crew members or passengers' casualties. Indeed on board, due to rehearsals, you can perform a minimum of safety exercises in a soft manner as on a simulator. (We often simulate simple operations like cutting the arrival of fuel to MPs for example instead of really doing it) and then we let you work your imagination to simulate an extension and escalation of the incident! So, dubious on the effectiveness of drills and exercises which are supposed to enter in the continuous training (M/V NORMAN ATLANTIC Syndrome).
- Even if all, or almost all of the ISM code chapters start with "the Company should", no other text clearly specifies the responsibility of the company manager contrary to the Master. During the trial of the COSTA CONCORDIA accident (2014) the application of the ISM code was only touched on and even if the liability of the company was highlighted, only our colleague Francesco Schettino goes to prison. So, still no will preventing the Master from always being the best scapegoat (HOFE Syndrome).
- Internal audits which are the fuel of an SMS, are always sloppy by companies because, as external auditors consult the reports, internal auditors are asked to do a soft audit in order to avoid double punishment. This is the "not seen, not caught" syndrome which has the opposite effect of the desired target!
- There is no desire to clarify the role of the DPA which for many Companies remains unclear and this prevents it from coming in the legs of the transverse directors of the various departments with the terrible possibility of shunting them and going to the big boss directly. (DPA syndrome).
- An ISM Chapter 7 "Shipboard operations" far too short seems to forget the main operations of the ship that are the conduct of the ship's navigation in all conditions and commercial operations in port (S/S EL FARO Syndrome).
- In the Flag Administrations, attempts have been made to take the ISM certification with the seriousness it deserves, it must be acknowledged. But for reasons, mainly of ignorance of the subject, the applications of certifiers were not numerous and therefore the choices were limited resulting in poor flag lead auditors sometimes acting in an atmosphere of general disinterest. Other more cautious flags have let the ROs taking care of it, and thus leave it to the specialists of the ISM code but, more engineers or naval architects than sailors who are unfortunately often not competent enough for management. (RO Syndrome).
- The main error in the application of the ISM, the parallel with ISO 9000 standards, was fatal. This standard being mostly administrative, in contrast to the ISM code, which claims to play on the human factor, this parallel was the origin of SMS in the form of a mountain of paperwork, which instinctively pushed the sailor back. To reinforce this very bad image, we continue to train ISM certifiers as ISO inspectors, and we have come to this glaring anomaly of wanting to ensure a safety culture of excellence through an administrative quality process which is the opposite of the operational seafarer's culture (ISO 9000 Syndrome).
- The ISM code has failed to clarify the fuzzy passages of maritime safety such as the difference between the safe manning crew and the muster list; on the one hand a theoretical minimum crew that has nothing to do with safety versus a crew always ready to respond to any emergency situation which is one of the objectives of the code. (SMC Syndrome).
- Presented to the seafarer by people with no experience at sea, as something new that would finally teach him/her his/her job, the ISM code provoked a reaction of rejection sometimes very strong among Masters and other seafarers who had great experience at sea. (THIS WAS BETTER BEFORE Syndrome).

4.

A famous judgement provoked reactions of comprehension

In the matter of the sinking of the COSTA CONCORDIA, even though the civil case is far from over, the criminal judgement is done and all appeals have been exhausted. Today our colleague Francesco Schettino is alone in prison while COSTA CROISIERE, the company responsible for almost everything under the ISM code continues as if nothing had happened. (RESPONSIBLE BUT NEVER GUILTY Syndrome).

Here's a reminder of the sentences. Captain Francesco Schettino, 16 years and 3 months in prison in ROME (REBIBBIA prison). The head of the crisis cell ashore (in this case the DPA) and the Purser/Hotel manager were sentenced to 2 years and a few months for their contribution to the mismanagement of the emergency situation while the owner CARNIVAL and the operator COSTA CROISIERE get away with a fine - 1.1 million Euros, a ridiculous sum for them. When we see the failures found by the commission of inquiry, it's surprising and concerning.

Even if the application of the SMS on board is the responsibility of the Master, it is the responsibility of the Company (the DPA is designated for this) to verify that its system is properly applied on every ship through the Ship's Captain (via his/her constant presence/responsibility on the premises, his/her continuous analyses and periodic reviews), then verified by the internal auditors and randomly by the DPA itself during its own inspections - when he/she does.

The list of failures found is long for COSTA CONCORDIA and there are some similarities such as the lack of adequate training of staff while we have the STCW convention since 1978, deeply amended in 2010.

So, everything happens as if the responsibility of the company was hidden through the use of national legislation, which completely forgot to integrate them into its decrees for a bunch of valid reasons certainly; and so the Master always remains the best scapegoat.

Today, and we have seen it, the courts continue to ignore the ISM code, which is one of the pillars of maritime safety preferring to let everything on the incapacity or human error of the Master alone.

We thought the lawyers were going to clarify all this. Among other things, our colleague Philip ANDERSON, (more lawyer than captain), who had started well as a great connoisseur of the judicial consequences of the ISM code, shunted this aspect of things and today he is drowned in business!

For my part, I had been called by the contracted law firm for TOTAL in the ERIKA case, in order to explain to them what the ISM code was, then, still surprised by the few cases that the maritime lawyers continue to make of the responsibilities of companies in the application of the Code, I offered to provide free training to a large specialized Parisian law-firm, but guess what? The answer was no thank you, we are not interested!

A lawyer, on the other hand, encouraged me, 10 years ago, to publish a handbook on the ISM code (it should be done soon) because apparently the developments in French that they use were insufficient. (Indeed, the book *Safety regulations on board merchant ships* published in 2004 does not help much on this subject, being only a succession of paraphrases of the text of the code like other supposedly specialized French documents.)

However, there are currently some weak signals of change!



5.

Today some weak signals, consideration of the company's responsibility in accidents seems to be slowly evolving

The ISM code is quite clear in Chapter 3.2: the company should define or establish in writing the responsibilities, powers and reciprocal relationships of all safety management personnel.

But, in the last few cases of accidents, the Master was often considered to be solely responsible for the non-enforcement of the regulations or procedures of the company's SMS!

His/her scapegoat role seems to be confirmed every time, but we keep some hope, because in the following studies some weak signal seem to be appearing.



a. **Accident of the container ship EL FARO (US flag) and some consideration of the owner's liability.** Following the sinking of the EL FARO in October 2015, reports by the USCG and the National Board, while implicating the Master, reported numerous other shortcomings. NB: The VDR found thanks to very large means, was usable with a 26-hour recording.

The report accuses the ship's captain of a poor assessment, underestimation of the seriousness of the situation, a lack of precautions to escape the dangerous sector of the hurricane, a poor assessment of the condition of the ship despite the warnings of the shipboard officers. However, the captain was experienced and came from several years of not-so-easy trips off the coast of Alaska.

The shipowner has also been heavily criticized for numerous failures among other things violations on working hours and rest, lack of safety training, lack of maintenance or modernization of facilities (such as this huge flag exemption for open lifeboats for ships built before 1986), with a short stability, lack of internal procedures for cyclonic periods and so on. All this stemmed from the benefits of the grandfather clause.

The ABS class and the USCG were also criticized in this report for the same reasons and particularly, the ACP program - Alternative Compliance Program - typically American, which ultimately allows ships below standards to sail under the U.S. flag. Amazing! The corresponding trial is still being investigated, it will be curious to see if this time the shipowner (US) will be sentenced for negligence, for example! We can dream! (see **).

b. **In parallel, another recent analysis (February 2018) in the former magazine Safety At Sea by the editor-in-chief, Mrs Tania Blake, entitled Finding the blame factor.**

We are told that investigations into major accidents such as EL FARO and COSTA CONCORDIA highlight the responsibility of shipping companies *"one of the first things that we, as human beings, do in times of disaster is look for the cause and often someone to blame. It is no different in shipping, where in cases of accidents, crews find their decisions examined as to whether they were sensible and measured or hasty and ill informed. While it is right that everyone's actions are analyzed to discover the root causes and so lessons can be learnt and shared among the industry, crew often take the brunt of blame as they are on the front line of shipping by contrast, shipowners, the individuals, and companies with true power over wider safety practices and culture often go unpunished."*

Credit to former Safety at Sea magazine (see ***).

** The EL FARO case came back in spring 2020 with a kind of "Mea Culpa" from the USCG. Interesting, isn't it? ... so, we'll talk about it again.
*** The magazine has disappeared since that time - strange, isn't it?

My God, we're not used to hearing that! ... Maybe an evolution is underway?

It is true, in the sharing of responsibilities related to safety of the ship and her operations, it is believed, thanks to the ISM code, that the things are clear:

- The objectives of safety culture and pollution prevention are those of the operating company and not those of the Master.
- It is the company's responsibility to establish, implement and maintain a safety management system created by the company and not by the ship's captain.
- To achieve the objectives, the company must establish a policy and ensure that this policy is applied by all. This is not the Master's safety policy.
- The responsibilities of all staff must be defined. For ships, there is no problem in the merchant navy, we know what to do on board! On the other hand, we rarely find the responsibility of all the shore personnel involved and in particular their responsibilities in the application of the SMS of the company. However, since the IMO circulars of 2007 and 2013 we now find the responsibilities of the DPA quite easily without seeing them very detailed. Why?
- NB. Circular MSC-MEPC.7/Circ.8 is very clear on this issue. The ideal would be for each function, a text message will be inserted into the job description. IMO circulars would then become more useful!

C. **In partial conclusion, how do companies react after an accident that affects them?**

In general, companies feel that governments or IMO are not competent and that they need to find the solution themselves. This starts from a good feeling of self-regulation except that our shipowners who hate any new regulations (which for them are only going to increase their costs) will move towards an action - always the cheapest possible. Indeed, in their respective associations it is like a permanent contest - who will find the cheapest solution (LOW-COST syndrome)!

Finally, the existing system that gives all responsibilities on the Master's shoulders is satisfactory for them. So why change?

However, if at the international level and at IMO, the responsibilities of both ashore as well as on board were well defined and understood, we might not be there. The code was born for this partly - to define the responsibilities of each - in order to assist the bodies involved in national judgments following maritime accidents! Or if the code actually involved the big boss in the event of an accident. We understand better that these same big bosses are standing on the brakes for the application of the ISM code and also that they tend to interpret it to their advantage only.



6.

One of the causes of the disillusionment with the ISM code: The bar has been set too low!

Even William O'NEIL, Honorary Secretary General of IMO, (he died in 2020), had a high opinion of the code. He said, *"The ISM Code in my opinion, is one of the most important steps forward that IMO has taken in maritime safety since its beginning, not because it replaces this status of all other IMO conventions, but because it embraces their standards and provides the framework by which they can be implemented"*.

First of all, being originally a voluntary policy, we remained in the official text of the ISM code to a strange condition that The Company "should". Then, to ensure the widest possible applicability, we deliberately remained very brief in the text, sometimes doing exaggerated brevity, such as chapter 4 where the designated person is missing, for example. But to be concise, we can also make things too blurry and this sometimes allows to change the top management by trying absolutely to avoid an additional cost - always the low-cost syndrome that endures and which has sometimes provoked some strange application of requirements.

(See article Maritime Low-Cost generation in AI No.118 or on the site www.AFCAN.org in the free forum folder).

a.

Thus, approximations continue ...

Recently, a colleague working in a small P&I club has released upon us a big enormity one again. I quote his analysis. *"The DPA (is) responsible for every ship's safe operation."* This doesn't make sense for a person who, by definition, stays ashore. I immediately emailed very politely in the Anglo-Saxon way, to the colleague who had kindly published his email at the end of his article. Sadly I'm still today waiting for the answer (an Anglo-Saxon way again)!

Recently, the 2020 SAFETY4SEA symposium in LONDON saw another fellow Captain demolishing the actual code. As a great supporter of the code at its beginnings, he has moved on to the other side today, it seems, by seeing an erratic implementation and with a certification nevertheless compliant carried out by the auditors of the ROs who finally have no idea of the management of a ship.

He also sees, as I do, with desolation, the Ship Captains falling completely under the harassment of little leaders ashore, who spend their time writing unnecessary reports instead of working to improve the true safety culture of their crews. Why such approximations that can become nonsense? Is it a lack of training again?

William O'NEAL reminded us in 2002 when we were starting to work on the text of the ISPS code: *"For the writing of the ISPS code don't forget this time, contrary to the ISM code, to include the necessary training for all stakeholders"* ... I know, I was there!





7.

Is the lack of initial training the root cause of this disillusionment?

In the training centres they propose sometimes an inhouse training as the corresponding IMO model course does not exist. Well, but it's amazing. IMO has accustomed us in the STCW code to put everything in the shape of a table including knowledge, understanding, proficiency to be acquired as a result (KUP) for all the subjects of our trade except for the ISM code which is drowned in general training!

- The ICS "Guidelines for the application of the ISM Code" was the first and the last valid information document on the application of the ISM code (4th edition today). These instructions, intelligently, state that "the task of implementing and maintaining SMS is a line management responsibility (while) monitoring activities must be carried out by a person independent of the responsibility for implementation" - (page 16 of the 1996 edition).
- Philippe Anderson, courageously, it must be said, studied the code well from the beginning by publishing his books. Remember, his analysis in "cracking the code" published

in 2003, he noted: *"The full meaning of the role of the designated person ashore is still far from clear. There is still much speculation about the role and legal exposure of the DP among lawyers and academics, but to the extent that the author is aware, there have been no court*

decisions providing clarification on the area of doubt. The author is also not aware of possible lawsuits against a DPA by the (British) Courts!". NB. He has unfortunately completely forgotten the training part!

- In most of the syllabus of the ISM courses I've studied, not many of them have really understood the role of the DPA, even if some made a great effort thanks to the support of the IMO circular of 2007 ("*Guidelines on qualifications, training and experience of the DPA*") and the other in 2013 for its responsibilities. They are clearly expressing "*check and monitor aspects of the operation of each vessel, related to safety and pollution prevention*" or the designated person "*must ensure the effective enforcement of the safety management system.*" It is therefore a job of verification and monitoring for an existing management system and not application or implementation of the system itself that belongs to the management and its directors involved.

8.

All of this smells of a scam doesn't it?

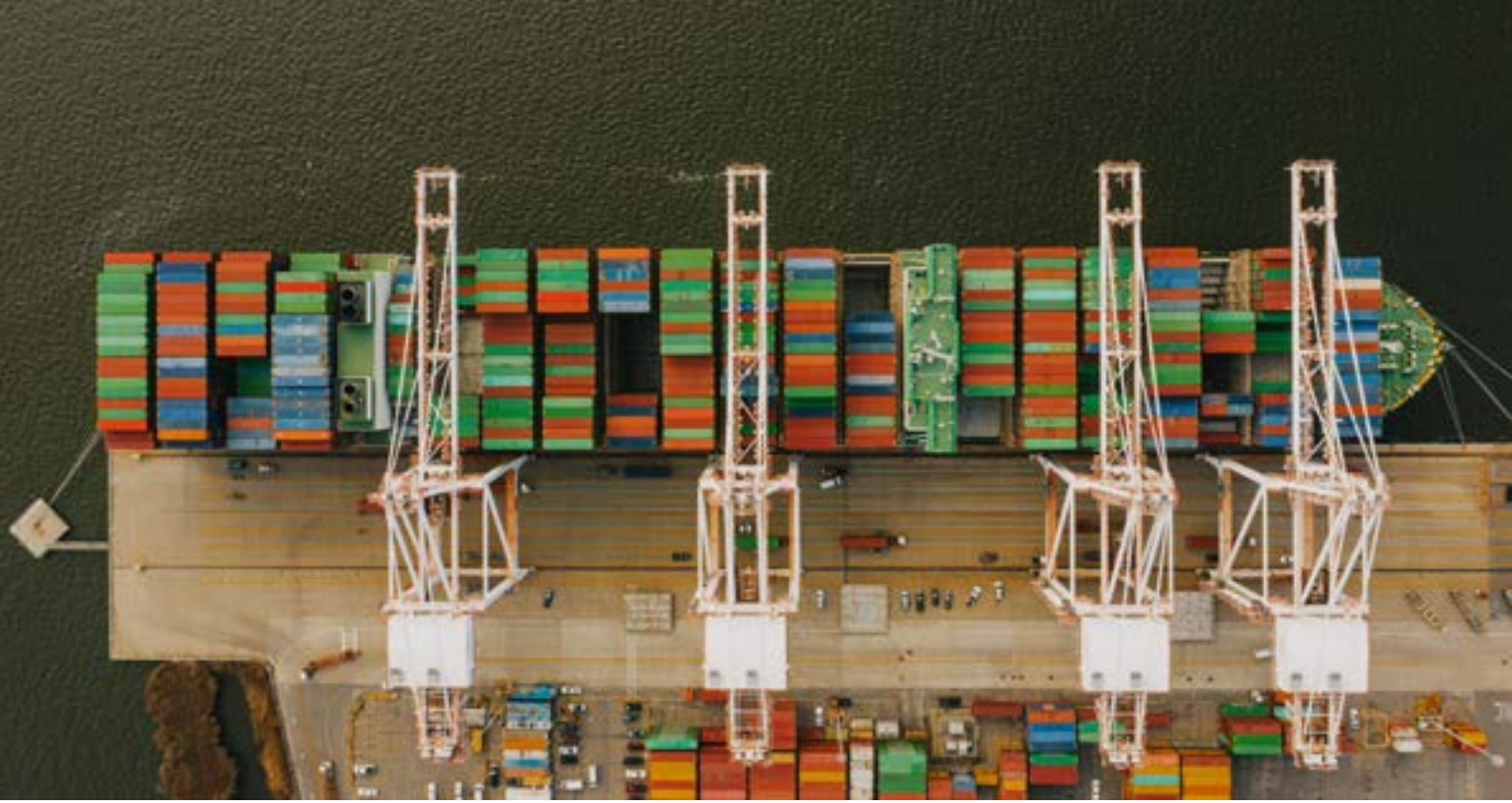
The ISM code is already more than 30 years old, and it is already remembered more that the quality assurance of safety management is based on a structure of verification and monitoring even if Lord Justice SHEEN had deemed "*it necessary the presence of a sailor in the organization ashore*" thing which was already in use everywhere in the world, except in the Townsend Thoresen company at that time apparently!

We often see this terrible misunderstanding, which is to confuse the enforcement officer and the verification officer, who must be necessarily independent of the operational sector of the first. It's still quite amazing that we invent the designated person with a major original function and then we forget it - to maybe allow all companies to work - do you know many companies that have been removed from the DOC for non-compliance on the DPA?

Shipowners, lawyers, fleet-managers all have the same fight! In a state of slight paranoia, you could say that it is a conspiracy, yes a conspiracy but to protect who?

Indeed, it is. On the one hand, we follow the proponents of a DPA completely responsible for safety which leads towards new disasters because nothing can avoid the laxity of the manager in charge (as at Townsend Thoresen line) when modern management standards require a monitoring close to control for quality insurance, in addition to the control of production (equipment or services) itself. And on the other hand, while the arrival of artificial intelligence (AI) pushes us to review the basics and content of the seafarers of the future's basic training, it would be good to admit our original mistake which was not to include specific ISM training in STCW and finally include it with a special section in the STCW code with model courses and certification.

So, the STCW code needs a review by introducing specific training on the ISM code. This shouldn't be too hard finally, but that does not mean that all IMO members will sign up easily, far from it!



9.

So, is the ISM code a scam, or not a scam?

Let's recap. A at every major accident, the ISM code is almost forgotten:

- a)** Company's top executives still get away almost without consequences.
- b)** The company itself sometimes disappears (Townsend Thoresen) but reborn under another name in virtually the same state (P&O).
- c)** The Master himself/herself, never gets away without damage even when he/she has nothing to complain about (Capt BARDARI, MATHUR, MANGOURAS and SCHETTINO apart).
- d)** The Ship's Captain always looks like the scapegoat, which is right for a lot of people finally!
- e)** The flag Authorities always get away without trouble (ERIKA, CONCORDIA).
- f)** The class, to which the flag delegates more and more, also always gets away without too much trouble - because we need it so much?
- g)** The SMS of the company derived from the ISM code ensures in theory and at a minimum a complete compliance with the mandatory rules and regulations, why then do we still need periodic visits from the flag and these Port State Controls. ISM certification should be sufficient! You will understand that the sailors wonder if we don't care a little about them at the end.
- h)** Despite a lot of rather blurry passages in the ISM code, we detail only the accompanying circulars, which some flags ostensibly ignore.

i) How, for a code considered a pillar of maritime safety do we not have an associated STCW training certificate? That we have on the other hand for the ISPS including for all crew members when the security of the ship is only part of the safety.

j) We persist in using the term company "should" therefore without obligation despite the code entered in SOLAS as Chapter IX and this is often used by some shipowners to avoid some requirements

ISM training is still a random field, while the code is considered one of the best initiatives in our industry since SOLAS. It's as it was more than 30 years after the analysis of the first impacts of the code, we are still wondering how to rectify the fatal error of the beginning. That we have forgotten the training, we admit it implicitly but as we never recognize our mistakes at IMO, it's hard to rectify.

As for the application of the ISM code, despite the efforts of IMO, especially in the training of certifiers, we always find strange weak SMS, but always certified compliant and operational of course. We are not going to demolish a shipowner for that.

It may still be over the time of copied/poorly copied manuals that we found in the 2000s but if compliance has evolved, quality is far from the top level always mainly because of a lack of adequate training of all operators, from the CEO to the seafarers through to the Master him/herself!

Serious mitigation anyway

As always, we should not generalize, some players in safety management are doing very well and in general, they are those who make less noise. Much closer to the spirit of the ISM pioneers (self-management of safety), some companies have implemented SMS systems of a great simplicity and efficiency concomitant for the greater success of a safety culture acquired and preserved in their activity. These are often maritime "niches" where leaders have "feet on the ground". Weirdly these companies are not valued even internationally, perhaps because they do not do as everyone else and perhaps their flag has no desire to communicate within the IMO either.

What could we do?

A supporter of the ISM code for a long time, I do not give up, but I think we could look at an improvement in the text of the code, which could thus enlighten those who do not want to see and gain in understanding. Such a proposal will require a complete review of the text of the code itself, considering the associated circulars already published but completed, if necessary.

NB. This will be the occasion of another article such as **Plea for a new ISM code**.

And remember, such a proposal to revise the code can only go through a member country, so we will have to go through a flag delegation to the IMO. Another challenge indeed!

10. Final conclusion

If the title of this article was deliberately catchy in its terms "maritime scam of the century", the content must have reassured you and the balance sheet is not so catastrophic! With the improvements proposed above, we should be much more confident about the future.

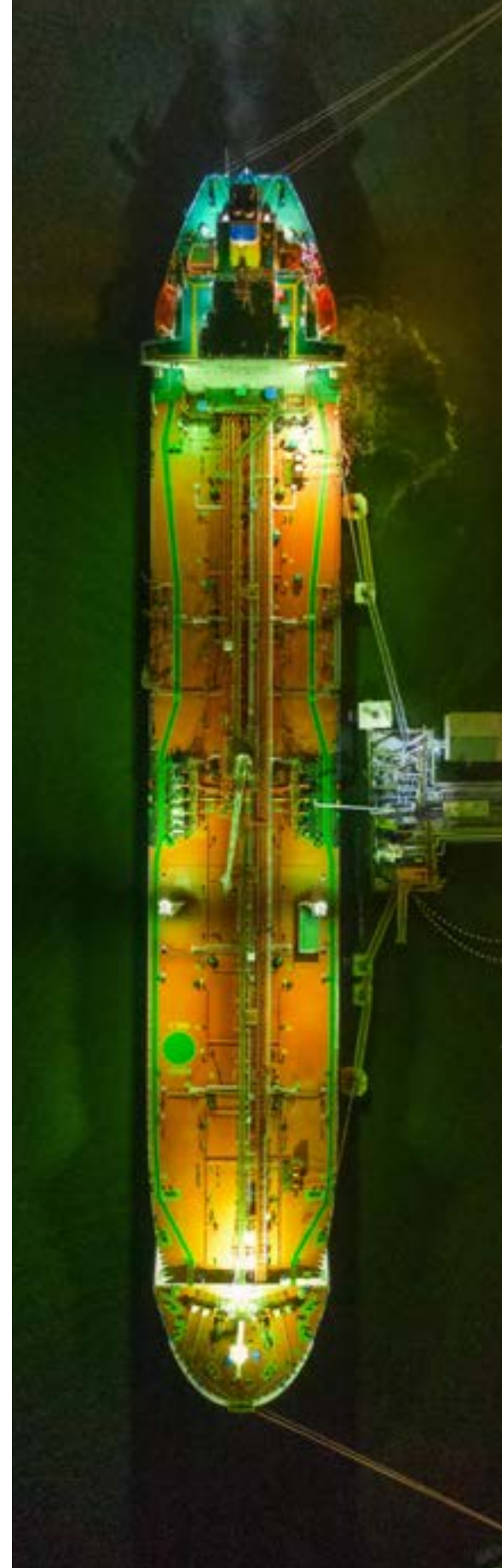
But the time to change things is very long in our industry. Examples are numerous and after 30 years how long will we still to wait for a complete review of the ISM code? In fact, among those who devote their time to improving maritime safety and who have focused on the ISM code, the most successful users are Captains or former Captains with solid experience at sea, crew management and onboard safety organization experience.

All are unanimous in confirming that the centrepiece of the actual application of the code is the ship's captain and they base their action on it. But the Master, in case of accident, is the man/woman who will pay the bill in the end. It seems the harmful consequences of a poor implementation of the ISM code are attributed to the Master only! Maybe, it's for that reason shipowners don't want to hear about any ISM code review or about the Master's protection. The courts and so-called maritime lawyers continue to superbly ignore the code and focus on human error or more accurately on the Ship Captain's underperformance.

In France, the Ship Masters' Association was created as a result of the French law act of 1975 on the total responsibility of the Master in case of accident. It is true that in popular imagery of a ship's Master, sometimes a great navigator or a great sailor is often poorly considered. (Our colleague F. Schettino was also demolished for his private life)!

After having been a pirate or mercenary, then trafficker in drugs or migrants, he nevertheless remained a kind of adventurer who today, the icing on the cake, is a big polluter.

With such a CV, obviously at trial, the conviction is assured!



Written in 2020 and reviewed in 2024 by Capt Bertrand APPERRY, AFEXMAR AFKAN HYDROS.
Email: bertrand.apperry@orange.fr



Safety considerations for hydrogen-fuelled ships issued by EMSA



EMSA has published a report which analyses hydrogen's main characteristics to frame which safety hazards, system threats and risks to be considered and mitigated when using hydrogen as ship fuel.

The purpose of the report is to assist the industry and the regulators towards a safe and harmonised deployment of this relevant technology that could demonstrate an important step towards decarbonisation of the sector. According to EMSA, hydrogen, when used as ship fuel, presents the following significant safety hazards and risks due to its unique properties...

Flammability and explosiveness

Hydrogen's wide flammability range and lower ignition energy compared to methane make it highly flammable and prone to more severe explosions. Its higher burning velocity can escalate explosions into detonations, posing greater risks than natural gas.

Storage and distribution challenges

The low boiling point of hydrogen complicates its storage and distribution. Managing boil-off gas and preventing the condensation of gases like nitrogen and oxygen are critical to avoid equipment malfunction and potential explosion hazards.

Density and dispersion

Hydrogen's low density causes it to rise and disperse quickly in open environments. In confined spaces, such as within a ship, it can accumulate in high spots, increasing the risk of ignition from sources like ceiling lights. Designing safety measures, such as gas detectors and ventilation systems, must account for hydrogen's density and behaviour in leak scenarios.

Hazards in confined spaces

Hydrogen releases in confined ship spaces amplify explosion pressures rapidly, potentially damaging structures and leading to further leakage. Leakages of liquefied hydrogen (LH2) can induce cooling effects that compromise gas-tight integrity and safety equipment function, further complicating emergency responses.

Pressure effects

High-pressure storage of hydrogen (250-700 bar) creates potential energy that, upon release, can cause significant pressure effects even without combustion. Sudden releases from high-pressure systems can ignite spontaneously, posing immediate risks to personnel and equipment.

Material compatibility and embrittlement

Hydrogen can adversely affect metal properties through embrittlement, reducing structural integrity. Condensed oxygen-enriched air can increase material flammability upon contact, necessitating careful material selection and design considerations.

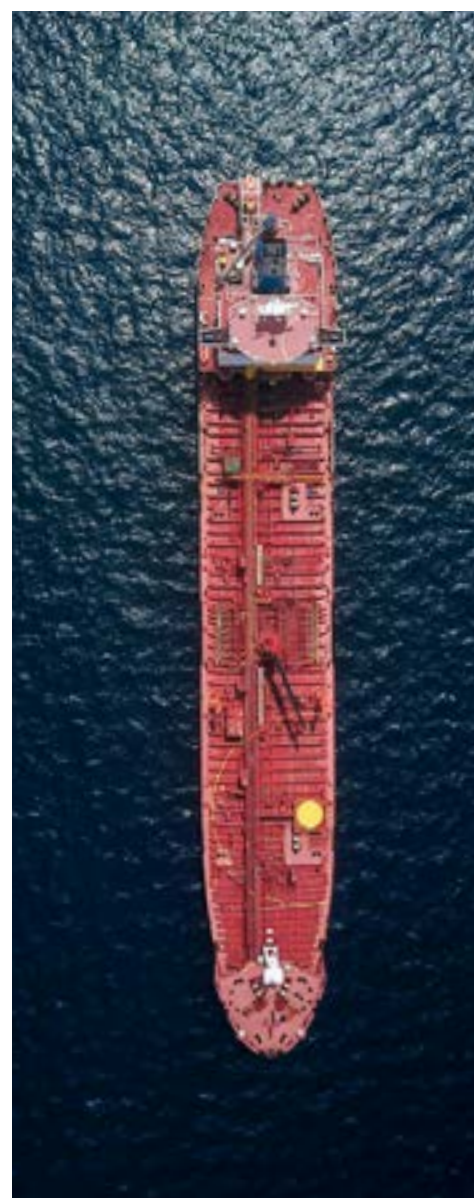
Health and safety risks

Finally, EMSA notes that significant hydrogen leakages pose risks of asphyxiation due to oxygen depletion, alongside risks of frostbites and burn injuries due to low temperatures and reduced flame visibility.

Lessons learned from hydrogen-related accidents:

- Reviewing accident databases shows that hydrogen-related accidents happen. From the 575 accidents analysed in the HIAD 2.0 database, the leading causes of hydrogen-related accidents fall into two categories: system design error and failure, and human error. A combination of both was also a cause of accidents with severe consequences. The largest number of cases were linked to safety management system factors (49%). The second largest cause was errors in the material or manufacturing (35%). Many of the incidents were caused by individual human errors (29%) and system design errors (27%).
- Nearly half of the incidents in the HIAD 2.0 database were related to human and organizational errors. Therefore, training the operating personnel and increasing their understanding of hydrogen hazards will be crucial to preventing future hydrogen-related incidents. Similarly, the safety management systems must properly account for hydrogen hazards in operating procedures, inspection plans, and emergency response procedures.
- Hydrogen-related accidents are documented in databases such as the HIAD 2.0 database, with 575 accidents analysed.
- Leading causes of hydrogen-related accidents include system design errors and failure and human errors
- Combinations of system design and human errors often lead to severe consequences in accidents.
- Safety management system factors account for 49% of hydrogen-related incidents.
- Errors in material or manufacturing contribute to 35% of accidents.
- Individual human errors are responsible for 29% of incidents, while system design errors account for 27%.
- Approximately half of the incidents in the HIAD 2.0 database are attributed to human and organizational errors.
- To prevent future hydrogen-related incidents, it is crucial to:
 - Provide training to operating personnel on hydrogen hazards.
 - Ensure safety management systems effectively address hydrogen hazards in procedures, inspection plans, and emergency response protocols.

"We find that the existing safety barriers in the IGF Code for natural gas do not account for hydrogen's extreme flammability properties, and the need for further regulatory development is also supported by EMSA (2023) and (DNV, 2022), which identifies many required safeguards for hydrogen not found in the IGF Code", EMSA noted.





Artificial Intelligence **is your skipper**

By **Hans Buitelaar**, Metstrade

Combined digital equipment draws the future of luxury yachting

Italian yard Rossinavi launched Seawolf X, a 42-metre long motor catamaran that uses artificial intelligence to determine routes, energy use and cabin temperatures. American studio DLBA presents concept yacht Tempo that can navigate autonomously using A.I. Will software define the future of the yachting experience?

Situational awareness is one of the most important capacities of a good skipper. Knowing the capabilities of your yacht, understanding the possible consequences of failing onboard systems, recognising the well-being of passengers and crew, reading the sea state and upcoming weather changes, acquiring lots of information that could affect a smooth passage – all of this and more comes together in the decision making of a captain aboard his vessel.

In our digital era, this encompassing process may be described as data analysis. Digitalisation of onboard systems has already resulted in interconnection of engines, communication and navigation instruments, household devices, tanks and pump systems as well as entertainment systems and climate control. Data from all these systems is handsomely shown on screens at the helm station, at the navigation desk and in the captain's cabin. Has situational awareness become a screen?

Augmented reality in modern yachting: enhancing safety and navigation

Some information is not obtained by an experienced yachtsman's eye. Racing sailors rely on their satellite connections to receive weather information with high- and low-pressure systems and gale warnings covering the whole ocean which they are navigating. They use this information to decide which route is the most favourable in getting to the finish fastest.

21st century offshore racing includes a lot of staring at screens. Thermal and optical sensors that detect floating objects like containers that have fallen off ships and float invisibly just under the surface provide an augmented reality presentation on a screen that alerts the helmsman of unseen dangers ahead. The detection system of the Austrian company SEA.AI consists of cameras and infrared sensors.

Integration of marine augmented reality tools with navigation software

The company recently announced to integration of their marine augmented reality tools with the navigation software of TimeZero. This French company was one of the pioneers of electronic maritime navigation and has cooperations with navigation equipment manufacturer Furuno from Japan.

The company is a merger of MaxSea, Nobeltec and MapMedia. Thanks to the integration of the navigation equipment with the augmented reality, data from AIS, radar, weather routing software and other tools is included in one overview, displaying all the information that can be seen, obtained or detected by sensors. The press statement announcing the integration of the digital tools claims to improve human awareness: "The integrated digital tools allow mariners to seamlessly combine collision avoidance equipment such as AIS and radar with real-time visual data analysis. This integration bridges the gap in situational awareness, providing mariners with an unprecedented level of insight into their surroundings and greatly enhancing safety at sea."

Calculated navigation with AI: safe and efficient yachting routes

With all systems connected, computers can start analysing data to present routes that are safe, provide the smoothest ride, follow the wind and the tides, arrive at their destination in time and with the least fuel consumption. Enter Artificial Intelligence into yachting.

Creating an electronic world model for autonomous yachting

Enabling autonomous navigation and enhancing onboard comfort are the goals that naval architecture and design studio DLBA had set in the development of their A.I.-driven superyacht TEMPO. It is an exploration of the possibilities of A.I. to set course autonomously and ensure to always provide the right atmosphere for crew and guests on board.;

In their presentation of the concept, the office writes: "Autonomous navigation systems create an electronic world model, fusing data from onboard sensors, and information sources like GPS, radar, AIS, electronic charts, weather information systems and video cameras to safely navigate both highly congested areas and open seas.

Navigation autonomy relieves the workload on the vessel operator. The operator is left to maintain a presence while the autonomous navigation system guides the vessel. The reduced level of focus required in this area results in higher situational awareness.

The benefits to this include a reduced risk of collision and grounding, avoidance of heavy weather, optimization of fuel consumption and lower operator workload." This results in the owner and his guests having more time to enjoy the experience of yachting. The onboard systems can even detect which persons are entering a cabin, to adjust temperature and other preferred settings to that person's liking. The motor yacht concept is set to be 58 meters long.

Dialogue with AI: enhancing yacht operations and guest experience

Italian yard Rossinavi has already launched a motor catamaran with such capacities last May: the 42-meter long Seawolf X. The yacht is equipped with an intelligent energy management system that allows it to cruise for one whole day in full electric mode, go electric for 90 percent in multi-day trips or even cross the Atlantic Ocean while using electric power only for 80 percent of the way.

When docked in hibernation mode, the yacht can be used as a battery to provide electricity for a waterside home. Rossinavi has created an onboard A.I. system that analyses the yacht's operations, learns from observations, and anticipates guest needs. It engages in dialogues with the crew to promote sustainable operations. The A.I. also monitors the battery pack to ensure optimal range and interacts with the crew.

Cybersecurity in AI-driven yachting: ensuring safe and secure voyages

Dependence on computer connections for travel does pose risks. The enormous congestion of air travel because of a computer security system update that went wrong on July 19th this year, illustrates that a software bug can lead to disaster.

Technological possibilities and advantages are clear, the risks may not be disregarded. Cyber security systems are crucial. It is also crucial to understand that they can always be hacked or show other failures. Upholding situational awareness as a personal merit remains a necessary quality for yachtsmen and mariners, a valued capacity that is also enjoyable to practise.

Container ship fires on the rise again?



By Are Solum, Gard P&I Club

After a seemingly 'benign' period, we have seen several serious container ship fires lately, including a large one leading to tragic loss of life. Congested ports in Asia and increasing traffic of large container ships around Africa are also a cause for concern.

Cargo-related fires on board container ships have long been a hot topic in the industry – and rightly so: In 2023, we saw on average one container cargo fire every 9 days, according to statistics from Cargo Incident Notification System (CINS). This is an increase compared with 2020, when the number was approximately one container fire every two weeks.

For the first few months of 2024, things were looking more promising, though. Up until May 2024, we did not experience any large-scale or high severity fires for a relatively long time. Then, on May 26 the container ship Northern Juvenile caught fire outside Singapore. On 19 July the Maersk Frankfurt caught fire off the west coast of India, a casualty that tragically cost a seafarer's life. And then the container ship YM Mobility suffered severe explosions and fire onboard while it was docked in Ningbo, China.

Why are container ship fires seemingly on the rise again – and what can be done to reverse the trend?

Risky routes and congested ports

The frequency of fire incidents has been high for a long time. This is concerning considering the severity of many of these incidents. The extent of damage depends on factors which are largely a matter of luck, such as the location of the container on board, the proximity to other containers, and whether the fire occurs in port or at sea. However, it is important to note that the increased focus on safety measures, improved booking systems, and innovative fire detection and firefighting systems all have had a positive impact on mitigating the fire risks.

In Gard, our primary focus is always to save lives and to ensure the well-being of people. The environment comes second, property and values come third. On the environmental side, the impact of containerized cargo fires can be significant. Fires and flooded cargo holds generate substantial amounts of waste.

There is currently also a huge challenge with congested ports, particularly in Asia. It takes a lot of time to get vessels in distress into port, to conduct investigations and discharge cargo. This potentially increases the loss and environmental impacts. On top of this, of course, comes the owners' concern of getting the vessel back in service as quickly as possible.

Another "new challenge" is that ship traffic around the Cape of Good Hope is increasing due to the missile attacks in the Red Sea. Ultra large container ships which used to go through the Suez Channel are now diverted around the African continent. The problem is that there are very few (if any at all) ports in Africa that have the scale and infrastructure available to accommodate the largest container ships with their draft and stack heights. This means that if something goes wrong, a ship in distress will have very few alternatives if a port of refuge is needed on a voyage around Africa. Luckily, we have so far not experienced any large container ship fires along the African coast, but these challenges have materialized in several cases concerning stow collapses on board liner ships lately.

Cargoes of concern

The sheer volume of containers shipped remains a fundamental challenge. Even with measures to deter and detect misdeclarations before carriage, some unsafe cargoes are likely to slip through the net. The increasing number of larger container ships also means that the risk is more concentrated, with more cargo and higher values on one keel.

The "Cargo Integrity Group" of the International Cargo Handling Coordination Association (ICHCA) has identified fifteen "cargoes of concern", six of which pose a treat when it comes to container fires. In Gard, we have seen fires originating from all these cargoes:

- Charcoal
- Calcium Hypochlorite
- Lithium-Ion Batteries
- Cotton and wool
- Fishmeal
- Seed Cake

Fire statistics from the CINS reveal that batteries are an increasing cause of container cargo fires. Various types of Lithium-ion batteries are the most common fire source, paralleled only by charcoal and various types of chemicals. Importantly, electrical

vehicles (EVs) are increasingly being shipped in containers, not just on conventional car carries, and with the rise in trade of EVs, a new market for used EV batteries also rises. In Gard, we have seen container fire incidents involving both new and used EV batteries.

Regulatory and industry efforts The principal challenge is still to avoid dangerous goods being misdeclared and inadequately secured for transportation. The container lines are focusing on these issues, but there is probably still a way to go. We hope that the relatively positive development with fewer large-scale incidents (up until May 2024) may be a sign that container ship owners and operators are investing more time and resources in fire detection, training and fire/fighting capabilities onboard.

IMO work to improve and amend fire-fighting detection & control regulations for large container ships continues. New regulations for newly designed ships are expected to come into force in a few years' time. In that context, a lot of good work is being conducted by other institutions such as EMSA and the Cargosafe project, as well as the EU-driven Overheat project. Operators have also taken several measures on their own to improve their fire-

fighting ability, using remotely operated devices, sensors and other technology. More companies are using software to identify cargo misdeclaration and the World Shipping Council is working on a common system to address the issue.

An area of increasing focus is how we can make shippers more accountable. China is taking positive steps in targeting and pursuing those who fraudulently mis-declare cargoes. In this context, Gard and other Clubs are prioritizing recovery actions, seeking to push the financial costs of cases down the contractual chain.

Approximately 250 million containers are shipped annually, meaning that in most cases, everything goes well and according to plan. Still, container cargo fires are a growing concern, and even a small fire or 'near miss' should be considered a serious incident. It can quickly turn into a full-blown crisis.





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TT warns container seals are being ignored to the detriment of cargo security

Though not a robust deterrent to determined thieves the humble seal plays a central role in identifying location, method and often perpetrators of cargo theft. Freight insurance specialist TT Club argues for greater emphasis on the container seal as part of a stronger security culture across the supply chain

Loss due to theft is among the top three causes of claims received on an annual basis by the international freight and logistics insurance specialist, TT Club. Identification of trends, spikes and hot spots surrounding this aspect of supply chain crime is a primary function of the insurer, as is the issuing of guidance to help mitigate such losses. In the latest of its ongoing series of Security Bulletins, TT focuses on the crucial importance of the container seal,

as a fundamental tool in assuring the integrity of global cargo transportation.

Despite the existence of a wide range of security seal types, from basic plastic clips through to the frequently used bolt seals, and now sophisticated digital options, many in the supply chain are ignoring their benefits in maintaining cargo integrity and promptly identifying theft.

“Many in the supply chain are ignoring their benefits in maintaining cargo integrity and promptly identifying theft”

Thieves have devised complex strategies, as well as traditional bolt cutters, to access a container's cargo undetected. These include recruiting insiders and manipulating seal numbers, either manually or using 3D printing so almost identical seals can be affixed once the cargo is stolen.

“Whatever sealing regime is employed its effectiveness crucially depends on how the process is managed,” emphasises TT's Logistics Risk Manager, Josh Finch. “It is important for supply chain managers to be aware of the limitations of the various seal designs but also appreciate that whatever seal type is employed, their efficacy hinges on whether the information from the seal is accurately checked. A security culture must pervade operations at both loading and unloading points, as well as other key handling locations.”

Often personnel at the receiving warehouse view the seal as a nuisance, something that needs to be cut from the

doors prior to them opening the container and unpacking it. However, identifying any tampering with the seal can be vital insofar as liability is concerned, helping to pinpoint exactly how the theft occurred, who was involved and where goods were damaged or stolen. “Moreover such knowledge clearly acts as guidance in taking steps to avoid future incidents,” comments Finch.

A vital consideration in expanding the use of seals is that almost all are currently either single-use or have an element that is plastic. Clearly, promoting their widespread usage involves consideration of sustainability, especially as the industry focusses increasingly on environmental, social and governance (ESG) issues. Speaking of this limitation, Finch comments “While there are clearly environmental concerns with many container seal solutions, we cannot ignore the societal implications of allowing cargo theft to thrive in the industry. TT sees innovation in all areas of the transport and logistics industry, and we see great potential in digital seals that increasingly appear on the market.”

“We see great potential in digital seals that increasingly appear on the market”

Gathered together in this Security Bulletin is TT's own loss prevention advice together with collaborative work undertaken with other like-minded organisations in this space. From basic descriptions of seal specification, performance characteristics and benefits to new e-seal and tracking technology, and from details of criminals methodologies to guidance on best practice to combat theft, the Bulletin outlines the crucial role seals should play in operators' security processes and culture. It can be accessed free of charge at <https://bit.ly/4eeFZ28>

<https://www.ttclub.com/loss-prevention/>



Managing the growing risk of Lithium-ion battery fires



By **Petar Modev**, Head of Ship Inspection, UK P&I.

The global energy transition has led to an acceleration of new and innovative technologies designed to support decarbonization efforts across the global supply chain. The maritime industry plays a fundamental part in this effort, not simply by addressing its own impact on global CO₂ emissions, but also by facilitating the availability and transportation of new and innovative technologies that are designed to mitigate carbon emissions.

For instance, the shipping industry is playing a critical role in accelerating the green automotive market, particularly the global transportation of electric vehicles (EVs) and large battery hybrids. According to Statista, the EV market is projected to grow by nearly 10% each year and account for over 17 million vehicles by 2028. However, this development also brings with it significant safety implications that don't just impact the vessel, but also the health and wellbeing of crew members onboard - specifically in relation to the significant increase in fire risks presented by the lithium-ion (Li-ion) batteries used in EVs.

At UK P&I, we understand the need for constant assessment of new and emerging risks for our members, as they attempt to navigate this period of transition within the industry. A key example of this forward-looking approach is the recent launch of our new Safety & Risk Management division in April 2024, which repositioned our in-house capability to encourage members to deepen their identification of safety and risk alongside tighter monitoring and reporting of safety performance.

Although it is encouraging to see EVs playing an increasingly important role in achieving governments' net zero mandates for sustainable transportation, the speed with which their presence is growing represents a steep learning curve for supply chain participants – especially shipping companies, both in understanding the risk of li-ion batteries and how to manage fire incidents specifically.

Li-ion batteries are the preferred technology for EVs due to their high energy density and efficiency. However, such batteries are inherently volatile and can catch fire or explode under certain conditions. The characteristics of fires caused by li-ion batteries are complex, and the shipping industry is making continuous efforts to understand effective ways to mitigate them. When incidents do occur, the threat to crew, vessels, cargo, and the environment is profound.

The main characterization of a lithium battery fire is the creation of an extremely hot thermal runaway, a primary risk where the battery's internal temperature rapidly increases, leading to a fire or explosion. A li-ion battery fire will sustain itself, meaning that rather than lasting minutes or hours, a fire can continue for days. Such an event can be triggered by physical damage, manufacturing defects, as well as exposure to extreme temperatures.

Although the number of such incidents on vessels that have been found to originate from EVs in recent years is assumed to be low, they are increasing and there have been several recent high-profile incidents where the presence of li-ion batteries has complicated firefighting efforts. In 2022, the Cargo Incident Notification System (CINS) – which was established by a group of container shipping lines and advisory organizations to share data on cargo-related incidents – reported 65 fires on board container vessels, more than double the 31 reported in both 2020 and 2021. These situations have required large-scale emergency assistance and the use of external salvage and firefighting resources, which are not always readily available. Such incidents have led to both fatalities and significant financial loss.

Despite the nature of the risk being the same, the implications of transporting EVs via both car carriers as well as in containers are different, and each comes with its own individual sets of risks. It is a legal requirement that EVs are declared as dangerous goods (DG) when transported in containers. However, the current DG regulations contain no specific restrictions related to stowage and segregation. This lack of stowage and segregation restrictions means that EVs on container ships can be stored near cargoes or operations where fires could originate, or near cargoes with corrosive

properties. Furthermore, there are currently no declaration requirements for EVs being transported on vehicle carriers (PCC's, Ro-Paxes, etc). Although these vessels are designed with additional fire safety measures, this lack of information makes it difficult to plan where EVs should be loaded to reduce exposure to any fire risks. It also makes it difficult to contain fires that EVs could be exposed to.

The continued growth of the EV market, coupled with the seeming increase in regularity of fire incidents onboard, means that the industry must act quickly and decisively to mitigate the growing risk. However, shipping companies cannot manage the fire risk of li-ion batteries alone. This is a complex, interconnected issue that requires collaboration between multiple stakeholders throughout supply chains, starting with equipment manufacturers and in developing associated regulations.

Recent examples of such collaboration are encouraging. From a PCC perspective, the Vehicle Carrier Safety Forum recently published its first good practice guidelines on 'Common guidance on the loading and presentation of vehicles,' which was based on shared best practice between shipping companies, the International Group of P&I Clubs (IG), the International Chamber of Commerce, and the TT Club. In 2023, the IG also co-sponsored the CINS's 'Lithium Batteries in Containers Guidelines.' This is encouraging progress across both shipping sectors, but guidance on issues such as EV identification and segregation will only be effective if there is alignment with freight forwarders' and terminal operators' processes.

Rising EV volumes are reshaping the risk profile of managing hazardous cargoes, and this is going to increase as the market grows. Ultimately, the key to taking control of such a potentially volatile presence on board is proactive defence and risk mitigation. Through effective crew training, ship owners and operators are able to establish a robust line of defence against li-ion battery fires on their vessels. This requires a reassessment in current approaches both in terms of fire detection, firefighting equipment, and in firefighting strategy. Managing fires caused by li-ion batteries requires a 'Fixed Fire Extinguishing System First' defensive strategy focused on early detection and containment.

Although this is a multifaceted issue, with many contributing elements across the EV supply chain, adapting and strengthening training will make a marked difference in equipping vessel operators and crews with suitable guidance to better understand the challenges they face. An industrywide standardization in crew training will create greater confidence in managing the immediate risks while building a strong foundation for change.





The wizardry of the spinning gyro versus the play of the fin paddle.

This article, by Riviera Australia, takes an in-depth look into the stabiliser universe to see which is better, or can they coexist?

Steady as she goes or staying stable.

Stabiliser technology has come a long way since the agricultural outrigger or "flopper stopper" days of the prawn trawlers, which featured long boom arms on both sides of the vessel with a heavy fish or triangle plates on the end of chains.

Think of the movie *Perfect Storm* where George Clooney had to shimmy out on the boom to cut one off, so it didn't destroy his trawler. These basic stabilisers work on the resistance of the plate hauling through the water as the vessel rolls and dampens the rolling effect.

These days we have two main types of stabilisers designed to reduce effects of the sea on the stability of a motor yacht, both while at anchor and underway. So, let's break down the differences between the two systems which fundamentally do the same job, or do they? And how do the mechanics perform and work? And what are their respective pluses and minuses?

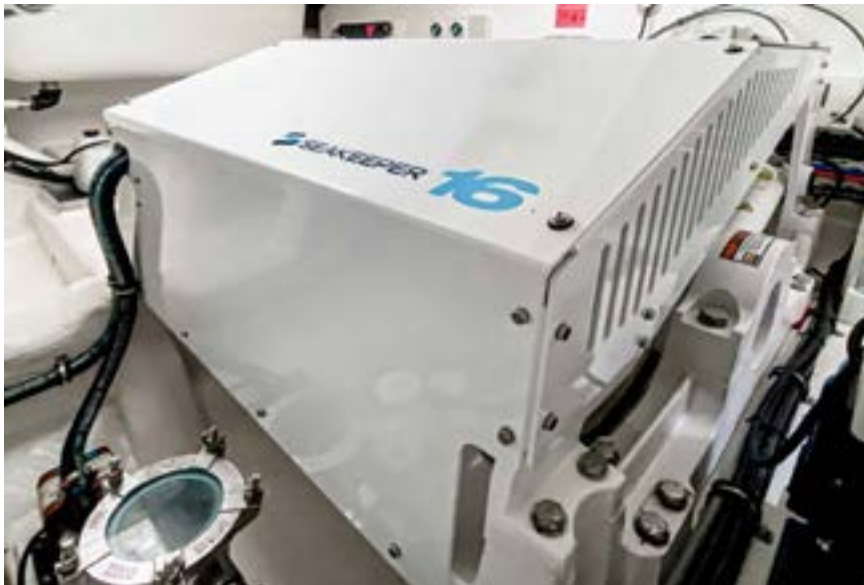
How stabilisation works

A boat has six degrees of freedom. These are the different directions it can move in and, while they may all contribute to motion sickness, roll is the most significant, followed by yaw (vertical rotation) and sway (side-to-side motion).

Both gyros and fins work by exerting force against the motion of a boat.



The gyro stabiliser works by spinning the flywheel ~which endeavours to remain horizontal.



The gyro stabiliser takes about half an hour to spin up to full operating speed and about the same to wind down. A gyro works as if someone is holding onto the boat, reducing rolling left to right or pitching.

Fortunately, we don't have to travel very far to find three experts in their fields at the Riviera factory. We firstly talked to Riviera technical writer Rob Partridge. Rob writes the owners' manuals for Riviera motor yachts and truly knows the technical side of the boats.

Asked to explain both systems in layman's terms Rob says: "The gyro is basically a large heavy metal wheel sealed in a vacuum environment that spins extremely fast. The reason it is sealed in a vacuum is to take out air resistance, which makes it spin faster.

"The gyro stabiliser works by spinning the flywheel which endeavours to remain horizontal. It

is on a gimble and always aiming to be level with the horizon forward and aft, and athwartships directions. If you can imagine a spinning top which, when spun, always tries to achieve the upright position.

"It takes about half an hour to spin up to full operating speed and about the same to wind down. A gyro works like someone is holding onto the boat, stopping it moving left to right or forward and backwards."

According to Seakeeper, who makes the stabilisers, the flywheel can reach speeds of 557 miles per hour or just south of 900 kilometres per hour, depending on the model of the unit, which is dictated by the size of the vessel.

Rob says the argument for fins versus gyros has several considerations including the space that is required and the weight of the gyro, which comes in at around a tonne for a 60-foot motor yacht.

"The fins also rotate 360 degrees and will adjust left and right to counteract the roll and pitch of the vessel. The system detects a motion in one direction and paddles in the opposite direction to make the boat stay level, like duck feet paddling away below the surface.

"But it is worth noting only the stabiliser fins, not the gyros, work in conjunction with the trim tabs to keep the vessel's ride level when underway."

"The gyro stabiliser works by spinning the flywheel which endeavours to remain horizontal. It is on a gimble and always aiming to be level with the horizon forward and aft, and athwartships directions."

Continuing our research into the secrets of stabilisers, we spoke with Riviera's Final Quality Control & Sea Trials Manager Dean Brickell.

Dean is the final stage in quality control at Riviera. He and his team test and trial Riviera yachts on water to ensure the best quality control. He makes sure everything works before the yachts are handed over to the Riviera dealer and delivered to the owner. Dean has been instrumental in the sea trial development of both the gyro and fin systems on Riviera motor yachts and has practical working experience of the stabiliser systems both in local waters and while on extended ocean voyage passage making.

at Anchor

"Gyro stabilisers are good for an at-rest scenario, perfect for stabilising a motor yacht at anchor, with no moving parts on the external hull. The cost is reasonably similar, but the benefit of the fins at anchor is that they are run off the ship's power and you don't need a generator running like you do with a gyro system.

"And when you do consider that you need a generator running to power the gyro, you must consider the noise aspect both for you and your neighbours. Of course, the fins aren't totally silent, they are moving around below the yacht keeping strain on your anchor, but if you do weigh up both systems in terms of noise, the fins are substantially quieter. The fin negatives include, while at anchor, the issue of people swimming around the yacht. So, it is always advisable to deactivate the fins if you have people in the water to avoid any wash or possible contact."

Weight

"And then of course there is the weight of a gyro versus the fin system, the former being a tonne plus. With the latter 250 kilograms per servo motor – there is one servo motor which drives each fin per side – that is half the weight at 500 kilograms plus the extremely light carbon fibre fins. This also means less fuel consumption."

Cruising

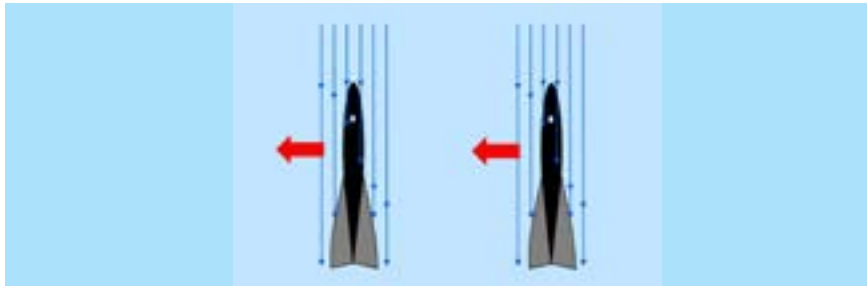
"If you are travelling at less than 10 knots the gyro works better, whereas the fins are effective at zero-speed mode which gives you stabilisation at anchor and at all boat speeds above 10 knots."

Is two better than one?

"We do have instances of yachts being fitted with both types of stabilisers, more for remote clients who require redundancy. However, you wouldn't want to have them operating at the same time as that would be counter-intuitive and they would work against each other. If both systems are installed it is better to use them separately. For instance, the gyro at anchor and under 10 knots, and the fins for passage making. But the cost and extra weight of having both installations onboard strengthens the argument to choose one system over the other."



Automatic trim control always delivers perfect running trim by controlling the pitch the vessel has while underway.



The greater the speed the more water flow there is, and the more force is created to counter motion. Because their potential force increases with speed, fins are well suited to faster ocean-going motor yachts.



The carbon fibre fins are easily installed on the bottom of the servos and precisely torqued up to the manufacturer's specifications.

Dan Henderson, Riviera's Design and Engineering Director, lends his experience to this topic.

"We have had some very good reports from people using fins on long trips in New Zealand. You do have to consider that the gyro adds a fair bit of extra weight to the boat, and they are usually positioned right at the back of the yacht so they can change the trim slightly. While the fins don't add anywhere near as much mass to the boat, you do have the additional draught caused by the fins."

Performance

"In terms of performance detraction on a yacht they are about equal. The fins cause a very small amount of drag while the mass of the gyro also slows down the yacht slightly."

"If you look back 10 years ago, we were fitting an occasional gyro and now more than 50 per cent of the yachts have them. But in the past two years the trend has gone towards fins which have been well accepted. And a lot of that is to do with the fact they are Humphree fins, which are electric and they integrate to the Humphree trim tab (Interceptor system)."

"So, you get excellent active ride control, coordinated turning, auto list and auto trim, making a good complete system. This brings me to talking about using the two systems together, and we recommend you don't use them at the same time, just independent of each other."

Summary

Ultimately it is up to the individual yacht owner to make the decision. However, the two systems are different, and the points below should be considered when making the choice between the two. You should also consider how and where you like to use your motor yacht.

Take into account:

- The fuel economy and upfront expense of both items are comparable;
- The draft of the fins versus no extra appendages on the outside of the hull to risk entanglement, makes the gyro better for shallow cruising;
- Performance over 10 knots is better with the fins;
- Performance under 10 knots and while at anchor is better with the gyro;
- Natural integration between the trim tabs and the fins gains better ride control for the fins through the Interceptor system and an integration doesn't exist for the gyro;
- For power you need to use your generator to run a gyro where the fins use the ship's power, so noise becomes a consideration.

For more details:
www.rivieraaustralia.com



How a Navy doctor revolutionized high-speed boat safety

By John Åge Handberg



John Åge Handberg is a freelance writer and an experienced high-speed boat operator, running RIBSTEIGEN.no, a nature tourism company at Nordskot Brygge in northern Norway.

For years, operators of high-speed boats have silently endured the physical toll of their profession. Repeated slamming impacts from rough seas caused serious injuries, many of them life-altering. However, one Navy doctor saw these challenges not as an unavoidable consequence but as a problem that could be solved. His solution? A seat that would change the course of high-speed boat safety.

The hidden cost of high-speed operations

Recent research shows that professional high-speed boat operators suffer more severe injuries than seen in almost any other peacetime profession. These injuries are caused by repeated exposure to violent impacts as the boats slam into waves. Most of the damage affects the spine, but severe traumatic brain injuries (TBI) have also been reported due to the violent head jolts caused by butt slams.

Photo credit: Ullman Dynamics



For years, it was known that these impacts caused injuries and severe fatigue, impairing combat readiness. But the scale of the problem had been underestimated and marginalized - until one man decided to change that.

Enter Dr. Ullman

In the late 1980s, Dr. Johan Ullman, a medical officer in the Royal Swedish Navy, noticed something concerning. Almost all of the conscripts serving on motor-torpedo boats (MTBs) in his unit complained of back problems after just nine months on board. These complaints were directly tied to the violent impacts experienced during operations.

Realizing the gravity of the issue, Dr. Ullman launched a research project at the University of Gothenburg's Department of Occupational Orthopedics. His goal was simple: understand the cause of these injuries and develop a solution to protect the operators.

The birth of Ullman Seats

Dr. Ullman's research quickly led to a breakthrough. By understanding the human body's natural reflexes and how muscles respond to protect against impacts, he designed a revolutionary seat, a seat with a progressive suspension system that absorbed impacts without needing any moving parts. This design performed far better than anyone had anticipated.

"I humbly named these after myself," says Dr. Ullman, referring to the now famous Ullman Seats and the Ullman Leaflex Suspension system.

What followed is history. Today, over 22,000 Ullman seats have been installed in military, police, coastguard, and search and rescue vessels in more than 70 countries. And almost every single one of those seats is still in use.

"They just never break," Ullman explains. "Structural failure is not an option because it can cause even more severe injuries than the impacts we are trying to prevent."

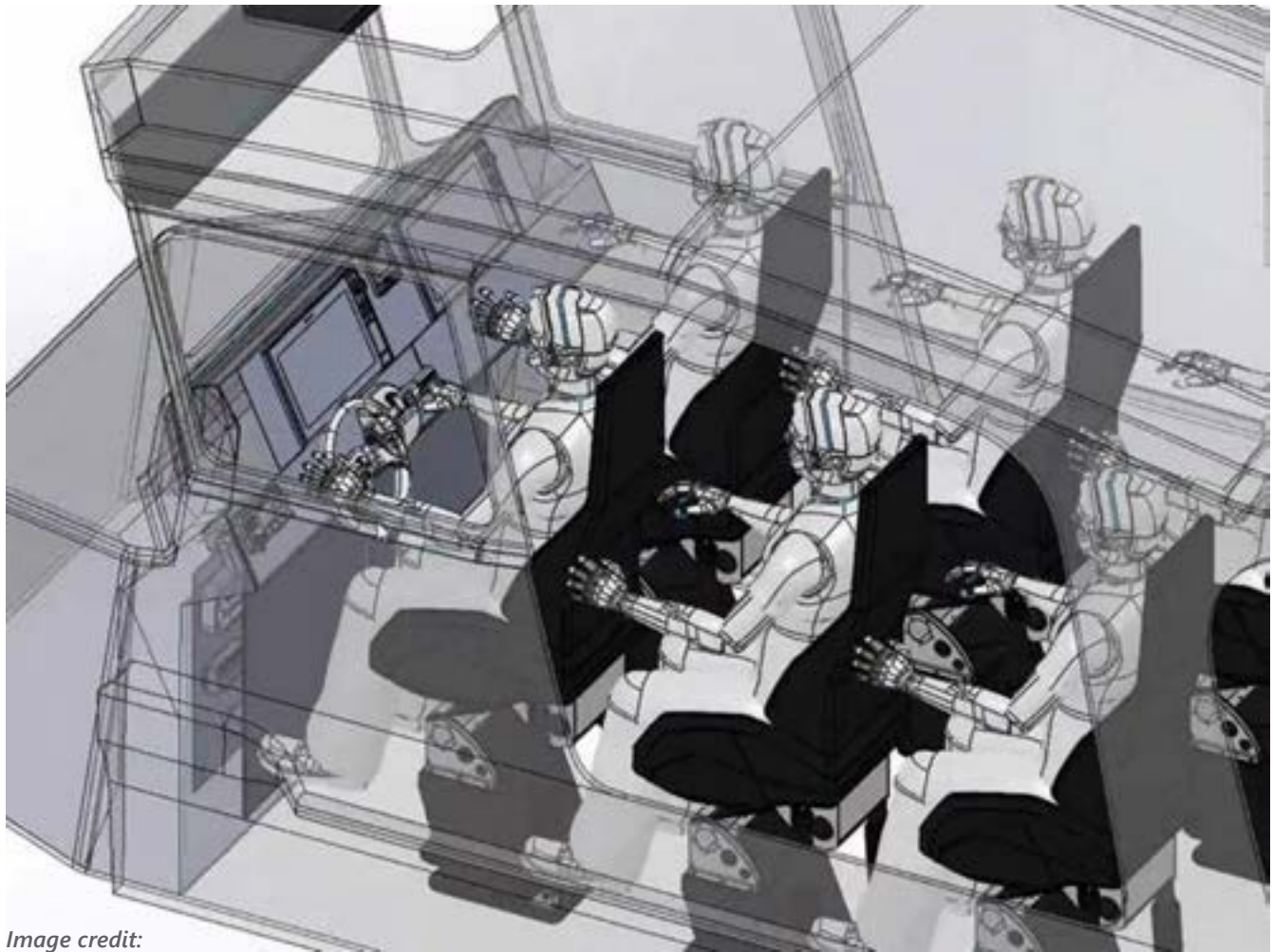


Image credit:
Ullman Dynamics

Proven protection, zero injuries

The performance of Ullman seats speaks for itself. In over 20 years of use, not a single impact-induced injury has been reported by operators using Ullman seats. Additionally, not a single overboard ejection has been reported, a unique testament to the effectiveness of the seats in even the roughest conditions.

For organizations operating in extreme environments, such as the U.S. Navy SEALs, Norwegian Special Forces, and the Dutch Caribbean Coast Guard, the decision to install

Ullman seats has been a game-changer. Each of these organizations conducted extensive trials in extreme sea states and found that Ullman seats provided unparalleled protection against slamming impacts.

A growing list of adopters

As the cost of injuries rises and the need for faster, safer maritime operations increases, many agencies are replacing other suspension seats with Ullman models.

For example, the USSOCOM SEALION project could be put into operation first after installing Ullman seats,

specifically designed for the task and named "Daytona." Similarly, the Norwegian Special Forces, operating in the harshest sea conditions with their Combat Boat 90 (CB90), replaced all of their existing suspension seats with Ullman seats after extensive sea trials.

In the Dutch Caribbean Coast Guard, operators patrol waters where waves often exceed two meters. After a series of at-sea tests, the coastguard replaced all the seats on their 38' Defiant boats with Ullman Atlantic seats.

Photo credit: Ullman Dynamics

A solution for the future

As military threats evolve and the need for speed in high-seas operations increases, Ullman Dynamics continues to expand. This growth isn't just due to the seats' superior ability to prevent injuries and reduce fatigue, there's also a strong economic case. Ullman seats last the lifetime of the boats, require no maintenance, and don't need spare parts or pre-operation adjustments. They are, hence, cost-effective seats to own and operate.

Every single component of an Ullman seat is designed and developed in-house and produced in NATO countries, with final assembly in Sweden and the U.S.



So, can all boats become good boats just by fitting Ullman seats?

Dr. Ullman acknowledges that while seats are crucial, there's more to making a high-speed boat safe: "Hull shapes can make a big difference in exposure to slamming impacts, and ride control systems can for sure improve ride quality. "And don't forget driver skills. But yes, there's no doubt - all high-speed boats are better boats with Ullman seats," he explains.

"High-speed boats are exposed to forces acting in all six degrees of freedom, making this as complex an environment as a fighter jet, however a bit slower. However, the forces acting on the operators are in the same range of magnitudes."

What makes the Ullman Seats stand out?

- They can mitigate impacts up to 20 g and above, while most other suspension seats bottom out at 5-6 g, making impacts worse. Bottoming has been shown to magnify the hull impacts by up to three times.
- They protect against both vertical and lateral impacts. Impacts containing lateral forces cause four times more injuries than purely vertical impacts.
- They are scientifically proven to reduce the risk of injuries and the physical fatigue that comes from impact exposure.
- They are designed to last the lifetime of the boats

without breaking or requiring maintenance.

- With a robust, relevant warranty, they are the most cost-effective investment in safety.

Dr. Ullman's journey from a Navy doctor trying to protect his crew to a global innovator in high-speed boat safety is a testament to the power of research and determination. His invention has not only revolutionized marine safety but has also set new standards for durability and performance in extreme conditions.

As agencies worldwide continue to adopt Ullman seats, they're not just investing in equipment, they're investing in the safety and wellbeing of their people.



Dr. Johan Ullman is a specialist in anaesthesiology, intensive care and occupational medicine. He is also a designated flight surgeon and certified in hyperbaric (diving) medicine. He is a medical officer in the Swedish Armed Forces reserve. Dr. Ullman is also the inventor behind other human-machine interface inventions that are today established as international standards, the most well-known being Bluetooth. Currently, Dr. Ullman is a PhD candidate at the University of Gothenburg, Institution for Clinical Sciences.

Photo credit: Ullman Dynamics

Compliance with ships' lifting appliances: A best practice guide

Following the announcement of a new Concentrated Inspection Campaign (CIC) by the Riyadh MoU on ship lifting appliances, SQE MARINE consulting firm has issued guidance on how to comply with the requirements. The campaign ran from September until 30 November 2024.

Based on the CIC questionnaire, SQE Marine has provided answers to each question and guidance to help others prepare for similar Port State Control (PSC) CICs. It is recommended that crew members adopt the Company's provided guidance and directions, applying them immediately to their daily routines. They should also identify potential discrepancies related to lifting appliances and loose gear, and, in coordination with the Company's guidance, implement corrective or preventive measures.

Q1. Is all relevant documentation for the ship's lifting appliances, including cargo operation manuals, approved lifting gears certificates, and loading instrument function documentation, available on board the ship?

A1. The Technical and Operations Managers, along with the Master and other designated responsible officers, must ensure that all documentation and certification regarding lifting appliances, loose gear, and manuals relevant to cargo operations and the functioning of loading instruments are valid and available. If any documentation is missing, corrective actions must be taken immediately (e.g., issuance of the missing documentation, suspension of the use of appliances or loose gear until their certificates are available, etc.).

Related PSC Codes

01101 – Cargo Ship Safety Equipment
01305 – Log-books/compulsory entries
01313 – Booklet for bulk cargo loading/unloading/stowage
01317 – Cargo record book

Q2. Is the cargo gears record logbook and loose gears conformance test report of all the ship's lifting devices available onboard the ship?

A2. The Master and responsible officers on board must ensure that the cargo gear record logbook and loose gear conformance test reports for the ship's lifting devices are always valid, updated, and available. Technical and Operations Managers ashore must monitor expiration dates and schedule the required equipment testing as necessary.

Related PSC Codes

01317 – Cargo record book
01322 – Conformance Test Report
06199 – Other (cargo)

Q3. Are the inspection reports for the lifting appliances, including those conducted by the classification society and the ship's crew, available onboard the ship?

A3. The Master and responsible officers on board must ensure that reports for the lifting appliances (conducted by the ship's crew) are always valid, updated, and available. A copy of the latest classification society's inspection report for the lifting appliances must also be available. Technical and Operations Managers ashore must regularly supervise the crew's compliance with these obligations and follow up on class comments and findings. If a report identifies a defect that poses a threat to the safe execution of loading operations, it must be

officially recorded, and the use of the lifting appliance or loose gear referenced in the report should be suspended until the defect is rectified.

Related PSC Codes

01101 – Cargo Ship Safety Equipment
01305 – Log-books/compulsory entries
01313 – Booklet for bulk cargo loading/unloading/stowage
01317 – Cargo record book
06101 – Cargo Securing Manual

Q4. Are the lifting appliances maintained and working in good condition?

A4. A Planned Maintenance System (PMS), based on manufacturers' instruction manuals, must be in place on board for every appliance and piece of loose gear, and followed without deviations. Officers on board, under the supervision of the Master, are responsible for ensuring the proper maintenance is carried out and for keeping the corresponding records upon completion. The Technical Department must monitor all required actions and reports as applicable.

Related PSC Codes

06199 – Other (cargo)
09225 – Loading and unloading equipment
15109 – Maintenance of the ship and equipment



Q5. Are the ship's communications devices maintained and working in good condition?

A5. Communication devices must be maintained according to manufacturers' instructions. Portable devices must be properly stored, protected, and recharged in designated areas after use. Officers on board, under the supervision of the Master, are responsible for ensuring this process is followed. Malfunctioning communication devices must be immediately replaced or serviced when identified on board.

Related PSC Codes

05116 – Operation/maintenance
05199 – Other (radiocommunication)

Q6. Are the safety operation procedures available onboard the ship?

A6. The Company's SMS must provide the crew with adequate written guidance, directions (such as directives and posters), and preventive safety measures that the crew must follow during loading operations to ensure high safety standards. The Master and Safety Officer on board must follow the SMS instructions and ensure their proper implementation.

Related PSC Codes

15106 – Shipboard operations
15109 – Maintenance of the ship and equipment

Q7. Is the master's order for cargo operations available onboard the ship?

A7. The Master, taking into consideration the SMS guidance for lifting operations, must provide additional guidance and issue a permit for lifting operations. In case the ship's cranes are operated by shore personnel, a pre-transfer meeting must be arranged so that the Master and Cargo Officer can provide their guidance and verify the ability of shore personnel to perform the lifting operations.

Related PSC Codes

15104 – Masters responsibility and authority
15106 – Shipboard operations

Q8. Is cargo operation Risk Assessment available onboard the ship?

A8. The SMS should include, in the relevant Risk Management section, the procedure for hazard identification and mitigation related to lifting operations. The Master and Safety Officer must follow the implemented risk management procedure and discuss potential hazards during the toolbox meeting prior to the operation. Shore personnel must participate in the final risk identification and the implementation of mitigation control measures. The developed Risk Assessment must be available for review.

Related PSC Codes

15106 – Shipboard operations
18432 – Risk evaluation, training and instruction to seafarers

Q9. Have the lifting appliances on the ship been inspected for oil leaks and cleanliness?

A9. Beyond the PMS, the ship's crew must check the lifting appliances for cleanliness and any oil leaks during preparation before loading operations begin, after the operations are completed, and after the ship has been exposed to rough weather conditions. Attention should also be paid during loading operations. In this case, the crew must be ready to suspend operations if needed to avoid hazards from potential oil leaks.

Related PSC Codes

09225 – Loading and unloading equipment
09297 – Other (working space ILO)
09298 – Other (accident prevention)

Q10. Are the ship's crew and shore operators properly familiarized with the cargo and lifting appliances operations?

A10. The SMS familiarization section should include lifting appliances familiarization. Only certified personnel may operate mounted lifting appliances or cranes, and their certification must be available on board. The company's personnel or agent must ensure that shore operators are also familiar with the operation of the ship's lifting appliances before loading or unloading operations begin. In this case, confirmation correspondence must be sent to the Master.

Related PSC Codes

15106 – Shipboard operations

SQE Marine is a leading provider of Maritime Safety, Quality and Environmental Solutions providing SMS Consulting, Ship Manuals, Regulatory Compliance Advisory, Training and e-learning products in these areas. We have been successfully providing a product and service range to more than 1,600 clients (based in 75+ countries) over the last 25 years, operating a LRQA ISO 9001 certified management system.

For more information
<https://sqemarine.com>





Promoting excellence in
professional maritime standards

The purpose of the **Maritime Professional Council of the UK** is:

- To promote the professionalism and esteem within the British Merchant Navy and to those organisations directly concerned with the sector.
- To provide a central point from which professional opinion on maritime matters can be offered to the Maritime Community, Industry, Government and the Media.
- To provide independent expert advice and guidance based on our combined professional knowledge and experience unhindered by any financial or commercial interests.
- To provide guidance to regulators and employers on the professional training standards adequate for our maritime professionals.maritime standards

www.mpc-uk.org



Bringing expertise to bear

By David Hughes

The UK's top maritime professional organisations are working together to make their voice heard on key issues

While the size of the British merchant fleet may have declined significantly over the past several decades the UK continues to be well endowed with maritime expertise.

For generations, professional organisations have provided a key source of expertise helping to maintain the right standards across industrial sectors ashore. However just over three years ago a number of maritime-linked bodies came to the view that this has not been happening within the maritime sector and, often, regulators and employers had been missing out on the years of experience leading professionals can bring to the table.

So on Merchant Navy Day, 3rd September 2021 a number of national and global professional associations based in the UK launched the Maritime Professional Council (MPC) to make sure policy makers are aware of the considered professional opinions of those with the qualifications, expertise and experience to provide informed advice on the many policy decisions that need to be made.

The MPC aims to bring together the collective voices of the UK-based professional organisations for the British Merchant Navy and associated Maritime Industry. It strives to promote professionalism within the industry and offer expert opinion on maritime matters to the maritime community, industry, government and the media.

The founding organisations of the MPC included the Honourable Company of Master Mariners (HCMM), The Nautical Institute (NI), International Institute of Marine Surveying (IIMS). They have since been joined

by Cameron Maritime Resources, Confidential Human Factors Reporting Programme (CHIRP), Intermanager, Institute of Marine Engineering, Science & Technology (IMAREST), Maritime Volunteer Service, The Professional Charter Association (PCA), Trinity House and Trinity Maritime. In addition The Institute of Seamanship and The United Kingdom Maritime Pilots Association are supporting organisations.

The organisations in the MPC believe that the government - and government-aligned bodies charged with policy and direction of the Merchant Navy and the wider maritime-linked industries need the best practical pool of experience to draw upon. The MPC's experts are able to contribute to policy discussions from an international perspective as well as sharing their in-depth understanding of the UK's maritime industries.

While the individual maritime professional bodies have long been respected within the shipping industry, their knowledge and experience had been rarely sought when decisions were made on key policy and legislative changes. The MPC is working to change that.

The MPC provides a common space for collaboration, and exchange of ideas between the major technical organisations closely allied with the maritime industries. In a relatively short space of time the MPC has become a key

source of knowledge and opinion reflective of the skills, experience, and professional status of the membership of the individual member organisations.

MPC chairman Derek Chadburn emphasises. “We have increased membership, bringing an even wider range of expertise including on our important small commercial vessel and inland waterways sector.”

“Importantly,” Chadburn adds: “we have raised our profile with the government and established a channel of communication with the MCA”

Turning to specific issues tackled by the MPC so far he notes: “Earlier this year we held a workshop and produced a document on the importance of Kind Leadership. Moreover we have established a number of sub groups to address important issues, topically including the dangers posed by lithium batteries but also focusing on a wide range serious challenges for our industries.”

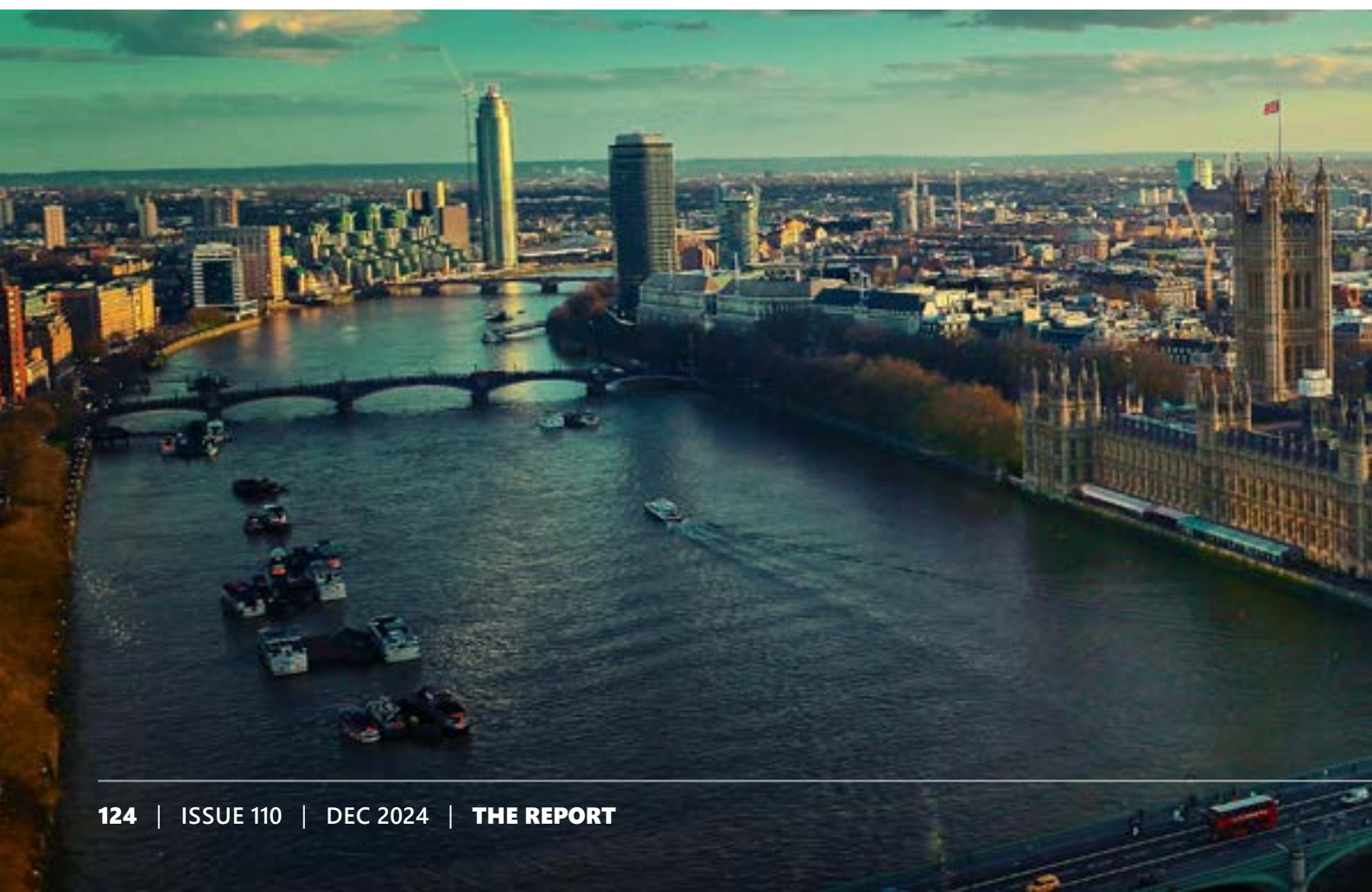
There is already a long list of issues that the MPC has tackled, prominent among them is deaths in enclosed spaces. Appalled that such deaths continue to be all too frequent occurrences in the shipping industry, it calls for fundamental changes to ship operation and design. It welcomes the shipping industry's new roadmap to prevent this needless loss of life.

MPC member InterManager, the global body which represents ship managers, has been at the forefront of raising this issue. It says: “Seemingly innocuous compartments, cargo holds and fuel tanks, vital for storage and operation on board any vessel, have become graveyards for far too many seafarers due to a lack of attention, regulation, and understanding.”

A surge of enclosed space related deaths on ships in late 2023 led InterManager to call on the shipping industry to work together to improve safety in these challenging onboard areas. In December last year the deaths of three seafarers and five shore workers in accidents in enclosed spaces in just seven days brought the total known deaths in these dangerous areas of vessels in 2023 to 31. InterManager records these incidents on behalf of the wider shipping community. Its statistics show that since 1996, 310 people lost their lives in enclosed spaces on ships – 224 seafarers and 86 shore personnel in 197 accidents.

InterManager's secretary general Captain Kuba Szymanski warned: “It's a minefield. We've created an unsafe environment, and then we blame people for not navigating it properly. It's absurd.” He highlighted the ineffectiveness of International Maritime Organization (IMO) regulations introduced in 2011, intended to prevent enclosed space fatalities. “Since 2011, an increase in fatalities in our data is related to the introduction of new IMO introduced regulation. This regulation hoped to eradicate all enclosed space accidents. But it was evident that it didn't because the shipping industry was barking up the wrong tree.” Specifically he argued: “One of the biggest issues is the flawed design of enclosed spaces.” This particularly includes cargo hold access arrangements. As an industry, “we need to have one voice, one approach to safety. Fragmented standards and practices only put lives at risk.”

The MPC has been encouraged by the shipping industry's response to Capt. Szymanski's plea for collaboration and unity across. The formation this year of a pan-maritime industry group and Enclosed Space Entry – Joint Industry Workshop meetings, demonstrates the industry's commitment to addressing this issue. Two Workshops,



with the most recent this July, took place at the Oil Companies International Marine Forum (OCIMF) office in London. The MPC believes the creation of the group to provide a single voice on enclosed space deaths is a major step forward.

Other critical issues that have been tackled by the MPC include lifeboat drill deaths, the threat posed by lithium batteries and the dangers of carbon monoxide poisoning. It also not shied away from controversy and issued a strong statement in support of seafarers sacked by P&O Ferries. Intermanager Capt. Garry Hallett adds: "We have also contributed in the UK MCA reviews on the code of safe working practices for the UK MPC especially in the chapters on extreme weather, working at height and, of course, enclosed spaces."

The MPC has also been closely involved in discussions on the future of nautical training and the revision of the the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW). Also looking to future of the maritime sector, the MPC has been involved in ongoing discussions on Maritime Autonomous Surface Ships (MASS) as well a providing input on changes to regulations covering small seagoing commercial vessels and inland waterways.

But the probably the important message that the MPC has sending out for longer term is that the shipping industry needs to embrace a new management approach if it is to make the most of its key asset, its people. MPC members have been working hard to promote the concept of Kind Leadership (KL) as the way forward.

The MPC emphasises that KL is not 'soft leadership' but an effective and considerate way of safely achieving

optimum industry productivity and efficiency, both at sea and ashore. This approach is attracting broad support. In June this year 50 selected participants representing the maritime industry's Regulatory, Education, Legal, Commercial, and Voluntary sectors took part in an MPC-organised workshop in London where they wholeheartedly endorsed the concept.

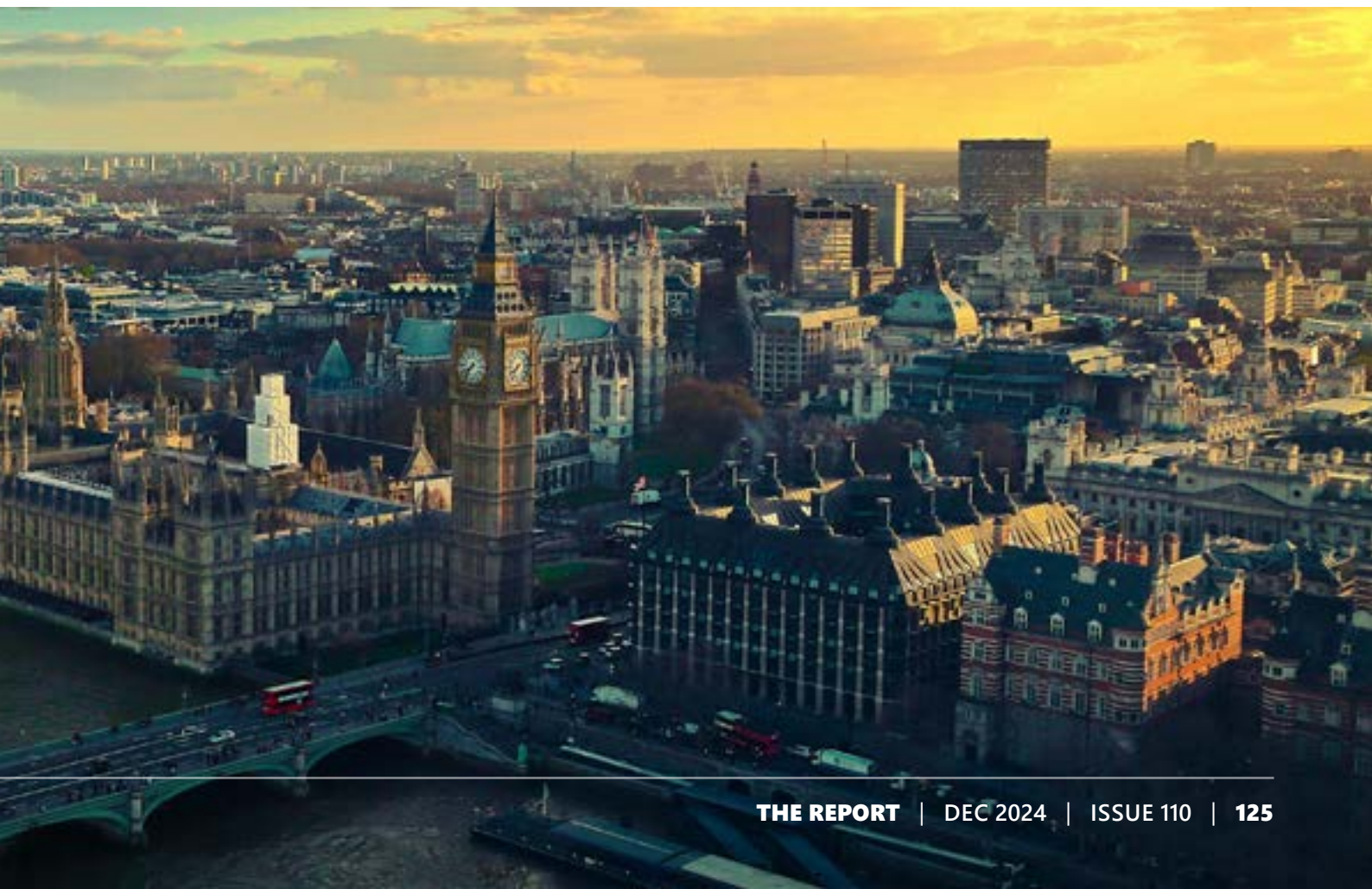
The MPC's Vice Chair (Nautical), and CEO of The Nautical Institute, John Lloyd, notes: "The MPC UK brought together industry leaders and stakeholders from across the industry to review the work to date on Kind Leadership and to help create a pathway that leads to widespread adoption."

In his keynote speech at the workshop Ritesh Prakashan, HQSE Manager of Zodiac Maritime, shared a shipmaster's perspective on Kind Leadership and explained how his experiences at sea led him to understand the need for a 'kind' approach to leadership.

Feedback from workshop is currently being assessed with a view to further engagement with the industry as part of this important initiative.

So is the MPC making a difference? Mike Schwarz, IIMS CEO, responds:

"In its relatively short existence, the MPC has tackled some thorny issues head-on. I am proud of the work we are doing, bringing diverse maritime organisations together to collaborate under one unified banner to discuss topical issues and to challenge the industry and its regulators."



HOW TO CHOOSE THE RIGHT MARINE SURVEYING PROFESSIONAL DEVELOPMENT COURSE FOR YOU **(and guidance on what to watch out for)**

By Frances Birkett

Has your chosen education provider achieved an internationally recognised standard? Today, it seems easy to get duped by seductive marketing and one International Institute of Marine Surveying (IIMS) member is urging others to do their due diligence when signing up for a professional development course.



A few years ago, the member in question decided to add another specialisation to their skillset at significant expense. Once they had chosen their course, they looked into the provider, saying: "I was getting fairly decent correspondence from whoever was on the other end, but once I paid my money it all pretty much stopped. They did give me the course and dumped the whole thing on me. Then I started going through the course and it wasn't exactly much of a challenge."

While completing the course, our member found the content rather simplistic, and it included out-of-date regulations.

They added: "You can see from the feedback you get from education providers and if there's any question at all that it's not legitimate, it's probably not."

"I spoke to them about the course before I started signing up. The initial effort seemed pretty legit, but as it progressed it got worse and worse."

"The worst thing about it is probably the marketing bling. It's so easy these days and anyone with any decent skill and time on their hands can pump this stuff out endlessly on social media. Social media has been the bane of our existence, and it suckers us all in."

Finding valuable and trustworthy courses can be tricky. That's why we've come up with the following important advice.



Why is CPD important?

With ever-changing and stiffening safety regulations within international marine industries, continuous professional development is crucial for honing your expertise and progressing your career further.

Continuing Professional Development (CPD) can help you to reflect, review and document your learning journey and to develop and update your professional knowledge and skillset.

It can also:

- provide an overview of your professional development to date;
- remind you of your achievements and how far you've progressed;
- uncover gaps in your skills and capabilities and open further development needs, and;
- demonstrate your professional standing and currency to clients and industry peers.

IIMS is the only worldwide professional body to award qualifications in marine surveying, so we know a thing or two about providing high-quality CPD opportunities.

Your career goals and aspirations

First things first, you need to think about what you're looking to accomplish. Are you looking to improve and expand your knowledge in a specific area? Fill in a skills gap? Perhaps you need to fulfil your professional membership CPD requirements?

You also have to think about how you want to study. Do you prefer a classroom environment where you can discuss points with others face-to-face, or does your busy schedule mean that distance learning allows you the flexibility to study at your own pace? Can you commit to a full-time course, or keep on top of a part-time programme alongside your job? Maybe a simple lecture, seminar or workshop is all it'll take? Knowing the answers to these questions will help.

Training and learning with the IIMS can be the start of your 'through-life pathway' in the marine surveying profession. You study with the IIMS and get your career started, do CPD with the IIMS, get mentored by the organisation and grow in your chosen area of surveying. No other organisation can offer this, and that is what sets the IIMS education programme apart from others.

Research the course provider

Next you should look into the training and education provider. Does it have a good reputation? Do they have any student testimonials, or can you find any personal recommendations from colleagues and peers within the boating, shipping and surveying industries?

Finding out whether the course or company has any internationally accepted accreditation by a well-known body can help ensure you get the best training possible. (This is a good opportunity to showcase how IIMS has been awarded the globally recognised ISO 9001 standard for training in marine surveying.)

Another good idea would be to see how well the company communicates with students. How quickly do they respond (if at all)? Are they helpful, or once the money has been paid do they become evasive and less communicative? What kind of student support services do they provide (if any)? Think about the provider's overall transparency when researching them. Read our 'What to watch out for' section below to see which questions to ask before starting your course.

Research the course content

Now it's time to focus on the course itself. Research the course details such as how it will be taught, what topics/units it will cover, entry requirements and course duration. How up to date is the course content? Also, check what type and level of qualification you'd receive at the end, i.e. is it accredited by a recognised awarding body? Would you receive a certificate of attendance or an official Level 4/5 diploma qualification?

Find out who will be teaching you. Are the course tutors industry experts at the top of their game and what kind of qualifications and relevant experience do they have?

How the course is assessed is something you need to consider. Will course assignments and theory-based exams help you gain the skills you need, or would a hands-on practical approach be more suitable? All of these should help you decide which course is right for you.

Of course, you'll also want to know what costs are involved so you that can make sure you're making a valuable investment. How much does the course cost? Do you have the option to buy a single unit if you don't have the time or desire to complete the full qualification? Are there any other costs you'll have to factor in, e.g. travel expenses, course materials, examination fees, etc.

Knowing how to pay for the course is important. Does the provider give the option for staged payment plans? It's also worth understanding their cancellation policy (if any).



For more information about the IIMS education programme and professional qualifications go to

<https://bit.ly/3CU3hHY>

What to watch out for

There's no harm in taking a second look before paying for a course. It's your money after all.

- Watch out for their answers. Communication is key. But this is a two-way street. Make sure you ask all the questions you want to know about the course before signing up. It's worth asking which authorities you can present the qualification to knowing it will be recognised and where else it is accepted. If they don't know, your suspicions should be aroused.
- Watch out for the marketing bling. Don't solely judge a provider by their social media presence (this goes both ways). Contact past students to find out what their experience was like. Exploring the provider's website can also be a good indicator on the quality of their courses and support. Read the 'About Us' page. Are there multiple typos as is sometimes the case? Do the images not load? Is the site difficult to navigate? Does it look unprofessional? These should set alarm bells ringing.
- Watch out for the provider's accreditations and memberships. We've said this before, but checking up on them can help reassure you that the qualification you'll gain is up to industry standards and will be accepted. IIMS, for one, does not accept a number of certificates when they are presented to support a new membership application because of the poor-quality training offered by the provider.
- Watch out for the price. Is the course provider making you a substantially discounted offer based on the original cost? If so, question why this is the case and be suspicious. Does giving away course material at a cheap cost devalue the content and importance of the qualification?

In conclusion

IIMS Chief Executive Officer, Mike Schwarz, has the last word.

He said, "Over the years, IIMS has been an ethical provider of education and training for marine surveyors, both for new as well as experienced surveyors. IIMS was the first organisation to develop a marine surveying distance learning education programme, set at first year university Level 4/5, some 20 years ago. Many education providers have followed, some good and some frankly rotten.

"IIMS has gone out of its way to gain the internationally acclaimed ISO 9001 accreditation for 'Training in Marine Surveying', because we believe it to be important. Our distance learning professional qualifications programme is an award winner too, coupled with our acclaimed training events held internationally throughout the year. This shows our commitment to the industry and demonstrates that we take the provision of education and training seriously enough to have had our work externally audited by DNV.

"We encourage student feedback and take it seriously and can point to many satisfied students who have learned with the Institute over the years, including a future IIMS President to be! How we handle, care for and communicate with our students is of great importance. We provide ongoing contact through to the end of the course and way beyond if desired.

"Our significant investment in a state-of-the-art student portal, which makes studying intuitive and pleasurable, is testament to our ongoing commitment as a major provider of quality marine surveyor training. You won't see marketing bling, as mentioned earlier in this article, from IIMS – just an honest and transparent overview of our credentials and prowess as an educator in marine surveying.

"Becoming a marine surveyor is not an easy task. The job is multi-faceted, demanding and requires the ability to expertly and forensically examine vessels and cargoes, and then compile a comprehensive report. That knowledge and those skills can only be taught by surveyors who are at the top of their profession."



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UNDERSTANDING EFFECTIVE RISK ASSESSMENT

By the Britannia P&I Loss Prevention Team

The growing scale and complexity of marine transportation necessitate a proactive and multi-faceted approach to risk management. While professional expertise, experience, and regulatory frameworks provide valuable advantages, they cannot anticipate all potential risks.

A review of incidents often finds that opportunities were missed to identify and mitigate the risks. As with any process, risk assessments may be ineffective and unlikely to contribute to safety if they are missing the point, are not understood, or seen merely as a 'tick box exercise'. Risk assessments should ideally occur on many levels, both as a formal, documented process and as a dynamic, 'on the job' activity.

For the purpose of the paper the following simplified definitions on how we understand the terms are applied:

- Hazard is an event or a situation which has the potential to cause harm, such as injury, damage or pollution;
- Risk is a combination of the likelihood and the severity (consequence) of a hazard;
- Risk assessment is the process of risk identification, analysis and evaluation;
- Risk management is the coordinated activity to assess, control and monitor risk.

Reasons why risks need to be assessed and managed
The general purpose of risk management is to identify the hazards before they occur and have a plan for addressing them. While some risks can be avoided altogether, others can only be minimised to a tolerable level. The reasons for managing risk may be summarised in the following groups:

Business risk

A company will be unavoidably exposed to various risks during business activities. If incidents do occur, they may lead to claims, losses, reputational damage and loss of competitive advantage. Efficient risk management will contribute to the overall success of the business.

Ethical risk

A company has a legal and moral duty to take reasonable care of the health and safety of their employees. These objectives extend to contractors, third parties, property and the environment. In turn, employees have a duty of care towards themselves, each other and the employer. This is also a prerequisite to achieving Environmental, Social, and Corporate Governance (ESG) objectives.





Regulatory risk

A ship is subject to the regulatory requirements of the International Maritime Organization (IMO), flag state, and those imposed by the Port/Coastal State in which they trade. Legal requirements agreed in commercial contracts (such as a charterparty) and employment contracts may also apply. Where the requirements regarding risk management may be explicit or implied.

Insurance risk

There are both explicit and inferred risk management requirements arising from insurance:

- Obligation to comply with class and statutory requirements
- Cover limitations applicable to imprudent, unsafe or unduly hazardous trading
- Obligation to mitigate loss, damage, expense or liability following an incident.

Risk Management and the ISM Code
The ISM Code has specific requirements regarding risk management and the objectives of the company (section 1.2.2):

- Provide safe practices in ship operation and a safe working environment;
- Assess all identified risks to its ships, personnel and the environment and establish appropriate safeguards; and
- Continuously improve safety management skills of personnel ashore and aboard ships, including preparing for emergencies related both to safety and environmental protection.

The above requires companies to carry out a systematic review of their operations and activities, assess the risk for all identified hazards and develop adequate controls – such as the procedures and instructions included in the Safety Management System (SMS).

The ISM Code does not stipulate a particular risk assessment methodology to be used. This provides companies with the flexibility to utilise the approach most suitable for their operational profile. However, company policy as well as procedures for methods selected for risk assessment should be structured and documented. Authority, responsibility and training requirements of the individuals involved with the risk assessment process should be defined in the SMS.

Risk assessment methods and techniques

The risk assessment may be based on the following foundations:

- Historical experience;
- Analytical methods;
- Knowledge and judgment.

Depending on the nature and complexity of their operations, companies may adopt a number of different methods ranging from detailed quantitative assessments to less formal qualitative assessments.

QUALITATIVE risk assessments evaluate risks based on subjective judgments and descriptions, often using categories like high, medium, or low. They often rely on expertise and experience to assess the likelihood and impact of risks.

QUANTITATIVE risk assessments, on the other hand, use numerical data and statistical methods to measure risks. They may involve calculating probabilities and potential impacts in numerical terms to provide a more precise evaluation of risks.

Selecting the method appropriate to the situation is essential for successful risk assessment. In principle, a simple qualitative method should be applied first to determine if the risk can be assessed without having to resort to more complex quantitative techniques.

Download the white paper at <https://bit.ly/4cDEglQ>



TALK THE TALK. WALK THE WALK. WOMEN IN SHIPPING

By Elpi Petraki, President WISTA International



Talking the talk on diversity and inclusion is good, but walking the walk will bring better rewards, writes Elpi Petraki, President WISTA International.

There has been a lot of talk at international maritime conferences about diversity, equity and inclusion and there are more women in shipping than ever before, but the figures are still too low.

So, what is not working?

The first IMO and WISTA International Women in Maritime Survey of 2021 showed that, even though their numbers were increasing, women contributed only 2% of the seafaring workforce. Furthermore, overall, they only accounted for 29% of the workforce within the maritime industry.

A second WISTA survey will be carried out this year, which commenced in September. Where the raw statistics are concerned, I am confident that it will show progress, says Ms Petraki.

However, any progress should not result in complacency: I believe it is time for companies that have shown leadership to follow through with the next steps.

One area for focus will be the opportunities available to women for career advancement. As with much else where trends in employment are concerned, shipping is not alone on this issue. Women often find themselves overlooked in the workplace and face barriers to career progression despite having the ambition, qualifications and expertise. Whether acknowledged or not, the reasons this is so include workplace expectations – or unconscious bias – relating to age and parenthood, even in societies which consider themselves liberal.

A recent survey of more than 1,200 professional women in Switzerland

across diverse sectors and management levels found that almost every second woman expressed increasing dissatisfaction with her career advancement in the age bracket 41-45. Among those surveyed, 90% wanted their careers to go further. The same research found that parenthood did not diminish ambition for career progression.

Attitudes to parenthood which frustrate those ambitions can be hard to shift, but practical adjustments can be made if company leadership is flexible and open to doing things a little differently.

In a recent example from my own company, a female chief mate had a baby and aims to go back to sea in time. However, as she preferred to return to work earlier, we found a way to use her experience in an office job that was mutually beneficial.

Small steps to progress

More generally, it is very often relatively small and easy to implement changes which make big differences to working conditions and workplace cultures.

Successes have included the wider availability of protective clothing on ships that fit women, but many other small changes could have big impacts. Ensuring that bathrooms for women are near where they work in ports and on ships, if that is somewhere like the engine room, can make an enormous difference. Again, the provision of sanitary products on vessels should be a basic workplace requirement rather than an issue.

Small measures like these can have a disproportionate effect in ensuring safer and better working environments. In the same way, changes in onboard cultures really start to take off when more women are present. It makes a dramatic difference if there are four women on a ship rather than just one or two.

Changing attitudes

Sustaining momentum will also rely on ensuring that we, as women in shipping, remain focused on making a difference. Panel discussions on diversity, equality and inclusion are invaluable in moving debate forward, but women in technical and management positions are also fully qualified to join business panels and show how their involvement can benefit industry thinking.

WISTA, with the IMO, has done its bit to help find and promote women speakers across the shipping industry through the Maritime Speakers Bureau platform. My point here is that women also need encouragement from their employers, to make themselves available for such opportunities and to stand up and speak.

Certainly, we must call out incidents where women are prevented from travelling to WISTA conferences by companies that do not recognise the value of learning and gaining

confidence from a member-funded organization committed to equitable opportunities.

The aim is not to 'replace men', but to better empower women in ways that create a fairer, discrimination-free environment which improves our industry, and shows that it is changing to attract the new talent it needs for the future.

We know that the challenges ahead are huge. Women in shipping are still often underpaid and, despite being well qualified, do not progress to the top positions as quickly as men. Again, setting aside their progress as seafarers, women working in ports lack standardized job specifications. For a woman, a job change can often involve a lower position and proving oneself to get back to where one started.

Thankfully, awareness is growing, and it is encouraging to see more companies contacting WISTA for guidance on how to improve diversity and inclusion within their organisations.

Ultimately, it is about ensuring the widespread adoption of policies and training that enhance understanding of the benefits and importance of DEI, address biases and create a fairer working environment for all.

To truly start changing behaviours and mindsets, we need to practice what we preach. Words are not enough if we want to bring about real cultural change for the good of the maritime industry and society as a whole.



How to reduce Scope 3 emissions

Scope 1, 2, and 3 emissions are greenhouse gases that are released across an organization's entire value chain. Scope 3 emissions are the most complex, as they are released before and after a product is delivered or consumed, McKinsey explains.

Greenhouse gas emissions are classified into three categories, or scopes. Organizations divide their emissions into these scopes to help them create effective reduction plans. McKinsey says that Scope 3 emissions, which are often hard to categorize, can potentially contribute far more to an organization's overall carbon footprint than the other two scopes. An organization's Scope 3 emissions, also known as its life cycle emissions, are those that arise across the value chain, both upstream and downstream.

At a glance:

- **Scope 1** emissions are released when a company manufactures a product or delivers a service (During production)
- **Scope 2** emissions are released by off-site energy providers when a company makes a purchase. (Upstream)
- **Scope 3** emissions: Upstream, they are released from the activities that a company engages in prior to production, from employee commuting to leased assets to transportation and distribution. Downstream, Scope 3 emissions are released from use or disposal of a product or service.



McKinsey highlights that regardless of the industry, the reduction of Scope 3 emissions will likely require not only new processes and technologies but also new kinds of collaboration with customers, suppliers, and stakeholders.

Ultimately, lower emissions may even require completely new business strategies.

Six levers for reducing emissions while capturing new value.

1. Supplier and customer selection.

One way organizations can decrease their upstream Scope 3 emissions is by selecting suppliers that have minimized their own carbon footprints. Dual-mission sourcing, or buying a product that minimizes both cost and carbon footprint, is becoming the standard across corporate procurement teams.

2. Downstream.

Organizations can encourage customers to reduce emissions while using their products.

3. Product specification.

Organizations can adjust their product specifications to rely more on lower-emissions materials.

4. Partnerships.

Partnerships focused on new technologies are particularly well suited to creating low-carbon product lines and processes,

which in turn can propel decarbonization actions. End-of-life solutions. Recycling and other circular solutions can reduce end-of-life emissions once a product has been purchased. Recycling can also produce raw materials that are suitable for reuse in new products, thereby reducing upstream emissions as well.

5. Green portfolio strategies.

Companies with significant downstream emissions can consider redistributing their portfolio, with a greater emphasis on lower-carbon business segments.

6. Value chain integration.

Value chain integration is when an organization creates new opportunities for value in the course of its normal production operations. Upstream integration can increase a company's control over gases emitted prior to production. Downstream integration, after a product is sold, can help control emissions during a product's use.

Addressing Scope 3 emissions is paramount for several reasons, as explained Sjoerd de Jager, CEO & Co-Founder of PortXchange. "Firstly, they constitute the most significant portion of a port's carbon footprint. Ignoring them risks an incomplete sustainability strategy and missed opportunities for improvement. Secondly, it affects the ability of ports to reduce their impact on the local environment, including air and water pollution, greenhouse gas emissions, noise, and traffic congestion, as well as allowing them to positively engage with the local community. Finally, acting on Scope 3 emissions can yield cost savings through increased efficiency and build resilience to regulatory changes and market shifts."

From 2025, EU companies will be required to track and report their Scope 3 emissions. Most global shippers and providers are already shifting toward greener shipping practices, which means using as few resources and as little energy as possible to move goods. And more than seven in ten of those recently surveyed said they would be willing to pay more for green shipping products. McKinsey estimates that demand for green logistics could reach an estimated \$350 billion in 2030.

The Danish group Maersk plans to use green fuels for its ocean shipping; 26 of its vessels have been commissioned to run on green methanol. Companies are also developing collaborative partnerships to accelerate shipping decarbonization, such as the one between Maersk and French shipping company CMA CGM.



The Hague Rules: **100 years old** and still standing



*By Mark Russell,
Head of Cargo Claims,
Gard P&I Club*

Is simplicity a reason for the success of the Hague Rules? In this opinion piece, Mark Russell, Head of Cargo Claims in Gard, outlines the history - and looks to the future – in a world of competing cargo carriage regimes.

The Hague Rules came into being 100 years ago this year, becoming the first international convention governing the rights and obligations under bills of lading for the carriage of goods by sea. As the volume of internationally traded goods grew, the Hague Rules were born out of a need for uniformity in the allocation of risk between shipowners and cargo interests.



The backdrop

The allocation of risk between carrier and cargo interests has ebbed and flowed over the centuries. The Romans considered the carrier should shoulder the risk as they were the ones best placed to protect the goods from harm. However, the perils were numerous for sailing ships – navigation, extreme weather and piracy amongst them. Over time, these causes of damage/loss, along with the inherent vice of goods, became standard exceptions to a sea carrier's liability. As shipowners became more powerful and influential in international trade, they set about applying wider exclusions to liability in bill of lading terms. Cargo insurance also evolved, allowing traders to transfer risk.

As the influence of cargo interests in America grew, so did a dislike for how courts upheld bill of lading exclusions under freedom of contract principles. This led to the Harter Act of 1893, a forerunner to the Hague Rules in seeking to achieve a more balanced risk allocation. However, US legislation was not going to stop foreign shipowners and courts from deciding different outcomes. On the seas, the risk landscape had also started to improve through the transition from sail to steam and shipping regulation. The first Safety of Life at Sea Convention (SOLAS) was adopted in 1914 following the Titanic disaster in April 1912.

The solution

As other nations adopted their own versions of the Harter Act, the need for more uniform rules grew. Comité Maritime International (CMI), a non-governmental international organisation whose purpose remains the unification of maritime law, was influential in the work culminating in 26 states signing the Hague Rules in Brussels on 25 August 1924. Inevitably, the rules were a compromise between ship owning nations and those more representative of cargo interests. The fundamentals included obligations on carriers which they could not contract out of, such as seaworthiness and duties of care in relation to the goods. As a quid pro quo, carriers would benefit from certain exceptions to liability,

limited (package) liability, a one-year time bar for claims, and rights and protections in respect of dangerous goods shipped onboard. Also, of significance for trade, the evidential value of the bill of lading as a receipt was affirmed, giving buyers essential confidence in the description of the goods in the bill and against which payment was made.

A patchwork of regimes

With the advent of container shipping, the Hague Rules were slightly revised by the Hague-Visby Rules in 1968. The relatively low package limit was increased, and a 1979 protocol amended the package limit currency to units of account in the form of Special Drawing Rights. Otherwise, the fundamentals of the Hague-Visby Rules are more or less the same as the Hague Rules.

As world trade increased, cargo interests and developing nations not party to the drafting of the Hague Rules gained greater influence. Calls for change were heard at the United Nations. Its trade body, the United Nations Commission on International Trade Law (UNCITRAL), was established in 1966 and the Hamburg Rules came into being in 1978. These rules did away with the carrier's listed exceptions to liability, creating a presumption of fault on the carrier and extending the Hague Rules tackle-to-tackle responsibility to the places of receipt and delivery at ports. They also featured express provision for delayed delivery, an increased package limit and a two-year time bar. However, the Hamburg Rules failed to achieve the same uptake as the Hague/Hague-Visby Rules, which had stood for much uniformity for over 50 years.

UNCITRAL also wanted to establish a multi-modal convention more aligned with land-oriented liability regimes and more fit for the digital future. A 1980 multi-modal transport convention providing a single liability system failed to gain traction, so the patchwork of regimes still needed to be tackled. Leading nations and industry organisations, including the CMI, came together and their impressive work culminated in 2008.

The Rotterdam Rules are described as a “maritime plus” approach. They adopt a “limited network principle”, where liability for damage that can be localized to a particular leg of non-sea transport will be determined by the relevant inland convention, such as the Convention on the Contract for the International Carriage of Goods by Road. Where damage cannot be localized the Rotterdam Rules take precedence.

As for the fundamentals, the Rotterdam Rules increased inflation-eroded package limits again but largely retained the carrier liability exceptions, save for negligent navigation. The carrier’s seaworthiness obligation was extended and the contractual carrier was also made responsible for acts and omissions of sub-contracting carriers, terminals and stevedores. When acting as “maritime performing parties” these sub-contractors were made jointly and severally liable together with the contractual carrier. Other new concepts included the ability to partly contract out of the Rotterdam Rules for volume contracts covering the carriage of goods in a series of shipments over a period of time. Ratifying states could also opt out of new compulsory jurisdictional provisions that would otherwise limit the effectiveness of contractual jurisdictional clauses.

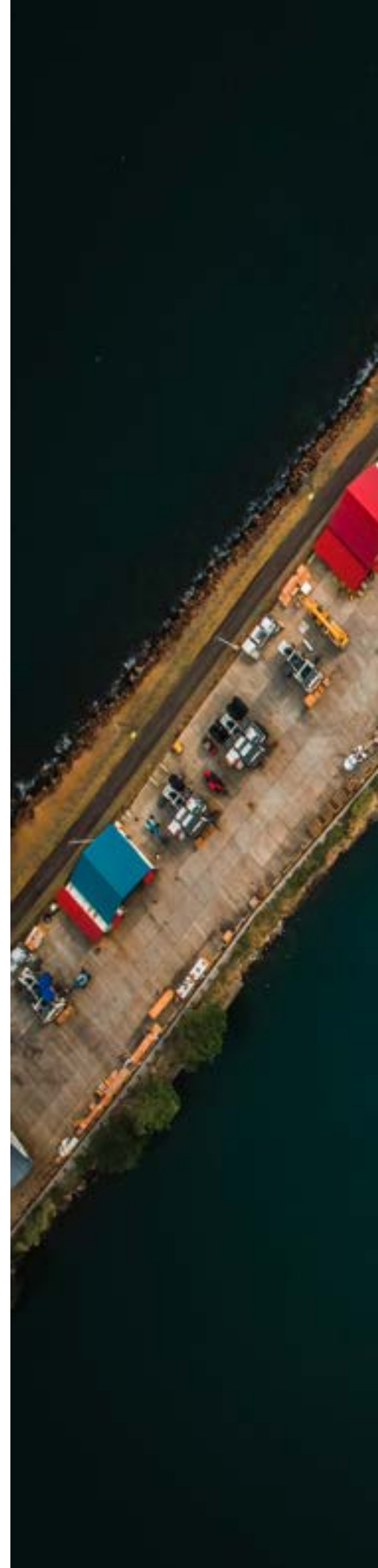
There were high hopes for the Rotterdam Rules with 19 nations signing up, including the United States and France. Sixteen years later, however, that number is still less than 30 and less than a handful have gone on to ratify the Rotterdam Rules, well short of the 20 ratifications (which include denouncing other regimes) needed for their entry into force. As such, today most states continue to apply one of the other existing regimes. Around 30 nations still apply the Hamburg Rules and three times as many apply a version of the Hague or Hague-Visby Rules. The US Carriage of Goods by Sea Act (COGSA) is broadly similar to the Hague Rules with some differences in relation to application (inbound as well as outbound shipments) and a variation on package limitation which remains relatively favourable to carriers. Other states, such as Australia and Germany have amended the Hague-Visby Rules to create hybrid versions which are more favourable to cargo interests.

Some nations, such as Brazil, have not signed up to any rules and instead apply a cargo-friendly commercial code. How individual nations interpret and apply the same convention also differs.

No global harmony but a guiding light

The Hague/Hague-Visby Rules themselves do not apply to charterparties but owners and charterers widely agree to apply them through standard forms or rider clauses with the effect that risk allocation is applied to more than cargo claims. An example of that is a recent English law decision that charterers bore the risk of lost time due to a vessel detained for anchoring in unauthorized waters. Hague/Hague-Visby Rule principles also provide the basis for P&I cargo liability cover and cargo insurance premiums reflect what can typically be recovered from a carrier. The recovery landscape has certainly changed over the last 100 years, and it has become more difficult for shipowners to distance themselves from the acts of and on their ships to avoid cargo liability. Advances in regulation (notably the ISM Code), industry standards (such as bridge procedures) and technology (eg data recorders) have resulted in swathes of evidence for lawyers and experts to pour over in the pursuit of fault. When things do go wrong there is much more transparency, especially for serious casualties through safety body reports.

Some significant judicial decisions have also shaped Hague/Hague-Visby Rules risk allocation, often in the favour of cargo interests. One recent example is the CMA CGM Libra where a defective passage plan rendered the vessel unseaworthy and the carrier was held liable for the failure of the master and deck officers to exercise due diligence at commencement of the voyage. The non-delegable nature of the seaworthiness duty was similarly upheld in the Cape Bonny due to the conduct of the ship’s engineers. A recent UK Supreme Court decision also ruled in favour of cargo interests in relation to the burden of proof.





The perils of the sea and Act of God defences are far from straightforward for a carrier today, requiring an assessment of what was reasonably foreseeable and whether reasonable care could have prevented the loss. Even when it comes to the cargo interests' own obligations in relation to dangerous goods, strict liability for the consequences of failing to properly inform the carrier is usually tempered by what the carrier knew or ought to have known. What cannot be disputed is the substantial body of law that has developed around the Hague/Hague-Visby Rules, as evidenced by CMI's own impressive database. All this has helped parties and practitioners to keep trade flowing and to resolve most disputes and claims amicably. Many disputes today arise from insufficient attention to clarity of contract. The shipper's description of the goods in the bill and the applicable package limits that result is one example.

A look to the future

With relatively far fewer incidents of cargo damage/loss, the allocation of risk is maybe less prominent in contract negotiations than it was in the past. Freight rates and other performance parameters dominate discussions, though for customers concerned with the risk of cargo damage/loss, some liner operators provide extended liability products. For some extra freight, this will guarantee compensation for many cargo damage/loss scenarios. Whilst this takes a carrier outside mutual P&I cover, fixed bolt-on covers have long been available for distinct risks and the Hague/Hague-Visby Rules do not prevent a carrier from negotiating more beneficial terms for cargo interests. Where P&I clubs have drawn the line is in attempts to contractually apply whole conventions that have yet to enter into force.

The pursuit of more harmony across commercial maritime carriage contracts remains admirable. When the Rotterdam Rules came into being the P&I clubs and their shipowner members stood ready to live with them (when entering into force) for the good of uniformity, notwithstanding the additional

liability burden. Sixteen years have passed. Whilst shipowners are better connected with their ships than ever before, a digital and greener age also brings new risks. Lost or false GPS signals increase navigation risks, especially in conflict areas. Coastal waters are increasingly crowded with a combination of both traditional and renewable offshore activities. There are more extreme weather events and a heightened risk of latent defects on more sophisticated vessels, increasingly operating with riskier green fuels. Shipowners face challenges crewing their vessels in a society facing generational shifts and struggles with mental health.

The CMI is committed to reviving earlier enthusiasm for the Rotterdam Rules and has set up a committee to urge wider ratification. There are certainly aspects to commend a modern regime that addresses gaps in the Hague/Hague-Visby Rules and the Rotterdam Rules also does a useful job in tidying up some contentious issues in older regimes. However, the muted response from nations in the time elapsed continues to cast doubt that the Rotterdam Rules offers a viable way forward. At 90 articles (versus 16 for Hague/Hague-Visby Rules) the Rotterdam Rules are long and detailed. Its new concepts involve more diverse interest groups who need to be persuaded that the Rotterdam Rules would work for them. Influential ports in the USA have their doubts though it is argued detractors should better focus on the benefits for trade given most voyages are accident free. Cited here are the non-liability provisions that the Rotterdam Rules attempt to unify.

Venturing into matters traditionally dealt with by courts and tribunals (amongst them, the identity of the carrier, burden of proof, rights of control and delivery of the goods) the Rotterdam Rules aim to avoid conflicting laws and frictions in trade. However, if they come into force, they are likely to create many disputes on issues of drafting and interpretation against a backdrop of established case law. As for electronic contracts of carriage (the Rotterdam Rules does away with well-known bill of lading terminology), these are being recognised and regulated through other legislation and questions arise as to compatibility of Rotterdam Rules provisions with model law. There is also the question of how much uniformity would be achieved

given opt-outs and the potential for more hybrid versions when Rotterdam Rules provisions are incorporated into national laws. On the multi-modal front, land based uni-modal conventions contain their own provisions extending application to other modes, raising more compatibility concerns. There are also suggestions that the Rotterdam Rules fail to sufficiently deal with decarbonisation efforts and which ought to require consideration of relative emissions in the available transport modes, as well as slow steaming in the sea leg. In all of this, industry itself has a role to play, through for example organisations such as Bimco in applying conventions through standard contractual forms on a balanced basis.

Absent the Rotterdam Rules coming into force, it seems likely that UNCITRAL will want to pick this up again. If not, there is a real danger in an increasingly protectionist world that we end up with an even greater patchwork of regimes. That is after all what the Hague Rules were designed to avoid and the Rotterdam Rules themselves halted efforts to revise US COGSA. How long will the heavily trade-oriented US continue to apply a 1936 COGSA? Either way, the voices of shipowners and carriers need to be heard. They do not enjoy a level playing field with cargo interests in many developing economies, where some local systems unfairly find ways to make a carrier liable for paper shortages and pre-shipment issues, amongst others. Would a new cargo liability regime help to achieve a more balanced risk allocation in such places? Without one, will anything change?

Time to rethink?

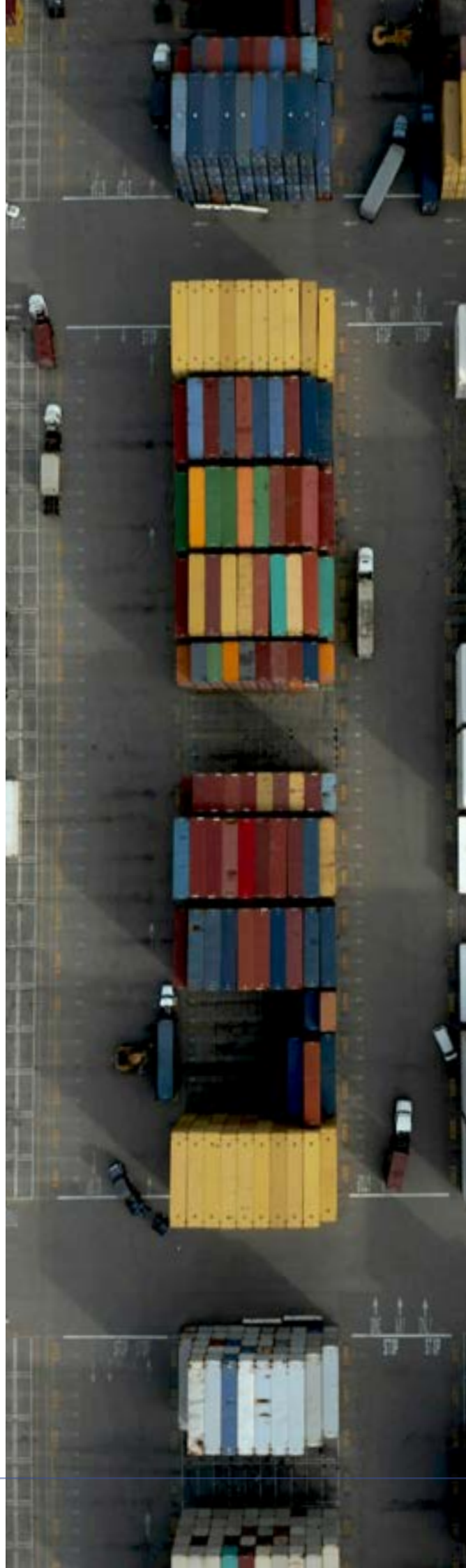
In an increasingly complex world, the simplicity of the Hague/Hague-Visby Rules and the industry's familiarity with them, provide a welcome degree of transparency, certainty and predictability. As for the allocation of risk, the above-mentioned English decisions are examples of the judiciary seeking to apply the rules in ways that reflect both the times, and the bargain struck between the parties.

The Rotterdam Rules recognized that the Hamburg Rules went too far in disturbing the carrier's listed exceptions. Perhaps the Rotterdam Rules themselves went too far in

disturbing the brilliant simplicity of the Hague/Hague-Visby Rules? Perhaps we can learn from another set of rules. The York-Antwerp Rules, designed to govern the principles of General Average, were first introduced in 1864 and have been updated over time. The 2004 version was rarely used, so CMI went back to the drawing board and following years of industry consultation, the 2016 version is now widely adopted. If all the good work is not to be lost, maybe the Rotterdam Rules should go back to drawing board aiming for a greater degree of simplicity? Otherwise, it may continue to be a hard sell to governments facing unprecedented challenges on matters seen as more important.

The author asked the CMI to comment on this article and is thankful to them for agreeing to publish these remarks:

The CMI is not as pessimistic as the author and is optimistic that the Rotterdam Rules will come into force. As discussed at its Gothenburg Colloquium in May the time scale for any other reform is at least another generation away and in any event the CMI believes it unlikely that UNCITRAL or any other international body would wish to venture into this area when there is such an obviously acceptable regime available. In addition, CMI believes if any new regime were to be agreed it would look very much the same or worse for carriers by that time. CMI looks forward to working with the P&I clubs to see this much needed reform take place before regional or local reform causes even greater dis-uniformity.





Practical guidance to safe and secure gangway operations

The Britannia P&I Club has published some practical guidance to ensure the safe use and management of gangways on board ships, emphasizing both safety and security.

A gangway refers to a platform, a walkway or a ramp connecting the ship to land or other vessels and is used as a means of safe access for the crew (and other personnel). The gangway must be properly rigged and maintained to prevent accidents or injuries and to counter the movement from tidal streams, swell, cargo operations and surge movements caused by ships in the vicinity.

Legislation

Accommodation ladders and gangways fitted on ships constructed before or replaced after 1 January 2010, should, to the extent possible, adhere with the IMO circular MSC.1/Circ.1331 – IMO “Guidelines for Construction, Installation, Maintenance and Inspection of means of Embarkation and Disembarkation”. This circular should be referred to in conjunction with the Safety of Life at Sea (SOLAS) regulation II-1/3-9 (Means of Embarkation on and Disembarkation from Ships).

Arrangement

Always ensure that each accommodation ladder is long enough. Even when tilted at its steepest working angle, its lowest platform must stay less than 600mm above the waterline, even when the ship is empty and at its lightest.

The arrangement for the gangway should allow direct access between the ladder and the landing at the ship's deck. The platform should be securely guarded by handrails and adequate handholds. When the gangway overhangs the water in port, a net or suitable protection should be provided to prevent personnel from falling.

Cautionary notice

The maximum and minimum permissible designed angles of inclination, design and maximum load on the bottom end plate should be clearly displayed on each side of the gangway. Personnel embarking on the gangway should be aware of the maximum number of persons allowed on the gangway at any one time to avoid overloading.

Additionally, if the maximum operational load differs from the design load, this distinction should be noted on the marking plate.

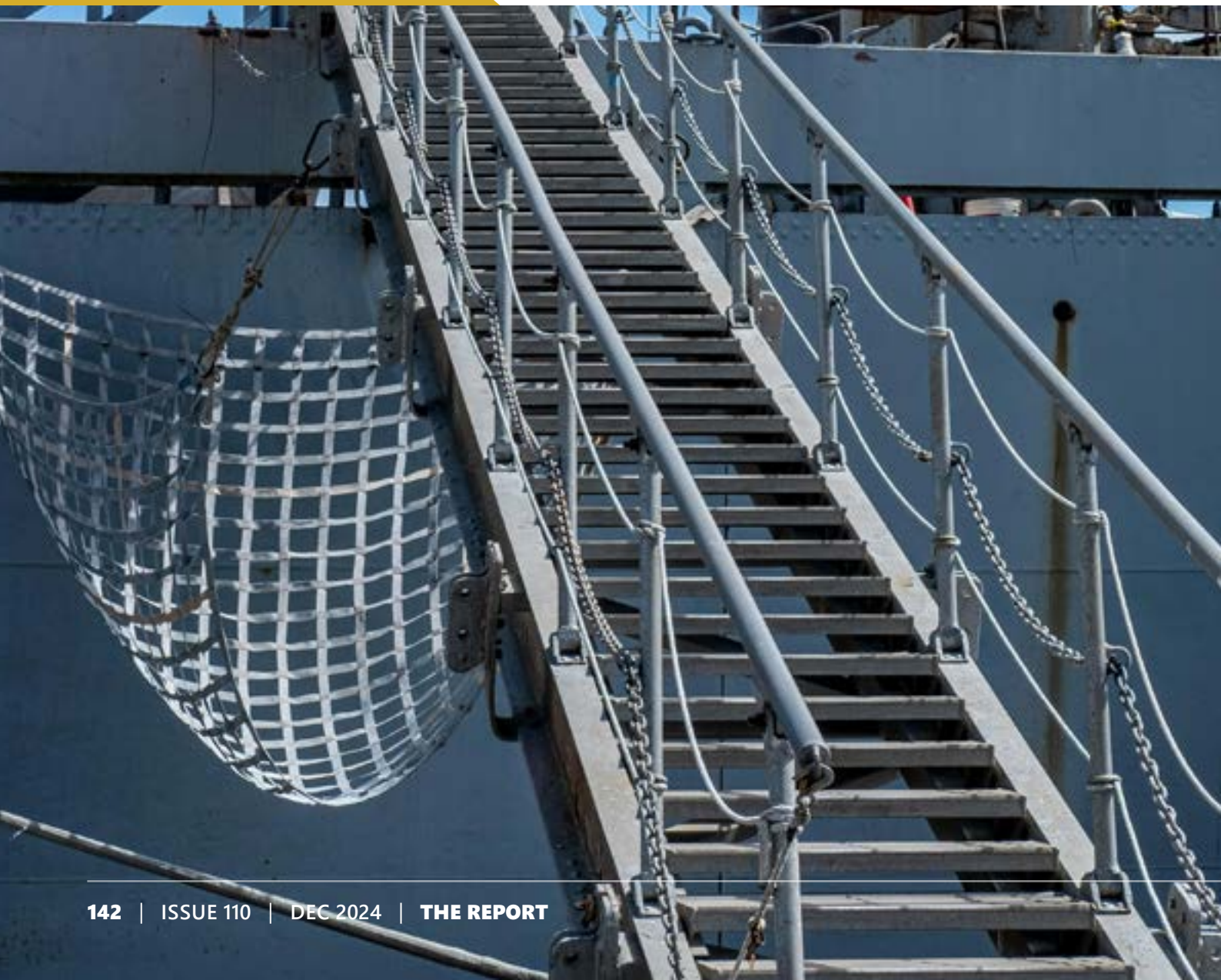
Gangway operations

The ship must actively engage with the local authorities, as they may interpret and enforce varying safety requirements related to secure methods of access. Accidents may occur while rigging the gangway, whether during the setup of stanchions or side ropes, especially when the gangway is overhanging the side, and the crew is working at height. Many ships now feature a gangway safety wire to which safety harnesses can be attached to, or they have fall inertia blocks, allowing for greater freedom of movement. Crew members' safety harnesses should have a slightly taut safety line, rather than being fully slack. This slight tension can help prevent crew members from landing abruptly in the event of a fall, reducing the risk of severe injuries.

If the vessel is doing a ship-to-ship (STS) operation, the gangway should not be placed on a bulwark or on the side railing of the vessel, unless these structures are designed to have sufficient strength and can support the weight of the gangway.

As part of the installation process, a lifebuoy equipped with a self-igniting light and a buoyant line should be available for immediate use in the vicinity of the embarkation and disembarkation area.

It can sometimes be difficult when positioning the gangway on the pier, especially when there are bollards or other fixtures on the wharf. In such cases, all kinds of extensions, extra steps, small gangways, or portable walking bridges may be used to connect the gangway with the quay side. If these solutions are required, a risk assessment should be carried out and the solution approved by the master and in some cases, you may obtain class approval.



Gangway security

To effectively deter a stowaway, the vessel should conduct a thorough risk assessment to systematically address all the vulnerabilities on board and manage the likelihood of any security threats. Often, the gangway serves as the first line of defence against stowaways boardings and is regarded as the primary deterrent to stowaway incidents.

To implement the Ship Security Plan (SSP) and comply with the International Ship and Port Facility Security (ISPS) Code, ship crew members typically restrict access to the vessel to a single focal point – the gangway. They secure and lock all other unauthorised entry or exit points. The gangway becomes the primary access point, where the crew controls boarding and conducts security checks and routine inspections of baggage before allowing anyone on board.

Stowaways may sometimes attempt to gain access to the vessel by disguising themselves as stevedores walking up the gangway. Therefore, gangway access should be a priority and should be placed under round-the-clock watchful eyes of gangway watchkeepers to check the visitor's photographic identification (ID). The Ship Security Officer (SSO) should verify visitors against the anticipated visitors list. If any unexpected visitors arrive, the SSO can identify them and take measures to prevent potential stowaway incidents. Additionally, conducting a practical headcount helps the SSO track the number of visitors on board at any time.

Prevention is the primary strategy, but the security level at individual ports may require a combination of watchkeepers, shore-based security personnel, or gangway watchmen, especially at high-risk locations. Therefore, vessel operators should confirm requirements with local regulators and adapt to the specific demands of each port. Furthermore, adequate lighting at night is also crucial for gangway watchkeepers to monitor approaching small crafts or inconspicuous visitors. In practical terms, vessels may raise the gangway during low tides or when they have a low freeboard, if permitted by the port authority, to prevent unauthorised boarding.

While gangway watchkeepers stationed at the gangway could significantly reduce the risk of stowaways, it is also essential to recognise that security extends beyond the gangway. A more comprehensive approach, following the recommendations of IMO's Resolution FAL.13(42) – Revised Guidelines on the Prevention of Access by Stowaways and the Allocation of Responsibilities to Seek the Successful Resolution of Stowaway Cases, may be adopted.

Safety tips

Below are some potential practical safety tips and recommendations when using gangways:

- The gangway should be free from repair and attention should be paid to areas where there are aluminium to steel connections. The absence or deterioration of an insulating gasket can lead to electrolytic corrosion, which will cause wastage and weakening of the gangway structure.
- The gangway should be inspected regularly to ensure it is in good condition and free from defects.
- The gangway should be maintained as per the vessel's planned maintenance system to allow early detection of defective moving parts and ensure it is kept in good condition.
- The gangway should be secured to the ship to prevent it from moving or slipping.
- The gangway should be trimmed correctly to ensure that it is level and not inclined at an excessive angle. It should not be greater than 30°¹, nor should it exceed the maximum permitted design angle of inclination, as indicated on the marking plate.
- The gangway should be clearly marked with the safe working load to forewarn personnel boarding the gangway and ensure it will not be overloaded.
- The gangway should be illuminated adequately to ensure it is visible and safe to use at night.
- The gangway should be kept clear of obstructions to provide a safe passage for users.
- The gangway should have handrails on each side to provide support and prevent falls.
- The gangway should only be rigged by authorised personnel who have received training on gangway operations.
- Crew should always wear a safety harness and lifejacket while rigging a gangway.
- The gangway should be used with caution, especially when carrying heavy or bulky items which may affect its balance and stability.
- Crew should always wear proper footwear that provides good traction and grip to prevent slips and falls.
- The gangway should be inspected regularly by the officers on duty or gangway watchmen.
- All visitors should be verified against their photo ID and the visitor list.
- A proper headcount should be carried out to determine the number of visitors boarded.
- A risk assessment should be completed prior to rigging and the gangway secured as per the company's safety management system, SSP and the provided checklists.

Potential hazards

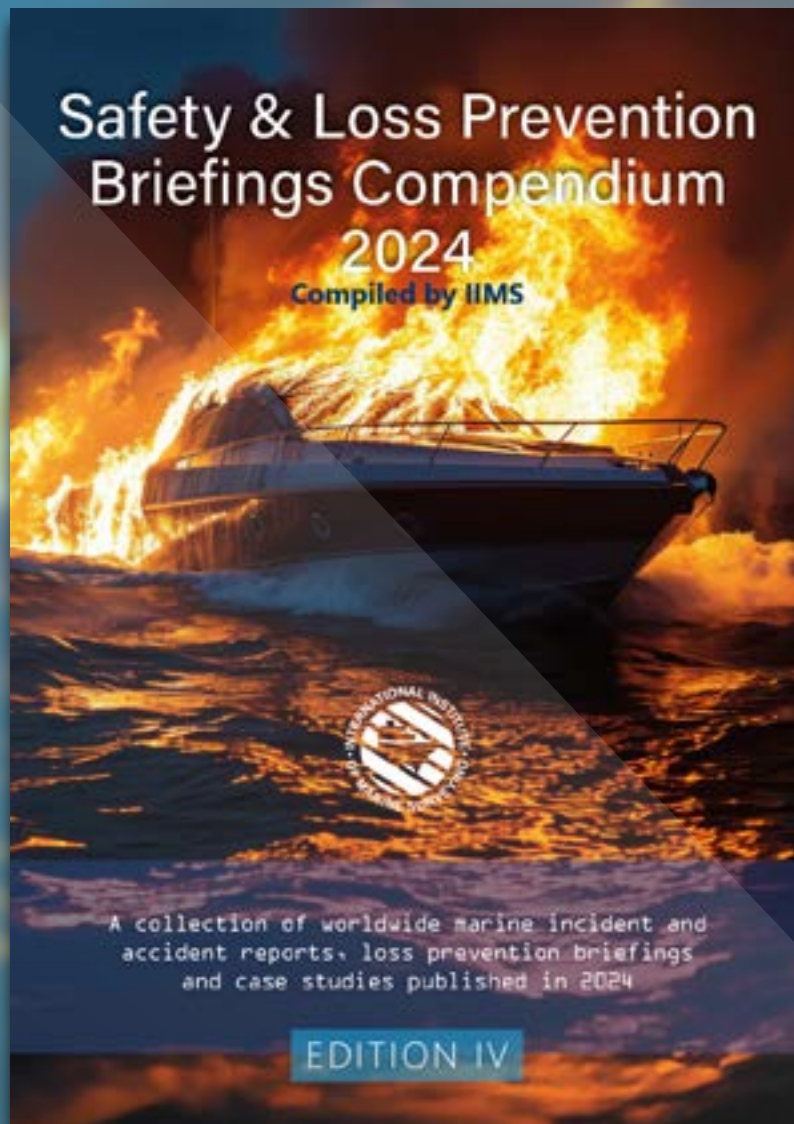
Potential gangway hazards include:

- Loose handrails
- Insufficient lighting
- Wet and slippery surfaces
- Unsecured gangway netting
- Poorly positioned nets
- Falling off gangway or ladders
- Movements of the gangway
- Being struck by moving materials



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1 JANUARY 2025



OR VIEW PAST COMPENDIUMS...

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EDITION II

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YANMAR launches first electric propulsion product to U.S. market

YANMAR Marine International has launched its 'plug and play' E-Saildrive range to the global market at this year's recent Newport International Boat Show, which marks the marine engine innovator's eagerly anticipated first step into electric propulsion. It is designed to give boaters a seamless transition to electric power by utilizing a straightforward installation platform.

The emissions-free saildrive is built on an integrated system with all the components on one 'plug and play' platform. It is fitted on existing footprints or as a drop-in replacement for combustion engines, making the switch to 100% electric boating easier and quicker. The E-Saildrive is offered in three models – the SDe7 kW, the SDe10 kW and the SDe15 kW. The Electric Saildrive range is designed to the same high engineering standards as YANMAR's combustion engines with full access to the same global support network.

Volvo Penta to launch diesel-electric hybrid power package

Volvo Penta has announced a hybrid-electric package – a fully integrated helm-to-propeller experience with new drive modes and intelligent features -- that is set to launch in late 2025. The system will be an advanced hybrid-electric design for its heavy-duty range.

The new system will be available for twin, triple, or quad installations using D13 IPS 900/1050/1200/1350 Hybrid motors. The Volvo Penta "EVC" will feature: Joystick Driving, Joystick Docking, Assisted Docking, Dynamic Positioning System, Glass Cockpit System with hybrid-electric driver interface (HMI) view displaying new functions such as drive modes and battery status.



Support features will include engine status monitoring, remote diagnostics, data sharing, and software updates. Charging capability will come with a CCS2 Standard Interface which supports shore charging with capacities f up to 250 kW DC and 43 kW AC.



Scania launches new marine engine

Scania has launched a new 13-litre marine engine for propulsion and auxiliary applications that it says is its most advanced marine engine yet, meeting high performance and reliability standards. Designated the DI13 and unveiled at last week's SMM trade fair in Hamburg, the new engine has a power range of 257-772 kW (350-1050 HP) and an auxiliary range of 301-553 kW: subject to duty ratings, emission standards and rated speed.

"This is our most advanced marine engine so far, contributing to a better operating economy and sustainability at sea," says Fredrik Järild, head of sales power solutions at Scania. "We want to meet our customers' needs and positively impact fuel efficiency and product performance for demanding conditions within all operations."

MAN introduces second-generation common-rail injection system

MAN Energy Solutions has just announced a new generation of its common-rail fuel-injection system for its medium-speed, four-stroke portfolio. The CR 2.2 common-rail fuel-injection system will eventually completely replace its CR 1.6 predecessor and builds on its experience, allowing a very precise and flexible control of injection pressure, timing, and duration throughout engines' entire operating ranges. Engine performance, emissions and fuel consumption can be optimized accordingly.

"This new common-rail generation integrates the experience and lessons learned from the previous CR generation," said Stefan Eefting, senior vice president and head of MAN PrimeServ Germany.

The new CR 2.2 generation is based on the CR 1.6's extensive field experience running over 17 years on over 500 engines and 5,000 cylinders, representing more than 17,800,000 accumulated operating hours in different applications and fuels.



Telmar Yachting launches digital navigation tools

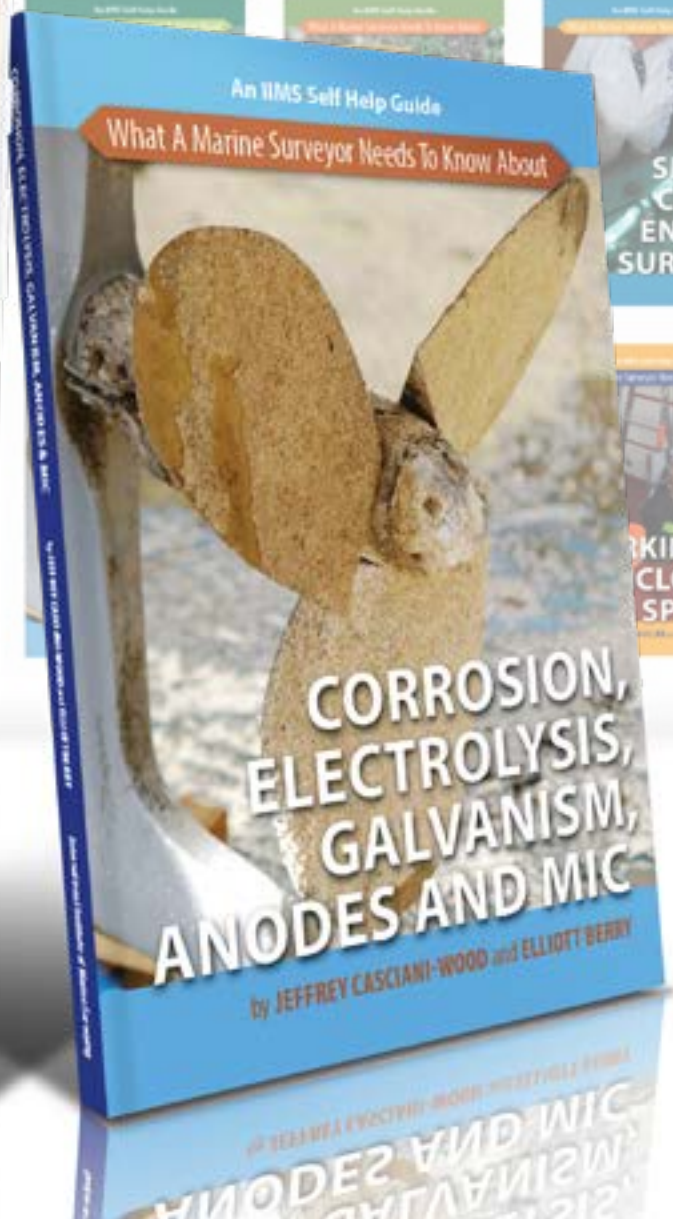
Italy-based Telmar Yachting, a navigation technology company with a global footprint as part of the Marlink Group, has unveiled its latest range of desk interface products for the "superyacht" market. The T-Master KIT and T-Master Touch systems were launched at the Monaco Yacht Show and boast touchscreens of up to 42-inches (106cm).

"The bridge consoles integrate a diverse array of essential technologies for safe navigation, including radar and chart plotters as well as wheelhouse controls, to deliver an ultra-modern integrated system with stunning aesthetics, suitable for any luxury superyacht," the company said.

The console can be installed as part of an existing bridge structure, or as a standalone podium. Telmar Yachting said it would be suitable for retrofit or newbuild operations. Despite packing the new products with new developments to aid navigation and control, the company said its interface is "simple and immediate".

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