

# THE REPORT



DEC 2023 | ISSUE 106

The Magazine of the International Institute of Marine Surveying

## WHAT A SMALL CRAFT SURVEYOR SHOULD INSPECT

ON THE  
SUBJECT OF  
ORCA ATTACKS

A TALE OF  
TWO EXPERTS

BALLAST  
OPERATION &  
MAINTENANCE  
PRACTICE



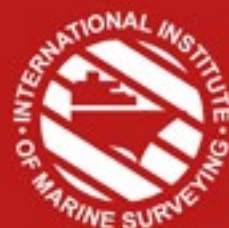
**What we have learned about the dangers of lithium-ion batteries**

**MATRIX**  
INSURANCE SERVICES LTD

**01892 724060**

[www.matrix-ins.co.uk](http://www.matrix-ins.co.uk) | [lobb@matrix-ins.co.uk](mailto:lobb@matrix-ins.co.uk)

*25 years+ of insurance, legal & risk expertise*



## 50 SHADES OF INSURANCE

*"read our article in the IIMS magazine"*

### Why choose us ?

---

- Only pay for what you need
- Low policy excess
- 24 hour contact point
- Good claims experience rebate
- Flexible benefits

### About our services

---

To us everyone is an individual and we strive to achieve the highest service standards for our UK and international clients using our insurance, legal and risk management experience.

Professional indemnity insurance for the marine industry is just one of the many insurance covers that we arrange.

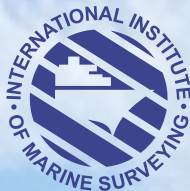
*"IIMS scheme arranged by professionals for professionals"*

Matrix Insurance Services Limited, Suite 3 First Floor, Unit 2, Crown Yard, Bedgebury Estate, Goudhurst, Kent, TN17 2QZ  
Authorised and regulated by the Financial Conduct Authority FCA Reg. No. 439075



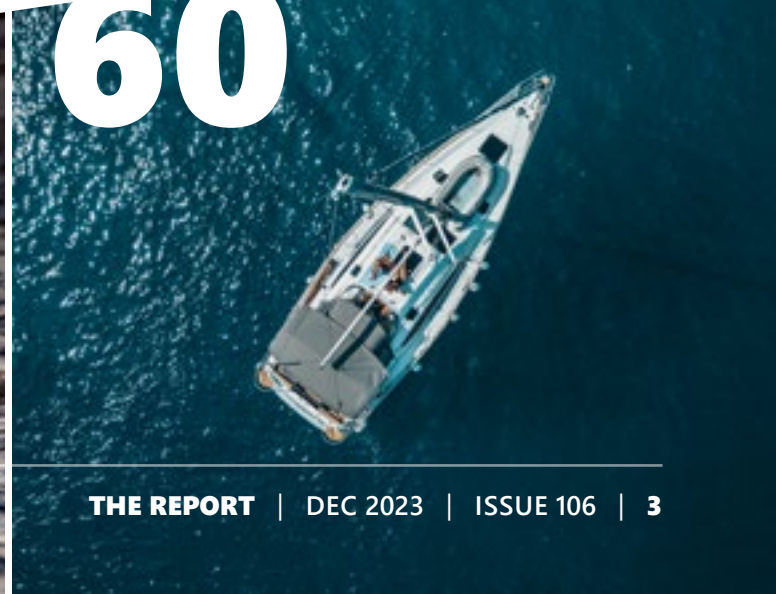
# THE REPORT

## CONTENTS



The Magazine  
of the International  
Institute of  
Marine Surveying

- 4 •** Editor's Letter
- 5 •** President's Column
- 7 •** IIMS Organisation and Structure
- 8 •** Marine News
- 19 •** Safety Briefings
- 29 •** Safe working conditions remain an issue on board vessels visiting Australia
- 32 •** With each passing year:  
A review of IIMS activities in 2023
- 38 •** Member News
- 42 •** Celebrating thirty years of the Marine Surveyors Association of Bangladesh
- 45 •** New marine reports and guides
- 50 •** Regulation News
- 55 •** Cargo packing matters
- 57 •** Give us a lift?
- 60 •** Tips and advice on what a yacht and small craft marine surveyor should inspect and how to comment in the report
- 62 •** What we have learned about the dangers of lithium-ion batteries and fires
- 70 •** Inventory of Hazardous Materials:  
New requirements from 2025
- 76 •** Ballast operation and maintenance practice
- 79 •** EEXI and CII ship carbon intensity and rating system - an insider's guide
- 82 •** Questions and Answers on Maritime Safety by the European Commission
- 86 •** Checklists for the inspection of accommodation ladders and gangways
- 88 •** The challenges of transporting refrigerated cargoes
- 93 •** Fumigation: An overview for the maritime sector
- 96 •** DON'T PANIC - Write a Report
- 98 •** Grains and soya beans cargo claims review
- 100 •** Charterparty pitfalls and dispute resolution
- 101 •** The depth of Lake Huron reveals a secret hidden for over a century
- 104 •** Tall Ships Youth Trust empowering young people
- 106 •** Rules for expert witnesses
- 108 •** Study on decarbonisation of the maritime industry highlights the need for collaboration and investment
- 110 •** On the subject of Orca attacks
- 113 •** Wind power developments for sailing boats into headwinds
- 116 •** The methods of quantity ascertained for liner bulk carrier self propelled barge if the barge has no hydrostatic data or any naval architecture chart
- 118 •** Supramax detention in Immingham Port:  
A PSC case study
- 120 •** A tale of two experts: How to deal with criticism
- 122 •** Can CO<sub>2</sub> Capture and Nuclear get ships to net zero?
- 126 •** A positive year for marine insurance with much change on the horizon
- 129 •** New Products
- 132 •** A day in the life of Capt Fasihur Rahman
- 138 •** A decade of progress and memories
- 142 •** The President's Maritime Crossword





## EDITOR'S LETTER

### Dear Colleague

Welcome to the new look Report Magazine, edition 106, December 2023, which recognizes the end of another busy shipping and boating year for the marine surveying industry and maritime world in general.

This is a special edition for me as I reach a personal milestone. In January 2024 I will have been CEO of IIMS for ten years and what a rollercoaster of a decade it has been. You can read my personal reflections of this decade on page **138**. So, by my reckoning using simple math, this is the 40<sup>th</sup> edition I have edited. We have come a long way.

I make no apologies for leading with the subject of lithium-ion batteries, for this has been one of the hottest topics challenging the marine sector this year. The reality is that we know far more now about this technology and its dangers since we did this time last year. As a consequence, I have pulled together a major feature which is a compilation of many articles written and published over the year. This technology is around all of us and it is important to understand the challenges. See the article entitled '*What we have learned about the dangers of lithium-ion batteries and fires*' on page **62**.

In the latter part of this year, I have been travelling extensively both at home and abroad. My trip to attend the one day conference in Chattogram to celebrate 30 years of the Marine Surveying Association of Bangladesh was a highlight. I have persuaded Capt Fasihur Rahman, a member of both organisations, to be the featured surveyor in this edition's '*A Day in the Life of*' feature. Our two day workshop in Baltimore was a success, although a number of us contracted covid afterwards! A trip to co-host a stand with Peter Broad at the major KORMARINE exhibition in Busan, South Korea completed the busy autumn travel schedule.

Closer to home, we have been busy training a large number of members at events in Scotland, Southampton and Lyme Regis, Dorset in the last quarter. There is a report on this activity elsewhere in this publication.

Safety is a subject dear to every marine surveyor's heart. With that firmly in the back of our minds, there are a number of safety related articles in this edition. '*Cargo packing matters*' on page **55**, '*Checklists for the inspection of accommodation ladders and gangways*' (page **86**) and on page **118** '*Supramax detention in Immingham Port: A PSC case study*' are just three such articles that focus sharply on critical safety issues and make for absorbing reading.

On a lighter note, the article entitled '*The depth of Lake Huron reveals a secret hidden for over a century*' (page **101**) charts the remarkable story of two documentary filmmakers who accidentally discovered a long lost steamship.

The article '*What a surveyor should comment on*' (see page **60**) has been written in response to a specific question from a small craft member. At first glance it seems obvious, but as we know that is not always the case!

As has become traditional at the end of each year, I once again present a detailed overview of life at IIMS over the past year on page **32**. It has been a progressive and successful year with no let-up in our workload.

In conclusion, I'd like to thank you for continuing to read The Report Magazine and to engage with the Institute. If you participate in Christmas, then I'd like to wish you Season's Greetings for the impending Yuletide celebrations.

Wishing you a successful 2024.

Regards

**Mike Schwarz**  
Chief Executive Officer





# PRESIDENT'S COLUMN



## Dear Members and fellow Marine Professionals

Welcome to the President's Report Magazine column, December 2023.

As the year draws to a close it is a good time to reflect on what has gone on, to record our achievements and to review what has shaped our world.

The world remains a strange mixed-up place as armed conflicts continue around the globe, and the extremes of weather have had a huge impact on many parts of the world. We must remember that the marine industry crosses all borders and continues to be an essential and vital part of the supply chain. There have also been several new legislative changes that impacted on the global shipping industry.

One is the MARPOL Convention which has just achieved its 50th anniversary having been adopted on 2nd November 1973; however, this convention is always evolving and since 1st November 2022 Amendments to Annex VI entered into force for the reduction of Green House Gas (GHG) Emissions for ships. From 1st January 2023 it became mandatory for all ships to calculate their attained Energy Efficiency Existing Ship Index (EEXI) to measure their energy efficiency and to initiate the collection of data for the reporting of their annual operational carbon intensity indicator (CII) and CII rating, with initial ratings given in 2024. This is an extremely complex process and certainly presents significant economic challenges for ship operators both for compliance and the future operations of their vessels. The goal is the reduction of GHG emissions from ships by 40% by 2030, compared to 2008. There is a lot to understand, and it will present future challenges for operators and marine surveyors.

The IIMS and CEO, Mike Schwarz, have continued to support marine surveyors around the world with conferences, training seminars, publications and attending consultative working groups, to keep us updated and current with all the changes and industry best practices that are taking place and evolving. He has been ably supported by his colleagues at IIMS HQ. I believe that the International Institute of Marine Surveying is truly the 'one-stop shop' for all marine surveyors of all disciplines.

I know Mike has done a lot of travelling through 2023, both around England and Scotland to attend 'local' practical training courses with our lead surveyors and technical experts (trainers/tutors) and internationally to attend conferences and seminars to meet members in Baltimore (USA), Chattogram (Bangladesh), Palma (Mallorca), and Busan (South Korea). Mike is more than our CEO; he is our Ambassador with global outreach and represents us (the IIMS) at many different levels throughout the marine industry.

It was a pleasure to co-host our stand, with him, at KORMARINE in Busan, South Korea, in October, as part of the UK Pavilion. I know Mike is preparing a full article on this event that is published in this Report Magazine, so I won't go on at length. We had targeted opportunities to meet industry regulators and representatives from local surveying organisations, with whom we were able to share the core values of the IIMS and the benefits of membership. We will have further dialogue with these organisations going forward to encourage collaboration and joining the IIMS as both individuals and corporate members. The IIMS was the only independent marine surveying organisation (non-IACS) represented at KORMARINE which in itself speaks volumes for our proactive marketing approach and desire for engagement across the industry.

To re-cap on other events from 2023. We had a marvellous hybrid Annual Conference last June and we plan to use a similar format and location for next year (2024). Gone are the days of hosting big events in London. These are not cost-effective for us as an organisation and we have so many resources available at and near our lovely HQ building, Murrills House at Portchester, on the UK South Coast near Portsmouth. We encourage Members to visit HQ and meet our great head office team.

After the Annual Conference in June, Mike took the head office team for a Team Building 'retreat' which was not only fun but was used to brainstorm and prepare targeted plans for the future of IIMS. The use of SWOT analysis has shown many strengths that already exist within our organisation and highlighted growth opportunities, both internally and externally. The areas that need to be addressed are the business weaknesses and threats. Many of these are external and will affect all businesses, but two which seem to be repeated through the organisation and the general media are 'Artificial Intelligence' (AI) which will impact both on jobs as well as methods of providing our educational and training material in the future. Elon Musk has said recently in a conversation with British PM Rishi Sunak that he considers all jobs will be done by AI, even 'humanoid robots' in the future and humans may work if they want to for their own 'personal satisfaction'. AI is already having a massive impact on the global shipping and boating industry with Autonomous Ships becoming a reality. This all seems too Sci-fi to me as a sceptic and a practical hands-on engineer and surveyor, but it is already happening and will continue to advance exponentially as these machines become more self-aware and learn from themselves. There have been several excellent articles on AI in previous editions of the Report Magazine by Nick Parkyn and others through 2023.

The other problem that we are all facing in the marine surveying industry and particularly at IIMS as an organization, is an ageing population, which means losing key members, assessors, markers, tutors and board members. The need for succession planning has never been more acute.

The great news is that the IIMS shared team values are all positive and to list a few adjectives used here to highlight this: "integrity, trust, supportive, motivated, family, recognition, ambition, professional, results and purpose-driven, and the need and desire for success". These demonstrate very positive leadership and a happy working environment at IIMS HQ.

So, while there are other marine surveying membership organizations around the world and other companies providing marine surveyor training material the IIMS and our members can hold our heads high and be proud of our achievements, our integrity and professionalism.

To demonstrate our high standards, the IIMS recently had an external audit by the **UK Maritime and Coastguard Agency** as a '**Certifying Authority**' under the '**Small Craft Codes**' for commercial vessels up to 24 meters in length. The audit showed that the IIMS runs the Certifying Authority efficiently and there were NO deficiencies and only minor observations. Well done to all involved at HQ and Fraser Noble, Chairman of the IIMS Certifying Authority.

I will close by mentioning again the President's Charity for 2023 to 2024.



**The Tall Ships Youth Trust. ([www.tallships.org](http://www.tallships.org)).**

We have all been talking about continuity planning and where the next generation of surveyors is coming from. There are great opportunities presented for a 'career pathway' through the Tall Ships Youth Trust. Please consider supporting our charity by donating through this link: [www.tallships.org/make-a-donation/](http://www.tallships.org/make-a-donation/). I know that purse strings are tight, especially as we near the end of the year, but a donation of £100 could pay for a lifejacket and tether lines for a young person. Or join one of their winter-sun sailing voyage programme which are open to 'adult' participants.

It has certainly been a busy year for IIMS and many of our members. I hope to meet more members face-to-face in 2024 as well as online too. May I wish you all Season's Greetings and a safe and prosperous 2024.

Stay safe.

**Peter Broad**  
CEng, CMarEng, FIIMS, FIMarEST  
President IIMS

President: **Mr Peter Broad** (FIIMS)

Chief Executive Officer: **Mr Mike Schwarz**

Vice President: **Capt Ruchin Dayal** (FIIMS)

Immediate Past President: **Mr Geoff Waddington** (HonFIIMS)

Deputy Vice President: **Mike Proudlove** (FIIMS)

#### Head Office Team

*Mrs Camella Robertson*. Membership Secretary & Office Manager  
*Mr David Parsons*..... Certifying Authority Administrator  
*Miss Rosie Webb*..... Office & Web Administrator  
*Mrs Vicki Loizides*..... Education Co-ordinator  
*Mr Craig Williams*..... Graphic Designer

*Miss Jen Argent* ..... Management Accountant  
*Miss Elly Bryant*..... Accounts Support Administrator  
*Mrs Hilary Excell*..... Marine Surveying Academy Business Manager  
*Mrs Pui Si Chung* ..... MSA Accreditation Scheme Administrator  
*Mrs Sharon Holland*..... MSA Events & Course Co-ordinator

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

© The International Institute of Marine Surveying 2023 - The Institute and authors accept no responsibility for any opinions, statements or errors made in any article, feature or letter published in this Magazine.



# IIMS ORGANISATION & STRUCTURE

## Directors of IIMS and Management Board Members

Capt Allen Brink HonFIIMS, Past President  
Capt Chris Kelly FIIMS, Chairman Professional Assessment Committee  
Mr Fraser Noble FIIMS, Chairman Certifying Authority & Finance  
Mr John Heath HonFIIMS, Technical Director  
Mr Geoff Waddington HonFIIMS, Immediate Past President & Chairman Administration  
Mr Elliott Berry FIIMS  
Mr Graeme Temple FIIMS  
Mr John Walker Mallorca FIIMS

## Directors of Marine Surveying Academy Ltd

Mr Mike Schwarz  
Mrs Hilary Excell  
Mr Paul Homer

## Regional Directors

Mr Edward O'Connor, Canada  
Eng. Dimitris Spanos, Eastern Mediterranean  
Mr Pervez Kaikobad, India  
Capt Zillur Bhuiyan FIIMS, Bangladesh  
Mr Zennon Cheng, China

## Other Honorary Fellows (HonFIIMS)

Capt Christopher Spencer  
Capt Peter Lambert  
Capt Satish Anand  
Capt Bertrand Apperry  
Mr Tony Fernandez  
Mr Milind Tambe  
Mr Parimal Bhattacharyya

## Other Fellows (FIIMS)

Mr Derek Levy  
Mr Martin Pittilo  
Mr Anthony Protopapadakis  
Capt Muhammad Alam  
Capt Reuben Lanfranco  
Mr Kay Wrede  
Mr Peter Valles  
Mr John Walker  
Capt Ian Coates  
Mr Elliott Berry  
Mr Mike Proudlove  
Mr Graeme Temple

Capt Nick Sloane  
Capt John Noble  
Capt Eugene Curry  
Mr Adam Brancher  
Mr Ken Hickling

## Honorary Members (HonMIIMS)

Capt Syed Khalid Humail  
Mr Jorge Sanidos  
Dr David Lawrence  
Dr Satish Agnihotri  
Mr Hans van Bodegraven  
Dr Paula Giliker  
Capt Ian Wilkins  
Capt J.C. Anand  
Mr Anthony Beck  
Capt Andrew Cross  
Mr Parthasarathy Sridharan  
Mr Brian Williamson  
Capt Jens Andersen  
Mr John Guy  
Capt David Linacre  
Capt Jean Paul Le Coz

## Other Management Board Members

Mr Paul Homer HonFIIMS, Chairman Standards  
Capt Sanjay Bhasin FIIMS  
Mr David Pestridge FIIMS  
Mr James Renn HonFIIMS, USA In-Country Representative  
Capt Zarir Irani HonFIIMS, Past President, Regional Director  
Mr Peter Broad FIIMS, President, South Korea In-Country Representative  
Capt Ruchin Dayal FIIMS, Vice President  
Mr Mike Proudlove FIIMS, Deputy Vice President

## In-Country Representatives

Mr R Rozar, Reunion & Mauritius  
Mr Luc Verley, Singapore  
Dr S Favro, Croatia  
Capt R Lanfranco, Malta  
Mr A Gnecco, Italy  
Mr J Rowles, Turkey  
Mr P Taylor, Trinidad  
Mr J Bru, Panama  
Mr G Jugo, Venezuela

## Past Presidents

1991 - 1993 Capt William MacDonald  
1991 - 1995 Capt David Linacre  
1995 - 1996 Capt David Linacre/Capt Andrew Cross  
1996 - 1997 Capt David Linacre  
1997 - 2000 Eur Ing Jeffrey Casciani-Wood  
2000 - 2003 Eur Ing Ian Biles  
2003 - 2005 Capt Christopher Spencer  
2005 - 2007 Capt Ian Wilkins  
2007 - 2010 Capt Allen Brink  
2010 - 2012 Mr Peter Morgan  
2012 - 2014 Capt Satish Anand  
2014 - 2016 Capt Bertrand Apperry  
2016 - 2018 Mr Adam Brancher  
2018 - 2020 Capt Zarir Irani  
2020 - 2022 Mr Geoff Waddington

## Cruise ship captain sent to prison for deadly collision with tour boat

A court in Hungary has sentenced a Viking cruise ship captain to five and a half years in prison for his role in a collision with a tour boat that left 27 people dead in the Danube River in Budapest. The 68-year-old Ukrainian national, Yuri Chaplinsky, captain of the Viking Cruises river cruise ship Viking Sigyn, was found guilty of negligence leading to mass casualties after his vessel struck and severely damaged the tour boat Hableány on the night of 29 May 2019.

The incident resulted in the deaths of 25 South Korean tourists and both crewmembers on Hableány while no trace has been found of a female South Korean passenger who was also on the tour boat when it sank. Only seven of Hableány's passengers survived the tragedy, having suffered only minor injuries associated with hypothermia.

Prosecutors claim Chaplinsky had not been paying attention and was therefore not properly focused on navigating his vessel in the minutes prior to the crash. One of the prosecutors said the defendant had had enough time to see the smaller tour boat and manoeuvre to avoid a collision but had not done so.



Photo credit: Hapag-Lloyd

## Berlin Express christened in ceremony by Hapag-Lloyd

A court in Hungary has sentenced a Viking cruise ship captain German shipping line Hapag-Lloyd has christened the first of 12 new Hamburg Express-class containerships. With a length of almost 400 meters and a capacity of 23,600 TEU, the M/V Berlin Express becomes the largest containership to sail under German flag. The ship was built at the Hanwha Ocean shipyard in South Korea.

Germany's First Lady Elke BÜdenbender christened the vessel during an event at the Container Terminal Burchardkai in the Port of Hamburg, attended by 300 guests including Peter Tschentscher, the First Mayor of Hamburg, and Daniel Günther, the Minister President of Schleswig-Holstein.



## Boero YachtCoatings presents two new sustainable antifoulings

Boero YachtCoatings has announced that it has been awarded the prestigious Water Revolution Foundation Sustainability Certificate for two antifouling products, launched at the Monaco Yacht Show.

Boero YachtCoatings, in alignment with the sustainable growth process undertaken by Gruppo Boero, showcased the results of this collaboration at the 2023 Monaco Yacht Show. This partnership, driven by a shared mission to ensure a greener and respectful future for the yachting industry, has taken a significant step towards sustainability.

The antifoulings, Magellan 630 EXTRA and Giraglia 633 EXTRA, have been recognised as two of the most respectful antifouling solutions in the market, with approximately 20% reduction of an environmental impact, compared to standard yacht antifouling products.

They combine superior performance and protection with a lower environmental footprint, whether you prefer a hydrophilic matrix self-polishing system or self-polishing copolymer (SPC). Boero YachtCoatings is showcasing these technologies and the company's commitment to making a positive impact in the Sustainability Hub Pavilion at Monaco Yacht Show 2023.

Magellan 630 EXTRA is a top-quality self-polishing and brightly coloured antifouling, developed using the innovative SPC technology. It effectively acts in both freshwater and saltwater environments, providing maximum protection against aggressive fouling with a special combination of biocides that keep the hull clean when anchored and during the sailing period.

On the other hand, Giraglia 633 EXTRA is a high-quality self-polishing antifouling with a hydrophilic matrix for professionals. Its high copper compound content ensures excellent anti-fouling power, ensuring a naturally clean hull under any operational conditions. This product is effective in warm and temperate seas as well as mixed waters, performing well even in aggressive seas.





## Common Interest report assesses how digital collaboration can make a difference

A new report commissioned by Bureau Veritas outlines the benefits of an approach to digital collaboration that will support shipping's energy transition.

Written by Thetius, the report, titled Common Interest, benchmarks shipping's progress on using digital solutions to collaborate on decarbonisation goals and shows how industry frontrunners are breaking down the technical, legal, financial and cultural barriers.

### Key areas

- Collaboration between different software providers and ship operators can provide more detailed ship performance analytics for fleet owners and managers.
- Digital synchronisation of the shipping ecosystem can help address "sail fast then wait" practices and reduce greenhouse gas emissions from voyages.
- Data sharing is critical to ensure seamless port visits and help deliver "just in time" arrivals, supporting decarbonisation and voyage efficiency.
- Large-scale data sharing can improve modelling of ship performance, with data pooled from multiple ships dramatically increasing the accuracy of modelling algorithms and digital twins.

Download the report at  
<https://bit.ly/46lpGHk>.  
Or scan the QR code.



## Regal Boats expands Florida production plant

Florida, US-based fibreglass boat builder Regal Boats recently broke ground on a significant expansion to its Orlando-area manufacturing campus that, when completed, will deliver the firm a total of 82,000ft<sup>2</sup> of new lamination space.

Scheduled for completion by autumn 2024, Regal's plant expansion is designed to increase overall production capacity and facilitate the integration of state-of-the-art fabrication technologies, according to Regal Boats marketing manager, Jeff Littlefield. "Another part of that is to create a better work environment for our team members," he says.

Established in 1969, Regal Boats is a family-owned independent boatbuilder producing a range of runabout and cruiser models from 20ft-42ft which are sold through a global dealer network.

## Bacteria and fungus in fuel filters led to ferry grounding

Bacterial and fungal growth in its diesel storage tanks led the ferry Walla Walla to run aground on Bainbridge Island in April, according to a Washington State Ferries (WSF) report.

The contamination was reportedly caused by air and water in the fuel system that overwhelmed the fuel filters, leading to a loss of power.

"We've made several changes to ensure it doesn't happen again," WSF spokesman Ian Sterling said.

The changes reportedly include using more biocide to curb bacterial and fungal growth. WSF has also cleaned the fuel system and sealed off sources of air which contribute to growth, and changed its training and procedures for monitoring the fuel system.

## Port of Kapellskär has Sweden's first suction mooring

The Port of Kapellskär has welcomed Finnlines vessel, M/S Finnsirius, with brand new technology. The port now offers automooring using vacuum pads. This makes mooring more efficient and improves the sustainability. Mid-September was the premier of Sweden's first automooring of a vessel using vacuum technology. The pads can dock and undock the vessel in less than 30 and 15 seconds, respectively.

"Together with Finnlines, we have planned and updated the Port of Kapellskär with brand new technology. Automooring using vacuum technology improves sustainability by providing a safer working environment and reduced environmental impact," says Johan Wallén, Chief Commercial Officer at Ports of Stockholm.

The vessel's engines can be stopped earlier, which leads to a significant fuel saving and reduced NOx and CO2 emissions, especially when combined with connection to onshore power.



## ICS launches CII Data Collection System

The International Chamber of Shipping (ICS) has launched its Carbon Intensity Indicator (CII) Data Collection System. The purpose of the CII Data Collection System is to support the International Maritime Organization during the formal review of the CII rating system, due to be completed by 1 January 2026.

ICS invites shipowners and relevant stakeholders to utilise the Data Collection System to contribute to a fair and successful CII rating system in the future.

CII is a rating system developed by the International Maritime Organization (IMO) to measure the energy efficiency of ships, above 5,000 gross tonnage and trading internationally, and came into effect on 1 January 2023. It is currently in an experience building phase, with a formal review running in parallel, until 1 January 2026.

Following the IMO's invitation during the Marine Environment Protection Meeting (MEPC80) in July, for interested Member States and international organisations to collect data and submit information and proposals, ICS has developed a system that enables shipowners and managers to submit data, including fuel consumption, transport work, and the trial metrics. Such information will enable a clearer understanding of how fairly and effectively the CII system is functioning and provide the necessary input to the IMO for system improvement.

Chris Waddington, Technical Director of the International Chamber of Shipping and lead on the CII Data Collection System commented, "At the International Chamber of Shipping we wish to engage constructively to the current experience building phase of the CII review, to ensure that the system is fit-for-purpose and effective. The ICS Data Collection System offers shipowners and managers the opportunity to contribute data that will improve the rating system in the future."

"We encourage shipowners to utilise the system in order to offer first-hand insights into what works well and possible challenges within the system. This data will be shared with the IMO and keep dialogues open for how best to meet our 2030, 2040 and 2050 net zero carbon emissions targets."

## Emission-free zone takes effect in Amsterdam from 2025

The canal heart of Amsterdam will become an emission-free zone from 2025.

"From January 1, 2025, a pleasure craft must be zero-emission to enter the centre of Amsterdam," the city said in a statement. "There will be transitional arrangements and an exception will apply for boaters who cross the centre of the city."

The city said emission-free means boats with electric or manual propulsion and that have a valid 'green' stamp. Hybrid boats with a valid 'yellow' stamp are also welcome if they are emission-free.

Before the final policy is adopted in 2024, there will be another round of public hearings, the city said. Amsterdam now has a low-emission zone for diesel vehicles only. Violators face fines ranging from €75 to €280 for trucks.



Photo by Joël de Vriend on Unsplash



## Review of Maritime Transport 2023 published by UNCTAD

The Review of Maritime Transport is a recurrent publication prepared by the UNCTAD secretariat since 1968 with the aim of fostering the transparency of maritime markets and analysing relevant developments. This edition of the Review covers data and events from January 2021 until June 2022.

Shipping continues to navigate COVID-19 post-pandemic trends, the legacies of the 2021–2022 crunch in global supply chains, a softening in the container shipping market and shifts in shipping and trading patterns arising from the war in Ukraine.

Global shipping continues to confront multiple challenges, including heightened trade policy and geopolitical tensions and is dealing with changes in globalization patterns. Additionally, shipping must transition to a more sustainable future, decarbonize and embrace digitalization. Being at the intersection of these forces will influence how the sector adapts to the evolving operational and regulatory landscape while continuing to effectively service global trade.

Maritime trade volume contracted marginally by 0.4 percent in 2022, but UNCTAD projects it will grow by 2.4 percent in 2023. Indeed, the industry remains resilient and UNCTAD expects continued but moderated growth in maritime trade volume (table 1) for the medium term (2024–2028). Global shipping is also facing concurrent forces that make balancing supply and demand a challenging task for carriers. During 2022, containerized trade, measured in metric tons, declined by 3.7 percent.

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



## International Propeller Club elects first female President

The International Propeller Club has elected Maria Conatser as International President, making her the first woman to be elected to lead the International Propeller Club in its near 100-year history.

Representatives of the Club's 77 chapters from around the world elected and installed its leaders for the next two years at its 97th annual convention in Charleston, South Carolina. Conatser has served in various financial, analytical, and business intelligence roles with the Ingram Barge Company of Nashville, TN. She is a member of the Propeller Club's Port of Nashville chapter, and she takes over the role at a time of enormous change in the maritime industry.

## Hempel inaugurates state-of-the-art production facilities in China

Responding to increasing demands for innovative coating solutions, Hempel's new state-of-the-art production facilities in Zhangjiagang substantially enhance capacity to better serve Marine, Energy and Infrastructure customers. Three years after announcing plans to invest in two new production facilities in China, Hempel has brought the Zhangjiagang site online to begin servicing customers in the region.

The inauguration ceremony included participation from Jiangsu province government officials, representatives from the Danish General Consulate in Shanghai, as well as customers, suppliers and members of Hempel's senior management.

With the majority of the world's marine newbuild business located in China, and over 50% of Chinese shipyards located in a 200km radius around Zhangjiagang, antifouling coatings are in high demand. Shipowners and charterers around the world are in constant pursuit of fuel efficiency, which has resulted in an exponential growth in sales of silicone-based, antifouling coatings like Hempel's Hempaguard.



Photo credit: Hempel



Image credit: VARD

## VARD and Chartwell Marine reveal a new generation of offshore wind vessel

The canal heart of Amsterdam will become an emission-free zone from 2025.

"From January 1, 2025, a pleasure craft must be zero-emission to enter the centre of Amsterdam," the city said in a statement. "There will be transitional arrangements and an exception will apply for boaters who cross the centre of the city."

The city said emission-free means boats with electric or manual propulsion and that have a valid 'green' stamp. Hybrid boats with a valid 'yellow' stamp are also welcome if they are emission-free.

Before the final policy is adopted in 2024, there will be another round of public hearings, the city said. Amsterdam now has a low-emission zone for diesel vehicles only. Violators face fines ranging from €75 to €280 for trucks.



## ARES Shipyard unveils new superyacht brand at Monaco

Turkey's ARES Shipyard which already has a strong reputation as a large boat builder of naval, utility and support vessels, has formed a new brand, ARES Yachts, to build superyachts. The new brand, announced at the Monaco Yacht Show, already has two yachts in build and a new series of three superyachts is due to follow. The company also has plans to develop two drydocks at its build facilities in Antalya.

ARES Yachts already has projects underway with Bannenberg & Rowell Design, Lateral Naval Architects, Hot Lab, Taka Yacht Design and Design Unlimited.

The projects already in build include the 61.6m (202ft) steel hulled cruising ketch Simena and the 50m (164ft) Spitfire motoryacht. Both are currently being built on spec.

## Thyssenkrupp and Wilhelmsen bundle 3D printing capacities

The two industrial companies thyssenkrupp and Wilhelmsen have founded a joint venture, "Pelagus 3D", which will in future offer spare parts for the maritime industry worldwide via a digital platform. The new company will use modern additive manufacturing technology and a global partner network to produce and deliver spare parts more efficiently in terms of time and cost. Customers will therefore be able to ensure the seaworthiness of their ships and maintain their operations as planned. Pelagus 3D thus addresses the challenge of high transport and storage costs as well as the longer duration of conventional manufacturing processes in the maritime sector.

"The global economy relies on resilient and flexible supply chains. The dynamic market environment has shown us this again and again, at least since Corona," says Ilse Henne, Chief Transformation Officer of thyssenkrupp Materials Services. "In our partnership with Wilhelmsen, we are showing how we can maintain the operation of ships and secure the flow of goods in shipping, which is so important for international trade."





## IMO's commitment to the preservation of the marine environment underlined on World Maritime Day 2023.

This year sees the 50th anniversary of the adoption of the International Convention for the Prevention of Pollution from Ships (MARPOL), the primary global treaty for the prevention of pollution of the marine environment by ships from intentional, operational or accidental causes.

To mark IMO's dedication to the objectives of this landmark treaty, the theme of World Maritime Day 2023 is "MARPOL at 50 – Our commitment goes on". IMO is calling on Member States to build upon the positive impacts MARPOL has brought. IMO's work towards a sustainable future with enhanced protection of our planet and ocean continues.

### Embracing the future by building on the past

In his message on the World Maritime Theme for 2023, the IMO Secretary-General, Kitack Lim, noted achievements already made in regulating to protect ocean health, but made it clear that significant work still faces the shipping industry:

"Shipping must embrace decarbonization, digitalization and innovative technology, including automation – while ensuring the human element is kept front and center of the technological and green transition to ensure a sustainable planet for future generations. MARPOL has made a difference to shipping – and to the health of our ocean – and will continue to do so, as we look ahead to the next 50 years," Secretary-General Lim said.

On World Maritime Day, the United Nations Secretary-General, António Guterres, called for "all-hands-on-deck" to realize a just and equitable transition to a greener, decarbonized shipping industry. Mr. Guterres said: "Through the decades, MARPOL has made important contributions to protecting our planet and ocean by making shipping safer and cleaner. Looking ahead, let us build on the legacy of this convention and together steer towards a more sustainable and prosperous future for this critical industry – and a safer future for humanity."

## Yamaha Marine wins safe boating award

Yamaha's US marine business unit was the recipient of the National Boating Safety Award in the marine manufacturer category, granted by the Sea Tow Foundation and the Boating Safety Advisory Council.

Established in 2019, the National Boating Safety Awards recognise the top recreational boating industry companies for their commitment to safe boating initiatives.

Yamaha US Marine is based in the state of Georgia offering outboard motors from 2.5 to 450 horsepower, fibreglass jet-drive sport boats from 19ft-27ft and PWCs and is a division of Yamaha Motor Corporation USA, based in the state of California.



Photo credit: Bernard Biger

## Royal Caribbean's second largest cruise ship floated out

Royal Caribbean International's giant new cruise ship, the sixth in the Oasis class and soon to be the world's second-largest cruise ship, has been floated from the building dock in France. Named Utopia of the Seas, the cruise ship, which will be 236,860 gross tons when completed will enter service in July 2024.

Unlike the five prior ships of the class, Utopia of the Seas was redesigned to be able to operate on liquefied natural gas, only the second ship for the cruise line to use LNG following the end-of-year introduction of the Icon of the Seas, which will also be larger and the largest cruise ship in the world. The Oasis class began in 2009 and after building two ships in Finland, Royal Caribbean decided to expand the class ultimately ordering four ships from Chantiers de l'Atlantique in Saint-Nazaire, France.

Royal Caribbean reports it took 17 months to reach the float out with the first steel having been cut in April 2022. They marked the beginning of assembly in July 2022. The cruise ship is made up of 74 unique blocks which were pre-assembled by the yard and then joined in the dry dock as assembly progressed. The ship is now structurally complete and the interior outfitting will proceed. The massive ship will be propelled by three 20 MW Azipods and have six engines producing 96,000 kW of power.

The float-out process took nearly 15 hours. Progressing overnight, the dry dock required more than 46 million gallons of water to float the cruise ship which is 1,188 feet in length and 211 feet wide. Tugs were used to reposition the vessel to the outfitting berth where she will remain until sea trials next year.





## New CEO appointed by IFAN

The Board of Directors of the International Foundation for Aids to Navigation (IFAN) is delighted to announce the appointment of Catherine Mulvihill as its new Chief Executive Officer.

Catherine underwent a comprehensive management of change process in collaboration with the outgoing CEO, Peter Stanley, before assuming full responsibilities as IFAN's CEO in early October 2023.

She brings a wealth of experience spanning four decades in the marine industry, including extensive knowledge in container shipping and operations, ports and terminals, and marine insurance within both mutual management and the London and commercial markets. She has been an FCA-regulated Director of UK companies and is a Court Assistant and Chair of the Education and Charity committee for the Worshipful Company of Shipwrights. Before joining IFAN, Catherine spent two decades with Charles Taylor, latterly as Managing Director for Charles Taylor TPA.

## Malibu Boats to create over 700 jobs

The Department of Economic and Community Development for the US state of Tennessee has revealed that Malibu Boats is planning to invest US\$75m and add 770 jobs over the next five years at the company's facility in Lenoir City, just a few miles down the road from its headquarters in Loudon, Tennessee.

The jobs will consist primarily of manufacturing positions with some engineering and upper management positions opening, and the county executive said pay rates will be 50% to 60% higher than the local average. In addition to Cobalt and its namesake towboat brand, Malibu manufactures Axis Wake towboats, Pursuit, Maverick, Hewes, Pathfinder and Cobia.

## BIA hosts Diversity in Boating event

The Boating Industry Association Ltd (BIA) of Australia hosted a Diversity in Boating event in Sydney recently as part of its ongoing commitment to promote inclusion across the sector.

"Boating is an activity which is available to people from all walks of life, abilities, genders and backgrounds, and that is something we want to champion," says BIA CEO Andrew Scott.

During the event, Nicole Watts, director of NSW Maritime, and Nicky Vaux, business development manager and partner of Empire Marinas Group, gave insights into diversity within their respective fields in the maritime regulator and industry.

## Singapore is the world's top maritime centre for 10<sup>th</sup> year running

Singapore has retained its lead as the world's top maritime centre in the Xinhua- Baltic International Shipping Centre Development (ISCD) Index for the tenth consecutive year.

The latest Xinhua-Baltic ISCD index published by the Baltic Exchange and China's Xinhua News Agency, ranked Singapore as the leading maritime centre among 43 global maritime hubs. The index provides an independent ranking of the performance of maritime locations on factors including cargo throughput, port facilities, maritime services and business environment.



Photo by Mike Enerio on Unsplash

Singapore's strategic location, international outlook and established ecosystem of professional global maritime services, as well as good governance, have contributed to the growth of their international maritime centre serving the global community.

Mr Chee Hong Tat, Acting Minister for Transport and Senior Minister of State for Finance, said, "Singapore is honoured to top the Xinhua-Baltic International Shipping Centre Development Index for the 10th consecutive year. This was made possible by the strong support of our tripartite partners from the industry and unions. We will continue to grow our maritime industry to create more good jobs for our people, and make Singapore the global maritime hub of choice."



## MAIB Safety Digest 2/2023 October published

The Marine Accident Investigation Branch (MAIB) examines and investigates all types of marine accidents to or on-board UK flagged vessels worldwide, and other vessels in UK territorial waters. This Safety Digest, the second edition of 2023, is a compendium of anonymous articles involving vessels from the merchant, fishing and small craft sector which draws the attention of the marine community to some of the lessons arising from investigations into recent accidents and incidents.

In his introduction, Andrew Moll, Chief Inspector, says, "Welcome to the second MAIB Safety Digest of 2023. I will start by thanking Simon Graves, Duncan Murt and Andy Murray for their respective introductions to the merchant, fishing and recreational sections of this edition; their expertise is self-evident, and their industry insights to safety help bring contemporary context to the cautionary tales in the following pages. I hope you will find time to read the whole edition – there is something here for every mariner – but please do read the section introductions. And, when you have finished, please pass the digest on so others can benefit too."

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



Photo credit: Cockwells

## Cockwells creates second tender for Malahne

Cockwells Modern & Classic Boatbuilding in the UK has created a second tender for Malahne, the 50m classic motoryacht built by Camper & Nicholson's in 1937 in the Art Deco style. Malahne not only participated in the evacuation of Dunkirk during World War II but also served as the production headquarters for the Hollywood blockbuster, Lawrence of Arabia, and hosted many film stars aboard at the time.

Maintaining the classic, opulent finish of the first tender for Malahne that Cockwells built to complement the mothership in 2016, this new vessel, with her cold-moulded construction for the hull and deck, clad with varnished Brazilian mahogany, and helm console trimmed with quilted maple veneer, strikes the perfect balance between classical elegance and enhanced engineering to provide outstanding performance for modern leisure.

## UK marina group makes switch to HVO

Premier Marinas has announced that it has become the first UK marina group to make the switch to using HVO fuel in boatyard plant machinery and equipment. HVO is a low carbon drop-in diesel replacement fuel made from 100% renewable waste, residue, and vegetable oils. It can be used across a range of applications and industries and is fast becoming a major player in helping achieve the UK's net-zero goals.

Premier Marinas has been trialling this fossil-free alternative to diesel in their 25-tonne WISE boat hoist and 15-tonne boat mover at their Southsea Marina for over 12 months. Gosport Marina's specialist boatyard Endeavour Quay has also seen successful trials of HVO on its 180-tonne WISE travel hoist, 40-tonne Alto self-propelled boat mover, 40-tonne Terex mobile crane, New Holland tractor and three forklifts.

Each Premier Marina has a full-service boatyard facility and now, Premier is rolling out HVO usage across its 10 South Coast marinas, having invested in new dedicated fuel infrastructure to support the roll-out in all plant machinery and equipment.



## New UK marina development to be completed next spring

Following the launch of the new Outer Marina in April this year, the UK's Port of Dover has announced that the renewed Wellington Dock will be fully operational by April 2024, kick-starting the season for berth holders with a full set of facilities.

The new Wellington Dock will bring another 135 berths to Dover and will perfectly complement the state-of-the-art facilities available at its sister site, the Outer Marina, whilst providing a mix of tidal and non-tidal berths. With its sheltered location and highly secure access, berth holders will enjoy the benefits of Wellington Dock once again, but with a modern twist.

One of the most popular services at the Wellington Dock is the new boatyard, which opened less than a year ago. It can be used by permanent and visiting berth holders to maintain and restore yachts and other leisure vessels of large size.



Granville Dock (left), Tidal Harbour (right) and Wellington Dock (above the swing bridge).  
Photo credit: Michael Harpur

## Two heritage steam vessels meet on the River Thames estuary

On 30 September the steam tug Challenge and historic paddler steamer Waverley met up near the Maunsell Sea Forts in the Thames Estuary for a 'steam parade'. Challenge is the last surviving example of a working Thames ship handling tug and is notable for her participation in the Dunkirk Evacuations in 1940. She helped to tow the Sea Forts into position in 1942.

The two historic steam ships met up off Southend Pier and Challenge escorted Waverley to the Red Sands Fort. With steam whistles sounding and the beat of Waverley's paddles, this was an unusual cruise. Also on hand was the Thames sailing barge Greta, which also participated in the Dunkirk Evacuation of Allied troops in 1940.

Challenge and Waverley are both registered in the National Historic Fleet. Paddle steamer Waverley launched in 1946 and is the last ocean going paddle steamer in service.

Photo credit: Fraser Gray



## UK firms secure over £32m in zero emissions funding

Maritime UK Solent has announced that several Solent-based maritime organisations have been successful in securing over £32m funding in the government's Zero Emissions Vehicles and Infrastructure (ZEVI) competition, ensuring a significant portion of the £80m match-funding made available by the government will support clean innovation in the Solent.

Funding will support the design and development of clean maritime solutions and is being made available for the construction and set-up of projects which can demonstrate zero emission solutions in a real-world environment.

"We are immensely proud of our Solent-based maritime organisations for their outstanding achievements in the ZEVI competition," says Anne-Marie Mountfield, chair of Maritime UK Solent. "This significant government funding recognises their dedication to driving innovation in clean maritime technologies and sets a powerful example for the entire industry."

"These successes will not only accelerate the shift towards zero-emission vessels but also create new job opportunities and stimulate investment in our region."





## Introduction by Dr Paul Little CBE, Chair of the UK Shipbuilding Skills Taskforce

As a seasoned mariner and career academic, and one who strongly advocates for both technological and professional education and higher skills, I was honoured to be appointed as Chair of the UK Shipbuilding Skills Taskforce.

Now, one year on, as the Taskforce enters its third phase, I am delighted to present our collective UK Shipbuilding Skills Taskforce Report.

This is a game-changing report from an expert Taskforce. It is not the summative output of a well-meaning committee dependent on corporate consultants. Instead, you will read in the following pages the result of a 'for industry-by-industry' national endeavour. It is the culmination of intense, weekly deliberations of focused workstreams and solution groups, distilled each month by an earnest Taskforce of shipbuilding and education experts, carefully chosen from all four nations of the UK and drawn from all parts of the UK shipbuilding sector.

Our report chimes with the UK government's Refresh of its 2017 National Shipbuilding Strategy which heralded a renewed ambition for naval procurement, and which sought to secure greater exports and more domestic contracts for UK shipbuilding. The 2022 National Shipbuilding Strategy Refresh reinforced the government's ambition for the UK shipbuilding industry, not least with £4bn of government investment into our shipyards and the UK supply chain, together with a clear expectation for greener vessels. Both helpfully highlighted the lynchpin importance of skills, and the implementation of the National Shipbuilding Strategy Refresh is well underway.

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

## Landmark site Trafalgar Wharf acquired by Premier Marinas

Premier Marinas has acquired the Trafalgar Wharf site in Portsmouth Harbour UK from the Trafalgar Group for an undisclosed sum of money. The sale includes the dry stack boat storage, which lays claim to being Europe's largest indoor dry stack boat storage facility. The well known Trafalgar Shipyard is also included as part of the sale.

Other Trafalgar Group businesses, which include Boat Club Trafalgar, RIBs For Sale, Ballistic RIBs, Thornham Marina and Gatcombe House Serviced Offices are not included in the transaction. They will continue to operate as usual. All of the existing operations team at Trafalgar Wharf will be retained and transferred to Premier Marinas as part of the sale agreement.

"We're delighted to add the Trafalgar Wharf site to the Premier portfolio and welcome new team members into our family," said Premier Marinas CEO, Pete Bradshaw. "The acquisition marks yet another milestone for Premier as we continue to invest and grow our business. Trafalgar Wharf adds new capabilities to our group and we're confident that we will be able to combine the knowledge of the existing team and our wider operational experience to further enhance the site and operations."

Jonny Boys, Managing Director of The Trafalgar Group, commented: "We're all about doing things differently and putting our customers first. We're delighted to be handing the reins to Premier Marinas who share our vision to create fantastic boating and waterside experiences."



# 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.

**Tritex NDT gives you the excellent performance that you would expect, with FREE annual calibration for the life of the gauge.**



**simple . accurate . robust**



sales@tritexndt.com  
+44 (0) 1305 257160

**www.tritexndt.com**

**10% discount and free shipping to anywhere in the world for all IIMS members**



# SAFETY Briefings

## Lack of hull inspection and maintenance led to sinking is report finding

The National Transportation Safety Board (NTSB) has issued an investigation report into the capsizing and sinking of crane barge *Ambition* that was towed by *Karen Koby*.

On 15 June 2022, about 0400 local time, the vessel *Karen Koby* was towing the crane barge *Ambition* when the barge capsized and sank in the Gulf of Mexico, about 48 miles southeast of Cameron, Louisiana. There were no persons on the barge, and none of the *Karen Koby*'s four crew were injured. The *Ambition* was partly submerged in about 54 feet of water, where it was later salvaged. The sunken barge released an estimated 1,980 gallons of oil. The *Ambition* and its crane were determined to be a total loss, with damages estimated at \$6.3 million.

### Probable cause

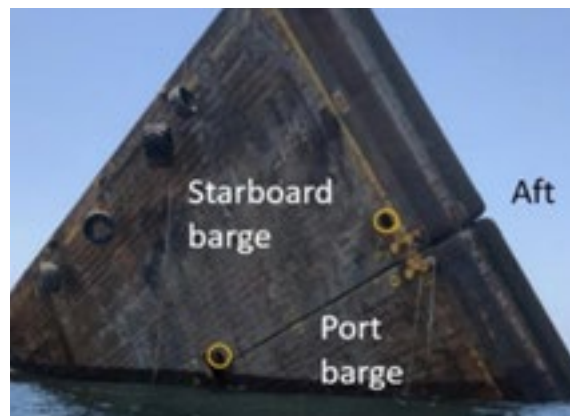
NTSB determined that the probable cause of the capsizing and sinking of the crane barge *Ambition* was the barge owner's lack of an inspection and maintenance regime, and not conducting permanent repairs, which resulted in the failure of the hull and subsequent flooding.

Contributing to the capsizing was likely down flooding through an open deck hatch due to the tow operator's failure to ensure adherence to its procedures for barge watertight integrity before getting underway, despite being aware of deficiencies with the watertight integrity of the barge.

### Lessons Learned

- Effective Hull Inspection and Maintenance
- To protect vessels and the environment, it is good marine practice for vessel 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.

Download the report at <https://bit.ly/48s3pPv>. Or scan the QR code.



## Ensuring safe access to Australian domestic commercial vessels

The Australian Maritime Safety Authority (AMSA) has published a safety alert to raise awareness of the risks involved with getting on and off domestic commercial vessels. Accessing a vessel while at berth is a routine activity and is sometimes taken for granted. The requirement for safe access can be overlooked, particularly where there are limited berthing options, or a vessel is only berthed for a short period. Failing to provide safe access can result in serious risk to people. This is heightened by bad weather or extreme tidal variations. Under the Australian National Law, the owner and master are responsible to ensure the safety of people boarding a domestic commercial vessel.

### 1 Assess the risks.

What are they? What could make them worse? What could happen to a person if things go wrong? How bad would the impact be?

### 2 Implement ways to control those risks.

These may include:

- Ensuring a 'safe design' gangway
- Securing platforms or gangways firmly and clear of the wharf edge or other potential hazards
- Limiting access in bad weather and if necessary, during extreme tidal variations
- Providing adequate lighting around the gangway, especially at night to increase visibility
- Including instructions on when and how to safely board the vessel—and when not to—in your crew safety inductions and signage. Under the general safety duties, crew,

passengers and other visitors must follow these instructions

- Encouraging crew to report hazards and incidents associated with getting on and off the vessel.
- Developing emergency procedures for possible incidents associated with access to the vessel i.e. falls, person overboard.
- Ensuring crew are clear about what they need to do—if there is no safe access, do not proceed (report any issues related to safe access)
- Identifying, documenting and managing the risks will help you implement effective risk controls. These could include safe work procedures, regular inspections and maintenance of equipment, appropriate training, induction and supervision of crew.
- Document these risks and controls in your safety management system and review them periodically to make sure they are still relevant and practical.

## REPORT bites

**The Princess Royal has unveiled a £420 million expansion at Aberdeen Port.**

The 2024 edition boot Düsseldorf will feature a "very high" attendance from international exhibitors as it continues a strong post-pandemic recovery.

ABS and Asiatic Lloyd Maritime LLP, member of the AL Group, have signed a joint development project (JDP) to study the feasibility of converting the fuel system of an ultramax bulk carrier.

**Samsung Heavy Industries acquired the Integrated International Certification For Compliance Management System from Lloyd's Register for the first time in the shipbuilding industry.**

Organisers of the Restore the Montgomery Canal appeal are delighted with generous donations from many supporters in the canal area and across the country and more than £95,000 has been raised already.

Marina chain D-Marín has partnered with luxury boat manufacturer Azimut Benetti to expand D-Marín's marina business by improving the growth of nautical tourism in the Mediterranean.

**The MSC Tessa, one of the world's largest ships, has entered the Port of Antwerp with a draft of 16 metres, a new record.**

Marine technology company Savvy Navvy has appointed US-based Alex Ostler as its new chief marketing officer (CMO) as it continues to scale up its growth.

**Dutch Marine firm, ShibataFenderTeam Group, has supplied 11 Double Cone Fender Systems for Dundee Port's expansion project in the UK.**

Wisconsin-based boatbuilder Cruisers Yachts is expanding its Pulaski facility by 56,000 square feet, with a project completion date of January 2024.

US-based American Boat & Yacht Council (ABYC) Foundation welcomed 70 marine technology students to its inaugural student career day, held Thursday at IBEX.



## Report on engine room fire on Moritz Schulte with loss of one life

At 0918 on 4 August 2020, the liquefied petroleum gas/ethylene carrier Moritz Schulte suffered an engine room fire while discharging a cargo of ethylene alongside the port of Antwerp, Belgium. The newly promoted third engineer, who was working on an auxiliary engine fuel filter, had not effectively isolated the fuel system and both he and an adjacent auxiliary engine's hot exhaust were sprayed with fuel under pressure. The fuel spray penetrated the exhaust insulation and ignited.

Prompt actions by the crew closed down the space to limit the spread of fire. The subsequent crew muster identified that the third engineer was missing and had last been seen in the engine room. The master prohibited the release of the CO2 fixed firefighting system and ordered the fire party to search for and recover the third engineering officer.

The vessel's search and rescue team made two attempts to enter the engine room, both of which were unsuccessful due to smoke and heat. The third attempt made a sweep of the area of the engine room where it was assessed that the third engineer would be, but he was not found. A shore fire team located him an hour after the start of the fire. He was recovered ashore but died 9 days later from the effects of smoke inhalation.

The investigation found that, despite the vessel having a full range of safe systems of work in place, the third engineer, who had worked for the company for over 5 years, died while attempting an unnecessary job conducted in an unsafe way at an inappropriate time, without a risk assessment and in the absence of any direct supervision of the task. Analysis of the third engineer's training programme activity log found that only two of the 65 rank-specific tasks he was required to undertake before his promotion to third engineer had been completed with the requisite evidence. It also found that the training system permitted line management to confirm that training had been completed without evidence being provided. This facilitated his promotion twice when he was not ready.

Other findings included a lack of any evidence of poor visibility enclosed space rescue drills or escape drills using Emergency Escape Breathing Devices.

The company's investigation identified 32 actions relating to: communication, crew and competence management, safety management and technical management. The company has since equipped its four vessels that were built before July 2003 with additional Emergency Escape Breathing Devices.

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







## Proper sampling of liquid cargoes is vital advises Gard

Gard P&I Club has highlighted the importance of taking proper samples of liquid cargoes to protect shipowners' interests, particularly when allegations of cargo contamination arise.

Cameron Livingstone, Claims Executive, Arendal and Robert Skaare, Senior Claims Adviser, Arendal have highlighted that if a cargo is found to be "off-spec" when the vessel arrives at the discharge port, and there is no evidence of contamination from the load port, the vessel could be faced with a potentially large claim even if the vessel is not at fault.

The crew should always take their own manifold and final tank samples, irrespective of whether cargo surveyors also take samples. The most important sample is the 'manifold' sample taken before the start of loading. Having your own set of 'evidence' is vital.

Read the article in full at <https://bit.ly/3PGt8LM>.

## NTSB renews call for US Coast Guard to require an SMS policy for passenger vessels

Safety Board renewed its call for the US Coast Guard to require safety management systems (SMS) for passenger vessels. The recommendation, which the NTSB reissued following its investigation of 2 September 2019 into the fire aboard the Conception, remains open. NTSB Chair Jennifer Homendy sent a letter to the Coast Guard Commandant emphasizing the need to issue the regulations within 30 days.

"While the Coast Guard has implemented so many of our recommendations from the Conception investigation, we've yet to see the necessary action taken on one of the most important ones: safety management systems," said NTSB Chair Jennifer Homendy. "We've been advocating for SMS on passenger vessels for nearly two decades. The public can't afford to wait any longer."

The NTSB has advocated for SMS for passenger vessels since 2005, and in 2010, Congress explicitly granted the Coast Guard the authority to require such systems. Progress has been stalled since January 2021 when the Coast Guard took initial steps to address the NTSB's recommendation.

### An SMS is an enterprise approach

to risk management. It is a formal organizational tool, comprising policies, procedures, checklists and corrective measures to ensure that vessel crews are operating a vessel in accordance with regulations, company requirements and best practices, with a goal of continuous improvement.

In December 2021, the Coast Guard issued interim rules addressing many of the recommendations the NTSB issued as a result of its investigation of the Conception casualty, but not for the SMS recommendation. The Elijah E. Cummings Coast Guard Authorization Act of 2020 mandates that the Coast Guard carry out all of the NTSB recommendations issued or reiterated as a result of the Conception investigation.

All 33 passengers and one crewmember died of smoke inhalation after they were trapped in the berthing area while a fire raged on the deck above. Both exits from the berthing area led to the same fire- and smoke-filled area above. The NTSB concluded that had an SMS been implemented, Truth Aquatics, Inc., owner and operator of the Conception, could have identified unsafe practices and fire risks on the Conception and taken corrective action before the casualty occurred.



# MARINE SURVEYING ACADEMY



Specialists in skills based training and accreditation for the marine industry

The Marine Surveying Academy Ltd (MSA), is a wholly owned subsidiary of the International Institute of Marine Surveying Ltd (IIMS). As an organisation, MSA is dedicated to providing the best quality marine surveyor-based training, although it operates in other specialist marine-related areas too, including marine accreditation.

Find out more at:

[International Registered Marine Insulation Inspectors](#)

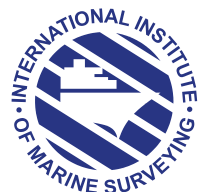
[Registered Marine Coatings Inspectors classification](#)

[International Institute of Marine Surveying](#)

[eCMID AVI Accreditation Scheme](#)

[marinesurveyingacademy.com](http://marinesurveyingacademy.com)

MARINE  
SURVEYING  
ACADEMY





# SAFETY Briefings



## Safety warning issued by MAIB after serious injury during a rigid inflatable boat ride

On 7 June 2023, a passenger on a sea safari rigid inflatable boat (RIB) suffered a spinal injury that left them paralysed from the waist downwards. Twelve passengers had boarded the RIB and, once it was clear of the jetty, the two crew gave them a safety briefing and instruction on the wearing of lifejackets. The RIB then proceeded out to sea and was increasing speed in choppy sea conditions when it encountered a steep-sided wave. The boat fell off the wave and slammed violently into the trough, dislodging the passenger from a seat at the forward end of the boat.

### Safety issues

- there is a significantly higher risk of spinal fractures to people seated in the front area of RIBs, regardless of speed;
- seated individuals may have little or no understanding of boat movement or how to mitigate its effects.

### Safety lessons

Owners and operators of small commercial passenger vessels are strongly advised to:

- urgently review operations and risk assessments, referencing the guidance linked below to mitigate risks outlined in the safety bulletin;
- review passenger pre-departure briefings and bring into line with current guidance.

A full investigation report into the accident will be published by the MAIB in due course.

Download the safety bulletin at <https://bit.ly/48zZwYX>. Or scan the QR code.



## Fatal pilot ladder accident has enduring lessons is report finding

Managers of the two vessels involved in a fatal crew transfer accident off Brisbane, Australia, had not ensured personnel had a common and complete understanding of how the transfer would be conducted, an Australian Transport Safety Bureau (ATSB) investigation has concluded.

On 9 August 2021, crew were being transferred to and from the bulk carrier Formosabulk Clement via the launch boat PT Transporter in the Port of Brisbane anchorage, about five nautical miles off the coast. The operation involved multiple visits from PT Transporter to transfer crew on and off the anchored bulk carrier. While the vessels were separated during a break from transfers before the accident, the bulk carrier turned about its anchor, exposing the transfer area to prevailing weather.

Language difficulties between the crews meant the bulk carrier's main engine was not used to correct this issue, prior to the launch coming back alongside. As PT Transporter approached, a crewmember of the bulk carrier climbed down the vertical pilot ladder without the knowledge of the ship's master, or the skipper of the launch.

A wave, larger than previously encountered, then lifted the PT Transporter higher than expected, sufficient for the smaller vessel to make contact with the crewmember, knocking them into the water. While the crewmember was quickly recovered from the water, they had sustained fatal injuries.

"This was a tragic accident, involving a seafarer who had been at sea for more than 400 days due to global border restrictions during the COVID-19 pandemic," ATSB Chief Commissioner Angus Mitchell said.

Mitchell said the investigation highlights clear safety lessons for all operators conducting crew transfers like this one, as there was no common or complete understanding amongst the personnel on board either vessel in terms of how the transfer would be conducted.

Since the accident, the operator of the launch has updated crew transfer arrangements and procedures, with a traffic light system for operational assessment and control. The system is designed to be less constrained by language, and amenable to being shared beforehand to assist in achieving the shared mental model of the task among all participants.

The operator of the bulk carrier has also completed investigations and held multiple safety meetings and training exercises to share details of, and lessons learned from, the accident.



Download the report at <https://bit.ly/46utZpz>.

## REPORT bites

**MB92 Group and Rolls-Royce join forces to explore sustainable yachting solutions.**

The UK Canal & River Trust has announced that boat licence fees will need to rise above the baseline inflation rate for each of the next five years.

Lloyd's Register has awarded Sanlorenzo with approval certification for the Fuel Cell system and Type C containment tank, designed by the shipyard together with Siemens Energy.

**MDL Marinas has installed a new system of solar panels at its Cobb's Quay Marina in Poole, Dorset, which the UK marina operator says supports its commitment to sustainability.**

Setting a new world record for the longest distance travelled by an electric boat in one day, the C-8 foiling craft from Swedish electric boat manufacturer Candela covered 420 nautical miles within 24 hours.

Feadship has received a second Approval in Principle (AiP) by Lloyd's Register on its compact multi-fuel system design during the UniQ on Tour tech-talk at this year's Monaco Yacht Show.

**Cruise shipping major Royal Caribbean Group has completed over 12 consecutive weeks of biofuel testing in Europe.**

Wave-powered desalination innovator Oneka Technologies has secured €8.7 million through equity round of financing, attracting various new investors on board.

**ABS joined Maersk and global dignitaries for the official naming ceremony of the first containership ever to sail on green methanol.**

Sea trials are scheduled to be held off the Portuguese coast to test a new acoustic deterrent device which aims to keep orcas away from boats.

Belgian shortsea shipping company Zulu Associates has contracted Conoship International to design the autonomous zero-emission shortsea vessel Zulu Mass.

A team led by the Ocean Exploration Trust on board the exploration vessel Nautilus undertook archaeological assessments of three World War II aircraft carriers that were lost during the Battle of Midway in 1942.



## Final Dutch report into fatalities due to wood rot on traditional craft due shortly

The Dutch Safety Board says its final report into another fatal marine accident involving wood rot on a traditional craft is due to be issued shortly. The board initiated an investigation last year after a fatal incident on 31 August 2022, on a historic sailing ship from Harlingen, which claimed the life of a person on the deck when the vessel's boom broke.

The board's "follow-up investigation" on this incident set out to examine "to what extent lessons can be learned, and what is needed to prevent these types of accidents in the future". It says that "the inspection phase of the investigation has been completed".

"The comments received from the parties involved on the draft report have been incorporated. The final report will be adopted shortly and is expected to be published in the foreseeable future," the board said.

The Dutch Safety Board has previously investigated two previous cases. A total of four people died in incidents occurring on 21 August 2016 and on 20 March 2019, when part of the mast broke off and landed on individuals. "In both cases, part of the mast broke off because it was affected by wood rot," the board said. In the 2016 incident, a wooden mast that broke suddenly on a Dutch historic sailing ship and killed three people on its deck had been rotting for at least four years beforehand, the board found.

The investigation report recounted how the captain of the historic sailing ship the Amicitia was just about to turn his ship into the port of Harlingen, after a week's sailing on the Wadden Sea, when "catastrophe struck". The three people on the foredeck did not survive the accident, which the safety board has traced to wood rot. This was caused by water penetrating the mast which could not drain out again and was trapped.

In this case, it says there was "no maintenance plan for the mast in question, and it was not inspected periodically". "This meant that changes and vulnerable spots were not identified. Because the captain himself did not have the relevant expertise, he relied on the maintenance personnel he engaged. However, they did not have the necessary specific expertise concerning wooden masts either," the report says.



## Grains and soya beans cargo claims review

The Swedish Club has released a detailed analysis of cargo claims in relation to grains and soya beans having reviewed 200 bulk carrier claims. To be included in the statistics the claims had to have generated a cost of at least \$5,000 and have been made between 2018 and 2022.

The average frequency for the five-year period is 0.056, which means that 5.6% of all bulk carriers have made a grain claim. Since 2019 the Club has seen a steady increase in the frequency of claims.

### Grains

During the five year period of the report the most common claims were for shortage (63%) especially during discharge (68%) and these were seen most commonly in North Africa and China.

About 70% of shortage claims occur due to discrepancies between the vessel's figures and shore figures. In this five-year period there were few claims in China until 2021, but since then Swedish Club said that it had seen a steady increase in the region. Over the entire five-year period, however, most claims were in North Africa.

The increase of claims in China over the last couple of years could be related to the pandemic, Swedish Club said. The severe lockdowns that were seen in many cases delayed the vessel. They also made it difficult for surveyors to attend the vessel for inspection. Crew and stevedores were also more hesitant to interact with each other because of the risk of becoming infected. This led to the crew not being able to verify the cargo operation and taking draft figures. The Club said that it had seen a similar picture with soya bean claims.

Shortage contributed to 44% of the total claims cost, with an average claim cost of \$35,000. Although shortage claims appeared to be of relatively low value, the aggregate cost of these claims was significant.

Non contribution towards General Average (GA) contributions made up 20% of the total cost. The average claim cost was \$800,000, but this type of claim was not common.

Wet damage made up 13% of the total cost, with an average claim cost of \$37,000.

Most cargo claims occurred at the discharge port. These contributed to 68% of all claims and were mainly driven by shortage. Claims during the voyage accounted for 16%, with only 10% of claims taking place in the loading port.

Any errors in manifests regarding quantity, or description of cargo, are subject to customs fines in Tunisia. If a spillage was experienced, the Club said that the crew should record details of the spillage and check the calibration and accuracy of the shore scale. "Take photographs of the cargo spillage from the grabs, hoppers and trucks", the Club advised.

### Soya beans

The global trade of soya beans has undergone continued expansion in recent times, in part due to the increasing demand in China, the largest soya bean importer, for animal feed. The largest soya bean exporters are Brazil and USA, which account for around 80% of the global export market.

The frequency for the five-year period saw 1.1% of all bulk carriers place a soya bean claim. The average claim cost was \$54,000. The pandemic had an impact, with vessels forced to stay at anchor for extensive periods. These delays could lead to heat damage – a significant concern with soya bean cargoes.

The most common claim was for shortage at 29%, followed by spontaneous heating at 19% and contamination at 16%.

When compared with grains, shortage made up a considerably smaller percentage of claims (29% vs 44%). This was partly a trading issue, but in addition the statistics were influenced by Covid-related delays.

Spontaneous heating accounted for 41% of the Club's total cargo claims cost in this category, with an average claim cost of \$115,000. Shortage made up 16% of the total cost, with an average claim cost of \$29,000. Physical damage contributed to 13% of the total cost, with an average claim cost of \$103,000.

The most common cause of damage claim was damage prior to loading, at 23% of total claims. When considering the damage that leads to these claims, 43% of these claims were observed in the loading port, 29% during the voyage, and 14% at the discharge port.

The second most common cause was inherent vice, at 19%. This manifests at the discharge port 50% of the time and during the voyage at 33%.

The third cause was improper cargo handling ship side, at 16%. This category of claim relates to heating damage and wet damage, often caused by rain during loading and discharge.



## REPORT bites

**The Port of Hamburg has received the title of best port in Europe for the fourth time in a row.**

*The SeaVolt consortium has installed its first of a kind offshore solar platform at the Blue Accelerator test site, near the Port of Ostend in Belgium.*

*Marine electronics specialist Actisense has been named Manufacturer of the Year at the 2023 National Marine Electronics Association (NMEA) Conference and Expo's Product of Excellence Awards.*

*Since August there has been an increase in reports of HMRC UK carrying out inspections of marinas to check their compliance with the rules on the use and sale of red diesel.*

*The cruise division of MSC Group has confirmed an order for two additional luxury cruise ships to be built by Fincantieri and outfitted with hydrogen fuel cells for its Explora Journeys brand.*

*Thousands of cars are now entering Turkey after DP World Yarmıca introduced a 'cars in containers' shipping solution that has helped solve an automotive supply chain crisis in the region.*

**France-based start-up HelioRec has completed the installation of a 25kW floating solar unit in the Port of Brest.**

*China Classification Society's Zhejiang Branch has issued the first type approval certificate of ship cyber security firewall to Supcon Ocean Technology (Zhejiang) Co.*

**Energy major Shell has carried out the first-ever cruise ship liquefied natural gas (LNG) bunkering operation at the Port of Gibraltar.**

*The U.S. Coast Guard, Hawaiian state authorities and a contracted salvor have begun removing sunken vessels from the harbour at Lahaina, Maui.*

*Copenhagen-based coating supplier Hempel has opened a new production facility in Zhangjiagang, China to respond to the growing demand for coating solutions.*

## Maltese authorities issue commercial yacht manning advisory

A commercial yachting notice has been issued by the Maltese Merchant Shipping Directorate (MMSD) to remind all yacht owners about manning responsibilities. Under Section 17 of the Malta Commercial Yacht Code (CYC), all yachts of 24m and above in length have to carry a valid Minimum Safe Manning Certificate, while yachts under 24m must follow the minimum safe manning requirements as detailed in Section 17.

The Minimum Safe Manning Certificate (for yachts > 24m) and the Safe Manning Scales (for yachts < 24m) are applicable for all international and domestic voyages. As detailed in Section 17 of the CYC, the number of crew may be reduced when a yacht is not operational and is laid-up and/or wintering at berth.

In these latter instances, the requirements of the Minimum Safe Manning Certificate/Scales are no longer applicable. In such cases the yacht's owners and managers are responsible to ensure the necessary manning requirements of the yacht.

The number of crew may be reduced below the minimum safe manning levels following a risk assessment carried out by the yacht's Master in order to ensure that:

- necessary maintenance on board can continue to be carried out. For yachts ≥ 500GT additional consideration should be given to ensure that the safety management system (SMS) can continue to be operational and maintained;
- any possible emergency which may occur on board such as fire, unmooring and mooring can be safely and effectively responded to and handled by experienced crew on board;
- the ship security plan (SSP) can continue to be maintained as necessary (for yachts ≥ 500GT);
- the maximum hours of work and minimum hours of rest shall remain in compliance with MLC requirements;
- any requirements which may be stipulated by the local Port Authorities and/or the yacht's insurance are complied with as required;
- full assistance is provided during any unannounced Port State Control inspection.

Yacht owners/operators do not have to inform the MMSD when the manning levels have been reduced during lay-up unless they have received notification of a possible flag state inspection. In such cases the MMSD should be informed when the yacht is expected to resume operations with its full crew. All onboard surveys shall be carried out with the necessary crew members on board.





## Be vigilant when loading scrap metal is the warning

Following increases in the issues with the carriage of scrap metal cargo, NorthStandard P&I Club has highlighted the need for extra vigilance at loading.

The IMSBC Code states that scrap metal should be kept as dry as possible before loading and not loaded in the rain. The main reason for this is that when scrap metal is wet it will accelerate the oxidation process. Should the cargo contain swarf, turnings, or other contaminants such as timber or rags, this can lead to fire.

From various recent incidents and reports, NorthStandard attributes the causes of these incidents are due to a combination of factors:

- The cargo is sprayed on loading: Stevedores or longshoremen may spray the cargo on load to reduce dust generation.
- The cargo is loaded during rain: Sometimes there is a request to load the cargo in rain, with shippers/charterers offer to issue a 'rain letter' in exchange for owners agreeing to continue loading. This should be resisted as P&I cover is at risk where an owner loads or discharges a cargo in the rain in circumstances where it was entitled to refuse to do so. In such circumstances a rain letter, under which the issuer indemnifies the carrier against the consequences of loading or discharging in the rain may stand as an alternative to cover.
- The cargo contains swarf: Often there is a large proportion of swarf, cuttings, borings and shavings in the cargo which means that the cargo does not meet the requirements to be considered a Group C 'SCRAP METAL' cargo.
- The cargo contains contaminants: Typically, the cargo is contaminated with rags or timber. However, more recently in Ghent there have been more instances of lithium batteries being found in the cargo. The presence of these contaminants significantly increases the risk of fire once heated. On one occasion issues were caused by a scrap metal cargo containing gas canisters which still contained flammable gas.

NorthStandard advises that cargo should be closely monitored for swarf, contaminants and to avoid loading in rain.

## Collision between a general cargo vessel and a split hopper investigation report

The UK Marine Accident Investigation Branch (MAIB) has published its investigation report into the collision between the general cargo vessel Scot Carrier and the split hopper barge Karin Høj.

The collision resulted in the capsizing of the barge with two fatalities in the Bornholmsgat traffic separation scheme. On 13 December 2021, the UK registered general cargo ship Scot Carrier and the Denmark registered split hopper barge Karin Høj collided in the precautionary area adjacent to the Bornholmsgat traffic separation scheme, Sweden. As a result of the collision, Karin Høj capsized and its two crew lost their lives.

The vessels collided after the second officer on board Scot Carrier altered course at a planned waypoint without checking the traffic in the area or that it was safe to execute the manoeuvre. Following the collision, Scot Carrier's second officer did not immediately call the master or raise the alarm, but returned the ship to its original course and speed.

Danish and Swedish coastguards were alerted to the incident following the activation of Karin Høj's emergency beacon and determined that the two ships might have collided. The Swedish Coast Guard subsequently questioned the second officer about the track of Scot Carrier via very high frequency radio and, 17 minutes after the collision, the master was finally alerted to the situation and sounded the general alarm.

### Investigation

The investigation found that neither vessel had posted a lookout during the hours of darkness. It further established that Scot Carrier's second officer was distracted throughout his watch by the continual use of a tablet computer and had also consumed alcohol before taking over the watch. It was not possible to establish what actions were taken by the crew of Karin Høj because the vessel was not fitted with a voyage data recorder and there were no survivors.

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



## REPORT bites

**A Scots teen who mentioned she was headed to the pictures was discovered on a 3,000-ton ship to Africa.**

The second emissions-free battery electric tug built to serve at LNG Canada's new export facility in Kitimat has officially arrived in North Vancouver.

Green Marine has certified the Port of Oakland through its environmental programme, the Seaport Air Quality 2020 and Beyond Plan, in support of the port's transition to zero emissions operations.

Wind propulsion installations on large vessels are on track to surpass the 50 mark in early 2024, according to a recent update by the International Windship Association.

The UK's second largest port operator Peel Ports Group announced it has significantly reduced its greenhouse gas emissions across its port facilities, cutting these by almost a third since 2020.

Cockwells Modern & Classic Boatbuilding says two of its boats are shortly set to achieve fame, starring alongside Cameron Diaz and Jamie Foxx in a forthcoming Netflix Original entitled *Back in Action*.

**Maritime fuel supplier Peninsula has won an LNG bunkering operator license from the Government of Gibraltar.**

Kawasaki Kisen Kaisha (K Line) has teamed up with Miotokushi Analytics to develop a draft survey application that harnesses the power of artificial intelligence (AI).

**The Cruising Association has created an online research library to document reports of orca interactions gathered from skippers worldwide.**

Jeddah Yacht Club & Marina in Saudi Arabia has opened The JYC Academy, a state-of-the-art training centre for sailing and powerboat training.

Mast Academy NZ, the training centre for trades in the marine, composites and textiles industries, has released its first VR showcase for the marine industry.

The BP-led effort for a major offshore carbon storage site to be located in the North Sea achieved what is being hailed as a major milestone with the awarding of an Agreement for Lease from the UK's Crown Estate.



## Bananas are sensitive cargoes

Bananas, though said to be the world's most transported and consumed fruit, are also among the most sensitive cargoes that can be carried on a ship according to Skuld. Before a banana ends up on the shelves it has been exposed to numerous external factors which all have a bearing on how the fruit is finally presented.

It is an essential part of the banana export trade that the bananas are harvested in a "green" condition. This way, the ripening progression can be controlled during transport up and until presentation to the consumer markets. The ripening process of the bananas is irreversible if the bananas are allowed to enter the "climacteric" phase before transport.

As Skuld says, the cargo must be loaded in a careful manner and stowed in a way which allows for proper air circulation. If air circulation is blocked, the cargo will be unevenly cooled. This may cause some of the cargo, typically the cargo stowed farthest away from the air delivery point, to ripen prematurely. A difference between the Delivery Air Temperature (DAT) and the Return Air Temperature (RAT) indicates that the cargo stow is blocking air circulation.

Whenever a cargo of bananas arrive with signs of damage, local correspondents and surveyors will routinely be appointed to record the events and assess the damages. Should the damage turn out to be serious, it is highly recommended to instruct expert surveyors to attend as soon as possible even where this involves cross-border travels.

It is essential that the expert surveyor arrives on site when the evidence is fresh, as expert reports prepared on basis of pictures and third-party reporting will carry less weight and value in the defence against cargo claims. Preferably, the expert surveyor should get in place when the vessel is still at discharge port so that the crew can be properly interviewed, and all relevant documentation can be collected. The expert surveyor should also assist in taking representative samples of the cargo and ensure that the testing methods are appropriate, which again will assist in determining the exact cause of the damage.





# Safe working conditions remain an issue on board vessels visiting Australia



Shipboard tasks such as working at heights and/or over the side, mooring and rigging (for example an accommodation ladder or pilot ladder) are considered high-risk operations. Unfortunately, these tasks are often conducted in an unsafe manner and this topic is highlighted in a recent AMSA Safety Awareness Bulletin with two case studies featured.

## Case study I

A seafarer fell in the cargo hold while undertaking repairs from the number 3 cargo hold access ladder and sustained fatal injuries. The Australian Maritime Safety Authority (AMSA) conducted a Port State control inspection and investigation following this incident. The vessel was detained with significant deficiencies related to the vessel's safety management system.

The investigation findings identified systemic failure in the vessel's safety management system to ensure safe shipboard operations and maintenance of the vessel. The safety equipment, such as helmet and safety harness were in very poor condition and defective. The operator did not adequately maintain the safety equipment and did not provide safety harnesses required for working at heights. There was a lack of safety culture and leadership onboard the vessel.

The shortcomings included:

- poor risk assessment process
- failure to provide seafarers with safety harnesses and associated equipment for working at heights
- failure to maintain safety equipment and PPE
- failure to allocate available resources
- fatigue not appropriately managed.

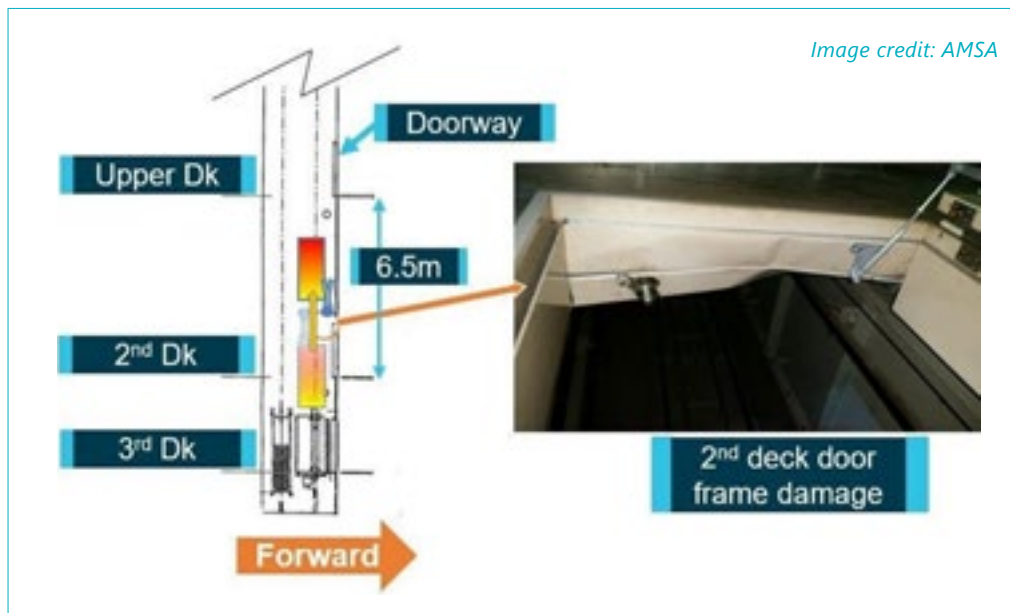
*Credit: Substandard, significantly worn waist harness. Source: AMSA*

## Case study II

A seafarer was testing the ship's personnel elevator after completing mechanical repairs. While on the elevator cage top, the seafarer was fatally injured after being trapped between the moving cage and the bulkhead.

The reason the seafarer was in this position and became trapped could not be determined. However, seafarers onboard were not informed that elevator work was being conducted and warning signs were not in place to indicate the elevator was out of service. This allowed elevator call requests to be made while the work was underway, while the seafarer was on the cage top. For any task that is performed on multiple occasions without any adverse consequences, there is the potential for an individual's perception of risk to decrease. Hence it is important to follow documented procedures and safe working practices, even when one considers the task/operation to be safe.

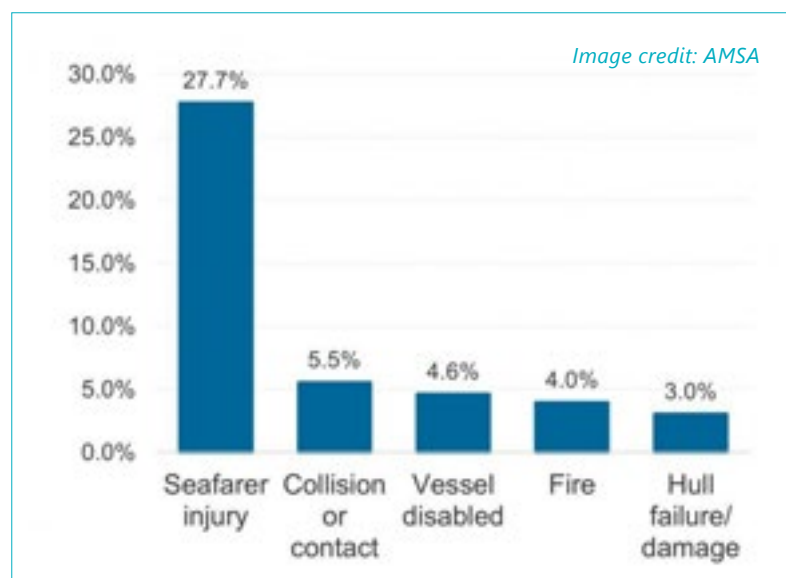
It is important that close and careful supervision is maintained for elevator testing and tasks. Supervisory oversight provides an external check and safety barrier before, and during, the work.



## Marine incident data

A total of 758 serious incidents were reported to AMSA between 2020 and 2022 on foreign-flagged and regulated Australian vessels. The top five reported serious incidents included:

- seafarer injury (27.7%)
- collision or contact (5.5%)
- vessel disabled (4.6%)
- fire (4%)
- hull failure/damage (3%).



Seafarer injuries make up most of the reported serious incidents, which suggests safe working conditions and associated practices is an ongoing issue on board vessels visiting Australia.

## Port State control (PSC) deficiencies

This issue is further evidenced in the PSC data. There is an increase in the number of Maritime Labour Convention, 2006 (MLC) PSC deficiencies recorded against Regulation 4.3 – Health and safety protection and accident prevention.

## How acceptable is unacceptable?

Over time, seafarers may develop informal practices and shortcuts to circumvent deficiencies in equipment design, poor procedures or policies that are incompatible with the realities of daily operations. If seafarers are continuously exposed to these practices, they are more likely to perceive the risks as low. This leads to a situation where poor practices and risky activities repeated over time are perceived as being normal.

Additionally, if supervisors and operators allow risk-taking behaviour to continue unchecked and have not effectively addressed these poor practices or shortcuts, these practices will often be deemed as acceptable behaviour by seafarers. This can create unsafe and poor working conditions onboard.

## Importance of safety culture

Safety culture broadly refers to the shared perceptions of safety policies, procedures, behaviours and practices of seafarers and the companies in which they work. It is now well known that safety culture is a significant determinant of





safety outcomes and is a leading indicator of accidents and injuries. It is important to note that having a safety procedure does not create a safety culture.

Seafarers carry out tasks in a cross-cultural working environment. To establish a positive safety culture, operators need to recognise cultural biases that may arise due to the different cultures of the seafarers and shore-based staff as doing so will ensure they can effectively address these differences or barriers.

Safety culture cannot be established without clear leadership and a prioritisation of safety. Effective leaders communicate clearly on safety standards and hazard identification and motivate the shipboard team to make safety a priority.

## Communication and consultation

When a risk has been identified, it needs to be controlled. Both the identification and implementation of risk controls are likely to be more effective when different perceptions are recognised and taken into consideration. It is important that the seafarers on board are consulted and that their views together with other knowledge of risk are taken into account in the risk management process.

People's individual perceptions may influence:

- willingness to consider new information
- confidence or trust in such information
- the relative importance given to information.

Effective communication and consultation will ensure everyone involved understands the basis on which decisions are made and the reasons why particular actions are requested.

## Commitment to safety

The success of a safety culture depends on cooperation and commitment from all involved and this commitment to safety must come from the top.

Leaders can start by ensuring tasks are adequately supervised, training is provided, workload and fatigue are managed effectively, and policies clearly prioritise safety above time pressures. Seafarers can contribute by following procedures, always using safety equipment, reporting defects, not taking undue risks because it takes less effort and remembering that even work that is done frequently can be dangerous.

This in effect leads to all parties being committed, not just because of rules and regulations but through individual choice, to safe actions and behaviours at all times, both during work and recreational activities on board.

## Key Messages

- Poor practices and shortcuts repeated over time gradually become the norm.
- An effective safety culture promotes the understanding to all seafarers that the goals of the company will be achieved through accepted safety procedures, practices and behaviours.
- The identification of risks and the implementation of risk controls are most likely to be successful when people's perceptions are recognised and taken into consideration.
- Effective communication and consultation with everyone involved in task and work can improve the risk management process.





# With each passing year: A review of IIMS activities in 2023

As has become traditional at the end of the year, I like to give an update for members of the Institute, which also signals to the wider maritime world what IIMS has been engaged in recently.

By **Mike Schwarz**



# Overview

IIMS has enjoyed a satisfactory financial year - my thanks to Jen Argent supported by Elly Bryant for maintaining an efficient accounts department - and with each passing year, it feels that IIMS is further cementing itself as not only the leading worldwide professional body for marine surveyors, but also as a highly visible and focused organization that is recognized by others in the maritime sector who engage with or touch the profession. This past year we have continued to meet and train surveyors the world over. And when I look back at the year just gone and review some of the meetings I have had and some of the senior industry people I have met, I am reminded that IIMS has a strong voice. Brand IIMS is increasingly strong, but my colleagues and I are not complacent and continually strive to find new ways to create efficiencies and to innovate for the benefit of members, the profession and the Institute. There is still plenty to do I can assure you.

During 2023 we have consolidated a number of our ongoing activities whilst bringing new products and services to market as well. Every business needs to constantly innovate and freshen up what it does and IIMS is no different. The onslaught of AI (Artificial Intelligence) in 2023 has certainly highlighted that point and like it or not, we all need to embrace AI, and IIMS is already doing so.

Let me start with detailing the progress at our head office, located in Murrills House, at Portchester. Earlier in the year, an investment was made in the communal areas of the building to update the decoration which looked tired. New carpet and fresh paint have created a country house feel on entering the front door and it looks splendid. Sadly heavy rain has since caused a leak to appear which means a little redecoration will be required where water ingress has left a stain.

Recently we have had a new lease line internet connection installed. It is super fast and is set to transform the speed at which we connect in 2024. And it costs less than the old lease line, so that's a bonus!

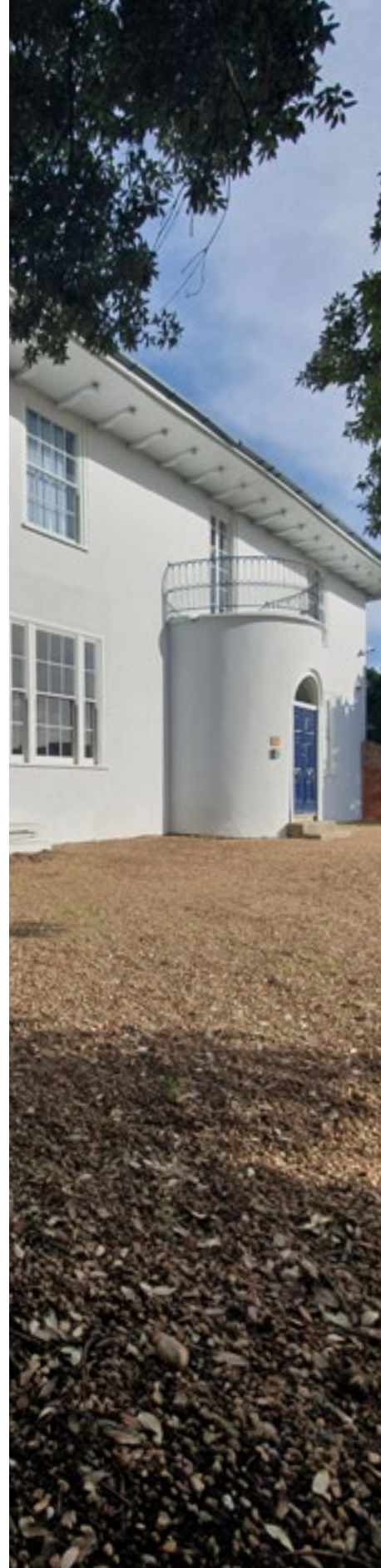
International travel has come back on to the agenda with a bit of a bang. However, there is far less appetite for face-to-face gatherings than prepandemic, partly due to the sharply rising costs of airfares and hotels. Almost all IIMS events are hybrid, apart from those that include a strong outdoor element such as heel test or tonnage training.

This year has seen a big push to prepare IIMS for ISO 9001 audit. My thanks to my colleague, membership secretary, Camella Robertson, who has led the way in preparing the initial documentation which is currently out for review. This alone has been a major undertaking to bring our processes and procedures across the business up to date. The next and final step is to prepare the documents against which we will be audited. The Management Board has chosen DNV as our preferred auditor. Our goal is to seek formal accreditation by audit no later than the end of the first half of 2024.

For your information: ISO 9001: Quality management. ISO 9001 sets out the criteria for a quality management system. It can be used by any organization, large or small, regardless of its field of activity. In fact, I understand there are over one million companies and organizations in over 170 countries certified to ISO 9001.

This ISO standard is based on a number of quality management principles including a strong customer focus, the motivation and implication of top management, the process approach and continual improvement. The principles behind using ISO 9001 is to ensure that customers get consistent, good-quality products and services, which in turn can bring business benefits.

Now I'd like to move on to review some specific areas of the IIMS operation.



# Mid Month MARINE COMMUNIQUE

## Communications

IIMS has increased its communications strategy deliberately and significantly during 2023. Despite a membership of 1,000, we have built up a database in excess of 10,000 people who we communicate with monthly and a further database of approaching 8,000 who we communicate with less often. The database is a mix of mainly marine surveyors, but includes P&I club and flag state surveyors, marine insurers and underwriters, accredited vessel inspectors, loss prevention personnel and vessel owners. The database has grown due to the extensive below the line digital marketing work we have invested in over recent years. Each email address has a value even if the individual is not a marine surveyor.

The monthly News Bulletin (released electronically on the first of each month) is not new, but it has grown exponentially in size this year. Thirty plus pages each month is becoming the norm as we try to bring you a detailed and essential round up of relevant news with a few curved balls thrown in each month for good measure! I monitor the open rates for the emailer that is the gateway to downloading the detailed bulletin itself, in pdf or eReader formats and they have grown. We now average about 7,000 email opens per month with between 700 and 900 downloading the full news bulletin.

The launch of the electronic Mid Month Marine Communiqué in January was a bit of a suck it and see idea. It was an instant hit and now 12

editions later recipients seem not to have bored of it. Great and relevant content is what makes it a valuable monthly communication. If you have not yet looked at the Communiqué, it is essentially an emailer with links to all types of content from podcasts to technical articles, forthcoming events and marine newsletters. The email is averaging over 6,000 opens each month, and sometimes as many as 2,000 clicks on the links offered - quite remarkable. I had no idea of the value of podcasts to some marine surveyors, but having tracked the download statistics, I do now!

The Report Magazine has once again been a pleasure to edit this year for your benefit. We have covered a wide range of topics and I am grateful to all those who have contributed an article, or written content. I always welcome contributions from anyone who has something to say. The Report is now widely read and almost certainly reaches over 10,000 readers a quarter, although it is hard to quantify an exact figure. I can only base the figures on the number of tracked downloads. But one subject that is way ahead of all others this year is lithium-ion battery fires. I have devoted a significant amount of editorial space to this topic and it is an issue for small craft just as it is for large commercial ships, only the devastation caused when a ship is involved in a lithium-ion battery fire is much more dramatic as we have seen; and it brings with it the potential for significant loss of life to say nothing of the valuable marine asset and cargo too.

At the time of writing, we are putting the finishing touches to the 2023 and

third edition of the Safety & Loss Prevention Briefings Compendium. I have been somewhat taken aback by the positive feedback from so many people who have seen and read this publication. The 2023 edition will be available to download by the end of December 2023. I extend my thanks to our in-house graphic designer, Craig Williams, who continues to produce high quality publications.

One of the surprising successes of the year has been our promotional activity with The YachtMarket. This leading internet portal boasts an online inventory of about 30,000 vessels for sale around the world. Earlier this year we agreed to pay for a clickable button, which appears on every listing, inviting the user to 'Survey it'. Once the button is clicked, it takes the potential boat purchaser straight into the Marine Surveyor Search App enabling them to select a surveyor. The campaign has recorded nearly 3,000 clicks over six months from around the globe. Sadly, I cannot track which surveyor has subsequently been contacted via the app. Anyway, such has been the success, that we plan to roll this marketing initiative on into 2024.

This year we have brought a couple of new handy guides to market and these are selling steadily. Available in both downloadable pdf format or paperback, *What a Marine Surveyor Needs To Know About Yacht Rigs* by Nick Parkyn and *What a Marine Surveyor Needs To Know About Things You See On Survey (And Can't Quite Always Believe)* by Geoff Waddington are both new, bringing the collection to 28 handy guides in total. More are in the pipeline.



## Membership

Retaining members for any membership organisation is challenging these days and we live in difficult times. But I am pleased to report that IIMS membership has remained stable this year. Some months we tip just over the 1,000 mark, some months just below. We have had the usual churn of membership across the year of about 4%, which is quite normal. A few members have passed away and some have left the industry, but most noticeable this past year is the number of retirees, much higher than in previous years.

New membership applications seem to come in waves. Some months we get one or two, other months many more. But across the year we receive about 130 new applications. Each and every one is reviewed by a member of the Professional Assessment Committee (PAC). They are responsible for ensuring that only those who are suitable to become members are granted membership. We have rejected some applications this year for the simple reason that there is no supporting objective evidence. Most applicants apply for far too many specializations and when asked for some evidence and proof of their competency and experience, they cannot provide anything substantial enough to satisfy the PAC. Capt Chris Kelly and his committee colleagues are to be congratulated for their commitment and valuable work in this area.

## Certifying Authority

Under the guidance of David Parsons, supported by Rosie Webb, the IIMS Certifying Authority (CA) has had a remarkably successful year with a significant uplift in income too. To remind you, IIMS is contracted by the UK Maritime & Coastguard Agency (MCA) to code commercial boats up to 24 metres. Our fleet size has grown, albeit slowly. But tonnages have grown exponentially, in fact more than doubled. We have authorized several members as tonnage measurers over the year. But it seems there have been other external factors at work in our favour.

Our annual CA external audit was undertaken by the MCA in October. It is fair to say we look forward to this event each year with a bit of trepidation. But the audit was clean with a few findings, but nothing of significance to report. I extend my personal thanks to IIMS CA Chairman, Fraser Noble, who backed by a strong and engaged committee, has done a first-class job.

The MCA is engaged is bringing two new sets of regulations to the sector. The Workboat Code 3 has had a difficult passage towards the statue book and the outcome of the consultation angered a number of surveyors and vessel operators. Those individuals and organisations voiced their opinions loudly across

the year. At the time of writing, the full extent of the new code is not clear, but in the coming weeks the content will be revealed and then we need to train some of our code examiners accordingly who specialize in workboats with details of the new regulations.

In conjunction with this work, the MCA has also been active in bringing the various codes applicable for Sport and Pleasure vessels into one code. IIMS has had a seat at the table as the new code has been formulated. I expect this work to go into formal consultation early in 2024 before formal implementation later in the year.

## Professional Qualifications

The Institute has had a progressive year with its two professional qualifications, one in Yacht and Small Craft Marine Surveying, the other in Commercial Ship Surveying. Vicki Loizides continues to run the distance learning programme efficiently helped by the new automated student portal we introduced last year. This year nearly 100 new students have enrolled. Vicki has continued the ongoing process of assessing and reviewing the various modules to ensure they are still fit for purpose in an ever changing technological landscape.



# Conferences and training

2023 proved to be a busy year for training with a number of events held across the world, which were well supported. After a gap of several years, we resurrected the annual Conference and AGM as a hybrid event in June at Southampton. A number of members joined us for the AGM and following seminar presentations in person. Others appeared via Zoom. The quality of the presentations was top quality covering such important topics as marine corrosion and lithium-ion battery technology. Perhaps the high point was the Conference Dinner, which was held on a sunny summer's evening at Chilworth Manor, near Southampton. Over 50 guests joined us for what proved to be a memorable event.

North America saw IIMS deliver two events. The annual Baltimore gathering always proves to be popular and James Renn put together a superb programme. Earlier in the year, the IIMS Canada Committee had organized half a day of training to follow their AGM. The presence of Luc Tremblay from Transport Canada was most welcome.

In September, I accepted an invitation and was honoured to represent IIMS at the 30th anniversary of the Marine Surveyors Association of Bangladesh (MSAB) in Chattogram. It was a long way to go for a one day conference, but I am glad I made the trip, not least as it gave me the opportunity to speak openly with the Director of Shipping.

Exhibiting at the KORMARINE exhibition in Busan, South Korea was an experience and to have the opportunity to put IIMS on the international stage at such a prestigious event was welcome.

Our annual gathering at Palma, Mallorca, in April attracted more delegates than usual. My thanks to local surveyor, John Walker, for helping to put together a quality speaker programme. We'll be back there in 2024.

In mid-year, we ran our first online only seminar for members in Australia and New Zealand. The event attracted 80 registrants and proved to be a fruitful day. A wide range of topics were presented and discussed. My thanks to AMSA, the Australian maritime regulator, for putting up two speakers and my further thanks to Mick Uberti and others locally for facilitating the event.

In the UK we organised several training seminars at various locations. Our spring and autumn training events for yacht and small craft surveyors both drew large audiences, mostly online. In April under the guidance of Fraser Noble, a one day heel test training event drew both coding examiners and general surveyors in their numbers to Haslar Marina, Gosport.

Paul Homer and I have continued to host and deliver the quarterly three hour online report writing seminar. These continue to attract large audiences, notably from new students, sometimes as many as 50 delegates each session.

Our annual inland waterways training event for narrowboat surveyors took place in Nottingham and was an excellent day with an opportunity to look around some of the vessels and workshop facilities at the marina. Thanks Chris Williams for his organisational skills and help.

In November I ventured to Scotland, the first time for several years, to meet members and to help deliver training. The event attracted nearly 20 delegates, the best turn out I can recall. We spent a day doing some practical and theory heel test training before meeting on the second day at The Royal Northern and Clyde Yacht Club in Rhu near Helensburgh for a day of presentations. Listening to Ian Nicolson (for the second time this year) delivering his surveying masterclass based on his 75 years' experience was a delight. Quite remarkable for a nonagenarian. We also enjoyed an informal dinner in Helensburgh – a chance to network.

The roll out of our first practical four day residential surveying course in November at Lyme Regis was something of a personal triumph. I have long advocated the chance for those who are new to surveying to be able to get some hands-on experience. Over the course of the event, the 12 delegates got the chance to forensically survey several boats and to complete a report assignment test for subsequent review. My thanks to David Pestridge, Geoff Waddington and Chris Olsen who were present to ensure fair play and to keep an eye on the delegates, advising and guiding where necessary. The success of this event means we will repeat it.







# Yacht Coatings Technical Insight

*A programme for those requiring a deeper understanding of coatings*



Yacht Coatings Technical Insight  
**HANDBOOK**

## Other developments

Elsewhere in the IIMS family, there have been new some significant developments, most notably the announcement and roll out of the Yacht Coatings Technical Insight course by IIMS' wholly owned subsidiary, the Marine Surveying Academy Ltd (MSA). This essential two day programme is not designed to make paint experts out of marine surveyors, but given how complex paint coating systems are becoming, it will upskill those who need more knowledge in this area. And it is not just aimed at surveyors. It will appeal equally to newbuild and refit yard personnel, client and owner's reps, applicators and more.

The pilot course was run in the UK at the AkzoNobel facility in Southampton during July. The small, invited group who attended all gave very positive feedback. More encouraging comments were received after we ran the first course proper for a group of a dozen people in Palma later in the year.

You will be hearing plenty more about the Yacht Coatings Technical Insight course as we announce dates around the world in 2024. And I must acknowledge the work that Gareth Thomas and his team at AkzoNobel have put in to help develop the training content, with considerable contributions from Ken Hickling too.

The eCMID Accredited Vessel Inspector (AVI) programme run by

MSA on behalf of the International Marine Contractors Association has continued to perform well. Over 900 people have applied for accreditation since we started the scheme back in 2015 and over 600 now hold AVI status. New applications are steady. The growing offshore wind farm industry is certainly giving new energy to the scheme with a number of new worldwide installations requiring CTV (Crew Transfer Vessel) inspections.

My thanks to Hilary Excell (my fellow MSA Director) and her colleagues Pui Si Chung and Sharon Holland (who rejoined the business to provide one year's maternity cover for Rachel Moores).

## External involvements

IIMS continues to engage in a number of activities outside the Institute.

As a founding member of the Maritime Professional Council (MPC) I continue to contribute at our regular online meetings. This year the MPC has discussed and tackled a number of issues - lithium-ion battery fires amongst them! We have produced and published a report entitled 'Kind Leadership' and the topic of the MCAs Workboat 3 has also come under the microscope.

The Institute continues to contribute to the Boat Safety Scheme and British Standards Institute committees.

## My personal thanks

It is important that I recognize and acknowledge those who have helped to keep the Institute on the rails over the past year. IIMS and MSA are teams of busy professionals who are dedicated to providing the best possible customer support to our various communities. My thanks to my 10 colleagues.

I am grateful to all those who choose to give up their time to further the professionalism of our members. That means the various Regional Directors, in-country representatives, our education tutors and markers, committee members, those who have spoken at events and all our suppliers who underpin and make it possible for us to do what we do.

I would also like to express my gratitude to the IIMS Ltd Executive Board and the wider Management Board who have continued to meet at quarterly intervals. A word of gratitude also to Geoff Waddington (Chairman of Administration) who has continued to look after the overall welfare of the team and Paul Homer (Chairman of Standards) who has had the usual mix of complaints to sift through as well as supporting me in delivering our report writing online seminars. My final thanks go to Peter Broad, the current IIMS President. He has worked tirelessly behind the scene on a number of projects and initiatives.

So in conclusion, that's a whistle stop tour around the year at IIMS looking back at some of the highlights of the past 12 months. Already my mind has turned to the many challenges and opportunities that await us in 2024!

## IIMS & Broadreach Marine exhibit at KORMARINE

Recognised as one of the premier exhibitions in the shipping world, the large KORMARINE show for the shipping, offshore, oil and gas industries opened its doors on Tuesday 24 October at the Bexco exhibition centre in central Busan, South Korea.



*Pictured above (from left to right): Peter, Nika and Mike on the stand*

*Pictured below (from left to right): Peter Broad, His Majesty's Ambassador to South Korea, Colin Crooks and Mike Schwarz*

IIMS President, Peter Broad's company Broadreach Marine Ltd, (locally based in South Korea), joined forces with the Institute to share a stand at the busy four-day event. Organisers reported a large attendance with visitors from around the globe coming to the show.

The show attracted hundreds of exhibitors from worldwide businesses, filling the huge exhibition halls. The shared Broadreach and IIMS stand was situated as part of the Great Britain & Northern Ireland pavilion stand which featured around 20 companies from the UK.

Over the course of the event some members came to meet Peter and

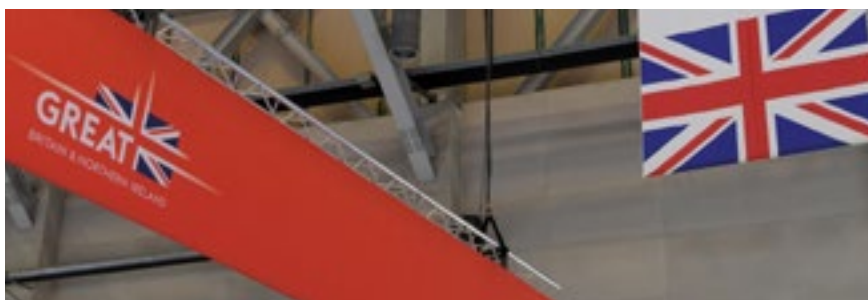




## *Meeting with the Korean Registry*

Mike on the stand. An informal gathering was held for IIMS members and eCMID Accredited Vessel Inspectors too. Exploratory meetings also took place with other interested parties, including the Korean Registry.

Commenting on the event, the IIMS President said, "It has been a great pleasure to co-host our stand in the UK Pavilion at KORMARINE with the IIMS this year. Mike and I enjoyed meeting some of our members and having targeted meetings with marine regulators and surveying firms based in South Korea. It has been a great opportunity to wave the IIMS flag for the first time at such a huge event in Busan and I am sure that we will have several follow-up emails and calls with the people and organizations we met. It was especially gratifying to meet Ambassador, Colin Crooks, from The British Embassy in Seoul and several of the Department for Business & Trade, Maritime Business Development team who attended the Trade Show and an evening reception hosted by the Embassy. I look forward to building on our contacts and developing the IIMS Brand and all that it stands for here in Korea."





## New practical surveying course launched

Last month IIMS launched a new practical surveying course at the Boat Building Academy in Lyme Regis, UK. The four-day residential programme attracted 12 students. The opening day was classroom based and largely devoted to understanding the importance and significance of accurate report writing techniques. The second and third days were set aside to physically survey several different vessels with senior members David Pestridge, Geoff Waddington and Chris Olsen present to guide and assist students. On the final day the delegates selected one of the boats they had surveyed in the previous days and completed a mock survey online, based on what they had seen with a list of graded defects.

*David (third from the left) and the 12 students*



## IIMS Scotland working group two-day event

Mid November saw the IIMS Scotland working group come together for a two-day event. A group of 16 surveyors met in Rosneath, near Helensburgh for some practical heel test training. This was followed later in the day by an afternoon in the dry studying theory on the same. After a well-attended dinner at a local curry house, delegates assembled at the yacht club the following morning for a series of presentations. Ian Nicolson, a remarkable nonagenarian, spoke eloquently and passed on some expert tips and advice to surveyors present. Also of note was the forthright presentation by Kerrie Forster, CEO of the Workboat Association. He spoke knowledgeably about the safety challenges faced by the Scottish aquaculture sector.



*Spotted at RB Marine, Rosneath. To repair or scrap?*





## Recent new IIMS members and upgrades

### Full members

Guy Vanhaecke	MIIMS	Belgium
Hans de Koning	MIIMS	Dominican Republic
Lalinda Namal	MIIMS	UK
Marko Kosuljandic	MIIMS	Croatia
Richard Nicolson	MIIMS	UK

### Associate members

Andreas Wagner	AssocIIMS	Germany
Daniel Ranger	AssocIIMS	New Zealand
Darius Ardeshir Aga	AssocIIMS	India
Dean Kennedy	AssocIIMS	New Zealand
Engin Mardin	AssocIIMS	Turkey
Garth Steyn	AssocIIMS	St Maarten
Ingolf Schneider	AssocIIMS	Austria
Jorg Sulzer	AssocIIMS	Portugal
Kaung Ye Minn	AssocIIMS	Mayanmar
Kenneth Hodgins	AssocIIMS	Virgin Islands
Paul Stock	AssocIIMS	New Zealand

### Graduate members

Alvise Narduzzi	GradIIMS	Italy
Andrew Brown	GradIIMS	Brazil
Cihan Baris	GradIIMS	Turkey
Dominic Hinwood	GradIIMS	UK
Linton Law	GradIIMS	UK
Victor Narynskyi	GradIIMS	Canada

### Affiliate members

Alex Lloyd	AffiliIIMS	UK
Barry Devlin	AffiliIIMS	UK
Deon Brits	AffiliIIMS	Canada
Finlay Somerville	AffiliIIMS	Ukraine
James Wilmot	AffiliIIMS	UK
Kostiantyn Halunets	AffiliIIMS	Ukraine
Mike Wills	AffiliIIMS	Canada
Niall Galway	AffiliIIMS	Ireland
Nimrod Palzur	AffiliIIMS	Israel
Sergey Pazdnikov	AffiliIIMS	Israel
Timothy Grant	AffiliIIMS	Australia

### Technician members

Jendrik Odenwald	TechIIMS	Germany
------------------	----------	---------

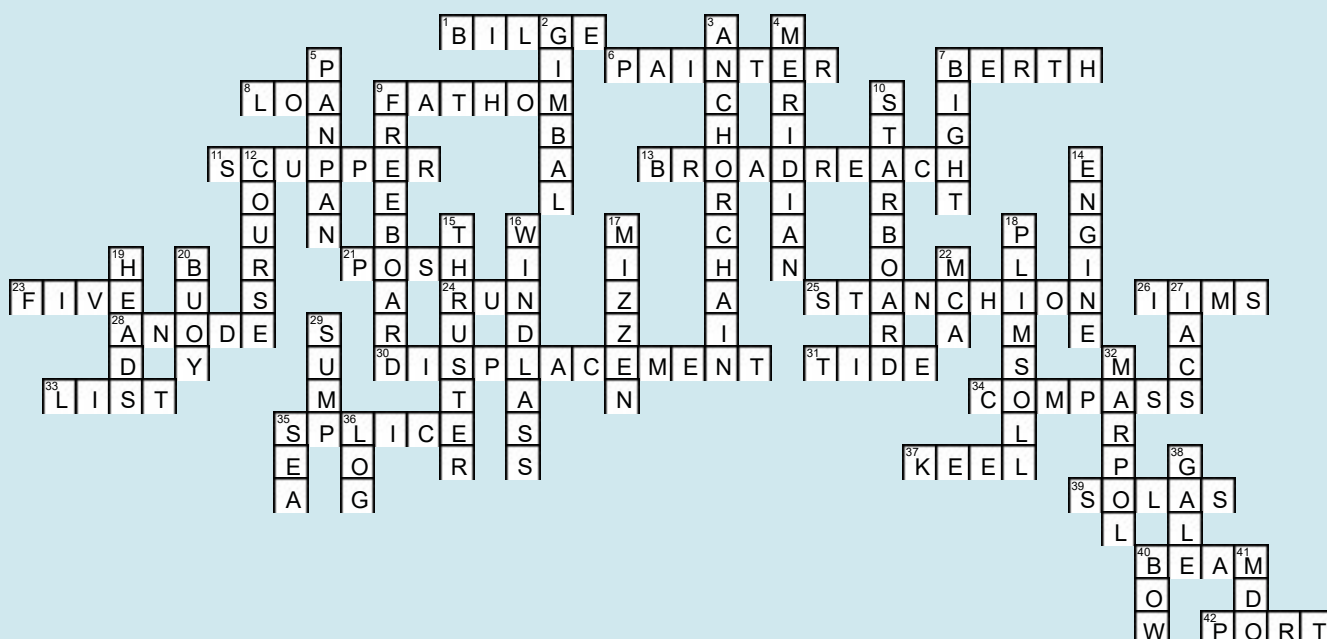
### Supporting members

Marcus Bellatti	SuppIIMS	UK
Ali Ozdas	SuppIIMS	Turkey

IIMS congratulates Alvise Narduzzi, Cihan Baris, Dominic Hinwood, Linton Law and Victor Narynskyi for completing their studies in the IIMS Professional Qualification in Yacht and Small Craft Marine Surveying.

IIMS congratulates Alvise Narduzzi for completing their studies in the IIMS Professional Qualification in Cargo and Commercial Ship Marine Surveying.

## Answers to Peter's Maritime Crossword 2023 on page 142



# Celebrating thirty years of the Marine Surveyors Association of Bangladesh



আঞ্চলিক মেরিন সার্ভেয়ার 'বিকল' হাতে অতিবিশ্ব

## মেরিন সার্ভেয়ার এসোসিয়েশন অফ বাংলাদেশ'র ৩০ বছর পূর্তি

কর্মান্বিতা আয়োজনে পালিত হল মেরিন সার্ভেয়ার এসোসিয়েশন অফ বাংলাদেশ'র ৩০ বছর পূর্তি। অনুষ্ঠানে কর্ণফুলী নদীতে জাহাজ নেভিগেশনের প্রতিবন্ধকতা নিয়ে আলোচনা করেন নৌ প্রকৌশলী অধ্যক্ষ ইমরান আলী।

**The MSAB conference made front page headlines**

**Mike Schwarz is joined by the MSAB committee**

On Saturday 16th September 2023, Mike Schwarz (CEO) represented IIMS when he attended the special one day conference at Hotel Agrabad, Chittagong, Bangladesh, as Guest of Honour, to help celebrate the 30th anniversary of the Marine Surveyors Association of Bangladesh (MSAB). An audience of more than 100 delegates from the marine surveying profession and wider local shipping industry had assembled to take part in the event. The conference was also broadcast live via Facebook.

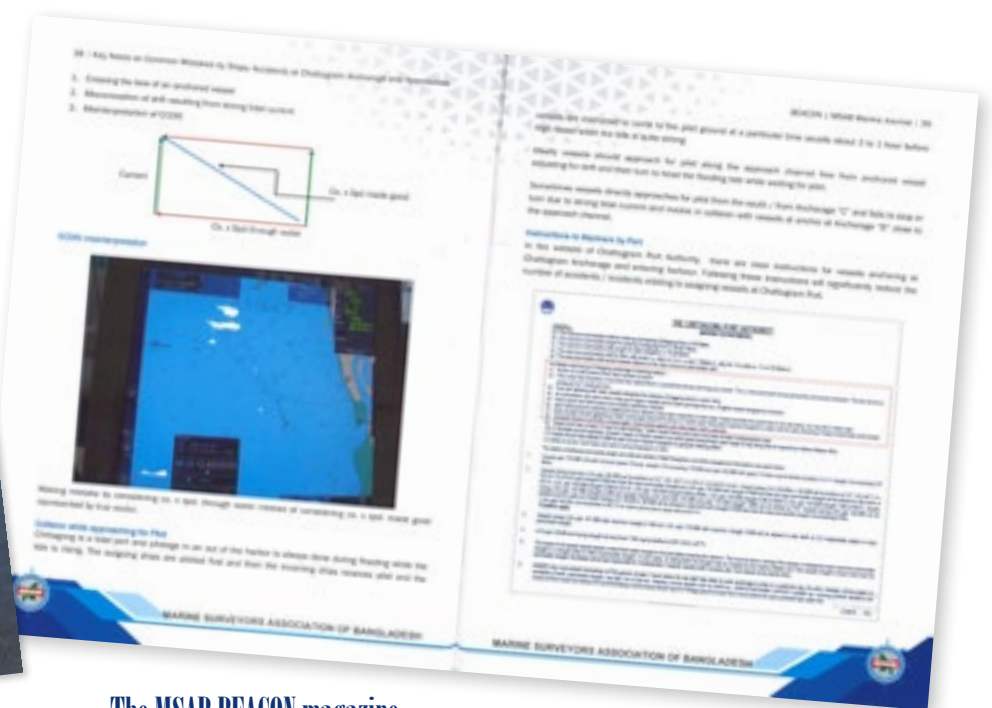
Opening remarks and the welcome were made by Captain Fasihur Rahman. Following a short presentation by Captain Sakhawat Hossain, who reviewed the history of MSAB since its formation, Capt Rahman came back to the podium to give an overview of the marine surveying profession.

There followed a fascinating insight into and analysis of the navigability of the Karnaphuli River, the lifeline for the Bangladeshi shipping sector on which the busy port of Chattogram (formerly Chittagong) is situated, knowledgeably delivered by Mar.Engr. Md Rashedul Islam.

One of the highlights of proceedings was the ceremonial unveiling of MSAB's first ever publication, the excellent BEACON magazine. Both Peter Broad (IIMS President) and Mike Schwarz (IIMS CEO) were honoured to be invited to contribute articles for the publication.







## The MSAB BEACON magazine

As part of his article, Peter said, "We must work together to encourage governments to invest in the marine industry and our profession, to stimulate growth and help prepare for the future. I believe that we are already a long way behind and there is a vacuum to fill."

"I hope that MSAB and IIMS can share our common goals and experiences in the future and gain more support and development for professional marine surveyors across the marine industry," he added.

Mike Schwarz focused his article commentary on the next generation of surveyors when he said, "This leads me to ask where the next generation of marine surveyors will come from. Today's young people seem to have a different work ethic and a totally different outlook on life. They don't want to be waiting for a ship to berth in the middle of the night in inclement weather – well they certainly don't in the UK! This means as an industry we need to enthuse the next generation about the surveying profession and that is a challenge. They will need mentoring too. When a surveyor retires, with him/her goes many years of experience. Consider mentoring a younger surveyor and passing on your skills and knowledge. It can be very rewarding to pass what you know on to another."

"It seems that those in the shipping and boating industry just do not value the work of a marine surveyor highly enough. And I for one agree - they don't! Being a marine surveyor can be a tough and uncompromising job at times, but you don't need me to tell you that. Of course, it has compensations too," he concluded.

The 182 page BEACON journal is available to download at <https://bit.ly/3PKxBwZ>. Or scan the QR code.



In his keynote address, Mike Schwarz took the opportunity to give a short overview of the many and varied activities that IIMS is currently involved with in his keynote address to the audience, which was much appreciated, both by local members and others too.

## Distinguished guests



Mike delivering his keynote address

Chief Guest, Commodore Mohammad Maksud Alam, Bangladesh Director General of Shipping, took to the stage to give his keynote speech. In it, he stressed the importance and need to raise and maintain standards across the surveying and shipping industry.

In his closing remarks, Captain Mahfuzul Islam, the current President of MSAB, expressed his thanks to all those who had participated before moving on to the awards ceremony. To mark this auspicious occasion, a number of special awards were made at the end of the Conference.

Both MSAB and IIMS have agreed on closer collaboration between the two organisations going forward.

The following morning, the MSAB conference made front page news headlines in the Chattogram daily paper, a remarkable end to a very successful celebration.

In conclusion, I am most grateful to the MSAB President and committee for extending their invitation for me to be present to share in their celebrations. It was an adventure and a great experience. I also thank those who took time out of their schedules to oversee my transportation locally, their hospitality and for keeping me safe in Chittagong.



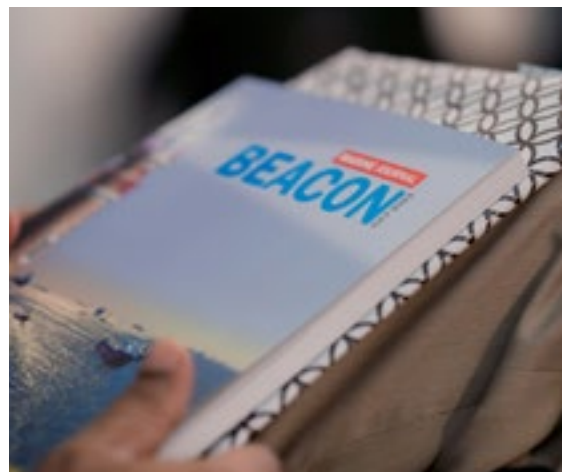
**Commodore Mohammad Maksud Alam**



**Mike Schwarz presents a bouquet of flowers to Captain Mahfuzul Islam, MSAB President**



**Mr Mohammad Sakhawat Hossain unveiling the BEACON magazine**





## Boats.com presents the findings of its Electric Boat Market Study 2023



### Highlights:

- Experts forecast the strongest growth for electric boats in Europe, ahead of North America
- Large differences in supply, demand and interest across Europe
- Many electric boats online available in entry-level and mid-priced

Electric motors are increasingly conquering European waters according to a study carried out by Boats.com. Initially eyed critically, the quiet and climate friendly electric boats are beginning to gain acceptance and popularity. The latest market research forecasts average annual growth of 12.7 per cent for electric boats until 2028 (CAGR). The analysts expect the strongest growth in Europe ahead of North America and the Asia-Pacific region.

For the study, Boats.com analysed the data of 11 leading European online sales platforms for boats that have joined forces under the umbrella of Boats Group, the leading platform for the boat trade. In total, the analysis includes the search behaviour of 46 million active potential buyers particularly across the

six main European marketplaces in UK, France, Italy, Spain, Netherlands and Germany of Boats Group. The data basis on which the study is based covers the period of the past four years (2019-2023). Additionally, the boat sales on the platforms by over 4,000 brokers, dealers and original equipment manufacturers were analysed.

Here are the key findings of the study:

Supply increased by 2.5 times in the last two years.

Since 2021, the range of electrically powered boats on the online sales exchanges has increased two and a half times. Compared to the year 2019, the online exchanges recorded that the total electric boat listings on the platforms increased by 60 percent in 2021, 160 percent in 2022, and 190 percent in 2023.

The Dutch and French are particularly interested.

The Google Trend Analysis reveals that interest in electric boats is not equally strong in all countries across Europe. For example, the search engine recorded a particularly high number of searches for electric boats in the Netherlands and France.

In Belgium, Sweden, the UK and Ireland, there are also comparatively many searches for electric boats.

Interest seems to be less pronounced among Spaniards and Germans at the moment. These countries are the worst performers in the search rating.

UK, Netherlands and Germany provide the largest supply, Italy and Spain lag behind.

Most of the electric boats listed for sale on the online marketplaces have their moorings in the UK (first place), the Netherlands (second place) and Germany (third place).

While interest is also high in the UK and the Netherlands according to Google Trend Analysis, a different picture emerges in Germany. There, the industry seems to be further along than the buyers. Although the country is one of the top three suppliers of electric boats, Germany records lower search queries for electric boats than other countries.

The southern European boating industry seems to be hesitant about electric boats. Compared to the rest of Europe, it is lagging behind in the electrification of its product range.

Electric boats predominantly available in the entry to medium price range

Electric boats are catching up, especially in the lower to high price segment. Thirty eight per cent of the total electric boat supply on the online exchanges is in the entry-level and mid-price segment up to 50.000 €/GBP. So far, they are less common in the luxury segment, probably due to the overall increase in price sensitivity.

Balanced offer of new and used electric boats.

The supply of new electric boats on the European online exchanges is slightly larger (57 per cent) than the supply of used ones (43 per cent), but overall, it is balanced. It remains to be seen how the second-hand market for e-boats will develop. It is also interesting to note that electric boats sell 40 per cent faster than diesel boats on the platforms.

"The Electric Boat Market Study 2023 paints an inhomogeneous picture in Europe in terms of both demand and supply. In some markets we see a much higher interest and demand than in other European countries. Overall, we see a north-south divide on the supply side. We investigated that there is a large supply of electric boats in the lower and medium price segments on our platforms. This is important, because CO2-neutral mobility on the water should be available for every boat driver," said Nadja Sörgel, managing director Europe at Boats Group.

In conclusion, the study reveals that the electric boat market is on the rise and shows no signs of slowing down. Now, Northern European countries are at the forefront of this trend, with the largest supply and interest from buyers. In response to increased interest, electric boat brands are expanding their supply. As the world becomes more environmentally conscious and people are looking for more renewable and sustainable options in terms of transportation, the global electric boat market will take off and gain significant market share in the next five years.

# NEW marine reports and guides

## Canal & River Trust 2022/23 Annual Report & Accounts published

The Report highlights the importance of the 250-year-old canal network in helping to address key societal challenges, but also the significant risks the ageing canals are facing due to a shortfall in funding and more frequent extreme weather events brought about by climate change.

Whilst the Report celebrates record usage of the network with 888 million visits, and more boats than ever before, it also highlights the impacts of rapid inflation and external, global factors affecting supply chains. These have added to the increasing cost of maintaining the UK's 2,000-mile network with the many thousands of structures including reservoirs, aqueducts, bridges, locks and heritage buildings.

There was an increase in income to £225.1 million (2021/22: £214.6 million) mainly due to inflationary increases in commercial revenue. Spending on charitable activities increased to £199.5 million (2021/22: £180.2 million). The financial contribution from the government, representing just under a quarter of our income, remained frozen with no allowance for inflation and therefore continued to decline in real terms.

Download the report at <https://bit.ly/47CAJm7>.



## ClassNK releases guidelines on the safe transportation of electric vehicles

In a bid to bolster the safety of maritime transportation of electric vehicles (EV) at a time of major concern for the shipping industry, ClassNK has unveiled a set of new guidelines and measures.

ClassNK has developed the Guidelines for the Safe Transportation of electric vehicles, which describes the characteristics of EV fires and provides guidance on how to respond, built upon dialogue with experts, operators, manufacturers, and other stakeholders.

Publishing these guidelines is a sensible move by ClassNK's part given the surge of challenges presented by climate change and global warming, the export of hybrid and EVs powered by Lithium-ion (Li-Ion) batteries. There exists a faction of industry insiders who argue that the transport of these vehicles may not be completely safe.

In the case of a thermal runaway, the risks are considerably amplified. This dangerous occurrence involves an uncontrolled escalation in temperature within the battery, resulting in a swift and forceful discharge of energy. The consequences of such an event can be dire, potentially leading to catastrophic explosions or fires.

"Controlling li-ion battery fires are almost impossible, once the fire catches on to nearby vehicles their frames melt and the work to extinguish is extremely challenging", stated Henrik Meyer, senior quality manager, ports, terminals and stevedoring at Wallenius Wilhelmsen.

The aim of the guidelines is to assist in the development of fire safety measures for the maritime transportation of EVs and, thus, enhance the overall safety of such transportation for not only ships themselves but also for their respective crews.

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



## Liquefaction remains greatest contributor to deaths in dry bulk sector

Cargo liquefaction remains the greatest contributor to loss of life associated with bulk carrier losses while grounding remains the main cause of ship losses, according to the recently published Bulk Carrier Casualty Report 2013-2022 from INTERCARGO.

The document was submitted to the International Maritime Organization in May, ahead of the 9th session of its Sub-Committee on Implementation of IMO Instruments (III), which took place at the IMO from 31 July to 4 August.



# NEW marine reports and guides

The Casualty Report provides 10-year information on bulk carrier casualty statistics, looking at trends in casualties in terms of both loss of life and loss of ships, drilling down into the size and age of vessels as well as Flag State performance.

While the report shows a clear trend of improved safety and declining ship losses at a time of fleet growth, it also shows that major incidents involving loss of life are still occurring and the industry must examine why they are still happening – there is no room for complacency.

Operations Manager Xianyong (Joe) Zhou, says: "As the voice of global dry bulk shipping, INTERCARGO is determined to help lead the response to these events. While the Report highlights that improvements are being made in safety, there is still clearly more to do to make shipping safer. We must continue to learn how we can best protect the lives of seafarers as well as the vessels and their cargo from damage and loss."

The report highlights that between 2013 and 2022, 26 bulk carriers of more than 10,000 deadweight tonnes (dwt) were reported lost, with the tragic loss of 104 seafarers' lives. Statistics for 2022 alone show the loss of two bulk carriers, one due to a collision and the other from losing power and sinking in rough seas, with a loss of 12 seafarers.

The rolling report also highlights that four of the five bulk carrier casualties, which led to the loss of 70 lives, occurred as a result of cargo liquefaction; four were loaded with nickel ore and one with bauxite.

In terms of ship losses, grounding was the most common reported cause between 2013 and 2022, accounting for 12 bulk carriers lost (46.2%), with various other causes including problems with machinery and equipment.

Read the report online at <https://bit.ly/3DBwvO9>. Or scan the QR code.



## ICOMIA launches essential new Paint Colour Guide: Yacht Coating Technical Guidelines

The International Council of Marine Industry Associations (ICOMIA) has produced a Paint Colour Guide: Yacht Coating Technical Guidelines as a result of their work with leading yacht coating manufacturers including Akzo Nobel, Hempel, Boero, CMP Chugoku and specialist coating consultants the Safinah Group.

The guide has been produced by ICOMIA members, for their members and the wider marine sector, in conjunction with industry technical experts including yacht paint surveyors, inspectors, chemists and formulators. It aims to provide clear, objective industry guidance on the use of paint colours and yacht coatings.

The days of yachts being painted only with the typical blue hulls and white superstructures are long gone. Today's large yacht customers are desiring far more choice in terms of customisation and individuality of colours and special effect coatings for their yachts, from pastel colour shades to metallic, or pearlescent effect coatings. The choice of finishes is almost unlimited. However, with this expansion of colour choice comes a growing complexity around colour range suitability, application successes, ongoing maintenance and long-term reparability, especially with the increasing size of vessels.

The publication aims to provide a high-level understanding of the complexities and characteristics of colour in aesthetic coatings (topcoats) so that owners, applicators, management companies, shipyards and so on can make informed decisions about colour selection and the potential associated challenges with its application and in-service maintenance.

For more information go to <https://bit.ly/3ZxWqjY>.



## Boosting cybersecurity awareness in inland navigation and especially for ports

The European Committee for drawing up Standards in the field of Inland Navigation (CESNI) has published a good practice guide on cybersecurity in inland navigation, focusing on ports. The good practice guide was developed in partnership with the European Federation of Inland Ports (EFIP) and aims to be an accessible framework for all inland ports, regardless of their size or location in Europe. Here is an insight into the new publication and its key takeaways.

As the world continues to become more interconnected and more reliant on digital services, cybersecurity attacks are continually increasing. Several ports have been victims of cyberattacks in the past few years, demonstrating that this sector is not an exception to the rule. Indeed, one of the strategic subjects for the future of inland navigation is digitalisation. But this evolution is also accompanied by new challenges and risks such as cybersecurity.

The good practice guide is intended to provide an overview of cybersecurity risks, threats, and mitigation measures, primarily within the scope of inland navigation ports. The main objectives are for port stakeholders to understand the motivations and actors behind cyberattacks, as well as the assets of ports to be considered when evaluating cybersecurity threats and risks. This guide also gives an overview of good practices for the implementation of cybersecurity risk mitigation measures.

The guide is divided into three parts:

1. Cybersecurity threat landscape of inland navigation ports: this part describes the port threat landscape, including threat actors, port assets, threat taxonomy, guide and attack scenarios.
2. Mitigating cybersecurity risks for inland navigation ports: this part details the portfolio of mitigation actions that should be taken to reduce cybersecurity risks for ports. It constitutes the core of this guide, with about 120 measures tailored to the inland navigation port situation.
3. Tips for the implementation of risk mitigation measures: this part outlines actionable security hygiene measures to be taken as a first step by IT and non-IT stakeholders.

## ABS Annual Report on Port State Control for 2022

This ABS Annual Report on Port State Control (PSC) provides information to owners on deficiencies identified on ABS vessels during inspections carried out by the various PSC regimes globally during the 2022 calendar year. This report is being made available to assist owners by providing awareness of potential areas of concern that have been identified on ABS classed vessels.



PSC 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 its 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.

Download the report at <https://bit.ly/3KiW36o>.  
Or scan the QR code.



Although this good practice guide is focused on inland ports, some aspects and mitigating measures are also relevant for other actors of inland navigation like waterway authorities or barge operators.

Download the guide at <https://bit.ly/3Onb8Xj>.



## The Future of Maritime Safety 2023: collaboration and data are key in tackling safety challenges

Inmarsat's new safety report analyses Global Maritime Distress and Safety System (GMDSS) information that has registered 853 distress calls from January to December 2022, an increase from 794 calls the previous year.

Safety data and reports can be used to proactively tackle the root causes of repeated and well-known safety issues to reduce incidence rates, rather than just monitor trends and improve incident response.

In this report you will discover how maritime safety data and reports can be analysed to improve maritime safety through adopting goal-based safety standards, creating and utilising standardised international marine casualty and incident data and sharing anonymised data between international and national safety bodies plus much more.

To improve standards and reduce the human, environmental and financial impact of marine casualties, the Future of Maritime 2023 report calls for cooperation and collaboration built on solid data and the collective desire to manage risk to the lowest practicable level.

This year's report also reveals that the number of distress calls from ships at sea remains high, despite a continuing decline in vessel losses as well as The Future of Maritime Safety Report 2023 provides insights into vessel distress, derived from the Inmarsat's Global Maritime Distress and Safety System (GMDSS) data gathered in 2022.

### Key highlights

- Analysis of aggregated data registered over Inmarsat RescueNET services received during 2022, and comparisons with statistics arising from data received in 2021 and earlier.
- Distress calls analysed by vessel type, gross tonnage, year of build, seasonal weather, Flag State and more.
- 853 GMDSS distress calls registered on Inmarsat networks in 2022, up from 794 in 2021.
- Safety should be prioritised as shipping moves towards greater digitalisation and adopts new fuel and propulsion technology for its decarbonisation journey.
- Seafarer well-being remains a core component of safety and must remain high on the post-pandemic agenda.
- Regulation, the human element - including human-centric design, - and technology need to be integrated to address safety challenges as shipping transitions to alternative fuels, adopts decarbonisation technologies, and continues to digitalise.

Request a copy of the report at <https://bit.ly/3EUPpQY>. Or scan the QR code.



## ABS publishes the January 2024 Edition of Guide for Performance Standards for Corrosion Protection

The American Bureau of Shipping has published the January 2024 Edition of Guide for Performance Standards for Corrosion Protection.

Corrosion protection requirements are specified in SOLAS Chapter II-1/3-2 for protective coatings of dedicated seawater ballast tanks in all types of ships and protective coatings of double-side skin spaces of bulk carriers, and in SOLAS Chapter II-1/3-11 for protective coatings or corrosion resistance materials of cargo oil tanks of crude oil tankers.

SOLAS Chapter II-1/3-11 specifies additional corrosion protection requirements for the cargo oil tanks of crude oil tankers contracted on or after 1 January 2013.

In 2019, this Guide superseded the ABS Guide for the Class Notation Coating Performance Standard (CPS) and introduced the additional ABS CPS-COT and CorrResistant notations for compliance with the SOLAS Chapter II-1/3-11 requirements for cargo oil tanks.

January 2024 Edition introduces CPS-B (seawater ballast tanks), CPS-D (double-skin spaces), and CPS-V (void spaces) notations to denote the area to which approved protective coatings are applied.

CPS-B, CPS-D, CPS-V, CPS-COT, and CorrResistant notations are intended for all SOLAS-compliant vessels but may also be issued to other types of vessels such as non-SOLAS vessels, MODU CODE compliant vessels, and ship-type floating production installations.

This Guide is provided to identify compliance with the IMO regulations on corrosion protection for the builders, owners, and operators of vessels classed with ABS.

The notations can help to promote the effective application of the IMO Performance Standards on ABS-classed vessels.

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





## IMO Implementation of IMO Instruments Ninth session (III 9)

Summary Report

### Revised Port State Control procedures effective from January 2024

The Sub-Committee on the Implementation of IMO Instruments (III) 9th session took place 31 July to 04 August 2023 where, among other things, the draft amendments to the Procedures for Port State Control were finalised.

The Sub-Committee on Implementation of IMO Instruments (III) brings together flag, port and coastal States to consider implementation issues, including the analysis of consolidated audit summary reports from the mandatory IMO Member state Audit Scheme. Lloyd's Register has helpfully provided the following summary and overview highlighting key outcomes from the session:

III 9th session finalised general guidance on the assessment and application of remote surveys and remote audits for inclusion in the draft Survey Guidelines under the Harmonized System of Survey and Certification (HSSC) and the draft Revised guidelines on the implementation of the International Safety Management (ISM) Code by Administrations. The guidance focusses on the circumstances, scope, and type of survey (e.g. annual, renewal, intermediate, etc.) or audit where remote technology may appropriately be employed and also provides circumstances where in-person survey or audit must be used either as a supplement to remote methods, or as the only appropriate method when remote technology is not suitable. Additional guidelines are expected to be finalised at III 10 (Jul 2024).

III 9th session finalised draft amendments to the Survey Guidelines under the Harmonized System of Survey and Certification (HSSC). These draft revisions take into account the amendments to the relevant mandatory instruments due to enter into force up to and including 31 December 2023 and amendments to SOLAS which enter into force 1 January 2024. The revisions to the Guidelines are expected to be adopted at Assembly 33 (Dec 2023) and will enter into force 1 January 2024.

III 9th session also finalised the draft amendments to the Procedures for Port State Control (A.1155(32)). The draft amendments include guidelines for the detention of ships under MARPOL Annex VI. The revisions to the Guidelines are expected

to be adopted at Assembly 33 (Dec 2023) and will enter into force 1 January 2024.

Amendments to the Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)

III 9th session finalised amendments to the Survey Guidelines under the Harmonized System of Survey and Certification (HSSC). These draft revisions take into account the amendments to the relevant mandatory instruments due to enter into force up to and including 1 January 2024 including but not limited to:

- MARPOL Annex VI: (as amended by MEPC.328(76))
  - Confirmation of the update of the Ship Energy Efficiency Management Plan (SEEMP).
  - Confirmation of the ship's attained EEXI.
  - Statement of Compliance related to operational carbon intensity rating.
- Amendments to SOLAS (MSC.474(102))
  - Towing and mooring equipment.
  - Openings in the shell plating below the bulkhead deck of passenger ships and the freeboard deck of cargo ships.

The revisions to the Guidelines are expected to be adopted at Assembly 33 (Dec 2023) and will enter into force 1 January 2024.

#### Procedures for Port State Control (A.1155(32))

III 9th session also finalised the draft amendments to the Procedures for Port State Control (A.1155(32)). The draft amendments include guidelines for the detention of ships under MARPOL Annex VI. The revisions to the Guidelines are expected to be adopted at Assembly 33 (Dec 2023) and will enter into force 1 January 2024.

The revisions include draft amendments to:

Guidelines for the detention of ships under MARPOL Annex VI (Appendix 2, Section 5, Detainable Deficiencies) were amended to include:

- The absence of a valid required Statement(s) of Compliance for Carbon Intensity Rating from 2023 and onwards of each following year (Regulation 28) would be considered as a detainable deficiency.
- It was clarified that port State control officers (PSCOs) should take a pragmatic approach if a ship has changed flag and/or company and there is evidence the losing Administration has not acted in accordance with regulation/s or data was not provided by the previous company when the ship was transferred.

On ships provided with an equivalent means of SOx compliance, i.e. an EGCS:

- It would be considered as a detainable deficiency if an Exhaust Gas Cleaning System (EGCS) fails to provide effective equivalence to the requirements in MARPOL Annex VI, regulations 14 and 14.4; and
- It would be considered as a detainable deficiency if the sulphur content of any fuel oil being used in combustion units not connected to the EGCS exceeds the limits stipulated in MARPOL Annex VI regulation 14 (considering the provisions of MARPOL Annex VI regulation 18.2).

The revised Procedures for Port State Control are expected to be adopted at IMO Assembly 33 (Dec 2023) and will enter into force 1 January 2024.

Download the guidance and summary at  
<https://bit.ly/47zujEX>.



## Requirements for lifting equipment inspection, and certification

The Gibraltar Maritime Administration has issued a shipping information notice on the requirements for lifting equipment inspection, and certification. Following a recent fatality on board a Gibraltar-registered vessel involving the failure of a hatch cover gantry crane, a preliminary investigation has highlighted the possible need to remind owners and managers of Gibraltar vessels of the requirements with regard to lifting operations and lifting equipment maintenance, inspection, test, and certification.

The majority of injuries to crew involving lifting equipment occur as a result of persons being struck, crushed or caught in moving parts and equipment. The cause is often attributed to incorrect practices or to errors of judgement. Other types of serious accidents are caused by the failure of lifting equipment or single point failures of equipment. Inappropriate use of lifting equipment and failure of lifting equipment can also have an adverse effect on a vessel's stability, and on smaller vessels, this could possibly lead to capsizing.

Gibraltar vessels are required to comply with the UK Merchant Shipping and Fishing Vessels (Lifting Operations and Lifting Equipment) Regulations 2006, guidance on this regulation is provided by the UK Marine Guidance Note MGN 332 (M+F) as amended.

These regulations place certain duties on vessel operators and managers with regard to lifting operations and lifting equipment maintenance, inspection, test and certification, and the following highlights some of these requirements.

Companies should note that during attendance on-board Gibraltar vessels and also during safety management audits at company premises, surveyors from this department will examine the procedures for lifting appliance maintenance, inspection, and certification.

Read the shipping information notice at <https://bit.ly/3K5b7o2>.



## New UK law opens door for wider use of electronic bills of lading

The UK has passed new legislation in the form of the Electronic Trade Documents Act 2023, which is set to come into force on 20 September this year. David Richards, Deputy Global Head of P&I Claims and Head of Legal & Expertise at NorthStandard, said that this represented the most significant piece of English legislation affecting bills of lading in 30 years because, in common with some other jurisdictions like Singapore, English law would now recognize that, in the right circumstances, an electronic bill of lading can have the same legal effects as a paper bill of lading.

Richards noted that it had long been recognized that an electronic bill of lading was capable of fulfilling two of the traditional functions of a paper bill of lading:

- it can be a receipt for cargo received for shipment
- it can evidence the terms of the contract of carriage.

However, it was hitherto considered that an electronic bill of lading is not capable of fulfilling the third function of a paper bill of lading: its role as a document of title. For carriers in

particular, this meant uncertainty about whether delivery of goods according to an electronic bill of lading protected a carrier against claims for misdelivery.

Briefly, the Act provides that an electronic trade document governed by English law is equivalent to a paper bill of lading provided certain gateway criteria are met.

Those criteria are that the electronic trade document should contain a certain minimum amount of information; be capable of exclusive control and allow a holder to divest itself of that control; the underlying electronic trade system must be reliable and have integrity; and, it should be possible to identify what is an original electronic trade document and what is a copy and to identify who uniquely controls the electronic trade document at any point in time.

Providers of electronic trading systems will look to try and ensure their systems fulfil all of these gateway criteria. Richards observed that "in time one will no doubt be tested by the English courts".

At present, cover for liabilities arising in respect of carriage of cargo under electronic (paperless) trading systems is as set out under the various club circulars on this topic. Since February 2010, such liabilities are covered provided the electronic trade system is first approved by the International Group and this remains the position.





## Amendments to the Maritime Labour Convention: Key changes and an overview of the significant updates

Recent amendments to the Maritime Labour Convention, 2006, are set to come into effect in December 2024. Key changes include modifications to recruitment, repatriation, recreational facilities, food and catering, medical care, and accident prevention.

The International Labour Conference, in its 110th session, adopted a series of significant amendments to the Maritime Labour Convention, 2006. These changes, expected to come in effect in December 2024, are designed to strengthen the rights of seafarers and ensure a safer, fairer, and more secure work environment in the maritime industry.

Major changes to the Maritime Labour Convention include revisions to regulations concerning recruitment and placement, repatriation, recreational facilities, food and catering, medical care onboard and ashore, health and safety protection, and accident prevention. Below is a brief overview of the most relevant updates:

### Updated Repatriation Protocols

The changes also seek to streamline and fortify the repatriation process, ensuring that seafarers' rights to a prompt return are upheld. These amendments delve deeper into the responsibilities of various state actors, thus ensuring an ample approach to repatriation.

### Revamped Recreational Facilities and Amenities

These amendments underscore the importance of social connectivity in the provision of amenities and recreational facilities for seafarers. The updates highlight the significance of ship-to-shore communication and steady internet access throughout voyages.

### Updated Food and Catering Regulations

These amendments bring about essential changes to the food and catering regulations, ensuring seafarers' nutritional needs are met adequately. The revisions strive to ensure that the provision of food and water supplies aligns with the specific requirements of seafarers and the nature of their voyages.

### Expanded Medical Care Provisions

These revisions broaden the range of medical care provided to seafarers, including a framework on the provision of treatment ashore. The changes also outline new guidelines regarding the repatriation of deceased seafarers.

### Enhancing Safety Protection and Accident Prevention Measures

The amendments aim to improve health and safety protection measures, reduce the risk of exposure to harmful factors, and ensure the provision of appropriate personal protective equipment.



**Maritime and  
Coastguard Agency**

## MGN 651 (M) Bilge alarms on cargo ships 24m or more in length and under 500GT

This MGN issued by the UK Maritime & Coastguard Agency explains the new legal requirement for cargo ships that are 24m or more in length and less than 500GT to be fitted with bilge water level detectors and alarms.

Applicable from 28 July 2023, this Marine Guidance Note explains the new legal requirement for cargo ships that are 24m or more in length and less than 500GT to be fitted with bilge water level detectors and alarms. This mandatory requirement has been introduced following several incidents in which ships have become flooded due to an undetected ingress of water occurring in bilge spaces and implements a recommendation of the Marine Accident Investigation Branch (MAIB) following the flooding and sinking of a grab hopper dredger Abigail H. The fitting of bilge alarms in the prescribed manner is intended to improve the safety of affected ships, their crews and the marine environments in which they operate.

Read the MGN in full at  
<https://bit.ly/457YbpO>.



## New SOLAS requirements for towing and mooring equipment

Lloyd's Register published a Class News bulletin about the new SOLAS requirements for towing and mooring equipment, effective 1 January 2024.

### New inspection, maintenance and procedural requirements for all ships

Paragraph 9 of amended SOLAS Regulation II-1/3-8, as amended by resolution MSC.474(102), states that "for all ships, mooring equipment, including lines, shall be inspected and maintained in a suitable condition for their intended purposes".

### What should shipowners and ship managers do now?

Owners (or ship managers) should establish the following onboard maintenance and inspection procedures:

- Procedures for mooring operations, inspection and maintenance of mooring equipment, including mooring lines.
- Procedures to allow the identification and control of mooring lines, tails and associated attachments.
- Periodic inspection of mooring lines, mooring line tails and associated attachments as part of the onboard maintenance plan or equivalent maintenance management system.
- Manufacturers' criteria for replacement of mooring lines should be available.
- Records of the original design concept, equipment, arrangements and specifications should be available on board.

### Review your procedures

While normally most of the above are already covered by the onboard Safety Management System, it is highly recommended that companies review their procedures, records and forms to ensure the above items have been properly addressed. For new construction, designers and shipbuilders should ensure the supplied documentation provides sufficient information (e.g. technical data, maintenance manuals, mooring rope specification and certificates) to support owners in developing their maintenance and inspection procedures.

### Challenges for ships built before 1 January 2007

Ships with a keel lay date before 1 January 2007 were not required to comply with SOLAS, Chapter II-1/ 3-8, so may not have the original design concept to support the development of the new SOLAS maintenance and inspection requirements.

For such cases, the following options are available:

- The original design concept could be a mooring arrangement plan or any document that specifies mooring specifications at the time of the ship's construction.
- Alternatively, owners may establish the original design concept, including MBLSD (Ship Design Minimum Breaking Load) for mooring based on the safe working load of mooring equipment provided on board.
- If the vessel neither has any mooring documentation nor any safe working load marking on fittings, owners are advised to check the strength of mooring equipment and their supporting hull structure based on MSC.1/Circ.1175/Rev.1 (or rules applied at the time of construction, such as IACS Recommendation 10). Owners should also determine MBLSD based on actual capacity of the equipment and their supporting hull structure on board. In this case, calculations should be submitted to Lloyd's Register (LR) for appraisal.

### When will surveyors verify the requirements?

The maintenance and inspection procedures above are required to be confirmed on board at the time of:

- Initial surveys completed on or after 1 January 2024 for new ships;
- First Cargo Ship Safety Construction survey (annual, intermediate or renewal), on or after 1 January 2024, for existing ships; or
- Passenger Ship Safety survey, on or after 1 January 2024, for existing ships.





# CARGO PACKING MATTERS:

**Amended Dangerous Goods regulation are mandatory from January 2024**



*By Peregrine Storrs-Fox,  
Risk Management Director, TT Club.*

The biennial cycle of maritime Dangerous Goods regulations, the next Amendment of which enters mandatory application on 1 January 2024, provides a valuable opportunity to consider the trajectory of changes or improvements in safety for the freight supply chain, argues Peregrine Storrs-Fox.

## ■ CHARCOAL

While there have inevitably been numerous changes embedded in this IMDG Amendment, a number of consequential debates remain underway at this inter-governmental level. IMO committees are, for example, currently seeking to reach finalisation on how to fashion a revised safety framework regarding the transport by sea of Charcoal / Carbon (UN 1361). This vexed issue, frequently resulting in fires while in the supply chain, has encountered protracted debate. As previously reported, the concerns relate essentially to lump charcoal that is intended for burning on barbecues and the like – sometimes having been treated with accelerants to boot.

While tests and research are ongoing to determine certain particular hazards, it appears that there is agreement over key safety measures that may be adopted. These will, however, only become mandatorily applicable from 1 January 2026 in Amendment 42-24. There remain some concerns relating to the differentiation between this cargo and Activated Carbon (UN 1362), which is produced from the raw material. Further, there are non-lump forms of Charcoal, such as produced for artists materials, that have quite distinct burning, cooling and packaging processes; deft handling of such issues will be required by regulators, carriers and enforcement agencies.



## ■ LITHIUM-ION BATTERIES

The topic arguably giving rise to most debate in the transport and logistics industry – lithium ion batteries, in their various forms – has yet to reach centre-stage at regulatory level. It is, however, almost a year ago that TT published the joint whitepaper on this, raising a number of calls to action. Subsequent papers, such as the guidance produced by CINS or the best practices from IUMI, have demonstrated both developing safety thinking and the need for further robust research.

The global need for decarbonisation and related demand for effective battery storage drive research towards power output and speed of recharge, but not necessarily enough towards safety through the supply chain and end-to-end life cycle. TT continues to lobby for engagement between manufacturers and the transport industry to reach a common understanding of the hazards presented and how these can best be controlled. In part, this requires thorough independent scientific research – as much for the existing and legacy chemistries as for what is emergent, since the former will continue in circulation for many years, including in increasing states of degradation.

Incident investigations – such as following the serious fire aboard ‘Freemantle Highway’ – will doubtless shape diverse regulatory change, but there must surely be opportunity to get ahead and in the meantime implement safety innovations to protect seafarers, broader workforce, assets and the environment.

## ■ WHAT IS CHANGING?

The UN agencies are necessarily constrained by the submissions that are raised, either by member states or affiliated organisations. Relevant here are the container inspection findings that are reported to IMO annually. Those lodged for 2022 continue to be too sparse to guide decision-making (and below the annual average count over the last two decades), while demonstrating continuing concerns in key safety issues such as placarding (the external alert) and effective packing.

It is heartening that the National Cargo Bureau (NCB) are repeating a broad-based inspection initiative to shed more light on general container packing safety. Indeed, the work of the Cargo Integrity Group, where TT was a founding partner, continues to be highly important in promoting safe packing practices, linking to the IMO/ILO/UNECE CTU Code.

Perhaps a ground-breaking initiative is the Cargo Safety Program recently announced by World Shipping Council that seeks to standardise cargo screening across the liner shipping industry, combining this with container inspections and creating a machine learning powered feedback loop, linking also to a ‘Verified Shipper Database’. There are a number of technology providers who deliver parts of such a matrix, but combining all elements has the potential not just to tackle non- or mis-declaration, but also beneficially segregate and reward those actors who habitually adopt good practice.

It is in everybody’s interest to improve certainty of outcome; innovations and initiatives such as these have the potential to deliver far beyond regulatory change.

TT regularly focuses on regulatory compliance and the adoption of sound safety practices. In this regard, we would remind all actors of the judgment statement in ‘MSC Flaminia’ that regulations set the baseline for safety. In other words, it is insufficient merely to comply where you have reason to believe that other factors need to be taken into account. Using a simple universal analogy: traffic speed restrictions are not intended to urge the driver to adopt a given speed. Good driving practice requires that all hazards are continually, and fully assessed, and appropriate actions taken accordingly.



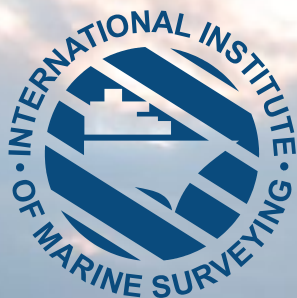
The revised  
‘Book it Right  
and Pack it Right’  
108 page pdf  
guidance is  
available to  
download at  
<https://bit.ly/46sZNeC>.  
Or scan the QR code.



*This article was originally published  
on the TT Club website and is  
reproduced here with our thanks.*

# Professional Qualifications in Marine Surveying

awarded by the  
International Institute  
of Marine Surveying



Study online at  
home and at sea

•  
IIMS Student  
Membership included

•  
Courses start every three months

[www.iims.org.uk/education/iims-education-centre](http://www.iims.org.uk/education/iims-education-centre)

**Professional Qualification**  
**in Yacht &  
Small Craft**  
Marine Surveying

**Professional Qualification**  
**in Cargo &  
Commercial Ship**  
Marine Surveying

IIMS is dedicated to developing the next generation of marine surveyors by offering quality qualifications that are recognised throughout the maritime world. Both IIMS professional qualifications are equivalent to a level 4/5 education qualification and can be studied on a distance learning basis. All you need is access to the internet.

For more info email [education@iims.org.uk](mailto:education@iims.org.uk), tel. +44 (0) 23 9238 5223



# Give us a lift?

**We all understand that marine surveying is a very diverse profession, and it is as broad as it is long, but I thought I would write this short article to focus on Shipyard Floating Cranes and Heavy Lifts.**

I have had the privilege of working in the biggest shipbuilding yards in the world in South Korea over the past 20 years, as well as in China and Japan. The technology and logistics management that goes into building a ship is quite staggering and impressive. The one thing that can cause a choke point in production is the use of cranes. The capacity of the crane to lift a

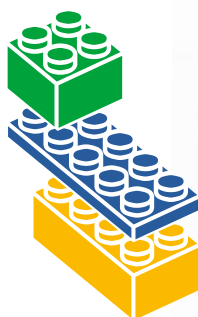
heavy load is vital to the production process as much as the number of cranes available and their location.

Generally, the production of ships' hull blocks starts with flat steel panels that are then made up into a small block, say 50 tons, which is then joined to another small block to make a 100 ton block and so on. As the block gets bigger, they are progressively moved closer to the dock. By the time the blocks are 1000 to 3000 ton (known as 'mega' or 'giga' blocks depending on size and yard) they are normally located close to the building dock and under a Goliath Crane.

**Using LEGO® blocks to illustrate this concept:**



*Material and components from multiple vendors, suppliers and sub-contractors are delivered to the shipbuilding yard.*



*Designed to fit together and delivery 'just in time'.*



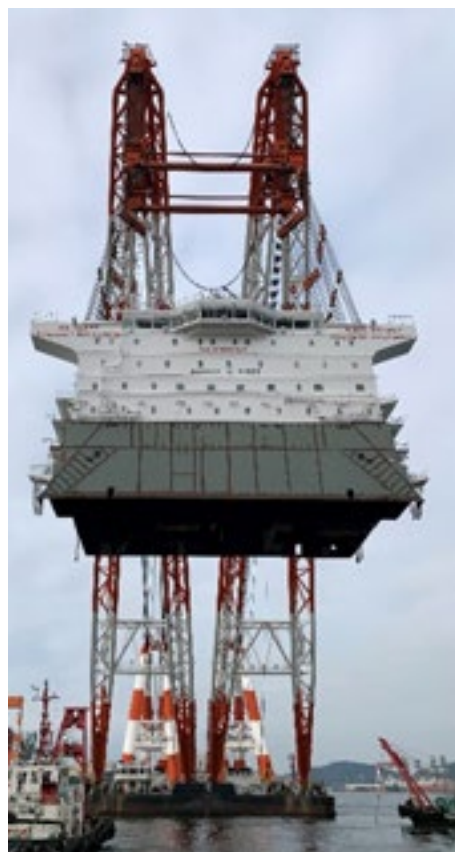
*Assembly of the modules and components in the shipbuilding yard.*

However, not all the blocks are built in the main shipyard. The main shipyard is often the assembly yard. Many blocks are built by specialist subcontractors who may be located many miles away from the main yard, or even in a different country. These blocks are transported by sea, either on a barge or on a heavy lift vessel. Here is the Marine Warranty part of the supply chain.



*Mid-body hull blocks for a container ship, being delivered from a Chinese sub-contractor, on a heavy lift vessel, to a Daewoo shipbuilding yard in South Korea for assembly in the building dock.*

*Accommodation Block being lifted onto the quayside at the building yard from a barge.*



The point of the Marine Warranty is to insure against loss of an asset. In this case, the loss of a large hull block or a topside module for an oil rig could have catastrophic repercussions for the delivery of the overall project as well as financial loss of the asset. For example, a topside module for a FPSO could cost \$100's million and take years to fabricate, if that one module is lost at sea or damaged it will 'set back' the project considerably.

There may therefore be a requirement either from the main shipyard themselves or the shipyard customer (Ship Owner) to have a warranty to transport the block from remote sub-contractors to the main yard. The block needs to be lifted and loaded onto the transport barge or ship and then travel by sea to arrive at the main yard, 'just in time', for it to be made ready to integrate with the rest of the hull structure or topsides. The seaworthiness of the barge, tug, ship, towing equipment, lashings etc. all come under the scope of the Marine Warranty Survey. If it is a particularly unusual or heavy load then it may be necessary to carry out suitability surveys of the load-out and load-in quay facilities.

It is really impressive how 'we' have evolved the production processes for shipbuilding and in doing so built some amazing tools to make those processes easier and more efficient. Namely the floating cranes and goliath cranes. These must be regarded as some of the world's most impressive engineering achievements, which as tools, are used to make even bigger mega structures.

As marine warranty surveyors, we have the privilege of witnessing massive man-made structures and amazing engineering feats that have gone into overcoming technical challenges. Before any lift, we carefully assess the condition of the cranes to ensure they are fit for purpose. Recently, I had the opportunity to work on two offshore projects where we lifted big topside modules, one at Samsung Shipyard and the other from Hyundai Shipyard, using floating cranes, which were involved in some huge load-ins and lifting of structures weighing around 8,000 and 10,000 tons respectively.



***Samsung Floating Crane lifting a Topside Module for integration onto Cloral FLNG.***

***Each crane hook is rated to 1000 ton SWL. The crane has eight independent hooks.***



***Samsung Floating Crane being maneuvered by tugs and anchor handling support vessels, with the suspended module.***



***One lifting wire secured to the module with 25 ton shackle.***

We often use 'Big' Shackles and wire stroops for lifting operations. These need to be certified with a Safe Working Load and the lifting engineers need to consider what are acceptable factors of safety for every special lift operation.



***One shackle weighs 25 ton***



***Installing one lifting wire with the 25 ton shackle onto the module lifting point. Four-man rigger team needed to position the shackle and insert the shackle pin.***



**Note** that most of these cranes do NOT come under the ILO Article 25(2) of the Occupational Safety and Health (Dock Work) Convention for Lifting Appliances for testing and maintenance. They are NOT ships cranes, they are shore cranes and therefore must be certified and tested under the National Occupational Health and Safety Rules and Regulations.

If you are involved in Marine Warranty Surveys that require the use of these 'big cranes' you should be aware of the testing regimes for the cranes as well as all the loose gear, shackles, slings, spreaders, etc.

Normally a qualified 'Lifting Engineer' will prepare the lifting plans and this will in turn be checked by the company providing the Marine Warranty Survey service. This is NOT a job for the Marine Warranty Surveyor.

The Warranty Surveyor must be provided with a clear scope of work and ensure that he/she is provided with all the necessary 'approved' lifting / loading / slinging procedures. Then the surveyor can follow this procedure and confirm that all necessary steps are followed.



*Hyundai Heavy Industries 10,000 ton SWL floating frame.*



*Each hook has SWL 1250 ton.  
There are eight independent hooks.*

In all shipyards around the world lifting operations within the yard are normally not considered Marine Warranty Survey items. These are day-to-day work for the yard to manage and manage the risks. Marine Warranty Surveys (MWS) normally require the surveyor to witness the safe delivery of the components and set them down at the receiving yard. That is the point at which the Marine Warranty ceases and the asset comes under the shipyard's risk management and insurance cover.

There are many other specialist heavy-lift machines used for the loading and discharge of modules.



*Heavy lift ship delivering modules to HHI shipyard. Mooring arrangements are part of MWS scope.*



*Heavy lift transporters (Self-Propelled Module Transporter – SPMT) are often used to lift and manoeuvre modules off a transport vessel and onto the quayside at the receiving yard. These transporters need to be certified and fit for purpose.*



*The use of Goliath Cranes in shipyards is a 'normal' operation that is NOT normally a MWS requirement unless it is a particularly high value or unusual asset that is being lifted.*

*This crane at HHI is rated to 1,600 ton SWL and can work in tandem with another crane of the same size to lift up to 3,200 ton modules in the building dock.*

I hope this article has been of interest to you, as a brief exposure to Marine Warranty Survey 'Heavy Lifts'. Many more items within the scope of Marine Warranty Surveys are not mentioned here and can form part of future articles.



Prepared by **Peter Broad**, FIIMS, FIMarEST.

President of The International Institute of Marine Surveying.  
Broadreach Marine Technical Consultants and Marine Surveyors.

IIMS is often asked by members how much depth and detail they should give when preparing their reports and what should have been inspected and reported on. Remember, you will have carried out a forensic inspection when surveying the vessel, so it is important that your final written report accurately and factually reflects what you have seen. And always write your report in the past tense.

**So, here is a helpful guide for yacht and small craft surveyors with some suggested useful phrases to include in your reports.**

## TIPS AND ADVICE ON WHAT A YACHT AND SMALL CRAFT MARINE SURVEYOR SHOULD INSPECT AND HOW TO COMMENT IN THE REPORT

### **Interior trim:**

Head and side linings - state if they were clean, or not. How well secured were they? Give details and describe any damage you found.

### **Furnishings:**

Curtains, carpets and upholstery can be expensive items for a vessel owner, especially to replace. Were they clean and in good order? If so, say so. If not then mention any marks, damage and especially water damage you found.

### **Water leaks:**

Check windows, portholes, escape hatches, sky lights with diligence. Did you see any evidence of new leaks or any long-standing ones, or both?

### **Timber furniture:**

Comment how well secured it was (or not) and mention any marks, damage, or visible water stains.

### **Doors and cupboards:**

Were the catches, latches and hinges operative? Did the securing locks work or not? Report accordingly.

### **Fire extinguishers:**

What make and size were they? Were they fully pressurized? What was the service date - were they in or out of service date?

### **Carbon monoxide detectors and smoke alarms.**

Were they operative?

### **Lights:**

Were they all working or not? If any were inoperative, report and indicate which ones.

### **Galley**

What equipment was fitted - give the maker's names or brand names - cooker, refrigerator, microwave - and so on. Have they been switch tested and were they operative or not? If they were not tested, state why not.

### **Gas pipes:**

What condition were the pipes in? Were the pipes loose, or were they well secured? Were the shut off valves free and operative? Report accordingly.



### Toilet Compartments:

What type of toilet was fitted and what make was it? Was it tested or not. Again, if it was not tested, why not? Check and report on all hoses and clips. Were they well secured?

### Bilges:

Access to the bilges in all cabins is very important. If any of the sole panels or hatches were accessible, but could not be lifted because they were secured down or fixed beneath carpets thus preventing access to the bilges, you must report this. Failure to say this will leave the report reader to assume the surveyor did not try to look at the bilge.

### Mains 230/240 AC supply:

If the vessel was connected to a shore supply, you should comment on the system and the equipment on board.

### Gas installation:

How many gas bottles were onboard, what type and size? What was the condition of the flexible gas hoses and regulators? Importantly, were they in or out of date? If you did not test the system, you must say so in your report.

### Batteries:

Report the type, age and condition if known. Were the batteries boxed and were all terminals clean and well secured?

## HULLS...

### Skin fittings:

Ensure each one is visually inspected. A useful phrase to use is: "The skin fittings were visually inspected and appeared to be in serviceable condition but were not removed or stripped at this time."

### Gelcoat:

Check the condition thoroughly. To simply say the hull has a good lustre is not enough detailed information. A useful phrase to consider is: "The gelcoat of this area was in fair condition and free from any serious damage, major repairs or stress cracking or crazing, but was very dull and dirty." Adapt as necessary depending on what you saw.

Another useful phrase might be: "A few minor scratches and abrasions were noted, but these were considered to be superficial cosmetic defects only." Once again, adapt as necessary.

### Gel coat repairs:

Has the hull had any small gelcoat repairs? If so, a useful phrase is: "Some small gel coat repairs have been carried out over the years. These were sound and well fashioned." If this is not the case, you must describe the problem which could be - poorly matched, not sound, painted, unfinished and so on.

### Rubbing strake:

What type is it and what is the condition? For example, "The rubbing strake consisted of aluminum section with a black rubber insert. This was securely mounted over the joint of the hull and superstructure and free from any serious damage. The rubber insert was in serviceable condition although a little scuffed in places and had shrunk slightly leaving a small gap on both stern quarters." Adapt as necessary based on what you saw.

### Anchor chain and /or warp:

Were these firmly secured and correctly tethered?

### Windows and portholes:

Give details of the material type of the frames (wooden, aluminium, or plastic). What was the condition - (ie. any corrosion of flaking paint). Another useful phrase might be: "The anodized aluminum framed portholes, escape hatches and windows were firmly secured into the superstructure and free from damage." Adapt as necessary.

### Cockpit hood:

Report the condition of the material, stitching, zips and window sections.

### Davits, winch wires and winches:

Were these operative? Check for corrosion and any damaged cables and report accordingly.

### Fenders and warps:

Check the condition.

### Out drive units:

What type were they and what model?

Ensure you inspected, checked and reported on the following: Casing, hydraulic hoses, rams, bellows, pins and bushes, anodes, propellers, earth bonding wires and oil - was it emulsified?

### Shaft/s:

Check and report on the size and shaft alignment. Did the shaft/s run true? Report accordingly.



# ***What we have learned about the dangers of lithium-ion batteries and fires***

*By Mike Schwarz*

The biggest topic for discussion in the marine world during 2023 has surely been the challenges associated with lithium-ion batteries and specifically dealing with the aftermath of fires that have made media news headlines around the world; and not just in the marine sector either. More column inches have been devoted to this technology than almost anything else it seems as the marine world continues its race to decarbonise. It appears we know far more now than we did a year ago, such as the use of metal boxes to contain a burning object and cooling the item as fast as possible to lower the temperature. These activities come with inherent risks of course. And once fire takes hold, as we have seen the result can be utterly devastating.

IIMS has written many words and published several associated articles on the subject and will continue to do so as more information comes to light in 2024, especially as official accident reports start to appear. The aim of this in-depth feature article is to reprise some of that content in scaled down format from the sheer volume of published material and to put it altogether in one place for the benefit of the surveying profession.

This story surfaced in July 2023 and caused some raised eyebrows when it was first published.

## **Safety Advisory Notice: Transportation of electric vehicles containing lithium batteries damaged by extreme weather events**

The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) has issued this safety advisory notice to inform the public and raise awareness of the risks involved in the transportation of electric vehicles (EVs) powered by installed lithium batteries that may have been damaged due to submersion in waters during extreme weather events. When transported in commerce, EVs containing these damaged batteries may present particularly significant hazards to the public, including property damage, injury, and even death.



PHMSA wishes to remind potential shippers of EVs - including vehicle owners, salvage companies, and vehicle transport companies - that they have a responsibility to assess EVs for potential damage to their installed lithium batteries and to observe the specific requirements in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) for both the transportation of EVs containing lithium batteries, and for the transportation of damaged and/or defective lithium batteries in commerce.

Federal hazardous materials law authorizes the Secretary of Transportation (the Secretary) to "prescribe regulations for the safe transportation, including security, of hazardous materials in intrastate, interstate, and foreign commerce" 49 U.S.C. 5103(b)(1). The Secretary has delegated this authority to PHMSA in 49 CFR 1.97(b). PHMSA's regulations (i.e., the HMR) are designed to achieve three primary goals:

1. Ensure that hazardous materials are packaged and handled safely and securely during transportation. This document contains guidance provided to help the regulated community understand how to comply with regulations, but its contents are not substantive rules themselves and do not create legally enforceable rights, assign duties, or impose new obligations not otherwise contained in the existing regulations and standards.
2. Effectively communicate the hazards of the materials being transported to transportation workers and emergency responders.
3. Minimize the consequences of an accident or incident should one occur.

As part of its safety mission, PHMSA regulates the transportation of lithium batteries, including those that are installed in or are intended for use in EVs. Lithium batteries pose a risk in transportation, and the HMR contains provisions intended to address the risk in transport and ensure safety of the public whether the lithium batteries are installed in an EV being transported or are transported separately. Damaged or defective lithium batteries pose a unique risk because they are more likely to experience thermal runaway and ignite during transportation. Consequently, shipments of damaged or defective lithium batteries have additional restrictions – see 49 CFR 173.185(f) – compared to newly manufactured, used, or undamaged/properly functioning batteries. It should also be noted that damaged, defective, or recalled lithium batteries must be prepared for shipment in accordance with the relevant provisions of the HMR and may be shipped only by highway, rail, or vessel transportation and are strictly forbidden for commercial transportation by aircraft.

There have been fires associated with lithium batteries installed in EVs that were submerged in floodwaters following extreme weather events. Saltwater is especially harmful to lithium batteries as residual salt within the battery or battery components can form conductive bridges that can lead to short circuit and self-heating of the battery, resulting in fires. The time frame in which a damaged battery can ignite varies, from days to weeks, and EV battery fires can be extremely time – and resource-intensive for responders. In addition, responders face safety risks related to the emission of toxic and flammable gases from damaged lithium batteries, and

the unpredictability of thermal runaway and reignition. As such, lithium batteries from EVs that have experienced flooding or other exposure to the elements in a manner other than designed are at significant risk of damage, resulting in elevated potential for producing a dangerous evolution of heat, fire, or short circuit.

PHMSA understands that assessing whether a battery is damaged may require input from the manufacturer and recommends that shippers consult with the manufacturer of the battery to assist in such a determination. However, it is ultimately the shipper's responsibility to determine when a battery is damaged and therefore requires additional consideration for packaging and transportation. Specifically, in accordance with 49 CFR 173.22(a), the shipper must properly class and describe the hazardous material being offered for transportation and determine whether the packaging or container is an authorized packaging. In addition, shippers are forbidden from offering for transportation or transporting electrical devices, such as batteries and battery powered devices—including EVs—that are likely to create sparks or generate a dangerous evolution of heat, unless packaged in a manner which precludes such an occurrence.

Lastly, when movement of an EV with a damaged lithium battery on a motor vehicle is necessary to protect life or property in an emergency, certain requirements of the HMR are waived. See 49 CFR 177.823(a)(3). Additionally, the National Highway Traffic Safety Administration has published guidance on their website for towing and recovery operators and vehicle storage facilities that describes how to properly handle EVs in the event of damage, fire, or flooding.

What are the packaging and marking requirements to transport damaged, defective, and recalled lithium batteries? See 49 CFR 173.185(f):

- Place the battery in an individual, non-metallic inner packaging that completely encloses the battery.
- Surround the inner packaging with non-combustible, electrically non-conductive, and absorbent cushioning material.
- Place each inner packaging into its own specification outer packaging rated to the Packing Group I performance level. This means only one damaged, defective, or recalled battery per inner packaging, and only one inner packaging per outer packaging.
- Mark the outer packaging as "Damaged/defective" and identify the battery type. The marking—reading "Damaged/defective lithium-ion battery" or "Damaged/defective lithium metal battery"—must be in characters at least 12 mm (0.47 inches) high.

What are the packaging requirements to transport EVs powered by lithium batteries that have not been damaged? See 49 CFR 173.220(d):

- EVs with their batteries installed are forbidden for transport aboard passenger-carrying aircraft.
- Lithium batteries contained in vehicles, engines, or mechanical equipment must be securely fastened in the battery holder of the vehicle, engine, or mechanical equipment, and be protected in such a manner as to

prevent damage and short circuits (e.g., by using non-conductive caps that cover the terminals entirely).

- Except for vehicles, engines, or machinery transported by highway, rail, or vessel with prototype or low production lithium batteries securely installed, each lithium battery must be of a type that has successfully passed each test in the United Nations (UN) Manual of Tests and Criteria, as specified in 49 CFR 173.185, unless approved by PHMSA's Associate Administrator.
- Where a vehicle could possibly be handled in other than an upright position, the vehicle must be secured in a strong, rigid outer packaging. The vehicle must be secured by means capable of restraining the vehicle in the outer packaging to prevent any shifting during transport that would change the orientation or cause the vehicle to be damaged.
- Where the lithium battery is removed from the vehicle and is packed separate from the vehicle in the same outer packaging, the package must be classified as "UN3481, Lithium-ion batteries packed with equipment" or "UN3091, Lithium metal batteries."

What are the additional stowage requirements to transport EV's powered by lithium batteries when carried on a vessel? See 49 CFR 176.905(a):

- For vehicles with batteries installed, the batteries shall be protected from damage, short circuit, and accidental activation during transport.
- Each lithium battery must be of a type that has successfully passed each test in the UN Manual of Tests and Criteria unless approved by PHMSA's Associate Administrator.
- A vehicle showing any signs of leakage or electrical fault—such as inability to start or move under its own power—or signs of prolonged exposure to water, is forbidden for transportation onboard a vessel.
- Where a lithium battery installed in a vehicle is damaged or defective, the battery must be removed and transported according to 49 CFR 173.185(f), unless otherwise approved by PHMSA's Associate Administrator.

Earlier in the year, the TT Club issued this press release.

## Fire not the only danger with lithium-ion batteries

Devastating consequences of rapidly spreading, and often challenging to extinguish fires involving the batteries particularly in electric vehicles (EV) on board ships, and other parts of the supply chain have been well-documented in recent months. There is however less awareness of the highly toxic combustion products that are released and their respective impact to the health and wellbeing of those exposed to the gases.

Based on the evidence of past fires the time between the initiation of a failed battery igniting to a discharge of toxic vapour can be measured in seconds rather than minutes. This is due to a process known as thermal runaway. The rapid sequence of events typically occurs where an internal electrical short within one of the battery cells generates heat; this breaks down the internal structure of the battery, increasing the rate of the reaction in an ever-increasing cycle. There is often a dramatic release of energy in the form of heat and a significant emission of toxic gases.

Neil Dalus of TT endeavours to paint a picture of the dangers. "During a lithium battery thermal runaway event, research has shown that significant amounts of vapour can be produced per kWh (kilowatt hour). In many common supply chain scenarios, including ships' holds and warehouses, the reality is that such vapour clouds are likely to accumulate. Even when the clouds are able to disperse, the potential toxic effects may occur at lower concentrations."

Drivers, stevedores, ships' crews and first responders attempting to control the blazes encounter what might appear to be smoke but is in fact a mix of toxic gases, generated quickly and in large volumes. These gases once in the atmosphere behave differently to smoke, often pooling at floor level due to their density. "Traditionally where fires and smoke are concerned one would stay low to avoid inhalation, doing so where lithium battery fires are concerned is likely to prove problematic," observes Dalus.

The toxicity of gases given off from any given lithium-ion battery differ from that of a typical fire and can themselves vary but all remain either poisonous or combustible, or both. They can feature high percentages of hydrogen, and compounds of hydrogen, including hydrogen fluoride, hydrogen chloride and hydrogen cyanide, as well as carbon monoxide, sulphur dioxide and methane among other dangerous chemicals.

Early detection of such an incident can also be pivotal in managing the response, camera and thermal imaging could enable an expedient response. Such equipment might have already become commonplace for some modes, however conducting a thorough risk assessment for example when cargo is stored in warehouses would be prudent. As Dalus comments however, "Given the hazardous nature of this vapour, if any of these measures are not in place then the best course of action is to evacuate the area and leave the incident response to the emergency services, ensuring that the known risks are appropriately communicated."

The article in full can be read at  
<https://bit.ly/3ZPpFPw>  
Or scan the QR code.





## Chubb launches Lloyd's consortium to address lithium battery risk

Lithium-ion batteries have certainly been exercising the finest minds in the marine insurance sector and here is the response from Chubb which is leading a new Lloyd's of London consortium to tackle this issue. This article first aired in September 2023.

A new initiative was rolled out and launched by Chubb. A new Lloyd's of London consortium has been created (which Chubb will lead) that is designed to provide insurance coverage for risks associated with the transit and storage of lithium batteries.

The consortium was created to address a lack of capacity in the marine cargo market for providing lithium battery transit and stock insurance. It provides a one-stop solution with limits up to \$50 million for risk types associated with lithium batteries including transit, stock throughput, standalone stock and warehouse legal liability, and will include excess stock and part orders.

As mentioned, the consortium is being led by Chubb Global Markets (CGM), including its Lloyd's platform, and supported by 11 other Lloyd's syndicates. Chubb Global Markets will also draw on the capabilities of Chubb Climate+, the company's global climate business unit launched early in 2023.

Rob Wilson, Chief Underwriting Officer for Chubb Global Markets said that the work involved in managing lithium battery risks is extensive and brokers can now use this facility to gain access to capacity in this new risk area.

He added, "The consortium provides brokers and insureds with a single port of call to bind these risks, helping to shore up the lithium battery supply chain as demand continues to grow."

"The lithium battery industry is growing at a rapid rate and many businesses involved in moving and storing these batteries are increasingly in need of an experienced and reliable insurance partner and solution to support the ramp-up in production," said Matt Hardy, Leader of Chubb Climate+ for Chubb Overseas General.

He further commented, "The creation of a consortium dedicated to underwriting these risks aligns firmly with our commitment to harnessing our underwriting and risk engineering capabilities to support the transition to a low-carbon economy."



## NCB launches second container inspection initiative to battle the dangers of misdeclared cargo

In September, the National Cargo Bureau released information about their second container initiative, which partially covers the issue of lithium-ion batteries.

National Cargo Bureau (NCB) has launched a second container inspection initiative to combat the persistent threat posed by misdeclared cargo. In a determined response to these sobering revelations and escalating concerns around ship fires, particularly those stemming from lithium-ion batteries, NCB is enhancing its inspection initiative. Several major shipping lines including Hapag Lloyd, Maersk and MSC have committed to the initiative, and container inspections have already commenced in various locations around the world.

Five years prior, NCB had again joined forces with industry leaders, Maersk, Hapag Lloyd, and MSC, in a trailblazing effort that laid bare the disconcerting realities within container transport safety.

Key findings from the analysis:

- 55% of inspected containers were non-compliant
- 43% of containers failed due to poorly secured dangerous goods
- 6.5% were found to be carrying mis declared dangerous cargoes.

Subsequent inspections, performed by NCB, have continued to reveal poorly stowed containers as well as undeclared and mis declared shipments of dangerous goods such as charcoal, flammable liquids, and used lithium-Ion batteries.

NCB expects this second round of inspections to expose further container deficiencies but, hopefully, reveal improvements since the first initiative.

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



## IUMI publishes “Best practice & recommendations for the safe carriage of electric vehicles”

The International Union of Marine Insurance, which represents the cream of marine insurers weighed into the debate in September following the publication of their best practice guidelines, a most useful document.

There are growing concerns within the shipping community, including marine underwriters, about fires breaking out on car carriers and ro-ros with the assertion that many of these fires are attributable to electric vehicles. In response, the International Union of Marine Insurance (IUMI) has researched these claims and published recommendations on the safe carriage of electric vehicles (EVs).

Lars Lange, IUMI Secretary General, explains:

“Our paper draws on a body of scientific research which demonstrates that fires in battery EVs are not more dangerous than fires in conventional vehicles, nor are they more frequent. Although statistics continue to be gathered, they currently estimate that, in general, there are fewer fires from EVs compared with fires from conventional vehicles when driven over the same distance.”

Research also proves that there is only a minor difference between total energy released during an EV fire and one that is related to an internal combustion engine vehicle (ICEV). Once established, vehicle fires are largely (approx. 80%) fuelled by the car body and interior parts rather than the propulsion system. However, the potential for thermal runaway (when the battery suffers an unstable chemical reaction) exists for EVs whereas it is not a consideration for ICEVs. Thermal runaway makes fires hard to extinguish, hence mitigation measures such as boundary cooling must be employed rapidly. Moreover, the risk of re-ignition is higher for an extended period of time.

In light of this, IUMI concludes:

- Early fire detection and verification/confirmation is critically important to reduce the time between detection and firefighting response to a minimum. Options, in addition to the conventional systems, could include thermal imaging cameras and AI powered systems.
- Drencher systems are effective for fire-fighting onboard ro-ro and ropax vessels both for EV and ICEV fires and should be installed alongside video monitoring systems.
- CO<sub>2</sub> extinguishing systems, if applied quickly, are successful in fighting PCTC fires and their capacity should be doubled. High-expansion foam fire extinguishing systems have also proved to be effective to prevent heat transfer from one vehicle to another.
- Early detection, confirmation and a short response time are crucial to fight a fire successfully. On board PCTCs, fixed systems should always be applied before manual fire-fighting is employed.
- A clear policy is required on which cargo is accepted or rejected. Vehicles should be screened with used vehicles being checked carefully for hidden damage.
- Charging onboard ropax vessels should be permitted subject to relevant risk assessments and control measures. Safety mechanisms built into EVs are usually activated during charging.

Read the full article at <https://bit.ly/47DUBpa>.

## ClassNK releases guidelines on the safe transportation of electric vehicles

A well-known and respected classification society, ClassNK, joined the debate in August 2023. They published a set of guidelines that focuses on the safe transportation of EVs.

In a bid to bolster the safety of maritime transportation of electric vehicles (EV) at a time of major concern for the shipping industry, ClassNK has unveiled a set of new guidelines and measures.

ClassNK has developed the Guidelines for the Safe Transportation of electric vehicles, which describes the characteristics of EV fires and provides guidance on how to respond, built upon dialogue with experts, operators, manufacturers, and other stakeholders.

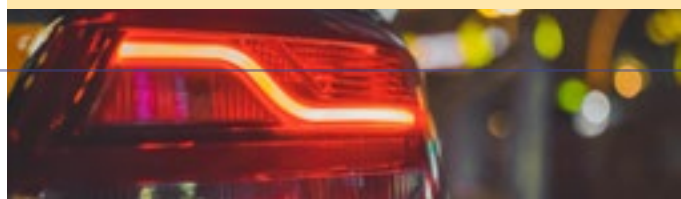
Publishing these guidelines is a sensible move by ClassNK's part given the surge of challenges presented by climate change and global warming, the export of hybrid and EVs powered by lithium-ion (Li-Ion) batteries. There exists a faction of industry insiders who argue that the transport of these vehicles may not be completely safe.

In the case of a thermal runaway, the risks are considerably amplified. This dangerous occurrence involves an uncontrolled escalation in temperature within the battery, resulting in a swift and forceful discharge of energy. The consequences of such an event can be dire, potentially leading to catastrophic explosions or fires.

“Controlling li-ion battery fires are almost impossible, once the fire catches on to nearby vehicles their frames melt and the work to extinguish is extremely challenging”, stated Henrik Meyer, senior quality manager, ports, terminals and stevedoring at Wallenius Wilhelmsen.

The aim of the guidelines is to assist in the development of fire safety measures for the maritime transportation of EVs and, thus, enhance the overall safety of such transportation for not only ships themselves but also for their respective crews.

Read the full article at <https://bit.ly/3EVIQGG>.







## **MGN 653 (M) Amendment 1 electric vehicles onboard passenger roll-on/ roll-off ferries**

Maritime regulators are behind the curve and struggling to catch up given the speed of technological change as opinion and facts continue to form on the matter of lithium-ion batteries. But the MCA has issued an amended MGN in August that deals specifically with EVs.

The UK Maritime and Coastguard Agency has issued a Marine Guidance Note (MGN) amending the guidance on the safe carriage of electric vehicles on board passenger ferries. The MGN was released on 7 August 2023.

This MGN provides the UK shipping industry with best practice guidance to facilitate safe carriage, and potential charging of, electric vehicles onboard roll-on roll-off (ro-ro) passenger ferries. The MCA has developed this guidance in conjunction with, and at the request of industry. Amendment 1 includes new guidance in section 4 on the carriage of light electric vehicles such as e-bikes and e-scooters which have become an area of concern following a spate of fires.

This is a lengthy document and can be viewed in full online at <https://bit.ly/3ZLrGMq>. Or scan the QR code.



## **Lithium-ion battery fires on vessels remain one of the biggest safety issues**

Earlier this year Allianz highlighted that battery fires on vessels remain one of the biggest safety issues facing the shipping industry. There have been a number of serious fire incidents in recent years where Lithium-ion (Li-ion) batteries have been reported as the source of or contributing to fires on vessels. Allianz experts Capt. Rahul Khanna, Captain Randy Lund and Captain Anastasios Leonburg, share their thoughts on how electric vessels may impact safety onboard.

Decarbonization and electrification are increasing the number of shipping goods that contain Li-ion batteries, from electric vehicles (EVs) to a wide range of consumer and electronic goods. The global Li-ion battery market is expected to grow by over 30% annually from 2022 to 2030, according to a report by McKinsey.

Recently, the Fremantle Highway car-carrying vessel caught fire off the Dutch coast with over 3,000 vehicles on-board enroute from Germany to Egypt. A fire on board car carrier Felicity Ace in February 2022, led to the vessel sinking in the Atlantic Ocean, along with its cargo of 4,000 vehicles. Li-ion batteries were cited as being a factor in keeping the fire ablaze. The Höegh Xiamen, caught fire in June 2020 in Jacksonville, Florida, resulting in the total loss of the vessel and its cargo of 2,420 used vehicles. An improperly disconnected battery in a used vehicle led to the fire, according to the official investigation.

In light of the growing number of fires on cargo ships, a spokesperson for IMO said that it will announce new safety standards for those transporting electric vehicles in 2024. The guidelines could include specifications on how fully a battery can be charged. The IMO said that chemicals for extinguishing fires, special fire blankets, equipment such as battery-penetrating jet extinguishers and bigger gaps left between electric vehicles on ships could also become mandatory.

Allianz explains that Li-ion batteries can be carried on board ships either as a cargo themselves or as part of the equipment for the electric vehicles (EVs) they provide power for. Many of these batteries are safely transported every day but fire risks are present in both scenarios, especially if the batteries are used or defective, damaged or improperly stored, packaged, handled or labelled.

The main hazards are fire, explosion, and 'thermal runaway', a rapid self-heating fire that can cause an explosion. They can also produce irritating, corrosive or poisonous gases that cause an explosion in a confined space. The main causes of Li-ion fires are substandard manufacturing or damaged battery cells or devices, over-charging, and short circuiting. Li-ion batteries are an important source of energy and do not necessarily burn more frequently than other goods. It is only when they ignite that they are more difficult to extinguish as they can burn more ferociously and are capable of spontaneously reigniting hours or even days after they have been put out.

Most ships lack the suitable fire protection, firefighting capabilities, and detection systems to tackle battery fires at sea, which has been made more difficult by the dramatic increase in ship size – container-carrying capacity has doubled in the last 20 years. We have seen many fires where malfunctioning or damaged batteries have been attributed as a contributing factor in recent years.

Allianz has long warned about the risks associated with Li-ion batteries and EVs in shipping for a number of years, first highlighting this issue in 2017. A recent report highlights a full list of loss prevention measures to consider including:

- All EVs should display clear and precise identification on the windshield detailing the battery type (e.g. Battery Electric Vehicle (BEV), Hybrid Electric Vehicle (HEV), Plug-in Hybrid Electric Vehicle (PHEV).
- EVs with low ground clearance should be clearly labelled as this can present loading and discharging challenges arising from the vessel's ramps, inner slopes, or deck appendages.
- All EVs with a Li-ion battery must have successfully passed pressure, temperature, crush, and impact tests as described in the UN Manual of Tests of Criteria – subsection 38.3 for transport of Li-ion batteries.
- All EVs must be fully functional, self-propelled, safe to drive and contain an undamaged battery system.
- There should be no charging of EVs during the passage.

All EVs must be properly secured to prevent any shifting during transport.

- One potential idea being explored by some car carrier operators, as part of fire-preventative measures, is the use of fire-proof blankets manufactured specifically for EVs.

Allianz experts conclude that the debate about EVs in the shipping industry is ongoing, with conversations about whether there is even a need for dedicated Ro-ro vessels for EVs.

"From an insurance perspective, this is something we would like to see – purpose-built vessels for transporting EVs, designed to substantially reduce the risk of fire. We have already seen shipping companies stop transporting EVs on their ships because of the potential fire risk," says Allianz.



## Höegh Autoliners details EV fire mitigation measures aboard its ro-ro fleet

Recent fire incidents aboard electric vehicle (EV) carrying vessels have brought attention to factors such as thermal runaway, saltwater intrusion, and compromised battery cells or components. Industry stakeholders, insurers, and safety experts have underscored the need for vigilance. Höegh Autoliners outlined the measures it is taking to minimise the risks.

"Together with a clear decarbonisation target, safety is our top priority both on our existing fleet and when designing our new Aurora-class vessels. Fire safety has been a focus area and part of the design work from day one," said chief operating officer of Höegh Autoliners, Sebjørn Dahl.

To improve fire detection and the ability to handle a possible fire the carrier has, Höegh Autoliners has implemented an extended number of fire zones, and installed heat and smoke detecting cameras and fire blanket stations on all cargo decks, among other measures. It said that it also has more than the class required amount of CO<sub>2</sub>, which serves as a highly efficient fire extinguisher, onboard its vessels. "We've also improved the onboard digital platform. This enables us to include early warning if any loaded unit would send out notification of anomalies such as elevated battery temperatures," said Dahl.

The carrier said it is not transporting second-hand EVs as they may represent a higher risk.

Prior to loading, it has a number of fire risk management procedures, based on the fact that high-voltage batteries in electronic and hybrid cars are charged ideally below 30 percent and not above 50 percent, limiting the energy density on the vessel's deck and thereby reducing the potential severity of fires.

Höegh added that its crew undergo regular refresher training on fire safety and firefighting techniques, and complete regular drills. In cooperation with local training centres, it is focusing on hands-on fire-fighting techniques as well as safety procedures for high temperature fires.



## De-risking the carriage of lithium-ion batteries

At the heart of efforts to draw attention to the hazards inherent in transporting lithium-ion batteries, specialist freight insurer TT Club now urges debate leading to a balanced, yet realistic awareness of the dangers, and a united approach to enhancing their safe carriage. Improved regulatory clarity is required and auto manufacturers need to address transport safety issues more thoroughly.

Rapid development of battery technology and the uncertainties created by these developments, particularly concerning safety when the energy packs are being transported require the logistics industry to have a clear understanding of the dangers which can include fire, explosions and toxic gas emissions. Moreover, there needs to be increased efforts to minimise the risks, and if necessary, make sure there is an effective response to any catastrophic event.

Alarmist reports in the media can overstate the number of incidents involving electric vehicles. Indeed Peregrine Storrs-Fox, Risk Management Director at insurance mutual TT Club points out that "Lithium-ion (li-ion) battery fires are not an everyday occurrence. But when thermal runaway does happen, the

result is release of toxic gases such as carbon monoxide and hydrogen cyanide, a very high temperature fire and can spread very fast."

The release of toxic fumes may be the first alert, but fire with temperatures higher than 1,000deg's centigrade can be reached in a matter of seconds and, as the mix of chemicals and metals ignites, devastation can ensue.

In keeping with its mission to extend awareness and achieve a united front, TT Club was delighted to be part of a forum of interested parties which was held recently in London. Much was revealed by the speakers and valuable debate ensued. "Supply chain players including ship owners, carriers, forwarders, terminal and port operators and insurers are engaged with these debates. Indeed, the maritime regulator IMO (International Maritime Organization) has its guidance for carriage of these batteries under serious review," says Storrs-Fox. "But we need to bring manufacturers of EVs and the batteries that power them actively into the debate. Their ambitions for the development of more powerful, lighter and diverse battery cells must not be allowed to outstrip prioritising safety concerns surrounding their future transportation around the globe."

Such concerns regarding the battery packs within electric vehicles (EVs) have been raised in the US and the National Transportation Safety Board (NTSB) has carried out a study. The forum heard that EVs were reported to have incurred fewer fire incidents than internal combustion engine (ICE) cars. However, there are a few provisos to be highlighted here – not least that there are far fewer electric cars on the road than ICE vehicles.

Secondly it is understood that newer batteries are less likely to ignite or explode than used batteries, effectively the older the li-ion unit, the greater the chance of an incident. As a result, it is not clear how the batteries will perform through the intended life, given that the switch to EV's is only now gathering pace and most battery packs are new.

Regarding the rapid spread of fire, Eva Mckiernan, the technical director at firefighting consultancy Jensen Hughes highlighted the dangers of thermal runaway as the most pressing issue after ignition. She

explained that these energy packs are thermo-dynamically unstable. When the batteries are damaged, they can release hot and poisonous gases into containers or onto car decks of ro-ro ships and other vehicle carriers within seconds. When the batteries explode those extraordinary temperatures can be reached.

"Thermal runaway occurs when the heat and chemical reactions reach a certain level, they are effectively self-sustaining and very difficult to extinguish," she added.

Of course, EVs are just one use for li-ion batteries, which can be found in a variety of goods including e-bikes and scooters, as well as computers and mobile phones. All of these goods are transported with batteries in containers. Whilst transported as new, it may be reasonable to expect appropriate packaging, although state of charge is variable, used and damaged batteries present considerable uncertainty for the transport supply chain.

"Currently li-ion batteries are classified as one of four UN numbers, depending on power output or the weight of lithium in them and whether they are contained within devices or shipped separately. All four are Class 9 in the IMDG Code – Miscellaneous dangerous substances and articles," explained Storrs-Fox. "Class 9 is the least hazardous ranking and dates from a change in IMDG Class from 4.3, which was made in the late eighties. Clearly there is a need for a radical review of this classification, as the size and energy capacity of these batteries has altered dramatically since then. As has the volume being carried in container ships."

This raises concern that li-ion batteries are not classified as sufficiently hazardous and the range of potential Special Provisions increases complexity and uncertainty. All this may have serious ramifications when a container is being accepted for shipment or a ship stowage plan is being compiled. Storrs-Fox concludes, "In addressing the commercial opportunity in the answering the agenda to move away from fossil fuels, there needs to be urgent engagement from manufacturers and OEMs to resolve the justifiable concerns of the logistics industry – ahead of regulatory strengthening."





## UK Chamber of Shipping to examine risks of lithium-ion batteries

The UK Chamber of Shipping has established an ad hoc working group to gain a comprehensive understanding of the risks associated with lithium-ion batteries (LIBs). The group is to examine various aspects of batteries, including how to guard against such batteries going into thermal runaway and catching fire.

The group has participants from the Chamber membership, the Maritime and Coastguard Agency and expert specialists. It is aiming to develop:

- Proposals for regulations relating to the carriage of LIBs on ships
- Recommendations for training and information for ships' crews
- Procedures for detecting damaged or faulty LIBs
- Equipment that can be used in ports and on ships to help manage the risks effectively.

The carriage, stowage, and safety of electric vehicles is an issue the shipping industry aims to tackle. Lately, in order to reduce greenhouse gas (GHG) emissions and accelerate the energy transition, the marine industry has begun to incorporate batteries onboard ships. However, for marine stakeholders, batteries present both a unique set of opportunities and a challenge.

Batteries can be very dangerous cargo if not handled properly. Some of the reasons include:

- Fire (Li-ion batteries contain electrolyte, an ignitable liquid);
- Explosion (resulting from the release of ignitable vapor/gases in a confined space);
- Thermal runaway (a rapid self-heating fire that can cause an explosion);
- Toxic gases that these hazards can produce.

And what about lithium-ion challenges with superyachts and small craft?

If you have read this article and think it mostly concerns the commercial shipping industry, you are correct; it does. But there are some very real concerns from those operating in the small craft and workboat surveying sectors too. Several inland waterways surveyors in the UK have, for example, raised very real concerns about the configuration of lithium-ion battery installations on narrowboats. In addition, a number of small craft and yachts are being retrofitted with lithium-ion batteries, including in some cases, with batteries designed specifically for houses (which are cheaper) and not boats! The potential for catastrophe in those circumstances is very real. And the superyacht sector is not devoid of these major concerns either. Last year almost 70 superyacht fires were attributed to lithium-ion battery fires. However, in most cases these were caused not by the main superyacht battery installation itself, but by the lithium-ion powered toys and accessories.

This article entitled 'Are lithium-ion batteries safe on yachts – and other vessels?' will give you an insight to this particular issue and can be read at <https://bit.ly/48HUSlr>. Or scan the QR code.







# Inventory of Hazardous Materials: New requirements from 2025

**The Hong Kong Convention was first adopted in 2009 to address, in a legally binding instrument, the environmental, occupational health and safety risks related to ship recycling, taking into account the particular characteristics of maritime transport and the need to secure the smooth withdrawal of ships that have reached the end of their operating lives.**

The updated Hong Kong Convention will enter into force on 26 June 2025. It will require new ships and existing ships of 500 GT and above - no later than 5 years after the entry into force of the Convention, or before going for recycling, if this is earlier - to have onboard a valid International Inventory of Hazardous Materials (IHM) certificate.

The objective of the IHM under the Hong Kong Convention is to document ship-specific information on the actual hazardous materials present on board to protect the health and safety of the crew and workers at the ship recycling facilities thus avoiding environmental pollution when the ship is going for recycling.

The European Parliament formally adopted the EU SRR on 22 October 2013. The EU SRR entered into force on 30 December 2013. The EU SRR requires all non-EU-flagged ships of 500 GT and above calling at EU ports; from 31 December 2020, to have onboard a valid IHM with a Statement of Compliance/International Certificate. The Statement of Compliance/International Certificate shall be annotated with a note that the IHM has been developed to cover also the requirements of EU Regulation No. 1257/2013 to confirm that due diligence and consideration has been given to how the IHM is

developed and controlled to cover both the requirements of the Hong Kong Convention and the EU SRR. Ships masters should be familiar with the requirements of this Note and should be able to present the same to Port State Control (PSC) officers when requested.

Considering the EU SRR is nearly aligned with the Hong Kong Convention and includes various references to it and related Guidelines, it is determined that there are efficiencies to be gained through combining compliance inspections to avoid unnecessary duplication and administrative burdens of multiple ship visits for Owners and Operators vessels. Upon entry into force of the Hong Kong Convention or earlier if requested, the Flag Administration will also issue the International Ready for Recycling Certificate prior to recycling and upon completion of the final survey.

Shipowners with ships calling at ports in the EU are therefore required to develop the IHM for approval prior to arrival at any EU port and for ships calling ports around the world other than ports in the EU, shipowners are required to develop the IHM for approval prior to entry into force of the Hong Kong Convention on 26 June 2025; or before going for recycling, if this is earlier. To meet the requirements of the EU SRR there should be a reference in the International Certificate on IHM stating that the IHM has been developed to cover also the requirements of the EU SRR. This would entail that the IHM would include the classification of materials according to the IMO guidelines together with the addition of two hazardous materials (Perfluoro octane Sulfonic Acid -PFOS and Brominated Flame Retardant -HBCDD) required by the EU SRR.

## Convention Definitions

Accredited laboratory is a laboratory accredited in accordance with ISO 17025 or an equivalent standard for the purpose of conducting specific tests for hazardous materials included in the Hong Kong Convention including additional materials required under the EU SRR and capable of providing a written report that can be relied upon by all parties.

**Hazardous Material means any material or substance which is liable to create hazards to human health and/or the environment.**

Hazardous Material survey is an investigation to trace and identify the presence or absence of Hazardous Materials contained in the equipment, systems, and/or areas on board a ship and may include a review of any relevant documents, visual inspections and sampling.

IHM process is the whole process of development and maintenance of an IHM throughout the operational life-cycle of the ship. It involves all the steps of developing an IHM including issuing/checking of any relevant documentation (e.g. Material Declarations), sampling and analysis, verification and life-cycle management.

Individual IHM Expert is a person who has the appropriate training, qualifications and knowledge to conduct hazardous material surveys for the development and maintenance of an IHM. He or she should have experience on ship structure and on handling of HM and sufficient knowledge of how to compile an IHM and of all the relevant international legislation.

IHM Expert Company is an entity employing or contracting individual IHM experts to conduct any relevant work or task in relation to the IHM process for the purpose of compiling or updating Inventories of Hazardous Materials. The IHM expert company should use a documented management system and should work on suitable standards, covering the relevant activities of the company.

Sampling check is the taking of samples to identify the presence or absence of HM contained in the equipment, systems, and/or areas on board a ship, by suitable and generally accepted methods such as laboratory analysis.



## Operational Guidance

The IHM consists of:

**Part I:** Hazardous materials contained in ship structure or equipment, their location and approximate quantities and referred to in Appendices 1 and 2 of the Hong Kong Convention and clarify that the ship complies with the controls of ships hazardous materials:

Prior to recycling - **Part II:**  
Operationally generated wastes;

and **Part III:** Stores.

In general, the guidelines in Resolution MEPC.269(68) provide sufficient information for the development of the IHM in relation to the hazardous material included in Appendices 1 and 2 of the Hong Kong Convention as well as an indicative list of these hazardous materials with CAS numbers and respective specific test methods. Therefore, for information on the hazardous materials included in appendices 1 and 2 of the Hong Kong Convention and in annexes 1 and 2 of the EU SRR, reference should be made to the IMO guidelines.

Part I of the IHM shall remain with a vessel throughout its operational life and be updated as all new installations enter the ship, as these may potentially contain hazards. The presence of the inventory will then ensure the safety of crewmembers during the vessel's operational life, and the safety of workers during the recycling process.

The shipowner is responsible for developing Part I of the IHM and should draw upon expert assistance. This is strongly recommended for safety and health protection reasons and in order to have a minimum assurance that the work is carried out by competent personnel, under a quality management system and in accordance with IMO guidelines in Resolution MEPC.269(68). However, such IHM Expert Company should not be the same as the Recognized Organization authorized by the Flag Administration to approve the IHM. The development and maintenance of the IHM should be subject to the principles of independence, quality and accountability.

The following procedure should be followed for the determination of Part I of the IHM:

- Collection of the necessary information
- Assessment of collected information
- Preparation of Visual/Sampling Check Plan (VSCP);
- Onboard Visual/Sampling Check; and
- Preparation of Part I of the IHM and related documentation
- Maintaining and updating Part I of the IHM during operations

The Hong Kong Convention requires that the shipowner maintain the IHM throughout the operational life of the ship.

If any machinery or equipment is added, removed or replaced or the hull coating is renewed, Part I of the IHM should be updated. Updating is not required if identical parts or coatings are installed or applied.



Part I of the IHM should belong to the ship and the continuity and conformity of the information should be confirmed, especially if the flag, owner or operator of the ship changes.

## Requirements for ascertaining the conformity of Part I of the IHM

The conformity of the IHM for new ships (or new installations on existing ships) should be ascertained by reference to the Supplier's Declaration of Conformity and the related Material Declarations collected from suppliers at the design and construction stage. To enforce the delivery of Material Declarations, builder's and operator's purchase departments are strongly advised to include related clauses in the contracts with suppliers of equipment, systems and installations.

## Material Declaration (MD)

Suppliers to the shipbuilding industry should identify and declare whether or not the materials listed in Appendices 1 and 2 of the Hong Kong Convention. However, this provision does not apply to chemicals that do not constitute a part of the finished product.

At a minimum, the following information is required in the MD:

- date of declaration.
- MD identification number.
- supplier's name.
- product name (common product name or name used by manufacturer).
- product number (for identification by manufacturer).
- declaration of whether or not the materials listed in Appendices 1 and 2 of the Hong Kong Convention are present in the product above the threshold value stipulated in reference (b)
- and mass of each constituent material listed.

The purpose of the Supplier's Declaration of Conformity is to provide assurance that the related.

Material Declaration conforms to the information above, and to identify the responsible entity. The SDOC should contain the following:

- unique identification number.
- name and contact address of the issuer.
- identification of the subject of the Declaration of Conformity (e.g., name, type, model number, and/or other relevant supplementary information).
- statement of conformity.
- date and place of issue and

- signature (or equivalent sign of validation), name and function of the authorized person(s) acting on behalf of the issuer.

For maintaining and updating Part I of the IHM throughout the operational life of the ship, reflecting new installations containing Hazardous Materials listed in Appendix 2 of the Hong Kong Convention including the additional materials in the EU SRR and relevant changes in ship structure and equipment, shipowners should implement the following measures in order to ensure the conformity of Part I of the IHM:

- Management policy to maintain the IHM:  
Designate a responsible person (ashore or on board);
- Management System to maintain the IHM:
- Request of Hazardous Material Information.
- Review of Collected Information of Hazardous Materials.
- Development of Revision of the Inventory.
- Review of Revision and Instruction of Updating Inventory.
- Update of the Inventory on Board.
- Ascertaining the Conformity of the Inventory.
- Continuity of Conformity of the inventory.
- Provide related documents as required for the survey or sale of the ship.

Shipowners may use an IHM Expert Company accepted by the Administration for maintaining and updating the IHM Part I.



# Hazardous Materials Survey and Certification

The Hong Kong Convention identifies the following surveys to be performed by the Flag Administration or organizations recognized by the Flag Administration:

Initial survey: to verify whether Part I of the IHM has been prepared in accordance with the Hong Kong Convention. Note that there are different requirements for the initial surveys of new ships and those for existing ships.

## Initial survey for new ships:

- Prior to the initial survey for a new ship, a request for the initial survey should be submitted by the shipowner or the shipyard to an authorized Recognized Organization along with the ship data required for the International Certificate on IHM;
- The request for an initial survey should be supplemented by Part I of the IHM along with the MD and SDOC and all other documents used to develop the IHM;
- The survey should verify that Part I of the IHM identifies the Hazardous Materials, their location and approximate quantities, by checking the MD and SDOC and especially the location of Hazardous Materials, is consistent with the arrangements, structure and equipment of the ship, through onboard visual inspection.

## Initial survey for existing ships

- In the case of an existing ship, an initial survey shall be conducted before the International Certificate on IHM is issued.
- Prior to the initial survey, a request for the initial survey shall be submitted by the shipowner to an authorized Recognized Organization along with the ship data for the International Certificate on IHM.
- The request for an initial survey shall be supplemented by Part I of the IHM.
- Part I of the IHM shall be developed through a visual check and/or sampling check on board the ship, based on the visual/sampling check plan in accordance with

Resolution MEPC.269(68) and be submitted by the shipowner to an authorized Recognized Organization along with supporting information such as the report of the visual/sampling check and/or MD and SDOC.

- The visual/sampling check plan and Part I of the IHM shall be prepared by an IHM Expert - Company in accordance with Resolution MEPC.269(68).
- The survey shall verify that Part I of the IHM identifies the Hazardous Materials, their location and approximate quantities, by checking supporting information such as the report of the visual check and/or sampling check and/or MD and SDOC. the MD and SDOC and especially the location of Hazardous Materials, is consistent with the arrangements, structure and equipment of the ship, through onboard visual inspection.
- The survey shall further verify that the IHM, especially the location of Hazardous Materials, is consistent with the arrangements, structure and equipment of the ship, through onboard visual inspection.

Renewal survey: is to be carried out at intervals not exceeding five years. This survey shall verify that Part I of the Inventory of Hazardous Materials complies with the requirements of this Convention.

Additional survey: at the request of the shipowner after change, replacement or significant repair of the structure, equipment, systems, fittings, arrangements and material, which have an impact on the IHM.

Final survey: conducted before a ship is taken out of service and before the recycling of the ship has started. This survey shall verify that:

- the Inventory, in addition to the properly maintained and updated Part I, incorporates Part II for operationally generated wastes and Part III for stores, taking into account the guidelines in Resolution 269(68).
- the Ship Recycling Plan, as required by regulation 9, properly reflects the information contained in the Inventory of Hazardous Materials and contains information concerning the establishment, maintenance and monitoring of Safe-for-entry and Safe-for-hot work conditions, and
- the Ship Recycling Facility(ies) where the ship is to be recycled holds a valid authorization in accordance with this Convention.





## Issuance and endorsement of certificates

Authorized Recognized Organizations shall issue an interim International Certificate on IHM for a period of five (5) months in the format specified in Appendix 1 of this Note after the successful completion of an initial, additional or renewal survey conducted in accordance with the paragraph above; upon transfer of flag, and upon any amendments to the previously issued Statement of Compliance. The Interim International Certificate on IHM along with the survey report and IHM Part I shall be submitted to the Flag Administration, for issuance of the full-term International Certificate on IHM.

Statements of Compliance on IHM already issued by authorized Recognized Organizations will continue to remain valid until they expire; or until 26 June 2025, whichever is earlier, after which the Flag Administration will issue the International Certificate on IHM, which may not require an additional shipboard inspection/survey, provided the IHM has been maintained and updated as required.

For the issuance of the full-term certificate, the following documentation must be submitted by the Recognized Organization to the Administration prior to 26 June 2025:

- the relevant survey report and IHM Part I and,
- Certification:
  - If SOC's expiring prior to 26 June 2025: an Interim Certificate on IHM upon completion of the renewal survey or,
  - If SOC's expire on or after 26 June 2025: the existing valid Statement of Compliance on IHM.

Upon entry into force of the Hong Kong Convention, authorized Recognized Organizations shall issue an Interim International Ready for Recycling Certificate for a period of fifteen (15) days in the format specified, after the successful completion of the final survey described above, taking into account the authorization of the Ship Recycling Facility in accordance with MEPC Resolution 211(63). The Interim International Ready for Recycling Certificate, Recycling Plan and Authorization of Ship Recycling Facility shall be submitted to the Flag Administration, for issuance of the full-term Certificate.

## Requirements for IHM Expert Companies and Shipowners

### IHM Expert Companies

The IHM should be developed by IHM Expert Companies accepted by the Administration as meeting the criteria listed below.

IHM Expert Companies desiring to be accepted by the Flag Administration for conducting IHM-related work described above, including maintaining and updating the IHM Part I should make an application to the Flag Administration and be able to demonstrate:

- Independence - Include Organization structure and a list of all Individual IHM Experts engaged with a copy of each person's training certification.
- Quality - Include a certificate or report verifying that the IHM Expert Company has a documented quality system.
- Accountability.
- Accreditation and Certification. Include the following:
  - ISO 17020 certification or equivalent standard and ISO 17025 certification or equivalent standard of the laboratories used;
  - Approval by an IACS classification society as a service provider for visual/sampling checks and testing of hazardous materials and preparing the IHM; and/or for maintaining and updating the IHM Part I.

### Shipowners

The responsibility for maintaining, updating and ascertaining the conformity of Part I of the IHM lies primarily with the ship owner. They have the duty of exercising due diligence when they appoint or instruct any person or party to conduct hazardous materials surveys, to compile reports, or to perform any kind of work within the context of the IHM process. Appointing an IHM Expert Company to compile/update an IHM should, in principle, be considered as exercise of due diligence to meet the relevant requirements of the Hong Kong Convention.

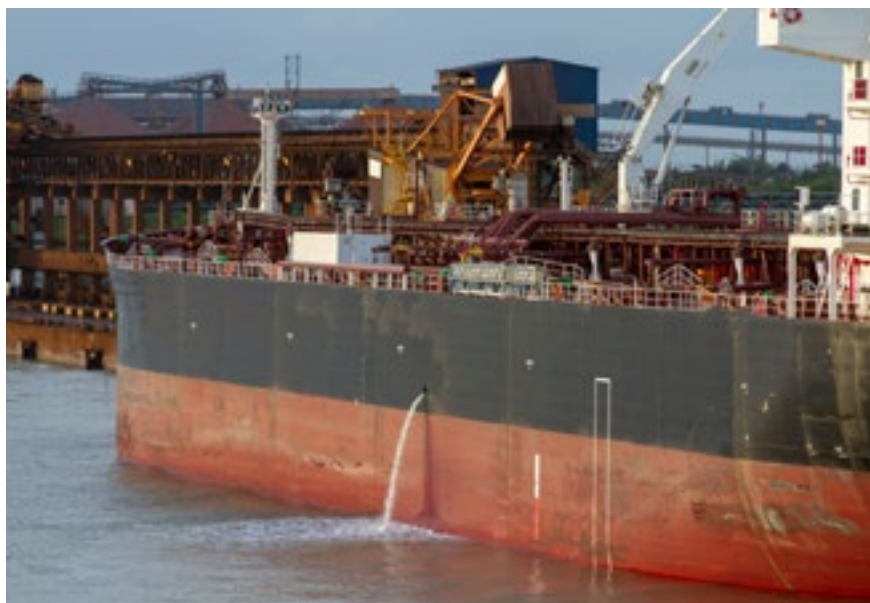
Shipowners desiring to obtain a Statement of Compliance/International Certificate on IHM should use only IHM Expert Companies that have been accepted by the Administration, with the onboard verification survey for approval of the IHM and issuance of the Statement of Compliance/International Certificate on IHM conducted by a Recognized Organization.



# Ballast operation and maintenance practice

Britannia P&I Club has seen several pollution incidents involving the accidental transfer of cargo into an adjacent ballast water tank. The main causes are pitting or corrosion of cargo tanks which results in cargo being flushed out during ballast water operations. These incidents have highlighted the importance of crew awareness of ballast principles and best practices. In this

guidance Britannia Club explores best ballast practice and how to maintain ballast tanks to prevent such claims.



*Ship de-ballasting*

## BALLAST PREPARATION

The main purposes of ballasting are to maintain the stability of a vessel, adjust the list and/or trim while at port to facilitate the cargo operation, to optimise a vessel's performance and reduce fuel costs. The International Ballast Water Convention (BWT) requires onboard ballast water management to help reduce potential ecological impact on the marine environment. However, a well implemented ballast practice remains crucial to avoid incurring expensive pollution fines due to potential contamination of the on-board ballast water.

Therefore, it is important that the regulations of the BWT, the approved Ballast Water Management Plan and any local regulations are followed. The company's Safety Management System (SMS) should also include procedures on ballasting operations to ensure it is carefully planned and executed. Planning considerations for the ballast process should include:

- Training and familiarising the crew with the onboard ballast system, the line setup, ballast water treatment system and associated equipment.

- Ensuring efficient ballast tank management, including regular inspection of tank-fitted alarms and sounding equipment. This will help prevent the accumulation of sediment or debris that could be of an invasive species.
- Assessing the suitability and quality of the water to be taken on as ballast. If possible, the ballasting required may be achieved by internal transfer of the ballast water already carried on board.
- Determining the amount of ballast water required for stability and trim during the different phases of the cargo operation and voyage. This includes ensuring that vent closures are open for the tanks being ballasted.
- Producing a ballast water plan, which stipulates the required ballast amount and sequence of tanks to be filled and emptied. Also taking into consideration any pump limitations and planning ballasting at a safe rate.
- Considering free surface effects as a result of tanks that are not pressed.



- Obtaining a loading/discharge sequence prior to the cargo operation. If the provided sequence plan raises any stability or hull stress concerns which cannot be compensated by the use of ballast, this should be brought to the attention of the terminal immediately for rectification.
- Ensuring all ballast tank level measuring gauges are working and provide reliable soundings. For manual sounding, suitable sounding intervals and reporting should be agreed. If operating in Arctic areas, ensuring the sounding pipes and tank level gauges are not affected by the extreme cold weather.
- Maintaining and updating ballast water management records as required.
- Considering nearby vessels. This is important for bunkering purposes so the de-ballasting does not cause damage or impact its safety.
- Considering the locations of shore installations to ensure de-ballasting operations do not cause damage, particularly to electrical items.
- Taking care when ballasting in shallow waters as it can cause ballast pump strainers to choke and sediment deposits to gather inside tanks.

## MONITORING

The ballast operation should be monitored throughout by a duly qualified deck officer, with the deck crew using a reliable means of communications. It should be verified that the ballast water is flowing as intended and the designated tanks are filled/emptied at the expected rate. If there is any doubt, the ballast operation should be stopped until the root cause is identified and rectified. To avoid potential fines, ballast tanks should not be allowed to overflow through airpipes. If manual soundings



*Beware what is alongside before de-ballasting*

are conducted, these should be carried out at agreed intervals and be reported to the officer in charge of the ballast operation.

During de-ballasting, frequent 'over the side' visual observations of the discharged ballast water should be carried out to determine if there are any signs of contamination. If it does, the ballast operation should be stopped immediately and the root cause investigated.

Furthermore, the officer in charge of the ballast operation should be familiar with all fitted alarms and react promptly if they are activated. They should also be aware of any alarm not being activated as expected. Some vessels may be installed with a gas

sampling system in its ballast tanks. This system is to provide an alarm should any cargo accidentally run into an adjacent ballast tank e.g., due to corrosion, and cause a potential dangerous atmosphere to develop within the ballast tank. While this system may provide a warning about ballast water contamination then it cannot solely be relied on for this purpose. Depending on the model it may be required to be disconnected when a ballast tank is full. Also, sufficient headspace within the ballast tank will be required for a dangerous atmosphere to develop and for the system to provide a warning of this.

Therefore, familiarisation with the ballast system and monitoring the operation by applying good



*The ballast operation should be properly monitored at all times*

ballast management practice remains vital. Similarly, ensuring accurate ballast tank management, including regular inspection and maintenance, is also important.

## **BALLAST TANK MAINTENANCE**

Maintenance and inspections of ballast tanks is key to ensure the structural integrity of tanks. As part of a vessel's Planned Maintenance System (PMS), a robust maintenance schedule for the ballast tanks, including cleaning, inspection and repairs should be implemented. Regular inspections help identify any potential issues or structural damage to the ballast tanks. This allows for timely repairs and therefore helps mitigate the risk of incidents. To ensure maintenance of the onboard ballast tank system the following precautions should be taken.

Conducting regular inspections of the ballast tanks and associated pipework to identify any signs of damage, such as cracks, deteriorated welding seams, corrosion, or structural weaknesses. These inspections should include thorough visual examinations, non-destructive testing techniques, such as ultrasonic testing or magnetic particle inspection, and thickness measurements of the tank walls. Ideally, photographs should be taken and kept as a record of visual inspections.

- Checking manhole covers to ensure that sealing arrangements are free of debris, the gasket is in satisfactory condition and all nuts and bolts are in place and correctly cross-tightened.
- Periodic hydrostatic testing of ballast tanks surrounding the cargo holds should also be considered as part of a vessel's planned maintenance system and conducted at suitable intervals when the holds are cargo free.
- Ensuring the surface is properly prepared before applying any protective coatings or treatments to the ballast tanks. This includes cleaning, removing rust and scale.
- Applying appropriate protective coatings to prevent corrosion. These coatings should have corrosion resistant and be able to withstand the harsh marine environment.



*Conduct thorough tank inspections to ensure the tank and its equipment is in a good condition*

- Monitoring and maintaining cathodic protection systems to ensure their effectiveness. This may include periodically measuring the current and potential differences to assess the performance of the system and maintaining and replacing corroded anodes as per the manufacturers' instructions.
- Regularly monitoring the quality of the water inside the ballast tanks to identify any potential sources of contamination. This includes testing for pollutants, chemicals and biological organisms that could lead to cross-contamination or damage to the ballast tanks. Also being aware of any unusual odour from the ballast tank venting system or sounding pipe.
- Promptly addressing any structural damage to the ballast tanks. This includes repairing any cracks, dents, or structural weaknesses that may affect the integrity of the tanks and notifying the vessels' classification society to determine further repair requirements.
- Where there is a sign or suspicion of a ballast tanks integrity being compromised, ensuring it is not used before an investigation and any required repairs have been conducted. This also applies to adjacent tanks or compartments that may be affected by potential structural damage.

It should also be noted that any inspection or work inside a ballast tank should be governed by Members' entry into enclosed space procedures and Permit to Work system, implementing the provisions stipulated by IMO's Resolution A.1050(27) 'Revised recommendations for entering enclosed spaces aboard ships'.

## **CONCLUSION**

Applying best ballast water management practice is essential in order to comply with applicable regulations and to prevent a costly claim. The maintenance and inspection of marine ballast tanks plays a crucial role in preventing leakage and cross-contamination. It is important to implement suitable measures, such as regular maintenance, appropriate drainage and cleaning, and efficient monitoring of water quality. Robust inspections will also help to identify any structural damage promptly. Providing training and education to the crew involved in operating and maintaining the ballast water system will help in mitigating the risk of pollution claims during ballast operations.

For further information, Britannia P&I Club can be contacted by email at: [lossprevention@tindallriley.com](mailto:lossprevention@tindallriley.com).





# EEXI and CII

## ship carbon intensity and rating system

### *AN INSIDER'S GUIDE*

Here are a selection of frequently asked questions on the seemingly much misunderstood Energy Efficiency Existing Ship Index (EEXI) and the annual operational carbon intensity indicator (CII) and CII rating.

Amendments to the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI entered into force on 1 November 2022. Developed under the framework of the Initial IMO Strategy on Reduction of GHG Emissions from Ships agreed in 2018, these technical and operational amendments require ships to improve their energy efficiency in the short term and thereby reduce their greenhouse gas emissions.

From 1 January 2023 it became mandatory for all ships to calculate their attained Energy Efficiency Existing Ship Index (EEXI) to measure their energy efficiency and to initiate the collection of data for the reporting of their annual operational carbon intensity indicator (CII) and CII rating.

### *What do those mandatory measures mean?*

As a stimulus to reduce carbon intensity of all ships by 40% by 2030 compared to 2008 baseline, ships are required to calculate two ratings: their attained Energy Efficiency Existing Ship Index (EEXI) to determine their energy efficiency, and their annual operational Carbon Intensity Indicator (CII) and associated CII rating. Carbon intensity links the GHG emissions to the amount of cargo carried over distance travelled.

### *When did the measures come into force?*

The amendments to MARPOL Annex VI came into force from 1 November 2022. The requirements for EEXI and CII certification came into effect on 1 January 2023. This means that the first annual reporting will be completed in 2023, with initial ratings given in 2024.

The measures are part of IMO's commitment under its 2018 Initial Strategy on Reduction of GHG Emissions from Ships to reduce carbon intensity from all ships by 40% by 2030 compared to 2008.

### *What is an Energy Efficiency Existing Ship Index (EEXI)?*

A ship's attained EEXI indicates its energy efficiency compared to a baseline. Ships attained EEXI will then be compared to a required Energy Efficiency Existing Ship Index based on an applicable reduction factor expressed as a percentage relative to the Energy Efficiency Design Index (EEDI) baseline. It must be calculated for ships of 400 gt and above, in accordance with the different values set for ship types and size categories. The calculated attained EEXI value for each individual ship must be below the required EEXI, to ensure the ship meets a minimum energy efficiency standard.

### *What is a Carbon Intensity Indicator rating?*

The CII determines the annual reduction factor needed to ensure continuous improvement of a ship's operational carbon intensity within a specific rating level. The actual annual operational CII achieved must be documented and verified against the required annual operational CII. This enables the operational carbon intensity rating to be determined.

## How do the new ratings work?

Based on a ship's CII, its carbon intensity will be rated A, B, C, D or E (where A is the best). The rating indicates a major superior, minor superior, moderate, minor inferior, or inferior performance level. The performance level will be recorded in a "Statement of Compliance" to be further elaborated in the ship's Ship Energy Efficiency Management Plan (SEEMP).

A ship rated D for three consecutive years, or E for one year, will have to submit a corrective action plan to show how the required index of C or above will be achieved. Administrations, port authorities and other stakeholders as appropriate, are encouraged to provide incentives to ships rated as A or B.

A ship can run on a low-carbon fuel clearly to get a higher rating than one running on fossil fuel, but there are many things a ship can do to improve its rating, for instance through measures, such as:

- hull cleaning to reduce drag;
- speed and routing optimization;
- installation of low energy light bulbs; and
- installation of solar/wind auxiliary power for accommodation services.

## How do the measures fit into IMO's decarbonization strategy?

The introduction of mandatory EEXI and CII comes under the framework of the Initial IMO Strategy for Reduction of GHG Emissions from Ships, adopted in 2018. The Initial Strategy sets out candidate short-term, mid- and long-term measures.

The introduction of EEXI and CII measures falls under the Strategy's short-term measures which commit IMO to a target of reducing carbon intensity of international shipping by 40% by 2030, compared to 2008.

## How will the impact of the new regulations be assessed?

IMO's Marine Environment Protection Committee (MEPC) is to review the effectiveness of the implementation of the CII and EEXI requirements by 1 January 2026 at the latest and develop and adopt further amendments as required.

The review paragraph says: Regulation 28 Operational carbon intensity:

11 A review shall be completed by 1 January 2026 by the Organization to assess:

1. the effectiveness of this regulation in reducing the carbon intensity of international shipping;
2. the need for reinforced corrective actions or other means of remedy, including possible additional EEXI requirements;
3. the need for enhancement of the enforcement mechanism;
4. the need for enhancement of the data collection system; and
5. the revision of the Z factor and CIIR values.

If based on the review the Parties decide to adopt amendments to this regulation, such amendments shall be adopted and brought into force in accordance with the provisions of article 16 of the present Convention.

In adopting the measure, MEPC also considered the outcomes of a comprehensive impact assessment of the measure which examined potential negative impacts on States, and agreed to keep the impacts on States of the measure under review so that any necessary adjustments can be made. MEPC also agreed that disproportionately negative impacts of the measure should be assessed and addressed, as appropriate.

## What about support for developing States in particular small island developing States (SIDS) and least developed countries (LDCs)?

IMO has a comprehensive programme of support for developing States to implement IMO regulations. In addition to IMO's Integrated Technical Cooperation Programme (ITCP), the dedicated IMO GHG TC Trust Fund support developing countries with the implementation of the Initial IMO GHG Strategy. There are also a number of global projects specifically targeting GHG reduction measures, including: GreenVoyage2050; GHG SMART; NEXTGEN; IMO CARES; the Global MTCC Network; Innovation Forum.

## What is the next stage for IMO's GHG Strategy?

Member States are working on the revision of the Initial Strategy. The Revised Strategy is set to be adopted in mid-2023 at the Marine Environment Protection Committee (MEPC 80) session in July 2023.

## What about mid- and long-Term IMO GHG reduction Measures?

IMO Member States have already initiated discussions on various proposals for IMO's next set of GHG reduction measures, such as a maximum carbon-content for marine fuels as well as on economic measures, such as a GHG levy, emissions trading scheme (ETS), feebate or an incentive scheme for zero emission vessels.



The work plan for looking at the development of these measures envisages:

**Phase I:** Collation and initial consideration of proposals for measures (spring 2021 to spring 2022) - completed;

**Phase II:** Assessment and selection of measure(s) to further develop (spring 2022 to spring 2023);

**Phase III:** Development of (a) measure(s) to be finalized within (an) agreed target date(s).

## What about new and alternative fuels for ships?

New fuels will be crucial for decarbonizing the shipping sector. IMO held the Second IMO Symposium on low- and zero-carbon fuels for shipping: "Ensuring a just and inclusive transition towards low-carbon shipping" on 21 October 2022 to look at the challenges and opportunities that renewable fuel production represents in the context of shipping decarbonization, particularly for developing countries, SIDS and LDCs, while also assessing what other elements could constitute a just and equitable transition.

## Where can I download the regulations and guidelines?

The revised MARPOL Annex VI (2021 Revised MARPOL Annex VI) and related guidelines can be downloaded at <https://bit.ly/44SLm2P>.

## Which ships do the CII and EEXI regulations apply to?

In general, MARPOL Annex VI regulations apply to "all ships except where otherwise stated" (MARPOL Annex VI Regulation 1 Application The provisions of this Annex shall apply to all ships, except where expressly provided otherwise.)

The regulations on carbon intensity of international shipping in Chapter 4 of MARPOL Annex VI apply to all ships of 400 gross tonnage and above. Notwithstanding, the provisions of Chapter 4 do not apply to ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly. However, each Party should ensure, by the adoption of appropriate measures, that such ships are constructed and act in a manner consistent with the requirements of chapter 4 of this Annex, so far as is reasonable and practicable. (Regulation 19 Application 1 This chapter shall apply to all ships of 400 gross tonnage and above.)

While EEXI generally applies to each ship of 400 gross tonnage and above, CII applies to ships 5,000 gross tonnage and above. Ships at or above 400 gross tonnage will need to be surveyed and issued with the appropriate certificates.

For survey and certification purposes, MARPOL Annex VI applies to every ship of 400 gross tonnage and above. (MARPOL Annex VI Regulation 5 Surveys 1 Every ship of 400 gross tonnage and above and every fixed and floating drilling rig or other platform shall be subject to the surveys specified).

The ships covered include: bulk carrier, gas carrier, tanker, containership, general cargo ship, refrigerated cargo carrier, combination carrier, LNG carrier, Ro-

ro cargo ship, ro-ro passenger ship, cruise passenger ship.

## EEXI

EEXI applies to: ".1 each ship; and .2 each ship which has undergone a major conversion". (MARPOL Annex VI Regulation 23 Attained Energy Efficiency Existing Ship Index (attained EEXI) 1 The attained EEXI shall be calculated for: .1 each ship; and .2 each ship which has undergone a major conversion.)

## CII

CII applies to ships of 5,000 gross tonnage and above (similar to the ships subject to Regulation 27 on mandatory annual fuel consumption reporting to the IMO Ship Fuel Oil Consumption Database).

(MARPOL Annex VI Regulation 28 Operational carbon intensity Attained annual operational carbon intensity indicator (attained annual operational CII) 1 After the end of calendar year 2023 and after the end of each following calendar year, each ship of 5,000 gross tonnage and above.... shall calculate the attained annual operational CII over a 12-month period from 1 January to 31 December for the preceding calendar year.)

## How many countries are party to these regulations?

The CII and EEXI regulations are in the Annex VI of the International Convention for the Prevention of Pollution by Ships (MARPOL). Annex VI was adopted through a Protocol adopted in 1997. Amendments since then have been adopted under the "tacit acceptance" process, meaning they come into force on a set date (unless a specified number of Parties object). As of 1 November 2022, MARPOL Annex VI had 105 Parties, representing between them 96.81% of world merchant shipping by tonnage.



# Questions and Answers on maritime safety by the European Commission

*New proposals to support clean and modern shipping*

## What is the aim of the Directive on flag state requirements?

Flag States (the State which registers the ship and under whose law it operates) are the keystone for ensuring maritime safety. Each flag State must take all necessary measures to attest to the ship's safety and compliance with international rules and regulations, including IMO rules. They are considered the first line of defence in maritime safety.

The revision of Directive 2009/21/EC on compliance with flag State requirements is designed to update and improve the EU legislation to improve safety and pollution prevention from EU ships.

The flag State Directive does not set standards, but rather incorporates into the EU legal framework the regulations and standards set at IMO level.

They require flag States to correctly implement and apply the Conventions and have the resources and powers needed to assume their international obligations and ensure compliance of their flagged ships with these rules.

The proposal provides for a harmonised implementation of these rules, in terms of sharing information on the outcome of Member States' inspections, promoting the use of electronic certificates, ensure adequate resources are dedicated for enforcement and appropriate training for inspectors as well as sufficient oversight over any outsourced inspection work.

## What changes are proposed to the Directive on flag state requirements and why?

The current directive dates back from 2009 and needs to be brought up to date to take account of changes in both the international regulatory environment and technology. The current proposal will introduce the flag-state-relevant parts of the IMO Instruments Implementation Code into EU law, aligning EU obligations with international provisions. This will ensure that EU Member States correctly, effectively and consistently fulfil their obligations as flag States.



In addition, the proposal will support flag State administrations of EU Member States by:

- Providing for more enhanced monitoring of Recognised Organisations (ROs) – private companies or entities that carry out technical survey tasks on ships on behalf of a flag State administration.
- Introducing requirements on digitalisation for flag State inspection reports that ensure better oversight and greater sharing of safety information with other EU Member States and the Commission.
- Requiring that national administrations maintain sufficient oversight of their fleet, thus helping to retain core technical staff for monitoring and carrying out checks on ships, even when these are outsourced to third parties.

A Member State group will be established to increase common understanding of flag State issues, to share information, views and experience, including ways to modernise the way in which flag State performance is measured. Finally, the legislation will provide for the provision of capacity-building support by the European Maritime Safety Agency to Member States' flag State inspectors.

## What is the aim of the Directive on port State control?

Port State control is a system of inspection of foreign merchant ships (cargo or passenger) in ports. The checks are intended to verify that crew competence and the condition of the ship and its equipment comply with the requirements of international conventions on the safety of life at sea, working and living conditions on board and on the protection of marine environment. As such, it is a vital part of the maritime safety chain. Port State control is an enforcement tool and the standards that it applies are set at IMO I level (or in some cases by

specific EU legislation). Port State control is considered the second line of defence, after flag State.

Port State control in the EU is based on an intergovernmental structure: the Paris Memorandum of Understanding ('Paris MoU'). All 22 EU Member States with sea-ports, as well as Canada, Iceland, Norway and the United Kingdom are members of the Paris MoU. Russia is also a member, but its membership was suspended in May 2022 following Russia's war of aggression on Ukraine. EMSA works closely with EU and Paris MoU Member States to implement the port State control regime. On average, over 15,000 port State control inspections are carried out annually by the Paris MoU Member States.

## What changes are proposed to the Directive on port State control and why?

The proposal to revise Directive 2009/16/EC seeks to improve the EU port State control regime by aligning it with developments at IMO and Paris MoU level to ensure there are no contradictions between the Member States' obligations at EU and international level. It will also incorporate two important environmental international legal instruments, namely the IMO Ballast Water Management and the Nairobi Wreck Removal conventions, meaning that ships will now be inspected to check they comply with these Conventions' provisions.

The proposal further provides for the development of a voluntary port State control regime for those EU Member States that want to inspect larger foreign-flagged fishing vessels (over 24 metres in length).

The amended text will also encourage the uptake and use of electronic ship certificates by providing for a central repository and common validation tool to allow for better prepared and more targeted inspections. Legislative amendments are put forward to

// **Port State control in the EU is based on an inter-governmental structure** //



address problems which have been encountered in the implementation of the current port State control regime, relating to missed inspections (either for operational or force majeure reasons), the number of inspectors required for more complex inspections and the validation and sharing of inspection reports.

It also requires Member States to have a quality management system to certify its port State control administration organisation, policies, processes, resources and documentation. This is something that is already required for the flag State part of the Member States' maritime administrations and it should allow the administrations to keep pace with the increasing complexity and requirements of port State control inspections.



**// Member States will also be provided with more clarity on the circumstances in which accidents should be investigated //**

## What changes are proposed to the Directive on maritime transport accident investigation and why?

Directive 2009/18/EC establishes the fundamental principles governing the investigation of accidents in the maritime transport sector. It integrates the principles of the United Nations Convention of the Law of the Sea, as well as the relevant International Maritime Organisation code, into EU law.

The Directive is being revised to align EU law with changes in international law, to take account of technological change, and to incorporate accident types currently absent from the Directive for example accidents involving port workers which take place on board ships in port. These changes are designed to ensure and improve on the EU's current high level of maritime safety and pollution protection.

The proposal partially extends the scope of the Directive to bring certain types of accidents involving smaller fishing vessels (less than 15 metres in the length) within the competence of Member States' accident investigation bodies. These accidents are the most serious, involving death of a crew member or the loss of a vessel.

The revised directive will allow for greater EMSA operational support to accident investigation bodies, upon their request. EMSA will also be able to provide support in the form of training to improve Member State capacity to conduct (and report on) accident investigations in a timely, expert and independent manner – including those involving renewable and low carbon fuels and technologies used on-board ships.

Member States will also be provided with more clarity on the circumstances in which accidents should be investigated. This will allow for a more harmonised approach across the EU. The proposal aligns the directive with the most up to date International Maritime Organization provisions and will also require that Member State's accident investigation bodies have a certified quality management system in place, similar to what is already required for the flag State administration and is being proposed in the port State control revision.

## What is the aim of the Directive on ship-source pollution?

Directive 2005/35/EC on ship-source pollution, focuses on the enforcement of agreed international standards under the International Convention for the Prevention of Pollution from Ships (MARPOL), which determines whether a discharge is authorised or illegal. The role of the Directive is to ensure that Member States set effective, proportionate, and dissuasive penalties for illegal discharges. It also provides for collaboration on enforcement across the EU with the support of EMSA. The current directive brings some MARPOL international standards into EU law, namely those relating to oil and noxious liquid substances in bulk (MARPOL Annexes I and II).

The proposed revision sets out to update this important piece of environmental protection legislation. This legislation is designed to decrease pollution of the sea from maritime transport by dissuasive penalties and expanding the scope of the directive to cover more polluting substances discharged illegally into the sea including garbage and sewage (MARPOL Annexes I to VI).





## What changes are proposed to the Directive on ship-source pollution and why?

The revision of Directive 2005/35/EC will significantly extend the scope to: harmful substances carried by sea in packaged form, sewage, garbage, and discharge water and residues from scrubbers. The proposal clarifies the liability regime applicable under MARPOL and introduces new measures on administrative penalties, without affecting the Environmental Crime Directive[1], currently under inter-institutional negotiations, which will take over the criminal penalties for ship-source pollution offences. In light of the cross-border nature of ship-source pollution, criteria to set penalty levels will also be introduced, ensuring that their deterrent effect is consistent across the EU.

The revision proposes to extend the surveillance services provided by EMSA through 'CleanSeaNet' to cover all types of pollutants. To improve information exchange between Member States and the Commission and strengthen enforcement action against pollution, EMSA tools and services such as CleanSeaNet, SafeSeaNet and THETIS will be further optimised and follow-up obligations on potential pollution incidents are provided for. These measures should allow Member States to better target potential pollution and reduce their enforcement costs.

The Commission will assist Member States in implementing the revised directive by assisting the training of relevant national authorities and facilitating whistle-blowers reporting potential pollution incidents. To increase public awareness on ship-source pollution discharges, and improve environmental protection, a regularly updated website containing key non-confidential information will inform the public of the implementation of the Directive.

The proposal also revises the reporting obligations of Member States to allow better monitoring of the implementation of the

enforcement system provided by the Directive. To minimise the administrative burden, the development of a single reporting tool for Member State is proposed (to be developed by EMSA).

## What changes to the Regulation establishing EMSA are proposed and why?

The revision is a necessary step to make the agency more effective and responsive. The agency's mandate needs to be revised as it does not properly reflect EMSA's current scope of activities. This has changed due to the evolving needs of the maritime sector and the new EU regulatory framework in several areas.

The proposed Regulation will reflect EMSA's new tasks in maritime safety, sustainability, decarbonisation, security and cybersecurity, surveillance, and assistance in crisis management.

## How will the Commission support the implementation of the proposed directives?

The Commission services will monitor the implementation and effectiveness of these initiatives through a number of actions.

The port State control Directive, as well as the maritime accident investigation Directive, already require administrations to upload results to the THETIS database, managed by EMSA. The flag State Directive will provide for Member State authorities to also share the result of their flag State inspections.

EMSA also carries out visits to Member States to verify operations on the ground on behalf of the Commission as part of EMSA's support role to the Commission. In port State control, flag State compliance and accident investigation, Member States will have to put in place a quality management system. This will have to be certified and subsequently subject to audit every five years.

The more detailed reporting requirements of Member States under the revised ship-source pollution directive will ensure that the Commission collects the necessary information for monitoring the implementation of the Directive, in the interest of minimising pollution from ships in European seas. Implementation can for example be monitored by checking if Member States provide feedback to EMSA-managed CleanSeaNet alerts in a timely and effective manner. The Commission, with support from EMSA, will also develop a public website with core indicators on the implementation rate, and the key non-confidential information on incidents of illegal discharges.

## What else is the Commission doing to make maritime shipping cleaner and safer?

On safety matters, the EU has a comprehensive set of legislation which is constantly reviewed. The Commission, supported by EMSA, is engaging with experts from Member States, as well as from other stakeholders, to address current issues, such as containership safety, autonomous shipping, and ships in need of technical assistance, to ensure continuous improvement and enforcement at national, EU and international level.

The Commission works continuously with EU Member States and third country partners in the IMO to help the organisation deliver on higher safety and environmental standards.



# CHECKLISTS FOR THE INSPECTION OF ACCOMMODATION LADDERS AND GANGWAYS

A risk alert which highlights that a new regulation refers to the construction, installation, maintenance and testing requirements as detailed in MSC.1/Circ.1331 'Guidelines for Construction, Installation, Maintenance and Inspection/Survey of Means of Embarkation and Disembarkation' has been issued.

In May 2008 the IMO adopted SOLAS regulation II/3-9 concerning the 'Means of embarkation on and disembarkation from ships', which entered into force on the 1 January 2010.

## REGULATORY REQUIREMENTS

Whilst the legislation is principally concerned with the provision of a means of embarkation and disembarkation, such as accommodation ladders and gangways, on ships constructed on or after 1 January 2010, the final paragraph of regulation 3-9 applies to existing as well as new ships. The final paragraph states that the means of embarkation and disembarkation shall be inspected and maintained (with reference to MSC.1/Circ.1331) at appropriate intervals (Circ.1331 refers to SOLAS regulation III/20.7.2 which states monthly inspection and maintenance), to ensure they are in a suitable condition for their intended purpose, considering any restriction related to safe loading. It is therefore recommended that suitable periodic inspection and maintenance routines along with suitable checklists be included in the vessel's planned maintenance system.

## INSPECTION AND MAINTENANCE

The monthly inspection requirement as detailed in SOLAS regulation III/20.7.2 refers to the instructions for onboard maintenance in regulation III/36. Regulation 36 states that the instructions for onboard maintenance be easily understood, illustrated wherever possible, and as appropriate shall include the following: checklists, maintenance schedules, lubrication instructions, spare parts information, inspection and maintenance records.



Checklists for the inspection and maintenance of accommodation ladders and gangways should include:

- Checking for distortion and cracks.
- Checking for corrosion, particularly where aluminium accommodation ladders or gangways have mild steel fittings.
- All moving parts such as turntables, sheaves, tracks, bearings and rollers should be free to turn and periodically greased with an appropriate grease product.
- Bent stanchions should be replaced and side ropes inspected along their entire length and replaced as necessary.
- The underside of an accommodation ladder or gangway should also be inspected for condition, distortion, cracks and corrosion.
- The structure of supporting points and winch beds should be inspected for distortion, cracks or corrosion.
- Where in use bulwark ladders should be closely inspected.
- Safety nets should be checked for wear, damage, the effects of actinic degradation, and for the impregnation of chemicals, grease or paint.
- The condition of the winch brake should be inspected and brake pads replaced as necessary.
- The satisfactory operation of the power supply system.
- The satisfactory operation of the control system.
- The satisfactory operation of limit switches.

## RECORD KEEPING

It is recommended that records pertaining to the inspection and maintenance of accommodation ladders and gangways include the following:

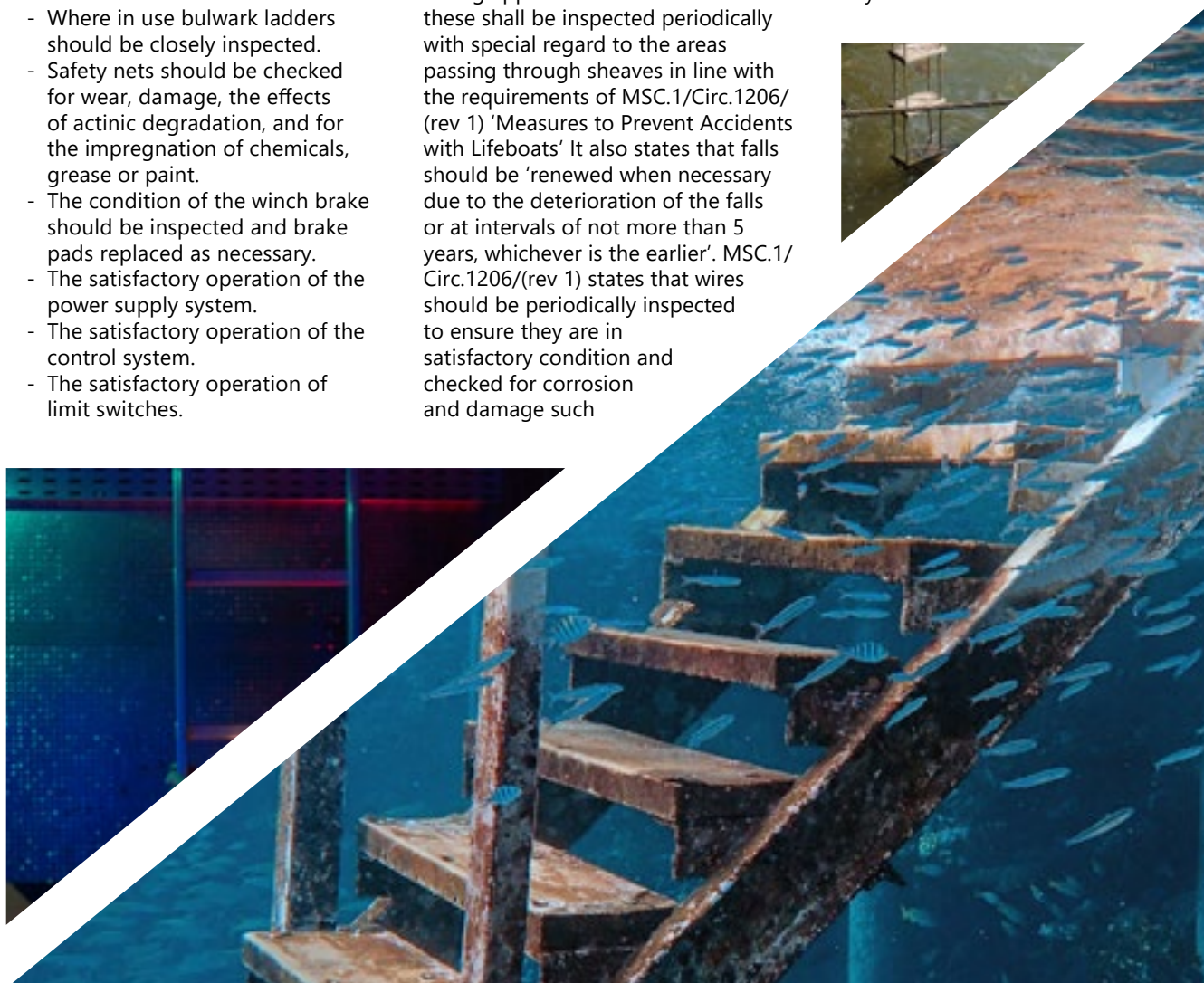
- Details of the dates of inspection / maintenance, details of the work undertaken, the name of the person or body undertaking the work, the due date for the next inspection and the date of the renewal of the fall wires. It is also recommended that the date of fall wire renewal is stencilled in the vicinity of the fall wire winch.

## FALL WIRES

The new SOLAS regulation II-1/3-9 states that all wires used to support the means of embarkation and disembarkation shall be maintained as specified in SOLAS regulation III/20.4. Regulation 20.4 refers to the maintenance of falls used in life saving appliances and states that these shall be inspected periodically with special regard to the areas passing through sheaves in line with the requirements of MSC.1/Circ.1206/ (rev 1) 'Measures to Prevent Accidents with Lifeboats'. It also states that falls should be 'renewed when necessary due to the deterioration of the falls or at intervals of not more than 5 years, whichever is the earlier'. MSC.1/Circ.1206/(rev 1) states that wires should be periodically inspected to ensure they are in satisfactory condition and checked for corrosion and damage such

as kinks, and kept properly greased with a suitable wire rope dressing. It is recommended that as part of the vessel's Safety Management System a wire discard criterion be specified to ensure that fall wires are replaced before they deteriorate to an unacceptable degree.

Apart from the periodic inspections and maintenance that are now required to be conducted in line with the new SOLAS regulations, the accommodation ladder or gangway should be subject to a visual inspection each time it is rigged. Members and their vessels' Masters must bear in mind that the implementation of this new legislation may be part of the focus of a Port State Control inspection and ensure they are fully in compliance with the new regulatory requirements. If the vessel is found to non-compliant with the new SOLAS requirements sanctions will be imposed by Port State Control which may include the detention of the vessel pending rectification of any deficiencies.





# The challenges of transporting refrigerated cargoes



A reefer container is a complex piece of engineering and has, over the years, become more reliable, and can be trusted to transport perishable goods vast distances, with little or no impact on quality.

It is easy to forget therefore, that the vessel crew still has an important part

to play in ensuring that these fragile cargoes are delivered safely, and that the actions of those on board can make a significant difference to the claims experienced by an operator.

Reefer containers carry a wide variety of refrigerated goods, of which fresh produce, frozen meat and fish, dairy

products and pharmaceuticals are only a few. A single reefer container may carry a cargo value of several hundred thousand US dollars or more.

Each type of cargo varies in its requirements for carriage temperature, humidity, stowage arrangements and ventilation.





# Variables to take into consideration

## Temperature

Temperature abuse affects cargoes in different ways depending on the cargo. For fresh or frozen products this might include premature ripening, freezer burn, frosting and textural changes.

To prevent this the crew should check that the container set temperature complies with the shippers' specified carriage instructions. The external integrity of the reefer container should also be checked for damage with any defects noted and photographed. The shipper should be notified of any physical damage to the container.

Poor airflow/ventilation through the cargo can lead to temperature hotspots developing. This can be due to poor stowage or packaging of cargo preventing airflow through the cargo or over stowage of cargo preventing return air to the refrigeration unit.

## Air

When carrying frozen cargo, the fresh air ventilation ducts should always be closed. In contrast, for chilled live cargoes such as fruit and vegetables the products should be stowed to allow air flow to circulate throughout the cargo stow. This will remove product heat, as well as moisture and gases such as carbon dioxide and ethylene.

The exact ventilation requirements will depend on the type of product carried.

## Loading

It is important to note that the reefer container is designed to maintain the cargo temperature rather than cool it. Ideally, all cargoes should be loaded at the intended carriage temperature to ensure product quality is maintained.

The most important point for carriers is to ensure that the carriage instructions and set temperature are checked and adhered to at the time the reefer container is loaded.

## Monitoring

Continuous supply of power to the reefer containers is also of utmost importance during the voyage. The vessel's crew should regularly monitor this and ensure that all incidents regarding the vessel's diesel generators and reefer circuit breakers and their associated alarm systems are meticulously recorded.

Proper container monitoring and prompt action during a voyage will provide helpful information as to whether the carrier should appoint a surveyor to be present for opening of the container at the destination.

## Record keeping

In the event of a claim, one of the most effective defences is the maintenance of clear and accurate records and documentation of each stage of the voyage from loading through to discharge.

For reefer containers, the crew can assist by maintaining detailed and accurate monitoring and maintenance logs as well as obtaining date-stamped photographs of incidents that occur during the voyage. However, the container's datalogger is the most accurate log available.

And here are some examples of claims that involved damage to a varied cargoes of food products.

The container vessel had loaded cargo in a European port to be discharged in Asia. Several reefer containers with meat, fish and other food had been loaded. The containers had been filled with frozen food at a temperature of -20°C and the container temperature was set to freezing.

During the voyage an AB checked the containers twice a day and logged the temperature at between -19°C and -20°C.

One month later the vessel discharged the containers in Asia. When the cargo receivers inspected the meat, they found it to be thawing. According to the container units' records, the temperature in the containers had increased over a couple of days after departure from -15°C to +5°C. All the alarms for the containers had been disabled.

The fresh air ventilation to the containers had been open. This allowed a continuous flow of warm air into the containers. Why this had been opened after departure is not known. The cargo was fully rejected and destroyed by the cargo receivers. The crew had not verified the correct temperature of the container but only

written down what should have been the correct temperature in the log as the actual container's digital log showed +5°C and not -20°C as in the vessel's log.

Ensure you comply with the shippers' carriage instructions. If these are unclear, seek clarification.

When loaded, make sure that the container's set temperature complies with the carriage instructions.

Keep clear and accurate records of temperature, ventilation, and other relevant aspects. The records must cover each stage of the voyage, from loading to discharge.

It is important to maintain a continuous supply of power to reefer containers during the voyage.

Keep a record of all incidents regarding the vessel's diesel generators and reefer circuit breakers, and their associated alarm systems.

### Meat damaged due to wrong temperature settings

The container vessel had loaded cargo in a South American port to be discharged in Europe. Several reefer containers with meat were also loaded. The containers had been filled with superior chilled meat at a cargo temperature of around 0°C. The containers were set to chilling mode with a set point temperature of -1.4°C.

For some reason one of the containers was switched to freezing mode with a set point of -18°C and remained at this setting throughout the entire month's voyage to Europe. On the bill of lading, it was stipulated that the container should be kept chilled at a temperature of -1.4°C. However, during the loading operation the agent supplied an initial reefer list which had two separate entries for this container - one stated that the container should be chilled and another stated that it should be frozen.

This mistake was discovered by the crew, and the agent then updated the reefer list confirming the set point temperature as -1.4°C for the container. One month later the vessel discharged the containers in Europe.

When the cargo receiver inspected the meat, it found it to be frozen. The meat should have been chilled as it becomes damaged when it is frozen.

According to the container unit's records the temperature in the container fell a couple of days after departure. This caused the meat to freeze. Over a sufficiently long time, even a reefer container will achieve solid freezing of the entire cargo. In this case, there was clearly sufficient time.

Each piece of meat was packed in a heat-sealed vacuum plastic liner bag. When the cargo receiver inspected the meat, it had turned dark red and slightly brownish and the vacuum bags contained a considerable quantity of blood. The meat which was initially of superior quality could now only be used for lower-end products and had to be sold for a loss.

### Damage to seafood

A shipment of containerised boxed shrimps shipped from Argentina to China was found to be badly frosted. The shrimps inside the boxes were also beginning to blacken due to melanosis. Shrimps and crustacea undergo melanosis (an enzyme

catalysed oxidation) when they are kept at incorrect temperatures and/or past their shelf life. Melanosis is also related to the freshness of the product at the time of freezing and whether it has been treated with any preservatives. While melanosis is not dangerous for consumption, it is a quality control indicator, and renders the shrimps unsightly and unsaleable.

The frosting is a second indicator that the product had suffered temperature abuse. Frosting appears when a product is thawed and then partially refrozen. Usually, the boxes are tightly packed into the containers, restricting airflow through the cargo and effectively insulating the cartons inside the stow compared to the ones in the outside. The product on the inside of the stow would be insulated against the worst damage by the cargo around it. It is then expected to observe a gradient of damage as the condition of the cartons is poorest nearest the door and the external edges of the stow, with the damage lessening towards the rear of the container.

The cargo should always be kept below the load line of the container, away from the container walls and not beyond the 'T' bars to allow the refrigerated air to flow freely around





the whole of the stow. The container logs showed erratic temperature changes. Seven days after the start of the voyage, the temperature started to rise slowly but steadily from -25 °C to a range between -10 °C to -2 °C at arrival, which is indicative of a refrigeration system malfunction. These temperatures are sufficient for melanosis and frosting to occur.

The Master and the crew should have been warned of the malfunction and should have made an attempt to repair the container. However, the corresponding alarms were not relayed to the vessel, suggesting a secondary malfunction in the system.

### Damage to fresh produce

A cargo of bagged white garlic was shipped from China to Central America. On arrival, it was noted that significant portions of the consignment showed signs of germination. After curing (a process of drying after harvest), garlic can be stored at high temperatures (+25 °C) or low temperatures (-3 to 0 °C) to prevent germination of the bulbs and maintain the storage life of the product.

Temperatures above 5 °C and below 20 °C are not appropriate for garlic storage and can cause dormancy break, advanced germination, and fungal/bacterial issues. It is common to see garlic transported in containers

at low temperature (i.e., -3 °C to 0 °C). At these lower temperatures, the heat generated by respiration of the garlic bulbs is removed, helping to maintain a period of dormancy.

The temperature records indicated that it took several days for the temperature to reach +4 °C. Furthermore, the situation was exacerbated by the cargo being 'hot-loaded', meaning that the cargo was not pre-chilled before loading. The effect of these two factors was to prevent the cargo from meeting the required temperature range and thus, led to a significant portion of the cargo arriving with unacceptable levels of germination.

The crew should take care when checking, that set point temperatures, as outlined in the carriage instructions, are properly applied to the containers. A failure to do so can lead to the onset of germination and/or spoilage of cargo through bacterial or fungal infections.

### Key learnings from case studies

- It goes without saying that a continuous supply of power to reefer containers is of the utmost importance during the voyage. The vessel's crew should regularly monitor this and ensure that all incidents regarding the vessel's diesel generators and reefer circuit breakers, and their associated

alarm systems, are meticulously recorded.

- The crew should check that the container set temperature complies with the shipper's specified carriage instructions.
- The external integrity of the reefer container should also be checked for damage with any defects noted and photographed.
- It is important to note that the reefer container is designed to maintain the cargo's temperature rather than cool it. Ideally, all cargoes should be loaded at the intended carriage temperature to ensure product quality is maintained.
- The crew should keep clear and accurate records. Document each stage of the voyage from loading through to discharge as well as obtaining date-stamped photographs of incidents that occur during the voyage.
- The owner should be aware that charterparties are often based on BOXTIME and, if not amended, any temperature damage to the cargo in reefer containers which is caused by crew negligence is 100% the responsibility of the owner.
- Ensure you comply with the shippers' carriage instructions. If these are unclear, seek clarification.
- When carrying frozen cargo, the fresh air ventilation ducts should always be closed.

*Thanks to The Swedish Club for this valuable advice and guidance.*

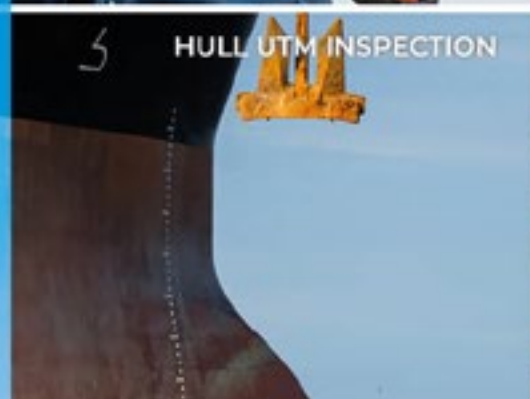


**Intuitive menu  
and sequential  
data logging for  
easy reporting  
and analysis.**

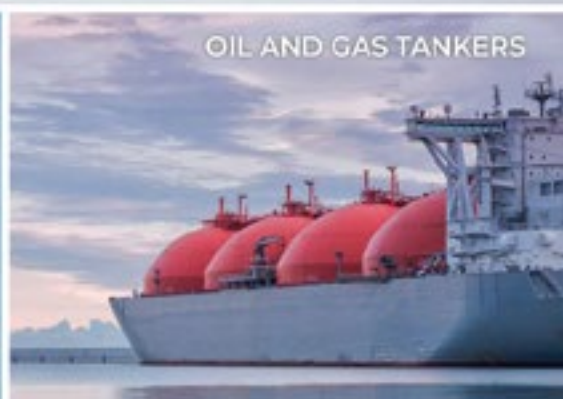
SHIP SURVEYS



HULL UTM INSPECTION



OIL AND GAS TANKERS



**The Cygnus 4+ General Purpose thickness gauge is a light, tough multi-mode thickness gauge. It features a sunlight readable display with Live A-scan, intuitive menu and sequential data logging for easy reporting and analysis.**

- Multiple-Echo mode for accurate, through-coat measurements as specified by Classification Societies
- Echo-Echo and Single-Echo modes for heavily corroded metals with a thin or no coating
- Deep Coat function ignores coatings up to 20mm thick
- Manual and automatic gain control
- Min/max measurement limit functions with visual and vibrate alert
- Large front sunlight readable LCD display with Live A-scan



**£200 OFF  
GAUGE**  
DISCOUNT CODE REP23



# Fumigation:

## An overview for the maritime sector

**Britannia P&I Club warns against the risks of fumigation and presents steps people onboard can take in order to mitigate those risks.**

Fumigation is an effective approach to eradicate living organisms, such as insects or rodents, and is used to mitigate the transmission of invasive species or phytosanitary risks when transporting an agricultural cargo from one port to another.

### FUMIGATION IN GENERAL

Fumigation carried out in cargo spaces on board should be in accordance with the IMO's circulars on the issue: MSC.1/Circ.1264 'Recommendations on the Safe Use of Pesticides in Ships Applicable to the Fumigation of Cargo Holds' as amended by MSC.1/Circ. 1396 and MSC.1/Circ.1358 'Revised Recommendations on the Safe Use of Pesticides in Ships'.

The IMO circulars clearly state that fumigation in-transit should only be carried out at the discretion of the master. Crew members can carry out small-scale or 'spot' treatment pest control if they adhere to the product manufacturer's instructions and cover the whole area of infestation. However, more extensive or hazardous treatments, including fumigation and insecticide spraying, should only be carried out by professional pest control operators in accordance with the IMO's recommendations.

The materials available for pest control on board vessels can broadly be divided into insecticides and fumigants. Insecticides are normally used to specifically target and kill the insects with direct contact, while fumigation is a pest control method achieved by filling the cargo spaces with toxic gaseous fumigants to neutralise the insects. From a commercial perspective, fumigation,

rather than contact insecticides, is the preferred method of removing potential infestations when shipping agricultural commodities. This is because it is easier for the fumigators to handle aluminium phosphide tablets or pellets. It is also relatively lower in cost and effective with the near absence of chemical residues on the cargo.

However, its popularity and associated risks have also resulted in the majority of marine fumigation incidents. Therefore, we will focus on fumigation rather than insecticides in this guidance. According to the International Maritime Organization's (IMO) guidelines stipulated in MSC.1/Circ.1264, 'Recommendation on the Safe Use of Pesticides in Ships Applicable to the Fumigation of Cargo Holds', two of the most widely used fumigants are phosphine and methyl bromide.

Aluminium phosphide is available in solid tablets or pellets, mostly known by their brand names; QuickPhos, Phostoxin, Fumitoxin and Weevil-cide. These tablets or pellets react with moisture in the air to produce an active fumigant gas – phosphine (PH<sub>3</sub>).

In contrast, methyl bromide is normally supplied in liquid form or as pressurised gas, known commercially sometimes as Bromomethane, Brom-o-gas or

Celfume. However, methyl bromide is not permitted for in-transit fumigation and has been found to deplete the ozone layer. It is gradually being replaced by other fumigants. Additionally, fumigation with methyl bromide must be carried out by qualified operators while the vessel remains at port with the ship's crew disembarked. There have been occasions when fumigation by methyl bromide has been conducted with the crew on board, but this should be avoided as it does not follow IMO guidance and can be extremely hazardous.

The choice of fumigant and the application method depends on the:

- type of commodity carried
- potential insects and rodents that may be present
- dosage and extent of coverage required by the cargo
- volumetric size of cargo holds
- location of infestation
- habits of pests found from the port of origin
- climate of the regions in-transit.

Given the complexity of these fumigants and wide variety of brand names, it is essential for the crew to review the Material Safety Data Sheets (MSDS) to understand the type of fumigant gas used and associated requirements, and the potential hazards and safeguarding measures required.

The reaction between aluminium phosphide tablets and moisture in the air is exothermic, meaning it releases heat, and disperses colourless phosphine gas into the atmosphere. Water moisture trapped in cargo spaces, either within a moist cargo or with high humidity within the hold, may accelerate this process, especially when fumigants are applied to the cargo surface. Ventilation flaps should be closed, and hatch covers sealed to prevent any water ingress during precipitation or shipping seas, and to prevent the escape of toxic gas.

If necessary, additional prophylactic measures, such as the application of expanding foam to hatch cover joints, can be considered to achieve gas-tight holds.

It is essential for fumigant tablets/pellets to be spread evenly on the cargo surface and to ensure cargo is dry prior to application. When piled on a wet cargo surface, a rapid exothermic reaction could be sufficient to set fire to the cargo.

The molecular weights for both phosphine and methyl bromide gases are heavier than air and therefore the gas will slowly sink down through the cargo to achieve a good penetration within the stow depending on depth and exposure period. However, when the aluminium phosphide tablets or pellets do not fully react with moisture in the hold, an inert residual by-product, often a light, powdery, grey, ash-like substance, may be left behind. This residue creates an exposure risk if it is inhaled or comes into contact with the eyes. Exposure to the partially reacted residue may occur when the tablets/pellets are used in low humidity, low temperature environments or opening of the holds prematurely before the full exposure period is completed. Care should be taken when disposing of the aluminium phosphide residues due to the risk of toxic gas. There have been previous cases where residues, when collected in buckets or similar, have ignited spontaneously.

Methyl bromide supplied in gaseous form can achieve an effective fumigation coverage of the cargo within 24 to 48 hours, whereas a typical aluminium phosphide tablet may take more than two days to breakdown. With aluminium phosphide tablets, the required exposure period can take approximately five to twenty days depending on the coverage, temperature, and relative humidity of the air. Colder temperatures and drier atmospheric conditions reduce the rate of the fumigant's reaction and gas dissipation. In order to mitigate these effects, sub-surface probes are sometimes used to introduce the fumigant into the cargoes to speed up the process.

There are various methods for applying aluminium phosphide tablets and pellets to cargo:

- Standard fumigation by surface application of tablets in sleeves or blankets
- Sub-surface fumigation via trench application by placing fumigants in trenches dug into the cargo
- Fumigation with probes inserted into the cargo from around 0.3m to several metres
- Application via tubing with a safe fan circulating the fumigation gas within the cargo spaces.

The main method for applying methyl bromide gas is from cylinders connected to the pipework via a vaporiser. Crew will need to disembark whilst the operation is carried out.

### FUMIGATION RISKS

Both methyl bromide and aluminium phosphide, chemicals used for fumigation, are toxic to humans and to the intended targets of insects and rodents. Unfortunately, by the time fumigant gas is detected, it is sometimes too late to prevent poisoning, since the concentration of gas may be above the safe working limit.

When phosphine gas, without the presence of any impurities, is released, it is colourless and odourless. However, when contaminants exist, phosphine gas may give off white-coloured smoke and/or the smell of decaying fish, garlic or carbide.

Methyl bromide is colourless but comes with a fruity or musty odour at high concentrations, Britannia adds.

These odours serve as good warning signs of gas leakage to people working in or near the cargo spaces. However, these indicators should never be solely relied upon as a means of determining whether a space is safe.

Below are some of the practical preventive measures recommended by Britannia P&I Club that should be undertaken during or before the voyage:

- Before reaching the loading port, maintenance should be carried out on the weathertight integrity of the cargo hold, such as hatch cover seals, hatch cleats, ventilators, cement ports and booby hatches. It is recommended that, as the hatch covers and other access points have to be gas tight to ensure their integrity. Prior to arrival, any necessary repairs should be conducted in good time and their effectiveness verified.
- Records of inspection and maintenance should be kept on board for a suitable period prior to fumigation.
- The fumigator should conduct inspections of all access points to the cargo holds to ensure they are suitably gas-tight for the fumigation process. This should be done when the hold is empty and in accordance with the requirements in the countries of loading and discharging. The master should sign off the pre-fumigation inspection report.



- The fumigator should ensure the formulation of fumigant is used at the correct dosage and is applied evenly to the cargo surface/subsurface. The application areas should be free from excessive moisture.
- To avoid fires it should be ensured that tablets and pellets on surfaces cannot roll and be collected at the hold plating.
- The master and ship's crew should carry out a thorough onboard search to confirm there are no stowaways or unauthorised personnel in the cargo spaces. All of the ship's crew should be accounted for before starting fumigation.
- The master and crew should also familiarise themselves with the fumigation procedures and precautions required when working near fumigated cargo areas and be aware of any warning notices posted at the entrances to holds on deck.
- The master may appoint at least two crew members to maintain safe conditions in the fumigated spaces on board, including testing the atmosphere. These crew members should be trained to use the gas detecting equipment.
- Upon completion of the fumigation process in each hold, all access points should be padlocked and ideally sealed with a customs seal or similar (and the seal number recorded). This means it should be easily seen if an access hatch has been opened. Keys for padlocks should be carefully secured by the chief officer.
- The treatment or exposure period for fumigation at sea, and in particular when the cargo spaces should remain sealed, should be made clear in writing to the ship's crew by the fumigator.
- Aeration and ventilation after the exposure period should be performed according to the guidelines specified by the fumigator.
- When determining the period required to ventilate the cargo holds, several factors should be considered including type of fumigants used, method and rate of fumigant application, voyage duration, weather and temperature conditions, likely risks of gas desorption, and gas readings.
- It should be ensured that the aeration and ventilation processes do not result in the fumigant gases being blown into air duct intakes for enclosed accommodation spaces, the engine room, deck lockers or routine working spaces.
- The master should ensure regular checks are carried out at the specified intervals recommended by the fumigator to detect gas leakage within spaces occupied by crew, or whenever and wherever there is any suspicion that fumigant gas may be present. This is particularly the case when crew members show signs of feeling uncomfortable. This should not be taken lightly and mistaken for motion sickness at sea. If there is any doubt, the atmosphere should be tested.
- In the event that the ship's crew shows any signs of poisoning, the master should take immediate action to evacuate crew from the affected spaces whilst using PPE.
- Gas detection equipment suitable for the intended fumigant should be provided, such as tube gas test equipment, photo-ionisation gas testing and monitoring equipment with the correct sensors.
- Proper protective respiratory breathing equipment (a minimum of four sets is recommended) should be provided for the vessel prior to starting the voyage.
- Disposal of the sleeves/residue should be performed by the approved fumigator's representatives in accordance with local and international regulations, with the use of appropriate PPE.
- After gas freeing and removal of residues, the fumigator's representatives should test the environment inside the cargo spaces with the gas detection equipment to confirm fumigant concentrations are below the threshold limit value (TLV). The ship's crew should verify that the gas-free testing is physically carried out up to the recommended maximum allowable PPM concentration as per the fumigator's instructions.
- A gas-free certificate for the vessel can only be issued by the fumigator in-charge when the cargo spaces are tested to show all residual fumigant has been dispersed from the cargo spaces and adjacent working spaces, the residual fumigant materials removed, and found safe for entry.

Download the full overview in pdf format at <https://bit.ly/3F9vei3>. Or scan the QR code.



***This article is republished with thanks to the Britannia P&I Club.***



# DON'T PANIC



## Write a Report



Article reprinted with permission of Roy Glencross

It is with regret and haste that I write this letter to you, regret that such a small misunderstanding could lead to the following circumstances, and haste in order that you will receive this report before you form your own pre-conceived opinions from reports in the world press, for I am sure that they will tend to over-dramatise the affair.

We had just picked up the pilot, and the cadet had just returned from changing the " G " flag (I require a Pilot) for the " H " flag (I have a Pilot onboard) and, it being his first trip, was having difficulty rolling the " G " flag up. I therefore proceeded to show him how. Coming to the last part of this instruction I told him to " let go ". The lad, although willing, is not too bright, making it necessary to repeat the order in a sharper tone.

At this very moment the Chief Officer appeared from the Chart Room, having been plotting the vessels progress, and thinking that it was the anchors that I was referring to, repeated the " let go " to the Third Officer on the forecastle. The port anchor having been cleared away but not " walked out ", was promptly let go. The effect of letting the anchor go from the " pipe " whilst the vessel was proceeding at full harbour speed proved too much for the windlass brake, and the entire length of port cable was pulled out from the "kenter". I fear the damage to the chain locker may be extensive.

The braking effect of the port anchor naturally caused the vessel to sheer in that direction and hence, directly towards a swing bridge that spans a tributary of the river up which we were proceeding. The swing bridge



operator showed great presence of mind by opening the bridge for my vessel. Unfortunately, he did not think to stop the vehicular traffic, the result being that the bridge partly opened and deposited a Volkswagen, two cyclists, and a cattle truck on the foredeck. My ships company are presently rounding up the contents of the latter which, I would say from the noise, were pigs. In his efforts to stop the progress of the vessel, the Third Officer dropped the starboard anchor too late to be of any practicable use, for it fell on the swing bridge operators control cabin.

After the port anchor was let go and the vessel started to sheer, I gave a double ring "Full Astern" on the Engine Room telegraph and personally rang the Engine Room to order maximum astern revolutions, when I was informed that the sea temperature was 530 and asked " was there a film tonight " : my reply would not add constructively to this report.

Up to now I have confined my report to the activities at the forward end of the vessel. Down aft they were having their own problems.

At the moment the port anchor was let go, the Second Officer was supervising the making fast of the after tug and was lowering the ships towing spring down onto the tug. The sudden braking effect of the port anchor caused the tug to " run in under" my stern just at the moment when the propeller was answering my double ring Full Astern.

The prompt action of the Second Officer in securing the inboard end of the towing spring delayed the sinking of the tug by some minutes, thereby allowing the safe abandonment of that vessel.

It is strange, but at the very same time as letting go the port anchor there was a power cut ashore. The fact that we were passing over a " cable area " at that time may suggest that we may have touched something on the riverbed. It is perhaps fortunate in this respect that the hightension cables brought down by the foremast were not live, possibly being supplied by the underwater cable, but owing to the shore blackout it is impossible to know where the pylon fell.

It never fails to amaze me, the actions and behaviour of these foreigners during moments of minor crisis. The Pilot, for instance, is at this moment huddled in the corner of my day-room, alternately crooning to himself and crying after consuming a bottle of my best scotch in a time worthy of inclusion in the Guinness Book of Records. The tug master, on the other hand, reacted violently and had to be forcibly restrained by the Bosun, who has him handcuffed in the ship's hospital, where he is telling me to do quite impossible things with my ship and crew.

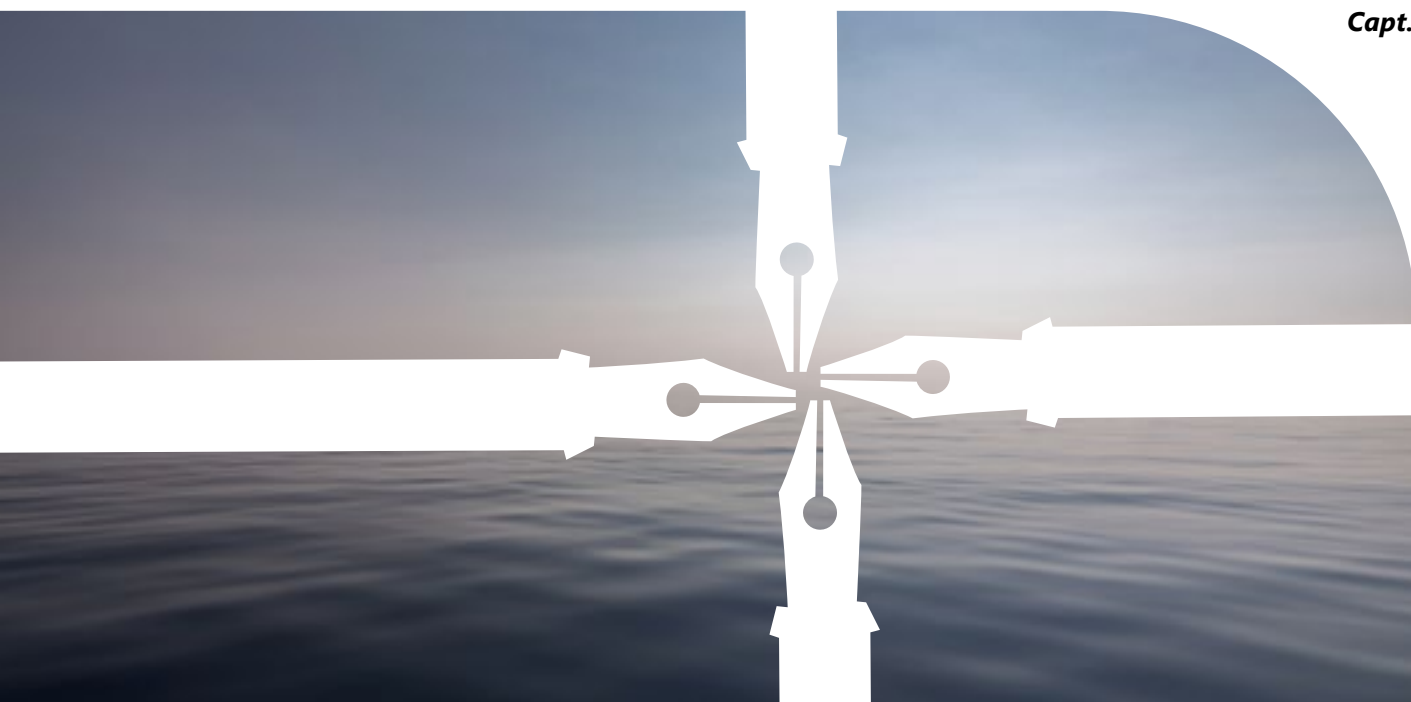
I enclose the names and addresses of the drivers and details of the insurance companies of the vehicles on the foredeck, which the Third Officer collected after his somewhat hurried evacuation of the forecastle. These particulars will enable you to claim for the damage they did to the rails abeam of No. 1 Hold.

I am enclosing this preliminary report, for I am finding it difficult to concentrate with the sound of police sirens and their flashing lights.

It is sad to think that had the cadet realised that there was no need to fly the Pilot flags after dark, none of this would have happened.

For weekly Accountability report I will assign the following casualty Numbers T/990101 to T/990199 inclusive.

Yours truly  
**Capt. M.V.**





# Grains and soya beans

## cargo claims review

**This overview of claims has been provided by The Swedish Club**

The Swedish Club has released a detailed analysis of cargo claims in relation to grains and soya beans having reviewed 200 bulk carrier claims. To be included in the statistics the claims had to have generated a cost of at least \$5,000 and have been made between 2018 and 2022.

The average frequency for the five-year period is 0.056, which means that 5.6% of all bulk carriers have made a grain claim. Since 2019 the Club has seen a steady increase in the frequency of claims.

## Grains

During the five year period of the report the most common claims were for shortage (63%) especially during discharge (68%) and these were seen most commonly in North Africa and China.

About 70% of shortage claims occur due to discrepancies between the vessel's figures and shore figures. In this five-year period there were few claims in China until 2021, but since then Swedish Club said that it had seen a steady increase in the region. Over the entire five-year period, however, most claims were in North Africa.

The increase of claims in China over the last couple of years could be related to the pandemic, Swedish Club said. The severe lockdowns that were seen in many cases delayed the vessel. They also made it difficult for surveyors to attend the vessel for inspection. Crew and stevedores were also more hesitant to interact with each other because of the risk of becoming infected. This led to the crew not being able to verify the cargo operation and taking draft figures. The Club said that it had seen a similar picture with soya bean claims.

Shortage contributed to 44% of the total claims cost, with an average claim cost of \$35,000. Although shortage claims appeared to be of relatively low value, the aggregate cost of these claims was significant.

Non contribution towards General Average (GA) contributions made up 20% of the total cost. The average claim cost was \$800,000, but this type of claim was not common.



Wet damage made up 13% of the total cost, with an average claim cost of \$37,000.

Most claims occurred at the discharge port. These contributed to 68% of all claims and were mainly driven by shortage. Claims during the voyage accounted for 16%, with only 10% of claims taking place in the loading port.

The Club noted specific-country issues:

- In Argentina, mate's receipts were customarily presented to the Master by the shippers. The exporter (or importer when applicable) had the right to choose the weighing method for fiscal/ customs purposes. In the case of bulk agricultural exports, the method chosen would invariably be the use of shore scales. The Club observed that it was not unusual to have discrepancies between the shipper's figures based on shore scales and draft surveys. In general, whenever the shortage per draft surveys exceeded 0.5%, the Club recommends that the Master clauses the mate's receipts (and bills of lading thereafter) with ship's figures as the only way to be protected from shortage claims at the discharge port.
- In Tunisia and Algeria shortage claims often arose as a consequence of receivers not accepting the established trade allowance of 0.5% of the bill of lading quantity. Draft survey figures are not recognized in Algeria. In the event of a shortage, only the shore scale figures would be recognized by the local receivers. Calculation of the claims would be on that basis.

Any errors in manifests regarding quantity, or description of cargo, are subject to customs fines in Tunisia. If a spillage was experienced, the Club said that the crew should record details of the spillage and check the calibration and accuracy of the shore scale. "Take photographs of the cargo spillage from the grabs, hoppers and trucks", the Club advised.

# Soya beans

The global trade of soya beans has undergone continued expansion in recent times, in part due to the increasing demand in China, the largest soya bean importer, for animal feed. The largest soya bean exporters are Brazil and USA, which account for around 80% of the global export market.

The frequency for the five-year period saw 1.1% of all bulk carriers place a soya bean claim. The average claim cost was \$54,000. The pandemic had an impact, with vessels forced to stay at anchor for extensive periods. These delays could lead to heat damage – a significant concern with soya bean cargoes.

The most common claim was for shortage at 29%, followed by spontaneous heating at 19% and contamination at 16%.

When compared with grains, shortage made up a considerably smaller percentage of claims (29% vs 44%). This was partly a trading issue, but in addition the statistics were influenced by Covid-related delays.

Spontaneous heating accounted for 41% of the Club's total claims cost in this category, with an average claim cost of \$115,000. Shortage made up 16% of the total cost, with an average claim cost of \$29,000. Physical damage contributed to 13% of the total cost, with an average claim cost of \$103,000.

The most common cause of damage claim was damage prior to loading, at 23% of total claims. When considering the damage that leads to these claims, 43% of these claims were observed in the loading port, 29% during the voyage, and 14% at the discharge port.

The second most common cause was inherent vice, at 19%. This manifests at the discharge port 50% of the time and during the voyage at 33%.

The third cause was improper cargo handling ship side, at 16%. This category of claim relates to heating damage and wet damage, often caused by rain during loading and discharge.



# CHARTERPARTY PITFALLS AND DISPUTE RESOLUTION

In the complex world of international commerce and maritime transactions, the negotiation and execution of charterparty agreements often set the stage for potential disputes. The intricacies of these contracts can be labyrinthine, and disputes can arise over whether a binding contract was indeed formed or over the comprehensibility of the terms agreed upon.

In the 6th Annual Baltic ICS Lecture Series webinar, Lawrence Teh and Karina Albers, two seasoned experts in international arbitration and maritime law, explored the key legal principles and practical considerations surrounding charterparty agreements and dispute resolution.

Teh kicked off by reminding brokers and traders of the fundamental legal principles that underpin charterparty agreements. When two parties negotiate a business deal, they can either discuss all the terms of the contract at once or agree to certain terms and leave others to be decided later. This flexibility is particularly relevant in the context of chartering vessels, where crucial terms such as charter hire, loading, destination, and laycan are agreed upon first, with other less pressing or less important terms left for subsequent discussion.

One critical issue in maritime disputes is whether the parties have indeed concluded a binding contract. English and Singaporean law, for instance, emphasise objective conduct over subjective beliefs in determining contract formation. The objective conduct takes into account what is both written and said orally, the industry's standards, the parties' familiarity with each other, and their common understanding.

It's important to note that contracts need not always be reduced to a single written document.

"A contract can exist through the words and conduct exchange between the parties," Teh said.

## KEY PRINCIPLES

Teh outlined the key principles governing charterparty agreements and dispute resolution:

1. **Comprehensible Terms:** The law will not enforce a contract that contains incomprehensible terms or contracts that are incomprehensible as a whole.
2. **Unfulfilled Conditions:** Contracts subject to unfulfilled conditions, such as the signing of a full written document or the agreement of all terms, will not be enforced.
3. **Illegality:** Contracts with an illegal principal purpose will not be enforced.
4. **Binding Agreements:** Subject to these impediments, the law will enforce any agreement that the parties have mutually agreed upon as binding.
5. **Reasonable Expectations:** Courts aim to give effect to the reasonable expectations of honest business people, underlining the importance of clarity and mutual understanding in negotiations.

"It is therefore important when you're negotiating a contract to be alive to these principles," Teh said. "It may make the difference between winning or losing a court case or an arbitration."

Albers highlighted a critical distinction between US and UK law regarding contract formation. Under US law, if parties agree without any conditions or subjects, a contract is considered formed. English law, to a large extent, has followed suit in recent times. When both parties are clear on the terms, have no subjects, and have adequately recapped their discussions, it is likely that the law will view them as having concluded a binding contract.

## ROLE OF CLARITY AND FAMILIARITY

Teh emphasised the importance of clarity and familiarity with industry-specific terminology. While brokers may use their own language for efficiency, it can lead to disputes. "I recall one arbitration which came down to one email, one acronym, which, if I recall

correctly, was AG WWP," Teh said. "Fortunately, that was immediately recognised by the arbitrator. So that underscores the point, that it's important to identify someone who's familiar with the terminology."

Also, the law does not require contracts to be written or signed; it seeks to establish whether the parties intended to be bound by their discussions and agreements. Albers said: "So be mindful even if the charter party is not signed – and it can be an electronic signature or no signature – if the parties have acted upon it, they've conducted the terms of the contract and then you do have a binding contract."

Additionally, contrary to the popular notion that silence can never constitute acceptance, in the right circumstances, silence can indeed be a form of contractual consent. This is particularly relevant in the context of fixtures and operations.

"In the right circumstances, silence can be as deafening as active contractual consent," Teh said.

Albers, meanwhile, underscored that negotiations conducted on social media platforms or via electronic communication can form a binding contract.

Both presenters stressed the importance of seeking resolution, whether through settlement or expert evaluation, when disputes arise. Settlement is often the most efficient and cost-effective way to resolve disputes, and legal professionals can play a crucial role in facilitating this process. Albers noted the use of Early Neutral Evaluation as an alternative to full arbitration.

"It's all about getting people inclined towards settlement," Teh said. "There's no point in ordering people to mediate or forcing people to enter the settlement negotiations if they are not inclined to find a solution. The question is how you're going to make two parties inclined to explore and find a solution. That's the trick."

**Source: Baltic Exchange**



Photo credit: Inspired Planet Productions

# The depth of Lake Huron reveals a secret hidden for over a century

Documentary filmmakers accidentally discover a long-lost steamship in the Great Lakes

By **Scott Way**,  
Editor,  
[BoatBlurb.com](http://BoatBlurb.com)

An astonishing accidental find at the bottom of the Great Lakes in North America is getting attention from around the world.

Filmmakers working on a documentary about invasive mussels in the Great Lakes have stumbled upon what they believe is a 128-year old steamship at the bottom of Lake Huron.

North American boaters are most likely familiar with the five basins that comprise the Great Lakes, but those outside the continent might be unaware that the largest freshwater lakes on Earth can be quite similar to the Atlantic or Pacific. Because of their size and depth, the Great Lakes, which includes Superior, Erie, Huron, Michigan, and Ontario, hold



**Zach Melnick (left) and Yvonne Drebert.**  
*Photo credit: Inspired Planet Productions*

some of the most famous shipwrecks in maritime history. Now their history is garnering more attention thanks to the discovery of a steamship missing since 1895.

The 128-year old wooden vessel was discovered by filmmakers Yvonne Drebert and Zach Melnick earlier this year. The pair received a tip from local scientists conducting a fish study off the coast of the Bruce Peninsula which led them to the ship's resting place. The peninsula is a well-known landmark in the Great Lakes. The outcropping marks the divide between the larger Lake Huron to the south and the smaller Georgian Bay to the north. The scientists conducting the fish study had noted a sonar anomaly consistent with a shipwreck, which they forwarded to Drebert and Melnick for further study.

The filmmakers, a husband and wife team who live on the Bruce Peninsula and run Inspired Planet Productions, were in the midst of a documentary about the invasive quagga mussels currently wreaking havoc on the Great Lakes. Originally from the Black Sea region in Eurasia, quagga mussels can cover lake bottoms in massive quantities while simultaneously filtering plankton out of the water. The loss of plankton is devastating to fish populations and government agencies in both Canada and the United States have been fighting since the 1980s to limit their ecological impact.

To find the vessel, and the horde of mussels attached to it, Drebert and Melnick used an ROV to explore the lake bottom using the coordinates provided by the scientists.

"When we set out on this project we thought what's the best possible tool for us to kind of play James Cameron and get to the bottom of the lakes and show people what's happening there? This was the best tool," Melnick told the Owen Sound Times.

"The robot gets to the bottom of the lake and surprise, surprise there are mussels. So I'm thinking, oh great, let's go back, this is going to be nothing," Drebert added.

But, hovering at depth of nearly 280 feet in the deceptively clear waters, Drebert saw a silhouette in the distance.

"It's like, OK, that could be a pile of rocks or something. Then it very slowly came into view and became obvious it was a shipwreck in incredible condition. We all started freaking out, really," Melnick told the Owen Sound Times. After circling the vessel's impressive length, Melnick and team then noticed the steam stack rising from the stern deck. A rare feature among Great Lakes shipwrecks, the steam stack would mark the beginning of a mission to uncover the vessel's name and origin.

"We started putting all the pieces together and started getting even more and more excited about it and we started thinking what is this?" Melnick recalled.

The task wouldn't be easy, first and foremost because of the quagga mussels coating the hull. Since nearly all shipwrecks fall under preservation and anti-salvaging laws in Canada, the vessel couldn't be touched. That meant Melnick and Drebert would have to explore other avenues to uncover the ship's origin.

"It's a bit of a double-edged sword for us because it's kind of great to be able to see with the clarity the mussels have

created but they're also having these huge ecosystem impacts," Drebert told the Owen Sound Times. "It's really flipped the whole ecosystem on its head."

The quaggas, which are a cousin of the equally problematic zebra mussel, coat surfaces by the thousands, making it impossible (or potentially illegal) to clear away a section of the hull to locate a name or ID number. With the circumstances making an identification difficult, the filmmakers approached maritime historian Patrick Folkes and marine archaeologist Scarlett Janusas for help.

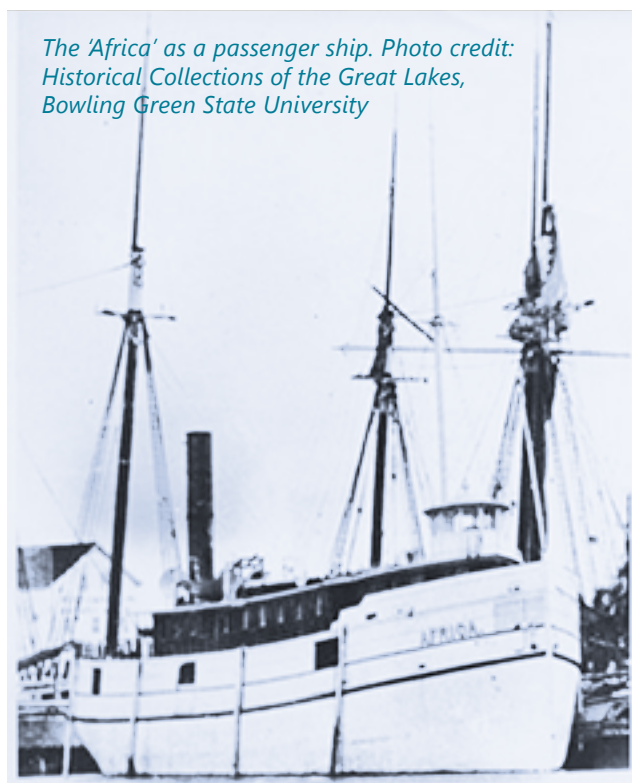
In an article with Canadian Geographic, Folkes, the author of "Shipwrecks of the Saugeen," estimates about 100 ships sunk in the region between 1848 and 1930. Approximately 40 to 50 were never found, which means there are many undiscovered shipwrecks littering the floor of Lake Huron. "Sometimes the only clue [that a ship had been lost] was when bodies or wreckage washed ashore," Folkes told Canadian Geographic.

In order to continue searching around the vessel, the team secured an archaeological license from the province of Ontario allowing them to return to the shipwreck with an ROV to look for more clues. After taking measurements to confirm the ship's length, wide, and signature features, their research narrowed it down to three names -- the Eclipse, last seen in 1883; the Africa, sunk in 1895; and the Saturn, lost in 1901.

In the silt surrounding the wreckage were pieces of coal, a telltale sign that she was a cargo ship. That detail, paired her surprising length and steam stack, made for only one logical candidate, the Africa. And therein lies the story of a mysterious vessel whose unique appearance had to be unwound through the webs of time.

Most of the original photos and construction details for the Africa didn't match the ship found at the bottom of

*The 'Africa' as a passenger ship. Photo credit: Historical Collections of the Great Lakes, Bowling Green State University*





Lake Huron. In fact, many of the records showed her as a passenger ship full of guest cabins, not a cargo ship used for hauling coal. According to maritime records, the Africa was built in Kingston, Ontario in 1873 for a cost of \$37,000 in gold (a peculiar detail in its own right) and spent her first 12 years shuttling passengers between Montreal, Chicago, Toledo, and Owen Sound. She was even known to race other passenger ships on the Great Lakes. In 1886, disaster struck when she inexplicably caught fire, likely from an explosion onboard. She was moored in Owen Sound at the time and burned down to the waterline.

In an extremely rare move, rather than scrapping the vessel as a burnt-out heap the Africa was rebuilt as a steam barge. Another 14 feet was added to her length and her interior cabins were removed to create more cargo space. She would spend the next nine years criss-crossing Lake Huron hauling lumber and coal.

Then, on 5th October 1895, she left port in Ashtabula, Ohio headed for Owen Sound with the schooner Severn in tow. Both ships were loaded with coal. On 7th October, both ships encountered a nasty storm off the Bruce Peninsula. The winds were so strong they shredded the sails on the Severn. As it became apparent both vessels were in distress, Larsen called for the Africa to release the Severn from her tow line. Now adrift in the storm and with dusk setting in, the crew of the Severn watched the Africa disappear on the horizon. Miraculously, help arrived at the Severn early the next morning. Her crew were cold, wet, and rattled, but alive. They'd hit a reef while adrift, which damaged the boat but didn't sink it, and the sailors had started a fire inside the hold using coal from their cargo to keep hypothermia at bay. The Africa was never seen again.

"Capt. Larsen either thought that we were sinking, or his vessel was foundering," the Severn's captain, James Silversides, told a local newspaper days after the storm, according to Canadian Geographic. "I think it was the latter, because he is a grand fellow, and would never have deserted us if he thought we were in a bad way."

A search for the Africa was immediately launched, and shortly thereafter the crew of the Severn found the Africa's lifeboat, but it was empty.



*The 'Africa' refitted as a cargo barge. Photo credit: Historical Collections of the Great Lakes, Bowling Green State University*

"No one had ever been in her," Silversides told the local newspaper. "I tell you that I have passed through some bad weather during my thirty-five years' sailing, but that experience upon Lake Huron is as bad as any. Captain Larsen was a splendid fellow to sail with, and he did all he could in this case to prevent what happened."

In the days that followed, two bodies were discovered by fisherman. Over the following months, debris from the Africa, including ominous items like life preservers and a trunk containing personal items, washed ashore. But nothing definitive was ever found that explained where, or how, the Africa went down.

The following summer, in 1896, three more bodies washed ashore, including that of Captain Larsen.

For the next 128 years, no other debris from the Africa turned up, and no new theories about her disappearance gained any momentum. Her loss was chocked up as another victim of the deceptively dangerous Great Lakes. But thanks to Melnick and Drebert, the location of the Africa is now known, which means the process of uncovering the gaps in her story can begin. In a strange twist of fate, Larsen Cove, where the filmmakers reside on the Bruce Peninsula, is named after Captain Larsen.

Now the duo, alongside the historian Folkes and the archaeologist Janusas, will seek to answer the remaining questions about the Africa. How did she sink? What happened to her crew?

Human remains are likely still onboard, perhaps in the engine room where they are beyond view, says Folkes, according to Canadian Geographic. To keep salvagers, divers, and other gawkers from disturbing what is likely a historic burial site, Melnick and Drebert are keeping the exact location a secret.

"It's a human tragedy; those lives were lost," Folkes told Canadian Geographic. "I always think of those poor sailors. They had pretty tough lives and ended up getting drowned in Lake Huron."

"We've lived by the Great Lakes, a stone's throw away our whole lives, and there is so much about them we haven't seen and don't know. The potential for exploration with this craft just opens up a whole new universe for us," Drebert told the Owen Sound Times.

The story of the Africa will feature in the pair's upcoming documentary *All Too Clear* with the story between her discovery and the invasive mussels offering a clear glimpse into the depths of the Great Lakes.

This article was originally published on the BoatBlurb.com website <https://www.boatblurb.com/> and is published here with our thanks.



# TALL SHIPS YOUTH TRUST EMPOWERING YOUNG PEOPLE

This year's International Institute of Marine Surveying (IIMS) President's Charity, **Tall Ships Youth Trust (TSYT)**, empowers **young people from across the UK** to realise their full potential, supporting them on their journey to adulthood and for some, careers in the maritime sector and blue economy.

To achieve this, **TSYT offers transformational voyages to young people aged 12 to 25** all year round. With a particular focus on those from disadvantaged backgrounds, the charity gives around 1,200 young people a life-changing experience each year.

TSYT offers a range of opportunities for voyage crew to progress their sea-going careers, through volunteering to build skills, experience and sea time, to become qualified mates and skippers delivering its transformational youth development programme.

Sarah Mardlin, Voyage Resourcing and Reservations Manager at TSYT, says: *"By sharing their life lessons and experiences on board, our volunteers become positive role models for our young people, helping them to create and develop positive relationships with others. So much of the work we do would not be possible without our volunteers' passion and commitment."*

With 95% of crew returning home with increased confidence, the young people the charity supports are using their newly acquired skills to successfully navigate careers in fields such as harbour management, the Royal Navy and yacht design.

Operating since 1956, TSYT has developed into the youth development and outdoor learning charity it is today, with a fleet of four 72ft Challengers and a 55ft ketch.

TSYT is passionate about supporting young people with their development, including guidance to pathways for







those seeking opportunities in the maritime sector. Through voyaging with TSYT, many young people have gone on to have incredible careers at sea spanning decades and continents.

Among those people is Jo Cox, who first boarded the *Sir Winston Churchill*, TSYT's first vessel, in 1995 and set sail on a voyage from Oban to Hartlepool sponsored by her employer at the time. It was during this voyage that she first envisioned her future in the maritime sector.



**Jo Cox**

*"From the first moment of stepping on board I was hooked. I was invited back as a Watch Leader and as I did more trips, I met more people with Merchant Navy backgrounds and started to investigate a career at sea."*

With sponsorship from Maritime London, Jo commenced her deck officer cadetship in 2000, starting a placement with the British Antarctic Survey (BAS). She describes the placement as 'a real turning point for my career' and following qualification as an officer of the watch, she secured a role with BAS as a Third Officer.

Over the course of her 10-year journey with BAS, Jo achieved her Chief Officer and Master Mariners certifications while conducting science operations and resupplying Antarctic research bases.

Following a multi-faceted stint as Government Officer on the sub-Antarctic Island of South Georgia, Jo returned to sea as Captain on board the royal research ship,

Discovery – the most technologically advanced research ship in the UK at the time with tours extending north to Greenland and south to South Georgia, carrying out a full spectrum of scientific activity along the way.

Jo recently took on the role of Harbour Master at Chichester Harbour, having previously served as a Harbour Master at Port Stanley in the Falkland Islands.

Today, TSYT's Challengers and ketch continue to provide a unique outdoor learning environment for young people to develop life skills, embrace a healthier, more active lifestyle and open their minds to a newfound passion for sailing.

Henry Mainstone, now serving as a Welfare Officer for the Royal Navy, first voyaged with Tall Ships Youth Trust in 2010. Having spent most of his life since 2015 at sea in the Middle East, Antarctica and the Americas, he is now focusing on training ships in navigation. Henry attributes his naval career to his formative experiences with TSYT.

He says: *"The experiences and leadership opportunities I had as a Watch Leader really helped me both as a mariner and a leader."*

*"The sea sense and knowledge of the maritime environment I gained set me ahead of my peers, and the leadership experience was invaluable."*

In 2022, TSYT launched its new five-year strategy, which included an increased focus on enabling voyage crew, as well as leaders within educational and youth-oriented environments, to promote the benefits of the maritime sector. This includes pathways into Sail Training, UK Defence and Mercantile marine, STEM learning, and contributing to the protection and preservation of the ocean environment.

As part of its new strategy, the three-voyage programme is tailored to young people's needs and journeys to adulthood. Starting on a Voyage of Exploration, voyage crew explore aspects of personal development alongside building understanding and awareness of ocean health and the impacts of human activity and climate change.

As they progress onto a Voyage of Empowerment, young people are given the space to reflect on decisions they can make and actions they can take to protect and respect the environment and their community. They are then empowered to take action on the Voyage of Leadership – equipping them with the skills to lead, plan and influence in their communities and consider their career options.

TSYT's CEO, Alastair Floyd, says: *"Each voyage experience will encourage and challenge young people to strive for better outcomes for themselves and their communities. We'll identify and develop future leaders, offering clear pathways into our volunteering roles and for those who want it, careers in the maritime sector and ocean environment."*

To support its transformational work with young people, TSYT runs a programme of adventurous adult voyages around the UK and across Europe, including a series of winter-sun voyages in and around the Canary Islands.

Not only do these voyages provide an exhilarating journey for sailing enthusiasts aged 18-80, but the proceeds from adult voyages directly enable more young people to benefit from TSYT's youth development programme.

To book an adult voyage with TSYT or explore other ways to support the charity's mission to change young lives at sea, visit [tallships.org](https://tallships.org).



# Rules for expert witnesses



Dear colleagues,

Whether you have been, are currently or maybe in the future, an 'EXPERT' I would like to draw your attention to UK Civil Rules & Practice Directions and Civil Procedure Rules (CPR) PART 35 – EXPERT AND ASSESSORS.

Please follow this link to see the full online information. <https://www.justice.gov.uk/courts/procedure-rules/civil/rules/part35>

As many maritime standard contracts refer to British Law, it is worth noting your obligations as a 'Civil Expert'.

There are some minor variations on these if the case is heard in a UK Court or if it is Tribunal or an Arbitration, but the underlying advice to an 'Expert' remains the same.

In the past twelve months, I have read a number of cases where Expert Witness reports and or their testimony have been thrown out by the judges. The example below is for medical malpractice but I believe that the Judges findings can equally be related to a Maritime legal case Expert.

There is one case where the Judge found the claimant's expert to be "a helpful, balanced and persuasive witness" who was "consistent in his approach and thoughtful under cross-examination".

While in contrast, he (the Judge) could not say the same of the defendant's expert, stating:

- He did not put a proper part 35 statement on his reports.
- He extracted one medical record adverse to the claimant's case and elevated it out of all proportion in the joint report.
- He displayed no desire to understand the difference between the burden of proof on the balance of probabilities and the medical requirement in the publication of research for the conclusions to be to a scientific standard.

Overall, he found the approach of the defendant's expert to be "unusual" – particularly in "failing to set out the range of opinions in his report and therefore ignoring the clear duties laid upon experts when reporting objectively for the court, not for one party".

So, I am highlighting some of the parts of PART 35 for your ease of reference:

## Experts – overriding duty to the court 35.3

- (1) It is the duty of experts to help the court on matters within their expertise.
- (2) This duty overrides any obligation to the person from whom experts have received instructions or by whom they are paid.

## Written questions to experts 35.6

- (1) A party may put written questions about an expert's report (which must be proportionate) to –
  - (a) an expert instructed by another party; or
  - (b) a single joint expert appointed under rule 35.7.



- (2) Written questions under paragraph (1) –
- (a) may be put once only;
  - (b) must be put within 28 days of service of the expert's report; and
  - (c) must be for the purpose only of clarification of the report, unless in any case –
    - (i) the court gives permission; or
    - (ii) the other party agrees.
- (3) An expert's answers to questions put in accordance with paragraph (1) shall be treated as part of the expert's report.
- (4) Where –
- (a) a party has put a written question to an expert instructed by another party; and
  - (b) the expert does not answer that question, the court may make one or both of the following orders in relation to the party who instructed the expert –
    - (i) that the party may not rely on the evidence of that expert; or
    - (ii) that the party may not recover the fees and expenses of that expert from any other party.

## Contents of report

### 35.10

- (1) An expert's report must comply with the requirements set out in Practice Direction 35.
- (2) At the end of an expert's report there must be a statement that the expert understands and has complied with their duty to the court.
- (3) The expert's report must state the substance of all material instructions, whether written or oral, on the basis of which the report was written.
- (4) The instructions referred to in paragraph (3) shall not be privileged against disclosure but the court will not, in relation to those instructions –
  - (a) order disclosure of any specific document; or
  - (b) permit any questioning in court, other than by the party who instructed the expert, unless it is satisfied that there are reasonable grounds to consider the statement of instructions given under paragraph (3) to be inaccurate or incomplete.

Finally, just to remind you of your obligation, an expert's report must be verified by a statement of truth in the following form:

***'I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.'***

Please also refer to The Practice Direction supplement to CPR Part 35, through the following link:

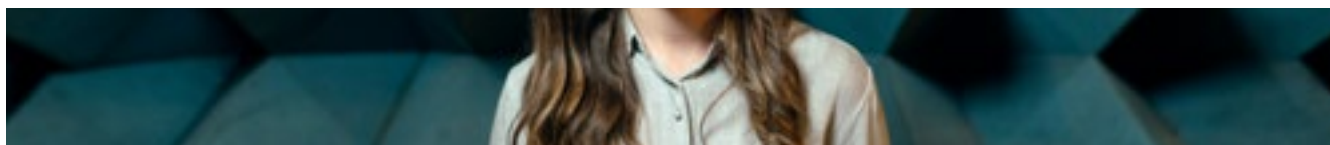
[https://www.justice.gov.uk/courts/procedure-rules/civil/rules/part35/pd\\_part35](https://www.justice.gov.uk/courts/procedure-rules/civil/rules/part35/pd_part35)

We should consider these principles when we are writing our survey reports. They should be factual, concise and unbiased. Also, if we refer to some other material it should be well-referenced and any other material that may be verbally received must be clearly defined. If you are unable to survey a particular item, you must state why, as it could be considered that you have simply missed it and therefore your report would 'not be complete'. If you ever have to defend one of your survey reports, the content will have considerable scrutiny, you must be able to defend the content and any opinions that you have stated.

If you are not an expert in a subject, then don't say that you are. It is much better to say that you consider additional expert involvement is required to provide a more accurate and conclusive report. An example of this for Hull and Machinery Surveys may be Fuel Quality Claims that have reportedly led to main engine damage. You probably do not have your own laboratory to analyze the fuel, so you will need to rely on a reputable lab to prepare a report on the fuel that you may witness being sampled on the vessel. You then need to refer to the Labs fuel quality report as part of your Machinery Damage Report. You may also need to have other expert input such as metallurgy analysis of any broken engine components. As well as maintenance records from the ship.

Be aware that any material you gather to support your survey report is 'discoverable' and may be called on by the opposing party, so make sure that you keep good records and notes on where and when you receive information and from whom.

Article by  
**Peter Broad**,  
President of IIMS.



# CO2

## Study on decarbonisation of the maritime industry highlights the need for collaboration and investment

**The Port of Tyne in the UK, working with Connected Places Catapult and partners Arup, Lloyd's Register, EDF R&D UK, Newcastle University and the North East LEP, has published the results of a feasibility study looking at the decarbonisation of the maritime industry through the creation of green shipping corridors, and the adoption of scalable zero-emission energy sources.**

The Clean Tyne Shipping Corridor Project – funded by the Department for Transport and delivered in partnership with Innovate UK as part of the Clean Maritime Demonstration Competition Round 2 (CMDC2) – sets out the opportunities and economic and environmental benefits of creating a new, green shipping corridor from North-East England that links the region with the European Green Corridors Network

The study also explores the current use of alternative fuels in the shipping industry, and some of the challenges the sector faces in transitioning from conventional fuels to net zero carbon fuels like methanol, hydrogen, and ammonia.

It is hoped the study, and the accompanying roadmap, will create opportunities for UK ports – including the Port of Tyne – to lead shipping's transition to net zero, which currently accounts for approximately 3% of annual CO<sub>2</sub> emissions globally.

Dr Eleni Bougioukou, Innovation Manager at the Port of Tyne, said: "Through The Clean Tyne Shipping Corridor Project we have been investigating what technology, infrastructure investment, and interventions are needed to create a green shipping corridor from the Port of Tyne to Rotterdam using renewable methanol.

"One of the biggest challenges we have found is the current cost differential between conventional and zero emissions fuels. The cost of alternative fuels in the maritime sector is prohibiting the pace of decarbonisation. There is also a need for greater investment in research, innovation, and digital adoption to help improve technologies that increase productivity throughout green corridors, ensuring they generate a positive return on investment.

"Despite some of the challenges, green corridors provide a huge opportunity to transform the current model of shipping by investing in staff, skills, and infrastructure. Working collaboratively to develop and share facilities, aggregate demand for future fuels, and align funding strategies, we can position the UK at the forefront of green shipbuilding and maritime technology."

The study explores the technical, strategic, and commercial barriers and enablers to creating a green shipping corridor in North-East England. It goes on to look at the

economic and regulatory feasibility of the project, and the opportunities to attract inward investment.

Maritime Minister Baroness Vere said: "The UK maritime sector is a world leader in green shipping practices, but we must decarbonise if we are to reach net zero by 2050 and the Port of Tyne is leading the way.

"These green corridors will have countless benefits to the economy – creating highly skilled jobs and supporting the levelling up of crucial coastal communities – while showing how the industry can take the lead in our green transition, thanks to government funding."

The Clean Tyne Shipping Corridor Roadmap outlines a series of milestones and activities that the Port of Tyne, its customers, and the green methanol supply chain, will need to deliver to establish the Port as a green methanol bunkering hub.

Compiled through stakeholder engagement, literature review, and analysis of port and vessel-calling data, The Clean Tyne Shipping Corridor Project provides the roadmap to create more green shipping corridors in ports across the UK and encourage the early adoption of alternatives to petroleum-based fuels in the maritime industry.

Mark Wray, Ecosystem Director for Maritime and Ports at Connected



Places Catapult, said: "The amount of CO<sub>2</sub> emissions from shipping is expected to double by 2050 if the sector does not take steps to reduce emissions. The Clean Tyne Shipping Corridor Project has been successful in demonstrating the viability of decarbonisation in the maritime industry, and highlighting the huge opportunity provided by the growing demand for alternative fuels.

"The Clean Tyne Shipping Corridor Roadmap sets out the short, medium, and long-term actions that will address methanol production and supply; the decarbonisation of vessels; and the expansion of Port and bunkering infrastructure to successfully deliver a Tyne-Rotterdam green shipping corridor.

"This roadmap can be expanded to other ports across the UK, helping lead the decarbonisation of the UK maritime industry, and support the delivery of the UK's net zero targets.

"We hope this will be a catalyst for future collaboration between our two great sea faring nations on establishing green shipping corridors across the North Sea and English Channel."

James Lovett, Innovation Lead – Future Maritime Technologies at Innovate UK, said: "The Clean Tyne Shipping Corridor project is a great example of the maritime industry coming together to research the green shipping corridor concept. Through this Department for Transport funded project, the Port of Tyne and project partners have demonstrated they're putting action behind the UK's commitments at COP26 and COP27 around the Clydebank Declaration.

"We're excited to see the project has created a series of follow-on activities that the Northeast can follow. The Port of Tyne and partners are one step closer towards bringing the green corridors concept to reality."

Dr Kayvan Pazouki, Senior Lecturer and Associate Dean of Education (PGT), Marine, Offshore and Subsea Technology, School of Engineering at Newcastle University, said, "Collaboration across the whole supply chain and the development of key infrastructures and processes have stood out as the key elements for the successful establishment and operation of a Green Shipping Corridor and wider scaled up green shipping activities in the northeast of the UK and we look forward to working with the Port and its partners to work towards our net zero ambitions."

The Clean Tyne Shipping Corridor project was awarded over £390k of UK Government funding from Round 2 of Clean Maritime Demonstration Competition (CMDC2). It aims to establish at least one of the six green corridors pledged in the Clydebank Declaration at COP26 by 2025.

//

**The Clean Tyne Shipping Corridor project was awarded over £390k of UK Government funding from Round 2 of Clean Maritime Demonstration Competition (CMDC2). It aims to establish at least one of the six green corridors pledged in the Clydebank Declaration at COP26 by 2025.**

//

# On the subject of Orca attacks

The first documented orca attack was allegedly at the end of the 19th century, at the height of industrial whaling, published in the Halifax Times in Nova Scotia.

Depending on who you ask there have been anywhere between 40 and 200 orca attacks on yachts this year so far in the area in and around the Strait of Gibraltar. Orca have also been seen inside the Med as far East as Marbella - 40nm from the Straits.

Are they all serious attacks on yachts or are some just sightings near yachts? Do sightings from motor vessels count? There seems to be no distinction. Everyone talks about attacks, but no-one has been hurt, so far.

I was in a shipyard the other day where at least three yachts were missing rudders. As a surveyor I have personally attended onboard 14 yachts for the insurers that have had their rudders chewed this year.

None of the crews I spoke to felt their lives were endangered. They did not feel the orca were 'after them' but rather that their yacht had become a plaything of the orca.

All of the boats I attended were 'attacked' within 10nm of the Spanish Atlantic coastal port of Barbate, which itself is about 12nm north of the West end of the Straits at Tarifa. All of the yachts I visited followed the procedure posted on a certain website telling you to turn everything off and play dead.

In all cases the orca took hold of the rudder and turned the boat sideways, or around, numerous times. In most cases they took big chunks out of the rudder by clamping on and twisting their bodies, played with it for a



*By Kim Skov-Nielsen MIIMS*

while, spat it out and came back for more. Until they got bored or found something else to play with.

The Spanish rescue vessel based in Barbate - a 60' rib with enclosed bridge - always takes a few turns around the stricken vessel at high speed to scare the orca off. This doesn't always work. In one instance they kept up their 'play' even after a tow had been established and the towed vessel was almost in the harbour at Barbate. They quit when the water depth was only 5m. At no time did they head-butt the vessel, nor did they nudge or play with the keel.

In one instance four orca lined up in line abreast and ploughed toward the vessel on the surface from abeam, diving under at the last minute while their bow wave rocked the vessel severely. This tactic has been observed in the Arctic as a means of dislodging seals from icefloes. This tactic implies that they were trying to dislodge the crew on deck and is the most disturbing tactic yet employed.

Many crews have described an almost playful attitude amongst the orca as they tossed bits of rudder about. Indeed, a group of three juveniles and a mother have been seen more than once and the mother

has been called "White Gladys" as she has much larger white areas than other orcas that are predominantly black. She is also quite big.

Whether she has been teaching successive generations of progeny to play with yacht rudders is a good question.

The orca here are a separate species, a distinct generic variation from the orca on the north west corner of Spain and also distinct from the orca family in the Canary Islands. So, we may have a group of orca specially adapted to play with yacht rudders, led by White Gladys.

When you consider the shape of a yacht as seen from under the water, you could be excused for thinking it is a large, disabled whale lying on its side with a big pectoral fin (the keel) hanging down and a moving tailfin at the back (the rudder).

Orca see using sonar. This is a sonic wave they emit and then recover. They may not be able to distinguish between a living and an injured creature. They may assume that it is a whale from the shape alone, and that because they hear no heartbeat it is a dead whale ready for consumption.

Pingers, an ultra-sonic device that emits a high-pitch ping at a frequency defined by 20 years of NOAA research which keeps dolphins, orca, and whales away from tuna fishing fleets, have been mandatory on EU (and worldwide) tuna boats since 1992. Or ever since Mel Gibson made a joke about tuna sandwiches in Lethal Weapon 2.

Speaking to the manufacturer about their effectiveness he said "I don't seem to get any calls telling me they are working. I only get calls when



they are not working, and I've never had one of those calls!"

The size of a couple of cartons of cigarettes taped together, they are deployed on a line to a depth of 5-10m and towed around with the vessel, pinging away!

There are a number of websites dedicated to news about orca and orca 'attacks' but not one of the sites has any mention of pingers! Why not? Pure sensationalism doesn't thrive on solutions, I guess.

Perhaps we should be speaking about deploying pingers geographically to protect certain areas like the area west of the Straits, or around Á Coruña in the north where there has also been a spate of encounters.

We all remember the story of the Robertsons whose yacht was deliberately sunk by orca west of

the Galapagos about 35 years ago, deliberately sunk by headbanging the boat to pieces. The Robertson family survived for 117 days in a life raft. The book is called *Survive the Savage Sea*. And well worth a read.

I have carefully questioned everyone I have been in contact on this specific point. Did they at any point head-butt the vessel and the answer has always been no. So far. Not even a nudge to the keel. And inspection in the shipyard afterwards being my job, I can confirm no soft brush marks, no push marks, no head marks seen. No sign of any contact other than with the rudder.

Tactics - a yacht was filmed recently shooting at the orca with a high-powered rifle. I would not want to anger a bunch of two-ton animals that are capable of sinking my boat. It's a bit like annoying a herd of elephant while driving a Citroen 2CV across the Serengeti. Not clever.

Other yachts are carrying military 'flash-bangs', or stun grenades, which they throw in the water to deter the orca, and it is believed to work. It is of course hard to gather direct evidence as no-one will admit to it. Today I was told about underwater speakers emitting loud noises to push the orca away.

To harm or hurt, or to cause these endangered mammals to be harmed or hurt is a criminal offence in Spain, as it should be. Big fines and jail time applies. But what do we do? Many yacht owners have had their plans for the summer scrubbed or delayed, and they are understandably annoyed. So, should they pressure the underwriters to enforce carrying and deploying pingers in certain areas, or not?

But from being annoyed to taking an assault rifle with you is a big step. Owning an illegal firearm in Spain is automatically five years in jail with no parole. No argument.





The above vessel that fired on the orca has been caught in Ibiza and fined 5000€, but they were allowed to keep the assault rifle due to it being an Israeli-flagged vessel and the fact that the incident took place in Moroccan waters. (How do they get a fine for shooting at orca in Moroccan waters but not have the gun impounded in Spanish waters? Don't ask!).

The courage that ignorance gives you is supreme. In early August I did an MY engine sea trial out of Sotogrande, 12 miles inside the Med and considered safe. As we came out of the harbour and opened up the engines a bit, I could see on the port side a pod of dolphin and on the starboard side out to sea I could just see a pod of orca. Up ahead a group of young guys were throwing their wakeboards in the water in readiness for some fun. Oh, what

fun to be chased by orca! The dolphin cleared off!

I do not believe the current wisdom of 'playing dead' is a valid strategy. I have heard yachtsmen talk of using the engine and spinning propeller to chase away the orca. I have seen on some of the videos presented to me orca with bleeding wounds along their spines and fins. I believe these are 'prop wounds' were getting too close to the props has cost them a chunk of flesh. I believe that motoring astern at pace with the prop leading and the rudder moving from side to side will put the orca off. They are not stupid and are not likely to risk serious mutilation!

The small, local fishing boats all around here that run in out out daily have told me that they have never been bothered by orca and they are competing with the orca for the same food!

And this may be the point. The height of the orca season coincides with the Almadraba – the completely illegal tuna harvests every spring using nets strung out from the shore which take everything in the sea - tuna, orca, dolphin, turtle, pelagic fish, sharks and, oh yes, small coastal fish and bottom fish as well. The sea runs red in March and April at the height of the slaughter! No kidding, it's true. Like the dolphin slaughter in Japan or the seal harvest in Greenland, it is senseless and barbaric! Perhaps the orcas think so too and are telling us to lay off! To leave some for them and their kids!

I have bought a pinger and I deploy it if approached by orca on one of my many sailing sea trials in the area. They don't seem to bother with motor vessels – perhaps that's the propellers again. The pinger cost just over 200€ with tax and shipping included. And a new rudder costs...?



# Wind power developments for sailing boats into headwinds

By  
**Harry  
Valentine**

Ancient maritime history tells of the development of the lateen sail, which allowed wind-powered vessels to sail at a 30-degree angle into a headwind. It is the basis of windmill driven vessels being able to sail directly into a headwind. During the 1970s, an inventor and mechanical engineer from New Zealand named Jim Bates built a windmill powered catamaran capable of sailing directly into a headwind at eight knots, preceding Canadian physics professor Brad Blackford by a decade.

## Introduction

New Zealand based mechanical engineer Jim Bates and his daughter Jennifer designed and built his windmill powered catamaran vessel named "Tango". Many years later, the concept was proven during a sailboat race at Halifax, Canada when physics professor Brad Blackford sailed a windmill powered boat directly into a headwind to win the race. British sailboat enthusiast Peter Worsley built a scale model windmill powered vessel to prove in a water tank, to illustrate that the forward thrust of a windmill-driven propeller can actually exceed the rearward drag of the windmill.

Worsley built several small-scale windmill-driven vessels capable of sailing directly into a headwind. He discovered that using a slower-turning, horizontal-axis wind turbine that delivered high levels of torque at low RPM to be well suited for driving a submerged propeller. Worsley developed and tested a small-scale windmill powered on a small inland lake using readily available wind. His initiative provides a basis for other enthusiasts to build and test their own small-scale versions of wind-powered vessels capable of using wind energy to sail directly into a headwind.

## Early Experiences

Jim Bates provided some insight into performance issues that he encountered when he sailed his windmill-driven catamaran at 8 to 9 knots directly into a headwind blowing between 20 and 30 knots. During powerful wind conditions that caused waves, Bates found it necessary to restrict speed so as to prevent damage to the vessel's hull. The combination of propeller generating forward thrust below the water surface and the windmill producing rearward aerodynamic drag far above the water surface when sailing directly into powerful headwinds, caused weight to transfer from the bow area to the stern area.

Based on the experiences of Jim Bates, Peter Worsley built and tested many types of wind turbines intended for vessel propulsion. Unlike power generation wind turbines, he set blade angles at a maximum of 45-degrees to reduce wind turbine drag and generate sufficient thrust to overcome that drag. Using smaller blade angles than 3-bladed power generation turbines has allowed Worsley to reduce turbine rotational speed and resulting blade induced wake and turbulence. He was able to install additional blades to his turbine, with the option of installing twin rotors on the same driveshaft.



## Direct Drive

During the mid-1980s, Professor Brad Blackford used direct drive on the first windmill boat that he built and entered into a trans-harbour sailboat race at Halifax, Canada. He sailed directly into a prevailing headwind to win the race. Axial-flow wind turbines would still generate power when set at 45-degrees from water surface, with flexibility to divert up to 20-degrees horizontally from headwind direction. An angled driveshaft on Blackford's boat connected the windmill that was mounted high above the bow to a propeller submerged below the stern, perhaps setting a precedent for larger scale, future wind-powered catamaran vessels.

## Number of Blades

The original into-the-wind boats built by both Jim Bates and Prof. Blackford were propelled into the headwind using 3-bladed axial-flow turbines. Peter Worsley has built wind-powered vessels that sail directly into the headwind using 6-bladed rotors. He set each blade at a maximum angle of 45-degrees to the driveshaft, resulting in a slower turning turbine that drives a propeller and has sailed a vessel directly into a headwind. Recent developments in dual-rotor axial-flow wind turbines include designs where upstream and downstream rotate in the same direction and also designs where upstream and downstream rotors spin in opposite directions.

Test results involving a pair of 5-bladed rotors counter-rotating on the same horizontal-axis suggest possible future application in vessel propulsion. Wind turbine powered vessels are subject to limitations on blade diameter along with its weight and height above the deck. In such operation, each of the rotors would be installed on a horizontal-axis upstream and downstream sides of a gearbox placed at the top of a tower, with concentric counter-rotating vertical driveshafts inside the tower. At the bottom end, bevel gears and a differential would recombine power from the vertical shafts to drive a propeller with steering capability.

## Vertical-axis Turbines

A vertical-axis turbine offers the advantage of being able to directly drive a propeller, including an axial-flow propeller operating on a vertical axis and using inlet and outlet ducts to redirect water to achieve propulsion. A Voith-Schneider type cam-type mechanism located below the turbine assembly would continuously reset turbine blade angle during each assembly rotation cycle, to allow forward thrust below water to exceed wind

drag above water. Vertical turbine blades that resemble air foil sails would continually change angle and duplicate the sail angles of a sailboat tack-sailing into a headwind.

Installing a narrow-angle deflector upstream of counter-rotating vertical-axis twin turbines of small diameter that inter-mesh like gears, would redirect the headwind to the downstream side of each turbine and reduce drag by shielding the upstream side from air flow. The air deflector would allow the vessel to sail within 15 degrees of wind direction, assuring that both turbines provide propulsion. At larger angles from the headwind, a single turbine would remain operational and assisted by either deck-mounted sails or airborne kite-sails. Both a single turbine with movable blades and twin counter rotating turbine would require further research and testing.



## Large Axial Turbine

Windmill-powered vessels built by Jim Bates and Prof. Blackford represent small scale prototypes of future windmill-powered large vessels. The vessel built by Bates used a 3-bladed turbine of 33-feet in diameter and delivered sufficiently low torque to allow gear systems to transfer power from the wind-mill hub to the propeller. As the physical size of axial-flow wind turbines increases, rotational speed decreases, with torque increasing dramatically. In a 30-mile per hour wind, a 120-ft diameter turbine will deliver over 500-Hp at 50-RPM at over 50,000-lb-ft of torque.

When wind speed reached just under 60 miles per hour, power output would rise to over 3,600 Horsepower at 50 RPM and over 185,000-lb-ft of torque. As an alternative to costly and heavy gear trains, a multi-section

large-diameter hollow driveshaft installed at an angle could carry power from a large-diameter wind turbine installed above the bow to a propeller located below the stern, where exit ducts could redirect the flow of water. There may be scope to install a pair of wind rotors that rotate in the same direction, at a distance apart from each other on the angled driveshaft.

## Combined Wind Technologies

Some designs of wind turbines that directly drive propulsion technology have sailed vessels directly into headwinds and able to deviate up to 20 degrees from headwind direction. As angle between wind and sailing direction approaches 30 degrees, other wind power technologies such as deck-mounted air foil sails including telescopic versions, airborne kite-sails and deck-mounted rotating Flettner rotors become more effective than wind turbines as providing for vessel propulsion. Future wind-powered commercial vessels and passenger cruise vessels would include multiple different wind-power technologies to provide propulsion, including kite-sails for sailing with prevailing trade winds.

## Conclusions

Boat builder Jim Bates and physics professor Brad Blackford proved that windmill-driven vessels could sail directly into a headwind. Sailboat enthusiast Peter Worsley has undertaken research into optimal blade angles for axial-flow wind turbines. His work with working scale-model wind-powered boats provides a basis for other enthusiasts and researchers to expand on researching and developing wind-powered technology capable of sailing vessels directly into trade winds, including on trans-oceanic voyages. Worsley's findings provide a basis to undertake further research into adapting vertical-axis wind turbines to vessel propulsion that includes sailing directly into headwinds, with little directional deviation.

On very large vessels, large-scale vertical-axis wind turbines including typhoon capable versions offer the combined advantages of lower centre of gravity than axial-flow turbines and directly driving a propeller, including an axial-flow propeller combined with ducts to redirect water flow. While axial-flow windmills with gear drive would be suitable for smaller catamaran vessels, large-scale axial-flow turbines operate at low RPM with extreme levels of torque that make gear drive problematic. While a suitable typhoon capable axial-flow propulsion wind turbine is possible, it would need to use an expensive electrical generator and propulsion motor(s).

*This article first appeared online on the Maritime Executive's website and is republished here with our thanks.*

# The methods of quantity ascertained for liner bulk carrier self propelled barge if the barge has no hydrostatic data or any naval architecture chart

by **Pradip Kumar Shaw** MIIMS

If Barges do not have any proper stability booklet and has no hydrostatic data then we could not go through the draught survey for determined the cargo quantity, then used an unconventional method to go

through average Block Coefficient for determined the cargo quantity. It is an average method this basic concept are taken from Naval Architecture, of the basic concept of block coefficient, these are used here for calculate the cargo quantity.

When calculate Average Block Coefficient/ Ratio of the barges, there required /taken many manual measurements these has taken from barge holds and deck.

Average Block Coefficient Process is given bellow:

**Our measurement to ascertain the ratio and also we go through an example:**

1. Length of Barge(LOA) taken manually = 50M
2. Breadth of Barge taken manually = 8M
3. Initial Free Board of Barge taken manually (Empty barge depth from barge deck level to water level) = 2.75M
4. Final Freed Board of Barge taken manually (Load Barge depth from deck level to water level) = 0.30M
5. To check drinking water tanks taken manually ( normally these barges has no ballast tanks)

Cargo Loaded depth =(Initial free board-Final free board) = 2.45M

## As well as taken

1. Measure before loading empty holds Volume.
2. Measure after loading empty holds Volume.
3. Bulk Density ascertained.

For an example given below:-  
Barge Name: MV "B.C 1111"

Before Loading Empty Volume:

Hold 1 (Inner Hold)	: Avg. Length	: 15.60 M	Avg. Breadth : 8.10 M	Avg.Depth : 3.50 M	= 129.860 M <sup>3</sup>
Hold 1 (Hatch Coming)	: Avg. Length	: 9.20 M	Avg.Breadth : 5.10 M	Avg.Depth : 0.90 M	= 42.228 M <sup>3</sup>
Hold 2 (Inner Hold)	: Avg.Length	: 25.50 M	Avg.Breadth : 8.50 M	Avg.Depth : 3.55 M	= 769.463 M <sup>3</sup>
Hold 2 (Hatch Coming)	: Avg.Length	: 10.50 M	Avg.Breadth : 5.20 M	Avg.Depth : 0.95 M	= 51.87 M <sup>3</sup>

**Total Empty Volume:** MV "B.C 1111" = 993.421 M<sup>3</sup>



### After Loading Empty Volume:

After completion of loading, the empty space was measured to get the loaded volume.

The followings are the loaded volume.

Hold 1 : Avg.Length : 15.60 M Avg.Breadth : 8.10 M Avg.Depth : 4.40 M – 2.50 M(U) = 1.90 M = 240.840 M<sup>3</sup>

Hold 2 : Avg. Length : 25.50 M Avg.Breadth : 8.50 M Avg.Depth : 4.50 M – 1.70 M(U) = 2.80 M = 606.900 M<sup>3</sup>

**Total Loaded Volume : 240.840 M<sup>3</sup> + 606.900 M<sup>3</sup> = 847.740 M<sup>3</sup>**

Density of Cargo found = 0.840 Mt/M<sup>3</sup>

**Quantity Loaded = 847.740 M<sup>3</sup> x 0.840 = 712.102 M.T**

We can say 712.102mt water displaced by the barge hull, we know the fresh water density is 1.000 MT/M<sup>3</sup> therefore we say 712.102M<sup>3</sup>volume displaced by the hull for loading the cargo.

Thereafter, we used the above all data to measure the average ratio or average block coefficient.

Cargo Ton = Submersion (Depth) x length x breadth x C<sub>b</sub> x Water density

712.102 = 2.45 M X 50M X 8M X C<sub>b</sub> X 1.000

C<sub>b</sub> = 712.102 / 980

C<sub>b</sub> = 0.73

Thereafter if the barge comes in every month of a year then the surveyor only take free board no need to take any other measurement. Only used this formula and get the cargo quantity. Supposed next time this barge initial free board is 2.85 metre and final free board is 0.26 metre then cargo quantity will be-

Cargo Ton = Submersion (Depth) x length x breadth x C<sub>b</sub> x Water density

Cargo Ton = 2.59M x 50M x 8M x 0.73 x 1.000

**Cargo Ton = 756**



# Supramax detention in Immingham Port: A PSC case study

During September 2023, a Supramax bulk carrier that was inspected in Immingham, UK (Port UNLOCODE GBIMM) resulted in a detention being ordered with 20 deficiencies found. Given the high number of deficiencies recorded, the reason for this case study is to highlight the causes and key lessons to be learned.

## The ship's background & Port State Control (PSC) Inspection eligibility

The three year old ship was built in 2020 and was assessed with a PSC Inspection Window Open given the risk profile of the ship and the Manager in the MoU area. The ship was eligible for inspection, as she had a window open for inspection under the terms of the Paris MoU going back to 29 September 2022. The ship's Manager (DOC holder) handles a mixed fleet of 120 ships, including bulk carriers, containerships and tankers.

The ship's PSC history during the last 36 months included 4 inspections. The ship had been inspected most recently under the Paris MoU in 2021 in Sagunto, Spain with zero deficiencies found. The window was open for inspection and the managing company should have been prepared for an extensive inspection on the ship.

## The manager's background

The manager's PSC record the previous five years included a total of 1,010 inspections during which 582 deficiencies were found and two detentions were made both under the Tokyo MoU. The manager's rate of deficiency per inspection is 0.58. The global benchmark for similar aged and type ships is 1.28 and the detention ratio is 0.20% while the global benchmark for similar fleet is 1.38%). The manager's risk profile under the Paris MoU was calculated to be medium based on his last 36 months PSC history.

## Immingham Port background

At Immingham Port over the last 36 months (prior to this inspection) there were 155 inspections on bulk carriers which resulted in 13 detentions. Statistically, the Port's detention Rate is 8.39% which is almost 8 times higher than the global average for ports inspecting bulk carriers (1.70%). Immingham's Deficiency per Inspection for the last 36 months is recorded at 3.15, almost 3 times higher than the global average for ports inspecting bulk carriers (1.21). These statistics show that Immingham, UK is a challenging port for bulk carrier operators and inspections, as the Port KPIs are far higher than the worldwide average.

## Port Call Risk Assessment (POCRA)

The PSCI has been analyzed with the Port Call Risk Assessment (POCRA) Risk Assessment Tool from the RISK4SEA Platform with the following outcome.

## PSC Inspection Probability

The ship's prior inspection under the Paris MoU was back in 2021, so the ship was eligible for inspection. The ship was rated SRS and the manager's performance as we know under the MoU was marked as medium.

The ship inspection ratio (SIR) for the unique ships called/inspected during the last 12 months at Immingham Port was 56%, meaning that 6 out of 10 bulk carriers which visited Immingham were selected for inspection.

As the ship had an open inspection window open date and the PSC history of ship and manager was well known and assessed by the local PSC authorities, the inspection probability was assessed as CERTAIN.



## PSC inspection Severity

Ship related factors were mostly Low (green flagged) based on the previous ship's and manager's PSC history under the MoU.

Although the manager's PSC history under the MoU was assessed as medium risk, some parameters were specifically red flagged:

- The manager's Deficiency per Inspection in Port
- The manager's Detention Profile vs Port Detainable Items
- The manager's Deficiency Profile vs Port Top 20 Deficiency Codes

The most dangerous set of parameters was the Port related factors which are assessed to be high risk (red flag) shown below which are higher than relevant ports worldwide for General Cargo Ships' inspections.

- Port Deficiency Codes spread
- Port Detention Ratio over 12 months

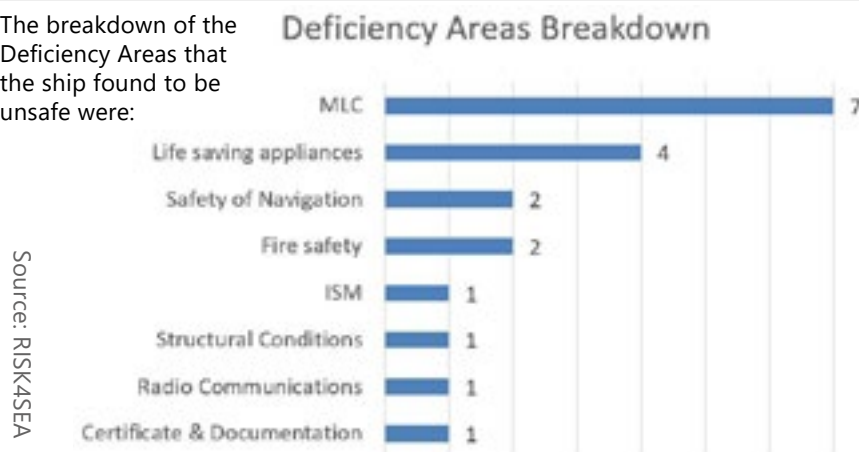
Additionally, the Concentrated Inspection Campaign on Fire Safety was in progress during ship's PSC inspection.

Taking into consideration the above Inspection Probability and Inspection Severity, the overall POCRA assessment was that the call risk was High, and this should have been sufficient to act as an alert to be prepared.

## PSC Inspection Result

The ship docked at Immingham and PSCO boarded to inspect and to check the ship's safety status and condition. The result of the PSC inspection was 20 deficiencies, 4 of which were detainable. As is expected in such situations, the code 15150 - ISM - was marked to engage the manager to provide verification of the ISM Implementation on board through an ISM Audit.

The breakdown of the Deficiency Areas that the ship found to be unsafe were:



## POCRA preparation checklist

If the vessel had used the POCRA preparation checklist, the findings may have produced a different outcome. The POCRA checklist in Immingham for bulk carriers generates a full and specific checklist including 48 items. This checklist includes all detainable items identified during inspection. If the vessel had prepared properly the detention could have been avoided.

## Root Causes

Almost 90% of ships being detained have zero detentions in the 36 months prior. Research has provided evidence that ships are being detained for the following key reasons:

- Inadequate identification that the ship will be inspected. It was evident in this case by the end result.
- Inadequate preparation by the crew as far as the ship's is concerned. Numerous deficiencies found in the areas where weekly inspections are due such as FFA, safety of navigation, propulsion and machinery are testimony to that.
- Inadequate MLC implementation. The living and working conditions on board show gaps from the level required by common good practice.

## The lessons to be Learned

There are several lessons to be learned from this case.

- The ship's MLC preparation and implementation on board was of a low level.
- Four deficiencies on life saving appliances are too many, as the SOLAS weekly inspections cover such issues.
- The two detainable deficiencies on Fire Safety indicate that there was no CiC awareness advance or preparation.
- As PSC inspections aim to identify safety gaps onboard, having too many technical/procedural issues unattended will probably lead to detention.
- Extreme caution should be exercised with the handling of the ISM Codes. It is recommended that an additional audit onboard the ship is carried out to verify the SMS implementation (regardless of whether or not this is required by the PSCO or not).

## About RISK4SEA Port Call Risk Assessment

The Port Call Risk Assessment (POCRA) is an automated Risk Assessment of the ship, the manager and port specific risk factors. It generates a detailed focused PSC Inspection Checklist which helps to prepare for a PSC inspection.

# A tale of two experts: How to deal with criticism

Although not related to the marine surveying profession, this article will be of relevance to anyone who gives (or is considering giving) expert witness at court.

It is an occupational certainty that expert witnesses will be challenged robustly in cross-examination; how the expert deals with that challenge will be revealing and will be commented on by the judge.

How should an expert respond to criticism, challenge, and adverse comment?

This article looks at the experience of two experts, Dr. E and Mr. T, in two very different cases. Both experts dealt with the challenge appropriately and their approaches are worth evaluating.

By Nick Deal



## Expert Witness: Dr. E

Dr. E is a retired consultant paediatrician who was instructed by the prosecution in the recent murder trial of Lucy Letby.

During his cross examination, two paths were followed in order to try to undermine his credibility and reliability: the way in which he had become involved in the prosecution case and previous criticism of him by a judge in another case.

It was put to him, and Dr. E accepted, that he had contacted the National Crime Agency when he became aware that Cheshire police were investigating the infant mortality rate at the Countess of Chester Hospital, saying that he had expertise in neonatal cases and would be interested to help.

The defence accused him of “touting” for the role of expert witness for the prosecution.

In evidence, he stated that he was simply offering his professional opinion to the police should they need it. He said that he was fully independent and impartial, that he knew his duty to the court and was fulfilling that duty. When challenged that he had adopted a partisan approach, he went further by saying:

“I’m completely independent. I have been giving evidence in court for a long time. I know about impartiality. I know about the rules. I’m not here for the prosecution. I’m not here for the defence. I’m here for the court.”

He was also faced with the comments of a judge in the Court of Appeal in an unrelated case, who had criticised Dr. E for producing a report which the judge described as not providing a “balanced opinion”.

The defence used the above issues to argue that the judge should exclude Dr. E’s evidence from the jury on the grounds that he failed to act appropriately, with independence, impartiality and objectivity.

The trial judge, Mr. Justice Goss, rejected that argument, on the basis that it was for the jury to consider the issue of Dr. E’s reliability by reference to all the evidence in the case.

Dr. E clearly did not accept that challenge made by the defence and stood by his assertion of independence. Although we will never know how the jury arrived at their decision to convict, it is a fair assumption to make that, in doing so, they accepted Dr. E’s evidence and must have found him to be a reliable witness.

**Dr. E’s approach? Robust defence.**



# Expert Witness

## Expert Witness: Mr. T

Mr. T is another very experienced expert witness. A Chartered Surveyor of many years standing, he had been commended in 2014 by a judge in the Central Family Court for approaching a complex valuation with the “required degree of expertise and independence” expected of an expert witness.

In 2019, he was criticised in the Upper Tribunal (Lands Chamber) for not having inspected the objectors’ properties and, therefore, not being able to give a properly evidenced opinion.

He accepted the criticism made by the Deputy President of the Tribunal – that he should have applied to the tribunal when his solicitors refused to allow him the time to inspect the properties. He understood that he should not have allowed his instructing solicitors to limit his ability to fulfil his overriding duty to the court.

His evidence was not given much value by the judge in his judgment.

That was a stinging criticism, but one which Mr. T had to, and quite rightly did, accept. Mr. T went further when writing his next report for a new and unrelated case. He drew the court’s attention to the criticism made in the 2019 case, giving the case reference and the paragraph number in the judgment. He openly admitted where he had been at fault and went on to describe how he had gone back to the expression of the duty to the court in CPR35. He also made sure, in the instant case, that he was properly complying with his duty to the court.

Result? The Tribunal in the second case found him to be a credible, reliable witness with whom they agreed.

**Mr. T’s approach?**  
**Transparent admission of fault.**

## What can expert witnesses learn?

There should never be any substitute for honesty and integrity. An expert must know the scope of their role and their duty and be able to express and demonstrate that they are fulfilling it at all times in their work as experts.

Criticism and challenge will come.

If it is well founded (i.e. if the expert has erred or not done something which they should have done), the expert must immediately accept that and not try to defend the indefensible. The longer they fight the point, the more their credibility will be destroyed.

This applies to future cases too. If the expert is proactive and transparent about any past errors, the scope for further cross-examination will be reduced. For example, in Mr. T’s case, he was cross examined about the error in the previous case – until the judge intervened and told the barrister to move on.

The expert should then go on to demonstrate what they have done to correct past mistakes and how they have guarded against a repetition in the future.

If the criticisms are not well founded, then the expert should say so. This is not about admitting fault where there is none.

## Conclusion

Bond Solon urges experts in all disciplines to make themselves fully aware of their role and their duty under the rules of court. The duty to help the court and to be independent applies in all the UK jurisdictions whether through case law or through the rules of court in England and Wales. An expert witness must read, understand the rules and apply them.

Bond Solon’s expert witness courses always reference the duty of the expert. The trainers are ready to discuss the application of that duty and the challenges that the expert will face as they seek to do so.

In reflecting on his experiences, Mr. T was well aware that whilst he had taken fifty years to build his reputation, that reputation could be destroyed in less than 50 seconds.

For more information about Bond Solon go to <https://www.bondsolon.com>.

*This article was first published on the Bond Solon website in September 2023 and is republished here with our thanks.*



# CAN CO<sub>2</sub> CAPTURE AND NUCLEAR GET SHIPS TO NET ZERO?

By Eirik Ovrum, Principal Consultant in Maritime Environmental Technology, DNV



**Uncertainties over the future supply and cost of carbon-neutral fuels are compelling reasons for shipowners, ports and other stakeholders to consider all technology options for reaching net zero. DNV's latest Maritime Forecast to 2050 includes case studies on whether on-board carbon capture and nuclear propulsion could be significant options.**

"In this decisive decade for shipping decarbonization, no stone should be left unturned in securing the future we need and want," Eirik Ovrum, Maritime

Principal Consultant at DNV and lead author of the Forecast says. "Our research indicates conditions under which carbon capture and nuclear could help bridge the gap between short-term measures and the bigger effort needed beyond 2030 to achieve 2040 and 2050 targets in the new IMO and forthcoming EU emissions regulations."

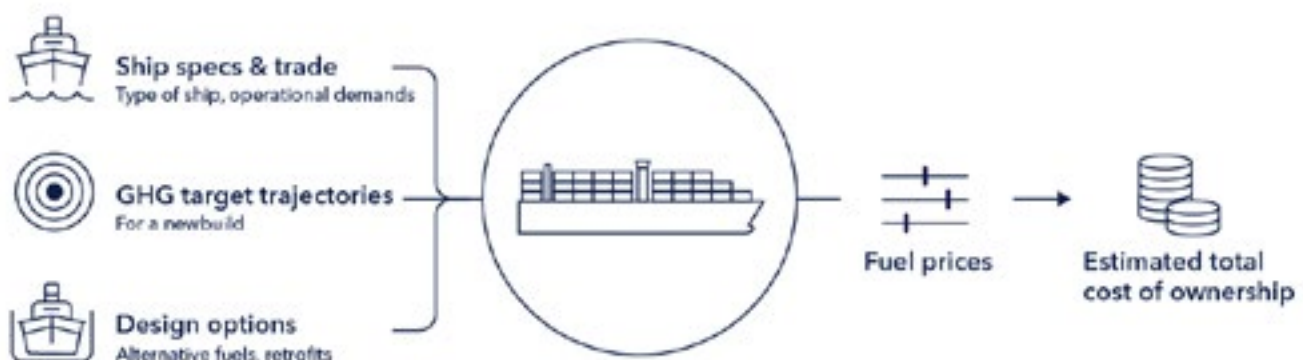
## Evaluating CO<sub>2</sub> capture and nuclear to cut ship emissions

The studies add fresh insight to assist maritime stakeholders who have to make costly investment

decisions now on ship design and operations, and on what fuels to produce, distribute and bunker.

The research has two goals. One is to establish if using these technologies is realistic operationally. The second is to compare their lifetime costs with fuel strategies most often discussed in the industry, such as fuel oil, liquefied natural gas (LNG), methanol and ammonia, each blending in carbon-neutral fuels (bio-/e-MGO, bio-/e-LNG, bio-/e-methanol, blue/e-ammonia) to comply with greenhouse gas (GHG) emission reduction targets.

The FuelPath model (Image credit: DNV)





## DNV's FuelPath model provides results for various scenarios

DNV's techno-economic evaluation involves two case studies using the company's tried and tested FuelPath model for a large, modern deep-sea ship, a 15,000 TEU container vessel sailing between the Far East and Western Europe.

Inputs that can be varied (Figure 1) in the model include ship specifications and use, a newbuild's greenhouse gas (GHG) emission targets and design

options such as converters and fuel systems.

## Studying ship decarbonization post-2030

Maritime Forecast to 2050 describes the technical, operational and economic assumptions involved in the case studies. In essence, the model assesses the economic performance of available design options related to a fuel over a vessel's lifetime. The outputs include total cost of ownership and the cost of fuel strategies

under different fuel-price scenarios. Annual costs include annual payments on capital expenditure (CAPEX), fuel costs, carbon prices and operating expenditure (OPEX).

## Benchmarking fuel strategies for the case-study ship

Based on real-world data and experience, the research first benchmarks the cost of the fuel strategies reflecting energy converter and fuel-system design options open to the case-study vessel over its lifetime.

## Annual cost range

Annual cost range of decarbonizing a 15,000 TEU container vessel by 2050

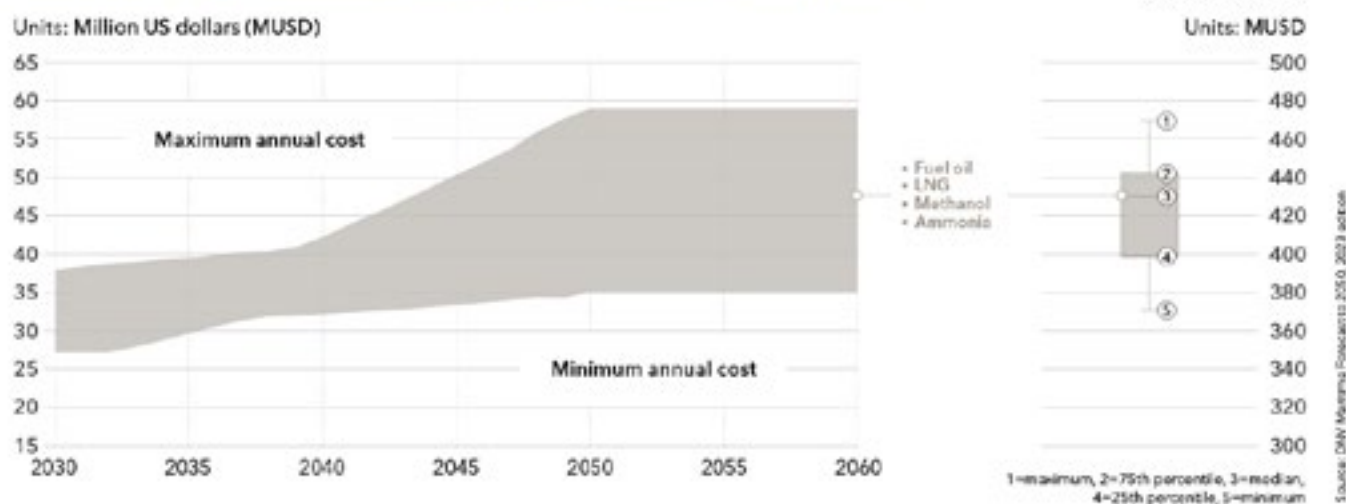


Figure 2: The benchmark span of annual costs and net present value for the case-study ship with fuel strategies using fuel oil, LNG, ammonia, methanol and all four with carbon-neutral blend-in for compliance (DNV Maritime Forecast to 2050, 2023 edition)

More specifically, DNV draws on its data-driven estimates of maximum and minimum fuel prices annually over the period 2030–2060 to create benchmark spans of annual costs and net present value for the case-study ship for various fuel strategies (Figure 2). It uses these spans to evaluate under what conditions on-board carbon capture and nuclear propulsion could be feasible.

## On-board CCS case study model

Assumptions for this study are described extensively in Maritime Forecast to 2050. Briefly though,

the ship runs on heavy fuel oil (HFO), has a carbon dioxide (CO<sub>2</sub>) capture unit and storage tanks, and is fitted with a scrubber for sulphur oxides (SOX) and exhaust pre-treatment.

The study models annual costs under two on-board CO<sub>2</sub> capture and storage (CCS) scenarios, Low and High cost, to compensate for economic uncertainties such as CAPEX and OPEX. It focuses on two parameters that it assesses as impacting most on the economics of on-board CO<sub>2</sub> capture. One is the 'fuel penalty', the extra energy used for operating the capture unit. The

other is the 'CO<sub>2</sub> deposit cost', the sum of the CO<sub>2</sub> transport and storage costs.

## What is required for an economic case for on-board CCS?

For the annual cost range, the Low CSS (cost) scenario is seen to perform well against the other fuel strategies (Figure 3). The Forecast attributes this partly to the HFO price in the scenarios, and partly to fuel penalty and CO<sub>2</sub> deposit costs compared with the cost of buying a larger share of carbon-neutral fuels.

## Annual cost range of onboard carbon capture and storage – Low and High scenarios

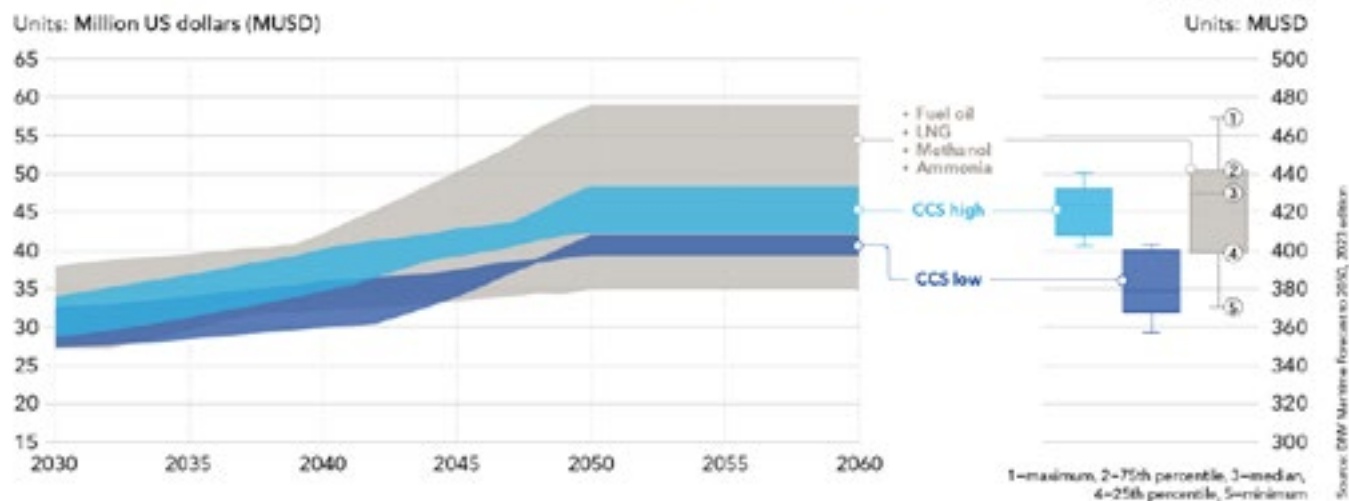


Figure 3: Range of case-study annual costs (left) and net present value (right) for Low and High cost scenarios for on-board carbon capture and storage (CCS) compared with the benchmark (DNV Maritime Forecast to 2050, 2023 edition)

The High CCS (cost) scenario performs around the middle of the studied fuel strategies. For net present value, the High CCS (cost) case is close to the mean for the fuel strategies by mid-century while the Low CCS (cost) case outperforms three-quarters of them.

“Our research suggests there can be an economic case for on-board CCS if the capture technologies have low fuel penalties and if a CCS industry can offer the low CO<sub>2</sub> storage costs in our model,” Ovrum says.

### Nuclear propulsion case study model

Assumptions for this are fully described in Maritime Forecast to 2050. One is that the reactor is leased along with its related systems

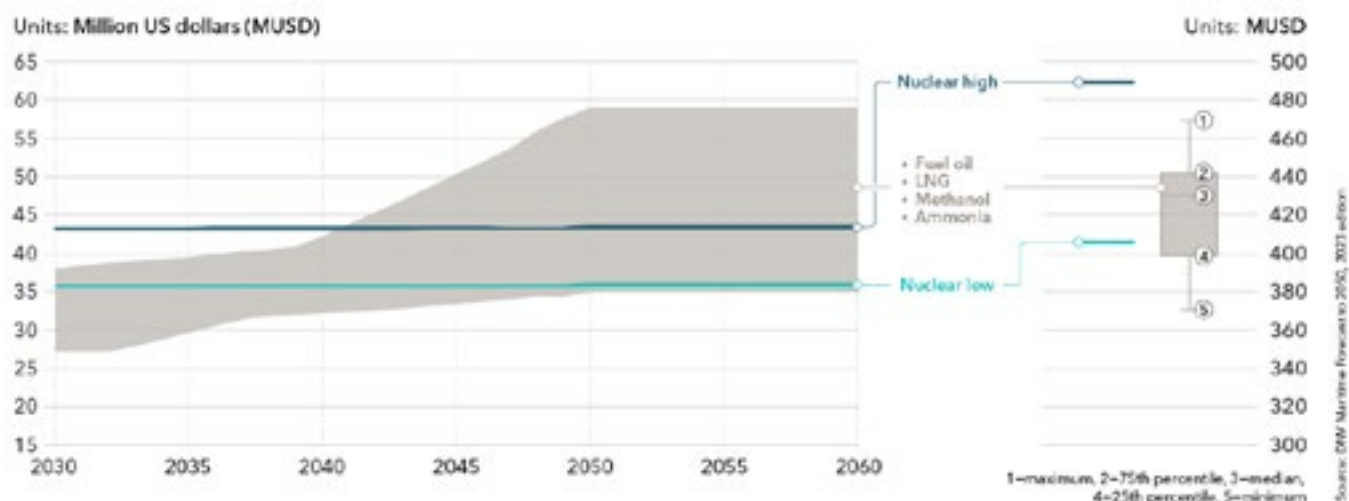
and services. This is because CAPEX for nuclear propulsion is uncertain but thought likely to be up to twice the cost of the ship itself.

As with the carbon capture study, High Nuclear and Low Nuclear cost scenarios are used to mitigate uncertainty over reactor costs for merchant vessels (the Forecast discusses cost drivers).

### What is required for an economic case for nuclear propulsion?

Figure 4 (below) shows the estimated annual costs (CAPEX, OPEX, fuel cost, carbon cost) and net present values for nuclear propulsion compared with the benchmark fuel strategies (fuel oil, LNG, methanol and ammonia) during ship decarbonization.

## Annual costs and net present value for the High Nuclear and Low Nuclear scenarios





### Annual cost range Nuclear

The annual costs of nuclear appear as more or less stable compared with the benchmark cost range that increases from 2030 to decarbonization in 2050. This, the Forecast concludes, indicates that nuclear propulsion will be increasingly competitive as GHG limits are tightened.

"The takeaway is that there can be an economic case for nuclear propulsion if reactors are developed that can reach the lower range of cost levels described here," Ovrum concludes.

### Key takeaways from the case studies

DNV's conclusions support the prospect that under the right conditions, on-board CO<sub>2</sub> capture and nuclear propulsion could mitigate competition for sustainable biomass and renewable electricity.

On-board CO<sub>2</sub> capture could release maritime from competing for carbon-neutral fuels.

Nuclear propulsion is itself carbon-neutral and less exposed to price swings and supply issues than carbon-neutral fuels.

### The implications for maritime stakeholders

The report acknowledges that carbon capture would need on-board facilities to remove exhaust CO<sub>2</sub>, onshore processing of captured CO<sub>2</sub>, temporary storage and offloading facilities, and infrastructure such as pipelines and permanent storage. Obstacles to nuclear include international regulations, public perception and technology costs.

"Both technologies face barriers for sure. But our studies suggest they could in the right circumstances be economical and valuable additions to the flexible toolbox maritime needs to meet mid- and long-term decarbonization targets amid anticipated competition for carbon-neutral fuels," Ovrum emphasizes.

**CONTACT EIRIK >**



# A positive year for marine insurance with much change on the horizon

*By Lars Lange, Secretary General, IUMI*

Each year, the International Union of Marine Insurance (IUMI) collects information on the state of the marine insurance sector from its member associations around the world. This data is added to the many time-series charts that we've compiled for a number of years and analysed to provide a bellwether on the health of our three key business lines – ocean hull, cargo and offshore energy insurance.

Key data for 2022 was recently presented at our annual conference in Edinburgh and it was pleasing to report, for the first time in a few years, some real positivity in terms of market development across all the business sectors. On a global level, marine insurance premiums had grown by 8.3% on the previous year to reach USD35.8 billion. Premium was shared between hull (23.4%), offshore energy (11.5%) and cargo (57.3%) with the remaining 7.7% attributed to liability cover not provided by the large, mutual P&I Clubs.

Key drivers for the increase varied depending on the business line but included a strong post-covid economy and corresponding growth in global trade. Renewed activity both in terms of ocean transport and offshore ventures were also contributors as well as a more robust oil price and rising asset values.

Inflation impacted all business lines as it reached 10% and more in some regions. Interest rates and the cost of capital rose as a result. On the plus side, this was positive in terms of premiums received to cover more expensive assets but less positive was the growing cost of claims and repairs.

Our data split allows us to investigate regional trends and it was interesting to see Europe performing strongly again following a few years of decline. The Asia/Pacific market had slowed in 2022 probably due to a lacklustre economic performance in that region but also because of weak Japanese and Chinese currencies when compared with the US dollar.

Taken together, it was promising to see that loss ratios had also improved across all three core sectors. The loss ratio is the difference between income earned in premiums and money paid out in claims. Technical break-even is achieved when the loss ratio does not exceed 100% (ie claims costs don't exceed premiums earned) however, the cost of doing business – overhead, capital costs, acquisition costs, management expenses etc – must also be taken into account.

The years preceding 2019 turned-in some disappointing loss ratios with technical breakeven rarely being achieved. However, performance

has revived recently and the 2022 numbers were looking much more positive. This was probably due to the increased premium base achieved by those frame conditions mentioned above but also because of a much more benign claims environment. From 2019 to 2022, Covid reduced shipping and offshore activity which lowered the number of accidents and losses. During that period there were also fewer significant weather or other natural events such as hurricanes or earthquakes to drive up claims. Shipping and offshore activity has now normalised and climate change is injecting more unpredictability into our weather systems and so it is likely that we'll see claims begin to creep upwards this year and next. That said, shipping per se is enjoying a long-term downward trend in claims and losses and major incidents now appear to be relatively stable at historically low levels.

Global shipping and trade continues to evolve and marine underwriters must maintain pace with the changes. Marine insurance is one of the key enablers of international trade and underwriters must adapt the cover they provided in order to ensure it remains relevant and fit-for purpose.

Perhaps the most significant issues facing marine insurance going



forward are the ramifications of climate change. This impacts hull, cargo and offshore energy insurance.

Earlier this year, the IMO agreed a revised greenhouse gas reduction strategy calling on all vessels to reach net-zero as close to 2050 as possible. Achieving this requires a step-change in propulsion technologies and we are yet to see which will emerge as favourite. Regardless of which technology is adopted - and there is likely to be more than one - the industry will need to cooperate to ensure a comprehensive regulatory and safety regime is in place. Marine underwriters play a central role and IUMI is already involved in the safety roadmap currently underway at IMO. It's the job of marine insurance to de-risk operations and so these new technologies will need to be thoroughly understood before they can be insured. At the same time, we are pushing for crew safety initiatives to be progressed alongside environmental imperatives and argue that the industry cannot have one without the other.

Aside from the vessels themselves, environmental pressures have also affected the type of cargo being carried. A topical example is the carriage of Lithium-ion (Li-ion) batteries and particularly those fitted in electric vehicles. Research shows that fires originating in electric vehicles are no more common than those started in traditional trucks and cars, and the energy and heat released from each fire is similar. However, the issue is that a Li-ion battery fire can result in thermal runaway where an unstable, internal chemical reaction will make the fire difficult to extinguish and cause it to continually reignite. This means that ships carrying these vehicles will need to adapt their fire-fighting capabilities and procedures accordingly. Similarly, marine underwriters will need to fully

understand this new risk and ensure the cover they offer is suitable. Loss prevention measures will also need to be updated and employed.

More fundamentally, it is the offshore energy sector that will be impacted most significantly by climate change measures. As peak oil comes closer, the growth in renewables is accelerating and this is translating into a massive uplift in floating wind capacity. Traditional oil and gas platforms are beginning to give-way to these new energy sources which, again, means a different type of risk for underwriters to understand and insure. Other offshore or sub-sea technologies starting to make themselves known to underwriters include carbon capture and storage, methane gas leak detection, and electrifying offshore platforms using renewable energy sources.

Earlier we discussed the low claims environment and the positive trend of a continual reduction in vessel losses. The anomaly to this is the growth in the number of onboard fires, particularly in containerhips and car carriers. In past few years there have been on average three major cargo fires on containerhips each year and statistics show that we are seeing, somewhere in the world, one fire each week in a container, in a container yard or onboard a vessel. Fires account for the most losses by value (around 18% between 2017 and 2021) and, tragically, they often result in loss of life.

The causes are complex but stem from the growth in vessel size. The largest containerhips now carry 25 times more cargo than those built in the 1960s and due to modern stowage methods, access for fire-fighting crews is extremely limited. With the largest containerhips now carrying up to 24,000 TEU, statistically there is a greater chance of a cargo within a box combusting and the

fire spreading. Unfortunately, the industry continues to struggle with cargo that is mis-declared resulting in some dangerous or hazardous goods being stowed in an unsuitable place, perhaps adjacent to highly combustible material. Onboard crews cannot effectively combat a blaze if they don't know the nature of the material that is burning and so it is important that cargoes are accurately declared and stowed accordingly.

IUMI has been extremely vocal in recent years calling for changes to reduce these onboard fires including better firefighting capabilities and prevention measures.

On a macro level, political tensions are also impacting. The war in Ukraine has changed a number of traditional shipping routes and destinations which must be adequately covered. Vessels operating in, or close to, the war zone must be protected and this has led to specialist insurance and alliances of interested parties to do as much as they can to provide cover.

A sad corollary is that some vessel owners are choosing to break sanctions and lift Russian oil illegally. This is usually done in old and poorly maintained vessels with no recognised insurance cover. The problem here is the increased risk of one of those ships colliding with another vessel, or an oil spill impacting a coastal community, with no insurance cover to pick-up the bill. Our annual statistics are a unique indicator of how our industry is faring and it is safe to say that recent years have shown positive market development and improved loss ratios. This follows a number of less positive years. It is important for marine insurance to survive in a way that enables it to adapt to a changing world and remain an effective enabler of trade and a tool to de-risk shipping and offshore operations.





Promoting excellence in  
professional maritime standards

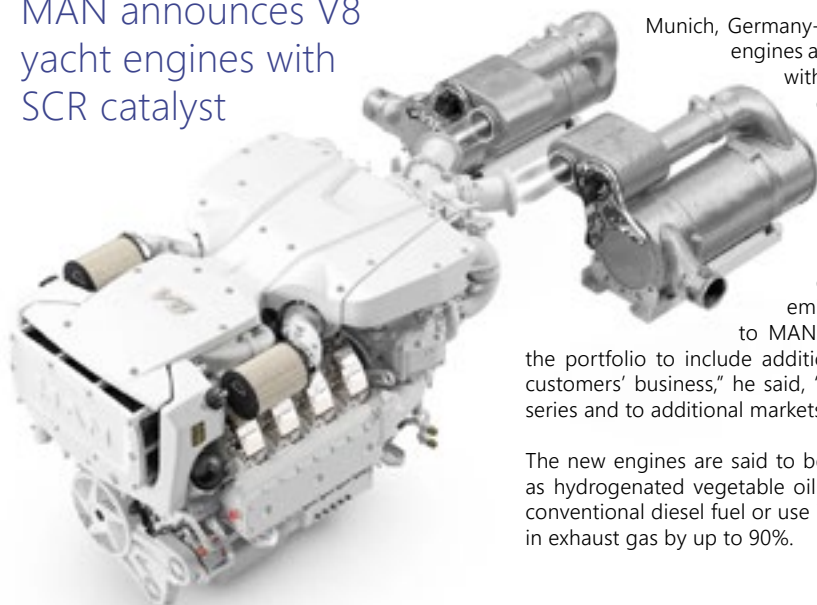
The purpose of the **Maritime Professional Council of the UK** is:

- 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](http://www.mpc-uk.org)



## MAN announces V8 yacht engines with SCR catalyst



Munich, Germany-based MAN Engines launched a new series of V8 yacht engines at the Cannes Yachting Festival. The new engines, equipped with an SCR catalytic converter, extend the company's existing lineup of product with IMO Tier III certification. MAN Engines says its new IMO Tier III V8 product will allow the firm to satisfy demand for lower emission propulsion options across a wider range of vessels.

The new marine V8s, including models in the 1,000hp to 1,300hp (735kW to 956kW) range, join MAN's existing line of V12 IMO Tier III product to bring lower-emission options to a wider range of vessels, according to MAN Engines head of sales, Reiner Rössner. "By expanding the portfolio to include additional V8 engines in IMO Tier III, we are simplifying our customers' business," he said, "while expanding sales opportunities for additional boat series and to additional markets."

The new engines are said to be approved for use with regenerative diesel, also known as hydrogenated vegetable oil (HVO). End-user customers can either blend HVO with conventional diesel fuel or use it as a full replacement in order to reduce GHG emissions in exhaust gas by up to 90%.

## Azimut partners with Google to bring AI on board

Azimut has revealed details of a new joint collaboration with Google Cloud and digital media firm Reply, which brings AI capabilities on board its yachts. The new Magellano 60 has been chosen to bring the AI of Google Cloud and Reply on board for the first time.

Azimut says it has created a proprietary app that leverages Google Cloud data management and analysis, and speech-to-text capacities included in its Vertex AI solution, to combine boat management and smart home functionality for the first time. These features allow captains and owners to interact with the yacht through voice commands or access the system remotely.

The beta version, which has been installed on board the Magellano 60 for testing, controls the entertainment, lighting and climate systems, as well as the appliances. It also displays up-to-date information from the main computer, allowing real-time water and fuel monitoring and supporting the optimisation of resource management. Additionally, security cameras can be installed and integrated to remotely monitor the yacht.

"We are thrilled to support Azimut in its digital transformation path leveraging Google Cloud's artificial intelligence solutions to help them provide their customers with a better experience onboard and develop new standards of innovation in their industry," says Fabio Fregi, country manager Italy Google Cloud.

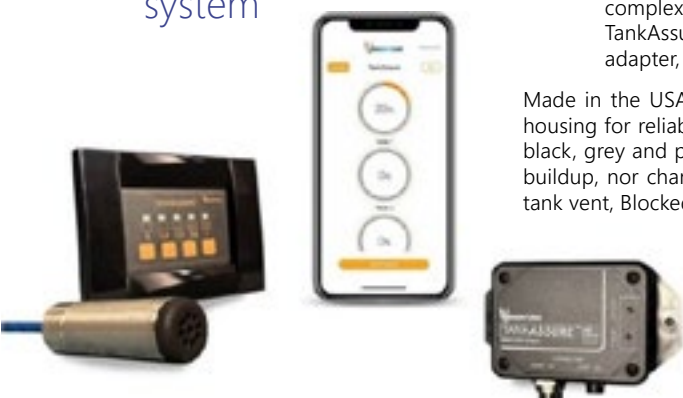


## App or MFD advanced TankAssure monitoring system

For generations, recreational and commercial boat owners have put up with finicky, inaccurate internal mechanical float sensors on holding tanks, as well as the ensuing hassles of maintenance and repair. The new TankAssure monitoring system from Raritan changes this. Ideal for OEM and refit, the sealed and submersible plug-and-play sensor minimizes wiring complexity and simplifies the installation process. It provides precise readings via the Raritan TankAssure companion app or simple readings through the LED panel. With an optional adapter, the device will display data on an NMEA 2000® networked MFD.

Made in the USA, the maintenance-free TankAssure has a durable, rust-proof stainless steel sensor housing for reliability and a long service life. It comes with a 25' sensor cable. TankAssure works with black, grey and potable water tanks of any material up to 40" H and isn't affected by sludge or foam buildup, nor changes in conductivity or temperature. Should an obstruction interfere with a holding tank vent, Blocked Vent Detection technology alerts the user and helps in diagnosing the issue.

The Raritan TankAssure accommodates a wide range of installation locations, mounts through the top or side of a tank and utilizes a choice of a 1" or 1-1/2" NPT fitting or a 2-1/2" hole with a Uniseal fitting. The device runs on 10-27V DC.



## ZF announces magnet-free electric motor



Germany-based ZF Group says the company has developed a magnet-free electric motor that eliminates the need for rare earth materials, allowing electric boating and electric vehicles to become even more sustainable.

The company's I2SM in-rotor synchronous motor concept transmits the energy for the required magnetic field via an inductive exciter positioned inside the rotor shaft, rather than by using the traditional magnets which require the mining of rare earth elements. The company says its new motor therefore enables electric propulsion at a lower carbon cost than the technology used in the permanent-magnet synchronous motors typically used in electric boat and automobile propulsion systems.

The firm adds that its unique design allows the motor to be uniquely compact in size while generating maximum power and torque density.

"With this magnet-free e-motor without rare earth materials, we have another innovation with which we are consistently improving our electric drive portfolio to create even more sustainable, efficient and resource-saving mobility," said ZF Group CEO, Dr Holger Klein. "This is our guiding principle for all new products. And we currently see no competitor that masters this technology as well as ZF."

## Volvo Penta introduces new Glass Cockpit 9000 series

Volvo Penta has announced a next generation of its popular Glass Cockpit System built around the new Garmin GPSMAP 9000 series touch-screen display. Featuring widescreen 4K resolution and response times said to be 7x faster than previous versions, the new system – available with single or multiple displays of 19, 22, 24 or 27 inch screen sizes – is being positioned as the most premium cockpit solution available today.



"Since its introduction, Volvo Penta has continued to update the Glass Cockpit System, bringing enhanced features that reflect the evolving nature of modern boating," said Volvo Penta product manager, Henrik Karlsson. "As engines and boats continue to increase in size and complexity, so does the demand for larger displays. The new 9000 series is not only larger in size, but higher in resolution and more responsive to the touch."

According to the company, the Glass Cockpit System visualizes essential information, such as engine data, temperature and activated functions, in addition to user-selectable data such as navigation charts, radar and sonar. Boaters can further use the Glass Cockpit System as a digital hub to control lighting, music and other entertainment features. The addition of Garmin's new GPSMAP 9000 series displays is said to allow seamless integration with Volvo Penta's Assisted Docking, Joystick Driving, Autopilot, Interceptor system and Garmin Surround View camera system. Boaters can also use their smartphones to control the Glass Cockpit and sync with the Garmin Active Captain platform to update software and charts.

## Quick unveils new Olympic Anchors



Quick Spa, one of the world's leading companies specializing in the production of nautical equipment, was proud to introduce the new Olympic anchors at the Cannes Yachting Festival 2023. These anchors have been developed through an extensive process of product engineering and in-house production process. The first two models created, weighing 16 kg and 20 kg, are ideal for boats ranging from 10 to 13 meters with a displacement of 6 to 10 tonnes.

These initial two models are just the precursors of an entire range of anchors that, thanks to their compact shank, will adapt to most bow rollers currently on the market. The shape and size of the anchor have been proportioned to have a larger amount of lead on the front part of the fluke, and thus achieve a center of gravity projected more toward the tip. The result? An increase in penetrating capacity through the material during penetration of the seabed. The rear shape of the Olympic anchors features a reduction, thanks to a design that favours the sliding of the impacted material during the seabed penetration process.



## Veth shows its Elite yacht propulsion system, 'most compact' ever

Veth Propulsion of the Netherlands unveiled its latest yacht propulsion system at the 2023 Monaco Yacht Show. The company called it so compact it can make room for an onboard swimming pool.

Bastiaan van Zuylekom, Veth's manager sales and projects, tells IBI at Monaco, "the system is future-proof in that it can be used for a range of fuels such as hydrogen, electric, methane or diesel."

Its fully electric Elite-branded propulsion system comes with a 360-degree thruster and counter-rotating props that the company says provide increased efficiency, maneuverability, very little noise and vibrations packed into a build-in height that frees up space.



## Seldén Mast launches new winch range

Swedish marine equipment manufacturer Seldén Mast has launched a new range of manual and electric winches. The drum of Seldén's new winches features vertical ribs placed asymmetrically with an uneven distance between them, which the firm says gives sailors a strong grip while allowing for an easy, smooth release with the winch handle fitted. This design allows a line under load to deform over the ribs, so that when the line is eased off the drum, all the indentations are not simultaneously reaching the next rib, ensuring the line will slide in a controlled manner with less tendency to 'jump' on the drum.

"Our CNC operators have done a fantastic job to machine all those different drum configurations our designers have come up with over the last six years," explains Mats-Uno Fredrikson, director of marketing at Seldén.

## Perkins Marine launches two new auxiliary engines

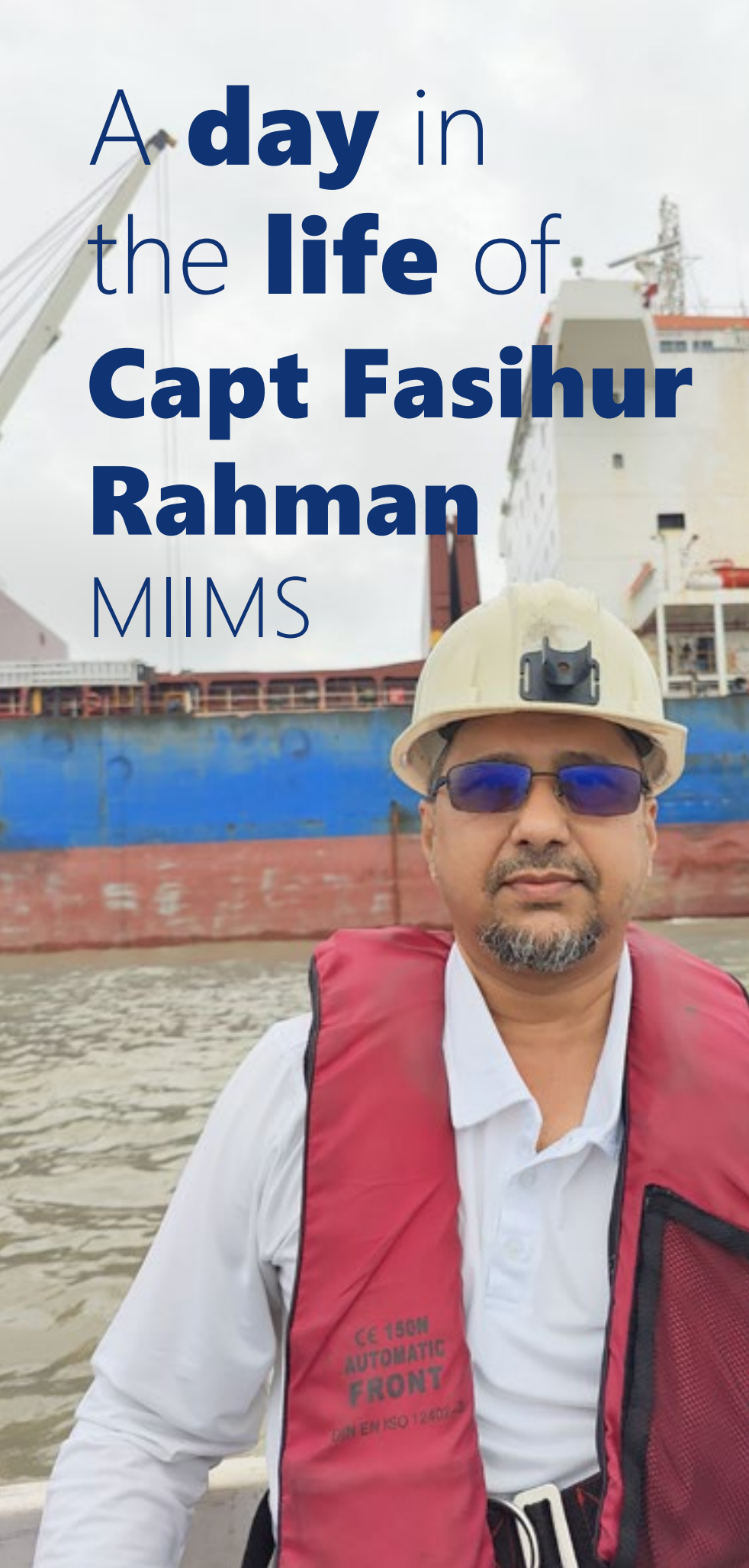
Perkins Marine is set to launch its new Perkins® E44 and E70B auxiliary engines for use on inland waterways, tugs, governmental, fishing and ferry services. The new Perkins® E44, an electronic 4.4 litre, 4-cylinder engine and the evolved E70B offer a broad range of power ratings and factory configurable power solutions to meet boat operators auxiliary power needs.

"Our customers require more, and we are here to meet their expectations," comments Ben Lewis, sales support manager at Perkins marine engines. The electronic engines are highly engineered and durable as Perkins understands that high engine uptime is a priority. "Customers in need of auxiliary power with a high-power density without compromising fuel efficiency or additional noise, need to look no further."

The E44 and the larger, more powerful E70B come with a 500-hour interval service and with low maintenance features. A self-priming fuel system, no zinc anodes, automatic valve lash adjustment and self-tensioning belts translate into exceptional uptime. All Perkins engines are supported by a dedicated global distributor network offering timely assistance and genuine parts whenever you need them.



# A **day** in the **life** of **Capt Fasihur Rahman** MIIMS



The recent Marine Surveyors Association of Bangladesh (MSAB) 30th birthday celebrations and conference were held in the busy port city of Chattogram (formerly Chittagong) in southern Bangladesh.

Mike Schwarz took the opportunity to sit down with Capt Fasihur Rahman, a full member and IIMS graduate, to seek his views and opinions on a range of topics in an area which is heavy with commercial ship surveying of all sorts.

**Q.1 Fasi, the event to mark the MSAB 30th anniversary was well attended. Indeed, the Director General of Shipping, Bangladesh, Commodore Mohammad Maksud Alam, felt it of significant importance that he attended in person to deliver a keynote address. What will be your lasting impressions of this event and why was it important to hold it?**

A.1 The Marine Surveyors Association of Bangladesh (MSAB) is the only recognized trade body of the marine surveyors who are mainly independent cargo and commercial ship surveyors of Bangladesh. The MSAB is affiliated with the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI) and an 'A' Grade member of the FBCCI.

*Traveling on a boat to board a vessel at Chattogram Anchorage*



*During safety inspection onboard a vessel*



Over 90% of the country's exports and imports are transported by sea and the maritime ports in Bangladesh are very vibrant. Marine surveyors are needed in almost all of the ocean going vessels calling at the Ports of Bangladesh to carry out surveys required from loss control to risk and loss assessment of cargo and vessels' hull & machinery.

It was significant for MSAB to celebrate its 30<sup>th</sup> Anniversary with the stake holders to raise their awareness and boost their confidence in the performance of the professional marine surveyors. The presence of the Director General, Department of Shipping, Bangladesh government, Commodore Mohammad Maksud Alam as the Chief Guest and that of Mr. Mike Schwarz, the CEO of the IIMS as Special Guest together with their keynote speeches have been an inspiration for MSAB members and elevated the event to a higher level.

We hope that, in the near future, through coordination between IIMS, MSAB and the Department of Shipping in Bangladesh, we can pave ways for training and certification of aspiring young marine surveyors and help them choose marine surveying as a profession at home and abroad.

**Q2. I am interested to know what drew you into becoming a marine surveyor after your life at sea. Was it a natural progression and how easy (or hard) did you find it to make the transition to becoming a marine surveyor?**

A2. During my life at sea, I had always been fascinated by the work of marine surveyors, be it a Cargo and Commercial Surveyor, a Class Surveyor, a P&I Club or H&M Surveyor. The depth of knowledge of the surveyors and their skills in dealing with complex matters used to amaze me.

I left the sea in 2003 at the age of 37 after four years commanding container ships. My first shore job was overseeing the operation of the largest deep sea fishing fleet of an esteemed conglomerate of Bangladesh. During this time, I was inspired by Captain Zillur Rahman Bhuiyan, a Fellow of IIMS and the then Honorary Secretary of

the Nautical Institute Bangladesh Branch, and became a member of the Nautical Institute. Captain Zillur, who is arguably the most reputed Marine Surveyor and Consultant in Bangladesh, was then at the helm of Henderson International Bangladesh Limited - a survey company mostly dealing with surveys of H&M and P&I Club matters. We used to meet at times at conferences and seminars and when in October 2007, I received an offer from him to be his partner in a new survey and consultancy company he wanted to form, I agreed instantly. Getting Captain Zillur as my mentor was a huge privilege and the transition to marine surveying profession was made easy for me.

**Q3. Please tell me something about your life and experience as a Captain at sea.**

A3. As Captain I served for about four years on container feeder vessels. The container feeder vessels I used to serve on had very busy schedules, calling at the ports of Singapore, Port Kelang, Tanjung Pelepas, Chattogram, Colombo, Haldia, Tuticorin - the Ports of the Bay of Bengal. Despite the challenges of Monsoon weather and short distances between the Ports, life onboard was not boring at that time as the number of officers and crew were adequate to have free time. We used to have parties onboard while at sea and had time to go ashore shopping and visit interesting places and so on. Senior officers had families sailing with them and in general life onboard was pleasant.



*Inspection of bridge equipment onboard a vessel*

**Q4. As a marine surveyor, what are your areas of specialization and what challenges do they raise when working in the Chattogram port area.**

A4. Chattogram is a very busy port. During my diploma in Commercial Ship Marine Surveying by IIMS, my specializations were in Marine Incident Investigation, Insurance Damage Surveys for Hull Surveys and Marine Warranty Surveys. Most of the incidents at Chattogram occur at the anchorages in the open sea and as such travelling and boarding the vessels in Monsoon weather is challenging due to the unavailability of suitable boats at reasonable costs. Donning of proper PPE, ensuring preparation of appropriate boarding arrangements by ships and careful embarkation and disembarkation procedures are always a priority.

**Q5. I was genuinely interested to learn more about the peculiarities of the port and had no idea that by far the vast majority of Bangladesh's imports come in via Chattogram. I understand the need to lighter ships is essential so they can make their way up the Karnaphuli River to the port. What special challenges does that process throw up for you as a surveyor?**

A5. In fact challenges are more for the vessels doing the STS lightening operations. The tidal current at Chattogram is very strong and reaches over 6-7 Knots during the spring tide. With low under keel clearance at the anchorages, anchor dragging of loaded vessels during

the STS are very common and efficient use of a vessel's engines in proper time is very important. Contact damages at the time of STS operations during Monsoon season or squally weather are also common.

A number of Master Mariner surveyors with their local knowledge and expertise are employed onboard bulk carrier vessels as Port Captain and Independent Pilots to assist the vessels dealing with these challenging issues.

**Q6. Marine surveying is an unregulated profession around the world as a general rule, but that is not quite the case in Bangladesh, which might surprise some readers of the Report, as it did me. Please tell me more about how a marine surveyor is permitted to operate locally.**

A6. Unlike many countries, to practice as a marine surveyor in Bangladesh, one needs to have a Certificate of Ship Surveyor from the office of the Director General of the Department of Shipping, Government of Bangladesh.

In order to ensure the quality and standard of marine surveys, the Department of Shipping of Bangladesh made it a prerequisite for the applicants of the certificate to be a Master Mariner or Chief Engineer with a minimum two years of experience in the ranks, to be a member of the MSAB and to get specific training under the supervision of experienced surveyor members. Only surveyors holding

the Certificate of Ship Surveyor are allowed to conduct Cargo and Commercial ship surveys onboard ocean going vessels at the ports of Bangladesh. The certificate is to be renewed every two years and for the revalidation of the certificate the surveyors need to undergo a medical examination and obtain medical fitness certificates from authorized medical centers.

**Q7. How important is the role of the Bangladesh Department of Shipping in helping to further the cause, standards and safety of the surveying profession in Bangladesh?**

A7. The role of the Bangladesh Department of Shipping in respect of the marine surveying profession is vital. In addition to issuing the Certificate of Ship Surveyor and keeping control over this profession, this office is also responsible for the safety of the vessels, crew and personnel attending onboard the vessels. In this regard, the unavailability of standard motorboats for transportation of surveyors to and from vessels at anchorages and Kutubdia Roads where deeper vessels anchor is a matter of concern. The MSAB can approach the Department of Shipping for necessary directives so that properly designed boats for plying during the Monsoon season, having means for safe embarkation and disembarkation to and from ocean going vessels are available for the surveyors.

The Department of Shipping can enhance the standard of marine surveying profession to the



*Inspection of hatch covers of a vessel*



*Writing inspection report onboard*





*Teeing off at Bhatiary Golf Club at Chattogram*



*Down memory lane- at IIMS conference in London in May 2011*



*At Istanbul under the Bosphorus Bridge during the cruise*

international level by introducing short courses in coordination with IIMS and IIMS membership can become a prerequisite to become surveyors at senior level.

**Q8. What are the biggest challenges you face in your day-to-day job as a surveyor?**

A8. It is very challenging and hectic for a surveyor to board a vessel at the anchorage on time after an incident, collect information and evidence, inspect damage and send the initial report shortly after returning to base. Travel time, safe travel and reporting within the shortest possible time are the biggest challenges.

**Q9. One of the areas of discussion that cropped up several times during the conference was where the next generation of marine surveyors will come from. Of course, this is not just an issue in Bangladesh, but globally too. What are your thoughts about this and what in your opinion can the industry do to try and make surveying an attractive and worthwhile career to pursue?**

A9. Motivation is the key word. Surveying is more than just a profession, it's a passion. Younger generation mariners have to be motivated to choose surveying as a profession. Awareness can be raised through seminars and conferences, and experienced senior surveyors should not hesitate to mentor the younger generation. Globally recognized survey companies can publish attractive adverts in marine publications and journals and recruit interested young seafarers and/or young graduates from other faculties and train them to become marine surveyors.

**Q10. One statistic I was given astonished me. I understand that Chattogram, which is recognised as perhaps the world's largest area for ship breaking, is expecting to scrap up to 15,000 vessels by the end of this decade. That seems extraordinary. What can you tell me about this?**

A10. Chattogram with its gently sloping natural coastlines is a very popular place for the demolition of large ocean-going vessels. There

are great demands in Bangladesh for scrap steel, old machinery and equipment and furniture collected from a vessel while demolished and labour costs are cheaper here. Over the years, the vessel recycling industry in Bangladesh has transformed into a large industry. A significant percentage of old marine machinery and equipment are also exported as there is huge demand for cheap spares from recycled vessels. A number of ship recycling yards already upgraded into 'Green Yards' and many others are in the process of transition. Bangladesh has just ratified the Hong Kong convention and the convention is going to be in force from 26 June 2025. Modernization of the industry by automation and use of advanced technology and equipment in compliance with the Hong Kong convention will help reduce undue incidents. In general, the ship recycling sector in Chattogram is very vibrant and has all the potential to be world's number one in ship recycling.

**Q11. Over the years I am sure you will have visited many places around the world on your travels. Which is your favourite place, or city, and why?**

A11. Traveling is my hobby. I manage time for traveling to places with my family of three grown up children and my wife, at least once a year. Amongst the places I visited, I liked Istanbul, London and Singapore the most. Although it is difficult to single out a city or place as the most favourite, my selection is Istanbul.

Its majestic historical palaces and grand mosques overlooking the Strait of Bosphorus and the Sea of Marmara, bustling streets and quiet sinuous lanes, mouthwatering food and lovely weather are great attractions.

Istanbul is the only city extended over two continents. The Strait of Bosphorus separates the European and Asian sides of the city. A cruise through the

Bosphorus is amazing. This cruise is a very interesting way to learn about this area of Turkey while seeing different structures and places that one would not see from land. The guides have everything set up and were amazing with giving a good history and we were able to learn and see a lot.

**Q12. Once you have finished writing your report at the end of the day and it is time to relax, what do you do like to do with your leisure time?**

A12. Physical fitness for surveyors is very important. Surveyors in Bangladesh need to travel frequently by boat to and from vessels in choppy seas and climb up and down high ladders. I started playing golf in 2014 and when the weather is fair and I have time in the afternoon, I play golf. It helps me keeping fit physically. I also love watching TV sports channels, especially football, cricket, athletics and international events.




*Visiting East London  
in May 2011*





# MARINE SURVEYOR SEARCH



## THE MARINE SURVEYOR SEARCH APP



Available on the  
**App Store**



GET IT ON  
**Google Play**

# A decade of progress and memories

By **Mike Schwarz**



## 2015: A YEAR OF GROWTH AND DEVELOPMENT

Mike Schwarz, IIMS Chief Executive Officer, gives a frank and honest review of 2015, including assessing the challenges and opportunities that have faced the Institute during what has been an eventful year.



January 2024 will mark ten years since I took up my role as IIMS Chief Executive Officer of the International Institute of Marine Surveying. I have to pinch myself to remind me that this is indeed the case, for I have never worked anywhere for ten years! It is a long time, but somehow seems even longer when I look back and see what has changed over this roller coaster period - even more so when set against the backdrop of a world that has changed beyond recognition in the past decade.

I wanted to record my thoughts on some of the Institute's progress and my personal abiding memories from the last decade.

### The marine industry 10 years on...

As I said, so much has changed. Decarbonization and climate change were things we were all aware of back in 2014, but it was still something of a pipedream that seemed far less relevant than now. No-one could have foreseen how things would ramp up so rapidly. New startups popped up and started to develop breathtaking technologies and potential solutions, often in geographical clusters - Norway being one such example. Who would have thought wind power would become fashionable in shipping circles once more? Suddenly, organisations were experimenting with all types of new-fangled and groundbreaking concepts as if the starting pistol had been fired and the race was on. Electrification has come on leaps and bounds over the past decade, but the debate about alternative fuel types continues to rage and most juries are still out on this one.

One of the biggest headaches in the small boat sector has been what to do with millions of end-of-life boats that have been abandoned, sometimes even turning up left high and dry in the middle of fields. That remains an issue and only slow progress has been made in ten years as the issue worsens. I recall a few years ago publishing an article about a German boatbuilder who is now constructing biodegradable boats out of flax, thus alleviating the problems of getting



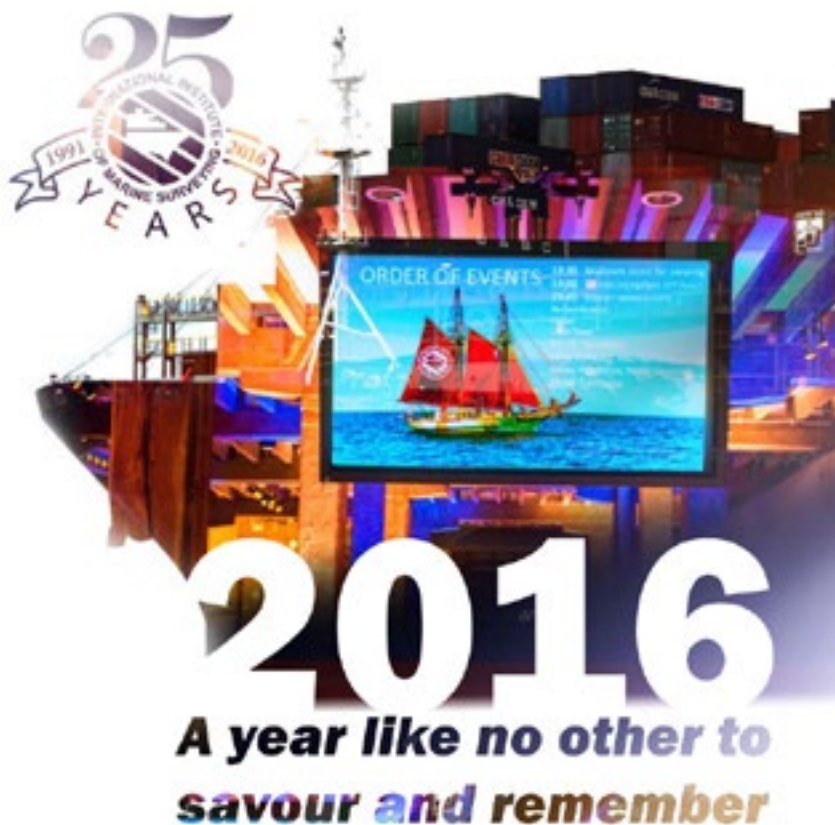
rid of the boat further down the line when it has reached its use by date. Progress indeed and to be applauded.

The one thing that horrified me at the start of my tenure with IIMS (and still does so to this day) is the sheer volume of incidents and accidents that take place in the marine world. Knowing that someone will perish at sea, or on a river in a boating accident tomorrow, is hard to stomach and when I tell my friends and others who know little about our industry, they appear visibly shocked for so much of that goes unreported in the media. Over the past 10 years, the types of shipping accidents have shifted; but sadly, far too many still share a common cause - human error. Back then, enclosed space deaths were a big topic. Still today, that remains an issue, but the focus has shifted. The onslaught of drones, for example, which can fly into and do a tank inspection on a ship, where previously a couple of people would have ventured in, has helped and this is an amazing development. Job advertisements for drone pilot jobs in 2014 probably existed only rarely!

Today it seems that fires on ships have become the much bigger problem and challenge, in many cases currently due to mis-declared cargoes and lithium-ion battery fires caused by electric vehicles. One step forward and two steps back? It seems we still have a considerable way to go as an industry and the job for maritime regulators, shipowners, marine insurers and underwriters is only getting ever more burdensome.

#### And what of IIMS 10 years on...

The business I inherited in 2014 is unrecognisable having been through a constant series of transformational changes since, which were entirely necessary because without them, I suspect the Institute would have faltered and failed. At times it has been a painful process and few of us like, or embrace change willingly. I have never enjoyed a role as much as I have this one. It has presented some amazing opportunities and challenges in equal measures. I came into the marine world from a 30 year plus career in publishing, media and business management, having been a Director of several well-known UK publishing and event management companies. My skills do not lie in technical matters! But I have always believed that business skills are transferable from one organisation to another and so it has been proved in this case.





IIMS | The Report | December 2019 | Issue 95



IIMS | The Report | December 2020 | Issue 96



The Report | December 2023 | Issue 106

The Covid years were hard beyond belief. But the decision not to furlough the IIMS staff and to keep the team in place (albeit working from home for extended periods) proved to be absolutely the right one, although making that decision was far from straight forward because of the numerous variables at play as we moved into lockdown. IIMS flourished remarkably during that dramatic and turbulent period as we repurposed and moved our training offerings into an online environment with great success.

I vividly recall the highly successful 25th anniversary celebrations and the Awards for Excellence in Marine Surveying in 2016, which drew a large crowd to the two-day event in central London at which Maritime & Coastguard Agency Chief Executive, Sir Alan Massey, was Guest of Honour. But perhaps my favourite event was an earlier conference and AGM when we managed to fill the stunning oak-panelled Old Library at the famous Lloyd's of London building. Those days seem like a distant memory now.

Until the pandemic hit, international travel was a regular part of my role, and I am grateful for the opportunity to have met many members in overseas territories and to visit parts of the world I would never have seen. International travel is opening up again. But online conferences and seminars have become much more the norm post Covid and that is a big change. Life will never go back to what we knew.

The deployment of continuous technological innovation has transformed IIMS' processes and efficiency beyond belief and has greatly reduced the Institute's carbon footprint too. In collaboration with our partners, eDot Solutions in Goa, IIMS has brought several eye-catching apps to market, including the sophisticated Marine Surveyor search app, the app which effortlessly handles the managing of CPD points and, most recently, a highly effective state-of-the-art student portal. Old-fashioned word document forms have been swept away in favour of easy-to-use online ones. Examinations

and tests were moved into a sophisticated online environment. The accounting function is sleek. And the IIMS Head Office has become almost paperless with all records and documentation scanned and now stored in the cloud. The job to introduce a bespoke database was a long and arduous one, but the outcome is good and underpins the organisation.

As many members know, my experience as a publisher meant I was able to make a positive impact on this very publication, the quarterly award-nominated Report Magazine, these days published electronically. It has gone from strength to strength over the past decade and now extends to well over 100 pages. It remains one of the aspects of my role I enjoy most. Nowadays the magazine boasts an estimated readership of more than 10,000 for each edition. I am grateful to my graphic design colleague, Craig Williams, the only remaining member of the original IIMS team from 2014, for his skills in putting this magazine together.

Our publishing interests have not stopped with the Report Magazine either. Nearly 30 handy guides covering all aspects of marine surveying have been authored by members and published by IIMS over the last ten years. I am immensely grateful to the many authors who have wanted to share their extensive knowledge in print with their fellow marine surveyors.

The extensive News Bulletin and Mid Month Marine communiqué are circulated monthly and broadcast electronically to about 12,000 recipients. They are opened and read by 7,500 people on average per month.

The IIMS website has grown into a huge beast attracting 15,000 unique visitors on average each month. It houses over 3,000 news stories and features along with a comprehensive collection of shipping and hard to find boating regulations, incident and accident reports and much more besides.



Perhaps one of the things I am most satisfied with is the increased general awareness of IIMS' presence in the surveying and wider marine industry. The prominence of brand IIMS over the past decade has grown exponentially and has opened several doors, some of which have proved to be significant. Through the Marine Surveying Academy, the wholly owned subsidiary of the Institute, we have created and delivered a high-profile quality accreditation scheme for the International Marine Contractors Association (IMCA) for those auditing vessels in the offshore industry. The widely accepted eCMID accreditation scheme has resulted in nearly 1,000 applications since launch in 2015. Furthermore, our unique work in the superyacht paint coating sector has brought recognition from the burgeoning superyacht sector and rewards. I refer to the Registered Marine Coatings Inspector (RMCI) standard. Our stakeholders include ICOMIA, SYBass, and AkzoNobel.

Over that past decade I have seen five Presidents come and go and I am now well into my sixth! Each has been quite different and brought their own style to the role. I am grateful to them all, but also to the Institute's Management Board who stood by and supported me in those challenging early years as I found my feet during what were, as I have said, parlous times indeed.

Over the decade several well-known and highly respected members (who became friends) have sadly passed away. Having to write obituaries at semi-regular intervals for people one knew and respected is not an easy task. The list has inevitably grown over the years, but those whose passing has saddened me greatly were Jeffrey Casciani-Wood, Peter Morgan, Tom Elder, Capt Mark Souter, John Excell, Capt Barry Thompson and Monday Ogadina. All are sadly missed.

Although not a technical person on any level, I have acquired boating knowledge. Now they say that a



little knowledge can be a dangerous thing! But worryingly I have learnt a great deal and feel sure I could survey a small boat and write a half decent report! Let me assure you I have no intention of doing so.

There are a number of other achievements that I would cite, and it is hard to know what order to put them in terms of importance but let me try. Knowing that IIMS is now financially stable is a comforting feeling and makes sleeping at night easier. Having the opportunity to negotiate and complete the purchase of Murrills House as the Institute's permanent headquarters in Portchester, UK, a few years ago is something that continues to give me and my colleagues great pleasure. For the Institute to own its own property of this magnitude with history traceable back 500 years is remarkable and a huge asset for the members.

The meaningful training and courses we have developed and delivered over the years and the growth and success of our distance learning education programme are gratifying.

Maintaining a government contract with the UK Maritime & Coastguard Agency to provide coding and tonnage measurement services for commercial vessels up to 24 metres has presented constant challenges, but over the past decade IIMS has sought to impose higher standards



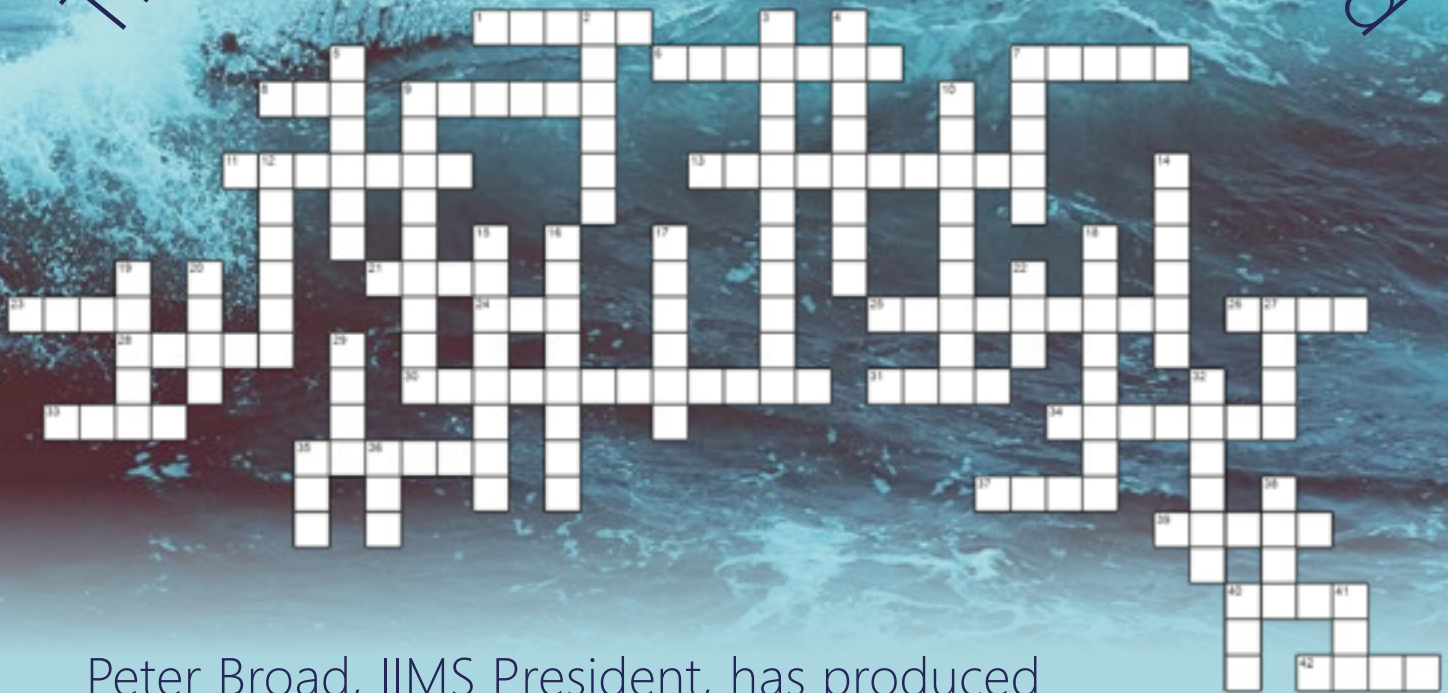
and is meticulous in the attention to detail it applies and the records it keeps in these areas.

I am immensely grateful to my colleagues, for it has truly been a team effort. Without them none of this would have been possible.

I am increasingly being asked how long I will continue in my role. I have said to the Management Board that subject to good health I am keen to go on to the age of seventy before retiring. And in case you are wondering when the process of succession planning will start, I am currently sixty-five and threequarters!

# The President's Maritime Crossword

## 2023



Peter Broad, IIMS President, has produced a crossword with a maritime theme...

(Solution on page 41)

### ACROSS

- 1 Lower part of the hull where water may collect?
- 6 If you are Picasso and need to secure your small vessel?
- 7 Where can you sleep and moor a vessel?
- 8 The extreme length of a vessel's hull?
- 9 If you have 6 feet what are you?
- 11 Hole used to drain water?
- 13 If you open your arms or have the wind on the quarter?
- 21 If you travel in the best cabins on a passenger or cruise ship what would your ticket have been stamped?
- 23 What is the normal period in years for a Special Survey cycle?
- 24 If the wind is on your stern what is the point of sailing?
- 25 What is an upright post supporting a guard rail?
- 26 Murrills House head office.
- 28 A device that may reduce galvanic corrosion.
- 30 The weight of water is equal to the weight of the vessel.
- 31 What is the vertical rise and fall of the Oceanacs?
- 33 A vessel permanently leaning to one side due to improper distribution of weight.
- 34 If you are at Flinders Bar and see Kelvin's Balls what are you?
- 35 How would you join two ropes?
- 37 Longitudinal structure at the bottom of the hull to help stability.
- 39 Marine Safety Regulations?
- 40 Maximum breadth of the hull.
- 42 A place where a ship may be left safely.

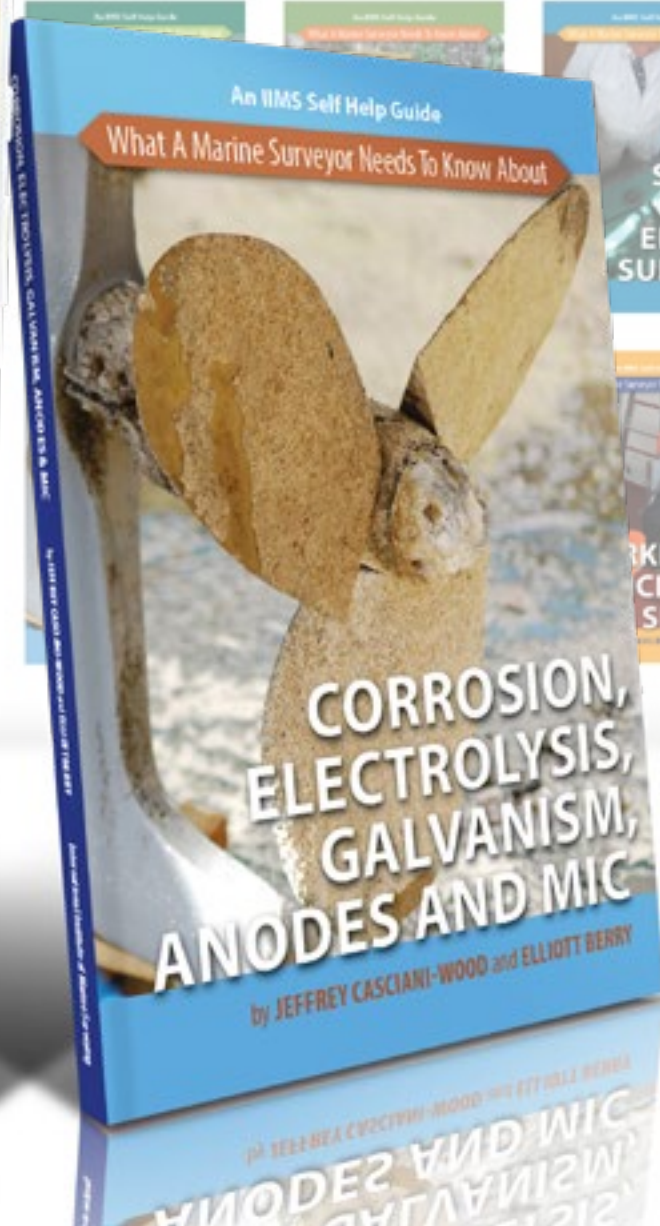
### DOWN

- 2 Two concentric rings pivoted at right angles which keep a compass horizontal despite the vessel's motion.
- 3 If you reach the bitter end what are you?
- 4 A line encircling the earth passing through the Poles?
- 5 Not Mayday, but need assistance?
- 7 What bite would you find in a rope?
- 9 The vertical distance between the waterline and the top of the deck.
- 10 If there is a little red port left in the bottle what is green?
- 12 The direction of a vessel.
- 14 If you have an explosion under your head and the crank gives you a stroke what are you?
- 15 An athwartships propeller?
- 16 Winch used to haul in the anchor chain?
- 17 Short aft mast?
- 18 What line on the ship side is not Samuel's shoe?
- 19 A marine toilet.
- 20 A floating marker.
- 22 UK maritime statutory authority?
- 27 The group is Classification Societies.
- 29 Where would you find the oil in an engine?
- 32 International convention to prevent pollution at sea?
- 35 What room does a ship need to maneuver clear of land of other dangers?
- 36 Ship speed and distance instrument?
- 38 If you are Force 8, what girls name are you?
- 40 If Aft is Stern, what is Fore?
- 41 If Heavy Fuel Oil is HFO, what is Marine Diesel Oil?



# "WHAT A MARINE SURVEYOR NEEDS TO KNOW ABOUT..."

The growing series of IIMS self help handy guides



BUY ONLINE AT: <https://bit.ly/2KIN5WM>

or call +44(0)23 9238 5223 and pay by credit/debit card



