

THE REPORT



SEP 2024 | ISSUE 109

The Magazine of the International Institute of Marine Surveying

HOW WELL DO YOU KNOW YOUR LIFEBOAT?

**THE NEW
AGE OF SHIP
MANAGEMENT**

**SPOTLIGHT
ON THE ITALIAN
BOATING INDUSTRY**

**TASSIE: THE WOODEN
BOAT CAPITAL OF
AUSTRALIA**

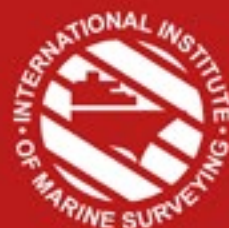
**Wind turbine recycling: Could this provide a
glimmer of hope for millions of end-of-life boats?**

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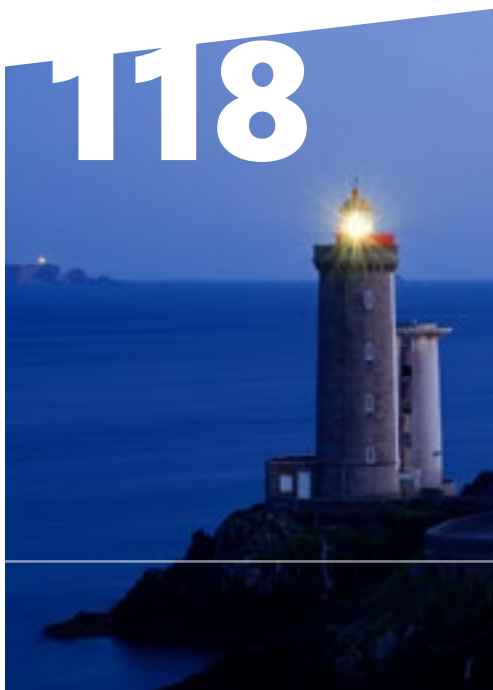
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EDITOR'S LETTER

Dear Colleague

Welcome to the September 2024 edition of The Report Magazine.

One of the great pleasures of my role is that I get to edit this magazine and by my reckoning this is my 43rd edition since I started a decade ago. As I was putting the finishing touches to this edition, I read an article by InterManager who have published some accident statistics. Captain Kuba Szymanski, Secretary General of InterManager, is questioning why there has been a doubling of deaths in maritime enclosed spaces incidents already this year. I sit with Kuba on the Maritime Professional Council and know first-hand how passionate he is (as am I) about safety of lives at sea. Worryingly, it seems little has changed over the past decade. Why not? I don't have the answers but would encourage you to read the article starting on page 138.

Now, please allow me to be a little self-indulgent for a moment. After a lengthy 2 year process to prepare IIMS for its initial ISO 9001 audit, (which took place a few weeks ago), I am delighted to inform you that we have been officially certificated and can now proudly display the official logo and

tell the world. You may be familiar with ISO 9001, but if not here is a brief explanation - ISO 9001 is a globally recognized standard for quality management. It helps organisations of all sizes and sectors to improve their performance, meet customer expectations and demonstrate their commitment to quality. It was Immediate Past President, Peter Broad's initiative initially, which was backed by the management board. I'd like to thank my colleague, Camella Robertson, who has taken the responsibility as Quality Manager and who has formatted everything that we put forward for audit. There is more on this story in Members' News.

The American Bureau of Shipping has put together an essential Safety Bulletin entitled *How well do you know your lifeboat?* It is a reminder that lifeboats come in all shapes, sizes and with different operating systems – so, being familiar with the various types could save lives. See page 134.

In the UK we often think of wood as being a much rarer form of construction material for vessels these days, but the folk in Tasmania, Australia might well disagree strongly. According to the state government, the wooden boat building industry is worth \$50 million per year to the Tasmanian economy. The feature story

on page 102 - *Tassie: The Wooden Boat Capital of Australia* offers an insight into what is driving this activity.

What to do with end-of-life-boats remains a hot topic, for which no-one really has a sustainable answer. It is a subject we have covered before. But it seems there is a glimmer of hope coming from an unexpected source that might alleviate this issue. As the first commercial wind turbines came online in the mid to late '90s, they are now reaching the end of their operational life and need to be decommissioned. This raises the question of what to do with their waste. The article on page 128 entitled *Wind turbine recycling: Could this provide a glimmer of hope for millions of end-of-life boats?* explains in more detail.

Martin Pittilo recently joined the IIMS management board and he is the subject of this edition's A Day in the Life of feature – see page 143.

There are many other insightful articles to read which I do not have space to promote, but my thanks to all those who have authored these stories and features.

Survey well,

Mike Schwarz
Chief Executive Officer



PRESIDENT'S COLUMN

Dear Fellow IIMS Members and Industry Colleagues,

It is with a mix of humility and excitement that I pen my first President's introduction for The Report Magazine. I'm honoured to follow in the footsteps of my esteemed predecessor, Peter Broad, whose tireless dedication – particularly in driving our ISO 9001 certification efforts – has paved the way for our continued success. I also want to acknowledge the exceptional work of our IIMS head office staff, led by our dynamic CEO, Mike Schwarz. Their expertise and commitment are the backbone of our organization.

A Commitment to Excellence: ISO 9001 Certification

IIMS is proud to announce that we have achieved ISO 9001 certification. This validates our dedication to quality management systems, operational efficiency, and continuous improvement. Whether

you're surveying a vast cargo vessel or a nimble pleasure craft, this certification underscores the consistent, high-quality service you can expect from IIMS member surveyors. It's a testament to our professionalism and a promise that we're constantly striving to raise the bar within our industry. This achievement would not have been possible without the vision and leadership of Mike, the support from Peter and the real work hours being put-in by Camella Robertson. We all remain deeply grateful for this contribution.

Pioneering Education: Expanding Horizons in Bangladesh

While IIMS is concerned with upholding standards, we're also committed to fostering the next generation of maritime professionals. I'm thrilled to share that, thanks to Mike and Captain Zillur Rahman of Bangladesh, we've welcomed a cohort of nine

(possibly ten) new students into our award-winning Professional Qualification in Commercial Ship Marine Surveying program. This initiative exemplifies our global reach and dedication to providing world-class education, regardless of geographical boundaries. The qualification will be delivered in a hybrid method locally in Bangladesh. I want to extend my sincere thanks to Captain Zillur and his colleagues for his instrumental role in making this happen.

Unity in Diversity: A Shared Purpose

One of the most remarkable aspects of IIMS is the diversity of our membership. We unite surveyors from all corners of the marine world – from those who meticulously inspect cargo ships to those who ensure the safety and compliance of smaller vessels.



It's this diversity that enriches our community and strengthens our collective voice.

Our shared purpose is to uphold the highest standards of maritime safety and professionalism. Every survey you conduct, whether on a towering container ship or a small private yacht, contributes to a safer maritime environment for all. Let's continue to work together, learn from each other, and ensure that IIMS remains the gold standard in marine surveying.

Commercial Cargo: New Challenges on the Horizon

As the Indian west coast prepares to resume iron ore fines exports in October, we're reminded of the evolving challenges in commercial cargo surveying. The sampling of large, static stockpiles presents unique complexities. Building on my previous work in this area, I'm

pleased to announce that we're developing a standard to facilitate in-situ sampling and estimate moisture content in inaccessible areas. Stay tuned for further updates on this important initiative.

Small Craft: India's Marina Boom

Exciting times lie ahead for our small craft surveyors. India's ambitious plans to build new marinas, inviting global tenders, signals a burgeoning opportunity for our sector. This is a chance to forge closer ties with the Director General Shipping and expand our footprint in small craft training and surveying.

Future-Ready Curriculum: The IIMS CPD Model

I recently had the privilege of participating in a panel discussion on "Future Ready Curriculum" hosted by the Mariners Trainers Guild (MTG) here in Mumbai. It was an excellent

opportunity to highlight the success of our IIMS Continuous Professional Development (CPD) program. I firmly believe that CPD, with its emphasis on ongoing learning and adaptation, is the key to ensuring competency in the ever-evolving maritime industry.

Looking Ahead: A Bright Future

As we move forward, I'm excited about the possibilities that lie ahead for IIMS and the wider marine surveying community. We'll continue to invest in education, advocate for our members, and embrace new technologies. Together, we can shape the future of our profession and ensure that maritime safety remains paramount.

Thank you for your unwavering commitment to IIMS.

Capt Ruchin Dayal

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US, Canada, and Finland introduce ICE Pact

The leaders of the United States, Canada, and Finland have announced the formation of the Icebreaker Collaboration Effort (ICE Pact), a trilateral agreement to collaborate on producing polar icebreakers and enhancing Arctic and polar capabilities. This partnership aims to bolster the shipbuilding industries and industrial capacities of the three nations, strengthen economic and security ties, and foster mutual workforce development, according to a statement from the Biden Administration.

The ICE Pact will initially focus on three components: enhancing information exchange between the United States, Canada, and Finland; collaborating on workforce development; and inviting allies and partners to purchase icebreakers built in American, Canadian, or Finnish shipyards. Recognizing the capital-intensive nature of shipbuilding, the agreement aims to leverage shipyards in each country to construct polar icebreakers for domestic use and export. This strategy seeks to meet the needs of allies and partners efficiently and affordably, while ensuring shipyards maintain robust, long-term orderbooks essential for their success.



Revision of Nautical Competency course syllabus announced by India

The Directorate General of Shipping, India issued Nautical Circular No. 17 of 2024 regarding the revision of the syllabus for Nautical competency courses leading to Certificate of Competency (COC) examinations.

This revision aims to maintain high standards in maritime education and align with evolving international standards and industry best practices.

Key Points:

- The syllabus revision is necessary to keep up with the dynamic maritime industry and regulatory changes.
- A meeting was held by the Chief Examiner of Master and Mates with various stakeholders to discuss the syllabus update, aligning it with the ongoing STCW Convention revisions.

Syllabus Revision Committee:

- A committee has been formed to review and update the current syllabus for STCW Competency Courses and relevant modular courses for Nautical officers.
- The committee will ensure the syllabus aligns with the latest STCW revisions and industry standards, aiming to improve course effectiveness and comprehensiveness.



2024 Superyacht Forum to have forward-thinking agenda

The newly redesigned meeting of the superyacht industry's senior leadership professionals at this year's METSTRADE will place delegates at the epicentre of the sector and feature a far-reaching, future-focused agenda.

The Superyacht Forum (TSF), supported by headline partners AkzoNobel/Awlgrip, DNV, Lürssen and Neom/Sindalah, is returning to the Amsterdam RAI exhibition centre from 18-19 November. It marks the first edition under the organisation of the venue, enabling closer alignment with METSTRADE's SuperYacht Pavilion and its three halls of global specialist manufacturers and suppliers which will take place from 19-21 November.

The benefits of this fully integrated approach include exclusive opportunities for delegates and exhibitors to network on Monday 18 November, and fully co-ordinated content across METSTRADE and TSF.

More than 600 leading industry professionals will 'Think Ahead' toward key issues of tomorrow across three streams – innovation, sustainability and professionalisation. Topics for keynotes, workshops and breakouts have been carefully selected by METSTRADE's newly convened Superyacht Content Board, which harnesses knowledge from many leading industry organisations.

Australian boat ownership hits new highs

Recreational boating, fishing and sailing are as much a part of Australia's DNA as mozzie bites and vegemite, but with boating ownership on the rise across the country, that DNA must include vigilance around marine safety.

In 2023, boat ownership reached a record high in Australia. With over 80 per cent of Australia's population living in coastal regions, and with fishing, paddling and sailing increasingly popular leisure pursuits, the need for safety education and awareness has never been greater.



InterManager issues call for industry-wide accident reporting



Captain Kuba Szymanski, InterManager Secretary General
Accidents onboard ships are not decreasing, according to latest accident statistics submitted to the International Maritime Organization by InterManager.

The Association says the number of seafarers injured in falls has remained fairly consistent year on year, as has the number of injuries resulting from rescue and survival craft accidents. However, the Association warns that the casualty rate for enclosed space accidents has almost doubled. InterManager has submitted its figures, which span several decades, to the 10th session of the IMO's Sub-Committee on Implementation of IMO Instruments which took place from 22nd to 26th July in London.

The Association's submission provides information and analysis in support of InterManager's information documents on enclosed space accidents (ranging from 1996 to 1 May 2024), fall accidents (from 2012 to 1 May 2024), and accidents involving rescue and survival craft (from 1980 to 1 May 2024).

InterManager notes there remains a significant lag between accident occurrence, its investigation, and the report being uploaded into the Marine Casualties and Incidents (MCI) module of the Global Integrated Shipping Information System (GISIS).

"It would be markedly beneficial to all analyses if this unwelcome lag could be decreased, or indeed eliminated," said InterManager.

Read the full story at <https://bit.ly/465JZz7>.



IMO Council steps up action on transparency and access to information

The IMO Council has decided to live-stream its plenary meetings and make its documents accessible to the public, in a bid to boost transparency in the Organization.

Meeting in London from 8 to 12 July for its 132nd session, the Council took a series of decisions to modernise its approach and operations.

These include:

- Live-streaming plenary sessions of Council
- Releasing Council documents and summaries of decisions to the public
- Permanently establishing hybrid capabilities to enable for virtual and in-person participation in meetings
- Enhancing multilingualism through a Strategic Framework for Multilingualism

The Council noted the ongoing progress on upgrading and improving the IMO's Global Integrated Shipping Information System (GISIS). GISIS is a comprehensive online hub for the collection, processing and sharing of shipping-related data.

"My efforts continue on the modernisation and transparency of IMO," said Secretary-General Mr. Arsenio Dominguez.

"I will continue to seek efficiencies, from restructuring, to the best use of our financial assets, recruitment and the building facilities, to name a few, while I invest in those who make all these possible - the professional staff of the Secretariat."

The Council is the executive organ of IMO and is responsible, under the Assembly, for supervising the work of the Organization. The Council is made up of 40 member states, elected by the Assembly for two-year terms. The session was chaired by Victor Jimenez Fernandez of Spain, supported by Amane Fethallah of Morocco as Vice-Chair.

Sailing vessel sunk by orcas

A sailing vessel off Gibraltar has become the first this year to be sunk by orcas that have been targeting boats in the area since 2020. Crew members of the Alboran Cognac boat called rescue services for help saying that their boat had been damaged by orcas 14 miles from Cape Spartel, at the southern entrance to the Strait of Gibraltar, in Moroccan waters.

The sailors said they had felt hits on the hull, before their rudder was damaged and they noticed a leak threatening to sink their 50ft boat, local outlet El Pais reports. The crew were swiftly rescued by a nearby oil tanker, but the yacht drifted off and sank following the orca attack.

OceanCare has said the recent attack on the 15m Alboran Cognac near the Strait of Gibraltar was not an act of revenge but likely play behaviour. The boat sank in the southern entrance to the strait after being damaged by orcas. The crew were safely rescued. This is the latest in a series of incidents in recent years where individuals from this particularly endangered population of orcas have damaged or lost vessels.



eCMID Accredited Vessel Inspector Scheme applications hit the 1,000 mark

Back in mid 2015, IIMS subsidiary, the Marine Surveying Academy Ltd, was appointed by the International Marine Contractors Association (IMCA) to pioneer, develop and launch the eCMID Accredited Vessel Inspector (AVI) Scheme.

The IMCA eCMID system provides the marine and offshore industry with standardised formats for vessel inspection. It offers a safety management system (SMS) 'health check' and can help improve the quality and consistency of inspections, as well as reducing the frequency of inspections on individual vessels through the adoption of a commonly recognised inspection process.

The desire for accreditation was largely driven by the industry itself. It was born due to pressure and concern from the industry that encouraged IMCA to find a solution to accredit competent inspectors. Prior to the scheme, vessel owners and operators had no way to validate the credentials of those stepping onboard to conduct the inspection. The purpose of the process is to provide a structure for the audit, or inspection of commercial vessels used in the offshore industry, conducted by vessel inspectors working on behalf of owners or clients. The robust accreditation scheme objectively assesses the competency of individuals against various vessel types.

Commenting on the receipt of the one thousandth eCMID AVI accreditation application, IIMS CEO, Mike Schwarz, said, "This is a remarkable milestone since we jointly developed and launched the accreditation scheme with IMCA in 2015. I clearly recall a decade ago sitting down with IMCA senior executives to devise a scheme that would objectively assess and match the capabilities of inspectors with different vessel types requiring inspection. Up to that point, vessel operators had no way of checking if the attending surveyor had the necessary technical knowledge and skills to conduct the inspection. The eCMID AVI scheme changed that for good. I look back over that time with a sense of great pride at what has been achieved."

For more information about the eCMID AVI scheme go to <https://www.ecmidvesselinspectors.com>.

Sweden bans scrubber discharges in its waters

Sweden has joined the list of countries seeking to ban scrubber water discharges in their waters. In a proposal the Swedish government wants to start prohibiting discharges from open loop scrubbers from 1 July 2025. This will be followed by a ban on discharges from all other scrubbers from 1 January 2029. The ban will be applicable in Swedish territorial waters.

While the IMO's global cap on sulphur content in fuel oil was lauded as the right step towards clean shipping, it inadvertently led to widespread use of exhaust gas cleaning systems, popularly known as scrubbers. In addition to washed-out sulphur, other contaminants such as heavy metals and oil residues have been found in the discharge wastewater.

In commenting on the scrubber discharge ban, Sweden's Infrastructure Minister Andreas Carlson said that most Swedish shipowners are already using low sulphur fuel oil (LSFO). For this reason, it became imperative to extend to all ships in Swedish maritime territory.

"Hopefully, these national bans will fuel discussions on regional bans in the Baltic, the Northeast Atlantic and the entire EU. The IMO needs to move forward on this topic as well, although I think a global ban is quite a few steps away. There are intermediate steps to make nevertheless," said Mattias Rust, Deputy Director, Ministry of Rural Affairs and Infrastructure, Sweden.



IMO brings engine manufacturers to the table

The International Council on Combustion Engines (CIMAC) has been officially granted consultative status with the International Maritime Organization (IMO).

Earlier this year CIMAC submitted its application. Rick Boom (Woodward), CIMAC President, expressed satisfaction over the success of their application, highlighting their anticipation to enhance CIMAC's contributions in large engines, power, drives, and propulsion to IMO. He believed CIMAC's expertise could significantly aid in achieving IMO's objectives.



The Tanker concept

Lithuania is at the leading edge building the first hydrogen-electric powered ship

The Lithuanian shipping industry is joining the leading edge of the industry becoming one of the first to be building a hydrogen-electric powered ship. While the technology is viewed with great promise only a few ships have moved into construction using hydrogen fuel cells combined with batteries.

The construction of the country's first hydrogen-electric ship began at Western Baltija Shipbuilding (WBS) with a keel laying ceremony. Commissioned by the Klaipeda State Seaport Authority, this ship is a harbour craft designed for waste management.

The tanker will be 138 feet (42 meters) long and 33 feet (10 meters) wide with a capacity to collect 400 cubic meters of liquid waste. It will be equipped with two electric motors powered by batteries with a capacity of 2000 kWh and an installed on-board hydrogen fuel cell system. Depending on the intensity of work, the ship will be able to operate within the Port of Klaipeda for up to 36 hours on a single charge.

Thailand International Boat Show targets expansion in 2025

The 2025 edition of the Thailand International Boat Show will take place at Phuket Yacht Haven from 9-12 January 2025. Located in the north of Phuket Island, Phuket Yacht Haven is the island's largest marina with 332 berths and can accommodate yachts of all sizes up to 100+ metres, aligning with the organiser's plans to expand the show and welcome more boats, larger boats and superyachts.



THAILAND INTERNATIONAL
BOAT SHOW
A LUXURY LIFESTYLE EVENT
JD a JAND event

"As we look to expand the Thailand International Boat Show in 2025 and beyond, the move to Phuket Yacht Haven is a strategic one – it gives us more space and the capacity to grow in the water and onshore. Feedback from many global brands is that they see the show as one of the most important boat shows in this part of the world and the new venue will allow us to grow in stature regionally and internationally. Also, being closer to the airport and many five-star resorts makes the show even more convenient for off-island visitors," said David Hayes, CEO of organisers JAND Events.



Report reveals €27bn impact of Italian boating industry

According to a new study into the sector's impact, the Italian nautical industry grew three times faster than the country's GDP between 2012 and 2022.

The first Altagamma-Deloitte study of the economic and employment impact of the yachting industry in Italy shows the sector's overall impact is 2.7 times its direct economic impact and six times its employment impact. Approximately 59% of the total impact was generated by the use of yachts, 38% by new builds and 3% by refits. The study also highlights an unexpressed potential: just 6% of superyachts (> 24 m) visiting Italy fly the Italian flag.

The Altagamma-Deloitte study 'La nautica da diporto in Italia' was presented on Tuesday 25 June in Milan by Giovanna Vitelli, Vice President of Altagamma for the nautical sector and chair of the Azimut|Benetti group, and Tommaso Nastasi, Senior Partner of Deloitte, in the presence of Matteo Lunelli, President of Altagamma.



The inaugural World Boating Day attracted almost 50 events globally

The Superyacht Life Foundation coordinated the new initiative, which was celebrated from 25 to 26 May. The foundation says World Boating Day is a non-profit campaign comprising many local open days across the globe, aiming to foster a greater understanding of the leisure boating industry and help attract more talent to safeguard its future.

Massimo Casoni, General Manager of Benetti, said: "We are very pleased to have participated in the first edition of World Boating Day, especially given the enthusiasm shown by the public from the very beginning."

Companies in nine different countries - Australia, Italy, the Netherlands, Spain, Turkey, France, the UK, Croatia, and the Isle of Man - organised local events, inviting people and their communities to join the celebrations.

Eva Janique, Marketing Director at West Istanbul Marina, added: "We loved feeling connected to other marinas, yacht manufacturers, and boatyards around the globe from afar. We're grateful to have been able to take part in the first-ever World Boating Day and encourage all lovers of leisure boating to connect, even from opposite sides of the world."

US Coast Guard reveals top 5 reasons for boating accidents in 2023

The U.S. Coast Guard has released the 2023 calendar year statistics on recreational boating incidents, reporting a decrease in fatalities and incidents, and revealing the top reasons for accidents.

Fatalities fell by 11.3 per cent to 564 from 636 in 2022, while overall incidents decreased by 4.9 per cent from 4,040 to 3,844. Non-fatal injuries also declined by 4.3 per cent from 2,222 to 2,126.

The top five primary contributing factors in accidents were operator inattention, improper lookout, operator inexperience, excessive speed, and machinery failure. However, alcohol continued to be the leading known contributing factor in fatal boating accidents in 2023, accounting for 79 deaths, or 17 per cent of total fatalities.

The U.S. Coast Guard data also shows that in 2023, the fatality rate was 4.9 deaths per 100,000 registered recreational vessels, a 9.3 per cent decrease from last year's rate of 5.4 deaths per 100,000 registered recreational vessels. (In 1971, when the Safe Boating Act was first passed, the rate was 20.6 deaths per 100,000 registered recreational vessels.) Overall, property damage totalled \$63 million.

Drowning accounted for 75 per cent of deaths, with 87 per cent of those victims not wearing life jackets. The Coast Guard reminds boaters to wear serviceable, properly sized and correctly fastened life jackets.



Leading shipping organisations express concern over certain CII flaws

Six major shipping organisations (BIMCO, CLIA, INTERCARGO, INTERMANAGER, ICS, and INTERTANKO) have issued a joint statement expressing their concern over some flaws of the Carbon Intensity Indicator (CII) regulation.

With the IMO's initial Carbon Intensity Indicator (CII) ratings delivered from Flag States to shipowners, organisations have noted the CII scheme's inadequacies. Thus, they will continue to work to ensure a CII methodology that is accurate, reliable, and implemented in a manner that fully reflects the intent of the IMO Strategy for the world's fleet of commercial ships.

To achieve the IMO's intent, the CII scheme must reflect the true efficiency rating for each ship. A one-size-fits-all instrument, as the CII is currently designed, has inherent flaws that work against its intended purpose of supporting our collective objective of reducing GHG emissions across the maritime industry, the organisations explain.



The organisations are calling on the IMO to amend the current CII system to avoid unintended consequences that are contradictory to reducing overall GHG emissions. Indeed, the IMO has already received 78 proposals submitted by every sector of shipping, also calling for amendment to the CII.

Read the full story at <https://bit.ly/3Lpahmr>.



Recreational boating safety basics in Canada

According to the Drowning Prevention Research Centre, there are around 100 recreational boating-related deaths in

Canada every year. To combat these accidents — most of which are preventable — Transport Canada (TC) has doubled down on its resolve to make boaters aware of the dangers of recreational boating, and how to avoid them. This mission, according to TC, has become more pressing in recent years, as recreational boating has soared in popularity since 2020.

According to TC, in 80 per cent of all boating-related fatalities, the deceased was not wearing a personal flotation device (PFD). Furthermore, a PFD was properly worn in only 13 per cent of boating-related deaths. Legally, there must be at least one PFD per person on board any boat.

"Wearing your PFD is the best chance that you're going to come home safely," said Sharon Sellars, Boating Safety Officer with TC. "A lot of these reasons where they were bulky or uncomfortable or they had to be red, orange or yellow... Those would have been the reason people gave in the past [for not wearing PFDs]. Of course, PFDs are a lot more comfortable now."

Another risk factor highlighted by TC is alcohol consumption. According to the Canadian Red Cross, 50 per cent of individuals who died in boating related incidents are found to or are suspected to have consumed alcohol. A condition known as boating fatigue, which is brought on by a combination of sun, wind, noise, vibration and the movement of the boat can exacerbate the effects of alcohol by up to four times its normal effect.





'Risk of drowning' alert for some Jeanneau Yachts issued

IIMS has been contacted directly by the UK Maritime & Coastguard Agency (MCA) to alert us to potential issues surrounding Jeanneau Sun Odyssey 410, 440 and 490 models, which are equipped with Sleipner-Sidepower retractable bow thruster modules. These models were built in 2020, 2021 and 2022.

The advice from Jeanneau is to immediately stop sailing. The company has issued a product recall amid safety concerns about seepage around the retractable bow thruster. This recall comes in the wake of the sinking of a Sun Odyssey 410 yacht off the coast of Germany last year.

In June 2024 the European Commission published a safety alert for the Sun Odyssey 410, 440 and 490 yacht constructed between 2020 and 2022, warning of a 'risk of drowning' as the boats 'may sink' due to a glueing problem with the underwater bow thrusters.

In the Safety Gate Alert statement by the European Commission, they say, 'Due to a glueing problem, the bow thruster flange may detach and generate a waterway. The boat may sink, increasing the risk of drowning for users.'

Jeanneau had launched a recall campaign in March 2023 as a precautionary measure to reinforce the bonding of Sleipner-Sidepower retractable bow thruster modules in the hulls of the three models mentioned. This advice was updated in May this year.

UK Marine News

£100k fine handed to operator for vessel modification resulting in two deaths

A Brixham, UK based fishing vessel operator has been ordered by a court to pay more than £100,000 after a vessel modification caused it to capsize, leading to the deaths of two people onboard. Joanna C had a major refit in 2019, including the addition of a whaleback, extension of the wheelhouse and raised bulwarks being added. That fatal incident happened in 2020 when the vessel's gear snagged on the seabed. Its lack of stability meant it could not recover, causing the boat to sink rapidly. Only one crewmember of three survived.



"This is a tragic reminder that modifications to vessels should be planned and their effects on the vessel's stability properly investigated using appropriate professionals," says Mark Cam, senior investigator with the Maritime and Coastguard Agency's (MCA) regulatory compliance investigations team.

"Companies are responsible for providing a safe place of work for their employees wherever that may be. The court has found that Laura D Fishing Ltd [the operating company] did not take all reasonable steps to operate the Joanna C in a safe manner and this led to the [two] deaths."

West Hampshire Magistrates Court was told that extensive changes made to the boat, not approved by MCA, made it significantly non-compliant with the minimum standards of stability. The vessel continued commercial operations however, without considering the impact and risks of the modifications.

Laura D Fishing was fined £36,000 and ordered to pay £69,284 in costs and a £190 surcharge.

Morco issues urgent water heater safety alert

The UK based BSS (Boat Safety Scheme) is supporting Morco in its on-going campaign to find and fix potentially dangerous models of its LPG water heaters that may leak gas with the risk of causing fires or explosions. Following concerns that appliance test-point screws may not have been correctly tightened at the time of commissioning or servicing, Morco has issued a safety alert and is offering free upgrades for the affected models.

Morco's concern is that un-rectified water heaters can potentially leak unburnt gas that could cause fires or explosions, that may result in burns and serious injuries.

What is the hazard?

Morco has identified a potential fire risk on their Primo 6 (MP6), Primo 11 (MP11), EUP6 and EUP11 LPG open flued water heaters. Gas leaking from an installation test-point could ignite and causing the plastic bezel and control knobs at the front of the water heater to catch fire and melt. The models affected were sold between 2018 and 2023.

What to do if you think one of the water heaters may be installed on your boat.

Go to the Morco website at <https://morcoproducts.co.uk> to check if the appliance is one of the affected ones. It includes a guide on how to find the model number and serial number, Morco's guide - see <https://bit.ly/3WqfGjE>. If confirmed as one needing an upgrade, then fill in a Safety Upgrade Form that will help Morco ratify the need to act and for them to organise an approved Gas Safe registered engineer to make the required safety upgrade to the water heater which will be free of charge.

Water heaters that have already had the safety upgrade should have a Morco branded yellow service notice sticker applied to the front face of the appliance including these words 'Notice to commissioning engineer' and a reference in the bottom left: Cod. 80000353 – ed.1

Morco stresses that if the LPG water heater is suspected to be leaking gas, the supply should be disconnected and Morco or a suitably qualified Gas Safe registered engineer contacted straightaway.

The Boat Safety Scheme urges anyone with a Morco water heater to check their model and year against the very clear information on the Morco website and get in touch with the company if they are at all unsure and need help. BSS Examiners have been asked to have a conversation with their customers and to ask whether it has had the free safety upgrade. If not, they will be encouraged to get in contact with Morco.



Bridge repairs prompts 'Slow Down' plea to motorists



Barrow Bridge. Photo credit: Canal & River Trust

Motorists are being urged to slow down and take more care when crossing historic hump-back bridges that span the canal network. The plea comes as the Canal & River Trust completes a £100,000 project to repair the latest damage to the parapet of Barrow Bridge in Derbyshire when brickwork was knocked into the Trent & Mersey Canal below.

Regional director Linny Beaumont said, "Canal bridges, which date back hundreds of years, are such an important part of our local heritage and character so it's heartbreaking to see them damaged in such a careless way.

"If motorists just slowed down a bit and took more care and attention then they would save themselves and us a lot of cost and aggravation and help us to keep canals alive for future generations."

25th edition of Seawork a great success

A stunning 25th edition of Seawork has led to record rebookings for 2025 as exhibitors look to repeat the success of this year's event. Re-bookings are currently sitting at well over 30%, just a week after Seawork 2024 closed its doors.

Audience numbers showed a steady increase on previous editions with 7584 visitors from 45 countries. Improved registration, using the Seawork App and more scanner/printers available to issue badges, streamlined the whole process for all attendees.

MOD and Government department meetings were up on last year with exhibitors taking advantage of the exclusive exhibitor one-to-one meetings service. Pre-exhibition bookings for Seawork's suite of private meeting rooms resulted in all rooms at 100% occupancy despite the increase in facilities available.

Unprecedented numbers of flares seen at Northern Ireland disposal events

The Northern Irish sailing community produced an unprecedented 4,000 expired marine flares at disposal events held at Portrush Yacht Club, Bangor Marina and Lough Erne Yacht Club.

RYA Northern Ireland organised these events in conjunction with the PSNI as The Maritime and Coastguard Agency's (MCA) voluntary flare disposal service stopped in December 2022 and as there is no commercial disposal service currently available in Northern Ireland for marine distress flare disposal. This has been problematic for boaters as it is illegal to dispose of flares at sea, illegal to dump them on land and illegal to let them off in anything other than an emergency.

It is also vital that there are adequate disposal facilities are provided for boaters as improper disposal of marine flares can be dangerous or cause harm to the environment. Shockingly, the oldest dated flare to be handed in at last Saturday's events dated back to 1965.



Major increase in UK river rescues in 2024

Unprecedented rainfall levels, water surges and numerous flood warnings resulted in River Canal Rescue (RCR) responding to more major incidents in the first three months of this year, than it did for the whole of 2023. Between January and March, its teams responded to 155 major incidents (emergency situations either involving submerged, partially sunken or grounded craft, plus salvage work) - in 2023 the figure for the year was 121.

The extreme weather conditions, which included various named storms – Agnes, Babet, Ciaran, Debi, Elin, Fergus, Gerrit, Henk, Isha and Jocelyn – hitting the UK over the winter months, tested RCR recovery teams who were unable to raise submerged boats and free land-locked vessels until water levels reduced and the rivers/canals were safe to enter.

Managing director, Stephanie Horton commented, "This has been a very challenging time for our teams; our ethos is to help people as soon as we can, but in some cases the weather and recovery conditions wouldn't allow us to do so. Thankfully, all vessels are recovered now, but many of the cases are heartbreaking where people have lost their homes and possessions."

Oyster Yachts partners with UK college

Bournemouth and Poole College in the UK has announced a partnership with Oyster Yachts, the UK manufacturer of blue water sailing yachts. Oyster will work with the college to deliver 10 apprenticeships for the first year of the partnership. During the next four years, students will undertake extensive training to complete Level 3 Marine Electrical, Marine Engineering or Boat Building apprenticeships.

Natalie Fox, group HR director at Oyster Yachts, said, "Apprenticeships are a very important initiative for us. We are passionate about growing our own talent and ensuring we help develop and nurture skilled craftspeople for the marine industry."

"By bringing the strengths of both the college and Oyster Yachts together, I am confident that we can provide a great learning environment for apprentices and continue to develop local skills for the marine sector."



Canal & River Trust responds to awful annual boaters' survey findings

The UK Canal & River Trust (CRT) says it will be doing all it can to make improvements following the publication of its annual boaters' survey, which has revealed a decrease in overall boater satisfaction from 54 per cent to 46 per cent from a year ago.

The organisation says it is greatly concerned to see the fall in boater satisfaction, and that the fall continues a downward trend since 2017.

In a statement, CRT says, "The trust is committed to doing whatever we can within our means to provide all of our boating customers with the experience and service they expect. This disappointing result confirms that we need to re-double our efforts to improve this."

Read the full story at <https://bit.ly/3zS4TFQ>.

Tritex NDT Multiple Echo Ultrasonic Thickness Gauges



The Drone Thickness Gauge
MultigaUGE 6000



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

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REPORT bites

In a heartfelt celebration marking Williams Jet Tenders' 20th anniversary, founders Mathew and John Hornsby were astonished and elated by the unexpected return of their very first hand-built wooden boat, Jade, after 25 years.

New research in the US aims to generate electricity from heat, opening the door to entirely new ways of powering things from hotel loads to primary propulsion systems.

The latest updates from the International Maritime Bureau's Piracy Reporting Center highlight an increase in violence faced by the crew of merchant vessels, though there is an overall reduction in piracy.

South Korea marked a crucial milestone in marine research by commissioning its first domestically built geophysical exploration research vessel.

Consultancy NASH Maritime reports it has been commissioned to prepare the navigation risk assessment for the proposed development that will see Rosslare Europort become the Offshore Renewable Energy hub for Ireland's South East.

Organisers of North America's largest leisure marine sector trade event have named Mary Velline as show director for the International BoatBuilders' Exhibition and Conference (IBEX) with immediate effect.

Höegh Autoliners has taken delivery of the world's largest pure car and truck carrier, Höegh Aurora, designed to operate using ammonia as fuel.

UK marine show BoatLife recently announced its acquisition by the NEC Group.

A new European boat-rental service called Boatsy has launched with a fleet of over 13,000 boats, covering modern yachts, catamarans and traditional sailing boats.

The US Laboratory for Energy Storage and Conversion (LESC) has created the world's first anode-free sodium solid-state battery for fast charging EV and grid electrical storage use.

Becky Cannon, 24, has achieved her ambition of becoming Coxswain of an all-weather lifeboat in the RNLI, the UK lifesaving charity making her the youngest female to perform this role.

Ensuring compliance of oil filtering equipment on ships

In an effort to enforce strict environmental standards, the Australian Maritime Safety Authority (AMSA) has outlined detailed guidelines for the installation and testing of oil filtering equipment, specifically oily water separators, on ships.

In particular, oil filtering equipment installed on a ship on or after 1 January 2005 must be approved to meet Resolution MEPC.107(49) to comply with MARPOL Annex I Regulation 14.

The requirements include:

- a truly representative sample of the effluent with adequate pressure and flow is supplied to the 15ppm bilge alarm;
- provision of fail-safe arrangements to avoid any discharge in case of malfunction of the 15ppm bilge alarm;
- 15ppm bilge alarm is fitted with an electronic device that is pre-set to activate when the effluent exceeds 15ppm and operates automatically if at any time the 15ppm bilge alarm should fail to function;
- the response time of the 15ppm bilge alarm. This is the time that elapses between an alteration in the sample being supplied to the 15ppm bilge alarm and the ppm display showing the correct response. Response time should not exceed 5 seconds;
- the setup of the installation must minimise the time it takes for the system to respond when the discharge from the 15ppm bilge separator exceeds 15ppm. This includes the time it takes for the automatic stopping device to activate and prevent discharge into the water. This should take less than 20 seconds. It must not exceed that limit under any circumstances.

AMSA Port State Control procedure

AMSA Port State Control officers (PSCOs) will inspect the condition, and operation, of the oilywater separator, filtering equipment and alarm, stopping or monitoring arrangements as described in the Procedures for Port State Control, 2023 Resolution A.1185(33). Operational testing of oil filtering equipment will require the equipment to be configured to circulate liquid from bilge tank to bilge tank (recirculating facility) and provide an effluent sample to the 15ppm bilge alarm – simulating the discharge of 15ppm bilge separator effluent overboard. When a simulation of effluent sample greater than 15ppm is applied, the PSCO will confirm that the alarm is activated, and that the automatic stopping device (3-way valve) stops effluent discharge overboard. This indicates compliant operation of the system. The PSCO will confirm that there is a flow of effluent sample from the 15ppm bilge separator that is truly representative, with adequate pressure and flow, to the 15ppm bilge alarm while effluent is being simulated to flow overboard.

In cases where the flow of effluent sample is not a representative sample, including blockage of the sample line or incorrect operation of valves, it is expected that, in accordance with MEPC.107(49) requirements, the fail-safe arrangement will activate the automatic stopping device (3-way valve) and stop effluent discharge overboard. AMSA's interpretation is that the failure of the 15ppm bilge alarm to activate the automatic stopping device in the absence of a representative sample of the effluent, represents noncompliance with Resolution MEPC.107(49). That is there is no fail-safe arrangement required by technical specification 4.1.3.

AMSA is aware various classification societies advocate for the installation of "flow sensors" in the 15ppm bilge alarm sample line. The flow sensors activate an alarm and operate the automatic stopping arrangements when a truly representative sample, with adequate pressure and flow, is not present at the 15ppm bilge alarm. They also recommend the sealing of all valves installed in the effluent sample pipes so that the valves are locked and sealed in their normal operating position to ensure adequate effluent sampling. AMSA accepts that MEPC 107(49) does not specifically require the fitting of flow or pressure sensors.

To read the full story go to <https://bit.ly/4f3HwJN>.



Ship fire safety systems are crucial and must be treated as such

Survitec has highlighted the dangers of inadequate maintenance, testing, and inspection of ship fire safety systems in a new white paper, which points to an alarming increase in fire safety-related deficiencies found during Port State Control Inspections and subsequent ship detentions.

In a white paper released at the Posidonia tradeshow, Survitec highlighted that fire continues to be a leading cause of major shipping incidents, accounting for over 20% of total losses, and the most expensive cause of marine insurance claims. While the highest level of fire safety deficiencies in a decade was recorded by the Paris MoU in 2022, and the Tokyo MoU also reported an increase in detentions, with a staggering 15,562 deficiencies reported in 2023.

"Analysts report a 17% year-on-year rise in shipboard fires, which correlates with an increasing number of reports and testimonies from our network of certified service technicians and engineers that document serious faults requiring immediate corrective measures," said Metkel Yohannes, Director of Service & Rental Solutions, Survitec.

Survitec has found that the economic downturn and the emphasis on cost reduction post-COVID have negatively impacted fire safety, with some shipowners and operators maintaining and inspecting safety equipment themselves in an attempt to save costs. The past few years have also seen a worrying trend of fire safety-related deficiencies on board ships, with rising numbers of ship detentions following Port State Control Inspections. As a result, fire safety was made the focus of a Concentrated Inspection Campaign (CIC) that ran between September and November 2023. The results are alarming.

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

AMSA releases new Marine Order 55: requirements for the carriage of industrial personnel

Marine Order 55 (MO55) contains mandatory requirements to ensure safe carriage of more than 12 industrial personnel (IP) on cargo vessels and high-speed cargo crafts in Australian waters. Issued under the Navigation Act 2012, MO55 gives effect to the new SOLAS chapter XV and the associated International Code of Safety for Ships Carrying Industrial Personnel (the IP Code).

It addresses aspects of safety including stability, machinery and electrical installations, fire safety, life-saving appliances and arrangements, carriage of dangerous goods, training of industrial personnel and their transfer arrangements.

Read the new Marine Order 55 at <https://bit.ly/4cJhtpG>.

Paris MoU 2023 CIC on Fire Safety

The Paris Memorandum of Understanding (Paris MoU) on Port State Control (PSC) carried out a Concentrated Inspection Campaign (CIC) on Fire Safety in collaboration with the Tokyo MoU from 1 September to 30 November 2023. During the CIC, member Authorities focused on compliance with areas specified by the CIC during PSC inspections.

The questions provided additional guidance to Port State Control Officers (PSCO) to help:

- determine if ships meet the mandatory requirements for fire safety prescribed in the International Convention for the Safety of Life at Sea (SOLAS) and the International Code for Fire Safety Systems (FSS Code); and
- foster consistent and harmonized inspection and implementation of the requirements by all PSCOs.

The objective of the CIC was to verify the level of compliance and create awareness with the requirements of Fire Safety. Fire Safety is considered an inspection item for PSC inspections. During the CIC, a total of 3856 inspections were carried out with the questionnaire. The CIC-topic detention rate in the period was 3.9% (151 ships were detained)

Conclusions

The results show that there is generally a good level of compliance, however this should be considered in the context that the shipping industry were informed well in advance of the intention to carry out a CIC in this area. The majority of the questions asked during the CIC already form part of an initial inspection and are checked each time an inspection is carried out.

In conclusion, the examination of CIC results highlights concerns regarding fire safety compliance, notably with Questions 2 and 10. Question 2, addressing the upkeep of fire doors, revealed a non-compliance rate of 9.3%, indicating a notable proportion of vessels where fire doors may not be adequately maintained. Similarly, Question 10, assessing the satisfactory execution of witnessed fire drills, demonstrated a noncompliance rate of 9.2%.

Download the findings at <https://bit.ly/3WoeMUJ>.



REPORT bites

The U.S. intends to create an Icebreaker Collaboration Effort with Canada and Finland to overcome challenges of producing the next generation polar icebreaker and strengthen the shipbuilding industrial sector generally.

Shell has inaugurated its first self-developed megawatt charger for dual use by both electric trucks and shipping vessels at the Energy Transition Campus Amsterdam.

Following some 15 years and nearly £850,000 of investment in solar PV systems, Premier Marinas has launched a new feature on its website displaying live data from the energy it has generated from the sun.

The Maritime and Port Authority of Singapore signed a memorandum of understanding with Microsoft on 29 July 2024 to collaborate on innovative technologies.

Drysuit and marine equipment manufacturer Typhoon International has launched a limited edition Typhoon Infinity 200 Drysuit to commemorate the Royal National Lifeboat Institution's 200th anniversary and raise funds for the charity.

More than one year after the tragic implosion of the experimental submersible Titan that killed five passengers, the US Coast Guard is continuing its thorough investigation into the cause of the tragedy.

The Panama Canal Authority (ACP) has unveiled plans for a new reservoir to address chronic water shortages affecting the canal's operations.

D-Marin has acquired Porto Mirabello, a superyacht marina located in the Gulf of La Spezia.

British actor and comedian Stephen Fry is teaming up with ocean charity Blue Marine to urge the new government to take immediate action to protect the ocean.

The Institute of Chartered Shipbrokers, the professional body for the commercial shipping industry worldwide, announces the inauguration of its Türkiye branch in Istanbul.

The Panama Canal is exploring the construction of a new water reservoir that would provide capacity for 11 additional ship crossings, the administrator of the key global waterway said.



NTSB issues report on Qualifier 105 passenger vessel fire in Homer, Alaska

The US National Transportation Safety Board (NTSB) has published its report on the investigation of a 2023 fire aboard the passenger vessel Qualifier 105 last year in Alaska. On 19 January 2023, the small passenger vessel Qualifier 105 was being stored ashore for the winter in the Northern Enterprises Boat Yard in Homer, Alaska when a fire started in a stateroom below the main deck. The local fire department extinguished the fire and no pollution or injuries were reported. The vessel was used for marine survey, oceanographic research, environmental clean-up, housing, and private charters. The owners declared the vessel a loss of US\$1.2 million.

While welders were on board performing aluminium hot work before the fire, investigators ruled out the hot work as a source of the fire, as there were no signs of a fire after or while conducting the work. Investigators concluded the fire was caused by an undetermined electrical source that ignited a stateroom ceiling. The substantial use of combustible materials for stateroom ceilings and bulkheads throughout the vessel's accommodation spaces contributed to the extent of the fire damage, the NTSB said. Although investigators could not definitively determine that stray welding current caused the fire, the NTSB report highlighted precautions to take for stray welding current.

"Stray welding current is a fault condition in which current goes through unintended conductors and back to the return terminal of a welding machine; it can cause fires by overheating wires," the report said. "To avoid potential fires caused from stray welding current, maintenance personnel, owners, and operators should follow industry practice to place the work clamp (the return current clamp) of the welding machine as close as possible to the point of welding."

Read the full report at <https://bit.ly/3xQvUcp>.



MERI crane collision and bridge damage in Kiel canal

The German Federal Bureau of Maritime Casualty Investigation (BSU) has published a report on an accident involving the Finnish-flagged heavy-lift vessel MERI while transporting a mobile harbour crane from Rostock to Esbjerg via the Kiel Canal.

Documentation indicates the ship and cargo exhibited a permissible height to pass the bridges on the NOK safely. However, while passing beneath the first bridges, the high bridges at Holtenau, on 30 November 2022, the mobile harbour crane's tower head struck the hollow box girders of both carriageways of the bridges.

The force of the impact broke the lashings that were securing the 643 t crane to the deck. This allowed the crane to tilt far enough toward the stern to pass under both bridges. In the process, it lost eight counterweights, three of which fell into the water. In both cases, the crane then tipped forward again after passing beneath due to its centre of gravity, crashing back onto the deck with its running gear and supporting pads.

The crane was destroyed in the process. The MERI's deck was also damaged. It was deformed and the crane jib penetrated part of it. The bridges sustained considerable damage. The bridges and the NOK were temporarily closed to all traffic. In particular, automobile traffic was seriously disrupted until the primary damage to the bridge was repaired on 21 December 2023. The cost of the bridge repairs stood at some EUR 6 million. Two investigators from the BSU immediately went to the scene of the accident to secure evidence and inspect the damage to the bridges, the MERI and her cargo, as well as to establish the consequences for safe passage of the canal as far as was necessary and possible.

In retrospect, the collision could have resulted in serious personal injury, although fortunately this was not the case. The MERI had cast off in the lock about eight minutes before the collision. However, since the deckhands working on the aft deck of the MERI had cleared and left the manoeuvring station immediately, nobody was in the crane's danger zone.

Main causes of the accident

- the transport was planned and contractually agreed on the basis of an incorrect transport drawing;
- an accurate transport drawing was not submitted subsequently. The actual tower height was not provided;
- the crane was loaded without using the information in the stowage plan. The different attachment points to the crane that was actually to be transported could possibly have been noticed;
- a clearly visible shipping label was attached to the loaded crane, indicating an incorrect tower height;
- when the special dispensation was granted, the submitted transport drawing could only be reviewed to determine whether the drawing was correct with regard to the measurements entered;
- it was not possible to measure the height in the lock. The crane's tower height specified by the ship was not called into question for the verification.

Download the report at <https://bit.ly/3y0wBzK>.



Loss of propulsion of ro-ro cargo vessel Mazarine: Transport Malta Report

Transport Malta's Marine Safety Investigation Unit has published an investigation report into the loss of propulsion and subsequent grounding of the Maltese-registered ro-ro cargo vessel Mazarine, on Wolf Rock off Land's End, UK on 10 July 2023.

At about 1040, the Maltese-registered, ro-ro cargo vessel, Mazarine ran aground on Wolf Rock, UK. The vessel sustained structural damage to the underwater section of the hull. In addition to the hull perforations, several deformations were observed, mostly on the port side.

The Transport Malta investigation determined that the ship ran aground following the failure of an elbow fitted on the vessel's main engine lubricating oil system, leading to the loss of a significant amount of lubricating oil and a drop in the main engine lubrication oil pressure. The safety investigation identified how the engine-room crew members made two desperate attempts to restore the main engine's lubricating oil system, working under significant time pressure given the vessel's proximity to the rocks. This safety investigation report makes two recommendations to the Company and the engine manufacturer.

Immediate cause of the accident

- It was not excluded that the initial cause of the pipe elbow failure was fatigue due to alternating stresses, possibly caused by high levels of vibrations and / or bending forces resulting from the degradation of the flexible rubber bellow;
- The loss of the main engine LO pressure was the cause of loss of propulsion, which eventually led to the grounding, after the vessel lost headway.

Read the full report at <https://bit.ly/3LqAe5i>.



REPORT bites

A. P. Møller-Mærsk's recently developed design for an ammonia-fuelled 3,500 TEU container vessel has earned approval in principle from classification societies Lloyd's Register and the American Bureau of Shipping.

Omayya Yachts has announced that the hull of its first Omayya 50 catamaran is now out of the mould at its Bulgarian shipyard, located along the banks of the Danube.

The Maritime and Coastguard Agency (MCA) announced that ten foreign flagged ship remained under detention in UK ports at the end of June after failing Paris MOU Port State Control (PSC) inspection.

The Chief Minister of Kerala, Pinarayi Vijayan, has welcomed the arrival of the cargo ship called San Fernando at the Vizhinjam International Seaport.

The government of Canada and First Nations along the coast of British Columbia have designated the country's largest marine protected area. It is located 93 miles off the west coast of Vancouver Island and around 50 miles southwest of Haida Gwaii.

In a recent ruling by the Batam District Court, Indonesia, the captain of the tanker MT Arman 114 was sentenced to seven years in prison and fined Rp 5 billion for environmental offences under Indonesian law.

Endurance, the legendary shipwreck from Sir Ernest Shackleton's Antarctic expedition, has significantly expanded its protected perimeter.

India plans to establish a new shipping firm and expand its fleet by at least 1,000 vessels over the next decade.

The iconic Cornish Crabbers brand has been bought by a team led by Ben Walker of Lagoon Marine and has confirmed production will continue in Cornwall, UK.

A partnership of Korean maritime technology companies has installed the country's first domestically built onboard carbon capture system on a sub-Panamax container ship.

The Port of Hueneme, in collaboration with STAX Engineering, is pioneering a solution to reduce maritime emissions with the deployment of an advanced emissions capture and control system.



Bunker hose damaged during offshore bunkering operations

IMCA has provided lessons learned from an incident in which, the bunker hose was damaged when it was stretched, during offshore bunkering operations.

A vessel passed the bunker hose to the supply vessel using the crane. The crew of the supply vessel received the bunker hose and tied it off. The crew then noticed possible damage to the bunker hose. The hose was returned and upon inspection it was seen that the outer layer of the bunker hose was damaged. Bunkering was cancelled. The potential further consequences were a possible spill to the environment and delay in operations.

What went wrong

- Both vessels experienced moderate pitching and rolling due to sea conditions;
- The bunker hose was tied off to the supply vessel aft bollard while still connected to the crane on our members' vessel;
- Due to both vessels moving in different directions, and the crane being unable to keep up with lowering or raising the hose in these conditions, the hose was stretched and damaged.

Lessons learned and actions taken

- Reviewed risk assessment for this task to identify risk of tying off bunker hose whilst still connected to the crane;
- Ensure that that standing orders for bridge communications include any special conditions between vessels –including not to tie off the bunker hose when connected to the vessel crane, if this can be avoided.



SAFETY Briefings

Britannia Club presents best practices for NAABSA ports

Britannia P&I Club presents some best practices for vessels berthing at a 'not always afloat but safely aground' (NAABSA) port.

NAABSA refers to ports or berths where it is customary and an accepted practice for ships to ground or rest on the seabed, particularly in areas where the tidal variations are significant. This allows ships to optimise cargo operations and minimise downtime, which would be the case if they were required to always remain afloat. Consequently, NAABSA clauses are usually incorporated to prevent charterers from breaching the 'always afloat' requirements found in most charter parties.

The Club advises the following practices to enhance safe operations in such ports:

Prior to arrival

- The navigator should ensure all navigational charts and the chart datum are up-to-date;
- Check the tidal information and make calculations to understand the estimated timing of resting aground and refloating;
- Consult the ship's classification society if the on board stability software cannot calculate the ship's stability when resting aground;
- Change the cooling water intake to appropriate sea chest so it does not to compromise the mechanical performance of the ship;
- Ensure the ship's mooring lines are in good working condition.

After alongside

- Conduct risk assessments with the port operator and stevedore of the operation;
- Confirm the loading or discharging rate of the cargo operations to estimate the time of resting aground;
- Ensure the crane operator is aware of the expected timing for resting aground and any possible listing when lifting cargo or hatch covers;
- Ensure the port operator can provide alternative firefighting arrangements in case of an emergency when the ship is resting aground;

- If possible, carry out visual check of the ship's drafts and conditions of shore bollards;
- After berthing, use hand lead lines to check the water depth and nature of the seabed around the ship. Compare this information with tidal data to obtain a more accurate estimate of low tide timing;
- Endeavour to keep the ship as close to even keel as possible when taking the ground on NAABSA berth;
- Regular visual inspections of the berth;
- Check for any visible obstructions or fallen objects during cargo operations when at low water. Inform berth operator and take photos;
- Post notices that steering gear should not be operated prior to checking that ship is fully afloat.

When resting aground

- Check for any signs of indentation of the ballast tanks, duct keel, cofferdams or cargo hold bilges;
- Be cautious of sudden ship listing caused by uneven seabed;
- Have emergency procedures in place, including pollution control measures, in case of hull breach or any unforeseen complications;
- The master should be aware that the ships may not always refloat at the time expected, due to nature of the berth and external influences;
- Consider informing the berth operator and port authority if the ship is not refloated at the expected time and be prepared to activate the ship's contingency plan, if necessary.

After refloating

- Inspect the hull for any potential damages;
- Conduct thorough safety checks of all systems, especially the thrusters, propulsion and any hull appendages such as echo sounder or doppler log to ensure they are fully operational;
- Ensure the steering system and rudder can turn freely to the maximum angles and has not been affected when the ship was resting aground;
- Keep records of timing and all the condition checks after ship has been refloated;
- Carry out an underwater survey, if required by class.



Update on emergency power supply testing non-compliance issued by Tokyo MoU

The Tokyo MoU has released a Safety Bulletin advising that there have been numerous observations by Port State Control Officers (PCSOs) where the "simulated blackout" testing of the Emergency Generator is demonstrated as fully functional, but during an actual power blackout, the system does not meet the requirements of SOLAS Ch. II-1, Reg. 42 / 43.

PCSOs have observed an alarming number of ships that were able to demonstrate a satisfactory test of the emergency generator utilizing a Sequence Test or RTS, but when tested by opening the Main Switch Board (MSB) Bus Tie (controlled blackout), the emergency generator was unable to:

- 1) automatically start; or
- 2) provide transitional power; or
- 3) automatically connect to the emergency switchboard.

These simulated blackout tests of the emergency generator may not meet the requirements of SOLAS Ch. II-1, Reg. 43.7, and more importantly, give ships' engineers a false sense of readiness of the ship's emergency systems in the case an emergency. This may endanger life, ship, and the environment, stresses the Tokyo MoU.

Download the Safety Bulletin at <https://bit.ly/4cHpb3o>.

REPORT bites

The CMA CGM Benjamin Franklin, a massive containership operated by the French liner CMA CGM, encountered severe weather conditions, resulting in the loss of 44 containers overboard off the coast of South Africa.

The iconic shipwreck on Navagio Beach, Zakynthos, is at risk of disappearing due to extensive damage caused by waves and weather, according to local authorities.

The Port of Seattle has become the first port in the nation to independently require that 100 per cent of all cruise vessels homeported in Seattle be shore power capable and utilise shore power.

X-Press Feeders has launched Europe's first regular feeder network powered by green methanol, aiming to significantly reduce greenhouse gas emissions by up to 65%.

The Oil Companies International Marine Forum (OCIMF) has confirmed that its digitalized Ship Inspection Report Program (SIRE 2.0) is scheduled to "go-live" on Monday September 2, 2024 and become the standard tanker inspection tool for the marine industry.

The Directorate General of Shipping, India issued Nautical Circular No. 17 of 2024 regarding the revision of the syllabus for Nautical competency courses leading to Certificate of Competency (COC) examinations.

North Technology Group is continuing its strategic growth by acquiring two renowned sailmakers, Doyle Sails and Quantum Sails.

IMO has launched a new toolkit that will help the global maritime industry respond better to ever-evolving 'insider threats'.

Dubai's Roads and Transport Authority is promoting its new project which developed what it calls the world's first ferry manufacture using 3D printing technology.

Gisatex, the German supplier of textile-based wall and ceiling coverings for yachts and mobile homes, has opened its new, enlarged logistics facility, 'Plant 2'.

San Francisco Bay Ferry and public and private sector partners have launched MV Sea Change, the world's first commercial passenger ferry powered entirely by zero-emission hydrogen fuel cells.



Flooding, capsize and sinking of stern trawler Piedras

On 1 June 2022, the UK registered stern trawler Piedras capsized and sank following an uncontrolled ingress of seawater in the engine room. The skipper of Piedras gave the order to abandon ship, but the abandonment was hampered as one of its two liferafts failed to function correctly. However, the second liferaft was successfully deployed and used by the 11 crew members who were all rescued uninjured.

Safety issues

- The crew of Piedras did not have an effective flood action plan as recommended by the Fishermen's Safety Guide
- Piedras possibly suffered from secondary flooding due to its transom being left open to the sea. A lack of good watertight integrity meant that floodwater spread to other compartments, leading to the capsize and foundering of the vessel
- The multinational crew of Piedras did not understand the onboard risk assessments and other safety documentation due to language issues
- One of the two liferafts failed to function, possibly due to a lack of effective servicing
- A passing vessel did not respond to the accident as the quality of its watchkeeping did not meet the required standards

Recommendations

While no safety recommendations have been made in this report, urgent safety recommendations (2022/129, 2022/130 and S2023/103) were made to Survitec Group as part of this investigation to ensure an appropriate level of oversight to confirm that liferaft servicing was both rigorous and complied with statutory requirements; to inform customers potentially affected by noncompliant liferaft servicing; and to distribute MAIB safety bulletin 2/2023 to appropriate vessel owners and operators.

Further, a recommendation (S2023/104M) was issued to all vessel owners and operators that had DSB liferafts certified by the service station Comfer Marin SL during the period 1 January 2017 to 30 June 2022 to immediately contact their nearest approved Survitec liferaft service station to arrange for their liferafts to be urgently re-inspected and serviced to ensure they are fully functional and comply with statutory requirements.

Download the full report at <https://bit.ly/466p2Ec>.



Enhancing safety in pilot transfer arrangements: a comprehensive look at the new SOLAS amendments

BIMCO has provided a comprehensive look at new SOLAS amendments, which are expected to be adopted later this year.

The IMO Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) convened for its 11th session from 4 to 13 June, and finalised the draft amendments of SOLAS, Regulation V/23 and associated instruments to improve the safety of Pilot Transfer Arrangements. The amendments are expected to be adopted at the Maritime Safety Committee (MSC) 109, in autumn this year, with an entry-into-force date as 1 January 2028. There is also a provision of voluntary early implementation for member states.

- PTAs installed on or after 1 January 2028 shall be designed, manufactured, constructed, secured and installed in accordance with the amended performance standards
- PTAs installed before 1 January 2028 shall comply with the requirements no later than the first survey on or after 1 January 2029

Voluntary early implementation

It must be noted that early implementing states should refrain from imposing new requirements before the entry-into-force date for their port state control measures to ships calling at its ports. Towards this direction, a draft MSC circular on voluntary early implementation was finalised, with a view to approval by the Committee.

1. Operational Readiness, Onboard Inspection and Maintenance
Detailed provisions are established for the periodic inspections, maintenance, stowage, care, documentation, records, and replacement criteria to maintain the fitness of pilot ladders, manropes and all associated equipment, including:
 - a. 36 months after the date of manufacture or within 30 months after the date of being placed into service, whichever comes first, pilot ladders and manropes (including spares) must be removed from service, replaced with new and not used for the transfer of personnel, regardless of the frequency of their usage.
 - b. At least one spare compliant pilot ladder and one spare set of compliant manropes shall be carried onboard.
 - c. Repair or replacement of pilot ladder steps or spreader steps is prohibited.
 - d. Instructions shall be supplied by the manufacturers with each pilot ladder, manrope and associated equipment.
2. Stowage of pilot ladders on winch reels
If a pilot ladder is to be stowed on a winch drum, the drum diameter shall be not less than 0.16m and the drum shall be provided with sunken securing points.
3. Training
Personnel responsible for the inspection, maintenance, rigging or operation of any equipment for pilot transfer arrangements are now explicitly required to receive proper onboard familiarisation so that they have the necessary knowledge and skills to perform their assigned duties.
4. Design, manufacture and construction
 - a. Marking: All pilot ladders and manropes shall be permanently marked by the manufacturer with a minimum of required information, to enable identification of each item for survey, inspection and record-keeping.
 - b. Ropes:
 - i. The side ropes of the pilot ladder should be not less than 20mm and not more than 22mm in diameter.
 - ii. Instructions have been developed on the securing arrangements of side ropes above and below each step.
 - c. Securing Arrangements
 - i. The required strength of strong points, shackles and securing ropes is double compared to the existing requirements (required breaking strength increased to 48 kN from 24kN). In this respect, manufacturers are required to provide means of securing a pilot ladder at intermediate lengths to strong points, and a text to this effect will be developed to provide clarity. Documentation of the conformance of the strong points, shackles, and securing ropes shall be maintained onboard and available for inspection purposes.
 - d. Side doors opening

The existing requirement under regulation V/23.5 has been rephrased to read “Ship’s side doors used for the transfer of pilots or other personnel shall not open outwards unless located below the freeboard deck”, to align with the Load Lines Convention requirements.

Conclusions

Although these amendments place additional requirements to the shipowners, they come to address some longstanding issues which could have significant impact on vessels’ operations and, thus, it is BIMCO’s view that shipowners eventually stand to benefit. The most important among them is the guarantee of the safety of all personnel boarding the vessel. Almost equally notable is the fact that vessels and operators will now be alleviated from the uncertainty usually facing with several port authorities and local regulations, often resulting in significant costs of operational delays and off hires. Therefore, potential delays to the ships will be reduced and the cost of procuring a new pilot ladder is minimal when compared to the associated costs and time lost if involved in a boarding ladder-related accident or pilot refuses boarding.

Nevertheless, there is a concern that these new requirements could create a situation where counterfeit or re-used expired ladders are supplied to the vessels. This concern aligns with the already increasing reported cases of marine casualties, where investigation revealed that the failed ladder was a counterfeit. Consequently, it is highly recommended that each pilot and embarkation ladder is inspected with particular attention given to the markings to determine if they might be counterfeit. Pilot and embarkation ladders should be obtained from original equipment manufacturers or their local approved suppliers, while care should be exercised that the product supplied meets the applicable requirements and is accompanied with all necessary certifications.

IMCA annual report highlights inadequate control on confined spaces

Analysis of more than 1,600 vessel inspection reports in year to 1 April this year reveals ongoing safety concerns over confined spaces.

A new report from IMCA has analysed 1,611 standard vessel inspection reports uploaded to IMCA's eCMID (Common Marine Inspection Document) and eMISW (Common Marine Inspection Documents for Small Workboats) database in the previous year.

The eCMID system provides the marine and offshore industry with standardised formats for vessel inspection. Offering a safety management system 'health check', it improves the quality and consistency of inspections, while reducing their frequency through the adoption of commonly recognised processes.

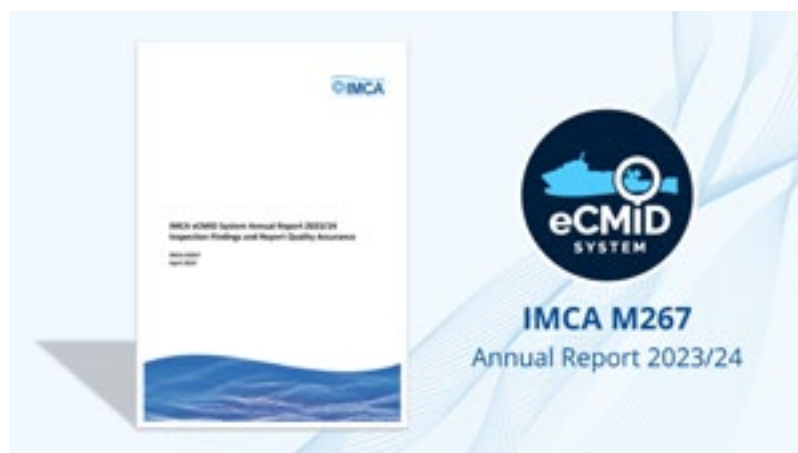
eCMID's analysis found that in the last year

- 7% did not have a technical inspection by the vessel operator.
- 9% did not adequately control enclosed space entry.
- 12% did not inspect the pilot ladder before use.
- 10% did not have procedures on the handling of chemicals and flammable materials.
- 11% did not have cybersecurity measures in place.
- 5% did not carry sufficient medical supplies on board.

Commenting on the findings, Mark Ford, Marine & Quality Manager at IMCA, said: "In last year's report, we highlighted controlled entry into confined spaces as one of the major safety concerns, and we're disappointed to see a similar trend in this year's analysis."

The 53-page report (IMCA M267) is freely available to support the improvement of our sector. As well as detailed analysis of inspection finding by vessel type, it includes relevant IMCA safety flashes, as well as a review of the report quality assurance process.

To read the report go to <https://bit.ly/3y0vtfu>.



BIMCO informs of the dangers of transporting palm kernel shells

According to BIMCO, recent events at the port of Ishinomaki, Japan, involved two workers found unconscious during cargo operations aboard a bulker ship transporting palm kernel shells. While the incident is under investigation by the Japanese Coast Guard to determine any connection between the cargo and the workers' condition, it underscores the importance of understanding the hazards associated with transporting palm kernel shells.

Palm kernel shells are fibrous fragments, typically brownish-yellow, with particle sizes ranging from 5 mm to 40 mm. These shells may be obtained either after the palm oil extraction process or before its commencement.

One significant risk is that palm kernel shells are not listed in the International Maritime Solid Bulk Cargoes (IMSBC) Code, meaning there are no established carriage requirements for their safe transport in bulk. Previous incidents have revealed numerous dangers, including the potential for high methane emissions leading to explosion hazards, self-heating causing oxygen depletion, and the production of carbon monoxide in cargo spaces.

Both methane and carbon monoxide are colorless and odorless gases, posing serious risks of asphyxiation and unconsciousness if inhaled, thereby endangering the safety of crew and personnel entering or working near cargo spaces.

Furthermore, confusion between palm kernel shells and "palm kernel expellers", another by-product of palm oil processing, is common, despite their classification differences under the IMSBC Code. Transporting palm kernel shells in solid bulk form requires a tripartite agreement in accordance with section 1.3 of the IMSBC Code, as they are not listed therein.



Collision between fishing vessel Kirkella and pusher tug Shovette

On 24 June 2022, while alongside at King George Dock, Hull, England, the crew of the UK registered fishing vessel Kirkella lost control of its propulsion system and the vessel collided with the unmanned tug Shovette, which was moored ahead of Kirkella. During the collision Shovette's hull and starboard fuel tank were breached by Kirkella's bulbous bow. The tug partially sank, which resulted in pollution of about 7,000 litres of marine diesel oil being released into the dock. Kirkella was not significantly damaged and there were no injuries.

Safety issues

- The pitch levers for Kirkella's propulsion control system were mismatched between the bridge and engine control room when control was transferred.
- Kirkella's engineer had not checked the pitch lever when control was passed between the bridge and engine room.
- There was no procedure for control changeover.
- The classification society's rules for remote control of engines was not aligned with the international unified requirement

Recommendations

Recommendations (2024/111 and 112) have been made to Det Norske Veritas to: propose to the International Association of Classification Societies that Unified Requirement M43.12 is reviewed to clarify its intent; and inform its customers that the Rolls-Royce Helicon-X3 system might allow remote control station changeover with mismatched levers and suggest that the manufacturer be contacted for advice.

A recommendation (2024/113) has been made to Kongsberg Maritime to issue a service letter to its customers advising that the Rolls-Royce Helicon-X3 system remote control changeover process can allow mismatching of levers resulting in the propelling thrust altering significantly, and advise them of methods of operation and/or rectification should these be requested.

Download the accident report at <https://bit.ly/3Ls8mha>.



UK registered fishing vessel Kirkella collided with tug Shovette



ABS Port State Control Q1 Report 2024 published

ABS has published its Port State Control Report which comes out quarterly, providing information to owners on deficiencies identified on ABS vessels during inspections carried out by the various PSC regimes globally during the First Quarter of 2024.

Top categories for grounds for detention

For period 1 January to 31 March 2024, the top categories for Port State Control (PSC) detentions on ABS vessels in the Paris Memorandum of Understanding (MoU), Tokyo MoU and the United States Coast Guard (USCG) database are the following:

- ISM
- Emergency source of power – Emergency generator
- Fixed fire extinguishing installation
- Lifeboats
- Fire pumps and its pipes
- Fire doors/openings in fire-resisting divisions
- Remote means of control (opening, pumps, ventilation, etc.)
- Machinery spaces
- Evaluation of crew performance (fire drills)
- Rescue boats
- Maintenance of the ship and equipment
- Launching arrangements for rescue boats
- Propulsion main engine
- Auxiliary engine
- Bilge pumping arrangements
- 15 PPM Alarm arrangements

Four hundred and eighty eight (488) total detained vessels in the first quarter per Paris MoU, Tokyo MoU and United States Coast Guard (USCG). Of those detained, only thirty-one (31) vessels were ABS classed vessels.

Download the full document at <https://bit.ly/3VqOzEt>.



Safer Seas Digest 2023 published by the NTSB

The National Transportation Safety Board (NTSB) has released its Safer Seas Digest 2023, highlighting the most important lessons learned from 31 maritime tragedies that took place in 2023 involving capsizings, contact, collisions, fires, flooding and groundings.



Among the investigations, the most sobering investigations NTSB conducted involve the loss of human life. In 2023, they completed their investigation of the fatal collision between the Coast Guard cutter Winslow Griesser and the centre-console boat Desakata, which took the life of one Desakata crewmember and seriously injured another.

"We found that neither vessel's crew maintained a proper lookout, and we issued a Safety Alert encouraging small-vessel operators to improve their vessels' detectability," said the NTSB.

According to NTSB, in 2023 the most prominent issues included the following:

- Small vessel detection
- Effective communication, including the proper reporting of chart changes and hazards
- Proactive equipment inspection
- Timely hull maintenance and repair
- Proper maintenance and repair of equipment and machinery
- Fatigue
- Anticipation of fire hazards, including those presented by lithium-ion batteries
- Firefighting training
- Effective watchkeeping
- Non-operational cell phone use
- Lack of appropriate planning
- Excessive speed during bow-to-bow harbour-assist operations
- Reporting potential anchor strikes

Lessons learned

1 Detecting Small Vessels

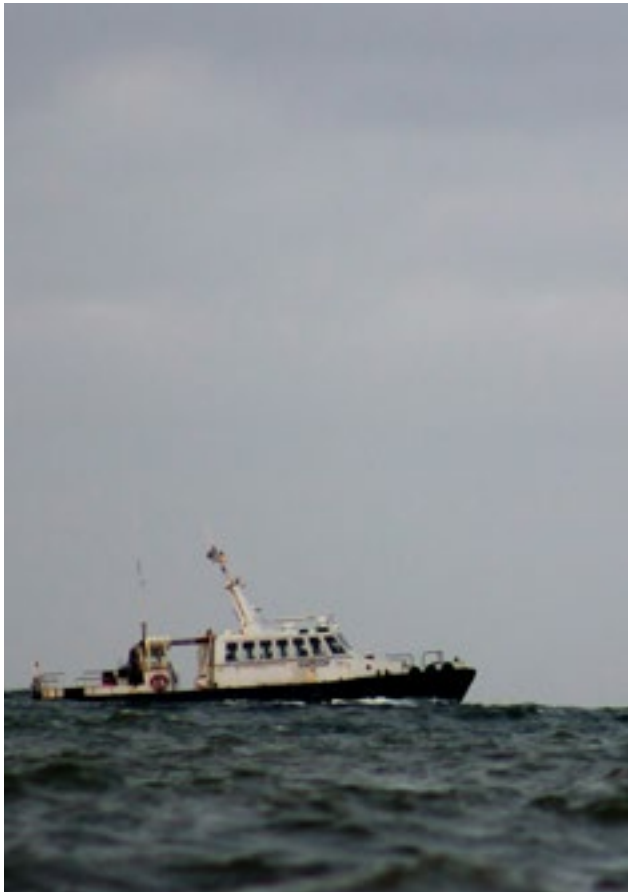
Sometimes, mariners on board larger vessels cannot see small recreational or commercial vessels, increasing the risk of a collision. Fitting small vessels with equipment such as radar reflectors or AIS improves the opportunity for vessels with radar, when combined with a proper visual lookout, to detect these smaller vessels and take action to avoid a collision.

2 Effectively Communicating

Effective communication between firefighting teams and a unified command or between mariners making passing arrangements is critical. Clear communication by the most prudent method, whether by radio or face-to-face, can be an effective measure in reducing damage or averting a casualty. Additionally, repeating orders or passing arrangements can help ensure everyone is on the same page.

3 Proactively Inspecting Equipment

Inspection programs can identify deficiencies before equipment fails. For example, conducting periodic inspections is prudent for equipment at high risk for corrosion - such as pierside bollards or wire ropes used on vessels - especially when their location is in or near saltwater environments, which can significantly affect service life. It is also good practice to develop a means to periodically inspect equipment and vessel systems that are difficult to access, such as those that run through tight spaces or are located near structures, other equipment, or materials that obstruct direct observation.



4 Mitigating Fatigue

Crew fatigue can increase the likelihood of a casualty, as it impacts all aspects of human performance. Inadequate sleep can lead to poor decision-making, decreased alertness, and slower reaction time. Mariners should understand the performance effects of sleep loss and recognize the dangers of fatigue. Company operational policies and requirements should incorporate and follow fatigue management best practices to ensure that crewmembers receive enough rest to adequately perform navigational, lookout, engineering, and other watchstander duties. Companies and vessel captains should also actively monitor watch schedules and any off-watch work performed by their crews to ensure adherence to fatigue mitigation policies. Further, they should adjust watch schedules to prevent crew fatigue.

5 Anticipating Fire Hazards

Fire is a serious threat - and, unfortunately, common occurrence - on board vessels. Fires can cause significant damage to a vessel or its cargo, equipment, and personnel. It is critical to ensure that combustible materials such as cardboard boxes or oily rags are properly stored (or disposed of). In addition, crewmembers involved in hot work should be trained to identify potential fire hazards, such as combustibles, and take action to remove or protect them from hot work.

6 Improving Firefighting Training

Firefighters or crews untrained in the complexities of managing fires on vessels can increase the chance that fires will damage or destroy vessels, or even lead to injuries or deaths. To prevent engine room fires and ensure they are effectively contained, operators should provide mariners realistic scenario-based training, including training that covers engine room emergencies. This training should also cover procedures for effectively shutting down machinery, fuel oil, lube oil, and ventilation systems, as well as boundary monitoring. In addition, because mariners may need to work with shoreside firefighters to extinguish vessel fires, it is important to educate land based firefighting teams that potentially respond to shipboard fires on marine vessel firefighting tactics, so they can avoid risks such as breaking a fire boundary or releasing accumulated firefighting water by opening watertight doors.

7 Conducting Timely Hull Maintenance and Repair

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 require the repair of corrosion issues in a timely manner by permanent means. Periodic out-of-water examinations and hull gauging by qualified individuals such as a marine inspectors or surveyors can help determine the material condition of the vessel's hull and identify areas of corrosion and fatigue.

8 Maintaining an Effective Watch

Regulations and long-standing prudent maritime practice require a proper lookout for safe navigation. Maintaining a proper lookout, by sight and sound, is a fundamental rule of the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS) for vessels, regardless of their size or activity, and is essential in determining the risk of collision. Operators and crews should ensure that vessel bridge teams are staffed with certificated/credentialed mariners who are familiar with all bridge navigation equipment and able to independently take immediate action when serving as lookout. In addition, repetitive operations, such as ferry transits - back and forth on the same route - require operators to sustain a high level of vigilance to prevent complacency. To combat complacency, operators should comply with procedures, such as operating checklists, that are in place to prevent single points of failure, and companies should train personnel on the importance of following procedures.

9 Avoiding Nonoperational Cell Phone Use

Using cell phones and other personal electronic devices has been demonstrated to be visually, manually, and cognitively distracting. Non-operational use of cell phones should never interfere with the primary task of a watchstander to maintain a proper lookout; personnel should follow established protocols regarding cell phone use.

10 Planning Appropriately

Lack of planning can lead to a disaster on the water. All operations—no matter how routine—should be adequately planned and all risks assessed. Planning can help prevent mishaps related to unforeseen circumstances. Voyage plans should include every phase of the voyage—from the vessel's starting port to its end port—including leaving the dock and mooring. The plans should account for any hazards, such as bridges, that pose a risk to vessels and tows with high air drafts.

11 Properly Maintaining Vessel Equipment and Machinery

Many casualties can be traced back to imprecise, incomplete, incorrect, or improper maintenance practices. Vessel crews and equipment manufacturer technicians should follow manufacturer assembly procedures and guidance and ensure correct replacement parts are installed. Additionally, vessel operators and crews should identify possible hazards or risks to maintenance being conducted, such as the effect of ambient conditions on machinery or how working on one piece of equipment may affect other equipment.

12 Reporting Chart Changes and Hazards

Accurate and up-to-date navigation charts are critical for crews to ensure the safe transit of a vessel while underway. Ports and terminals should immediately report significant modifications to port or terminal configurations to the appropriate hydrographic authority so charts can be updated and the changes made readily available to chart users. In addition to marking hazards on their own charts and charting software, mariners can report issues (errors or omissions) with NOAA's nautical charts and/or Coast Pilot through the Office of Coast Survey.

13 Avoiding Excessive Speed during Bow-to-bow Harbor-assist Operations

The risk of a casualty during bow-to-bow harbour assist operations with ASD tugboats increases with increasing speed. Hydrodynamic forces around an assisted vessel's bow increase exponentially with speed, while the amount of reserve propulsion power available to the tugboat operator decreases. Therefore, owners and operators of ASD tugboats that perform bow-to-bow harbour assist operations should set speed limits for these manoeuvres. Additionally, tugboat operators should communicate pre-determined speed limits to pilots and ship masters in command of the vessels that they are assisting before engaging in these manoeuvres.

14 Preventing Vessel Damage from the Risk of Thermal Runaway of Lithium-ion Batteries

The risk of fire from lithium-ion batteries is a growing concern as their use becomes more prevalent in handheld radios and other devices. A lithium-ion battery cell - if damaged, shorted, overheated, defective, or overcharged - can spontaneously experience a thermal runaway, a chemical reaction that can cause the cell to ignite and explode. A cell that explodes can be propelled from its initial position within a battery and ignite combustible materials on a vessel. Due to the potential for rapid expansion of a lithium-ion battery fire, detection, containment, and extinguishment are essential to prevent damage to a vessel.

15 Reporting Potential Damage from Dragging Anchors

Underwater pipelines or other utilities can become damaged if anchorages are located too close and vessels drag anchor. Vessel crews should be aware of nearby underwater hazards while anchored and notify the appropriate authorities of an anchor-dragging event.

Download the PDF digest in at <https://bit.ly/4bGVfTS>



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IIMS AGM, Conference and Dinner 2024 Report

By Frances Birkett

In the first week of June, attendees from around the world gathered for this year's IIMS AGM, Conference and Dinner.

The Dinner

Held at the beautiful Chilworth Manor Hotel near Southampton, the dinner was a chance for professionals from the marine surveying industry to meet and network. Incoming President of the Institute, Captain Ruchin Dayal, addressed delegates that evening and announced his chosen charity the Sailors' Society.

He said, "They are a recognised international organisation worthy of our collective support. Sailors' Society is a global maritime welfare charity supporting seafarers and their families in need, day and night, 365 days a year. I hope over the course of the next two years you might choose to support the charity by donating what you can to a deserving cause."

Of his support, Director of Communications of Sailors' Society Melanie Warman, said, "Our support and services are needed more than ever by seafarers and their families who may be caught up in conflicts, desperately in need of our emergency welfare grants or turning to our 24/7 helpline and Crisis Response Network for assistance."

"This is why support from organisations like IIMS is really important and we are so grateful to Captain Ruchin Dayal for selecting Sailors' Society as his chosen charity."

Annual General Meeting

CEO Mike Schwarz started the meeting by giving an overview of the Institute's activities over the last year. He began by saying, "As some of you know I celebrated 10 years in my role back in January. I look back over the past decade with a sense of pride, for we have come a long way together. I believe the one thing that underpins everything that IIMS has tried to achieve is building a powerful network of professional surveyors, and as an organisation we continue to provide first class training opportunities."

During the meeting, it was announced the Institute is in the process of trying to gain ISO 9001 accreditation — a globally recognised standard for quality management.

Another update revealed IIMS has now launched brand new regional websites for Asia and the USA as well as rebranding its six existing branch websites with a new design including Australia, Canada, India, New Zealand, Nigeria and the UAE.

Online voting prior to the AGM on three matters were disclosed and can be seen below.

1. Are you in favour of re-electing the existing IIMS Management Board en-bloc?

- In favour: **96**
- Not in favour: **4**
- Abstain: **4**

2. Are you in favour of the appointment of David Pestridge as Deputy Vice President?

- In favour: **92**
- Not in favour: **2**
- Abstain: **10**

3. The IIMS Management Board proposes and recommends increasing the membership fees by the sum of 5% across all areas in 2025.

- I approve: **61**
- I do not approve: **31**
- Abstain: **12**



Capt. Ruchin Dayal addressing dinner guests.



Above: Melanie Warman talks passionately about Sailors' Society.

Below: Immediate Past President Peter Broad (left) handing the medal to Capt. Ruchin Dayal.



Outgoing President Peter Broad took a moment to comment on the final result, saying, "Members are getting great value for money. When they are accepted as members, it's still a valuable credit to them, and a 5% increase keeps us below other professional organisations."

Of his new appointment, David said, "I am deeply honoured to have been nominated and then voted in as Deputy Vice President. I've been a member of the IIMS for 16 years — a full-time practising surveyor in that time and I've been a board member for five years. I'm very keen to help bring on the next generation. Education is a big part of what sets the IIMS apart from most other surveyor organisations in the UK. We take training seriously. We take mentoring seriously. And we take developing the skills of our surveyors seriously. I see this very much as a part of my role going forwards, so thank you again to those of you who voted."

Peter Broad parted from his role, presenting the Institute with a golden model of a Korean Turtle Ship, which was the first ironclad warship in the world (1592) and shaped like a turtle.

As the new incoming President, Capt Ruchin Dayal addressed IIMS members for the first time, saying, "Thank you very much, I'm deeply honoured by the trust you've placed in me. Absolutely humbled but enthusiastic about taking up the presidency. I will surely try my best to render service and not let you all down."

"I want to thank Peter for the last two years. He has put in dedicated, interactive and energetic contributions to the Institute and has taken the ISO bull by the horns. Perhaps the most inspiring action was taking the initiative to write personally to every new member."

"I want to take this opportunity to thank all the head office staff, the Board of directors and the members. Over the next two years I will work with each one of you and I'm looking forward to it."

The event concluded with the virtual presentations of two membership awards. Rory Marshall has been awarded a fellowship and Zennon Cheng was awarded an honorary fellowship for their significant contributions to the Institute and surveying profession.

Conference

Following a welcome from Captain Ruchin Dayal and an update by Mike Schwarz, the morning included a presentation and demonstration by Professor John Tyrer and Simon Dickinson on Understanding the realms of shearography – practical and theory. Describing how the NDT technique works — including a time when a fallen glove was discovered during an inspection — delegates were given the opportunity to see the technology at work in person.

Conference attendees were then split in two after an excellent buffet lunch provided by the Axis Conference Centre.

In the afternoon, Julian Smith, Cayman Registry, started the yacht and small craft session with a useful update on the amendments to the Large Yacht Code, which take effect this month.

Karen Brain of Matrix Insurance Ltd, returned to the conference to give an insightful discussion on general aspects of marine insurance, including the importance of P&I cover.

The session ended with a live interview with the remarkable nonagenarian who is Ian Nicholson, the Institute's oldest active surveying member. He spoke of his remarkable career, which started with an apprenticeship during World War II to leading European surveyor and yacht designer Fred Parker before going on to share practical surveying tips and advice.

Meanwhile, in the commercial ship session, Steve Warner gave an in-depth presentation and review of Cygnus Thickness Gauges. This included showcasing the new Cygnus Underwater gauge and Cygnus 1 Ex gauge.

Inventory management risk in the supply chain was presented by Josh Finch, Logistics Risk Manager, TT Club, which shared the mutual insurer's knowledge, experience points of good practice.

Last but not least, the session was concluded by board member Captain Zarir Irani whose presentation topic explored the growth and ethics of marine surveying business.



Peter Broad proudly displaying one of his leaving gifts



Peter Broad presenting the Korean Turtle Ship to IIMS CEO Mike Schwarz.

Below: Close up of the Korean Turtle Ship.



MEMBER News

IIMS AGM, Conference and Dinner 2024 in photos...



Capt. Ruchin Dayal & Melanie Warman.



Capt. Ruchin Dayal and his esteemed dinner guests.



The two Nobles... Fraser (left) and John (right)... share a joke.



Peter Broad opens one of his gifts.



Martin Pittilo (centre) flanked by Capt. Zarir Irani (left) and Capt. Allen Brink (right).



Capt. Ruchin Dayal in reflective mood.



Peter Broad and Mike Schwarz presenting the AGM.



John Tyrer presents the theory of shearography.



David Pestridge addresses the AGM attendees.



Julian Smith,
Cayman Registry.



Capt. Zarir Irani.

Following the publication in a recent story in the IIMS July news bulletin entitled

The Baltimore Bridge Black Swan Event, IIMS received an email as follows:

"Just reading the latest news bulletin and the Baltimore Bridge Black Swan Event article. I believe the article first appeared in the RINA newsletter and Maritime Executive.

Having read it twice, I contacted Chris Boyd, Chief Executive of RINA, and he agreed with me that the reference to the MWS (marine warranty surveyor) is incorrect in that it is independent marine surveyors appointed on behalf of underwriters, P&I clubs and so on, that carry out this work, considered to be reactive surveys. The proactive surveys which MWS carries out are to do with the design and construction of larger projects.

In this case the design of the vessel had little to do with the incident. It was a failure of technology. The bridge problem was one of lack of sufficient material around the bridge supports to prevent a vessel from hitting the bridge structure, the realm of the civil engineers."

Mike Wall

Richard Watson writes from Antigua following the publication of the article in edition 108 of **The Report** magazine entitled **Advancements in Marine Composite Inspection through Laser Speckle Pattern Shearing interferometry and the need to introduce qualified technicians to undertake the work.**

"As you know I have an interest in how best to survey composites, in particular carbon composites. This is an interesting article; however, laser thermography and shearography have been around for decades and the reason they are not more widely used is the expense of the equipment, not the lack of training.

However, that is not my concern. The author is wrong to cite the loss of the Cheeki Rafiki as the reason to establish yet another group of 'experts'. Cheeki Rafiki departed Antigua not Newfoundland and her loss was due to failed keel bolts not delamination of the hull. She had been grounded previously and a simple torque test of the keel bolts would have discovered they had already snapped without the need for expensive and specialist NDT.

I gave evidence at the request of the MCA in the manslaughter trial of the operator of Cheeki Rafiki. He was found not guilty as sadly the judge determined that it was ultimately the skipper's decision to go to sea in an unsafe vessel."

IIMS President meets Sailors' Society in Goa

**By Capt Ruchin Dayal, IIMS President
- Master Mariner (MMI), FIIMS (UK),
AMS – SAMS (USA), MAIMS (Australia),
AFNI (London)**

Recently I was delighted to meet with Captain Manoj Joy and Johan Smith from Sailors' Society, my chosen charity as President of the IIMS, for the next two years, at my offices in Goa. Sailors' Society is a vital organization that provides comprehensive support to seafarers and their families around the world. Their work encompasses a wide range of services, from emotional and practical assistance to crisis response, Chaplaincy support, and so on. Captain Manoj, their representative in India, and Johan, Head of Wellness from South Africa, presented an overview of their work, highlighting their commitment to seafarers' well-being.

We discussed the challenges faced by seafarers, such as the case of a Burmese fisherman, who managed to escape from the dreaded Somalian pirates, rescued by the Indian Navy but stranded due to lacking documentation and language barriers, as depicted in a documentary produced by Captain Manoj titled "A Man Without a Nation". This is available on YouTube. This documentary sheds light on the plight of seafarers and the crucial role played by organizations like Sailors' Society in providing assistance in such cases.

Captain Manoj shared several recent cases where Sailors' Society has provided invaluable support to cadets and other ship staff who have experienced bullying and harassment, including sexual harassment. He highlighted that victims are often hesitant to disclose their ordeal due to cultural norms and traditions, underscoring the importance of a safe and confidential space for them to seek help. Sailors' Society not only offers immediate support but also provides long-term assistance, reassuring the affected individuals that they will be supported throughout their professional lives.

The rise of modern technology and the trend towards shorter contracts have undoubtedly reshaped the social landscape at sea. While advancements in communication technology like video calls allow seafarers to have more face-to-face interaction with loved ones on shore, leisure time on board is often



Capt Manoj Joy (left) and Johan Smith (right) from Sailors' Society with Capt Ruchin Dayal in the eDOT office in Goa, India

dedicated to staying connected with family and friends back home. This can be a positive development, as it helps seafarers maintain strong social connections despite the physical distance. However, it can also be challenging to develop strong bonds with fellow crewmates during short contracts. The transient nature of crews, coupled with the ease of staying connected remotely, can make it difficult to build the deep camaraderie that traditionally served as a buffer against loneliness at sea. Ironically, despite all apparent positive conditions, seafarers face loneliness and depression like never before. The Sailors' Society recognizes these challenges and offers programs and resources to help seafarers build connections and combat loneliness. The importance of empathy towards foreign seafarers in India was emphasized, along with the need for maritime associations to be more proactive in promoting seafarers' wellness. We concluded by discussing potential collaborations, including incorporating Sailors' Society information into eDOT's mental wellbeing videos and planning a future event for seafarers and their families in Goa.

*Will you support the IIMS
President's chosen
charity, please?*



At the
IIMS AGM,
Capt Ruchin
Dayal announced
the Sailors' Society
as his chosen charity over

the next two years of his presidency. Ruchin said, "I was delighted to meet with Captain Manoj Joy and Johan Smith from Sailors' Society. Sailors' Society is a vital organization that provides comprehensive support to seafarers and their families around the world. Their work encompasses a wide range of services, from emotional and practical assistance to crisis response and Chaplaincy support. I encourage you to support this most worthwhile of causes."

*To make a donation (anonymously if you wish) please visit
the Just Giving page at <https://bit.ly/463uR5y>.*

IIMS marine surveying training receives international seal of approval

By Frances Birkett

The International Institute of Marine Surveying (IIMS) has been awarded the globally recognised ISO 9001 standard for quality management of its training services.

ISO 9001 is the most widely used quality management standard with more than one million certificates issued to organisations around the world. There are seven guiding principles of ISO 9001, which are customer focus, leadership, engagement of people, process approach, improvement, evidence-based decision making and relationship management.

IIMS earned the standard following an external audit carried out by DNV. Specifically, it has been awarded for the organisation's training in marine surveying. This covers the Institute's membership services, award-winning education and professional qualification distance learning programmes, training seminars and conferences, and publications, including its collection of handy guides and the award-nominated, quarterly Report Magazine.

This achievement proves and underlines the Institute's commitment to quality, customer satisfaction and continual improvement.

IIMS CEO Mike Schwarz said, "Over the years, IIMS has vetted, assessed and accredited various people for many reasons, so it seemed highly appropriate that as an organisation we too should put ourselves up for external scrutiny. This excellent news brings an end to two years of hard work put in to meet the standard. Of course, it is really only the start!

"Special thanks are due to my close colleague, Camella Robertson, who as well as managing her day-to-day work as Membership Secretary, took up the role of Quality Manager which meant creating the framework and documentation to prepare us for audit.

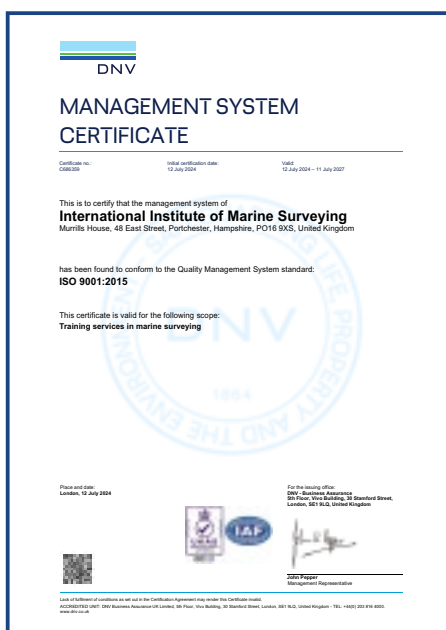


Andy Wilson, Area Manager - DNV UK Certification Division - presents Camella Robertson and Mike Schwarz with IIMS' certificate for conforming to the Quality Management System standard.

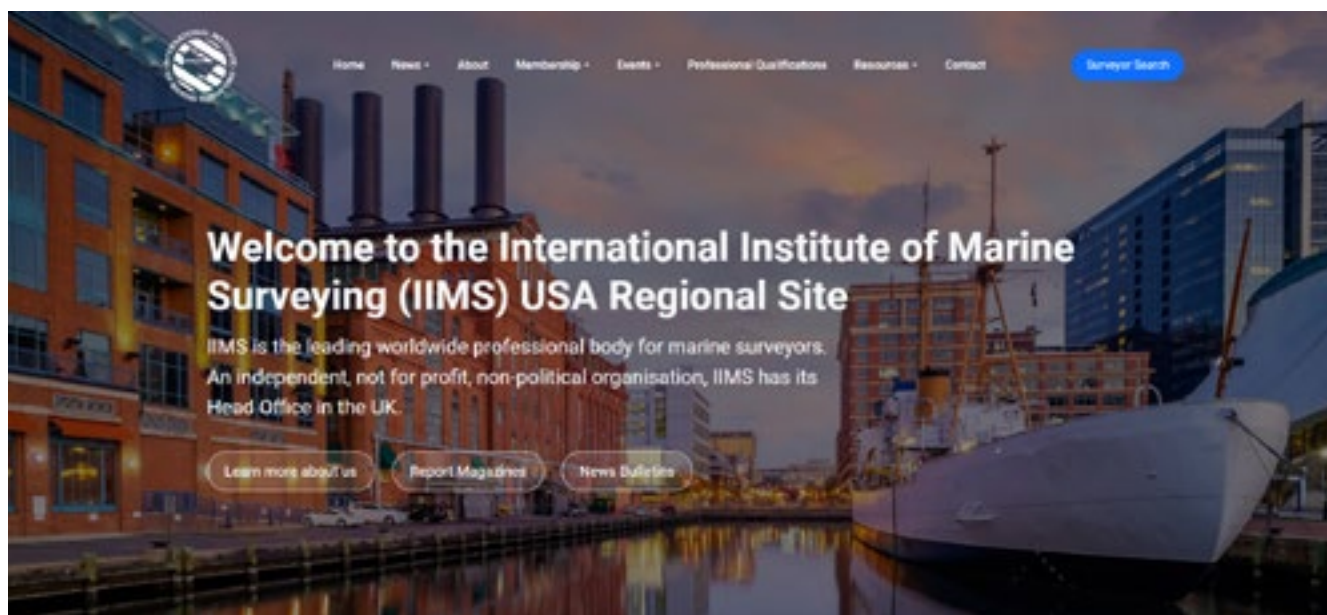
"Our Immediate Past President, Peter Broad, made ISO 9001 one of his key objectives and championed it during his term in office."

Commenting on the ISO 9001 certification, Peter Broad said, "This is an important milestone in the history of IIMS. I am delighted that the foremost global professional body for the marine surveying profession should achieve this meaningful internationally recognised standard, certified by one of the top Marine Quality Assurance organisations. My thanks to the IIMS head office team for making this possible."

Finally, Andy Wilson said, "On behalf of all of us within Business Assurance here at DNV I want to congratulate the International Institute of Marine Surveying for achieving their ISO 9001 certification. In doing so they have demonstrated their ongoing commitment to pursuing a customer centric and continuous improvement to their services. We look forward to supporting them as they continue on their certification journey with us."



IIMS branch and regional websites given a boost



IIMS' new regional websites for Asia and the USA are now live! We've also spruced up our existing Australia, Canada, India, New Zealand, Nigeria and the UAE branch and regional websites too.

The new design features large splash homepage images that are synonymous with the countries they represent. Our aim is to populate the individual sites with local news stories of relevance as well as international ones too. In addition, the team is working on an enhanced local surveyor search as well as the existing international search facility.

Check our new and improved IIMS regional websites here:

- IIMS Asia – www.iimsasia.asia
- IIMS Australia – www.iimsaustralia.com.au
- IIMS Canada – www.iimscanada.ca
- IIMS India – www.iimsindia.in
- IIMS New Zealand – www.iimsnewzealand.co.nz
- IIMS Nigeria – www.iimsnigeria.com
- IIMS UAE – www.iimsuae.org
- IIMS USA – www.iimsusa.com

Recent new IIMS members and upgrades

Full members

Erefagha Robert Derri	MIIMS	Nigeria
Mohamad Arief Lucky Dharmanto	MIIMS	Indonesia
Nico Grove	MIIMS	British Virgin Islands
Kenneth Hodgins	MIIMS	US Virgin Islands

Associate members

Marc Pearson	AssocIIMS	USA
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Affiliate members

Ryan Chetwynd	AffiliIIMS	Canada
Anthony Clynick	AffiliIIMS	Spain
Steven Hutchinson	AffiliIIMS	UK
Sai Krishna Murari Kakita	AffiliIIMS	UK

Graduate members

Jay Owen	GradIIMS	New Zealand
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IIMS congratulates Jay Owen for completing his studies in the IIMS Professional Qualification in Yacht and Small Craft Marine Surveying.



New handy guide published by IIMS: What a marine surveyor needs to know about yacht spars

The Institute is pleased to announce the publication of the 'What a marine surveyor needs to know about yacht spars' handy guide, authored by rig and mast expert Nick Parkyn. This brings the collection of handy guides to thirty since they were launched nearly a decade ago.

About the handy guide

A spar is a pole of wood, metal, or lightweight materials, such as carbon fibre, used in the rigging of a sailing vessel to carry or support its sail. These include yards, booms, and masts, which serve both to deploy sail and resist compressive and bending forces as well as the bowsprit and spinnaker pole.

Traditionally yacht masts and spars were hollow or solid and built from wood, but they have significantly evolved in recent years:

- First revolution in mast and spar manufacturing occurred around 1930 when for the first-time aluminium masts, instead of the traditional wooden masts, were used on the large J-class boats competing for the America's Cup.
- Wooden masts and spars were "re-invented" using wood/epoxy in the late 1960s.
- Second revolution in mast manufacturing occurred around 1990 when the first carbon-fibre mast and spars appeared on racing yachts.

Author Nicholas Parkyn puts his considerable experience in marine surveying and his specialist knowledge about rigs and masts to good use in this handy guide as he considers the latest yacht spar technology and the challenges spars present for marine surveyors. He has an extensive background in the information technology arena and is keeping a keen eye on the future developments surrounding AI (artificial intelligence).

The 'What a marine surveyor needs to know about yacht spars' handy guide is available in paperback at £35 plus post and packaging or in eReader pdf format at £32. For more details and to purchase a copy go to <https://bit.ly/3xtUqQj>.



Another new face at IIMS HQ

Remember how we said in our last magazine the recruitment process was now complete? Well, we spoke too soon as IIMS has welcomed a new team member. Erin Kelsey has joined us as our Certifying Authority Support Administrator.

This is a new position, which was created to support David Parsons. Due to strong growth in the CA department, led by prolific growth in tonnage processing, we realised David needed more support in this area. In time Erin will start to learn the coding documentation and process so she can understudy David. In related news, David is now our Certifying Authority Operations Executive.

Erin comes to the organisation with a great deal of experience in business administration working for online retailers.

When not at work Erin is a keen traveller both domestically and abroad with her boyfriend. She is also very creative and enjoys knitting and crochet.

Zennon Cheng



Rory Marshall



IIMS announces the appointment of two new Fellows

At last month's AGM held on 4 June at the Axis Centre near Southampton, IIMS announced two new Fellowships.

Based in Hong Kong, Zennon Cheng, a long-standing member of the Institute, is a name that will be known by many. He has performed the role as Regional Director for IIMS in Hong Kong and China for many years, but recently confirmed his intention to retire at the end of June. The Institute wanted to express their gratitude to Zennon for all he has done for the benefit of the organisation by appointing him as an Honorary Fellow.

Rory Marshall, who is located in Italy, has also been a member of IIMS for a number of years. He has been appointed as a Fellow of the Institute in recognition of his extensive experience and specialist knowledge of the superyacht coatings industry. As a leading player in this sector, he has been of great assistance to IIMS in developing and delivering the Registered Marine Coatings Inspector standard and course over recent years. And more recently in the last year, Rory (in conjunction with Ken Hickling HonFIIMS and the AkzoNobel team) has assembled and started to present the new Yacht Coatings Technical Insight programme in Europe.

Obituary: Christopher (Chris) Moody

Somewhat belatedly, news has reached IIMS Head Office of the passing of Chris Moody late last year. It was known that Chris had been in failing health for a number of years, but his death was not discovered until some months later.

A highly experienced yacht and small craft surveyor, he played a key role as Deputy Chairman of the Institute's Certifying Authority. As part of that, he performed the vital function as an MCA coding and tonnage scrutineer.

In 2016, Chris was the winner of the 'Customer Focus Award' at the celebratory IIMS 25th Anniversary Conference, held at Regent's University in London for "someone who routinely puts customer service first without a second thought".

Mike Schwarz, IIMS CEO, recalls the event clearly when he said: "It was a pleasure for us to present such an award to Chris and who ever said that grown men don't cry was lying. He was hugely moved and humbled by the whole presentation ceremony. I enjoyed spending time in Chris' company, and he was a valuable asset to IIMS for many years. He was a likeable and personable man."

Chris Moody said, "This is a very proud and humble moment. I am truly honoured to receive this prestigious award. This will keep me focussed on the goal after a difficult year."



Chris was pictured receiving his award by Sir Alan Massey, the Chief Executive Officer of the UK Maritime & Coastguard Agency at the time.

In 2022, Chris Moody was given an Honorary Membership for his services to the Institute and his commitment to the yacht and small craft industry over many years. Chris, who was Deputy Chairman of the Certifying Authority, scrutineered numerous tonnage measurement surveys and coding surveys over many years. A well deserved recognition of his work as a marine surveyor and his continuous contribution to IIMS.



Chris was pictured being handed his award by Peter Broad, IIMS President at the time.

DOWNLOAD THE 2023 COMPENDIUM AT

<https://bit.ly/48svS7b>



OR READ IT IN EREADER FORMAT AT

<https://bit.ly/4apshlN>

New vessels review



Sialia begins construction of first electric sportsboat

Poland's Sialia Yachts has commenced construction of its first electric sportsboat, the Sialia 45 Sport. Penned by Denis Popov Design Studio as the perfect electric day cruiser, the 45ft yacht does not compromise on range, speed, or luxury. The first carbon model is being built in Poland, a country with a long heritage of maritime craftsmanship and expertise in high-performance carbon designs. Constructed from lightweight carbon, hull #1 will be equipped with a powertrain boasting 2 x 300kW engines and a 500kWh battery for top speeds exceeding 44kt and a cruising range of 124Nm.



New BRIX Marine LandingCat is en route to Alaska

Following its launch by Port Angeles, Wash., based BRIX Marine, the 4615-HTC LandingCat OMC is now en route to serve the Chenega community in Alaska. There it is set to become a versatile construction workhorse for Prince William Sound, capable of hauling freight and equipment to remote locations. The 4615-HTC LandingCat is constructed with 5086 alloy aluminum hull skins and 5052 alloy aluminum interior transverse frames. Its catamaran hull form, certified by the USCG Builder's Certification, provides stability and adaptability for various maritime environments. The vessel's propulsion system includes quad Yamaha 450HP outboard engines, designed to ensure efficient performance.



Sunreef Yachts adds new superyacht model to its Eco series

Sunreef Yachts has launched a new model to add to its eco series – the 35m (115ft) Sunreef 35M Eco sailing cat superyacht. After the Sunreef 43M Eco, the 35M is the largest model in its Eco sail range. Sunreef claims the 35M Eco model "reinvents the superyacht experience". The catamaran offers zero emission operation, being fully autonomous and is very quiet when running.

Yonca shipyard releases images of 'beguiling' Mishi 88

Vacuum infused construction is behind the latest offering from Turkey's Yonca shipyard. It's built a carbon fibre hull for the Mishi 88, a 27-metre super-sailing-yacht. The beguiling elements mentioned above include a generous sail plan which should help the Mishi 88 reach speeds of 10 knots and more. The mainsail covers 167 square metres, as does the self-tacking jib, and there is the option of in-boom furling. Under power, the yacht is capable of a maximum 11.5 knots. At the 8-knot cruising speed, its range exceeds 1,000 nautical miles – more than enough to avoid a storm or run for shelter – says the company.



Archipelago Yachts unveils new 80ft explorer vessel

UK powercat builder Archipelago Yachts has launched the Archipelago 80, a 24m explorer yacht built upon a Chartwell Marine hull form used extensively in the offshore wind industry.

Created to be a 'go-anywhere, do-anything' vessel, combined with the ability to be owner-operated, the Archipelago 80 has a fuel capacity of up to 20,000 litres and a payload capacity of 16 tonnes. It is able to travel vast distances with ease and comfort, combined with a performance of up to 30kt.



Wheeler launches 55ft wooden hull

Wheeler Yachts is out with its latest model, the Wheeler 55. The handcrafted, cold-moulded wooden vessel using all-African mahogany, with Douglas fir structural elements and teak decks, "merges classic elegance with cutting-edge technology to redefine luxury yachting," a company press release reads.

Powered by 850hp i6 MAN engines, with the option to upgrade to MAN V8-1000 engines, and twin straight shaft propellers, the 55 will cruise at 25kt. Features like the synchronised joystick controls with bow and stern thrusters ensure easy docking, while the Seakeeper gyro stabilizer and Zipwake systems provide a smooth and stable ride.



New vessels review



Marian Boats ABT Sportsline collaboration: the M 800-R

The new M 800-R from Marian Boats is the latest collaboration of an electric boat manufacturer with a partner from the high end automotive world – in this case famed tuning provider ABT Sportsline.

On the performance side, it comes with a 250 kW Next-Gen-E motor – 50 kiloWatts larger than that in the Spyder. The 250 kW rating is for continuous power. A peak power of 450 kW (610 hp) is reached in the 'ABT Mode' that activates all water pumps, increases drivetrain cooling and enables a top speed of 85 kilometres per hour: 53 mph/46 knots.

Firefighting and rescue landing craft delivered to Thai operator

Ocean Marina Jomtien, a marina resort complex based in eastern Thailand's Chonburi province, has taken delivery of a new aluminium workboat built by Thai/Australian shipbuilder SeaCat Ships. Named Ocean Angel, the craft will be used on duties such as towing, firefighting, sewage pump-out, search and rescue (SAR), buoy and marker handling, and general support for marina activities.

The workboat has an LOA of 9.6 metres (31.4 feet), a beam of 3.5 metres (11.4 feet), a draught of only 0.4 metres (1.3 feet), a displacement of three tonnes (2.95 tons), and capacity for up to 2.5 tonnes (2.46 tons) of assorted payloads. Also fitted are a firefighting pump with hoses and specialised equipment for facilitating the pump-out of blackwater tanks from other boats berthed at the marina.



Photo credit: SeaCat Ships

First Admiral Quaranta motor yacht sold

The Italian Sea Group (TISG) has sold the first Admiral Quaranta motor yacht after the unveiling of the new series a few months ago. The project, developed in collaboration between the Monaco-based studio The A Group and The Italian Sea Group Centro Stile, marks the debut of the 40-metre superyacht range within the Admiral fleet. "The Admiral Quaranta yacht was made possible thanks to the perfect synergy found with The A Group, to offer a 40-metre yacht that encompasses typical layout and comfort features usually only found on much larger yachts," says Giovanni Costantino, founder and CEO of The Italian Sea Group.



New Pershing GTX80 latest to join the stable

Pershing has extended its GTX series with the new Pershing GTX80. With an overall length under 24 metres and a beam of 5.8 metres, it is the result of collaboration between the Ferretti Group Product Strategy Committee led by Piero Ferrari, Vallicelli Design, and the Group's Engineering Department. Equipped with three 1,000 mhp VOLVO PENTA D13 IPS1350 engines, Pershing GTX80 reaches a top speed of 34 knots (preliminary data) and a cruising speed of 28 knots.



New Marine Rescue Brunswick and Trial Bay vessels ace sea trials

Two new Marine Rescue NSW replacement vessels have undergone successful sea trials at Yamba ahead of going into service over the coming weeks.

Marine Rescue NSW Senior Manager Fleet Kelvin Parkin said the new Brunswick 30 and Trial Bay 30 rescue vessels were put through their paces off Yamba. "Their performance was excellent. They turned, handled and drove beautifully. Trial Bay 30 and Brunswick 30 are outstanding rescue vessels," he said.



New BR30. Photo credit Marine Rescue NSW

New vessels review



Image credit: Houlder

Houlder designs a 10,000 cubic meter methanol bunkering vessel

London-headquartered design and engineering consultancy Houlder has unveiled a design for a 10,000-cubic-meter methanol bunkering vessel. The methanol bunkering vessel design includes semi-automated crane systems for supplying methanol to other ships of a wide size range, including cruise and large container vessels. Houlder says the design marks a key milestone in the development of methanol infrastructure and is a strategic step towards wider alternative fuel bunkering.



Valhalla Boatworks unveils epic 'V-55 Sport'

Valhalla Boatworks has revealed the epic all-new V-55 Sport (SP) - an evolution within the V Series that emphasizes comfort, style and accommodations in a high-performance luxury cruising yacht. Powered by four Mercury 600-hp outboards, the V-55 SP runs on the same Michael Peters Yacht Design Stepped-V Ventilated Tunnel (SVVT) running surface, delivering a fast, stable and efficient ride.



Three models announced in ISA's new Viper line

ISA Yachts has presented its new Viper line. It says that this line takes in the shipyard's twenty years plus of experience in the production of GRP sports boats. The Viper line will include three models of 100, 120 and 140 feet, all made of composite with carbon reinforcements.

The first project to be put into production, with delivery expected in 2026, is the 38-metre 120 Viper. This has a reduced draft of 1.5 metres, and as such is suitable for shallow waters like the Caribbean Sea. Fitted with three MAN or MTU engines, at the customer's choice, this displacement vessel can reach the maximum speed of 33 knots and cruising at 26 knots.

Zeelander launches new model

Zeelander Yachts has just released images of its new Zeelander 5. The 48ft (14.7m) yacht joins its larger sisters with Zeelander's new curvier styling and a host of small design improvements including a new S-shaped sheerline. Billed as a natural evolution of the Z44, which began the Zeelander story back in 2000s, the tweak, says Zeelander, completes the updating of the brand's design language, giving the yacht even more presence on the water.

Performance is a given with the Zeelander 5. Choose between twin or triple Volvo Penta IPS 650 drives, providing intuitive joystick handling at close quarters and exhilarating top speeds up to 40 knots. With a cruising range of over 450 nautical miles, the specially designed hull keeps the boat comfortable in any conditions says Zeelander.



J/40 performance cruising yacht launched

From the same team that launched the award-winning J/112E, J/122E, and J/45, comes an exciting new 40-footer that boldly pushes the envelope on performance, versatility of use, and cruising comfort.

"The New J/40 has the sailpower and stability to sail well in both light and windy conditions, while others are having to either motor or reduce sail," said Alan Johnstone of J/Boats.

Didier Le Moal of J Composites added, "This boat will excel in both coastal and offshore events and at the same time pass the family cruising test. The J/40 is the essence of our expertise."



New vessels review



First of seven Parramatta Class ferries enters service

The NSW Government in Australia has announced the first of seven new Parramatta Class ferries, which have been designed by digital shipbuilder Incat Crowther, is now in service in Sydney. The fleet of new ferries, which will serve the busy Parramatta River commuter route, are being constructed in Tasmania, Australia by Richardson Devine Marine. A second vessel has begun sea trials and three more are already under construction, with the full fleet expected to enter passenger service over the next 18 months.



New Halevai electric trimaran a 'hybrid' on experience, not power

When Halevai Boats CEO and co-founder Frank Heidinger set out to build an electric boat with broad appeal, he didn't know it was going to be a different kind of 'hybrid', but that was where the journey took him as he followed his company's motto: We will. The end result is the Halevai Model2050, an electric trimaran with seating for 10, a dining area, sun beds, swim platform, power to do some tubing or waterskiing and enough range for a quiet, no-stress day on the water.



Cheetah Marine introduces new walk-around cabin workboat

Cheetah Marine has introduced its Marine Walk-Around Cabin catamaran, highlighting a customized version recently launched for the Fluid Water Taxi service on the United Kingdom's south coast. The 9.95-meter length, 3.6-meter beam (32.6'x11.8') catamaran design aims to combine the practicality of a workboat with options of a high-end finish. The Walk-Around Cabin was customized with generous seating for 12 passengers, alongside a customized hull and cab branded with the taxi service colours.

Photo credit: Cheetah Marine

IMO issues guidelines on implementation of the ISM Code by Administrations

The International Maritime Organization has issued resolution A.1188(33) with 2023 Guidelines on the implementation of the ISM Code by Administrations.

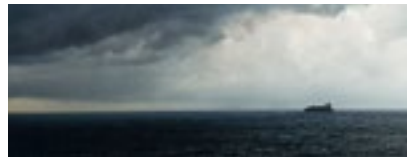
The resolution notes that the ISM Code became mandatory under Chapter IX of the International Convention for the Safety of Life at Sea (SOLAS) in 1998 for certain types of ships and in 2002 for other cargo ships and mobile offshore drilling units. It mentions amendments to the ISM Code adopted by the Maritime Safety Committee at its ninety-second session.

The resolution emphasizes the responsibility of administrations to maintain safety standards and issue Documents of Compliance and Safety Management Certificates according to the ISM Code. It highlights the necessity for administrations to enter agreements with other administrations for issuing certificates compliant with SOLAS and resolution A.741(18).

It also stresses the importance of uniform ISM Code implementation and the application of remote audits, especially considering the experiences from the COVID-19 pandemic and technological advancements.

Based on recommendations from the Marine Environment Protection Committee and the Maritime Safety Committee, the resolution adopts the 2023 Guidelines on implementing the ISM Code by Administrations. These guidelines, included in the annex, cover the introduction, scope, application, compliance verification, and certification processes.

The resolution urges governments to follow the 2023 Guidelines for ISM Code implementation and requests them to report any difficulties to the IMO. It authorizes the Maritime Safety Committee and the Marine Environment Protection Committee



to revise the guidelines as needed and revokes Resolution A.1118(30).

Section 1: Introduction

- Overview of the ISM Code: This section introduces the ISM Code, explaining its purpose and significance in promoting maritime safety and pollution prevention. It describes the process of its adoption by the International Maritime Organization (IMO).
- Importance of Safety Culture: Emphasizes the critical need for developing a safety culture within the shipping industry, where safety practices are deeply embedded in daily operations and decision-making processes.

Section 2: Scope and Application

- Definition of Key Terms: This section clarifies the key terms and concepts used throughout the guidelines, ensuring a common understanding for all stakeholders.
- Scope and Application: Outlines the range and applicability of the ISM Code, detailing which types of vessels and companies are covered and the extent of their obligations under the Code.

Section 3: Verifying Compliance with the ISM Code

- Guidance on Compliance: Provides comprehensive instructions on how companies should develop, implement, and maintain a documented safety management system in line with the ISM Code's requirements.
- Responsibilities of Companies and Administrations: Highlights the roles and duties of companies in ensuring their safety management systems are effective and meet the ISM Code standards. It also outlines the responsibilities of administrations in overseeing and verifying compliance.

Section 4: Certification and Verification Process

- Certification and Verification Activities: Describes the different stages and types of verifications involved in the ISM Code implementation, including:
- Interim Verification: Initial verification for new companies or ships.
- Initial Verification: Comprehensive assessment conducted before the issuance of the Document of Compliance and Safety Management Certificate.
- Annual Verification: Regular checks to ensure ongoing compliance.
- Intermediate Verification: Mid-term reviews of Safety Management Certificates.
- Renewal Verification: Reassessment conducted at the end of the certification period to renew the certificates.
- Additional Verification: Extra checks that may be required based on specific circumstances or non-conformities.
- Audit Process: Provides detailed guidance on the steps involved in the audit process, including the application, preliminary review, audit execution, reporting, and follow-up on corrective actions.

Appendix: Standards on ISM Code Certification Arrangements

- Management Standards: Sets out the standards for the management of organizations responsible for verifying compliance with the ISM Code.
- Competence and Qualification Arrangements: Specifies the required competencies and qualifications for personnel involved in the verification and certification processes.
- Certification Procedures and Instructions: Details the procedures and instructions that organizations must follow when conducting ISM Code certification, ensuring a consistent and thorough approach to verifying compliance.

Download the guidelines in full in pdf format at <https://bit.ly/4ciu6XX>.



Key outcomes from the 108th meeting of the IMO MSC

RINA has published a report from the 108th session of the IMO Maritime Safety Committee (MSC 108) that was held from 15 to 24 May 2024. The main decisions taken are summarized in the report on the basis of the information obtained while following the debate.

Read the report at <https://bit.ly/4f3q7Rp>.

Amended REG guidelines on Shaft/Engine Power Limitation systems for EEXI compliance

The Red Ensign Group (REG) of the UK Maritime and Coastguard Agency has amended the Unified Interpretation for the use of Shaft Power Limitation (SHaPoLi) systems on REG ships in June 2024.

The document provides the Red Ensign Group's (REG) interpretation and requirements regarding Shaft Power Limitation (SHaPoLi) and Engine Power Limitation (EPL) systems to meet Energy Efficiency Existing Ship Index (EEXI) requirements. These systems limit engine power to control carbon emissions. They must adhere to the 2021 guidelines outlined in IMO Resolution MEPC.335(76) and include an Onboard Management Manual (OMM).

Key Points

Power Reserve Usage:

- Definition: Power above the limited level used only for safety, life-saving, adverse weather, piracy, or engine maintenance.
- Activation: Can be overridden by the ship's master or officer in charge when necessary.
- Recording and Reporting: Usage and overrides must be documented in logbooks and reported to relevant authorities.

System Requirements:

- Visual and audible indicators for power limits.
- Alarm for system malfunctions.
- Non-permanent systems needing positive action (e.g., key switch) for overriding.
- Automatic data recording upon reserve usage or power limit exceedance.
- Documentation of use and reactivation required.

Verification and Surveys:

- Reactivation or replacement of the system must be verified by the Recognized Organization (RO).
- Regular checks during MARPOL Annex VI (IAPP) surveys.

Engine Maintenance:

- Defined as occasions requiring power reserve for scheduled engine maintenance and performance testing.
- Usage during maintenance must be recorded and reported similarly to emergency use.

Manoeuvring Information:

- Ships with SHaPoLi/EPL systems must update manoeuvring characteristics on the pilot card, wheelhouse poster, and manoeuvring booklet.

Coastal and Port State Requirements:

- Familiarization with and adherence to local requirements, including those from the US Coast Guard and other authorities.

Bureau Veritas issued new rules for the classification of steel ships

Classification Society Bureau Veritas (BV) has issued new Rules for the Classification of Steel Ships. The July 2024 edition introduces several key updates from the January 2024 edition. New service notations include one for cement carriers, while the floating dock notation is removed. Added service features are CYBER RESILIENT for cyber resilience, CBM-P for predictive condition monitoring, and a new battery system feature replacing the previous BATTERY SYSTEM notation.

New class notations like COLD BASIC for cold weather operations, DATA-CENTRIC for digital testing solutions, and OPS for shore connection systems are introduced. Existing class notations such as BATTERY SYSTEM and HVSC have been updated or replaced. Updates and clarifications are made regarding local corrosion solutions and computer-based system surveys.

Hull and stability changes include updated towing and mooring fittings, IP Code introduction, and revised structural design principles and wave loads. Machinery, electrical, automation, and fire protection sections see new testing procedures, safety measures, and battery system reorganization.

Service notations for container ships, oil and chemical tankers, and liquefied gas carriers are updated with new wave load criteria and safe access requirements. Offshore service vessels and tugs have revised anchoring equipment standards and compliance with the IP Code. Semi-submersible cargo ships include updated wave load criteria.

To view the new rules, go to <https://bit.ly/3WqDB2k>.

Malta issues summary of FuelEU Maritime Regulation requirements for ship operators

The Merchant Shipping Directorate of Transport Malta has informed ship-owners, operators, and managers about the FuelEU Maritime Regulation (EU) 2023/1805. This regulation applies to ships above 5000 gross tonnage transporting passengers or cargo to or from EU ports.

By 31 August 2024, companies shall submit a FuelEU Monitoring Plan for each of their ships to an accredited verifier, indicating the method chosen from among methods set out in Annex I of the Regulation for monitoring and reporting the amount, type and emission factor of energy used on board by ships and other relevant information.

As of 1 January 2025, companies shall start monitoring and recording on an annual basis the required data for each of their ships, including the amount of each type of fuel consumed and the emission factors covering all relevant greenhouse gases. By 31 January of the verification period, companies shall provide to the verifier a ship-specific FuelEU report containing all the relevant data for the reporting period.

By 30 June 2026 and for each subsequent year, the verifier shall issue a FuelEU Document of Compliance for the ship concerned, provided that the ship does not have a GHG intensity compliance deficit or non-compliant port calls. The FuelEU Document of Compliance should be held by ships as evidence of compliance with the Regulation. In case of ships having a compliance deficit, a FuelEU penalty to be calculated by the verifier in accordance with the formula in the Regulation shall be due. The pertinent data in relation to the Regulation shall be recorded in the FuelEU database.

As of 1 January 2030, container and passenger ships falling under the scope of the Regulation and at berth for more than two hours in a Ten-T port shall use the Onshore Power Supply (OPS) or zero-emission technology, and by 1 January 2035 this shall also apply to all EU/EEA ports where onshore power is available.



Updated USCG guideline for towing vessel stability compliance

The United States Coast Guard Marine Safety Center updated its Design Verification Guideline DVG H1-18 with regards the general arrangement plans for towing vessels.

Purpose: The Design Verification Guideline (DVG) serves to provide comprehensive guidance and information to the marine industry regarding the verification of stability compliance for towing vessels certified under 46 Subchapter M of the U.S. Coast Guard regulations. Its primary aim is to ensure that these vessels meet specific safety and operational standards related to their structural integrity and stability.

Applicability: The guideline applies to general arrangement plans of towing vessels that either had their keel laid on or after July 20, 2017, or underwent a major conversion after that date. It clarifies that while the Marine Safety Center (MSC) can review these plans, owners have the option to pursue plan verification through three specified sources:

- A registered professional engineer (P.E.) licensed by a U.S. state or the District of Columbia.
- An authorized classification society delegated with issuing the SOLAS Cargo Ship Safety Construction Certificate under 46 CFR 8.320.
- Directly with the U.S. Coast Guard.

References: The guideline cites specific regulatory references that must be adhered to during the verification process. These include:

- 46 CFR 144 for Construction and Arrangement.
- Marine Safety Manual (MSM) Volumes II & IV.
- ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways.
- ABS Rules for Building and Classing Steel Vessels Under 90 Meters (295 feet) in Length.

Submittal Checklist: A detailed checklist is provided to ensure that the submittal package for general arrangement plans includes essential documents such as a letter of intent, application for inspection, outboard and inboard profiles, and deck arrangements. These plans must sufficiently detail compliance with the requirements of 46 CFR Subchapter M for independent verification.

View the full guidelines at <https://bit.ly/4eZp6K0>.

UK MCA issues MIN 709 (M) with 2024 amendments to the ESP Code for bulk carriers and oil tankers

The UK Maritime and Coastguard Agency has published MIN 709 (M) with the 2024 Amendments to the ESP Code. The document details significant updates to the Enhanced Survey Programme (ESP) Code for bulk carriers and oil tankers. These amendments, effective from 1 July 2024, were established through the International Maritime Organization's (IMO) resolution MSC.525(106) in November 2022.

The updates focus on improving safety and inspection standards to ensure the structural integrity and operational safety of these vessels.

Key Points of the Amendments

Revised Inspection Standards:

- The minimum acceptable standard for tank and void space conditions has been raised. Previously, a condition was considered acceptable if there was no more than a general breakdown of coating over 20% of the area (rated as "poor"). This threshold has been tightened to "less than good," meaning minor spot rusting is now the maximum acceptable level of degradation.



Inspection Frequency:

- For bulk carriers with single-side skin construction, ballast tanks and their protective coatings must be inspected more rigorously. If the coating condition is "less than good," annual inspections are required.
- For double-skin construction bulk carriers, intermediate and renewal surveys will include examinations of the tank, hold, and double-side skin void space corrosion prevention systems. Tanks and void spaces with coatings in "poor" or "less than good" condition will also require annual inspections.

Specific Requirements for Older Vessels:

- Bulk carriers over 20 years old and at least 150 meters in length must have their double-side skin void spaces inspected based on the outcomes of renewal and intermediate surveys.

Read MIN 709 (M) online at <https://bit.ly/3ygFNjy>.

Transport Canada has issued ship safety bulletin No. 15/2024 concerning the discharge requirements for cruise ships

Purpose

This bulletin outlines the sewage and greywater discharge requirements for cruise ships in Canadian waters, replacing previous Bulletin 14/2023 issued on June 23, 2023.

Scope

The regulations apply to Authorized Representatives (AR) of cruise ships certified to carry more than 100 people and with overnight accommodations. It includes both Canadian and foreign vessels operating in Canadian waters.

Background

- In 2022, Transport Canada introduced voluntary measures for sewage and greywater discharge.
- New permanent measures developed in 2023 will continue from June 2024 to June 2025 to protect Canadian waters from vessel-sourced pollution.
- The interim order is effective immediately while the process of creating new regulations is underway.

Key Requirements

No discharge within 3 nautical miles from shore, an ice-shelf, or fast ice.

Between 3 to 12 nautical miles from shore:

- Greywater must be treated with sewage before discharge.
- Sewage must be treated with an approved marine sanitation device, with specific standards for fecal coliform count and visual appearance.

Definitions

Sewage: Human body wastes, drainage from toilets, medical premises, spaces with living animals, and mixed drainage.

Greywater: Used water from sinks, laundry, bathtubs, showers, and dishwashers, excluding sewage and machinery drainage.

Reporting and Record Keeping

Immediate reporting of emergency releases to a Marine Safety Inspector.

Detailed records of discharges, including reasons, times, locations, volumes, and signatures, must be maintained for 2 years.

Records can be in paper or electronic format and must be kept in English or French.

Inspections

Transport Canada will inspect Canadian and foreign vessels in Canadian waters to ensure compliance with environmental regulations. Deficiencies will result in enforcement actions as per the Canada Shipping Act, 2001.

For more detailed information go to <https://bit.ly/4fkEWPR>.

Managing the risk of blackouts: DNV guidance paper



Blackout and consequential loss of propulsion have long been considered a major accident hazard for the maritime industry. Loss of propulsion may, depending on the operational situation, pose an imminent threat to the ship and its passengers and crew.

Most operators of passenger ships occasionally experience blackout with subsequent temporary loss of propulsion. Fortunately, most incidents do not have significant consequences, as they usually occur while in transit in open sea. Research from DNV found that in 2019, the media reported 12 power loss events on cruise ships that resulted in full or partial blackout while in transit or manoeuvring. This was a significant increase from four events in the previous year.

These incidents are a driver for stakeholders in the passenger ship industry to stop and reflect on what can be done to reduce the risk of blackout and consequential loss of propulsion, in order to ensure safe operations.

Risks of blackout

In ships with diesel or gas-electrical propulsion systems, a blackout will cause immediate loss of propulsion and steering. Propulsion is then lost until the standby generator(s) are started, the main source of power feeds the power distribution system, and propulsion units are re-connected.

Whether loss of propulsion poses an imminent threat to the ship and its passengers and crew depends on the operational situation. Incidents that occur during operations in confined waterways or during port manoeuvring, transit close to shore, combined with severe weather conditions, have a higher severity potential than incidents occurring while the vessel is in open sea. The time it takes to recover from blackout in these situations is critical, because it may be too late to restore propulsion in time to avoid accidents.

Depending on the type of failure causing blackout, the system design and operational configuration, the blackout recovery process may be completed within a minute in the best-case scenario, but in the worst case, the recovery process may not happen in time to prevent a disaster.

Major incidents may also negatively affect company reputation through global media coverage. Today's incidents almost instantly spread through social media. This may have a major impact on earnings, profit and shareholder value.

Causes of blackouts

Blackout occurs when there is a sudden total loss of electric power in the ship's main power distribution system. This could be caused by various mechanical or electrical failures in the power generation, distribution or propulsion systems, coupled with an ineffective operational response to the failure. The underlying causes of blackouts can often be traced back to the operation of complex integrated systems.

Today, the industry is pushed to design and implement technical solutions and operations that reduce cost and that are more energy efficient. The complexity of system integration challenges our ability to understand how these systems work. This has become an increasing concern for the whole industry.

The guidance paper 'Managing the risk of blackouts' from DNV addresses prevention and mitigation of blackouts to support safe and reliable operations of passenger vessels.

Download the paper: [Managing the risk of blackouts DNV](#).





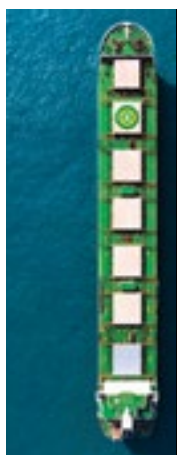
New report: Expert insights into the future of alternative fuels

Alternative maritime fuels have become increasingly important, as a response to stricter environmental regulations on emissions, driving technological advancements and improving the industry's sustainability practices. To support ship owners and operators navigate the complexity of the future fuels landscape, Lloyd's Register has launched a new report on Ammonia in the Fuel for thought series on alternative fuels for shipping.

While not yet mainstream, Ammonia is gaining traction as a future fuel for the maritime industry. Its key advantages lie in its zero-carbon emissions and high energy density. However, safety concerns necessitate robust regulations and infrastructure development.

The growing interest from shipping operators, coupled with potential cost competitiveness, hints at a possible future shift. This report dives deep into Ammonia's potential, exploring production methods, engine compatibility, fuel system requirements, and the current regulatory landscape. By painting a comprehensive picture, the report aims to assess Ammonia's readiness as a clean fuel for the maritime industry.

To request a copy of the full report go to <https://bit.ly/4aSJHMR>.



The reduction of incidents, as revealed in the report, can be attributed to continual safety improvements implemented by ship operators in tandem with enhanced legislation within the sector. A significant contributing factor to the safety performance of bulk carriers is the development and implementation of an improved international regulatory framework. As a Non-Governmental Organisation (NGO) within the International Maritime Organization (IMO), INTERCARGO is proud to have played an important part in the development of this legislation. The adoption of new technology to improve ship design is also a major causal factor.

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

Bulk Carrier Casualty Report 2014 – 2023 from INTERCARGO

INTERCARGO has published its Bulk Carrier Casualty Report, reporting that 21 bulk carriers of more than 10,000 deadweight tonnes (dwt) were reported lost, with the tragic loss of 89 seafarers' lives, for the period 2014-2023.

According to INTERCARGO's report, bulker losses took place as follows:

- 80,000+ dwt: Six ships were lost, accounting for 23.8% of the total 21 casualties reported. These casualties cost 22 lives, or 24.7% of the total 89 lives lost during the period. In 2020 the losses of one Capesize and one VLOC vessel (Wakashio and Stellar Banner) focused attention on large bulk carrier safety.
- The lowest number of casualties occurred in the 60,000-79,999 dwt range, representing 9.5% of the total of 21 ship losses, with no fatalities. There was no life lost as a consequence of those ship losses.
- Other categories saw the loss of six ships with significant loss of life as a result. The 50,000-59,999 dwt range accounted for 55 seafarers' lives, (61.8% of the total), and 12 fatalities in the 10,000- 34,999 dwt range.

Losses by cause

- Cargo liquefaction remains the greatest contributor to loss of life, accounting for 55 lives or 61.8% of the total loss of life in the past ten years.
- Groundings remain the greatest cause of ship losses, with nine losses or 42.9% of the total.
- Three casualties (14.3% of the total) were a result of flooding and these cost 22 lives – a significant 24.7% of the total number of lives lost.
- The average life loss per ship casualty was 4.24 during the ten year period between 2014 and 2023, and 4.00 between 2013 and 2022, 3.41 between 2012 and 2021. This compares to 3.56 during 2011 and 2020.





Black Sea MoU PSC Annual Report 2023

During 2023, 5,294 inspections involving 3,541 individual ships were carried out on ships registered in the Black Sea Region. Those are the key headlines of the Black Sea MoU Annual PSC Report.

The impact of the Russian Armed Invasion of Ukraine, according to the Black Sea MoU Annual PSC Report, affected shipping in the Black Sea Region, including Ukrainian ports. In 2023, although the number of inspections closely aligns with the five-year average recorded during the pre-Covid period from 2015 to 2019 (5,258), the number of inspections of Ukraine significantly dropped by 45.5 per cent compared with the pre-war five-year period.

Black Sea Grain Initiative and its impact

Although grain shipments from Ukraine resumed in 2022 thanks to the Black Sea Grain Initiative, signed by the Republic of Türkiye, the Russian Federation, Ukraine, and the United Nations on 22 July 2022, the Initiative was terminated on 17 July 2023. After the termination of the Initiative, the number of inspections of Ukraine also decreased by 21.1 per cent.

Establishment of maritime corridor

To establish a special maritime corridor in Ukrainian sovereign waters in the Black Sea for commercial vessels heading to and from Ukrainian ports, the Government of Ukraine has temporarily instituted a maritime route to facilitate the unblocking of international shipping in the northwestern part of the Black Sea which runs along Ukraine's southwest Black Sea coast, into Romanian territorial waters and exclusive maritime economic zone, and onwards to Türkiye (for further information, please see IMO Circular Letters No.4748, dated 19 July 2023, and No.4769, dated 24 August 2023). The corridor had a positive impact on the increase in vessel traffic. Subsequently, a positive step for the viability of the route was launched by a mine sweeping group of Bulgaria, Romania, and Türkiye designed to free coastal waters from sea mines.

Inspection rate and ship data

The exact number of individual ships operating in the region was unavailable due to the war in Ukraine, and it was estimated as 5,617*. The inspection rate in the region was approximately 63.04% in 2023. The number of individual ships inspected in 2023 (3,541) is slightly more than the number of individual ships inspected in 2022 (3,501). Out of 5,294 inspections in 2023, 3,204 were found with deficiencies. The percentage of inspections with deficiencies in 2023 (60.53%) is nearly similar to 2022 (59.96%).

Detentions due to deficiencies

In 2023, the number of ships detained as a result of deficiencies clearly hazardous to safety, health, or the environment amounted to 208. These detained vessels were registered by 27 different Flag Administrations. The overall detention percentage in the region (Detentions as a per cent of inspections) in 2023 continues its upward trend, from 3.50% in 2022 to 3.93%. Since several individual ships were inspected and detained more than once during any one year, the regional detention rate (Individual ships detained as a per cent of individual ships inspected) in 2023 was 5.20%, which is higher than the detention percentage. The regional detention rate in 2023 was also higher than the 2022 detention rate of 4.63%.

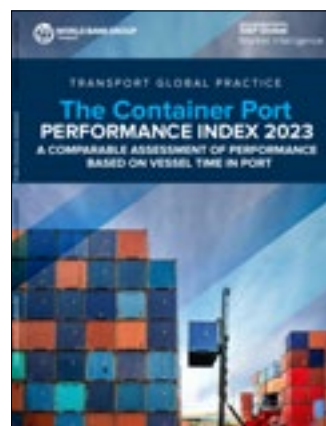
Download the full report in pdf format at <https://bit.ly/3RrtYgN>.



Container Port Performance Index 2023 published

The newest global Container Port Performance Index (CPPI) has been published and reveals that East and Southeast Asian ports excelled in 2023, accounting for 13 of the top 20 places. Regional disruptions impacted port performance everywhere, according to the new report. Developed by the World Bank and S&P Global Market Intelligence, the fourth edition of CPPI is based on the biggest dataset ever: more than 182,000 vessel calls, 238.2 million moves, and about 381 million twenty-foot equivalents (TEUs) for the full calendar year of 2023. More than 90% of merchandise trade is transported by sea, so the resilience, efficiency, and overall performance of ports are crucial to global markets and economic development.

The full report can be downloaded in PDF format at <https://bit.ly/3Xmv1m8>.





Annual Report 2023
June 2024

BSU Annual Report 2023

Germany's Federal Bureau for Maritime Casualty Investigation (BSU) has published its Annual Report for 2023, providing useful insights on marine casualties. The total number of notifications has risen sharply year-on-year: 698 in 2023 compared to 659 in 2022. This represents an increase of almost 6%.

The total number of notifications has risen sharply year-on-year: 698 in 2023 compared to 659 in 2022. This represents an increase of almost 6%. Slight year-on-year fluctuations can be seen in the two 'main categories'. In the case of marine casualties according to the IMO Code, there was a significant increase of more than 10% (120 to 134) and in the case of incidents, a slight reduction (294 to 273).

However, the increase in global reporting is mainly due to the rise in the number of OCIs reported, i.e., cases for which the BSU is not responsible or that do not constitute an accident (237 to 291). This alone includes 20 notifications concerning vessels that could not be reached on the local radio channel 80. The total number of actual accidents has remained almost identical: 414 in the previous year to 407 in 2023.

The number of fatalities and missing persons on commercial vessels has risen sharply compared to previous years. However, this is only based on two accidents – with the VERITY and POLESIE collision alone accounting for five seafarers. The number of people injured has once more increased. A total of 40 people were reported injured in marine casualties.

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

Organisations urge the new UK Government to agree a green shipping framework

Leading maritime trade bodies are calling on the recently elected UK Labour Government to ensure that publication of the plan for decarbonising the shipping sector becomes a top priority. According to the letter, to meet net zero targets, the maritime sector requires assurance that government support will align with its ambitions. Signatories include the UK Chamber of Shipping, Cruise Line International, British Ports Association and the UK Major Ports Group as well as other sectoral organisations.

The planned review of the Clean Maritime Plan, which was delayed by the General Election, is now overdue. The signatories highlight that its successor should build on existing foundations and establish a multi-year strategy with a technology-neutral framework for government support, mechanisms like UK Shore, and a clear pathway to net zero. The Clean Maritime Plan is part of the UK Government's Clean Air Strategy, which aims to cut down air pollution across all sectors to protect public health and the environment. It will also help deliver the United Kingdom's commitment to be net zero on greenhouse gases by 2050.

"The previous plan, published in 2019 is now long overdue for review and the Government must now undertake this, alongside industry, as a top priority to ensure that maritime sector does not fall behind in reducing emissions," said UK Chamber of Shipping CEO, Rhett Hatcher.

According to the letter, a framework that aligns with the 2023 International Maritime Organization (IMO) Strategy will provide the private sector with the confidence that the Government supports its efforts in enabling significant

investment in the years ahead, generating new jobs and growth not just around the UK coastline, but across the entire country.

"We are ready to work with you and your officials to produce a credible plan for emissions reduction and urge you to treat this as an early and top priority," said the organisations.

To remind yourself about the original plan published in 2019 go to <https://bit.ly/4drEIVe>.



New ICS report says hydrogen has an important but not dominant role in net zero

The International Chamber of Shipping (ICS) presents a new report identifying hydrogen demand sectors, demand locations, and the demand-pull timelines.

The groundbreaking report, written by the Professor of Energy Economics at Biberach University of Applied Sciences, Germany, called "Turning hydrogen demand into reality: Which sectors come first?" focuses on the potential of clean hydrogen to function as an energy carrier and feedstock to decarbonise multiple sectors, especially hard-to-abate sectors.

The report identifies that to meet future hydrogen demand, the scale of renewable electricity demand for green hydrogen production is unprecedented and leads to once-in-a-generation opportunities and challenges.

Key findings

- Hydrogen has an important but not dominant role in the transformation towards climate neutrality.
- Hydrogen demand depends strongly on climate ambitions and could benefit from offtake agreements with multiple sectors.
- Scenarios for future hydrogen demand show huge variability and uncertainty from now towards 2050. The rate and timeline of hydrogen uptake varies between sectors due to infrastructure, regulatory and sectoral ecosystem challenges and is likely to take place in stages.
- To unlock investment, governments should also focus their attention on supporting demand side derisking over supply side subsidy.
- Industrial demand, and not transport, will vastly dominate hydrogen demand in the coming decades, acting as a baseload for hydrogen demand.
- The scale of electricity demand for green hydrogen production is unprecedented and leads to once in-a-generation opportunities and challenges. The need for hydrogen transport by ship requires the energy-maritime value chain to shift towards a low-carbon infrastructure that is fit for purpose.

"For global hydrogen demand to keep the net-zero by 2050 scenario within reach, demand for hydrogen-based fuel sources would need to scale five times from current levels to reach approximately 500 million tonnes from 2030 to 2050. One of the main takeaways in this report is the high variability in potential demand. Industry will dominate the hydrogen demand. Shipping, however, can play a key role as an enabler of the hydrogen economy," said Guy Platten, Secretary General of the International Chamber of Shipping.

According to the International Energy Agency (IEA), hydrogen use is expected to remain static and within current industrial use cases into 2030. However, to go beyond the current hydrogen demand by existing sectors, infrastructure, enabling regulation, and power access barriers need to be addressed for new sectors to begin uptake of hydrogen, the report finds.

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



Australian industry data report shows turnover up 5% year-on-year

Australia's Boating Industry Association (BIA) has released its annual state of the industry data report, revealing national turnover at A\$10.12bn for 2023-24, a 5% increase on the previous year. BIA president Adam Smith said the report, launched on the opening day of the Sydney International Boat Show, demonstrated continued growth for the sector despite economic challenges over the past 12 months.

"There are now 27,500 people directly employed in the boating industry as well as 8,250 more in contractor roles supporting more than 2,000 businesses across the nation," Smith says. "Seventy-five per cent are in small, family businesses, employing local workers and supporting local communities. Many are based in regional areas, and help deliver much-needed support for jobs and economies, including enhanced tourism-related spend of boating activities."

Download the data card and infographic at <https://bit.ly/3WLBrul>.

NEW marine reports and guides



Fourth MB92 report highlights urgency for yachting industry to tackle social sustainability

Superyacht refit management specialists MB92 Group published today its fourth report designed to drive sustainable development in the superyacht industry: "People and the ocean – How the yachting industry is addressing the sustainability challenge with top talent". The report, which focuses on the social pillar of ESG, reveals a relatively high level of inertia in this area, yet underscores it as an indispensable engine for the industry's transition.

The report methodology combines insights from a panel of experts on social issues and sustainability in the yachting industry, alongside extensive research, including a quantitative survey of companies within the shipyard's supplier network and a qualitative survey of yacht management representatives and captains. The panel analysed the sector's social challenges, outlined recent progress, and identified key focus areas, driving factors, and obstacles to adopting sustainable social practices.

"Unfortunately, social issues tend to be overlooked by industry members and the general public. That is partly due to the niche nature of the industry. But it needs to change if we want the transition to happen," said Jean-Marc Bolinger, CEO of MB92 Group. "Change should take place at all levels: individuals, companies, and the industry as a whole. At the heart of the matter is how we promote awareness, understanding and sensitivity across the yachting community. We will not resolve the environmental issues confronting the sector without formal mechanisms to develop the skills of all our people."

Key findings from the MB92 report highlight the need for sustainable people management strategies, increased investment in talent engagement, and the development of essential skills. While progress has been made on environmental fronts, the industry's approach to social issues remains fragmented. Key findings of the report:

- Despite positive impacts on local economies, current approaches to social issues are insufficient and disjointed.
- While there's a growing willingness to invest in sustainable initiatives, strong incentives and broader adoption are still lacking.
- Addressing ESG issues is crucial for attracting and retaining talent, especially among younger generations. Formalising ESG roles and recruiting from outside the sector can enhance expertise and commitment.
- The industry must increase focus on developing essential skills to include knowledge of sustainable materials and practices, environmental impact assessment, and regulatory compliance.
- Close ties between the yachting industry and academia are necessary to ensure students acquire relevant skills.
- Industry employees need training on sustainability issues, including gender equality and mental health.
- Efforts to address gender imbalances on shore have had some success, but more is needed on board, particularly in ensuring contracts include maternity leave.
- Greater industry-wide collaboration is needed to address sustainability challenges in talent management. Currently, only 10% of companies collaborate regularly with other stakeholders.

Register to receive a full copy of the report at <https://bit.ly/3xWdS8x>.

EU Dialogue on End-of-life Recreational Craft report

Earlier this year, the European Boating Industry (EBI) organised the "EU Dialogue on End-of-life Recreational Craft" in Brussels, Belgium, in collaboration with the Belgian EU Presidency and the European Commission (EC). The resulting report developed by the Belgian EU Presidency summarizes the event.

The Belgian event demonstrated the large support and interest to find solutions towards a circular economy for pleasure craft. Momentum was created with all stakeholders involved to move forward and to keep the topic high on the agenda for the years to come. More work is needed in the field of legislation on pleasure craft as well as on waste management and recycling. Cooperation and coordination on and between the industry, national and EU-level are needed. The above will only be successful if the topic of Circular Economy for pleasure craft is maintained and put forward on both the future national and European agenda.

Download the report at <https://bit.ly/46wR8IU>.



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Risk Issues in Respect of Soybean Cargoes

The global trade in soybeans is dominated by three countries with Brazil and the USA accounting for around 80% of total export market, and China accounting for almost 60% of all soybean imports. Features of this trade associated with the countries of production, pre-shipment transport, and long voyages through various climate zones provide a number of potential opportunities for the condition of cargoes to deteriorate with consequent expensive claims exposure.

The period of safe storage for soybeans before deterioration occurs varies according to the temperature of the beans and moisture content and can shorten dramatically as both of these measures increase. The Club has received reports of increasing problems with soybean cargoes due to the increased moisture content. Soybean is a sensitive cargo and prone to deterioration and self-heating whenever its moisture content (MC) and temperature rise above the limits within which the seed is biologically stable. The soybean cargo condition can deteriorate during transit due to many factors such as:

- **Ingress of water** – in this respect, the weather tightness of cargo hold hatch covers is of paramount importance. It is recommended that an ultrasonic test (UST) is carried out on the hatch covers and associated parts to ensure that the sealing arrangement is effective and properly maintained. The hatch covers must be weathertight as any water ingress will damage the soybean cargo resulting in caked cargo or burned cargo as the result of self-heating caused by the increase in MC.

- **Inherent vice of the cargo** – like any other agricultural product, the soybean cargo itself respire and during this metabolic process gives off heat. This, in turn, increases the cargo temperature which leads to

microbiological reactions and mold growth, thus resulting in progressive deterioration of the cargo's condition. If the cargo has not been treated and stored properly ashore and is loaded with a high moisture content, this might then lead to self-heating during the carriage onboard the vessel. The self-heating can affect a large amount of cargo and in some cases, the whole cargo can be damaged. A factor that contributes to this is that the soybean fields are at times far away from the ports and it might take days, by road or barge, for the cargo to arrive at the ports. If not protected properly during transit it can be exposed to the weather which then affects the seed quality, for example by increasing the moisture content.

- **Once loaded, the cargo is susceptible to damage** by having its temperature raised through contact with hot surfaces such as the engine room bulkhead, heated double bottom, and topside fuel tanks. Such damage is usually restricted to the cargo layer in contact with the hot surface and necessitates the damaged cargo being collected and segregated from sound cargo during discharge operations. Even in such instances of isolated areas of damage, the level of claim can be significant, particularly when taking into account, in addition to the value of the cargo loss, the logistics of segregation and the disposal of the damaged cargo.

Moisture Content (MC) of the cargo

– a cargo moisture content (MC) of around 14% is considered safe for transportation (as per ANEC 41 dated 01 July 2020), however, if the cargo itself was not harvested, treated, and stored properly ashore then, even with the greatest attention to onboard care of the cargo, there is a possibility that the cargo will suffer damage over the duration of a long voyage. The passage from South America (e.g. Brazil) to the Far East (e.g. China) takes about 40-45 days; a long voyage. If any transit delays and delays waiting to berth are experienced, this can result in cargo deterioration. Warm moist air rising from the cargo may result in moldy cargo developing at the surface, or it may lead to ship's sweat which may in turn fall back onto the cargo as droplets, thus leading to cargo damage at the surface.

Moisture content and temperature of the cargo also have an important relevance to the period of time for which the cargo can be safely stored. As moisture content and temperature increase, the safe storage period reduces quite dramatically. This is an important factor when vessels are subject to berthing delays.

• Improper ventilation

during passage – soybean cargo on a vessel loaded in Brazil en-route to China will be at risk of exposure to ship's sweat. The cargo will have been loaded in warm and humid conditions and ship's sweat is formed when the steel hull and structures of the vessel cool due to the colder ambient sea and air temperature as the voyage progresses. If hold ventilation is not properly managed, condensation can form on the inside of the steel structures as the moist warm air from the cargo comes into contact with the cool steel.

This condensation will then drip onto the cargo surface causing damage.

• Cargo damaged in this manner can be collected and separated from the sound cargo during discharge operations and is not usually a very significant amount.

Members are recommended to engage a third-party surveyor at the load port to assist the master in loading soybean cargo. The surveyor will also assist in checking the temperature/moisture content of the cargo prior to and during the loading operations and will also

assist the master in the event that any clausing of the bills of lading is needed concerning the condition of the cargo.

The following are also important in mitigating potential cargo claims:

- The master is to be provided with the quality certificate for the cargo at the load port.
- The master should record the weather conditions at the time of cargo loading.
- Cargo temperature and moisture content are to be frequently checked during loading operations and an independent surveyor can assist with this.
- Cargo should not be loaded during precipitation and the crew should be vigilant in monitoring weather conditions such that cargo hold hatch covers can be closed prior to any precipitation.
- The conveyor belt is to be checked for any water at the start of the cargo operations.
- Ventilation of the cargo holds. Ventilation cannot prevent self-heating which is a pre-loading issue, however, it can prevent or reduce "sweat" while the vessel is at sea. All cargo hold ventilation activities are to be properly logged and filed onboard.
- Record the daily temperature of the cargo while on passage.
- Detailed deck log book entries recording weather conditions for the entire voyage are to be maintained.
- Ensure that the cargo is fumigated properly at the load port before departure by a qualified person and that the instructions for achieving effective fumigation are strictly adhered to in order to have the desired effect. (Reminder that all appropriate safety precautions are to be taken when fumigating to ensure the safety of personnel).
- The cargo holds are to be sealed on cargo completion in the presence of an independent surveyor and again, seals are only to be broken at the discharge port in the presence of all interested parties, except where it has been agreed that the seals can be broken at sea in order to comply with the fumigation requirements.
- It is also good practice to take samples of the loaded cargo and keep them onboard in airtight sealed containers. These samples might be useful in defending future claims related to cargo damage.

This article is published courtesy of Steamship Insurance Management Services



Preventative and predictive methods for torsional vibration

With thanks to the Regal Rexnord technical team

About Regal Rexnord

Regal Rexnord is a global organisation with the purpose of creating a better tomorrow with sustainable solutions that power, transmit and control motion. Their marine division works across three segments: commercial vessels, oil and gas platforms, and port equipment.

The company is an industry leader building and supplying high-performance motors, controls, and power transmission solutions to the marine industry that are designed to last in the most extreme of environments.

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Using vibration analysis to assess machinery health

While vibration analysis is widely regarded as one of the most effective tools for assessing machinery health, torsional vibration is often overlooked and misunderstood. The measurement of radial and axial vibration of the equipment shaft and/or casing typically does not provide insight into the angular vibrations, produced by torsion, in rotating or reciprocating shafts. Left undetected, torsional vibration can result in rapid failures of couplings, bearings, and shafts, creating the potential for significant health and safety hazards.

Preventive maintenance tasks can aid in detecting the presence of torsional vibrations by identifying fretting patterns, coupling flexible element deformation, and crack initiation points. However, these conditions occur later in the failure progression and do not yield enough information to properly identify the severity, frequency, or source of vibration.

Beginning with an understanding of the laws of motion, the torsional dynamics of any drivetrain can be analyzed during the equipment design stage to avoid the occurrence of adverse conditions. For equipment which is already installed, modern torque measurement systems can be utilized to verify theoretical models, evaluate changes to drivetrains components, or continuously monitor torque for effective defect identification. The integration of angular, radial, and axial vibrations can provide a comprehensive condition-based monitoring system for critical assets susceptible to these failures modes in numerous industries.

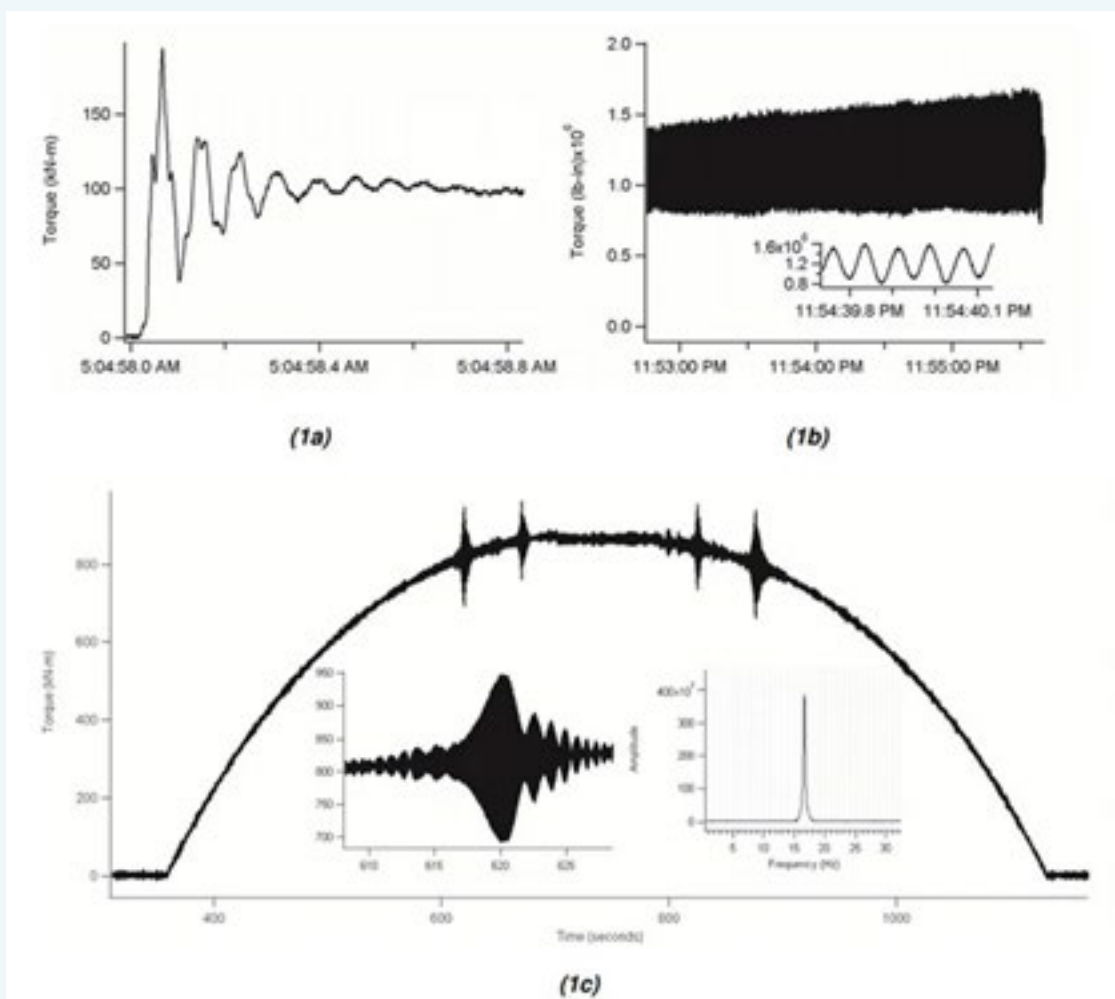
What is torsional vibration?

Torsional vibration describes the angular movement of a shaft(s) in a drivetrain, which is superimposed on the steady-state rotational movement of a rotating or reciprocating machine. More simply, torsional vibration refers to the angular or 'twisting' movement of the rotating shafts that connect the various pieces of equipment in a drivetrain. This form of vibration can be induced by the driving equipment, the driven equipment, or simply be the result of how the various inertias (rotating masses) and spring stiffness are

distributed throughout the drivetrain. Drivers such as reciprocating engines and VFD-controlled motors; and driven equipment such as mills, large fans, reciprocating compressors, generators, and various turbomachinery can be susceptible to torsional vibration problems.

Depending on the source, torsional vibration can be present in different forms. Sudden impacting (an example shown in figure 1a) from intermittent loading, equipment start-up, or process upsets can produce vibrations that consist of a sharp peak followed by subsequent oscillations that eventually dampen out. Alternatively, torsional vibrations can be present in a more continuous nature as the result of constant process conditions, motor control fluctuations, or resonant conditions as shown in figure 1b.

As with any type of vibration, a resonant condition will exist when an excitation frequency is in close proximity to a natural frequency. Generally, torsional resonance is more prevalent in higher-speed (> 600 RPM) applications. An example of torsional resonance during the start-up and coast-down of a motor driven centrifugal compressor train is shown in Figure 1c. In this case the first torsional natural frequency was excited by the rotational speed, creating oscillating torques at a frequency of 16 Hz. These torque measurements can be used to identify potentially harmful operating conditions that need to be avoided.



Figures 1a-c: Torque-time waveforms resulting from various conditions such as impacting (a, top left), continuous oscillations from process conditions (b, top right) and resonant conditions which occurring intermittently during start-up and shut-down (c, bottom).

How to use torque measurements to determine acceptable stress levels

To make practical use of the measured torque, the value needs to be related to the mechanical stress which it induces in a drivetrain component. Torque can be damaging to equipment when it induces stresses in the load-transmitting material that exceed the endurance limit or yield limit. The endurance limit is the maximum stress that a material can be subjected to repeatedly without failing from fatigue. These values are typically much lower than the stress required to yield (permanent deformation) or fracture the material from a single applied load. Fatigue typically progresses in (3) stages: crack initiation, crack propagation, and final fracture. During the initial stages of fatigue crack propagation (Photograph 1a), no deformation of the material occurs so long as the stresses remain below the yield limit. This is the one of the primary reasons that torsional failures are difficult to detect. Later in the failure progression, or in cases of high amplitude loads, deformations (yielding) of a rotating shaft, flexible coupling, or gear teeth can typically be detected using traditional means of vibration analysis because they can cause the component to rotate

eccentrically, producing a mass imbalance (Photo 1b). It should be noted that material yielding can occur once a fatigue crack has grown and the component is no longer capable of transmitting the nominal load even if they are below the material yield limit. Also cracks and fractures which occur at a 45-degree angle on a shaft are typical in torque related failures.

One relatively simple method for determining acceptable stress levels from alternating loads is the Modified Goodman Diagram. This method plots the value of mean stress on the horizontal axis and the value of alternating stress on the vertical axis. A combination of mean and alternating stresses in the region below the 'yield line' and 'modified Goodman line' (shaded gray in the figure) indicates an infinite fatigue life. Stresses outside of this region indicate finite life. The values plotted in Figure 2 were calculated to understand the effect of alternating loads on the fatigue life for gear teeth, specifically bending fatigue in the tooth root. The mean stress was considered to be the stress from the nominal driving torque (based on nameplate power and speed). As torque measurements were not available, hypothetical values of alternating torque were then added, based on an increasing percentage of the nominal torque. The analysis showed that mean stresses of 4 to 5 times the nominal values combined with cyclic loads could create a finite life situation. While gear tooth stresses are relatively simple to calculate, other methods such as finite element analysis are better suited for more complex geometries.



(a) Fatigue crack initiation



(b) Later stages of propagation

Photographs 1a and b: Failed rotating component in the (a) early and (b) later stages of failure.

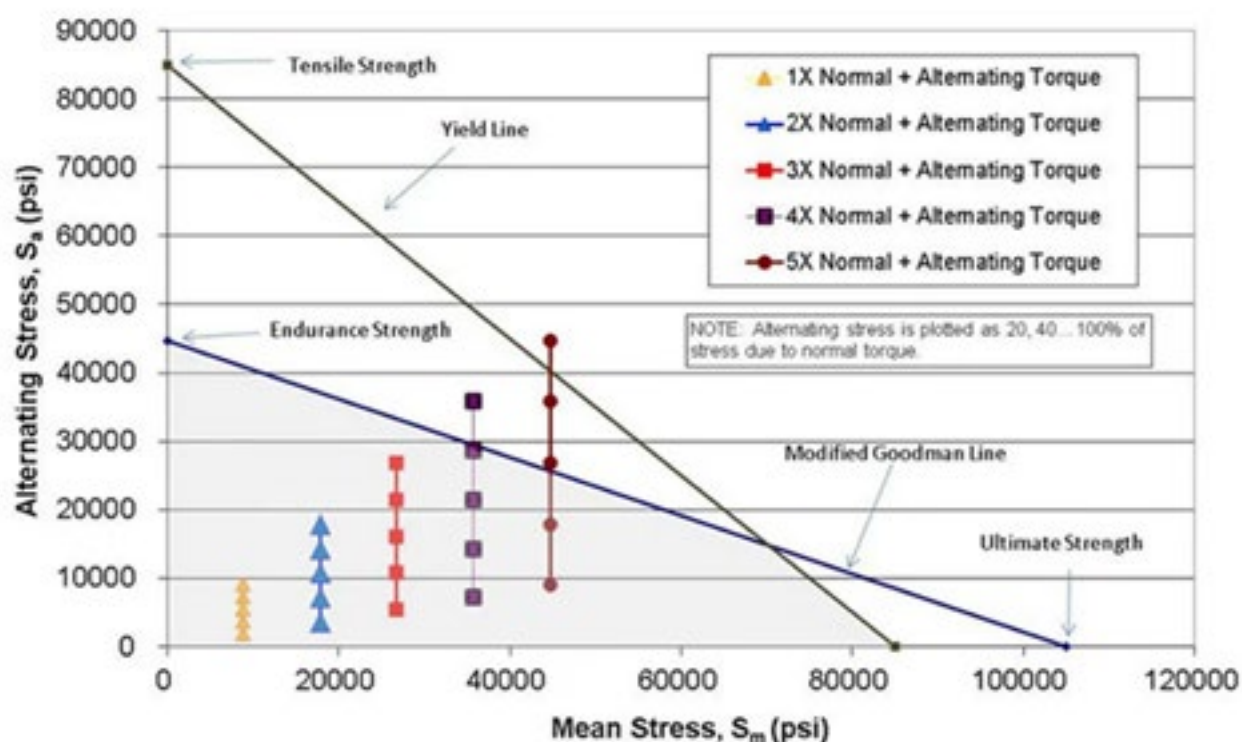


Figure 2: Modified Goodman Diagram used to determine acceptable stress levels.

In the example used for Figure 2, the endurance limit was calculated as a percentage of the ultimate tensile strength (typically 42.5% of the ultimate strength for this particular material). Other factors which might further decrease the endurance limit should be considered when determining safe limits; including: surface condition, operating temperature, size, load, and criticality. Testing of a material specimen is the most accurate way to determine the endurance limit, and should be performed for critical components and those which are design to shear at a prescribed level in the event of an overload (shear pins, shear grooves, etc.)

A limitation of the Modified Goodman approach is that it assumes the alternating stresses occur at consistent amplitude. In most cases the amplitude of the torsional vibration (and hence alternating stress) will vary. Additionally, reversing torques as shown in Figure 3, are better analyzed with other methods. The Palmgren-Miner rule is one method for determining fatigue life in cases of variable amplitude loading.

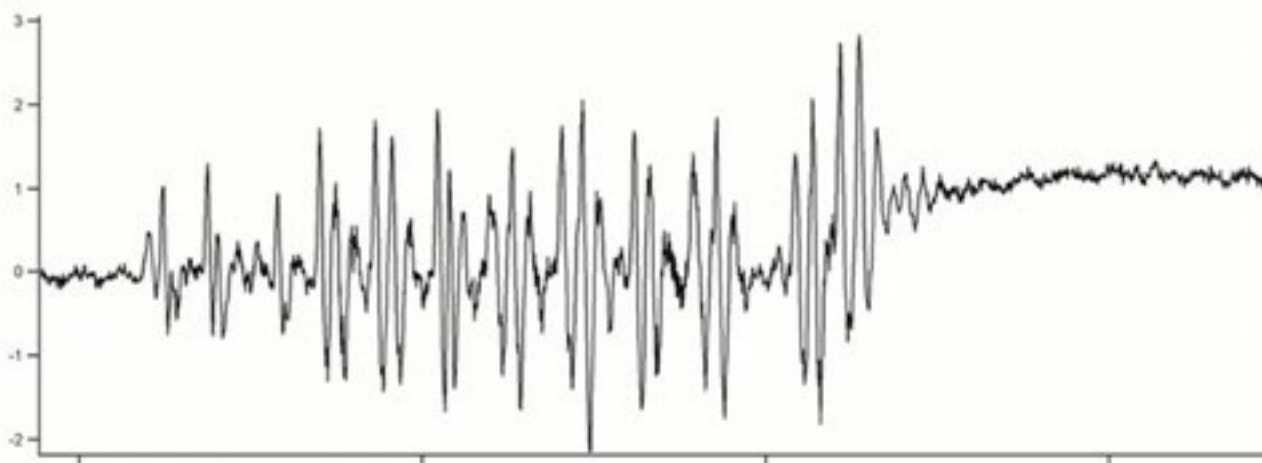


Figure 3: Variable amplitude and reversing torque.

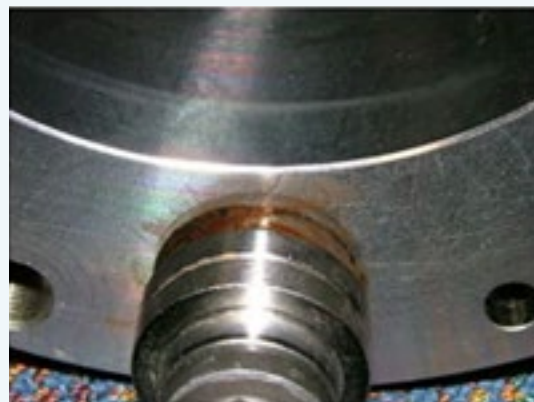
Preventive methods: How to detect torsional vibrations

The amplitude of torsional vibration can be destructive and since most machinery is not equipped to measure it, the first indication of a problem is typically failure of a drivetrain component. However, there are some methods for detection that can be utilized to determine the presence of torsional vibrations. Flexible shaft couplings often times provide tell-tale signs that can be detected visually upon disassembly or, in some cases, during operation. The flexible element(s) of the coupling (i.e. disc pack, gear teeth, grid, elastomeric blocks, etc.) which are meant to accommodate for shaft misalignment while transmitting the load are the components of the coupling that are primarily susceptible to damage which is visible. Additionally, shaft sections, keyways, and bolted flange connections can present visible damage; but this usually occurs in addition to flexible element damage due to the higher torque capacities of those interfaces and components.

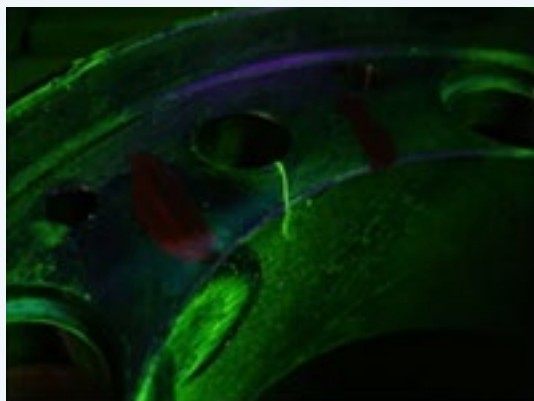
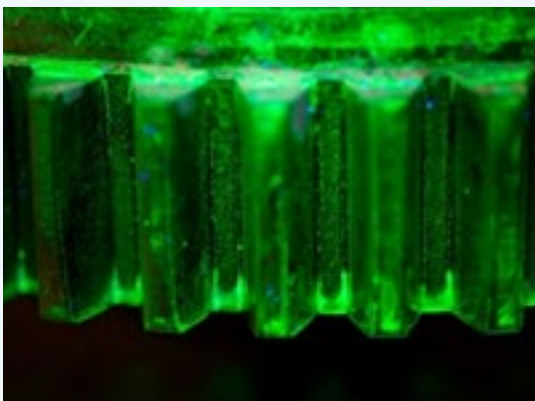
For drivetrains which include a gearbox, audible noises may be detected when torsional vibrations are present. This can sound like ‘chattering’ or looseness in the gear mesh. However, without a more detailed inspection, or actual measurements, the loads seen during these events cannot be determined. Note that radial vibration is sometimes measurable on gearboxes when torsional vibration is severe.

Fretting is the result of the relative movement of two surfaces subjected to a load. Torsional vibration can produce fretting wear in bolted flange connections, splines, and at hub/shaft interfaces. During inspection, couplings and shafts should be carefully inspected for signs of fretting as it tends to reduce the fatigue life and is a common crack initiation point. For ferrous materials, surfaces with fretting wear usually contain reddish-brown areas which are oxidized wear particles as well as some areas that appear polished as the wear particles begin to serve as a lapping compound. Photograph 2a shows a fretting wear pattern around a bolt hole of a coupling flange connection caused by relative movement of the flange and washer. Photograph 2b shows a different bolt hole with a crack that has begun to propagate and after initiation in the fretting zone.

Visual inspection should also be aimed at finding surface cracks in the load-carrying components. Attention should be paid to areas where the stress can become concentrated by sharp corners or an abrupt change in geometry such as steps in a shaft, keyways, welded joints, etc. The limitation of visual inspection is that small and sub-surface cracks are not visible to the naked eye. For critical equipment susceptible to torsional vibration, inspection methods for crack detection should include either dye penetrant or magnetic particle inspection (MPI). Dye penetrants are effective at quickly identifying surface cracks, but are not capable of detecting sub-surface cracks and can be difficult to use in small corners. MPI is typically the best method to detect cracks in ferrous materials. Examples of cracks detected using MPI in the root of gear teeth and a coupling component are shown in Photographs 3a and 3b, respectively.



Photographs 2a and b: Showing fretting wear around bolt hole from dynamic contact with mating washer (left) and crack initiated in fretting zone (right).



Photographs 3a and b: MPI crack indications in the root of gear teeth (left) and crack that propagated through a flexible coupling component (right).

With some type of couplings whose flexible element is visible while in operation, non-intrusive inspection methods may be possible. The use of strobe lights during operation can help identify abnormal deflections of the flexible elements. As an example, Photographs 4a and 4b show a flexible disc pack in operation. Torsional vibration can cause the individual discs to separate and

buckle. Coupling manufacturers can provide guidelines for acceptable limits of disc spreading. Note that shaft misalignment and installation errors can also create this occurrence. Torque-related problems typically cause buckling to occur at every other link between bolted connections. This is because the disc packs are alternately bolted to the driving and driven side of the coupling.

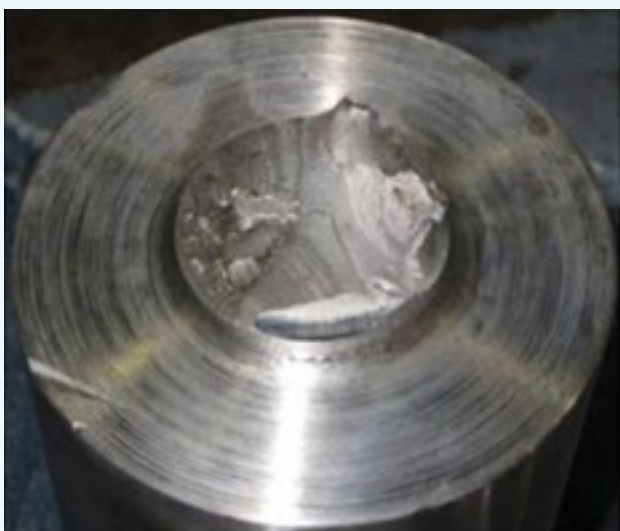


Photographs 4a and b: Inspection of coupling element (disc pack style) showing minor distortion due to slight overload (left) and severe buckling of discs (right). Note that deformation/buckling occurs in the centre of the link between alternating bolted connections.

Elastomeric couplings are often installed to increase system damping, and hence reduce or restrict torsional vibration. These couplings utilize rubber in compression or rubber in shear as the flexible elements. Compressed rubber will tend to absorb the torsional vibration energy in the blocks where it is converted to heat. Excessive vibrations will melt the rubber material from the inside of the blocks which won't be visible until complete failure occurs or if the blocks are sectioned for inspection when they are replaced. Rubber in shear couplings will often show signs of degradation at the interface between the rubber and metallic material which can be visually inspected.

In the event that failure does occur, the fracture surface should be inspected as it can help distinguish between different potential failure sources – a one-time overload from a process upset, or torsional vibrations which are inherent to the drivetrain design or operation, requiring more extensive corrective actions.

A metallurgical analysis performed by a competent test laboratory will provide the most comprehensive results, but it can be time-consuming and doesn't typically provide insight into potential design or operational modifications necessary to correct the problem. One key piece of information that can be gained from the fracture surface is the crack initiation point. Simply knowing where the crack started can determine if design changes should be considered, which might be as simple as increasing a radius, shot-peening the surface for fatigue resistance, or recognizing the need for improved manufacturing and quality processes. Most fracture surfaces from fatigue failures will exhibit beach-marks (striations), which 8 of 19 resemble the tidemarks on a beach. The beach-marks expand outward from the crack initiation point in a circular or semi-circular pattern and are followed by a region of fast fracture. Multiple initiation points can be present and are usually evidenced by what are called ratchet marks, which occur when separate patterns of beach-marks intersect.



Photographs 5a and b: Fatigue failure surfaces of shear pin subjected to cyclic stress below the prescribed overload limit but above the material endurance (left) and fatigue fracture of a crowned gear tooth from repeated impacting (right).



Fatigue is sometimes used synonymously with age-related failure or equipment wear-out. There is a component of time, in relation to the cycles of vibration, but this can be matter of seconds in some cases. Fatigue failures are typically characterized as either low-cycle (<1,000 cycles) or high-cycle (>1,000 cycles).³ Theoretically, if a drivetrain is operating at 1,800 RPM and the speed coincides with a natural frequency that is synchronous with speed, short cycle fatigue failure could occur within 30 seconds, provided the stresses induced are above the material endurance limit.

Failures due to periodic impact loading can resemble those due to torsional oscillations. The impact represents one or several cycles of vibration which typically occur during start-up, shut-down, speed changes, or are a result of the mechanics of the process. Again, the magnitude of the stresses and frequency in which they occur will determine the fatigue life.

Understanding torsional dynamics

As with any form of vibration, the oscillatory movement of an object is governed by the universal laws of motion and is usually described in terms of a mass-damper-spring system. Analogous with mass in linear vibration, inertia describes a rotating mass in a torsional reference frame. In a drivetrain, examples of inertia include the motor rotors, gearing, flywheels, compressor rotors, pump impellers, etc. which are connected to each other with torsional springs such as couplings and shaft sections. A simple torsional system is shown in Figure 4, and could be used as a simple representation of a motor-driven fan. The undamped natural frequency of this system is defined in Equation 1. For larger drivetrains with additional inertias, the calculations for natural frequencies become more complex.

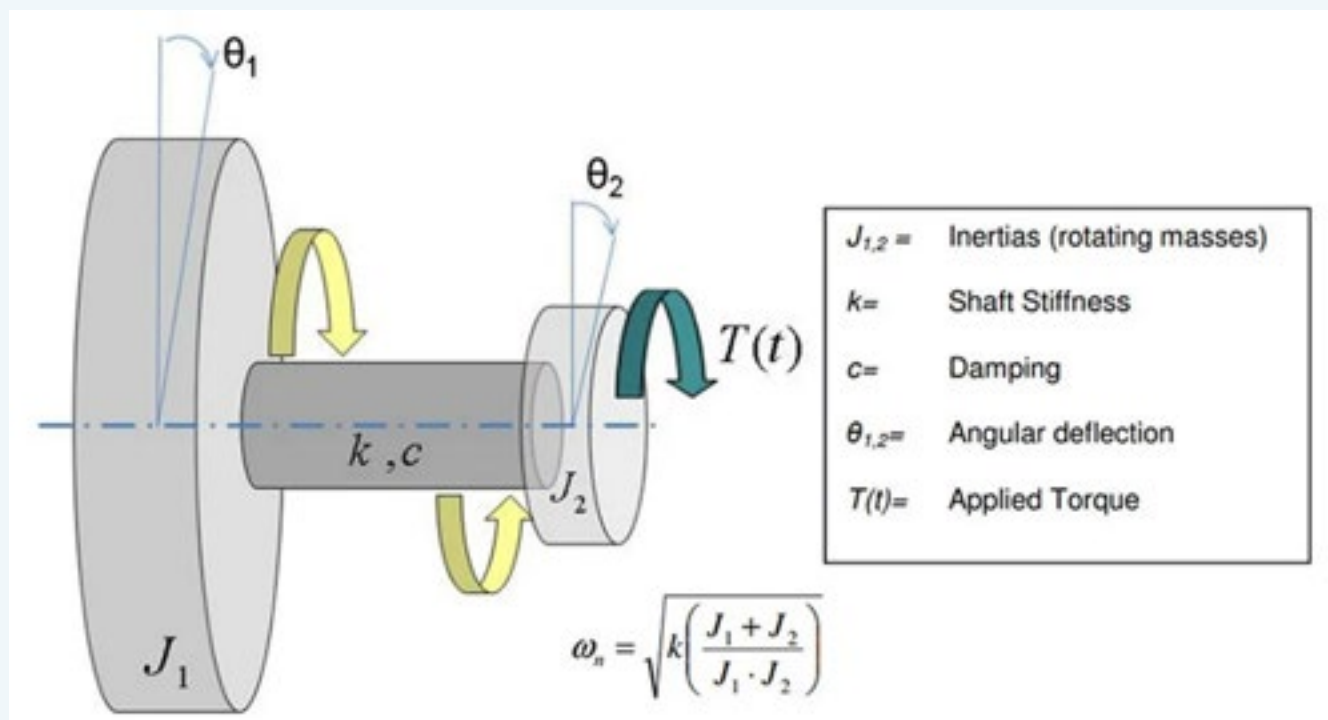


Figure 4: Simple 2-Inertia System showing external torque applied and resultant forces transmitted.

Equation 1: Undamped Natural Frequency of 2-inertia system in Figure 4

When drivetrains are designed, it is typical that the torsional natural frequencies are calculated and compared with known excitation sources to ensure that resonant conditions do not exist under normal operating conditions throughout the intended speed range. A Campbell Diagram, as shown in Figure 5, is commonly used to determine where natural frequencies intersect with excitation sources.

Horizontal dotted lines represent the system natural frequency. When these intersect with potential forcing frequencies (1X RPM, 2X RPM, shown in the angled lines), there is a potential that you will have a resonant condition. This is of most concern when these intersections occur within the operational speed range.

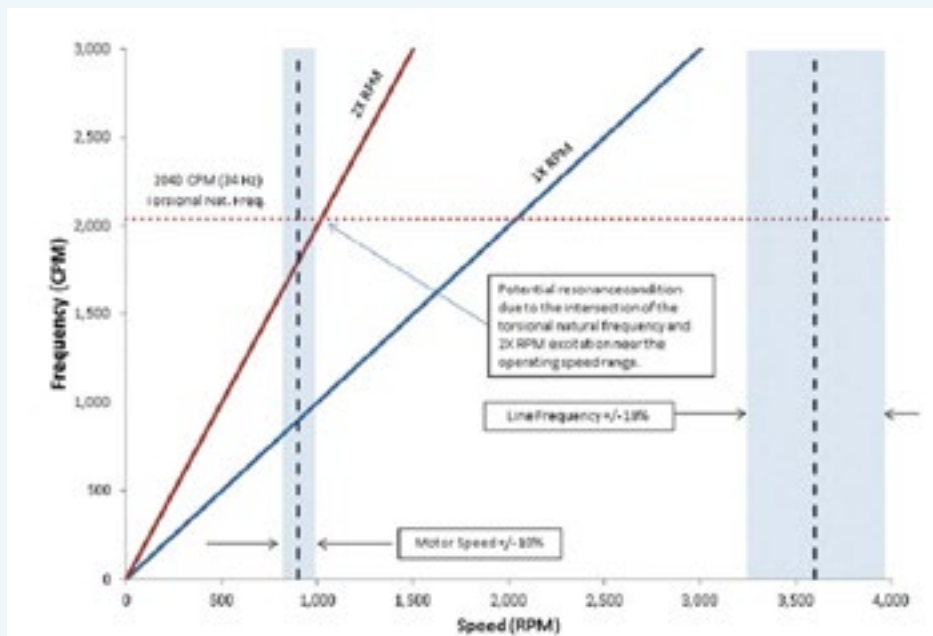


Figure 5: Campbell (Interference) Diagram Example.

As shown in the Campbell Diagram, there is a potential for resonance while the equipment is operating within the normal speed range that which could be excited by the confluence of the torsional natural frequency and 2X RPM excitation sources. Practically speaking, this would indicate that vibrations occurring at 2X motor speed could excite the torsional natural frequency. Potential sources of this type of vibration would include shaft misalignment. Unless properly diagnosed as a torsional resonance issues, corrective actions might be incorrectly aimed at reducing shaft misalignment. In this example, while improved shaft alignment would result in a decreased excitation source, it will be difficult to reduce the amplitude of torsional vibration due to the nature of resonance.

To avoid amplification of torque due to resonance, American Petroleum Institute (API) recommends a minimum separation margin of 10% between natural frequencies and excitation sources. As shown in the Campbell Diagram, the potential excitation sources are shown in bands to indicate the separation margins. According to API 684, 2005, a torsional analysis should always be performed for new designs. However, this is not widely practiced in other industries and unfortunately torsional vibration might not be considered to be a problem until after a failure has occurred. It should be noted that the safety and reliability of a torsional system is determined by stress, not merely by separation margin from excitation sources that may or may not be of any importance.

While most equipment manufacturers will study the torsional dynamics when the drivetrain is designed, the same analysis is often neglected when drivetrain equipment is upgraded or process conditions are changed to increase plant throughput. The measurement and analysis of torsional vibration (either at the design stage or during retrofit) will help ensure process optimization and equipment reliability by mitigating the risks associated with otherwise potentially harmful operating conditions.

A torsional analysis can have varying levels of complexity. Often, if there is no indication that the natural frequencies will be excited then that is the extent of the analysis. However, due to the uncertainties in the calculations and the potential for off-design operating conditions, it is recommended that the torsional analysis include the calculation of the forced vibration response.

A forced response analysis typically includes the creation of a mathematical model of the drivetrain and the calculation of the resultant stresses from external torques generated from the driving and/or driven equipment. The mathematical model is usually a discrete lumped mass-spring system which represents the major inertias and torsional springs in the drivetrain. Because the motion of one inertia in a drivetrain is dependent upon all of the other inertias, a system of equations based on the laws of motion is developed. Theoretical torques can be applied to the model to simulate different conditions like start-up, impacts, and resonance by altering the time-varying torque function.

The equations of motion for each inertia can be determined through the summation of the forces applied to each inertia as shown in Equations 2 a-b for the two-inertia system shown in Figure 4. From Newton's universal laws of motion, the summation of forces acting on an object is equal to the object mass multiplied by acceleration. In the torsional reference frame this equates to inertia (J) multiplied by angular acceleration. When an external time-varying torque, $T(t)$, is applied to an inertia there will be equal and opposite reaction forces transmitted throughout the drivetrain in accordance with the laws of motion. The equal and opposite forces are related to the damping and stiffness characteristics of the connecting shafts. Equation 2c shows the system of equations which is then utilized to simultaneously solve for the angular displacement (θ_n) as a function of time for each inertia. The resultant torque at each shaft location can then be calculated because torque is equal to the relative angular displacement across inertias connected by a known spring stiffness (Equation 2d).

$$J_1 \ddot{\theta}_1 = c(\dot{\theta}_2 - \dot{\theta}_1) + k(\theta_2 - \theta_1)$$

Eq. 2a: Summation of forces on inertia J_1

$$J_2 \ddot{\theta}_2 = -c(\dot{\theta}_2 - \dot{\theta}_1) - k(\theta_2 - \theta_1) + T(t)$$

Eq. 2b: Summation of forces on inertia J_2

$$\begin{bmatrix} J_1 & 0 \\ 0 & J_2 \end{bmatrix} \begin{bmatrix} \ddot{\theta}_1 \\ \ddot{\theta}_2 \end{bmatrix} + \begin{bmatrix} c & -c \\ -c & c \end{bmatrix} \begin{bmatrix} \dot{\theta}_1 \\ \dot{\theta}_2 \end{bmatrix} + \begin{bmatrix} k & -k \\ -k & k \end{bmatrix} \begin{bmatrix} \theta_1 \\ \theta_2 \end{bmatrix} = \begin{bmatrix} 0 \\ T(t) \end{bmatrix}$$

Eq. 2c: System of equations of motion

$$T(t) = k[\theta_2(t) - \theta_1(t)]$$

Eq. 2d: Torque Calculation

The majority of systems are not well represented by a model with two inertias connected by a spring, and as such the system of equations will be much larger. In these cases, computer software is utilized to simulate the torsional response using numerical simulation methods such as Runge-Kutta.

These simulations are used to identify sections of the drivetrain which may be subject to high amplitude torsional vibrations. It allows designers to make modifications to the model, such as changing spring stiffness, adding damping, or changing inertia values, to determine if a positive effect can be realized. Physically, these modifications could include altering the shaft geometry (tubular or solid), utilizing an elastomeric coupling for increased damping, or adding/removing a flywheel to the drivetrain. If modifications to the drivetrain components is not possible, the analysis may still yield information as to the best location to use a torque overload or limiting device. As these types of alterations can pose significant costs in terms of new components and downtime, it is essential that effective and accurate modeling of the torsional dynamics be completed. When possible, it is best to use empirical data from field torque measurements to validate and normalize the torsional model.

Using predictive maintenance methods

The direct measurement of torque is the best method for addressing uncertainty in natural frequency and forced-response calculations, evaluating the effects of operational changes (load and/or speed), and capturing transient events which could reduce system reliability. The location on the drivetrain where torque is measured is important to consider for useful data to be acquired. Large inertias, such as gearboxes, tend to isolate the driving and driven sides of the drivetrain from transient torque events because they act like flywheels. The measurements need to be taken at a location where there is enough angular deflection to produce a signal in the torque transducer; meaning that short, solid shaft sections may not deflect much under loading. Lastly, for torque sensors such as strain gages, the shaft section geometry (and material properties) where the gage is installed needs to be known so that torque can be calculated from the measured strain. Complex geometries will make the relationship between strain and torque difficult to calculate.

Often, electrical torque measured at the motor is used to determine the torque downstream in the drivetrain. While this is usually adequate for steady-state torque, the electrical torque at the motor does not react quickly enough to torque spikes generated at the driven side of the drivetrain. In VFD-controlled motor applications, the source of torsional vibration is commonly generated from the drive. The VFD is used to control the motor speed by manipulating the frequency of their output by rectifying an incoming AC current into DC, and then using various methods (commonly pulse width modulation) to recreate an AC current and voltage output waveform. While newer VFDs produce smoother outputs and reduce the amplitude of the associated torque ripple, it has been seen that tighter speed control can cause other instabilities as the drive tries to make quick corrections due to the excitation of a TNF which has been misidentified by the drive as a load change. Tighter speed control is also problematic when the motors are driving larger inertias (large diameter fans, gearboxes, etc.) which inherently do not react to sudden speed changes because they tend to act like flywheels.

Changes in the output frequency waveform can produce corresponding torque fluctuations. Generally, the torque ripple for smooth operation should be 1% or less. It would seem logical that the feedback from the drive could be utilized to measure the transient torques; however, the torque data is usually only recorded at 10 Hz (samples/second) which is generally too slow to capture transient events without truncating the waveform peaks.

Transient events such as impacting, start-ups, and process upsets can produce torque spikes whose first (and largest amplitude) cycle of vibration occurs over only several milliseconds. In order to adequately capture the waveform, without truncating peaks, sampling rates typically need to be at least 500 Hz (Samples/second).

Several common technologies capable of measuring transient torque are available including: phase displacement systems, strain gages, and optical encoders. A comparison of the different technologies is shown in Table 1, where an 'X' indicates that the technology is suited for the specific criteria or condition listed in the first column. The choice of the particular technology largely depends on the intended use and application.

The digital signal from the transmitter is sent wirelessly (RF, Bluetooth, or wired) to a signal receiver that can provide various analogue outputs (4-20 mA, 0-10 Vdc, etc.) that can be recorded. A gain (multiplier) and offset are applied to the analogue output signal to provide a torque value based on the known material dimensions and mechanical properties of the rotating shaft/coupling.

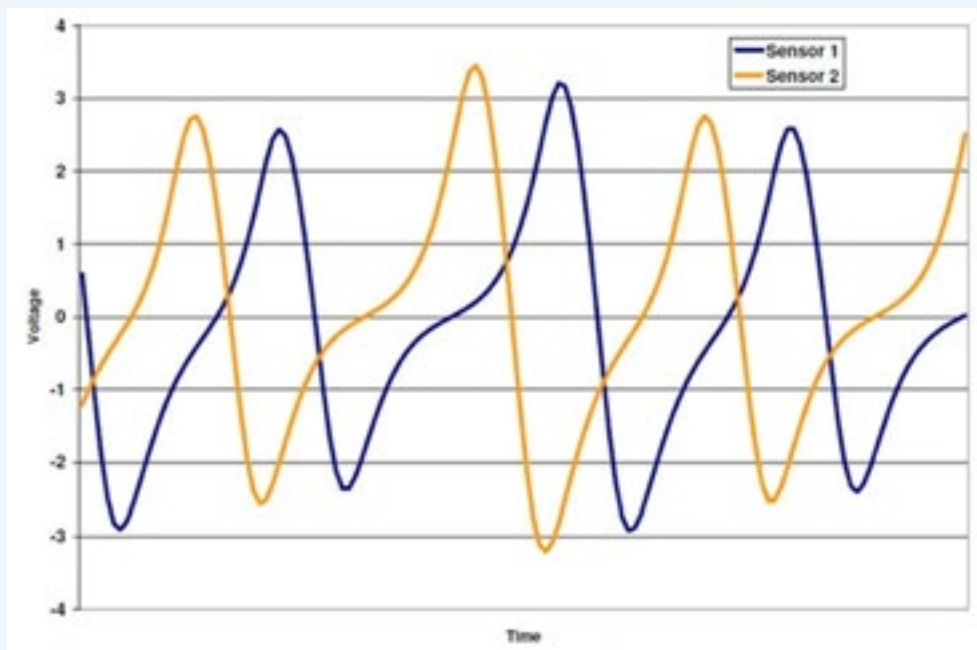


Figure 6: AC Waveform used in phase-displacement torque measurement systems.

Phase displacement systems utilize toothed wheels that generate a pulse each time a tooth passes the sensing element. The time difference (detected by sets of opposing sensors) between the teeth on the driving and driven toothed wheel is used to determine the amount of angular deflection that exists between the wheels of a known stiffness, and therefore the torque being transmitted. An example of the AC voltage waveforms produced by the two gear wheels passing the sensors is shown in Figure 6. These systems are a good choice for continuous duty use where a high degree of accuracy is required for process optimization and performance validation. Phase displacement torque measurements systems are typically installed in turbomachinery applications and are not viable solutions for low speed (< 500 RPM) equipment.

Optical systems typically employ banded or “zebra-tape” coders adhered to the rotating shaft and an optical encoder to detect the changes in colour as the tape passes the encoder. Optical systems are another option for temporary measurement of torque but have some limitations in environments that have grease/oil that could impede the optical sensor or heat which degrade the adhesive. Additionally, algorithms for signal processing need to be developed to address the overlap of each banded tape segment to avoid false measurements.

Strain gages, which consist of electrical resistors oriented in a Wheatstone bridge, are mounted to the rotating shaft or coupling, connected to a signal transmitter, and powered inductively or by batteries. For transient torque measurements, selection of a system with adequate sampling rates is necessary as some systems are designed only for intermittent measurement.

	Strain Gage, Battery	Strain Gage, Induction	Phase Displacement	Optical
Commissioning/Diagnostics	x	x		x
Continuous Duty	x	x	x	
Low Speed	x	x		
High Speed		x	x	x
Harsh Environment	x			
Lateral Shaft Movement	x			
Relative Cost	Low	Mid	High	Low

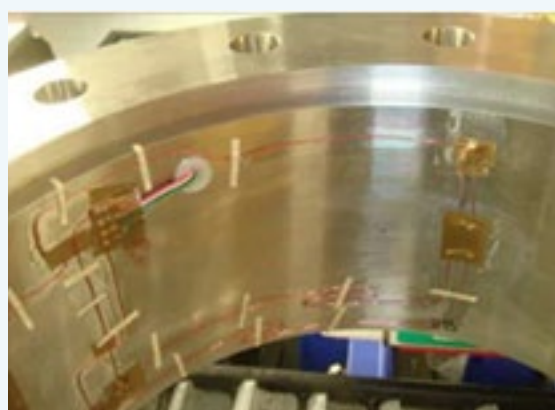
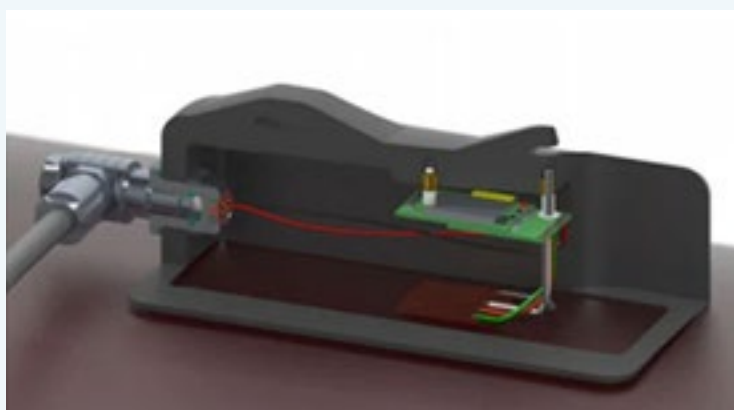
Table 1: Relative Comparison of Torque Measurement Systems.

The desired length of uninterrupted measurement is the first criterion that should be considered when selecting a torque measurement system. Significant costs can be avoided through the selection of a simple system. Often, torque measurements are only required temporarily for validation of theoretical models, commissioning, or diagnostic purposes. In these cases, strain gage systems are commonly used. An example of a temporary installation of a strain gage system is shown in Photograph 6a. The gage and RF transmitter are attached to the rotating shaft, in this case a shear spacer. A brass hoop antenna is installed around the circumference of the shaft and receives the RF signal from the transmitter. In certain designs, this type of setup can also serve to provide inductive power to the transmitter, eliminating the need for batteries. Photograph 6b shows a permanent installation using

a similar strain gage telemetry system. The electronic components on the rotating shaft are protected by the rubber and metallic enclosures mounted to the shafts. An alternate enclosure used to protect the gages and transmitter is shown in Figure 7a. This particular system does not require a hoop antenna and transmits the signal wirelessly to a receiver and processing module. In higher-speed applications, the mounting of electronics on a rotating shaft can introduce imbalance, creating other problems. In these cases, the transmitter assembly mounted to the shaft should be counter-balanced with a weight installed at 180 degrees. In balance-sensitive applications, the components should be dynamically balanced once the telemetry system is installed. Tubular shafts provide an option for the gages and wiring to be installed on the inner diameter which provides additional protection and secures the wiring (Figure 7b).

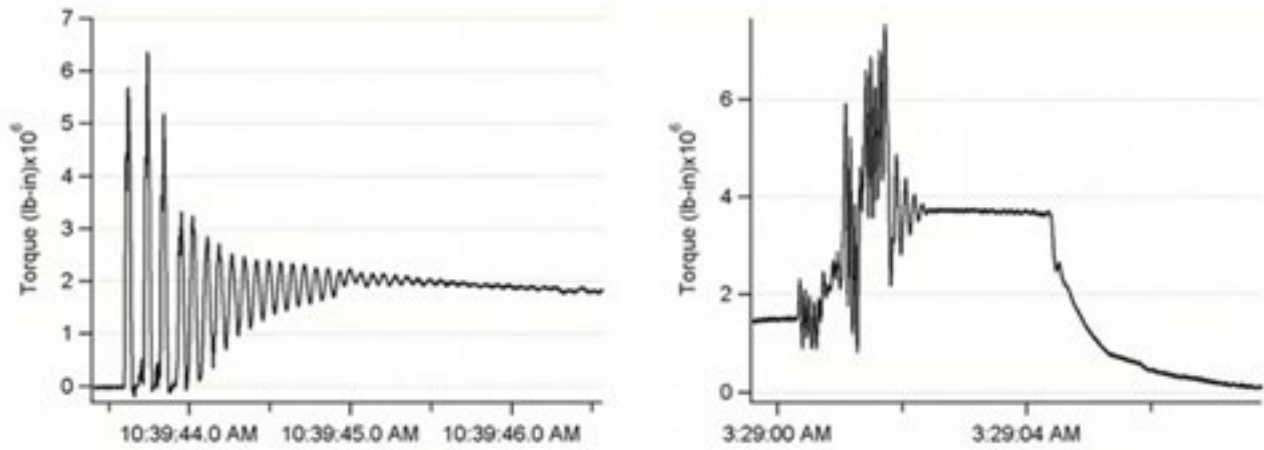


Photographs 6a and b- Strain Gage Telemetry System Installation on shear spacer (left) and permanent installation on counter-rotating shafts (right).



Figures 7a and b: Enclosure and mounting options for an externally shaft mounted transmitter (left) or gages and wiring installed on the inner diameter of a tubular shaft/spacer section (right).

As with linear vibration, the time-waveform and FFT spectrum of the torque data provide the analyst with information needed to identify the torsional vibration severity and source, respectively. Values from the time-waveform can be directly related to stress, which allows for evaluation of the drivetrain reliability in terms of fatigue and yield safety factors.



Figures 8a and b: Various type of adverse torsional vibration which can occur during start-up (left) or process upsets (right).

The spectral data will provide the analyst with information on the frequencies present in the waveform. Process conditions and angular clearances such as backlash or wear can produce torsional oscillations within the equipment; however, it is more common to see the system natural frequencies in the spectral data. This is the frequency which the shaft(s) oscillate at after an impacting load or when the operational speed coincides with a torsional natural frequency. While there are an infinite number of torsional natural frequencies for a drivetrain, it is likely that only the first and sometimes the second TNF are observed. Higher-order natural frequencies are much less energetic and more difficult to excite. The spectral data can be utilized to verify theoretical calculations of torsional natural frequencies so that changes to operational speeds can be properly evaluated, ensuring that adverse conditions are avoided. Additionally, the empirical data will allow for the mathematical model of a drivetrain to be 'normalized', providing confidence in evaluating any changes (motor upgrades, coupling changes, etc.) proposed to the drivetrain to improve reliability without introducing unforeseen problems.

For applications that are susceptible to torsional vibration (either due to resonance at operating speeds or from impacting loads), the integration of torque measurements with radial and axial vibration from eddycurrent probes or case-mounted accelerometers can provide a comprehensive condition monitoring system. First, the torque measurements can be used to trigger predicate-based recording of vibration data. Because light and intermittent loads can pose difficulties in the collection of useful vibration data, torque measurements can help analysts distinguish between data which is representative of a fault and that which is just a characteristic of how the equipment is operated. To illustrate this, data from an online vibration monitoring system which simultaneously records torque and vibration data on a metal rolling application is shown in Figure 9. The figure shows spectral data recorded with a case-mounted accelerometer on the reduction gearbox, which is intermittently loaded. The vibration measurements for lightly-loaded (blue) and fully-loaded (purple) conditions were triggered by a signal from the torque measurement system installed on the output shaft of the gearbox. The difference in the spectral data is obvious, but without knowing the transmitted torque, it would be difficult to determine if the vibration increases are due to load or a fault in the machinery.

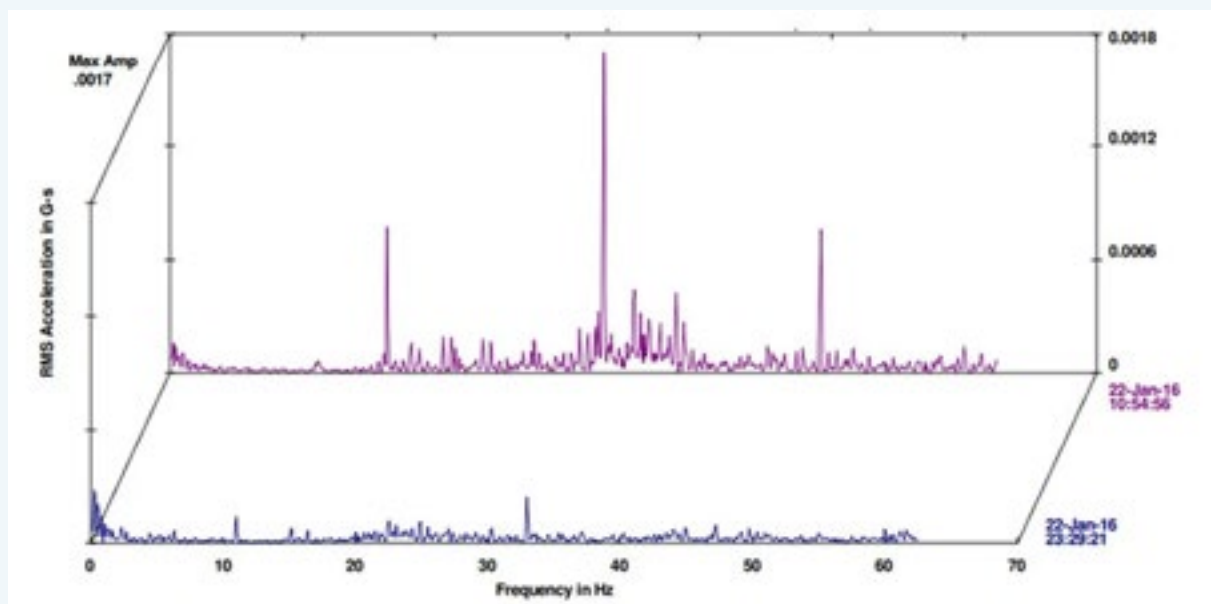
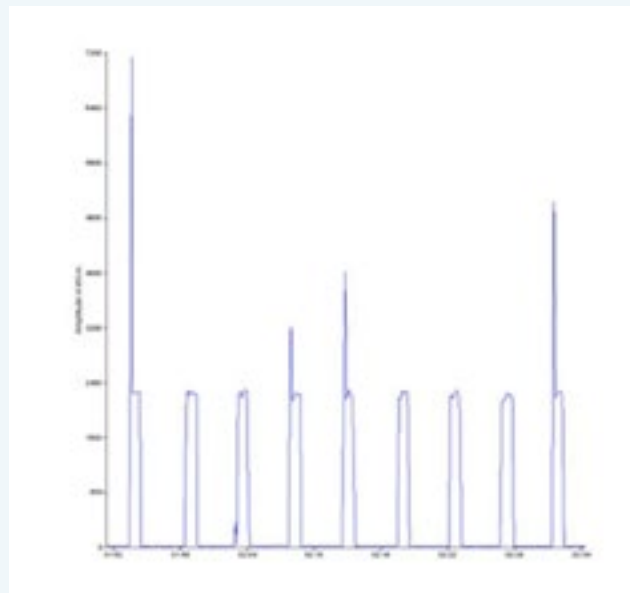
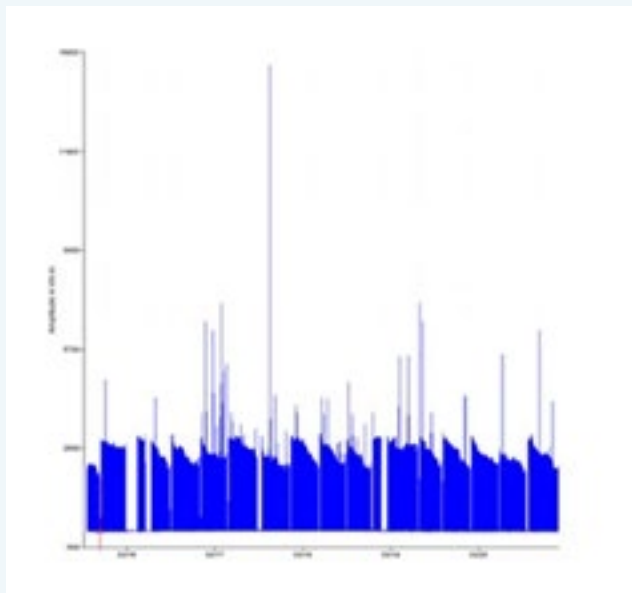


Figure 9: Loaded (purple) versus unloaded (blue) vibration spectrum data acquired from case mounted accelerometers.

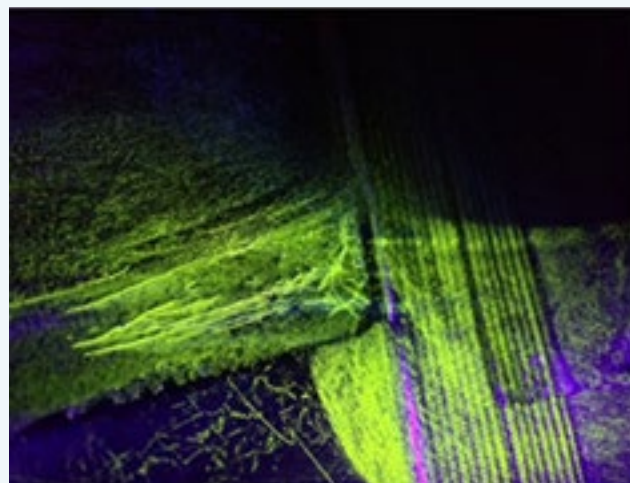


In addition to using the torque data for discerning the effect of load on vibration measurements, the torque measurements can also be used to alert operators to adverse conditions. When the amplitude of torsional vibration is measured continuously, the number of instances where the amplitude exceeds a certain threshold can be counted, allowing for corrective

actions to be taken before fatigue failure occurs. These thresholds can be determined from stress analysis of the torque transmitting component, or based on a multiple of the nominal operating torque which would indicate abnormal conditions. An example of a torque trend is shown in Figure 10 which includes several instances of high amplitude torque spikes.



Figures 10a and b: Torque trend for rolling mill application (left) and magnified view of impacting occurring at the start of rolling process (right).



Photographs 7a and b: Inspection of drivetrain component subject to repeated high torques in Figure 11. Cracks located in the area shown (left) were detected using magnetic particle inspection (right).

The measurements prompted maintenance personnel to remove the components for inspection and repair, during which time small cracks were found. The identification of these fatigue cracks would have remained hidden without transient torque measurements until further propagation or fracture. Additionally, the removal of the component before the cracks propagate further can significantly reduce equipment downtime associated with the complete fracture of the components.

Benefits of continuous torque monitoring

Harmful torsional vibrations can occur due to process conditions and transient events or can simply be inherent to the design of the drivetrain. As most equipment is not instrumented to measure these vibrations, failure is often the first indication of their presence. In some cases, preventive (time-based)

tasks can be used to identify the presence of torsional vibration, but these methods have limited effectiveness in determining the severity and source.

Drivetrains susceptible to torsional vibrations are used in numerous industries and include slow speed equipment as well as turbomachinery. API standards (617, 2002 and 684, 2005) provide guidance on torsional modelling, natural frequency calculations, and recommended margins of separation to avoid resonant conditions. Unfortunately, these standards are not used to the extent they could be in other industries to avoid failures due to torsional vibration.

Predictive methods which include the measurement and analysis of transient torque can be employed on a temporary or continuous basis. Torque measurements can be utilized to evaluate stress safety factors for new designs, throughput increases, and other modifications to the drivetrain. Additionally, continuous torque monitoring can be utilized to capture adverse conditions which could initiate fatigue cracks in drivetrain components, which are difficult to detect with conventional vibration analysis.

The original article can be read on the Regal Rexnord website at:

<https://www.regalrexnord.com/brands/perceptiv/solutions/preventive-and-predictive-methods-for-torsional-vibration>





Stowage of heavy lift cargo: legal and insurance implications

Contractual and operational background

There are customarily three principal contractual players in the carriage of project cargo: the head owner of the vessel (the "Owner"); the intermediate charterer operating the vessel on time charter (the "Operator") who, in many instances issues their own bills of lading; and the sub-charterer who contracts to have the cargo shipped (the "Merchant", as is the customary name under a booking note). The Merchant may be a freight forwarder, in which case additional cargo interests may feature as parties to the contract of carriage.

Carriage under the same or overlapping voyages of different cargoes with multiple concurrent Merchants is conceivable. Further, the head charter might normally be concluded on an amended iteration of the NYPE form. Whilst the sub-charter would most often take the form of a booking note, it is

The project cargo trade, as with many segments of the shipping industry, experienced a boom during the pandemic owing to the constraints on available tonnage to match demand. This development emphasised the importance of careful stowage of multifaceted cargoes, as contracting parties sought to optimise cargo space on vessels. Whilst market conditions may have changed somewhat, correct stowage remains vital to charterers involved in this trade. Strict compliance with the vessel's cargo securing manual is essential.

not unknown for this to be concluded as a voyage charter, such as a version of Gencon or the Heavycon 2007. Under the latter form the Hague/ Hague-Visby Rules are replaced by a knock-for-knock liability regime, but we see that the standard provisions in this regard are sometimes amended by the parties.

Moreover, unlike most other cargoes, heavy lift goods are not uniformly sized and shaped. Careful stowage, therefore, assumes primacy. Considerable preparation goes into drawing up a detailed stowage plan, so all cargo presented may be safely loaded onboard in accordance with the contractual

requirements. It is our experience that the stowage plan is commonly prepared by the Operator, who will often have considerable in-house expertise, including highly specialised personnel and, in some cases, software able to process complex calculations as regards the cargo properties in the context of both stability and hold space.

Shut-out cargo

Things can go wrong. Where a stowage plan does not accurately delineate the physical dimensions of the cargo, the vessel may find herself unable to load the full complement of goods presented. The question then arises as to the consequences flowing from the shut-out cargo. An Operator may find, subject to the contractual provisions, that without all cargo loaded, a reduced amount of freight is payable under the sub-charter.

Conversely, the Merchant would not be able to load some or all its cargo for onward carriage to the place of discharge. In those circumstances, the Merchant would require substitute tonnage to perform the voyage, necessitating additional voyage costs. The question of who is to bear these costs will likely turn on whether the cargo, as described in the packing list presented by the Merchant, inaccurately stated the cargo's physical properties or whether the stowage plan prepared by the Operator was deficient.

Part-cargo

A further complexity in the breakbulk trade resonates from the frequent fixing of part-cargoes. Each parcel loaded at a different port must fit in alongside the other cargoes stowed onboard the vessel.

Therefore, it can happen that a part-cargo is blocked from fitting into a vessel's hold by a parcel loaded at a previous port, and somehow, the stowage plan did not envisage this. In such a scenario, the Operator would face lost earnings from the freight on the shut-out cargo as well as, potentially, claims from its shut-out counterparty for failing to perform the contractual voyage. A recovery action by the Operator for these losses by way of a damages claim against the Merchant at the first load port would again likely be a factual question of whether there was a misrepresentation in respect of the description of the cargo's physical properties by that Merchant or whether the Operator erred in the stowage plan.

A similar dispute is also possible regarding the nature of the cargo presented at the intermediate load port. The permutations are not limited to these examples given. The flexible character of stowage is ripe for disputes.

The reader will note the absence of any mention of the Owner in these scenarios. The responsibilities tend to land on the Merchant and the Operator in circumstances where the Operator draws up the stowage plan. Further, delays in restowing would not ordinarily be an off-hire event under the unamended NYPE 1946 form and opportunity costs resulting from lost freight are not the concern of an owner under a time charter, unless, of course, such an owner was itself at fault. Nonetheless, if the Owner were to contract directly with the Merchant or were to prepare the stowage plan itself, the Owner could find itself involved in a dispute as to the consequences of shut-out cargo.

Restowage liabilities

Aside from damages claims within the charter chain, a charterer, either as Operator or Merchant, should be aware of the risks of restowing at a port en route to the final place of discharge, whether a subsequent load port or a port of refuge. Operations may be required to rearrange cargo to create space to allow otherwise shut-out cargo to be loaded or shifted cargo to be re-lashed.

First is the question of the costs of these operations relating to shut-out cargo, which are potentially considerable and are regulated by the charter terms. There may be a debate between the contracting parties in the charter chain as to the cause of any shifting and, if due to improper stowage, the party contractually responsible for stowage will have to bear the expenses of this operation. Nonetheless, to avoid undue loss of time, a party believing itself to be innocent might, under reservation of rights, reasonably decide to arrange restowing unilaterally. Where the final costs of this would fall would be determined later.

Second, and perhaps a more significant financial upshot of shut-out cargo, is the potential liability for damage to cargo during restowage and who is responsible for any damage to the vessel. There are a multitude of potential insurance repercussions arising out of this type of operation. If a charterer has agreed to perform restowing, it should confirm with its own liability insurer that the risks of these operations, including damage to cargo, are covered.



Knock-for-knock

As to liability, the situation changes where the charter provides for a knock-for-knock regime akin to those widely adopted in the offshore industry and seen, perhaps most often, in the heavy lift trade in the Heavycon 2007 form. This standard form contract does not appear so frequently but, when it is, is most often used where a singularly large cargo is to be loaded with no other separate parcels carried concurrently. Clause 22 sets out the knock-for-knock terms, which provide for a simple mechanism by which, amongst other things, the charterers are relieved of responsibility for damage to the ship and, by equality of arms, the owners are not responsible for damage to cargo. Aside from assessing whether such a liability regime is suitable for the contract, charterers should confirm that, should these knock-for-knock terms be agreed, their insurance remains in place as regards potential cargo damage during loading, discharge and any re-stowage operations.

Considerations for charterers

In summary, careful and precise stowage of project cargo is paramount; mistakes can be expensive. A charterer as the Merchant should ensure cargo documents are accurate, including the description as to dimensions and weight, to avoid the financial consequences of, amongst other things, shut-out cargo, whereas a charterer as Operator will rely on their expertise in drawing up an appropriate stowage plan.

In addition to operational care, charterers may benefit from negotiating their contract terms prudently. At all times, a clear allocation in the contract of the responsibility for cargo loading and the accompanying costs is vital. Further, whilst providers of heavy lift tonnage were in a stronger negotiating position during the pandemic, market forces have tilted this balance away from the ship to cargo. As such, in less adverse

conditions, a charterer may consider it expedient to deny the owner any option for a part cargo. This would preclude the risk of the charterer becoming liable for lost earnings and other claims arising out of a shut-out part cargo. Further, charterers would be wise to assure themselves of the appropriate form of the contract, including the suitability of any proposals for a knock-for-knock regime, which can create an exposure if the position is not carefully aligned up and down the contractual chain.

As is known, Skuld requires certain approved terms in contracts for the carriage of cargo, as set out in Appendix 6. For heavy lift carriage, Skuld has approved the use of the Heavycon form, provided that it is not materially amended (Section 4 of Appendix 6).

Finally, as cargo operations in this trade are complex and damage is potentially very expensive, we would emphasise the necessity of accurately clausing bills to reflect any pre-existing damage and referring to any remarks in the mate's receipts; and where cargo is carried on deck, this needs to be stated in the bills. Charterers should always refer in good time questions of cover arising out of unorthodox clauses and restowage operations at an intermediate port to their underwriting contact in Skuld.

How can Skuld help?

As described above, the handling and transport of project and heavy lift cargoes can be quite complex and may lead to both P&I and FD&D disputes, as well as more practical questions regarding the operations' impact on P&I cover. Skuld's claims handlers and underwriters are available to assist the assured with practical advice and potential additional covers if needed, and ensure that the operations are not interrupted and can continue without cover being prejudiced.

Article prepared by Skuld.





Marine lifting operations (Part II)

By Tony Small *AfilliMS*

In the first of two articles about heavy lift, we looked at the legislation that is involved in lifting operations, including the core legislation in the UK which is the "Lifting operations and lifting equipment regulations" more commonly known as "LOLER" and also the invaluable information published by British Standards BS7121 (Code of practice for the safe use of cranes). This differs from LOLER as it is not a regulation (law). If it is adhered to, this code of practice can form the basis for good working practice. However, as we are all too aware what is required by law and what actually happens on the ground can be two very different things. Let me recap the roles of the various people involved in lifting operations in the UK for their input is essential for safe lifting operations.

In real terms, at least in the UK, all lifting operations should have the following people not only to plan the lift, but to safely undertake the operation. We touched on these roles in the first article, but now we can look at how their roles link and the interdependence upon each other.

- **The Appointed Person (AP).**
This individual is ultimately responsible for the design of the lift plan. (It should be noted that he or she does not need to be present during the lifting phase of the operation as this is the responsibility of the crane supervisor). The design of the lift plan can be described as:

A lift plan is a comprehensive document that outlines the details of a lifting operation. It includes information about the roles, risks, methods, crane setup, ground conditions, and personnel. The plan ensures safety, streamlines the process, and controls costs.

If the lifting operation is a complex operation the AP should consult with others, examples of those could be temporary works engineers, lifting engineers or crane company specialists.

Where you undertake lifting operations involving lifting equipment you must:

- plan them properly
- using sufficiently competent people
- supervise them appropriately
- to ensure that they are carried out in a safe manner

Source: LOLER

The planning aspect of a lifting operation is a crucial operation and failure to plan any lifting event or action correctly can have dire and at times fatal consequences. However, major failures are becoming less frequent, because of a number of factors including strict implementation of current legalisation, more rigorous training, and certification of operators.

Major incidents can and do happen as illustrated in the picture below.



This previous picture was taken following the collapse of two cranes during the lifting of a new bridge section in the town of Alphen aan den Rijn in Holland in 2015. The Dutch transport investigation team cited lack of planning to be one of the primary causes of the failure. Another item that was mentioned by the investigation team was "Furthermore, the cranes were loaded to 100% of their rated capacity".

"Each party assumed that the others knew what they were doing and neither the main contractor nor the municipal authority asked any questions that could have exposed the dangers. The parties involved trusted each other's expertise and relied on the responsibility of the other parties in the chain," says the report. This pattern was reflected throughout the project organisation, from the barge operator to the municipal authority.

Loading to 100% of capacity leaves no margin for error and could be viewed by many including the author as less than acceptable working practice.

The photograph and the comments below are another example of what can go wrong in lifting operations, again as identified by the Health and Safety Executive (HSE), the lack of appropriate planning was a major contributory factor in the incident.

An investigation by the Health and Safety Executive (HSE) found that the company "failed to properly plan the lift and therefore unsuitable lifting accessories were used. Suitable anchor points for operatives using fall arrest equipment were not identified and there was no consideration of fall distances. Additionally, they failed to provide appropriate instructions and information for work at height and lifting operations."

An inspector added: "All organisations undertaking lifting and work at height must ensure work is properly planned, and the correct equipment is selected. Workers should be provided with adequate health and safety information and instructions." *(Taken from HSE report)*



Had the various organisations involved in these incidents viewed the planning and implementation of the lift with as much importance as the actual project, it is highly likely that the incidents may not have happened. It should also be remembered that when accidents of this nature happen involving cranes, the resultant damage and the potential for injury can be considerable given the weight, size of cranes, the stresses and the associated loads.

- **The Crane Supervisor.**

This person is responsible for ensuring the lift plan that the appointed person created is followed by all parties,

such as the crane operator, the slingers/signallers and the banksmen.

In recapping the roles and responsibilities of the individuals involved, the main theme to run through the lifting of any object from the initial planning to the safe execution of the task where there are issues and the possibility of subsequent failures, these can invariably be attributed to lack of or poor planning. The mention of the incident in Alphen aan den Rijn was attributed directly to lack of planning and the lack of communication between the various organisations.



The operation above was the removal and disposal of Linkspan following a collision involving a RoRo ferry a number of years ago at a major ferry port on the east coast of England. The linkspan weighed in at approximately 480T. An accurate weight was difficult to ascertain so sufficient redundancy was built into the calculations to allow for this. The shear leg vessel was capable of lifting 600T so more than sufficient capacity given the exact weight was unknown. All the lifting accessories were purchased new for the project and overrated given the aforementioned circumstances. The planning stage was comprehensive. As well as the appointed person to undertake the lift plan, the Master of the shear leg vessel was also involved, experienced heavy lifting engineers and the local Port authorities too. The planning stage took a considerable effort, and with input from all parties involved, the operation was successful and passed without incident.

- **The Slinger Signaller/Banksman.**

This person is at the sharp end of lifting operations and is in direct contact with the crane operator, either by the use of hand signals or radio, in the event that there is no direct line of sight between them. They are responsible for the actual slinging of the load – making sure that the load is correctly slung, all the wire or chain slings are taking an evenly distributed load and the load is level, and where necessary undertaking a trial lift before the lift is actually undertaken.

The emphasis for safe lifting operations is the planning and implementation of the project. I cannot emphasise enough the requirement for not only the adherence to the lift plan but also the skill, experience and competency of all involved.

As for the operation of lifting any item of cargo or anything to do with shipboard operations – hatches, gangways etc, what is the definition of lifting equipment? Well, according to LOLER, “Lifting equipment” means work equipment for lifting and lowering loads. This includes lifting accessories and attachments used for anchoring, fixing or supporting the equipment.

I would like to add that this includes any item of equipment that is used for opening and closing of hatches on vessels. So, we can take it that it is not only the actual slings and shackles that are used but also how the equipment is secured.

As part of this article, we look at some of the issues surrounding the actual lifting operations. Apart from that we can give some thought as to what and where is the involvement (if any) of a cargo surveyor in a lifting operation, especially when the cargo is worked with the gear and crew of the ship.

One of the things that was discussed in the first article was (apart from the legislation in the UK is the enforcement of the current regulations) that normally on land-based sites or within the confines of a UK port, the lifting operations are under the control of the Health & Safety Executive. As mentioned, this changes when a foreign vessel is loading or discharging cargo with its own gear, then the responsibility for enforcement rests with the UK Maritime & Coastguard Agency (MCA).

As a working cargo surveyor, the author is involved in lifting operations, albeit, at a distance. That being said, the author believes it is good working practice to:

- Visually inspect the lifting equipment, check the load ratings and the general condition of all the equipment and accessories to be used. Below is a photograph of a wire sling used in a recent lifting operation clearly showing the SWL. This was one of a pair of slings used in the lift of an item from a ship’s hold which weighed 15 T - more than adequate capacity for the lift.

If possible review the test certificates to ensure that all the equipment is in test and up to date. One further thing (if possible) is to have a look at the “Risk Assessment and Method Statement” (RAMS) produced by the Port staff, or those responsible for the lifting operation. Visual inspection of the lifting equipment, checking of test certificates and, where possible, a review of the RAMS, will give an indication as to the competency and the level of planning that has gone into the impending operation.

It could be argued that surveyors without heavy lift expertise may not have the necessary skills or experience to review all the documentation that is involved in the planning of safe lifting operations. However, it is an extra set of eyes assessing the plan and will provide an indication of the level of planning that has been undertaken for the operation. In the majority of instances, as mentioned earlier, lack of or poor planning has been a major contributory factor in the accidents mentioned above and many others too. Remember that when accidents occur with cranes involved in heavy lift operations they are rarely, if ever, minor. As a surveyor, if you spot something around a heavy lift operation that looks awry or requires further clarification to meet your satisfaction, you should bring it to the attention of the Appointed Person, or other senior personnel involved on site.



China MSA's action plan to prevent equipment failure



The China Maritime Safety Administration (MSA) has issued a notice announcing a special safety inspection period to prevent the failure of ships' mechanical and electrical equipment. The China MSA said that maritime management agencies at all levels will conduct detailed inspections of ships' electromechanical equipment in conjunction with daily ship safety inspections. The period of extra inspections covers from April to 31 October 2024.

Background

During this period of extra scrutiny for ships entering Chinese ports and shipyards if it is discovered through various channels that a ship has experienced electromechanical equipment failure, special inspections will be carried out. For ships that have experienced two or more electromechanical equipment failures within 12 months, the maritime administration agency will invite shipping companies and ship inspection agencies to jointly conduct inspections, and require the ships to submit fault analysis reports and measures to prevent ship electromechanical equipment failures.

Any such equipment failures on board must be reported promptly to the local MSA and follow Chinese port authority safety requirements. Failure to comply could result in delays, detention in port and legal consequences say authorities.

In addition to the inspection of the electromechanical equipment itself, attention should also be paid to the possibility that other systems may cause problems with the ship's electromechanical equipment. For example, the malfunction of the fuel quick-closing valve may cause the accidental cutoff of the main/auxiliary engine fuel supply, the lack of mechanical and electrical equipment protection facilities may injure the crew and cause manual emergency stop of the equipment, and the failure of the bilge water system

may cause engine room flooding, etc. Additional attention should also be paid to crew fatigue issues on board ships and ships leaving the shipyard after repairs.

There is a list with 9 focus items that the MSA will inspect for functionality and good order:

- Main Propulsion
- Main propulsion remote control
- Stem Boiler
- Main source of power (auxiliary engines, main board)
- Emergency Generator and Emergency board
- Steering Gear
- Crew members' competence and familiarity with above systems
- If system documents related to electromechanical equipment are effectively implemented on the ship
- Other problems that may cause electromechanical failures of ships

Actions required

Ship owners/managers should be prepared for the above inspections even if their managed ships are not eligible for a normal PSC inspection, as below actions to be performed:

- Send Appendix A with key actions for each of the 9 items that will be inspected on board ships in order to conduct a self assessment.
- Report any failure on above systems prior to entering China's ports.
- Assume rectification actions as may be required.



Appendix A: Items Required for Extra Inspection

1. Is the main propulsion device (prime mover) normal?

Preventing main propulsion unit failure requires self-examination from the aspects of oil, gas, water, and electricity. It should focus on the fuel system, lubricating oil system, air system, cooling water system and main engine control system.

- Whether the fuel system of the main propulsion unit is normal (fuel supply unit, high-pressure oil pump, oil pipe, oil leakage monitoring, fuel heating, automatic fuel pump switching (if any), etc.).
- Whether the communication facilities such as the console and driving platform clock are normal, and whether the nearby instruments such as the tachometer are normal.
- Is the starting air system of the main propulsion device normal (main starting air bottle pressure, main air compressor, main starting valve, cylinder starting valve, air distributor, etc.).
- Whether the main engine's lubricating oil system is normal (whether there are traces of leakage in the pipelines and filter joints, whether the pressure gauge display is normal, whether the sensor joints are firm, whether the lubricating oil pump automatically switches (if any), etc.).
- Whether the cooling water system of the main engine is normal (whether there are traces of leakage in the pipelines and coolers, whether the pressure gauge display is normal, whether the sensor joint is firm, whether the cooling water pump switches automatically (if any), etc.).
- Check whether the host control air system is normal (control air pressure, control whether there is water in the air, etc.).
- Main engine retreat measures (adjustable propeller blade pitch control system, clutch).

2. Are the main propulsion device security, monitoring remote control and other ancillary equipment normal?

- To prevent the failure of the security system of the main propulsion unit, it is necessary to conduct self-examination from the aspects of oil mist concentration detector, oil pressure loss protection, and overspeed protection function reliability.
- Whether the main diesel engine overspeed alarm and emergency stopping device are normal.
- Whether the main diesel engine lubricating oil low pressure, cylinder jacket water high temperature alarm and automatic shutdown protection devices are normal.
- Are the main diesel engine oil mist concentration detector and main bearing temperature detector normal? (Only applicable to sea-going ships and unattended engine rooms with diesel engine power greater than 2250KW or cylinder inner diameter greater than 300mm).
- Check whether there are alarm records related to main propulsion system security and automatic parking devices in the centralized monitoring system. (Only applicable to sea-going ships).
- Whether the low-pressure oil pressure alarm device of the gear transmission device is normal. For gear transmission devices with an input power greater than 1470kW, whether the high-lubrication oil high-temperature alarm device is normal. (Applicable to sea-going ships).

3. Is the ship's steam boiler normal?

The boiler can adjust the oil and water temperature through steam heating to ensure that the diesel engine operates within normal operating conditions. To prevent boiler failure, it is recommended to conduct self-examination from the water supply system, combustion system, safety protection, etc.

- Whether the water supply system is normal (number of water supply pumps, water supply quality, water level indicating device, etc.).
- Whether the combustion system is normal (ignition, fuel supply, air supply, etc.).
- Whether the security system is normal (safety valve, air supply, flame extinguishing, low water level alarm, etc.).



4. Is the main power supply of the ship normal?

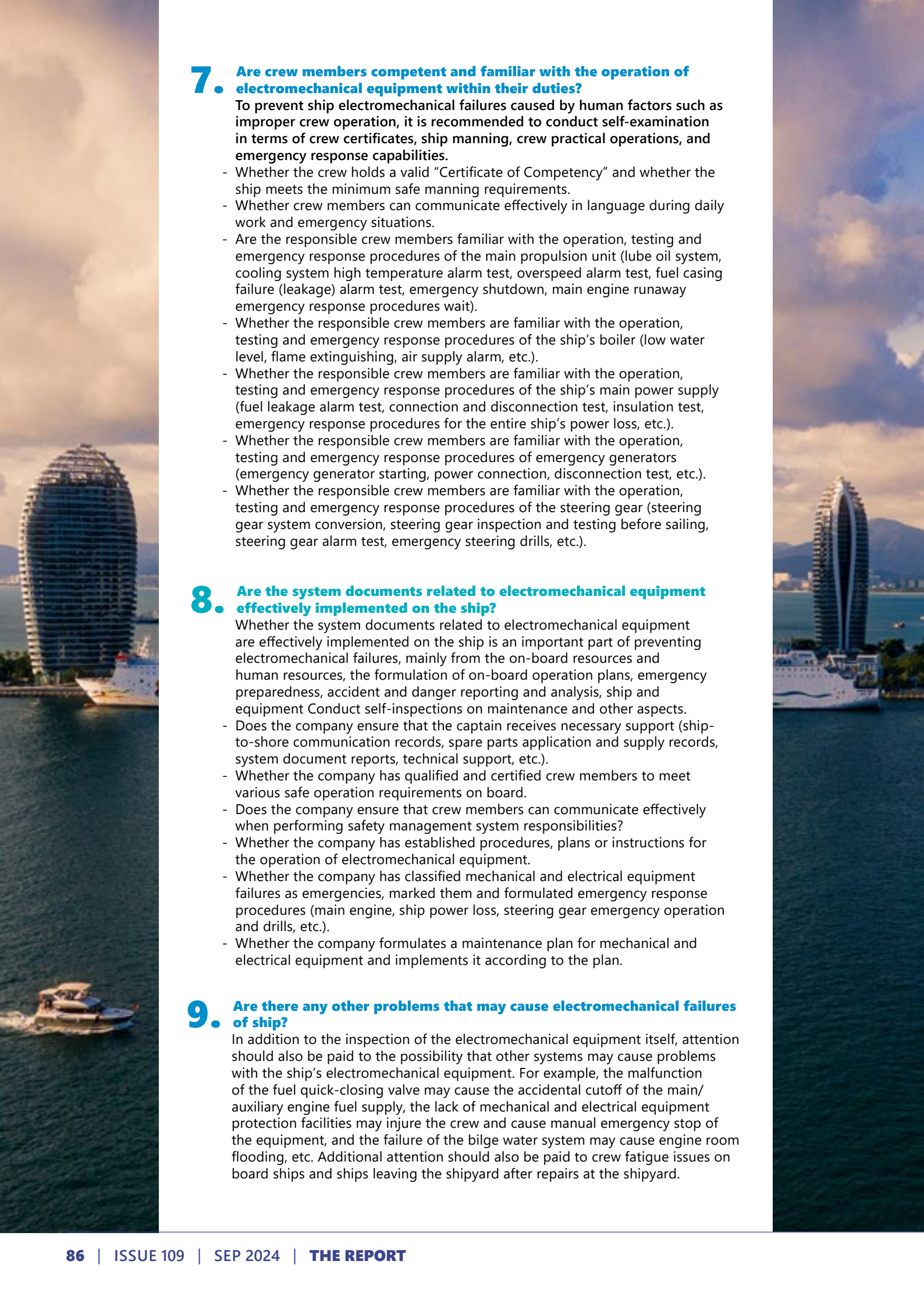
- Preventing main power failure requires preventive self-examination from three aspects: prime mover, generator and main switchboard.
- Whether the main power supply capacity is sufficient (focus on the failure of single or multiple sets of generators and ships equipped with side thrusters, desulfurization towers, ballast water treatment devices, etc.).
 - Check whether the prime mover starts and operates normally (fuel, lubricating oil, cooling water, etc.).
 - Whether the prime mover security system functions normally (overspeed protection, low oil pressure, high cooling water temperature, etc.).
 - Whether the main switchboard and generator unit control panel are normal (automatic start, stop, parallel, de-parallel, load distribution, graded unloading control of the generator unit, etc.).
 - Check whether the insulation monitoring function of the main distribution board is normal.

5. Is the emergency power supply normal?

- The ship's emergency power supply (mainly the emergency generator) can be used as an independent energy source to provide power for important equipment such as steering gears when the ship's main power supply fails. The inspection of the ship's emergency power supply can be carried out from the aspects of emergency generators, emergency switchboards, emergency battery banks, etc.
- Check whether the emergency generator starts and operates normally (fuel, oil, cooling water, etc.).
 - Whether the emergency generator starting device meets the requirements. (Only applicable to sea-going ships).
 - Whether the emergency generator has sufficient fuel reserve.
 - Whether the emergency generator mode switch for automatic starting is placed in the automatic position.
 - When the main power is lost, according to regulations, can power be supplied to emergency equipment within 45 seconds (inland river ships are required to within 30 seconds).
 - Whether the insulation monitoring function of the emergency switchboard is normal.
 - Whether the emergency battery pack is functioning normally.
 - Whether the quick-closing valve of the emergency generator fuel tank is working properly.
 - Whether the switches of various load units on the emergency generator distribution board are in the open position.
 - Are there check valves in the emergency generator compressed air bottle supply pipeline (in the emergency generator room)?
 - Is the fuel leakage alarm of the high-pressure oil pipe of the emergency generator normal?

6. Is the steering gear normal?

- In order to ensure the effective operation of the steering gear and prevent steering gear failures, self examination can be carried out from the aspects of the steering gear electrical system, hydraulic system, alarm device and operation.
- Whether the steering gear can start automatically after power failure. (Only applicable to seagoing ships)
 - When main power is lost, whether the steering gear can receive power within 45 seconds. (Only applicable to sea-going ships, rudder stock diameter exceeds 230mm).
 - When a single failure occurs in the electronically controlled steering gear power equipment, it should be able to switch to the backup power equipment within 10 seconds. (Applicable to river boats only).
 - Whether the capacity of the steering gear hydraulic oil storage tank is sufficient to refill at least one power actuator system (including the reservoir).
 - Whether the low-level audible and visual alarms of the hydraulic oil reservoir of the steering gear (in the cab and machinery space) are normal.
 - Whether the audible and visual alarms of the steering gear (short circuit protection, overload alarm, phase failure alarm) are normal (in the main engine space or in the control room and bridge where the main engine is normally controlled). (Only applicable to sea-going ships).
 - Is the steering performance test normal?
 - Whether the communication facilities between the cab and steering gear room are good.



7. Are crew members competent and familiar with the operation of electromechanical equipment within their duties?

To prevent ship electromechanical failures caused by human factors such as improper crew operation, it is recommended to conduct self-examination in terms of crew certificates, ship manning, crew practical operations, and emergency response capabilities.

- Whether the crew holds a valid "Certificate of Competency" and whether the ship meets the minimum safe manning requirements.
- Whether crew members can communicate effectively in language during daily work and emergency situations.
- Are the responsible crew members familiar with the operation, testing and emergency response procedures of the main propulsion unit (lube oil system, cooling system high temperature alarm test, overspeed alarm test, fuel casing failure (leakage) alarm test, emergency shutdown, main engine runaway emergency response procedures wait).
- Whether the responsible crew members are familiar with the operation, testing and emergency response procedures of the ship's boiler (low water level, flame extinguishing, air supply alarm, etc.).
- Whether the responsible crew members are familiar with the operation, testing and emergency response procedures of the ship's main power supply (fuel leakage alarm test, connection and disconnection test, insulation test, emergency response procedures for the entire ship's power loss, etc.).
- Whether the responsible crew members are familiar with the operation, testing and emergency response procedures of emergency generators (emergency generator starting, power connection, disconnection test, etc.).
- Whether the responsible crew members are familiar with the operation, testing and emergency response procedures of the steering gear (steering gear system conversion, steering gear inspection and testing before sailing, steering gear alarm test, emergency steering drills, etc.).

8. Are the system documents related to electromechanical equipment effectively implemented on the ship?

Whether the system documents related to electromechanical equipment are effectively implemented on the ship is an important part of preventing electromechanical failures, mainly from the on-board resources and human resources, the formulation of on-board operation plans, emergency preparedness, accident and danger reporting and analysis, ship and equipment Conduct self-inspections on maintenance and other aspects.

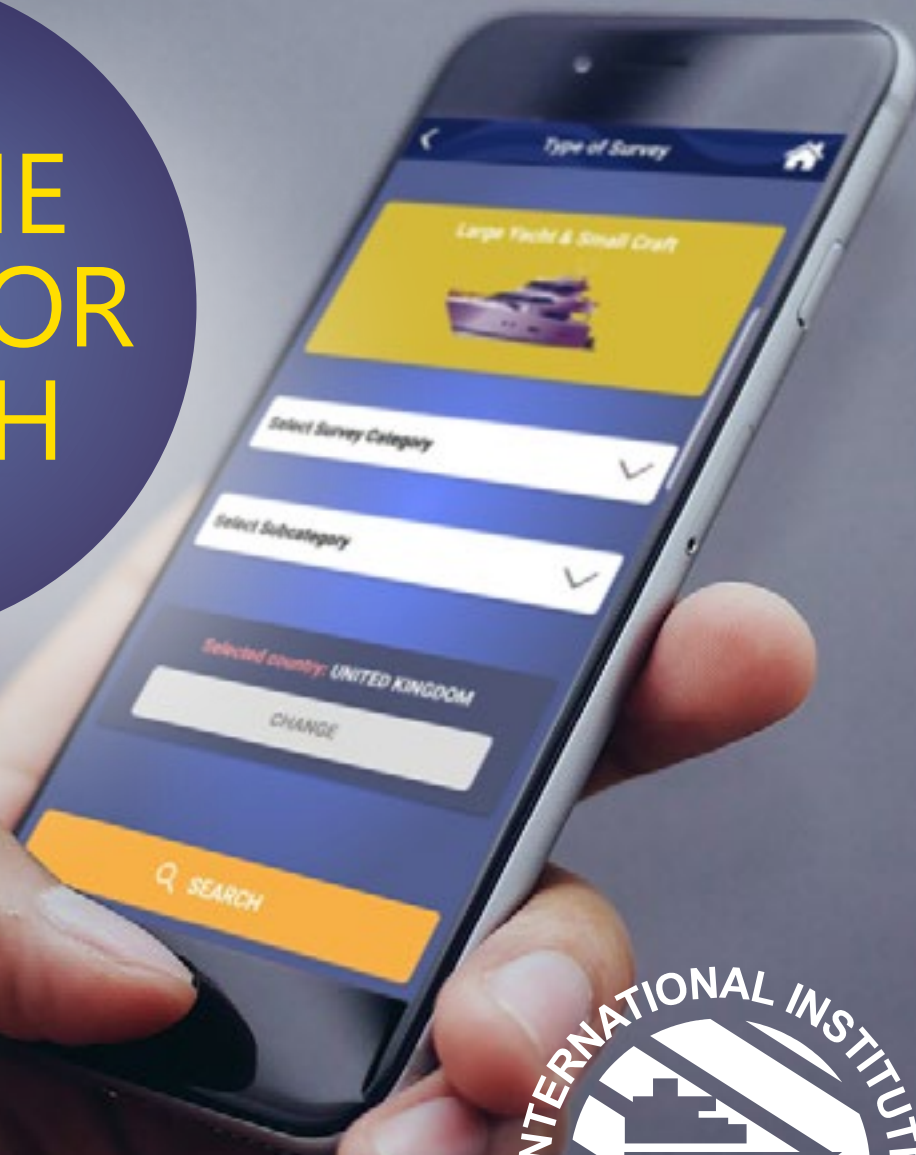
- Does the company ensure that the captain receives necessary support (ship-to-shore communication records, spare parts application and supply records, system document reports, technical support, etc.).
- Whether the company has qualified and certified crew members to meet various safe operation requirements on board.
- Does the company ensure that crew members can communicate effectively when performing safety management system responsibilities?
- Whether the company has established procedures, plans or instructions for the operation of electromechanical equipment.
- Whether the company has classified mechanical and electrical equipment failures as emergencies, marked them and formulated emergency response procedures (main engine, ship power loss, steering gear emergency operation and drills, etc.).
- Whether the company formulates a maintenance plan for mechanical and electrical equipment and implements it according to the plan.

9. Are there any other problems that may cause electromechanical failures of ship?

In addition to the inspection of the electromechanical equipment itself, attention should also be paid to the possibility that other systems may cause problems with the ship's electromechanical equipment. For example, the malfunction of the fuel quick-closing valve may cause the accidental cutoff of the main/auxiliary engine fuel supply, the lack of mechanical and electrical equipment protection facilities may injure the crew and cause manual emergency stop of the equipment, and the failure of the bilge water system may cause engine room flooding, etc. Additional attention should also be paid to crew fatigue issues on board ships and ships leaving the shipyard after repairs at the shipyard.



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IACS adopts Unified Requirements to address container loss

In response to the increasing concerns over container loss incidents at sea in recent years, IACS has adopted two new Unified Requirements, UR C6 and UR C7, which will come into force starting 1 July 2025.

As explained by IACS, by mandating lashing software for all seagoing dedicated container ships as an additional means to supplement the container stowage and securing plan, UR C6, 'Requirements for Lashing Software', provides harmonised performance standards and requirements.

Lashing software serves as a critical tool in optimising cargo securing arrangements, mitigating the risk of shifting and potential loss of containers during transit. UR C6 therefore details the functional requirements the lashing software is to comply with, together with the requirements of the test loading conditions used to approve and survey the software as well as the approval and survey procedures for the software. It is also to be capable of indicating the respective permissible values in order to assist the master in his/her judgement on whether the ship is loaded within the approved limits. The following parameters are to be presented:

- summary of ship particulars such as IMO No., length, and breadth;
- summary of loading conditions showing relevant input parameters such as draught and GM;
- stack and container positions;
- actual stack weights verified against permissible stack weights;
- relevant properties of securing devices, including permissible loads;
- accelerations and other external forces such as wind containers are exposed to;
- listing of all calculated forces on containers and container securing equipment, and evaluation of compliance of the calculated forces with the corresponding allowable values.

"By adopting uniform standards, IACS aims to enhance consistency and reliability in the implementation of lashing software, thereby promoting safer shipping practices by providing vessels with advanced tools to optimize cargo securing arrangements," said IACS in its statement.

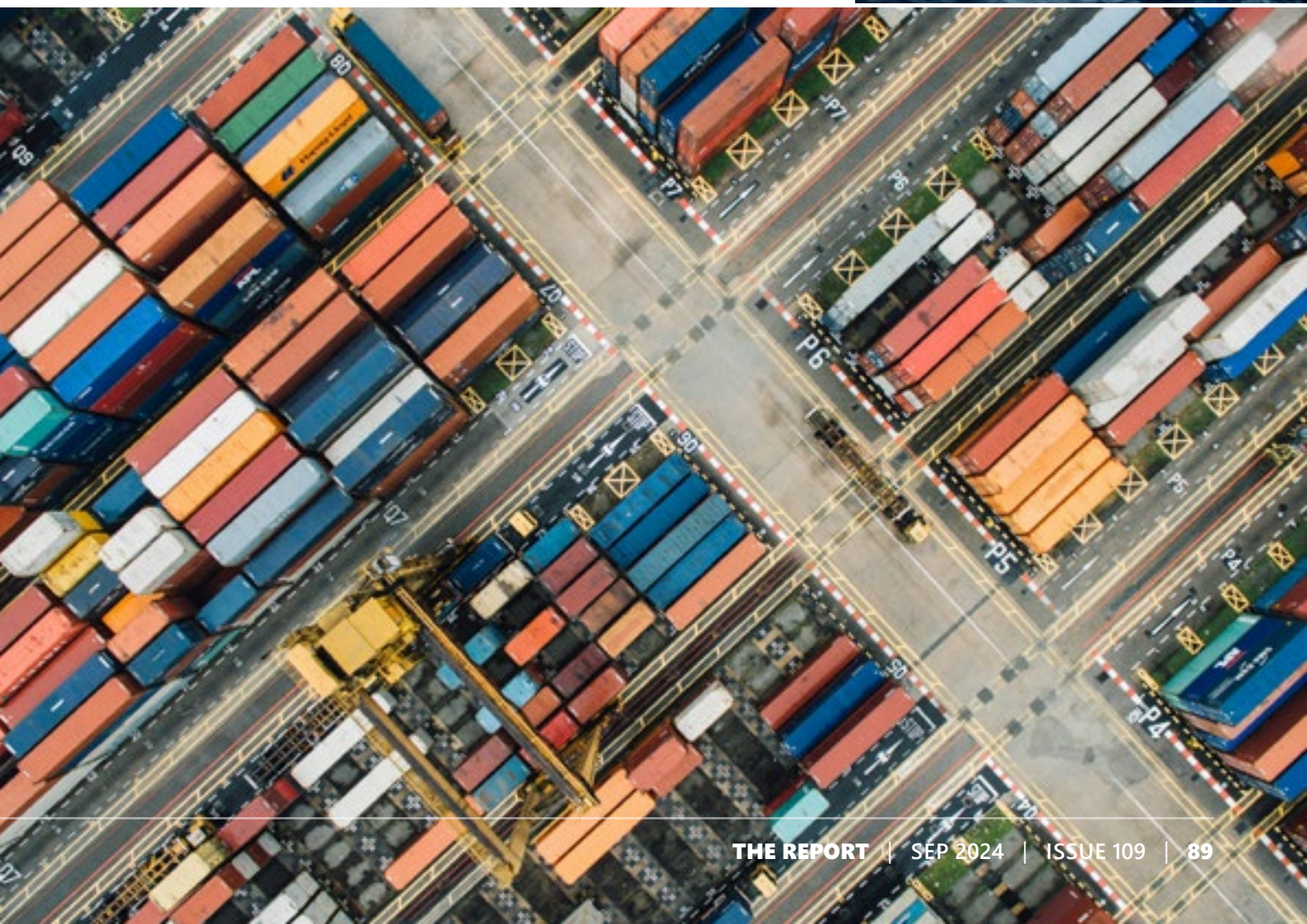
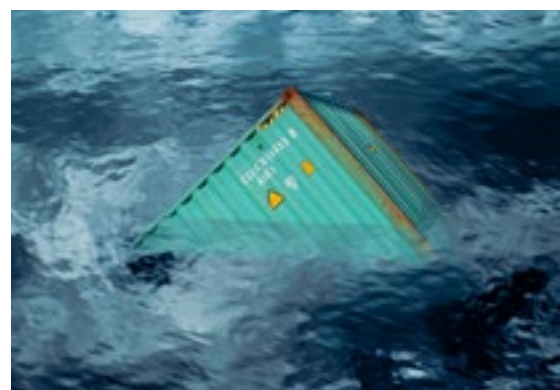
Ensuring the proper securing of cargo is paramount not only for the safety of the vessel, but also for the protection of the cargo and the personnel onboard. This requires properly accounting for the strength of the container securing systems used onboard the vessel, IACS explains. Therefore, in conjunction with UR C6, IACS has also developed and adopted UR C7, 'Approval and Certification of Container Securing Systems', which mandates minimum requirements for the approval and certification of container securing systems for container ships. UR C7 defines a comprehensive scope of approval and/or certification for container securing system, encompassing fixed and portable container securing fittings, arrangement plans, drawings of container supporting structures, and cargo safe access plans.

The container securing arrangement plan is to contain all information necessary to prepare lashing calculations in accordance with the Rules of the Society. The container securing arrangement plan is to include at least the following information:

- summary of ship particulars such as IMO No., length and breadth;
- summary of loading conditions showing relevant input parameters such as draught and GM;
- longitudinal views of under deck and on deck stowage locations of containers as appropriate showing nominal capacity;
- maximum stack masses;
- relevant properties of securing fittings, including permissible loads;
- graphical presentation of container and lashing arrangements in each bay on deck and in holds for sample loading conditions in accordance with the Rules of the Society for each container type the ship is allowed to carry;
- stack total mass and the sequence of masses in a stack;
- minimum quantity of fittings required to secure containers for the presented sample loading conditions.

Both UR C6 and C7 will be uniformly implemented by IACS Member Societies on ships contracted for construction on or after 1 July 2025.

"With the adoption of UR C6 and C7, IACS further demonstrates its commitment to the safety and reliability of container ship operations, mitigating the risk of accidents and cargo loss, and thus enhancing maritime safety and the protection of the marine environment," said IACS Secretary General, Robert Ashdown.





The role of the Captain in the construction, purchase, sale and refit of a yacht

By Gianfranco Puopolo, PG Legal

Introduction

The Captain's role consists of running the crew, overseeing the technical conditions of the yacht, making sure that the yacht is secure and safe in compliance with the relevant international maritime regulations. In addition, pursuant to article 295 of the Italian Navigation Code and the 2006 Maritime Labor Convention, the Captain is the legal representative of the Owner and the person of trust in the construction, purchase & sale and refit phases. It is essential to establish a relationship of trust between the Captain and the project managers in order to build a yacht that meets the buyer's expectations and the experience and knowledge of the Captain may be of utmost importance in such sense.

What is the role of the Captain pursuant to Italian law and international regulations?

Pursuant to article 295 of the Italian Navigation Code, the Captain represents the crew, the passengers and the Owner. Specifically, the Captain represents the Owner in all dealings and negotiations if the Owner is not present or has not appointed his representative (the so-called *absentia domini*). The Captain also supervises the construction and the refit phases and he is liable for the performance of his activities in monitoring the works carried out by the shipyard or by any subcontractors. Moreover, he may also represent the Owner in courts for any disputes arising in connection with the yacht, the cargo, the crew or any other events occurred onboard.

It should be noted that the Captain has a vital role onboard the yacht and he is an advocate of both the Owner and the crew. In particular, in accordance with the International Safety Management Code (ISM), the International Ship and Port Facility Security Code (ISPS) and the 2006 Maritime Convention, the Captain is responsible for the overall technical and regulatory compliance of the yacht and, therefore, he shall

oversee the construction and refits works on behalf of the Owner. As mentioned above, the Captain may also represent the Owner in the complaint-handling procedures submitted by a crew member.

What is the role of the Captain in the construction and/or refit phase?

In addition to the obligations of the Captain set out by Italian and international law, the Captain has a relevant role in the construction of a yacht. In fact, the Captain is representative of the Owner at all times during the construction or refit phases and he has the authority to ensure that the shipyard and/or the project managers comply with the agreement and the specifications. Specifically:

He/She assists the Owner in selecting the shipyard, maybe through a bid process;

He/She assists the Owner in selecting the project managers and other technical experts;

He/She reviews and negotiates the technical specifications and the general arrangements of the yacht;

He/She supervises the construction and/or refit works and keeps the Owner fully and constantly informed of any progress;

He/She attends the sea-trials to make sure that all the performance levels are met;

He/She assists in the delivery and re-delivery process by selecting the appropriate crew members.

It is recommended that the Captain is formally appointed by the Owner as his project manager or technical advisor in order to avoid any issues with the shipyard. In particular, if the Captain acts as the Owner's representative or as project manager: i) he may refuse to sign the milestone certificate, ii) give notice of any defects or non-conformities to the shipyard. In those cases, the matter, pursuant to the construction agreement, shall be submitted to a technical expert or to the Classification Society or to Arbitration.

It should be again pointed out that the supervision of the Captain during construction is fundamental in order to avoid any legal issues regarding defects and non-conformities. The

latter shall be distinguished from minor non-conformities, which are all the minor defect that do not impair the Class or affect the seaworthiness of the yacht. For example, with its decision no. 24725, the Italian Supreme Court condemned the shipyard to pay damages for the hull of a yacht damaged by osmosis. Such defect was discovered one year after her launch. In such case, the Court considered the shipyard liable of such damage, because the shipyard carried out some reparation works, which, actually, worsened the state of the hull and it was proved that the works were performed by using poor quality materials.

What is the role of the Captain in sea trials and condition surveys?

As stated above, the Captain should attend the sea-trials, which are carried out before delivery. In particular, the Captain should make sure that the yacht is properly functioning and that she meets the performance requirements set out in the construction agreement. In addition, the Captain should also advise on the acceptance of the yacht based on the successful completion of such sea trials.

With reference to the purchase & sale process, pursuant to the MYBA MOAs, the yacht, before delivery, shall be placed ashore in order to carry out the condition survey. Therefore, the Captain should attend the condition survey and consequently advise the Buyer: (i) whether to give notice of any defects to the seller; and (ii) on the acceptance of the yacht.

Notwithstanding that the presence of defects may be detected during sea trials and condition surveys, so before delivery, it may often happen that

defects are discovered after delivery. In such cases, Italian law (article 1495 of the Italian Civil Code) provides that the limitation period for claims for defects is one year after the delivery of the yacht. Italian courts have several times ruled that the limitation period of one year do not apply to the so-called hidden defects, i.e., defects that cannot be detected during sea trials, condition survey or delivery of a yacht. Such defects, if reported after their discovery and subsequently acknowledged by the shipyard, are subject to the standard limitation period of ten years. Examples of hidden defects are: corrosion of the exhaust pipes of the engine, leaks due to the poor assembly of the seals.

What is the role of the Captain upon closing and delivery of a yacht?

In addition to the role of the Captain during construction, sea trials and condition surveys, the Captain may be extremely helpful upon closing and delivery of a yacht. In particular, the Captain shall make sure that all the technical documents required upon closing are onboard. He is responsible for sailing the yacht to the designated place of delivery and he shall sign the protocol of delivery and acceptance, which shall include the date, time and exact coordinates of delivery.

If the delivery is in international waters, the Captain shall sail the yacht 12 miles off the coast. Once international waters are reached, the Captain shall take appropriate evidence of the yacht's location (pictures of GPS), fill out the log book with the relevant time and

exact coordinates and sign the protocol of delivery and acceptance.

Conclusions

As explained above, the Captain may play a fundamental role in the construction, purchase and sale and refit phases. In addition, the Captain, as an advocate of both the seller and the buyer, may be extremely helpful in order to avoid any legal issues that may arise. Therefore, it is suggested that Captains are assisted by an experienced legal team throughout all the phases of construction, purchase & sale and refit in order to ensure that the buyer is fully satisfied.

About PG Legal

PG Legal has offices in Milan, Rome, Dublin and branches in Naples and Genoa. Our work is international by nature as our clients come from all over the world and their businesses require assistance and advice across several jurisdictions.

To better serve our international client basis we have developed strong best-friends relations with leading law firms across Europe, the US, the Middle East and Asia that specialize in the same sectors in which we operate.

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This article as first published on the PG Legal web site and is republished here with our thanks.



Fire safety is crucial and must be treated as such



Survitec has highlighted the dangers of inadequate maintenance, testing, and inspection of ship fire safety systems in a new white paper, which points to an alarming increase in fire-safety-related deficiencies found during Port State Control Inspections and subsequent ship detentions.

In a white paper released at the Posidonia tradeshow, Survitec highlighted that fire continues to be a leading cause of major shipping incidents, accounting for over 20% of total losses, and the most expensive cause of marine insurance claims. While the highest level of fire safety deficiencies in a decade was recorded by the Paris MoU in 2022, and the Tokyo MoU also reported an increase in detentions, with a staggering 15,562 deficiencies reported in 2023.

"Analysts report a 17% year-on-year rise in shipboard fires, which correlates with an increasing number of reports and testimonies from our network of certified service technicians and engineers that document serious faults requiring immediate corrective measures," said Metkel Yohannes, Director of Service & Rental Solutions, Survitec.

Survitec has found that the economic downturn and the emphasis on cost reduction post-COVID have negatively impacted fire safety, with some shipowners and operators maintaining and inspecting safety equipment themselves in an attempt to save costs. The past few years have also seen a worrying trend of fire safety-related deficiencies on board ships, with rising numbers of ship detentions following Port State Control Inspections. As a result, fire safety was made the focus of a Concentrated Inspection Campaign (CIC) that ran between September and November 2023. The results are alarming.

According to preliminary results published in January 2024, the Baltic Sea MOU carried out 1,237 inspections on vessels in its jurisdiction. Inspectors noted basic failings in routine fire safety practices, such as the maintenance of fire doors (36%) and the periodic testing of fire detection and alarm systems (22%).

Other MOUs cite similar findings. In a review of fire-related deficiencies found between July 2022 and July 2023, Paris MOU reported that most detainable deficiencies related to:

- Fire doors
- Fixed fire extinguishing installations
- Fire-dampers
- Ventilation
- Fire detection and alarm systems
- Fire pumps and pipework
- Remote means of control (valves, pumps, ventilation, etc).

The campaign was conducted jointly with the Tokyo MOU. Preliminary results published by the Tokyo MOU in March 2024 revealed a total of 8,273 inspections were carried out during the period, of which 7,190 (86.91%) were directly related to the CIC. 2,860 deficiencies were found on 1,287 ships, representing 17.90% of its CIC inspections.



The importance of attention to detail in maritime safety and oversight risks in firefighting systems

Metkel Yohannes highlighted a critical issue in maritime safety: the discovery of fundamental errors and oversights that often remained unnoticed until a ship underwent inspection failure or experienced a fire incident. One such incident underscored the gravity of these oversights.

When Survitec responded to a vessel following an engine room fire, the crew suspected a malfunction in their high expansion foam firefighting system. Upon investigation, they identified a blockage caused by a simple yet significant oversight: one of the protective caps remained on the inlet after the installation of a new foam pump. This oversight, while seemingly minor, could have had catastrophic consequences, emphasizing the need for meticulous attention to detail in maritime safety protocols.

Survitec also finds wrong parts being used or poorly fitted, or low-quality parts that deteriorate rapidly and fail. For example, in CO2 firefighting systems, hydraulic hoses are often mistaken for high-pressure hoses, but they are not designed for CO2 applications and may burst under pressure.

Certification issues lead to costly damage

The white paper also highlights an incident involving a bulk carrier. The vessel had completed a fire safety inspection and received full certification from a local service provider. Shortly after leaving port, a fire broke out in the engine room. Over half of the cylinders failed to activate despite the CO2 system having been inspected and approved. While the fire was eventually extinguished, it caused significant damage to the vessel, resulting in off-hire and repair costs estimated between \$2-3 million USD.

Concerns about service quality and inspection standards

Metkel Yohannes explained that there was evidence of a slip in standards regarding basic safety practices, along with a wide disparity in service quality between service providers. He mentioned that approval stamps were being applied to fire systems and appliances that would or should not pass inspection. He noted that some issues, such as rust on a valve or fire extinguisher, were self-evident, but others were less obvious and could have catastrophic consequences.

New challenges in fire safety

He also pointed out that the development and introduction of alternative fuels, including the use and transportation of lithium-ion batteries, brought new fire risks and safety challenges that couldn't be ignored. Metkel Yohannes emphasized that fire systems and equipment must be maintained and tested as mandated by SOLAS, the IMO, and the FSS code.

The importance of trustworthy service partners

Metkel Yohannes further stated that shipowners and operators need accredited service partners they could trust and must have confidence in the system of approvals. He expressed concern about substandard inspections taking place, indicating that although service providers may boast many approvals, they might not be suitably equipped or resourced to perform all the required tests.

"As an industry, current practice should be reviewed to determine if more oversight and governance, and more quality control procedures are required to protect crew and vessel safety," concluded Metkel Yohannes.



HSE issues risk of serious injury from motion compensated gangways

The Health & Safety Executive (HSE) in the UK has issued a safety advisory regarding incidents associated with motion-compensated gangways on offshore vessels. Incidents involving motion compensated gangways (MCG) within the UK Continental Shelf (UKCS) or Renewable Energy Zones have resulted in serious injury.

Processes and systems should be in place, as part of a wider safe system of work, to ensure that motion compensated gangways are safe during deployment, retraction and when in use by personnel transiting to and from offshore installations, offshore windfarms and offshore energy structures.

Motion compensated gangways have been used in the oil and gas sector for some time. Rapid expansion of the wind energy sector has led to an increase in manufacturers and suppliers of these systems and more vessel owners and operators installing them to provide access services to offshore installations, offshore windfarms and offshore energy structures.

Recent incidents have highlighted the potential for, and in some instances have resulted in, serious personal injury during the deployment and use of motion compensated gangways.



Entrapment and falls

There are risks of serious injury from motion compensated gangways from:

- entrapment in, and shearing between, moving parts such as the fixed and telescopic sections of walkway or handrail
- falls from height, such as from the open walkway end

Assess risk

Windfarm operators, installation duty holders and vessel owners or operators, using, planning to use or operating motion compensated gangways must ensure, so far as is reasonably practicable, that the system is safe and suitable for the purpose for which it is being provided.

Manufacturers and suppliers of motion compensated gangways should have identified the hazards and assessed the risks from the design and the operation of their system. Operators and duty holders should confirm that a suitable and sufficient risk assessment has been undertaken.

Motion compensated gangways are designed to move whilst in use. The hazards from entrapment and shearing between moving parts and falls from the open end of the gangway must be identified, assessed and the risks eliminated, safeguarded or mitigated. The assessment should explain how this has been achieved using the hierarchy of risk control.

As explained, any assessment should also consider risks associated with someone stumbling or falling on, or from, a gangway following sudden movements of the system or vessel. Such risks are considered foreseeable due to the nature of the gangways compensating motions.

If the risks from entrapment or fall from height are still present on any MCG in use or being considered for use then further risk reduction measure will be required. If additional risk reduction measures require modifications or alterations to the gangway system then appropriate collaboration will be required between the operator or duty holder, vessel owner or operator, and the system manufacturer.

Auto-retraction

In a statement, a spokesperson for the HSE said, "Operators, duty holders and vessel owners or operators should ensure that any gangway auto-retraction function provides suitable audible and visible warnings which allow users sufficient time to make themselves safe before the auto-retraction function activates."

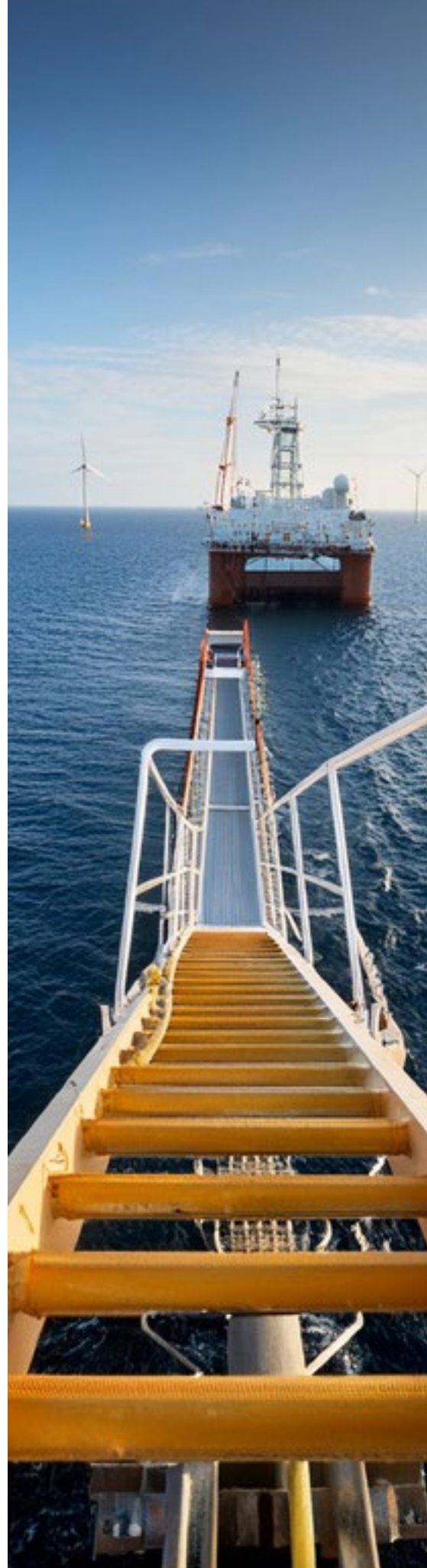
Instruction and training

Operators and duty holders must ensure that anyone who will be using a motion compensated gangway has received sufficient instruction and training in its use. Training must address normal operation of the system as well as what actions to take in an emergency or auto-retraction situation. A suitable system to verify user competence should be in place.

Vessel owners and operators must ensure that anyone who operates a motion compensated gangway has received sufficient instruction and training to ensure their safety whilst undertaking this work. Training must include what actions to take in emergencies and actions required to ensure, so far as reasonably practicable, the safety of users of the system whilst transferring across the gangway.

"Windfarm operators and installation duty holders should verify that owners or operators of motion compensated gangways have an inspection and maintenance regime in place to ensure that it is maintained in an efficient state, in efficient working order and in good repair," said the HSE.

HSE stated that vessel owners and operators that are responsible for the safe condition of a motion compensated gangway must have a suitable inspection and maintenance regime in place to ensure that it is maintained in an efficient state, in efficient working order and in good repair such that it will remain safe for your employees or persons not in your employment to use.



The difference between liquefaction and dynamic separation explained

NorthStandard P&I Club has published a guide on Bulk Cargo Liquefaction and Dynamic Separation, explaining more about the differences between the two and presenting best practices to mitigate the phenomenon.

WHAT IS DYNAMIC SEPARATION?

Dynamic separation occurs during a voyage where the moisture in the cargo rises to the surface of a stow as the cargo consolidates due to vibration and vessel motion. This is caused by a mechanism similar to liquefaction, but the cargo contains enough fine particles such that the void spaces between particles are very small and impede the moisture flowing through the cargo. As the water becomes pressurized and begins to flow, fine particles are carried with it and create a slurry.

Unlike liquefaction where a portion of the cargo in its entirety flows like a liquid, dynamic separation generates a slurry of water and fine particles which is driven away from the consolidating portion of the stow to areas of lower pressure and collects on the top of the denser (consolidated) portion of the stow. In response to vessel motions, this slurry has a free surface effect causing incremental shifting of the centre of gravity in the hold, leading to a reduction of the vessel's metacentric height (GM), negatively affecting the ship's stability.

DIFFERENCES BETWEEN LIQUEFACTION AND DYNAMIC SEPARATION

	Liquefaction	Dynamic Separation
Definition	Cargo behaves like a liquid when the moisture content exceeds the transportable moisture limit (TML).	The moisture in the cargo rises to the surface during the voyage, creating a slurry of water and fine particles.
Cargo state	Entire cargo or significant portions flow as a liquid.	Slurry of water and fine particles forms on top of the consolidated cargo.
Cause	Excess moisture causes the cargo to lose its solid structure and behave like a liquid.	Vibration and vessel motion cause moisture to migrate to the surface, carrying fine particles with it.
Mechanism	Moisture saturates the cargo, reducing friction between particles, causing the cargo to flow.	Consolidation due to vibration and motion increases pressure, pushing water and fine particles to the surface.
Movement	Cargo can flow freely, potentially shifting within the hold and causing instability.	Slurry forms a free surface on top of the cargo, leading to shifting of the center of gravity.
Effect on ship stability	Can cause significant shifts in the center of gravity, leading to dangerous angles of list and potential capsizing.	Creates a free surface effect that incrementally shifts the center of gravity, reducing metacentric height (GM) and negatively affecting stability.
Detection	Requires monitoring of moisture content before and during loading.	Can be harder to detect as it develops during the voyage.
Prevention	Ensure moisture content is below the TML before loading.	Requires proper sampling and testing, and awareness of the cargo's condition throughout the voyage.
Examples of affected cargoes	Iron ore fines, nickel ore, bauxite.	Similar to liquefaction-prone cargoes but more influenced by the presence of fine particles and vessel motion.

WHAT ARE THE CONSEQUENCES?

Cargoes that lose stability and flow due to liquefaction or dynamic separation have similar negative consequences for the ship. The effects may produce dangerous angles of list, and in some instances, the resulting loss of stability can be so severe that the vessel and the lives of those onboard are lost. It is therefore imperative that crews are aware of the types and conditions of cargo prior to loading that may give rise to either phenomenon.

HOW ARE THESE CARGOES CLASSIFIED?

In the IMSBC Code, cargoes that can liquefy or dynamically separate are classified as Group A cargoes. The IMSBC Code 2022 definition of a Group A cargo is: "Group A consists of cargoes which possess a hazard due to moisture that may result in liquefaction or dynamic separation if shipped at a moisture content in excess of their transportable moisture limit."

The International Maritime Solid Bulk Cargoes (IMSBC) Code classifies cargoes into three groups based on their potential hazards:

Group A: Cargoes that may liquefy

These are cargoes which possess a hazard due to moisture that may result in liquefaction or dynamic separation if shipped at a moisture content in excess of their Transportable Moisture Limit (TML). Examples include:

- Iron ore fines
- Nickel ore
- Bauxite

Group B: Cargoes that possess a chemical hazard

These cargoes pose a hazard due to their chemical properties and can include substances that are corrosive, toxic, flammable, or prone to spontaneous combustion. Examples include:

- Coal
- Sulphur
- Ferrosilicon

Group C: Cargoes that are neither group A nor group B

These cargoes do not liquefy (Group A) nor possess chemical hazards (Group B), but may still pose other risks such as dust or mechanical hazards. Examples include:

- Grain
- Aggregates
- Scrap metal



SOLAS REQUIREMENTS

The International Convention for the Safety of Life at Sea (SOLAS) Chapter VI – Carriage of Cargoes – provides the general framework for the carriage of all cargoes.

SHIPPER'S DUTIES

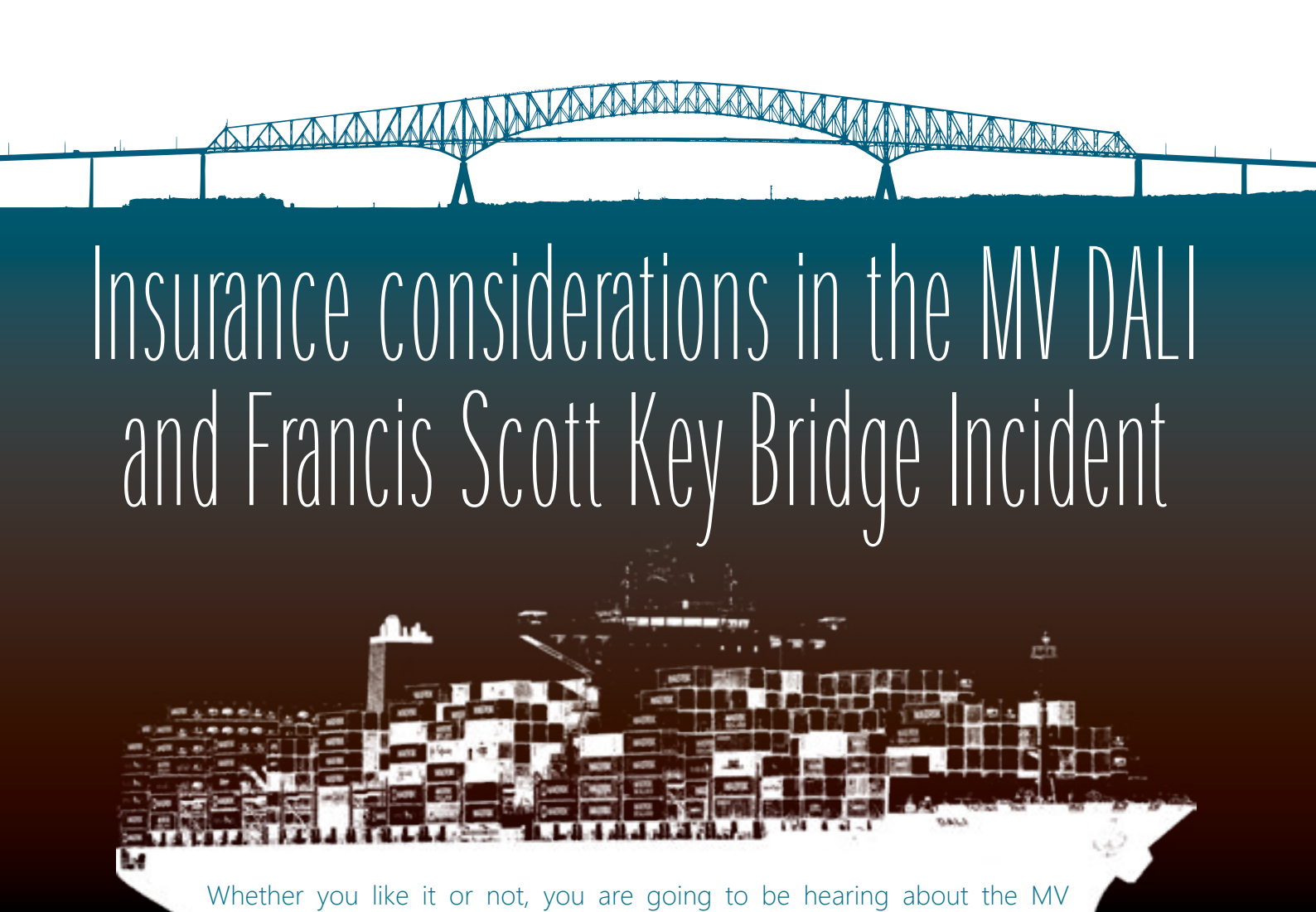
In respect of cargoes with particular hazards, such as liquefaction or dynamic separation, SOLAS requires the shipper to provide the master, or his representative, with the appropriate cargo information sufficiently in advance of loading to enable the necessary precautions for safe carriage to be put into effect. The format of such information is provided in the IMSBC Code 2022 Section 4.2.3. A typical form for the shipper's declaration is also included in IMSBC Code 2023 Appendix 5.

Additionally, there are specific provisions for additional information to be supplied for Group A cargoes in the form of a certificate of moisture content and transportable moisture limit (TML). As such, shippers are obliged to provide appropriate cargo information to the master prior to loading. To obtain this information, the shipper must arrange for the cargo

to be properly sampled and tested. Physical property tests on the cargo are meaningless unless they are conducted on truly representative samples prior to loading. If such information is not given, the master should not accept the cargo for loading.

MASTER'S DUTIES

Section 7.3.1.1 of the IMSBC Code states: "Group A cargoes shall only be accepted for loading when the actual moisture content of the cargo is less than its TML." Therefore, a master should not accept such a cargo for loading without first receiving the appropriate documentation certifying the moisture content and TML of the cargo, with the moisture content shown to be less than the TML.



Insurance considerations in the MV DALI and Francis Scott Key Bridge Incident

Whether you like it or not, you are going to be hearing about the MV DALI and Francis Scott Key Bridge accident for many years to come, not least as it may well turn out to be the biggest insurance claim on record. This is a fast moving and developing situation, which will inevitably have changed since this article was written. Contributors from insurance experts, Lockton, take up the story and review the complexity of the situation.

In the wake of the early morning collision on 26 March 2024, between the DALI container ship and the Francis Scott Key Bridge, resulting in the bridge's collapse, the complexity of insurance coverage in maritime incidents has been brought to the forefront.

The incident resulted in extensive property damage, loss of life, and a significant disruption of shipping and vehicular traffic in and around the Port of Baltimore. With many losses yet to be quantified, a crucial question emerges: which losses are recoverable and from whom?

Below is a summary of the marine insurance coverages potentially triggered by this tragic event, along with the implications of relevant U.S. maritime law principles for claimants, insurers, and reinsurers.

Hull & Machinery (H&M) *(Purchased by the owner of DALI; claim paid to same)*

Physical Damage: Covers structural damage to the ship's hull, with current repair estimates in the region of \$28 million.

Salvage Costs: Covers expenses incurred in salvaging the vessel, currently estimated to be in the region of \$19 million.

General Average: May cover the ship's proportion of general average, depending on the insurance policy terms.

Loss of Hire (LOH) *(Purchased by the owner of DALI; claim paid to same)*

Compensates for loss of income due to the vessel being out of service.

Reimbursement of pre-agreed daily lost revenue until the vessel returns to normal service, subject to a time element deductible.

Freight. Demurrage and defence *(Purchased by the owner of any vessel impacted by the port/bridge closure; claim paid to same)*

Covers legal expenses incurred in defending or pursuing legal action relating to the port or bridge closure. Cover typically discretionary in nature.

POW
CRASH
BOOM

Trade Disruption (TDI)

(Purchased by owner of any vessel impacted by the port/bridge closure; claim paid to same)

Compensation for losses due to trade disruption, subject to time element deductible.

Reimburses for additional costs incurred to complete voyage(s) via alternative means.

Strike and Delay

(Purchased by owner of any vessel impacted by port/bridge closure; claim paid to same)

Coverage available for first-party losses from delay, such as loss of income if ship is delayed, supplementary to standard Loss of Hire and/or Trade Disruption.

Business Interruption (BI)

(Purchased by marine and non-marine businesses impacted by the incident; claim paid to same)

Compensation for lost revenues resulting from port/bridge closure.

Reimbursement of additional costs incurred to maintain operations.

Cargo

(Purchased by cargo owners impacted by incident; claim paid to same)

Cover for loss, damage or spoilage of goods awaiting shipment or in transit which are delayed due to the port closure.

Supplemental coverage for additional expenses incurred, such as transshipment costs.

Protection and Indemnity

(P&I) (Third Party Liability Claims)
(Purchased by owner of DALI; claims paid to third parties)

Personal injury and death related medical expenses, lost wages and other damages resulting from the incident.

Pollution clean-up costs as well as mitigation / prevention expenses.

Discretionary cover for fines and penalties levied by government authorities.

Unrecoverable General Average contributions (Cargo, H&M etc.).

Liabilities from damage or delayed delivery / non-delivery of cargo onboard the vessel.

Recovery for Economic Damages

Case law: Robbins Dry Dock

At present there are two unknowns that will determine whether the DALI makes P&I history or not: first will be whether parties who have sustained purely economic losses (and their subrogated insurers), will be able to successfully recover those claims. Under existing U.S. maritime law, the answer is likely no because of the Robbins Dry Dock rule established by the U.S. Supreme Court in 1923. This case, and countless cases that have followed, have established a fundamental restraint on the recovery of economic losses in maritime law, emphasizing the need for a proprietary interest in the damaged property. This pivotal and long-established legal principle has shaped how economic damages are approached and recovered in U.S. maritime law and would likely act as a bar to recovery for pure economic loss. As such, many of the business interruption claims arising out of this incident would not give rise to a legal liability for which the DALI (and their P&I insurer) would be called upon to pay.

Limitation of Liability

The second unknown that will shape the ultimate outcome of this matter as it winds its way through the US courts is whether the DALI's owner can successfully limit their liability. On 1 April 2024 the DALI's owners (and her manager) filed a petition in federal court in Maryland seeking to limit their liability by availing themselves of the protections afforded them by the Limitation of Liability Act of 1851 - a long-established U.S. federal law permitting the owner of a vessel involved in a marine casualty to cap their maximum liability for damages in cases of maritime accidents. This law was enacted primarily to encourage investment in the maritime industry by limiting the financial risks associated with ship ownership and allows a shipowner to limit their liability to the value of the vessel immediately following a casualty plus pending freight (i.e. compensation paid to the vessel owner for the carriage of cargo or other service performed for the respective voyage). This limitation applies regardless of the extent of the actual damages caused by the incident.

Damaged cargo onboard other vessels

Delay claims from impacted third party vessels (stationary vessels awaiting transit) where there is a breach of duty of care and legal liability to indemnify for those losses.

Lost revenue resulting from port closure (potential claimants include port authority and other government agencies, private port and terminal operators, vessel operators doing business in and around the port and local businesses whose revenue has been impacted as a result of the port closure). Under U.S. law, however, a claimant must typically prove physical damage to property in order to recover lost revenue.

Lost revenue resulting from closure of the Francis Scott Key Bridge, to potentially include bridge owner's loss of use of the bridge and others whose business

has been impacted by closure of the bridge, if the vessel owner is ultimately determined legally liable for lost revenue (i.e. claimants can demonstrate physical damage to property).

Cost of demolition and repair/rebuilding of the Francis Scott Key bridge via cover for Fixed & Floating Objects (FFO), where not recoverable under H&M.

Limitation of Liability and US Maritime Law Principles

The primary challenge in this incident is the potential third-party liability claims (covered by the DALI's P&I insurer, Britannia P&I, a member of the International Group). Considering the whole universe of claims, including those brought by uninsured / underinsured parties and insurer subrogation, the current estimated value of damages is thought to be between \$2 billion and \$4 billion which, if this were to materialize, would result in the largest P&I claim in history.

In the case of the DALI, the cap sought is approximately \$44 million and if the DALI interests are successful, claimants to whom the shipowner is found liable would be paid their proportional share of that amount. Many of the claims outlined above – particularly the high value claims involving personal injury/ death, general average/ salvage costs, damage to the bridge and other recoverable economic losses – would be subject to such limitation.

In addition to potentially capping a vessel owner's liability, the filing of a Limitation of Liability petition consolidates all claims in a single federal forum (i.e. a single multi-party lawsuit). Once all parties have appeared, the court will then move the case forward to determine whether the shipowner is entitled to limit their liability or whether the ship owner is responsible for the full value of all claims arising out of the incident. As noted above, the delta in the DALI matter is astonishing given the limitation amount resting at \$44 million and potential liabilities topping out at approximately \$4 billion.

The key question will be whether the Dali owners will be successful in their efforts to limit their liability. The primary hurdle they will need to clear is proving the owner lacked "privity or knowledge" or the negligence or fault that caused the incident. In the context of US admiralty law, "privity" refers to a legal relationship or connection between parties – meaning the relationship between a shipowner and the person or entity responsible for the act or omission that caused the maritime incident. "Knowledge" in this context refers to the shipowner's awareness or understanding of the circumstances that led to the incident. This can include knowledge of any unseaworthy conditions of the vessel, negligence of the crew, or other factors contributing to the incident. For corporate shipowners, courts generally impute the privity or knowledge of high-ranking corporate officials onto a corporate shipowner, such as land based executives, as well as the privity or knowledge of the master or the

owner's superintendent or managing agent, at or before the beginning of each voyage.

Despite our simple summary of privity or knowledge, this area of law is far from straightforward. U.S. courts have struggled for literally centuries to apply the privity or knowledge standard, calling it "somewhat elusive" and "difficult to apply" in a consistent manner. As such, U.S. courts will typically look at the specific facts of the case, including such factors as crew competency and efforts made by the owner and crew to remedy defects in the vessel that are discoverable through reasonable diligence. Navigational mistakes or other errors caused by an otherwise competent crew, or latent defects in the ship, typically are not deemed to be within the shipowner's privity or knowledge. Even so, legal decisions in this area are far from consistent or predictable, with the trend in U.S. courts toward holding shipowners seeking to limit liability to an extremely high standard.

At present, all reports indicate that the immediate cause of the incident was a power failure aboard the DALI moments before the allision. If that power failure were the only causal link in the chain, the limitation petition of the owner of the DALI would undoubtedly be successful. However, previous power failures noted by the NTSB in their Preliminary Report could complicate the owner's limitation petition, potentially unravelling their defence and leaving them and their insurer (Britannia P&I) liable for the full value of recoverable claims.

Conclusion

The outcome of the limitation petition and subsequent litigation will significantly impact all parties involved, including insurers, reinsurers, and claimants, potentially reshaping the landscape of maritime insurance and U.S. admiralty law. Regardless of the ultimate determination, the legal process will undoubtedly drag on and thus the payout of third-party claims could take years. The incident also underscores the importance of P&I insurance and the P&I Club group pooling and reinsurance system, which will be the focus of an upcoming Lockton PL Ferrari publication. The incident also highlights the importance of proactive risk management and comprehensive insurance planning to mitigate risks from unforeseen maritime incidents.

This article has been compiled by insurance specialist Lockton and is republished here with our thanks.

See the Lockton website at <https://bit.ly/3KNvgiM>

View from the cargo vessel Dali, which struck and collapsed the Francis Scott Key Bridge on March 26, 2024. (Photo: Peter Knudson/NTSB)



Tassie:

The Wooden Boat Capital of Australia

If you are one of those who thought that wooden boat building was a dying art, then you need look no further for inspiration than Tasmania in Australia. Tasmania (Tassie) is the epicentre of Australian wooden boat building. As the home of what is considered the world's finest boat building timbers, Huon Pine, Tassie has a rich heritage of boat building which began in the early years of colonisation and survives to this day.

2023 Australian Wooden Boat Festival in Hobart. Image credit: John Curnow



According to the state government, the wooden boat building industry is worth \$50 million per year into the Tasmanian economy, in addition to the economic and cultural benefits given impetus by events such as the biannual Australian Wooden Boat Festival in February.



Image credit: Jeni Bone

The Wooden Boat Centre, Australia's only wooden boat building school, located on the Huon River at Franklin, is an organisation dedicated to continuing the tradition. In fact, its mission is "to ensure the traditional craft of wooden boat building ensure and remains a relevant part of contemporary maritime culture".

Cody Horgan, Head Shipwright and Manager of the Wooden Boat Centre (WBC), says that "historically, Tasmania has a proud history of boat building and shipwrighting".

"Tasmania is home to various timbers that take so long to grow," he explains. "Because of the unique timbers such as Huon Pine, King Billy, Celery Top Pine, Blue Gum, and the culture of the place, people place a great value on heritage, and we have a passion for it."

As Cody explains, "Huon Pine is endemic to Tasmania and is now protected from logging. Huon Pine is scarce, so it has been put away for boat builders of the future, stored for us for restorations and building projects at the Wooden Boat Board Bank, managed by Sustainable Timber Tasmania.

"Its rarity makes it very precious," he continues. "King Billy Pine is even rarer. We are very lucky to have the Boat Board Bank. It comes at a price, though: \$12,000 to \$14,000 a cubic metre."

Huon Pine (*Lagarostrobos franklinii*) is a rainforest tree that grows in western and southern Tasmania. It is very fire sensitive and only grows in fire-free areas. It is slow growing and may live for over 2,000 years. The durability of the wood is due to the presence of the essential oil, methyl eugenol, which gives Huon pine its unique odour.

According to Cody, "restoration is a more responsible way of building boats".

"In an effort to conserve the Huon Pine supplies, we build plywood dinghies, with only the visible parts in Huon Pine. Once or twice a year we build a boat out of Huon Pine and really celebrate. We are conscious that we're using up a resource that we will never get back again.

"Restoration is particularly special. For me, I get paid to do my hobby. And for clients and boat owners with foresight and passion, they have the thrill of restoring and retaining the heritage, turning something dilapidated into something beautiful again. We are all passionate about it."

The imperative to preserve wooden boats and pass on the restoration skills to the next generation are a matter of pride and historic preservation.

"We are trying to save the boats that exist," says Cody. "That way, we use fewer resources. It's a more

responsible use of timber. These boats have a history, and we can pass down pleasure to next generations. It's important to teach other people how they can make a living out of it and be responsible, AND have as much fun as I do!"

For Cody, working with wood is a totally pleasant experience. "It's a nice medium, easy to shape, smells good, healthier than other forms of boat building, there's a beautiful grain that tells a story. We can make functional boats which are artistically crafted. They are floating pieces of art.

"Those who share our vision are crucial to our work. A love for wooden boats is important. Without these visionary owners, there would be no heritage wooden vessels."

After the 2023 restoration of the D-Class sailing yacht, Undine, which the WBC restored to her former glory and was then sold to the Commodore of Kettering Yacht Club, Mick Hawes, they are now working on two more. Current projects include Minerva, the second D-Class and a project for students this year, and another D-Class called Pixie, which will be undertaken in 2025. The one-year students are building an Appleseed boat that Cody designed; based on the template of an American Melonseed skiff.

"It's the Huon Valley, we have a lot of apples here," Cody says, explaining the name. "It will use plywood and Huon Pine transom, and lots of WEST SYSTEM!"

Andrew Denman, who has been operating Denman Marine since 2005 with a small team of dedicated craftspeople, specialises in the construction and repair of wooden boats using both traditional and modern construction methods and materials.

Andrew believes a number of factors contribute to Tasmania being the epicentre of wooden boat building in Australia. "First, is the beautiful endemic timbers we have available. These slow-grown timbers are renowned for being the best boat building timbers in the world.

"The second factor would be our favourable climate in which to build and maintain wooden boats.

"The third and most important factor is public recognition of the Tasmanian wooden boat building sector's intangible cultural heritage, including the desire and support to preserve and transmit this heritage to future generations.

"I have trained several apprentices during my time, and it is wonderful to see the next generation of wooden boat builders stepping up to play their part in this ongoing story."

Graeme Broxam, Secretary of the Wooden Boat Guild of Tasmania is an authority on the history of wooden boat building in Tasmania. "Tasmanians have a special affinity for the sea," he states, which is at

the heart of the state's boat building heritage and prowess to this day.

"Until the 1930s, all transport to and from Tasmania was by water, and before the development of quality roads and rail, much commerce within the state was also taken through our river and coastal systems. By the 1820s, Tasmanian-owned merchant ships could be seen in ports as far away as India, South Africa and Great Britain.

"In the 1820s, a home-grown fleet of whalers brought great prosperity, peaking in the late 1830s but remaining of some economic value right up to 1900. We were early adopters of new technology, with Hobart boasting its first two river steamers in 1832, just a year behind Sydney, and by the 1850s few coastal settlements were not served by steamers, in addition to a large fleet of sailing coaters.

"As well as commerce, Tasmanians soon began to enjoy the water for recreational pursuits, with yachting both on the Derwent and the Tamar in the 1830s. To service all of these needs, Tasmanians were obliged to establish boat and shipbuilding industries, and soon found that they were blessed with some of the world's best shipbuilding timbers. "Hardwoods such as the renowned Blue Gum were used for seagoing ships, while lighter pines such as Huon, King William and Celery Top Pines were more suited for boat building. Exports of timber, especially hardwood, could be exchanged for desired overseas shipbuilding timbers, like Kauri Pine from New Zealand and Oregon pine for North America: in ships frequently owned locally, and often built locally as well."

In the early 1900s, timber shipbuilding was a significant Tasmanian industry, but petered out with the availability of iron and later steel steamships, beyond the technical capacity of local shipbuilders, as Graham recounts.

"Smaller coastal traders continued to be built into the 1950s. Since then, boat building, mostly fishing boats and pleasure craft, has continued on a moderate scale.

"The industry today is much hampered by the loss of access to speciality timbers, however, there are



Image credit: Francois Fourie

still considerable stockpiles of timber cut in the past that come onto the market from time to time. Much of this goes into an active restoration and repair industry. Due to the durability of the local pines, there are dozens of Tasmanian yachts, both remaining in the state and elsewhere, that were built a century or more ago.



"Although the inaccessibility to adequate quantities of timber has essentially destroyed the timber fishing boat construction industry, there are many dozens of traditional boats built before the 1990s still in commercial service: the oldest in current survey is Jean Nichols of 1940. Others are preserved as pleasure craft, including my own 46-foot yawl, Casilda (1915).

"Until the 1960s the majority of vessels built in Tasmania were of 'traditional' timber construction: clinker, carvel or batten-seam carvel that includes elements of both clinker and carvel construction. The beginnings of 'modern' construction techniques begins immediately after the end of WWII, when quality plywood first became available (plywood had been available since the 19th century but the bone-based glues then used made it of little use in a marine environment). The 11-foot plywood Mersey and Tamar class dinghies were introduced in 1946, while from the 1950s many overseas plywood boats (many from the prolific pen of British designer Jack Holt) were adopted as basic training and racing boats by Tasmanian boatyards.

"These continued to be the main small racing boats in Tasmania until fibreglass put in an appearance in the 1960s, and gradually claimed ascendancy. The qualities of lightness, strength and aesthetic appeal continue to make timber a preferred material for the construction of pleasure craft. Due to the inability to obtain long lengths of boat-grade timber, cold-moulded laminated construction is common, as well as strip-planking where narrow planks are brought together via rebated, glued seams."

Over the years, the Wooden Boat Guild of Tasmania has built two clinker-built 14-foot west coast piners' punts and restored another that was probably over 100-years-old, rebuilt Tasmania's oldest yacht (Terra Linna, 1881) and restored several pre-WWII dinghies. Although the Guild itself has mostly been involved with traditional boat building activities, many of its members have been actively involved in building boats with a range of "modern" techniques: plywood, cold-moulded laminated and strip-planked.

"All of these techniques are highly dependent on the availability of strong, durable glues such as WEST SYSTEM epoxy produced by ATL Composites. Other small organisations involved with similar activities are the Living Boat Trust at Franklin and Spring Bay Community Boatshed at Triabunna."

This enthusiasm for all things wooden boat comes together in Tasmania every two years with the Australian Wooden Boat Festival in Hobart. Tasmania's biggest single cultural event (with over 60,000 individual attendees), over 100 local, interstate and overseas wooden vessels are on display afloat, and smaller boats ashore bringing the total number to 550 vessels.

Paul Stephanus, General Manager/ Festival Director of the Australian Wooden Boat Festival believes the preservation of the traditions of wooden boat building owe much to the Tasmanian way of life.

"Tasmanians have a proud culture of building boats in their garage, shed or back yard," he observes. "It's a different pace of life."

The state's Convict history lends a unique trait to its pride in traditional techniques.

"A lot of those who came here were seamen. And, not only is the best boat building timber available in Tasmania, we live on an island and we need to travel by boat.

"The Wooden Boat School in Franklin supports the continuation of traditional skills. Boat owners from Sydney, Melbourne and northern states bring their boats here to repair or refit and enjoy the cruising grounds. It's part of our identity and a source of great pride. The Council and community are very supportive."

The Festival has a major role in "preserving, honouring, showcasing and cherishing wooden boat culture", Paul explains.

"The Australian Wooden Boat Festival showcases craftsmanship and celebrates restoration work. It also provides a deadline for projects and a place for the industry to gather."

"Wooden boats appeal to a deep human instinct. They have been a part of civilisation for 50,000 years, all over the world. Wood is so tactile; it was a living thing and it inspires us.

"In our modern lives, we are interfacing with reality through some other medium, such as screen time, whereas meeting up, understanding the boat on water, all the elements at once, craftsmanship and the human urge to travel, satisfies our thirst for real things."

A long-time exhibitor at the Australian Wooden Boat Festival, ATL Composites is a proud supporter of

the Tasmanian wooden boat industry and its many talented proponents. ATL will attend the 2025 Australian Wooden Boat Festival with an extensive range of WEST SYSTEM products and the Epifanes range of Marine Varnishes.

"Our company has been manufacturing WEST SYSTEM epoxy in Australia and New Zealand, under licence to Gougeon Brothers Inc, USA, since 1977," says Director Lorraine Duckworth.

"Initially supplying the professional boat building industry for cold-moulded and traditional wooden boat manufacture, we continued on with the promotion of cedar strip construction (timber composite) for both professional and amateur construction in the 1980s, with WEST SYSTEM epoxy as an integral part of the construction techniques.

"Today, WEST SYSTEM epoxy is a marine industry standard used for everything from basic long-lasting repairs to the construction of high-performance composite structures, and we continue to be dedicated to supporting the wooden boat industry."

James Watson, from Red Car Marine agrees that Tasmania has a proud heritage of wooden boats, "and we have the highest boat ownership per capita in Australia".

James, who's working on the restoration of the ex-Governor General's 1964 Millkraft boat; a 51-foot Spotted Gum trawler conversion to cruising pleasure boat, built in Sydney in 1946, and a 52-foot Celery Top Pine cray fishing vessel built in Triabunna. "This is a fairly large job as we have to take the amidship decks off and several other major refurbishments," he says.

An industry veteran of more than 25 years, James enjoys "the unknown qualities of timber".

"It's natural and like a gemstone, you really don't know what it looks like until you work it. Then there's a distinct smell of all the different timbers, which is magic."

The trio from Tasmanian Shipwrights & Co - Nathan O'Neill, Jonathan Minnebo and Matt Stevens - are dedicated to the preservation and restoration of wooden boats which have a unique allure.

"It's what nature gave us and it's sustainable," says Nathan of the raw material.

All under 35, Nathan, Jonathan and Matt have different and complementary skill sets and backgrounds. Jonathan has 17 years of experience in the boat building industry, Matt, formerly lead shipwright at Denman Marine, brings a wealth of boat building and restoration experience to the job, and Nathan has a diverse and creative background. Together, the three partners have a full calendar of resto projects under the new enterprise established in October 2023.

"Wooden boat building is unique in that we are working with an organic material. Wood is the best material to capture both function and beauty," Nathan says. "A boat is not just a means to an end to get a job done, it's also art and emotion. Wood still captures that better than steel or composite."

Matthew is just as passionate about wooden boats, saying "The allure of working on wooden boats is learning a craft that has been in place for hundreds of years.

"The knowledge that with a handful of tools, unchanged for the past century, and a selection of trees that can be regrown for future generations, you can build

something aesthetically pleasing and practical that could carry you around the world using nothing but the wind. It is surely one of the most romantic trades."

Jon enjoys the technical challenge, saying, "Whether it's boat building or restoration, each job is different, bringing its own set of challenges.

"Though no two jobs are alike, they all require thinking, planning, and problem-solving. It's a mentally stimulating job that offers a big chance for learning and growth. With a basic foundation in using hand tools and machinery, passed down from earlier generations of boat builders, you gain the confidence and skills to take on new jobs. The satisfaction comes from challenging yourself, solving problems, and creating something to the best of your ability while picking up new skills.

"Looking back at your work and feeling proud of what you've accomplished is really rewarding. I'm always learning, not just from taking on new jobs, but also from Matthew and Nathan, as well as other boat builders who are always willing to share their knowledge and experience."

This is a lightly edited article based on the original which was supplied by ALT Composites. More at www.atlcomposites.com.au.





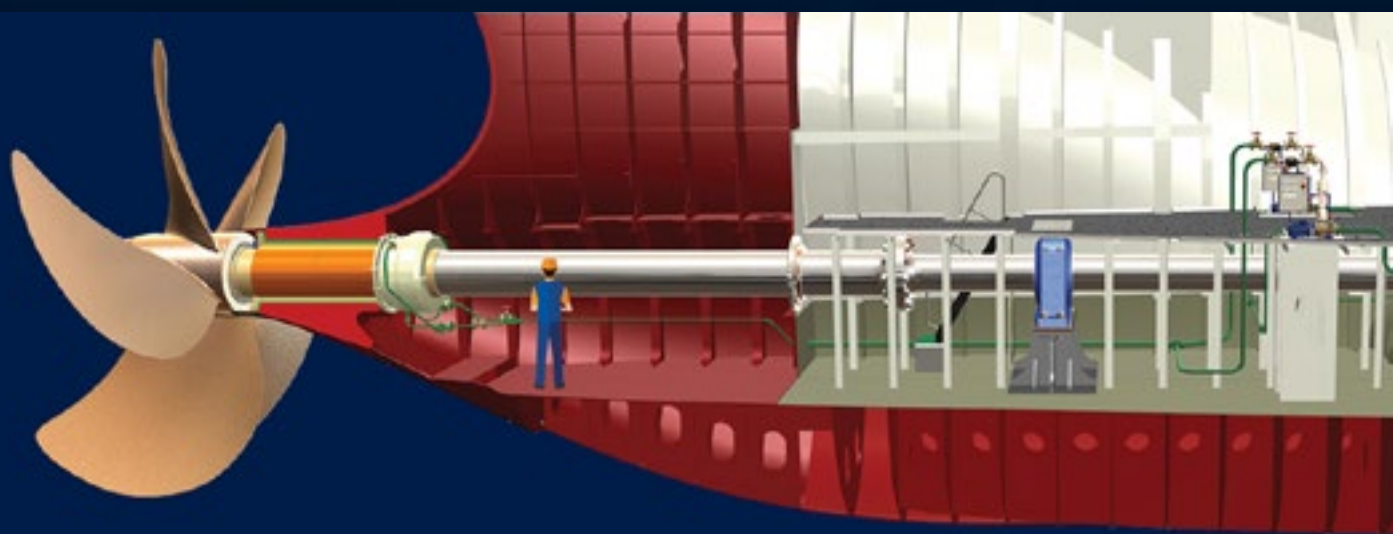
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All new ships to be built without a sterntube?



Arrangement for supporting propeller shaft and method of servicing per patents CN109641644[B], EP3475165[B], KR101979186[B], under licence from Wärtsilä

Future newbuild ships of all types should be built without a sterntube and with a seawater-lubricated propeller shaft bearing arrangement, according to Blue Ocean Alliance's Chris Leontopoulos.

Speaking at a recent maritime industry forum in Hamburg, Mr Leontopoulos said the sterntubeless ship design – jointly developed by Blue Ocean Alliance members ABS, Thordon Bearings, Shanghai Merchant Ship Design and Research Institute (SDARI), Wärtsilä, and the National Technical University of Athens (NTUA) – is so commercially, operationally and environmentally attractive that “I personally hope that in the future all ships are built like this”.

Kick-starting his presentation with the startling statistic that more than eight million litres of sterntube lubricating oil is polluting the oceans annually, Mr Leontopoulos, ABS' Vice President, Technology, EMEA, said the design interventions proposed by the group can deliver a commercially and environmentally optimal vessel capable of saving hundreds of thousands of dollars in operational costs. This, without changing hull lines or existing class rules and regulations.

“We decided to remove the sterntube, and by shortening propeller shaft length and moving the prime mover further aft, we no longer needed a forward sterntube bearing. This places less friction on the shaft, resulting in lower power loss, improved fuel efficiency and reduced emissions. A sterntubeless ship also results in a bigger cargo space for the same vessel length,” he said.

Mr Leontopoulos went on to say that the use of a seawater-lubricated bearing with a tapered key design – the principal component that makes the sterntubeless ship possible – also removes the need for an aft seal and a shaft coating system. The sterntubeless design features a seawater-lubricated bearing, a Wärtsilä forward shaft seal, a Water Quality Package and a bulkhead seal. The technical differences were immediately obvious when a graphic was shown comparing a ship with and without a sterntube. Essentially, the design presents a dry internal inspection chamber aft of the engine room, in the

space normally given to the sterntube. This new space, big enough for engineers to stand up in to maintain or replace propeller shaft components while the ship is afloat, has been created by trimming stiffeners and cutting an opening into the bulkhead.

"This is a very a big advantage because you don't have to drydock the ship and withdraw the shaft or propeller to monitor and maintain seawater-lubricated bearings and seals. We can now do this from inside the ship while the vessel is operational," said Mr Leontopoulos.

The sterntubeless ship, he said, also negates the need to realign the shaft throughout the vessel's lifetime, mitigating the risk of shaft damage or indentation, which can result in substantial downtime and expenditure.

Going on to reveal the cost benefits of a sterntubeless ship, Mr Leontopoulos acknowledged that although the estimated CAPEX for additional components could add about US\$10,000 to \$30,000 to the cost of a newbuild depending on shaft diameter, the ROI is quick given the reduced operational expenditure. This is where the real financial gain is to be made. He told conference delegates that aside from immediate savings of US\$350,000 in lubricating oil, operators could save more than US\$1 million in through-life operational costs. This is based on reduced fuel consumption, reduced drydocking and maintenance costs, and associated loss of earnings; shaft alignment optimization, lower bearing wear rates, better EEDI; and an increase in cargo carrying capacity. The arrangement also reduces to zero the risk of environmental fines related to sterntube oil pollution.

Summing up he said, "There's no pollution risk, no oil changes, and no need to drydock to change the bearing. A shorter shaft line and smaller engine room space increases cargo space and improves EEDI ratings; there is no barred speed range and no fatigue concerns. It complies completely with all existing class rules."

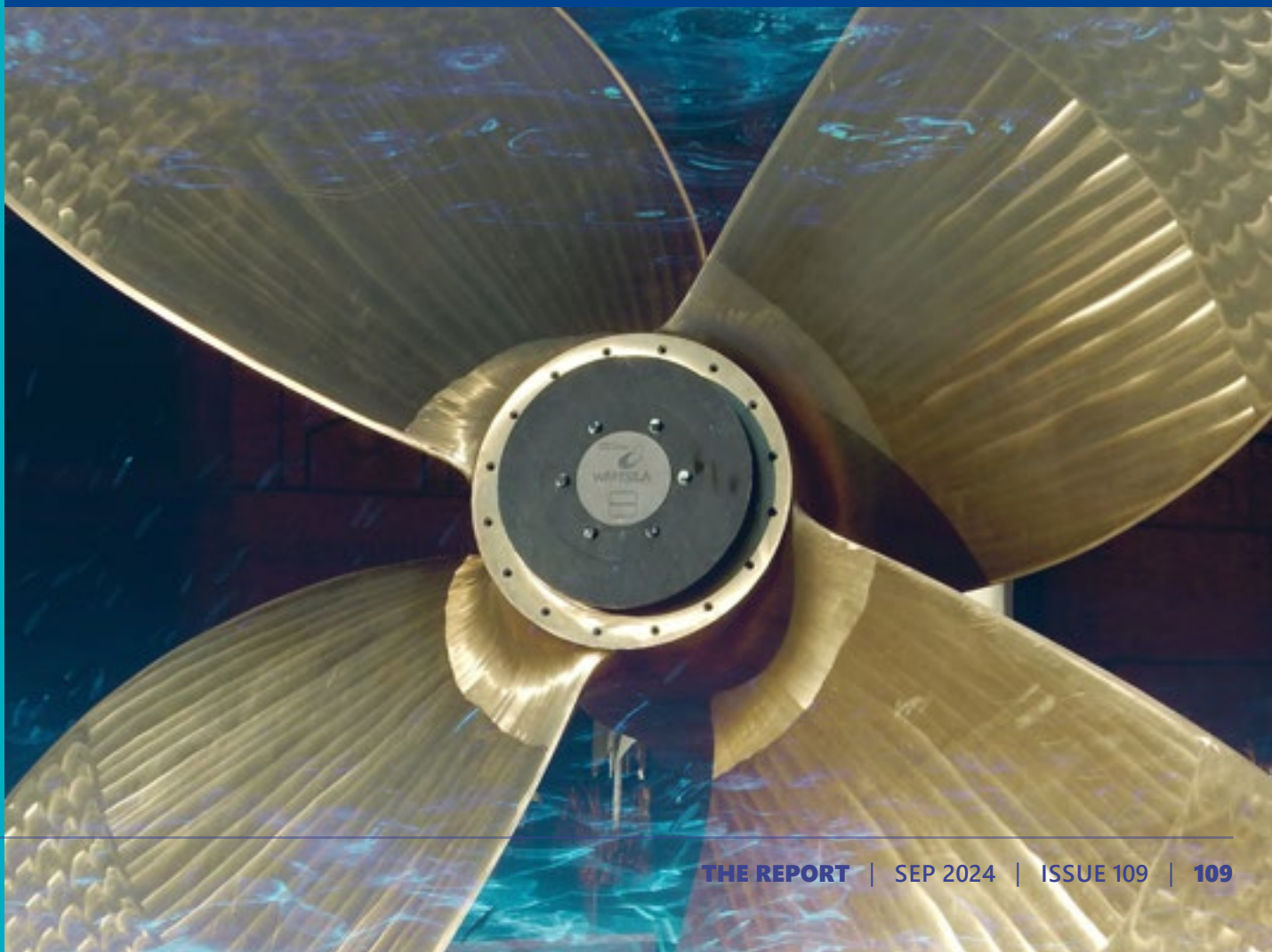
On that latter point, ABS has now published a Requirements for Sterntubeless Vessels with Water-Lubricated Bearings guide, bringing together in one document all existing applicable rules for the design. ABS is also introducing a new notation for the sterntubeless ship design, for which the classification society awarded an AiP in June 2022.

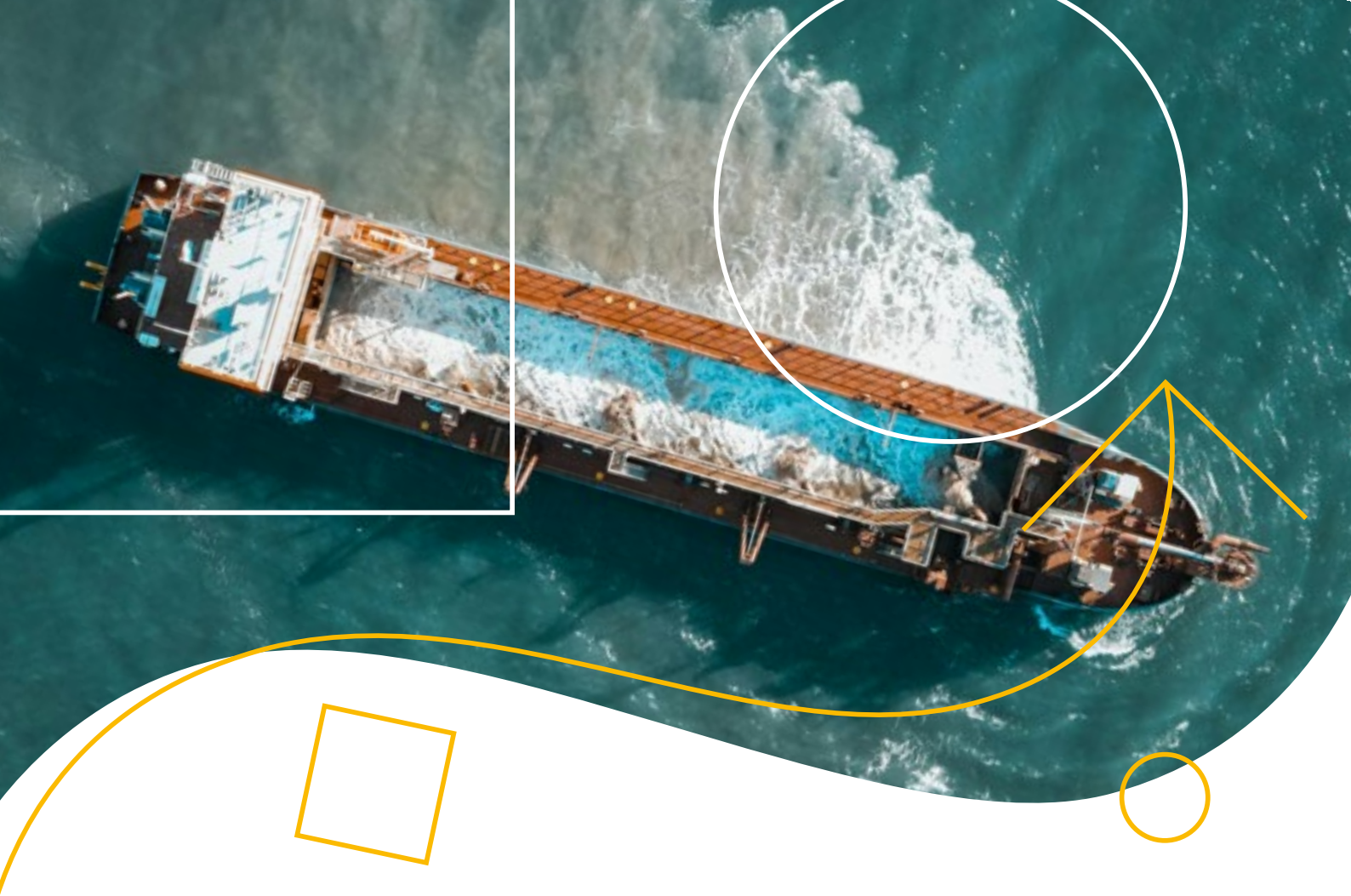
Neil McDonald, Thordon Bearings' Regional Manager – Northern Europe & Africa, said, "The sterntubeless ship design proposed by the Blue Ocean Alliance is truly a milestone development for the global shipping industry. This part of the ship hasn't changed since the advent of steam propulsion.

"Simply by remodelling the sterntube space and replacing an oil-lubricated bearing system with one lubricated by water, newbuild ships can be substantially more environmentally and operationally sustainable, without the need for new class rules and notations. It is significant design intervention."

Chris Leontopoulos believes the first sterntubeless ship with a Thordon seawater-lubricated propeller shaft bearing system, probably based on a SDARI design, will be ordered within the next twelve months.

The ABS guidelines for a sterntubeless ship can be downloaded in PDF format at <https://bit.ly/4chk1KY>.





Report demonstrates shortfall against climate goals

The shipping industry must take urgent action to meet ambitious new climate targets set by the International Maritime Organization (IMO), according to a new report from the Sea Cargo Charter (SCC), a global transparency initiative developed by the Global Maritime Forum.

New data from the SCC, a global framework representing 20% of global bulk cargo transport, reveals the sector fell short of minimum international climate goals set by the IMO by an average of 17% in 2023, equivalent to 165 million metric tonnes of CO₂e. When considering 'striving' goals set by the IMO, signatories are on average 22% misaligned, which represents a shortfall of 204 million metric tonnes of CO₂e in 2023.

Currently, dry bulk, general cargo, and tankers account for around 400 million tonnes of CO₂ emissions. With global trade predicted to quadruple by 2050, emissions will skyrocket without urgent action.



**SEA CARGO
CHARTER**

For the first time, this year the SCC signatories have chosen to voluntarily report against much stricter criteria, including the IMO's revised GHG Strategy, introduced in July 2023. The strategy set ambitious net-zero emissions targets for 2050, with interim checkpoints in 2030 and 2040. Reporting has also been expanded to include "well-to-wake" emissions, which measure emissions from the extraction of oil to its end use, providing a more comprehensive picture of environmental impact and pushing the industry towards faster decarbonisation.

Despite the misalignment with the IMO's revised emissions targets, the report also reveals promising trends. The number of SCC signatories has grown to 37 in 2024, 35 of which are reporting this year – a significant increase from 2022, demonstrating a growing commitment to sustainability and transparency within the industry. Furthermore, the average reporting percentage has shown a steady increase over the past three years, from 80% in 2022 to 93.2%. This year's report shows that industry collaboration and data sharing is improving.

This level of transparency is unprecedented in the sector

"The Sea Cargo Charter's expanding coverage of reporting is a testament to its commitment to transparency and accountability, setting a new standard for environmental reporting in the shipping sector," said Sea Cargo Charter chair Rasmus Bach Nielsen and global head of fuel decarbonisation at Trafifigra. "As the Charter continues to attract new members and shape market practices, it underscores the importance of integrating climate considerations into business decisions. These efforts not only enhance emissions transparency but also propel the maritime industry towards a more sustainable future, at a time when action is needed more urgently than ever before."

The SCC's annual disclosure report is at the core of the framework's mandate to making chartering activities environmentally responsible, by integrating climate considerations into business decisions and enhancing transparency on emissions. The 2024 report, released today, highlights the gap between current emissions and the IMO's revised strategy for net-zero emissions by 2050. The report shows the importance of commercial and operational decisions on the vessels' use (such as, instructed speed, cargo and routing optimisation, laden/ballast ratio), innovation and cooperation within the industry to be able to take action in this transition.

Other identified barriers to cutting emissions are geopolitical disruptions, limited alternative fuel options for long voyages, and a lack of infrastructure to support new technologies.

From next year, shipowners – not just charterers – will for the first time also be fully able to form part of the annual report, further enhancing transparency across the entire shipping value chain.

The Findings & Results

In these scores, negative values indicate alignment with decarbonisation trajectories, while positive values denote misalignment. The simple average score for climate alignment was 16.9% misaligned with the IMO's 'minimum' ambition, with scores ranging from -16.5% to 47.6%. For the IMO's 'striving' ambition, the simple average score was 21.9% above the target, with scores ranging from -14.8% to 54.7%.

Factors that influenced these scores include the challenges of adapting to longer journey times following geopolitical disruptions, changing operational parameters in ports, commercial choices such as energy-saving retrofit programs, instructed speed, laden/ballast ratio, and deadweight tonnage (DWT) utilisation on laden voyages.

Despite the steeper challenge of meeting the more ambitious IMO goals, signatories remain optimistic and committed to the continuously evolving SCC framework, which enables them to measure performance against a quantifiable industry standard while being part of a likeminded progressive group.

The growing number of signatories included, and the increasing reporting percentage of eligible activities covered in this report (93.2% on average) signals that many in the industry take the challenge seriously, using transparency on their emissions to drive positive change.

The SCC's 2024 report paints a picture of an industry aware of the climate challenge and actively seeking solutions. Increased transparency, collaboration between charterers and shipowners, and alignment with the IMO's revised strategy are all positive steps in the right direction. The shipping industry has a long way to go, but with continued transparency, commitment, and innovation, it can navigate a more sustainable future.



Download the report in full in PDF format at
<https://bit.ly/4cmSTdM>

Ensuring compliance of oil filtering equipment on ships

The Australian Maritime Safety Authority (AMSA) has outlined detailed guidelines for the installation and testing of oil filtering equipment (oil water separators) on ships.

Oil filtering equipment installed on a ship on or after 1 January 2005 must be approved to meet Resolution MEPC.107(49) to comply with MARPOL Annex I Regulation 14.

The requirements include:

- A truly representative sample of the effluent with adequate pressure and flow is supplied to the 15ppm bilge alarm.
- Provision of fail-safe arrangements to avoid any discharge in case of malfunction of the 15ppm bilge alarm.
- 15ppm bilge alarm is fitted with an electronic device that is pre-set to activate when the effluent exceeds 15ppm and operates automatically if at any time the 15ppm bilge alarm should fail to function.
- the response time of the 15ppm bilge alarm. This is the time that elapses between an alteration in the sample being supplied to the 15ppm bilge alarm and the ppm display showing the correct response. Response time should not exceed 5 seconds.
- The setup of the installation must minimise the time it takes for the system to respond when the discharge from the 15ppm bilge separator exceeds 15ppm. This includes the time it takes for the automatic stopping device to activate and prevent discharge into the water. This should take less than 20 seconds. It must not exceed that limit under any circumstances (as per section 6.2.1).



MEPC. 107(49) Installation arrangement

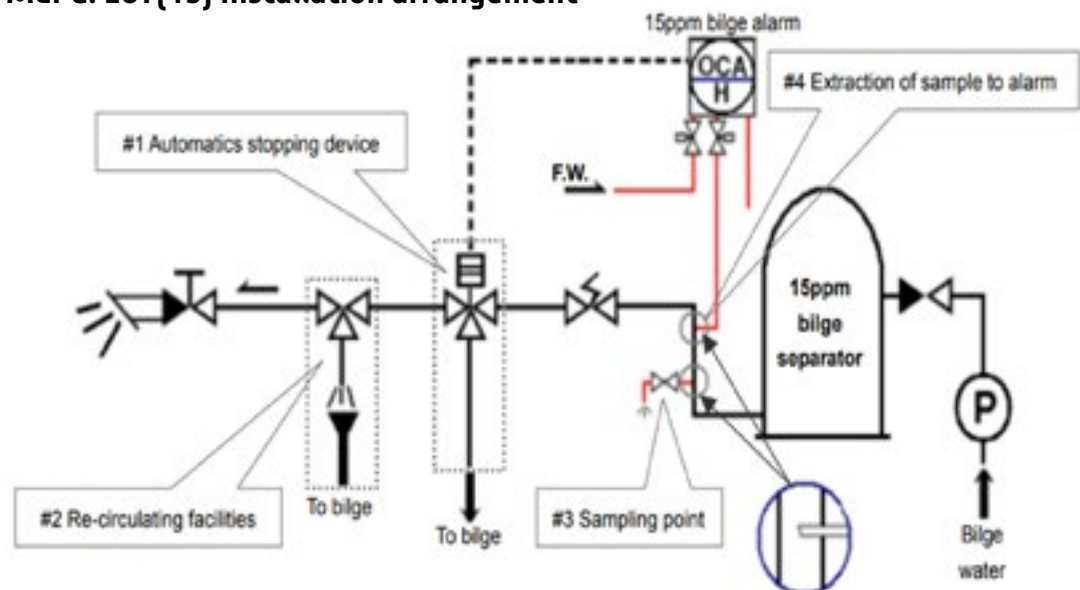


Figure 1 - Example of piping arrangements

AMSA PSC procedure

MSA port State control officers (PSCOs) will inspect the condition, and operation, of the oily-water separator, filtering equipment and alarm, stopping or monitoring arrangements as described in the Procedures for Port State Control, 2023 Resolution A.1185(33).

Operational testing of oil filtering equipment will require the equipment to be configured to circulate liquid from bilge tank to bilge tank (recirculating facility) and provide an effluent sample to the 15ppm bilge alarm – simulating the discharge of 15ppm bilge separator effluent overboard. When a simulation of effluent sample greater than 15ppm is applied, the PSCO will confirm that the alarm is activated, and that the automatic stopping device (3-way valve) stops effluent discharge overboard. This indicates compliant operation of the system.

The PSCO will confirm that there is a flow of effluent sample from the 15ppm bilge separator that is truly representative, with adequate pressure and flow, to the 15ppm

bilge alarm while effluent is being simulated to flow overboard.

In cases where the flow of effluent sample is not a representative sample, including blockage of the sample line or incorrect operation of valves, it is expected that, in accordance with MEPC.107(49) requirements, the fail-safe arrangement will activate the automatic stopping device (3-way valve) and stop effluent discharge overboard.

AMSA's interpretation is that the failure of the 15ppm bilge alarm to activate the automatic stopping device in the absence of a representative sample of the effluent, represents non-compliance with Resolution MEPC.107(49). That is there is no fail-safe arrangement required by technical specification 4.1.3.

AMSA is aware various classification societies advocate for the installation of "flow sensors" in the 15ppm bilge alarm sample line. The flow sensors activate an alarm and operate the automatic stopping arrangements when a truly representative sample, with adequate pressure and flow, is not present at the 15ppm bilge alarm. They also recommend the

sealing of all valves installed in the effluent sample pipes so that the valves are locked and sealed in their normal operating position to ensure adequate effluent sampling.

AMSA accepts that MEPC 107(49) does not specifically require the fitting of flow or pressure sensors.



Figures 2 and 3 show a sample line found blocked when no flow observed from 15ppm bilge alarm outlet.



Figure 2



Figure 3

Figures 4 and 5 show a flow sensor and alarm fitted to the 15ppm bilge alarm sample line.



Figure 4



Figure 5

Figure 6 Sample line valve to 15ppm bilge alarm sealed open, and signage fitted.
Figure 7 Verification of flow of sample water from 15ppm bilge alarm.



Figure 6



Figure 7

Considerations during testing

The following sets out AMSA's considerations when testing oily water separators during port state control inspection with respect to two types of systems approved under MEPC 107(49):

1. MEPC 107(49) approved system that is fitted with an effluent sample flow sensor to 15ppm bilge alarm.

Operational testing of the equipment is performed by stopping the sample water flow to the 15ppm bilge alarm. If the 15ppm bilge alarm does not alarm when effluent sample flow is stopped for more than 5 seconds, and the automatic stopping device is not activated within 20 seconds, this is considered a failure of the oily discharge monitoring and control system and the 15ppm alarm arrangements. The ship is likely to be detained until the system complies with MARPOL requirements.

2. MEPC 107(49) approved system that is not fitted with an effluent sample flow sensor to the 15ppm bilge alarm.

The sample water flow through 15ppm bilge alarm should be unobstructed. All valve(s) fitted for sampling line to the 15ppm bilge alarm should be in the normal operating position when testing is performed during port state control inspections. During the test the following will be considered:

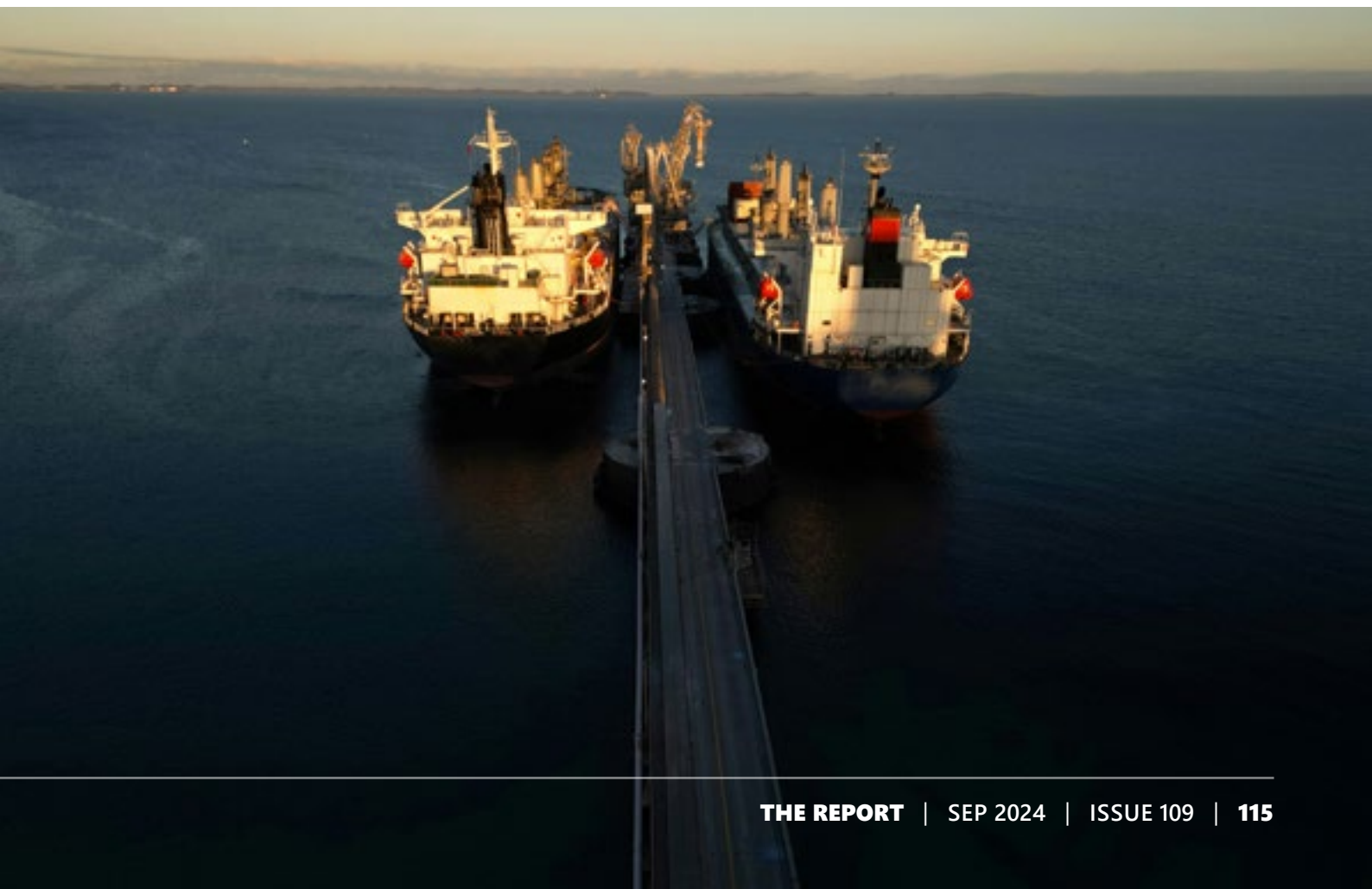
- If operational testing of the equipment commences with effluent sample valves open, this is evidence of the system being used correctly in service. If there is no 15ppm bilge alarm and automatic stopping device activation after shutting the effluent sample valve, then the equipment is non-compliant. The equipment must be made compliant. As a temporary measure, valves to and from 15ppm bilge alarm can be secured and sealed open to ensure the flow of effluent sample cannot be stopped or manipulated whilst the equipment is operating, as required by MEPC 107(49) 4.2.10.1.
- If operational testing of the equipment commences with the effluent sample valve shut or no flow of effluent

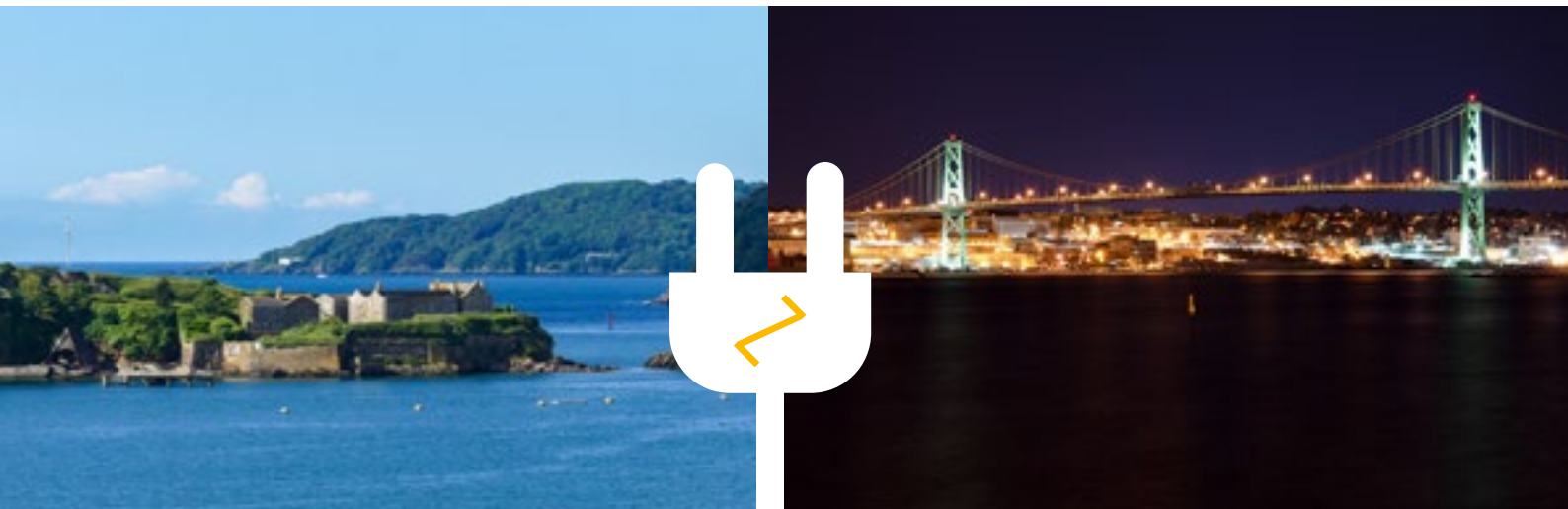
sample possible through the 15ppm bilge alarm and the automatic stopping device does not activate, this is viewed as evidence that wilful manipulation of the equipment is possible. As pollution of the environment may occur, the ship is likely to be detained until the equipment complies and crew are sufficiently familiar with the operation of the system.

- If operational testing of the equipment commences with the effluent sample valve closed and with clean water, used for cleaning or calibration, flowing through the 15ppm bilge alarm and the automatic stopping device does not activate, then the equipment is non-compliant to MEPC 107(49) 4.2.10.2. The ship may be considered for detention until the equipment complies and crew are sufficiently familiar with the operation of the system.

Guidelines

MEPC 107(49) –
Resolution MEPC 107(49)





UK AND CANADA SET UP JOINT ELECTRIC VESSEL TWO WAY CHARGING PROJECT

By Jeff Butler, Plugboats.com

In a big step forward for electric propulsion of all descriptions, the CAN-UK Vessel-to-Grid Project is bringing together multiple organizations on both sides of the Atlantic to prove the benefits and advantages of electric vessel two-way charging.

Two-way charging, bi-directional charging, Vessel-To-Grid, V2G (the term that will be used in this article) - they all mean the same thing. It is technology that allows the electrons in boat batteries to flow to the electric grid on shore, and vice versa.

It means that when a boat has a full battery but no need to use the electricity immediately, the energy can be distributed in the immediate area – to the marina or port – or to the wider world through the general grid to help power offices, factories and homes.

ELECTRIC VESSEL TWO-WAY CHARGING A 'WIN-WIN-WIN'

It's a win-win-win scenario that optimizes efficiency for the vessel owners, marinas, ports, utility companies and any business or consumer that uses electricity. In short, everyone.

What makes this particular project even more exciting is the transatlantic partnership. Bi-directional chargers will be deployed for electric vessels in both Plymouth (UK), and Halifax (Canada), which has Canada's deepest harbour. Real-world installations will feature V2G capabilities in both software and hardware, onshore and aboard the vessels.

The dual locations, with their contrasting environmental and operational conditions, will demonstrate the bi-directional energy flow to and from the vessel batteries, highlighting their capacity to perform key energy services and enhance energy security.



HERE IS A QUICK RUNDOWN
OF THE COMPANIES AND
ORGANIZATION INVOLVED:

Plymouth, UK

Aqua superPower is installing, operating and monitoring the two-way chargers.

RS Electric Boats will be building the vessels

RAD Propulsion will be supplying the electric drives

The University of Plymouth will provide their expertise in marine electrification and battery chemistry.

Halifax, Nova Scotia, Canada

BlueGrid, a Halifax-based marine V2G software provider, is working with:

COVE (Center for Ocean Ventures and Entrepreneurship), a Halifax marine technology hub

Lennox Island First Nation, who will be deeply involved in skills training, and

Dalhousie University, home of the Jeff Dahn Research Group, which has an exclusive research collaboration with Tesla for battery development.

On the UK side funding is coming from Innovate UK, part of the UK Research and Innovation science and research funding agency.

Canadian funding is coming in part from Canada's Ocean Supercluster, which has almost 600 members from a wide spectrum of sectors including aquaculture, marine renewables, defence, transportation and ocean technology.

BUILDING MOMENTUM FOR PATH
TO BROAD MARKET USAGE

The transatlantic consortium will co-develop a V2G ecosystem, supporting V2G standards integration, battery R&D, and energy market alignment. It will create relationships, intellectual property, foster commercial partnerships and build momentum for paths to broader market implementation in the UK, Canada and other regions. Universities and commercial partners will gain from ongoing R&D collaborations.

Everyone agrees that V2G will be a huge factor in the future of electric boats and vessels, but like so many things, the difficult part is getting to that future. One of the reasons this project is so important and exciting is that the companies involved in both countries have already been working on V2G and can now combine their knowledge and experience.

Aqua superPower was a leader in creating the UK's first high power DC electric boat charging network, started in prominent Plymouth locations in May of 2022. The company has worked with RS Electric and RAD Propulsion on other marine charging pilots since then, most recently the Virtual Bunkering for Electric Vessels (VBEV) – which is another Innovate UK project.

In Halifax, BlueGrid announced about a year ago that they were working on a V2G pilot with ABCO Boats, Norway's Evoy electric drives and V2G charging system manufacturer BorgWarner. The first successful test was completed a few weeks ago, on May 30th.

"This is a world-first for the electric boating industry and a key milestone in the maritime sector's transition to electric," said Leif Stavøstrand, CEO of Evoy at the time. BlueGrid CEO Andrew Boswell expanded on that, saying the achievement "demonstrates our commitment to building data and intelligence solutions that forge pathways from vessel owners to electricity grids, enabling those

participating to achieve financially rewarding net-zero goals together."

The data is a key part of everything. The V2G chargers need to monitor the needs of both sides of the system – the boats and the on-shore grid – accumulate information, then use that to develop algorithms and optimize everything for all involved.

One of the key things is that electric vessels, can cost-effectively bridge gaps in wind and solar electricity generation by providing grid support during peak electricity supply and demand periods without negatively impacting vessel operations.

The other key factors are two cost equations: the financial equation and the carbon equation. No matter how one looks at it, the battery in any electric boat or vessel is a significant investment. The more it can be put to use the better – and if that use also is an income generator, so much the better.

There is also a significant amount of carbon involved in building a battery when you look at a life-cycle assessment – all of the carbon emitted along the production steps from the machines that dug up and forged the materials, transported the materials, transported the finished product, etc.

The more the battery is used, the lower the carbon per kiloWatt hour. We say that a battery has a capacity of X kilowatt hours, but that is not exactly accurate. If the battery can be charged/discharged 1,000 times, the storage capacity is actually X,000 kWh, and the carbon impact per kWh is dramatically less than the carbon impact of burning fossil fuel to release that amount of energy.

The CAN-UK is a great pathway to the future for electric boats and vessels of all sizes. One of the benefits is that as V2G is developed further, it will do it at the same time as the entire marine charging infrastructure is being developed. The marinas, ports and others that are looking at installing high speed charging will also be able to include V2G capabilities from the outset.

This article first appeared on the www.Plugboats.com website and is published here with our thanks.

The background of the top half of the page is a photograph of a lighthouse on a rocky island at night, with its light glowing. In the foreground, the red hull of a ship is visible, partially obscured by a large white triangle that frames the title.

the new age of ship management

In April, BIMCO published a revised ship management agreement, SHIPMAN 2024, following a two-year review process involving input from shipowners, managers, P&I clubs and insurance and legal experts.

BIMCO has included a number of clauses in SHIPMAN 2024 relating to emission trading schemes, sanctions, cyber security and anti-corruption. The aim is to reflect current market ship management practices in order to reduce the need for parties to heavily amend standard form agreements and include rider clauses.

This article focusses on the main differences between SHIPMAN 2024 and its predecessor SHIPMAN 2009. The below is not an exhaustive list of the amendments to SHIPMAN 2024, but what we believe are the key changes.

Authenticity Warranty: In SHIPMAN 2024, BIMCO has inserted language at the end of Part I requiring the party responsible for issuing SHIPMAN 2024 to warrant that the execution version of the agreement uses the authentic BIMCO SHIPMAN 2024 template properly sourced from BIMCO. This is BIMCO's attempt to prevent parties from using counterfeit copies of SHIPMAN 2024.

EU ETS Clause (Clause 10): BIMCO incorporated into SHIPMAN 2024 its ETS SHIPMAN Emission Trading Scheme Allowances Clause 2023 (ETS Clause), which was introduced in 2023. In April 2023, the European Parliament voted in favour of legislative amendments to the EU Emissions Trading Directive to include the maritime sector in the EU's Emissions Trading Scheme. This has had a profound effect on how shipowners, ship managers and charterers interact with each other in respect of emissions trading.

The ETS Clause sets out the Emission Scheme Management Services which managers will provide and a separate fee in this respect will be paid by owners. This EU ETS fee is set out in Box 14 of Part I.

Management Fees (Clause 13): The management fee structure has been updated in SHIPMAN 2024. Instead of only having an annual management fee payable from the commencement date of the SHIPMAN agreement,

management fees are split into an annual management fee (set out in Box 15 of Part I) payable from the delivery of the vessel from the owner to the manager and a predelivery management fee (set out in Box 15 of Part I). The pre-delivery fee is intended to cover predelivery services provided by the manager, while the annual management fee covers usual management fees from the commencement of the management period. If the owner and manager do not include a figure into Box 15 Part I for the predelivery fee, it will automatically be calculated as a twelfth of the annual management fee. Until now, parties had to amend SHIPMAN 2009 themselves to clarify their position in respect of any predelivery services and the relevant fee. This therefore addresses a previously common issue.

The revised management fee clause also provides that all management fees paid will be without set-off and free of any withholding for tax. Owners will have to increase the payment so that managers receive the amount due to them on the basis that no withholding of tax been necessary.



Roles and responsibilities

Change Of Control (Clause 18): BIMCO introduced a new change of control provision allowing parties to terminate a contract by serving no less than one month's notice to the party that had a change of control. This clause has been introduced mainly for sanctions reasons, allowing a party to terminate if the other party has been acquired by a sanctioned entity. This clause complements the new sanctions clause BIMCO also introduced.

Responsibilities (Clause 19): The majority of the responsibilities clause remains as per SHIPMAN 2009 but there have been some subtle changes in the wording in SHIPMAN 2024 including:

Clause 19 (a) – scope of force majeure events expanded to include plagues, pandemics, other disasters, extreme natural events, radiation and contamination;

Clause 19(b) – managers will now be liable to owners for the negligence, gross negligence and wilful default of any of the manager's affiliates;

Clause 19(c) – owners' indemnity to the managers will also include the manager's affiliates; and

Clause 19(d) – manager's affiliates are now included as agents of the managers.

Managers' Information System (Clause 21) and Vessel's Information And Data (Clause 22): Two new clauses have been introduced in SHIPMAN 2024 that deal with the way vessel information is handled and all parties' intellectual property rights. Clause 21 provides that managers must provide owners with access to their digital platform containing the vessel information but that said digital platform, including intellectual property rights relating to it, remain the managers' property. Clause 22 makes it clear that all vessel information is the owners' property and that once the ship management agreement is terminated all the vessel information will be released by the managers to the owners. With the shift to digitalisation and managers increasingly using digital platforms to store vessel information, these clauses are necessary in order to add clarity to the way vessel information is handled and each party's intellectual property rights.

MLC (Clause 25): BIMCO introduced a new clause dealing with the regulations imposed by the Maritime Labour Convention (MLC 2006). Under MLC 2006, owners have certain financial security obligations they must ensure compliance with when hiring crew members. This new MLC clause provides that managers, to the extent provided by management services, will assume the duties and responsibilities imposed by MLC 2006 on owners. This provision obliges managers to be aware of MLC 2006 requirements imposed on owners when hiring crew as compliance with these provisions will be shifted on them.



Security concerns

Personal Data Protection (Clause 26): A new Personal Data Protection clause was introduced requiring owners and managers to comply with any applicable data protection regulation including the European Union General Data Protection Regulation (GDPR). This provision deals with the collection, use, safeguarding, transfer and retention of personal data and the protection of Data Subject's rights. This clause ties in with the Managers' Information System (Clause 21) and Vessel's Information and Data (Clause 22), which BIMCO introduced in SHIPMAN 2024.

Cyber Security (Clause 27): An amended version of BIMCO's Cyber Security Clause 2019 has been included in Shipman 2024. This amended clause does not include a liability cap as this is already covered in Clause 19 (Responsibilities). The Cyber Security clause was introduced to help managers and owners appropriately implement measures to protect digital environments and provide a procedure for responding to cyber security incidents. The key aspect of this provision is the requirement to promptly notify the other party of the occurrence of a cyber security incident to help mitigate its effect.

Sanctions (Clause 28): A revised version of the BIMCO Sanctions clause used for the Time Charter Parties 2020 with logical amendments to reflect the nature of a ship management agreement has been introduced in SHIPMAN 2024. Owners and managers had to introduce their own sanctions clauses in SHIPMAN 2009 to deal with various sanctions regimes. The need for a sanctions clause in SHIPMAN became even more necessary following Russian sanctions by the EU, UK and US.

Under the new Sanctions clause, owners warrant that neither themselves nor the vessel are a sanctioned party and managers warrant that neither themselves nor any entity which they subcontract services to are a sanctioned party. If during the term of the SHIPMAN, either party breaches the warranty they have given, the other party may terminate the SHIPMAN and the party in breach must indemnify the other party for all claims, losses, damages, costs and fines incurred.

Termination (Clause 31): SHIPMAN 2024 has amended the following provisions of the Termination clause:

Clause 31(b)(iii) – if either party (the Defaulting Party) fails to meet their obligations under Crew Insurances or insurance policies, the other party may give notice to the Defaulting Party requiring them to immediately remedy the default compared to the previous 10-day period under SHIPMAN 2009;

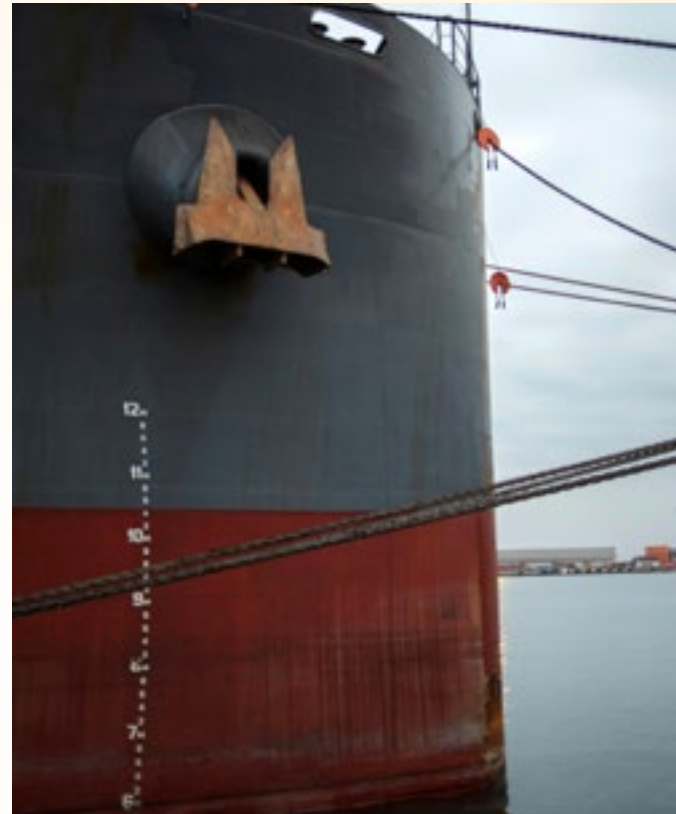
Clause 31(f) – if the parties fail to agree on a change of flag or change of control, either may terminate the SHIPMAN with 1 month's notice, the result of which will be the termination of the agreement upon the change of flag or change of control or on expiry of the notice period, whichever is earlier; and

Clause 31(i) – if the managers provide crew services in respect of the vessel, the owners shall pay "any severance costs which may be incurred", not to exceed an agreed amount, whilst in SHIPMAN 2009, the owner's liability in respect of severance costs was limited to "an equitable proportion of any severance costs incurred".

Miscellaneous: Finally, there are various more boilerplate provisions that have now been added to SHIPMAN 2024, including anti-corruption, waiver, confidentiality and an electronic signature clause.

Conclusion

SHIPMAN 2024 introduces necessary updates to the ship management agreement, and it makes it a more solid starting point for the discussions between ship owners and ship managers. It will be the maritime industry that will determine whether SHIPMAN 2024 has enough practical benefits for ship owners and ship managers to move away from SHIPMAN 2009 and adopt SHIPMAN 2024.





By Live Oftedahl

Autonomous vessels need to be more afraid of dying

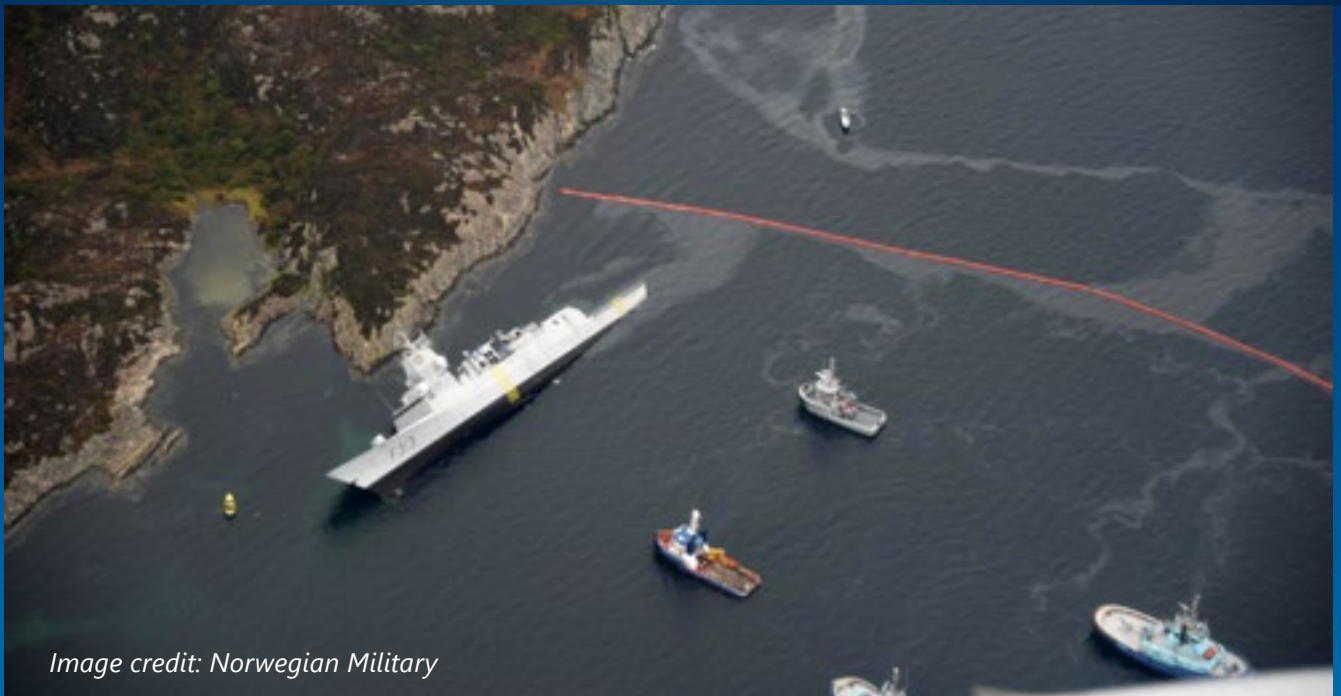


Image credit: Norwegian Military

8 November 2018 at 0400 hours: The frigate KHM Helge Ingstad is heading south in the clear winter darkness in Hjeltefjorden northwest of Bergen. It is heading towards Scotland after a major NATO exercise in Trøndelag County. The warship, with 137 people on board, does not emit AIS signals (automatic identification system), but other ships in the fjord can see it on their radar. At 0401 hours, the 133-meter-long frigate crashes with the 250-meter-long tanker TS Sola. The tanker is heading towards England loaded with crude oil. The collision tears open an almost 50-meter-long hole along the starboard side of Helge Ingstad.

Manually controlled by humans

Sleeping sailors are abruptly woken in their cabins where ice-cold seawater starts to pour in and electric wires and other cables stick out everywhere. Luckily, everyone is evacuated, no lives are lost, and only seven people on board are injured. The tanker has only received a few scratches, and an environmental disaster has been avoided.

The morning news that day played the audio log from the incident. How was it possible not to spot a 250-meter-long tanker on a collision course?

There are many complex reasons why the accident occurred, but would the same have happened if Helge Ingstad had been equipped with higher levels of autonomy and artificial intelligence (AI)?

Opinions vary.

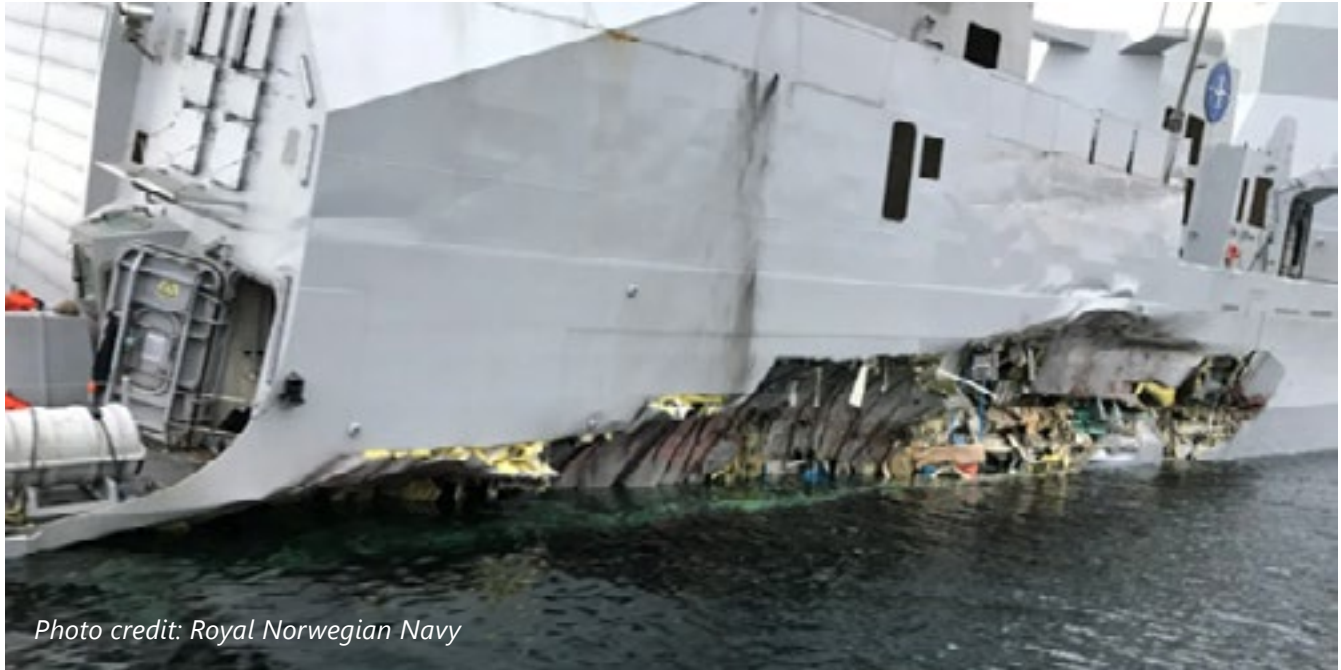


Photo credit: Royal Norwegian Navy

AI can reduce possible accidents

Ingrid Bouwer Utne is professor of Marine Safety and Risk at NTNU's Department of Marine Technology. She conducts research on the development of safer and more intelligent autonomous systems – for shipping, underwater robotics and flying drones. Utne's research is organized under the Fjord Laboratory section of the Norwegian Ocean Technology Centre.

Utne believes that more AI in the maritime sector could have contributed to a better understanding of the maritime accident, both on the bridge of Helge Ingstad and at the Fedje Vessel Traffic Service Centre, which monitors and regulates vessel traffic in the area.

"Neither the outgoing nor the incoming officer of the watch on board Helge Ingstad understood that TS Sola was a tanker. And the operator at Fedje forgot to plot the course of Helge Ingstad when the ship arrived at what is called the precautionary area," says Utne.

She thinks that these are examples of where better decision support could have reduced the likelihood of these kinds of misunderstandings and oversights, even if AI and autonomous systems alone are not adequate risk mitigation measures.

Utne is a former operations officer on frigates in the Royal Norwegian Navy. She has been a member of a committee working on an Official Norwegian Report (NOU) looking into cruise traffic in Norwegian

waters after Viking Sky almost ran aground during a storm in Hustadvika in 2019 with almost 1400 people on board. In two of the research projects she has worked on in recent years, the aim is to incorporate risk understanding into the 'thinking' of autonomous systems.

AI must be able to reason more like human beings

The research conducted in the ORCAS project is about further developing autonomous ships. Kongsberg Maritime and Det Norske Veritas (DNV) are partners in this project. In the UNLOCK project, autonomy research is focused on flying drones and underwater robots.

Among other things, the aim is to get drones and robots to carry out inspections in hard-to-reach areas, such as in closed tanks and under sheets of ice.

"The projects are about connecting the way robots sense risk with control so that risk assessment becomes a more integrated part of the decision-making process for robots," explains Utne.

With more autonomous systems operating independently of a human operator, good risk assessments must be made.

"If robots are to be made more intelligent, it is natural to think that they need to be able to reason more like human beings. They must be able to assess risk."

"A lot of good research takes place at the intersection of different disciplines, and it requires creative and open-minded people," says Utne.

Just prior to the Helge Ingstad accident, the sailors on board the frigate were undergoing optical navigation training.

"When the tanker TS Sola called the officer of the watch on Helge Ingstad over the radio to request a change of course, the officer of the watch did not understand that the tanker was moving and that there was a risk of collision.

In addition, the Norwegian Safety Investigation Authority's first report after the accident states that Fedje Vessel Traffic Service Centre's automatic plotting, warning and alarm functions were not good enough.

"AI can provide more information about the surroundings and therefore better understanding of the situation, assuming that the systems are actually used and are user-friendly. However, striking a good balance between the manual control performed by a human operator and autonomous control is demanding," says Utne.

Low level

Utne is of the opinion that autonomy development is still at a relatively low level of maturity, despite the recent acceleration in the use of artificial intelligence.

"It is not uncommon for the people designing and programming the systems to spend a long time working on control systems and algorithms, only for risk analyses to be introduced late in the development process," says Utne.

What is unique about the ORCAS and UNLOCK research projects is that advanced risk analyses and models form the basis for developing algorithms in the early programming phase of the control system. As a result, the risk analyses become more integrated into the system because functions are actually created that enable robots to make safer decisions.

"I am not aware of any others who are working in this way, even though many people are talking about AI, autonomy and risk. There has been no systematic or professional basis for understanding what a risk analyst should contribute to the programming of autonomous systems. It seems there is a bit of a silo mentality," says Utne.

Important to involve risk analysts

As a researcher at NTNU AMOS, the Centre for Autonomous Marine Operations and Systems, she found that researchers were able to collaborate across disciplines. This was very important for the development of her research.

"Cyberneticists and AI experts may struggle a little to understand what risk analysts can contribute, but AMOS was quick to understand the importance of risk management expertise and working in an interdisciplinary manner," she said.

The Helge Ingstad accident showed us just how complex causal relationships and risk factors can be."

Although the development of a robot's understanding of risk is primarily for application in marine areas, the methods and results can also be used on land and in the air.

"A lot of good research takes place at the intersection of different disciplines, and it requires creative and open-minded people," she said.

Risk is about more than just distance

Risk models have been created in the ORCAS and UNLOCK projects. The models represent risks associated with various operations and systems, and these are then linked to ways in which vessels are controlled.

"We have conducted simulations with real vessels, and carried out experiments on Grethe – an unmanned surface vessel owned by NTNU's Department of Marine Technology," says Utne.

The next step is to further develop and test the models and algorithms more thoroughly in field studies and simultaneously with several other vessels. There is also a need to improve the situational awareness of the human operators. Utne has recently received an ERC grant of NOK 29 million to conduct research on this.

"Including risk management experts when creating decision systems for robots is something new. One typical risk factor already being used by many people working with control and artificial intelligence is the distance between vessels, but risk is about much more than just that," says Utne.

For example, Utne mentions the risks of running aground, fire, capsizing, and sinking. Therefore, if these types of incidents are to be prevented from happening, measuring the distance between ships is simply not enough.

"The Helge Ingstad accident showed us just how complex causal relationships and risk factors can be," she said.

Utne believes there is a need for a much more systematic approach to identifying, analysing, and modelling risk factors.

"That is what makes systems smarter. Risk models provide a more holistic picture and can contribute to better situational awareness, rather than creating algorithms that focus on minimum distances for example," she said. "Why not vary things and use different risk models that determine whether a vessel should speed up or slow down, and that take multiple factors into account – such as the weather forecast?"

The next generation of frigates must also be able to navigate optically in manual mode, but hopefully, will also have more intelligent systems that can provide better warnings if the people on board do not realize they are on a collision course with another ship.

"More intelligent systems will better understand possible risk factors way before they might actually occur – where death is the ultimate risk factor," Utne said.

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Fuel leaks and unshielded hot spots in engine rooms

Written by the Gard P&I Club team

The majority of fires onboard ships start in the engine room and the frequency of such fires is on the rise. Although the main cause of these fires may not be identical, there are certain similarities in the underlying patterns of the fires.

Introduction

Every year fires on board ships lead to loss of lives and severe damage to the ships themselves. Most fires on board ships originate in the engine room where the three ingredients for a fire, namely fuel, oxygen and a source of ignition, exist in abundance. These do not only start the fire but also feed and intensify it further. Fire safety is not only about detecting and fighting a fire, but also about preventing it from igniting in the first place.

In this article we focus on how these fires can be prevented. We will touch upon some of the main causes of engine room fires and explore insights from our claims data to understand the frequency of such fires before setting out some recommendations on how to mitigate the risks of these fires occurring.

Case study

A copper pipe that was part of the fuel oil pressure gauge supply pipework for one of the auxiliary engines fractured. Due to a missing metal spray shield the fuel sprayed onto the unprotected hot surfaces of the nearby turbocharger and the exhaust system which had temperatures of more than 400 °C. The fuel ignited causing extensive damage to auxiliary engines and power distribution cables. The vessel was out of service for 40 days to carry out repair works. Investigation by experts showed that the copper pipe that fractured did not match the original design and had a lower wall thickness. There was no record of any previous repairs carried out to the fuel system pipework. The pipe assembly on the other three auxiliary engines appeared to be of original installation comprising of a steel pipe. The spray shield was removed during maintenance and not re-installed. Insulation was also suspected to be inadequate since exposed sections around the exhaust manifold and turbocharger were noticed on other three auxiliary engines. The investigators concluded that the heat shielding arrangements on the fire damaged auxiliary engine did not meet the relevant SOLAS regulations, II-2/2.2.6.1.

In the above case, there are two main aspects which need to be highlighted.

- First is the leakage of flammable oil; and
- Second is the inadequate protection to prevent highly flammable fuel from coming in contact with a source of ignition.

Leakage or spray of fuel due to a failure in the oil system

Below we list some of the most commonly occurring causes of fuel spraying from low pressure piping systems. The list is by no means exhaustive, but a review of past Gard cases has shown that below listed failures occur frequently.

Piping, piping connections and other associated components, such as o-rings, were not original parts or of a type recommended by the manufacturer. In some cases, modifications had been done by the crew under existing management, whilst in others the crew were not aware of such modifications as they had been done under previous ownership or management.

- Piping connection had not been tightened to the required torque and with time it loosened due to, for example, vibrations. Another reason may be incorrect assembly after maintenance.
- Bolts for flanges or filters breaking due to fatigue caused by overtightening over a period of time. In some cases, securing bolts were also found loose or missing altogether.
- Fatigue fracture of pipes. Such pipes are typically not well supported along their entire length, which causes excessive stress due to vibrations. Lack of support may be attributed to the design or failure to reinstall the holding brackets after maintenance.
- Fuel oil filter covers coming loose and displacement of the spindle from the top cover for various reasons.
- Rupture of rubberized hoses due to degradation caused by the heat generated from nearby machinery.

Oil coming in contact with hot surfaces

Shielding can either be by insulating hot spots with thermal insulation or anti-splashing tapes, and/or by using physical barriers such as spray shields. Some typical issues with insulation which we have seen in our claims portfolio are:

- the quality may differ from yard to yard,
- it can deteriorate with age,
- it may not have been fixed back properly after maintenance, and
- it can become soaked with oil over a period of time due to minor leakages.

As for physical barriers:

- they may not have been part of the original design and therefore not fitted, or
- where fitted, they may not have been installed back in place after maintenance has been carried out on the oil system, as in our case study, and as time passes may even be misplaced.

Older vessels need more attention

One of the factors which must be considered when assessing fire risks in engine rooms is the age of vessels. The risk of leakages from machinery may increase as ships grow older. We discuss this further below but highlight here some of the main issues that can increase the risk of fire in the engine room on older vessels.

- Protection of hot surfaces may degrade, with the quality of insulation may deteriorating thereby increasing the probability of ignition and risk of fires.
- Older vessels can face cuts to their maintenance and safety budgets as they near the end of their service life.
- A vessel may have changed ownership and management a number of times during its life, and this can have a direct impact on the consistency of maintenance in the engine room.

Typical hotspots in the engine room

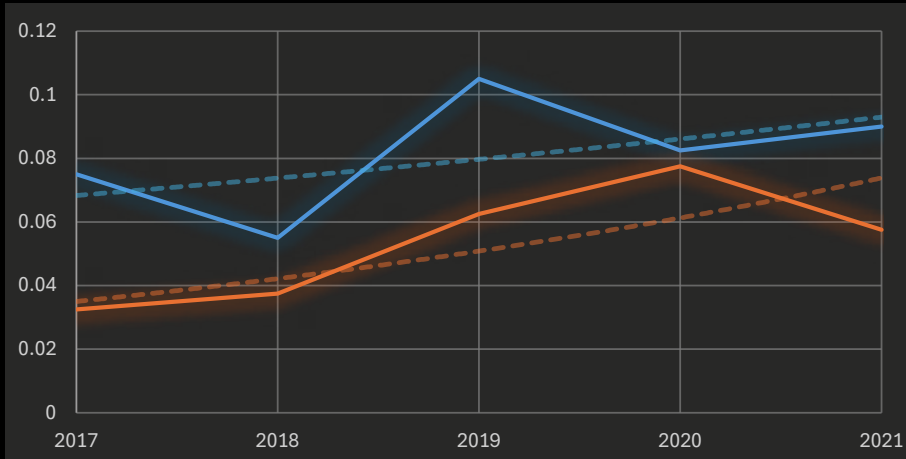
Based on previous fire incidents handled by Gard, we have found that the below listed areas acted as a source of ignition in most cases. The temperature of these areas can easily exceed 500 °C which may be well above the oil's auto ignition temperature.

- Exhaust manifold, pipes and associated flanges
- Exposed areas of boilers
- Turbochargers
- Indicator valves on cylinders
- Heater for purifier units
- Electrical wires/components and switchboards. Melting or smoldering of cables can also contribute to the transmission of heat



Data insights – do the numbers tell their own story?

In Gard, when analyzing trends, we, just like Cefor (The Nordic Association of Marine Insurers), follow closely the frequency trends of incidents over a given time period. This way we are also able to account for the growth in our portfolio from one year to the next. Over the five-year period, from 2017 – 2021, the frequency for the various Hull and Machinery (H&M) claims areas is showing a downward trend except for fires in engine room. This rise is largely due to fires occurring either on main engines or auxiliary engines which, as mentioned earlier, make up majority of all engine room fires.



Frequency of engine fires (GARD H&M data)

For the period 2017 - 2021, the average annual frequency of engine room fires is 0.13%, which means out of every 10,000 vessels, 13 vessels have had one such fire incident each year. This may not seem like a high number, but the consequences of such fires can be serious for human life, environment, and property causing significant business losses.

One of the main concerns is that the frequency of both main and auxiliary engine fires shows a rising trend. The highest frequency of fires on main and auxiliary engines is seen on passenger and container ships. It is almost twice the Gard 5-year average. Within the container ship segment, the frequency is the highest for feeders (<3,000 teu).

Cefor in its most recent 'Fire Trend Analysis' publication has made similar conclusions.

Age as a factor

We mentioned earlier that age is one of the factors to consider when assessing fire risks. Our data shows that older vessels are more prone to fires originating in engine room and frequency peaks for vessels between 25 – 30 years age. Interestingly, concentrated inspection campaigns (CIC) by Port State Control MoUs on 'Fire Safety Systems' carried out a few years ago concluded that the rate of detention for vessels failing certain CIC items seemed to increase as ships get older. See the Paris MoU report and Tokyo MoU report.

Shielding hotspots

Insulation: As materials used to insulate high-temperature surfaces may degrade over time or become oil-soaked, regular checks should be carried out. Even if the insulation of an exhaust pipe/system appears to be in good order, there may be hidden inadequately insulated areas and smaller open hot spots which could start a fire if in contact with oil.

Spray shields: The position and condition of spray shields for both high and low-pressure flammable oil lines should be checked regularly, as should the drainage arrangements for jacketed fuel oil pipes. Where spray shields are not included in the original design and the area has been identified as a potential 'source of oil leakage' then the installation of spray shields should be considered. Particular attention should also be given to the immediate and proper refitting of spray shields and insulation materials upon completion of maintenance.

Referring to our initial case study maintenance and that the piping met the original specs, reinstalling the spray shield after maintenance, and using thermography to identify the exposed sections in the insulation around the turbocharger and exhaust manifold of the auxiliary engine would have prevented the fire from occurring.

Recommendations

Failure in an oil system followed by deposit of oil onto a high temperature surface is the leading cause of engine room fires. We have following three key recommendations which can help owners, managers and their crew reduce the risk of such fires occurring.

1. Identifying sources of leakages

Checking fuel and lube oil pipes for loose fittings, missing bolts on flanges, non-metallic hoses in areas where the temperatures can exceed the oil's ignition point etc., from where oil can spray onto hot surfaces should be part of the vessel's planned maintenance system. It is recommended that the assessment to identify potential sources of leakages be done on a regular basis. Also look out for whether the components of the oil piping system are original and meet the manufacturer's specifications. This is particularly important when taking over a second-hand ship either under management or ownership.

2. Mapping hot surfaces using thermography

Owners/managers can incorporate the use of thermography onboard for detection of hot surfaces and for checking insulation during normal operations. Owners should consider including thermographic examinations in newbuilding specifications and have such tests carried out during sea trials. A thermographic examination of the engine room and the vessel's electrical installation should be carried out periodically with engines and electrical equipment running.



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Wind turbine recycling:

Could this provide a glimmer of hope for millions of end-of-life boats?



Energy Observer. Image credit:
Energy Observer Productions

Wind power, like any other renewable is clean, increasingly cheaper and emission-free, but for it to be considered truly green, it is important to evaluate its end-of-life environmental impact, says energy expert and onboard scientist of Energy Observer, Beatrice Cordiano.

Currently on its seven-year world tour to promote and trial new sustainable energy and propulsion solutions, Energy Observer is a laboratory for the ecological transition, conceived to push back the limits of zero-emission technologies. Hydrogen, solar, wind, and hydropower: all solutions have been experimented with, tested, and optimised onboard, to make clean energies a practical reality accessible to all.

Beatrice Cordiano explores the pressing issue of wind turbines that are coming to the end of their use.

WIND TURBINE LIFE CYCLE

As the first commercial wind turbines came online in the mid to late '90s, they are now reaching the end of their operational life and need to be decommissioned. This raises the question of what to do with their waste.

As of 2022, the total capacity of all wind turbines worldwide has exceeded 906GW, enough to provide more than seven per cent of the global electricity generation. Wind turbines are growing taller, bigger and more powerful, offering the possibility of reliable and abundant energy.

Wind turbines do not turn forever, they are engineered to last at least 20 years and their lifetime can be increased with if they are properly maintained. They run about 7,500 hours per year, around 150,000 hours or more during their lifespan. And, sooner or later, the constant exposure to wind and weather will bring evident effects, meaning they

will need to be taken out of use. That is what is happening for the initial wave of wind turbine installations – which, in Europe, traces back to the 1990s, mainly in Germany, Denmark and Spain – that today are approaching the age of retirement.

Once it reaches the end of its lifecycle, a wind turbine presents three possible courses of action: extend its operations by three to five years, undertake a repowering operation – the replacement of old turbines with more efficient models, making it possible to increase the output of the wind farm without requiring additional land – or, if none of these alternatives proves viable, dismantle the park.

By 2030, about 50,000 wind turbines are expected to reach or exceed 20 years of life in Europe, and from 2030 onwards, a further 5,700 per year will be added to the dismantling pipe as a result of repowering. One question arises: what will happen to this ageing and obsolete stock?



CAN WIND TURBINES BE RECYCLED?

There is a misconception that wind turbines are environmentally harmful because of their components and that, for this reason, they are impossible to recycle. This is wrong: about 96 per cent of a wind turbine is recyclable. To understand this, one can look at the composition of such a technology.

Shell, shafts, gearing and electrical components, a wind turbine is made up of more than 8,000 parts. But to make it simple we can divide it in four parts, each with specific functions and the therefore materials:

- The foundations, buried in the ground, are made of concrete and scrap metal.
- The tower, which needs to support the nacelle and provides access to it, is essentially made of steel.
- Going up we find the nacelle, which houses the system to convert the wind's mechanical energy into electricity and is therefore mainly constituted by electrical components.
- And finally, the rotor – hub and blades – made of a polymer resin reinforced with fiberglass and occasionally carbon fibre.

If we relate these materials to the tonnage of the wind turbine, we find that almost 90 per cent of it is steel and cement, six per cent is fiberglass, only three per cent are polymers and the rest are metals and electronic materials. Most of it is therefore fully recyclable. In 2021 the recycling rate of wind turbines in France, excluding the blades, approached 98 per cent (96 per cent with the blades).

While the concrete can be crushed, sorted and recycled as aggregate for other types of concrete, in particular for other wind turbines, or as fill, and steel can be recycled over and over without any loss of property,

that is not the case for the blades. At present, blades are the hard nut of wind turbine recycling. The problem with blades is the way they are built. Fibreglass is composed of fine strands of plastic and glass, which makes them hard and costly to recycle.

According to estimates, 1GW is expected to be dismantled annually in France by 2025, which means 3,000 to 15,000 tonnes of composite materials per year. The issue of the recycling of composite materials is not unique to the wind power industry, the same materials being used by the automotive, shipping and leisure industries for aeronautical parts, boats' hulls and even skis, but it is often used to discredit the sustainability of this renewable energy. Although blades are inert and do not produce toxic emissions – being therefore quite safe for landfills – their uncontrolled disposal remains a huge waste of resources that moves away from sustainability and circularity criteria. There is no denying that a lot of first-generation blades end up in landfills – but not in Europe, where burying wind turbine blades is strictly prohibited – however that's not the case for all of them.

Manufacturers and operators are focusing on new approaches, trying to find ways to separate the polymer matrix from the reinforcing fibres to recover and reuse the materials, or rebuild new blades using recyclable materials. Wind blades can thus be entirely repurposed as structural elements such as playgrounds, bike shed, noise barriers or parts of civil engineering projects. They can be recycled in a mechanical way, shredded, and often reused as filler material in buildings: a process Veolia, the French resource management company, masters using crushed blade materials as an ingredient for cement production. They can be treated thermally, incinerated, and revalorised as fuel for energy production, and – in few

cases – they can also undergo a chemical process where the fibres are separated from the resins by means of solvents and thermal processes.

That is what Vestas, the Danish wind turbine manufacturer, is working on, testing a cutting-edge technology which breaks down blades in a liquid using inexpensive, non-toxic, and readily available chemicals, which allows to produce high quality materials using little energy.

Other initiatives are looking at modifying the materials used to make turbines, with the aim of designing a new generation of blades made from thermoplastics that are either biodegradable or can be reconstituted at the end of their useful life, making the blades more sustainable to manufacture and easier to recycle. That is the case of the first fully recyclable blades that the ZEBRA (Zero waste Blade ReseArch) consortium has worked on, producing them in LM Wind Power's Ponferrada factory in Spain, before testing and marketing them in Denmark.

There is always room for improvement, particularly by keeping working on the eco-design of components. This 100 per cent recyclable blade is an important step and a promising breakthrough that can help achieve an increased sustainability in the wind energy sector, while waiting to create a highly efficient supply chain capable of recycling and upgrading all components.

Needless to say, even if today the wind turbines current form may not be perfect, their positive environmental impact far outweighs the negative ones on the overall life cycle.

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Spotlight on the Italian boating industry

According to a new report, the impact of the Italian boating industry is estimated at €27bn. The new study shows the sector's impact on the Italian nautical industry, which grew three times faster than the country's GDP between 2012 and 2022.

The first Altagamma-Deloitte study of the economic and employment impact of the yachting industry in Italy shows the sector's overall impact is 2.7 times its direct economic impact and six times its employment impact. Approximately 59 per cent of the total impact was generated by the use of yachts, 38 per cent by new builds and 3 per cent by refits.

The study also highlights an unexpressed potential: just 6 per cent of superyachts (> 24m) visiting Italy fly the Italian flag.

The Altagamma-Deloitte study '*La nautica da diporto in Italia*' was presented in Milan by Giovanna Vitelli, vice president of Altagamma for the nautical sector and chair of the Azimut|Benetti group, and Tommaso Nastasi, senior partner of Deloitte, in the presence of Matteo Lunelli, president of Altagamma.

Operating across a number of sectors, Altagamma encompasses 119 brands in the fashion, design, jewellery, food, hospitality, automotive and nautical industries. The foundation, formed in 1992, works to enhance the growth and competitiveness of Italian high-end industries.

The authors say this is the first study to examine the economic and employment impact of the nautical sector in Italy, the global leader in the construction of yachts exceeding 24 metres, taking into account both shipbuilding and marine tourism.

The analysis looks at factors upstream of the delivery of yachts - new builds, refits and extraordinary maintenance - and their subsequent use (downstream) with the benefits generated by their permanent or seasonal presence along the country's coastline.

The Italian nautical industry

Yachting is a strategic mainstay for Italy, with an overall impact of some €27.7bn and 157,000 employees. It draws on the complementary chains of tourism and 'Made in Italy', with a total economic multiplier effect of almost 2.7 and an implicit employment multiplier effect of six.

The report finds these figures indicate the need to open a debate about the main growth opportunities for the sector and its entire value chain, with a particular focus on the development of activities connected to the use of yachts, which currently account for over half the total value. Specifically:

Upstream: Italian new-build production - which represents 50 per cent of the global superyacht portfolio - is characterised by highly professional services requiring advanced knowledge and technical expertise. These have allowed it to generate an overall economic and employment impact of approximately €11.4bn and involve over 54,000 employees directly, indirectly, or in satellite activities.

Downstream: an even greater impact is caused by yachts and marine tourism on local areas. Indeed, Italy remains a major destination on the international scene both during the winter season, partly thanks to the strong refit sector, and in summer, thanks to the attractiveness of the country's coasts. The total economic impact of the fleet, accounting for 1/3 of tourism spending on the ground, is €16.3bn, with an economic multiplier effect of 2.7 and 103,000 people employed in the sector.

One of the main opportunities for the expansion of satellite activities linked to yachting is therefore the development of marinas. The report highlights that just 30 per cent of the berths available in Italy are in marinas equipped to receive yachts and superyachts and offering appropriate technical and tourism facilities to cater for this market.

The high-end nautical sector

The high-end nautical sector - i.e. yachts longer than 18 metres - is the segment that displays the greatest impact on the ground. The report finds:

- It constitutes 65 per cent of the total economic impact, with 80 per cent of its value in shipbuilding (upstream). Furthermore, although this segment accounts for just 2 per cent of the yachts visiting Italy, it generates 55 per cent of the downstream value, i.e. that deriving from the use of yachts.
- Spending on the ground (downstream) activated by large yachts is on average 26 times greater than the average across the nautical sector.
- This is therefore a major economic and employment contributor for Italy, which can tap into the interest of a global niche market of 'high-spending' consumers whose input translates into high social and economic value, potentially greater still if we consider that just 6.5 per cent of these superyachts sail under an Italian flag.
- The study shows that a large yacht registered in Italy, with an Italian crew and visiting the country's coastline for a minimum of 10 weeks per year would generate an overall annual contribution of €1.6m. Increasing the number of yachts visiting or, especially, resident in the country, would have a major impact on the economy and employment levels.

The already significant economic and employment impact of Italian yachting, therefore, presents numerous opportunities for growth through improvement throughout the value chain. The report finds that the main development areas to boost marine tourism include specific legislative measures geared to making the Italian flag more attractive, greater investment in port infrastructure and related services, and improvement in technical and management skills.

"Analysis shows not only the value of the Italian nautical industry", says Giovanna Vitelli, "but also the unexpressed potential of a sector with a considerable margin for growth: although Italy is the world leader in the construction of superyachts, only 6 per cent of these fly the Italian flag. This inhibits the positive impact that superyachts can generate in the area.

"Hence the need to intervene to increase the attractiveness of Italian registration and chartering on our coasts, bringing VAT into line with hotel activity, and also our marinas, which are real destinations for marine tourism."

Tommaso Nastasi, senior partner of Deloitte Italy, adds: "Yachting is a strategic sector for Italy, due to both its economic contribution and its spillover into other 'Made in Italy' sectors and tourism. Enhancement of nautical services and tourism can generate substantial benefits for the Italian economy."

Altagamma's recommendations

Vitelli also presented the foundation's initial reflections, which include:

- 1) Bring VAT rates for yacht charter into line with those of the tourism and hotel sector.
- 2) Update the regulations and procedures for Italian flag registration in relation to other international flags, to increase its attractiveness.
- 3) Simplify bureaucratic procedures relating, for example, to checks on crew recruitment.



AI AND DATA SET TO TRANSFORM THE MARITIME INDUSTRY

The pace of change is accelerating, writes Mike Collier, business development manager for the MARSS Group, which means AI and data are already having high implications for shipping.

When thinking about the maritime industry, it's easy to be swept up by a sense of romanticism. Seafaring is, and will continue to be, an artform defined by a freedom to roam, with skills and knowledge being passed through the generations. And, while some vessel operators are constantly pushing at the forefront of technology there are others for whom a respect for traditions has made them more hesitant than others to depart from the established ways of doing things. However, even the most conservative of mariners is starting to be swept up by the digital tide and the pace of change is accelerating.

Digital solutions are penetrating industries which are steeped in tradition and history, like maritime, and over the coming decades we can expect to see a rapid acceleration of seafaring transformation driven by data, automation and smart technologies.

While full autonomy may still be many decades away, crews will shrink as operations move ashore. Data-driven efficiencies from predictive analytics, optimised routing and preventive maintenance will reduce costs and environmental impact. State-of-the-art situational awareness and safety systems will make voyages more secure. As costs shrink, our seas get smarter and voyages become increasingly secure, this could mark a new era of opportunity and growth in global shipping, with companies launching ever more vehicles and our seas bustling with new activity. Thus, advances in technology are driving change and smart solutions, which are transforming other industries, have become increasingly difficult for maritime stakeholders to ignore.

So, just how 'smart' will it get? How far (and fast) will maritime operations be transformed?

DATA WILL BE LEVERAGED TO REALISE EFFICIENCY GAINS

The future of maritime will be centred around data. One of the biggest opportunities for a smarter maritime future is properly leveraging the immense amounts of data already being collected by shipping companies. At the moment many firms are amassing huge datasets from ships' sensors, systems and equipment – but they may not be making the most of this information overload.

Over the coming decades, advances in artificial intelligence and machine learning technologies will allow maritime organisations to more effectively analyse and derive insights from their data stockpiles. For example, by applying AI to key data sources like noon reports, companies can optimise operations for maximum efficiency.

Predictive analytics, meanwhile, can be used to make smarter routing decisions that minimise fuel usage based on weather, currents and other variables. Data-driven maintenance regimes can reduce equipment downtime and costly repairs, and vessel operators can also uncover patterns in their data to identify and eliminate operational inefficiencies by pinpointing bottlenecks and pain points – such as port space.

As data science capabilities mature, the maritime industry will have powerful new tools to increase productivity, reduce expenses, and shrink its environmental footprint through improved efficiency.

AI MEANS FEWER PEOPLE AT SEA

The drive for efficiency will inevitably lead to reduced crew sizes over the next 30 years. As more vessel data is streamed to shore-side teams for monitoring and analysis, there will be less need for large onboard crews. This will allow shipping companies to reduce personnel costs, which represent a major expense given the requirements for highly trained and credentialed seafarers.

Recently Kongsberg Maritime announced that it has received Approval in Principle from the regulators to move the role of the Chief Engineer from the ship to a shore-based control centre, which will eventually see a huge number of roles leave vessels. However, with leaner crews, maritime operators must get smarter about crew training, human-machine interfaces, workload management and operational resilience. While technologies open the door to smaller teams, this also introduces new human risks that must be carefully managed. Maintaining safety and readiness with skeleton crews will require innovative approaches.

AI MARINE AUTOPILOTS WILL GET SMARTER, BUT WON'T FULLY TAKE OVER (YET)

That said, I do not envisage a maritime system based on full autonomy in the near future. While autopilot and autonomous navigation systems will certainly get smarter,

ships are incredibly complex vessels that will still require human oversight for the foreseeable future.

Even as autopilots advance, ships demand constant care, maintenance and human intervention that cutting-edge technology cannot [yet] fully replace. Additionally, the ships being built today have long lifespans of 20-30 years, meaning much of the existing fleet won't be compatible with comprehensive automation until these are retired.

Nonetheless, we can expect to see autopilot systems taking on ever more roles as they evolve to become more capable platforms.

DATA MEANS SITUATIONAL AWARENESS AND SAFETY AT SEA WILL BE STATE-OF-THE-ART

Technology is also helping to make seafaring safer, both for crews and passengers aboard vessels of all shapes and sizes.

Platforms such as MARSS's NiDAR (which integrates with the vessels' existing cameras and navigational systems to feed into a single tactical picture and is used by superyachts for security) for example, are pooling data from different sensors to create a single, intuitive picture, delivering highly advanced situational awareness and protection across surface and air domains.

Automated man-overboard systems are also enhancing marine safety. For example, MARSS' MOBtronic ensures the instant detection, classification and rescue support of a human falling overboard a vessel or maritime structure and is already deployed across several cruise fleets.

Indeed, as detection systems become recognised as reliable systems, the maritime industry will be compelled to install them across all vessels. It is easy to foresee, in 30 years' time, that every seafaring vessel over a certain size will be running a man-overboard detection system. And, as these systems become ever smarter, these same platforms could be used to detect other activities, such as illegal dumping to protect the environment.

For more information: <https://marss.com>



How well do you know your lifeboat?

The American P&I Club has issued guidance highlighting the importance of in-depth training, robust familiarity with the specific lifeboat onboard each vessel, and rigorous maintenance routines to ensure the safety and reliability of lifeboats.

There are several types of lifeboats used aboard ships, each designed to meet specific safety requirements. Open lifeboats, lacking a roof, are the most basic and least safe, typically propelled by hand-operated oars. Closed lifeboats, either partially or fully enclosed, provide a safer environment against harsh weather and rough seas, with the ability to self-right if overturned. Free fall lifeboats, similar to closed types but designed for rapid launching from a height, offer immediate deployment in emergencies and are highly reliable in all sea conditions. To aid mariners in understanding and enhancing lifeboat safety, the American Club recommends sticking to the following protocols and procedures:

Comprehensive training is a must

Comprehensive training is critical to ensure all crew members are proficient in procedures for boarding, launching, and operating their lifeboats, regardless of the lifeboat design and release mechanisms.

Regular and realistic drills is essential

Regular and realistic drills of various scenarios help to reinforce the crew's operational knowledge and promote safety, confidence, and efficiency during actual emergencies.

Cross-Training

Cross-training facilitates the readiness of multiple crew members to competently conduct lifeboat operations, even during the absence or incapacity of key personnel.

Adherence to guidelines

Published guidelines and procedures should be meticulously followed as they will increase operational safety and boost crew confidence in lifeboat functionality.

Use of checklists

Detailed checklists should be implemented for every aspect of lifeboat deployment from launching to restowing. Checklists will help ensure thorough preparation and will help prevent operational errors.

Safety during drills

Safety should be emphasized during lifeboat training and drills. Correct safety and operational procedures should be repeatedly emphasized and practiced. As per IMO's MSC.1/Circ.1277, Interim Recommendation

on Conditions for Authorization of Service Providers for Lifeboats, Launching Appliances and on Load Release Gear, drills involving lowering and raising the lifeboat should only have as few crew members as are necessary to operate the boat.

Documentation of learning

Insights and lessons from both drills and real-life deployments should be captured to provide valuable feedback for continuous improvement.

Regular maintenance and inspections

Maintenance schedules are prescribed by lifeboat manufacturers and should be closely followed. They will ensure that all mechanical and safety systems are in optimal working condition.

Thorough inspections

Detailed inspections should be conducted regularly and should go beyond superficial checks. They should include the lifeboat's internal systems as well to help ensure they remain fully functional over time.

Vendor support

While external vendors play a critical role in maintaining lifeboat systems, crew involvement is essential for overseeing and validating the quality and completeness of maintenance work performed.

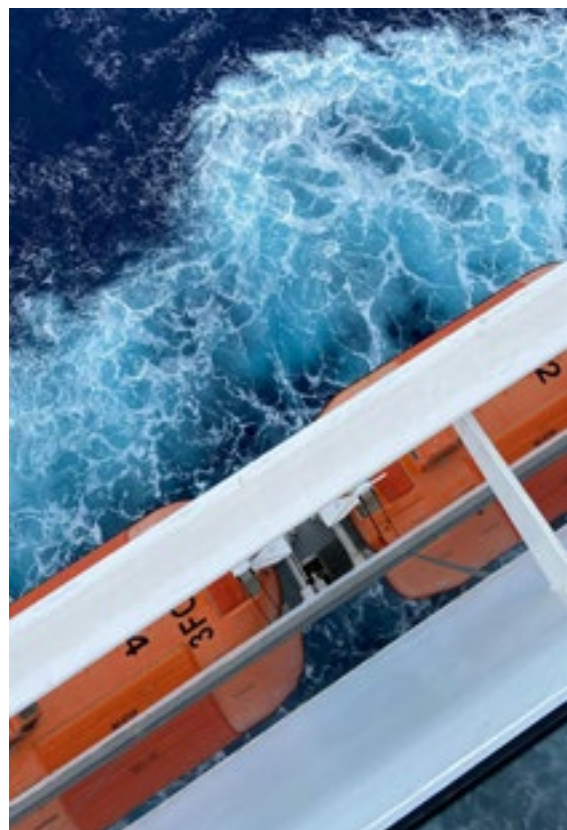
Furthermore, the American P&I Club recommends asking the following questions to assess how well you know your lifeboat:

- Do you know YOUR lifeboat?
- Have you thoroughly reviewed the operating manual for your lifeboat?
- Does your lifeboat have lashing or maintenance cables that require removal?
- Are there davit safety pins that are required to be pulled out to allow your davit-launched lifeboat to be lowered?
- Are there release hook safety pins that require removal on your davit-launched lifeboat?
- Is there a release hook safety pin that is required to be removed before your freefall lifeboat can be launched?
- Where is the battery charging cable connection to your lifeboat and how do you disconnect it?
- Should you put on your lifejacket before entering your davit-launched lifeboat? Your freefall lifeboat?
- Does your lifeboat have a drain hole that needs to have the plug inserted before launching?
- Does your freefall lifeboat have a safety pin in the release lever that is required to be removed?
- Where is the remote-control wire for lowering your davit-launched lifeboat from inside the lifeboat?
- On your davit-launched lifeboat, do you know how to operate the release hooks in both the offload mode (best in good sea conditions) and the onload mode (can be best in rough seas)?
- Should you use a painter on your davit-launched lifeboat? Your freefall lifeboat?
- Do you know where the painter release is located inside your lifeboat?
- Should you start your lifeboat's engine before launching or after?
- Where is the emergency release located in your davit-launched lifeboat in case the primary release mechanism doesn't work?
- Is there a bypass valve that needs to be closed or opened to enable your freefall lifeboat to launch?
- If your freefall lifeboat has a pump release, how many pumps before the lifeboat falls (or, how many pumps before you should be concerned if the release will actually work)?
- If the release doesn't work on your freefall lifeboat, what is the emergency procedure?
- Do you know where the food, water, extra safety equipment, and first aid kit are stored in your lifeboat?
- When doing maintenance on your lifeboat, what safety pins and lashing should NOT be removed?
- Do the inspections on your lifeboat include the launching components or do they primarily focus on food, water, and safety gear in your lifeboat?
- After successfully launching your lifeboat in a real emergency, do you thank: a) the lifeboat manufacturer; b) the people who trained you to properly launch your lifeboat; c) the people who did all the periodic maintenance and safety inspections on the lifeboat; or d) All of the above?
- Have you checked the lifeboat boarding ladder?
- Is the rope free from rot, especially near the securing thimble?
- Is the anchor canvas in good condition?

In conclusion

Lifeboat safety and reliability require thorough familiarity with the lifeboat and its systems, the rigorous application of training, and strict adherence to maintenance procedures. Mariners should be ever-prepared to deploy their specific lifeboats and confident that these critical safety devices will perform flawlessly in emergencies. Prioritizing lifeboat training, safety and maintenance based on the specific lifeboat onboard enhances safety at sea and instills confidence to those who might face life-threatening situations. NEVER assume your lifeboat is identical to lifeboats you have seen on prior vessels. Take the time to carefully read the operating manual and ensure you are familiar with every aspect of the lifeboat installed on your vessel because, when you've seen one lifeboat, you've only seen one lifeboat.

Download the American P&I Club guidance at <https://bit.ly/3LmgIG0>.



InterManager issues call for industry-wide accident reporting



InterManager



*Captain Kuba Szymanski,
InterManager Secretary General*

Accidents onboard ships are not decreasing, according to latest accident statistics submitted to the International Maritime Organization by InterManager.

The Association says the number of seafarers injured in falls has remained fairly consistent year on year, as has the number of injuries resulting from rescue and survival craft accidents. However, the casualty rate for enclosed space accidents has almost doubled, the Association warns. InterManager has submitted its figures, which span several decades, to the 10th session of the IMO's Sub-Committee on Implementation of IMO Instruments which took place from 22nd to 26th July in London.

The Association's submission provides information and analysis in support of InterManager's information documents on enclosed space accidents (ranging from 1996 to 1 May 2024), fall accidents (from 2012 to 1 May 2024), and accidents involving rescue and survival craft (from 1980 to 1 May 2024).

InterManager notes there remains a significant lag between accident occurrence, its investigation, and the report being uploaded into the Marine Casualties and Incidents (MCI) module of the Global Integrated Shipping Information System (GISIS).

"It would be markedly beneficial to all analyses if this unwelcome lag could be decreased, or indeed eliminated," said InterManager.

Industry statistics are undermined due to lack of transparency and hesitation in sharing accidents. This is causing problems with accident reporting.

InterManager's submission notes a number of accidents involving falls onboard ships are not being recorded within GISIS nor made available elsewhere, although these accidents are being openly reported and recorded on ship type-specific websites and within regional media. It also notes there have been a number of enclosed space accidents in ship repair yards which are not currently required to report to GISIS.

InterManager's submission to IMO reveals:

Enclosed space accidents

The trend for the number of enclosed accidents occurring on an annual basis appears to have stabilised over the past few years with a noticeable dip during the global pandemic of 2021. However, when comparing 2022 and 2023, both of which saw 14 recorded enclosed space incidents, there was a marked increase in the number of actual casualties in 2023, compared to 2022, 34 as against 18. Thus, although the frequency of accidents remained fairly constant, the casualty rate almost doubled.

Of those who have lost their lives in enclosed space accidents where the rank or role has been stated, 66% currently come from what is considered to be the ships' leadership team. (For statistical purposes, the ships' leadership team comprises the master, chief engineer, chief officer and second engineer.) A further 6% of those who lost their lives were serving onboard the ship in a training role, which is defined in similar statistical terms as a cadet or a trainee.

In early June, InterManager submitted a paper to IMO, with "Lessons Learned and Safety Issues Identified from the Analysis of Marine Safety Investigation Reports", regarding the alarming trend of deaths in enclosed spaces onboard ships. The submission presented detailed information regarding enclosed space accidents spanning from 1996 to 1 May 2024, specifically focusing on incidents of asphyxiation.

Fall accidents

The trend for fall accidents from, or onboard, ships for the past five-year period has remained consistent between 44 and 52 accidents per year, and the majority of casualties resulting from these accidents involved just a single person. Between 1 January and 1 May 2024 18 accidents were recorded within the GISIS.



The percentage of fall accidents, when analysed by ship type, remained broadly constant throughout the review period of 2012 to 1 May 2024, as compared to InterManager's previous submission (document III 9/INF.12). Likewise, the location of the fall accidents reported remained consistent between the two review periods. It would appear therefore, that the industry is experiencing a similar frequency of fall accidents in similar locations year after year.

Where it is mentioned in the accident investigation report, seafarers directly involved in undertaking the majority of activities which involve working aloft or working over the ship's side experience the highest number of accidents at 55%. Those who are not ship officers or crew account for 22% of the fall accidents, with ship officers accounting for the balance of 23%.

Rescue and survival craft accidents

InterManager's data in relation to accidents associated with rescue and survival craft onboard ships involves all kinds of merchant ships, cruise ships, naval vessels, oil rigs, tugs, and supply boats with IMO numbers. Out of 538 incidents (including 50 near misses) gathered since 1980, only 19% are available in GISIS.

There is still a potential for serious accidents in the handling of lifeboats during drills and launching. InterManager gratefully acknowledges the continued efforts of the IMO to prevent lifeboat accidents by reviewing resolution MSC.81(70) on the Revised Recommendation on testing of life-saving appliances, and the adoption of resolution MSC.544(107) on 8 June 2023 on the amendments to the Revised Recommendation on

testing of life-saving appliances (resolution MSC.81(70)) which includes all types of lifeboats on board ships.

InterManager strongly recommends that categories of specific operations – such as enclosed space, fall, personal transfer, lifeboat, mooring and other – be included in the data collection database of accidents by GISIS, Flag States, other industry organisations, including shipping companies. This will assist regulators to review procedures, improve safety and minimise accidents.

As InterManager stated in May 2024, the Flag State of Panama has contributed substantially to accident reporting, adding a total of 59 notification and investigation reports to GISIS. This influx of reports is highly welcomed as it greatly aids in statistical analysis and the formulation of corrective actions to enhance safety at sea.

Speaking about the submission to IMO, Captain Kuba Szymanski, InterManager Secretary General, said "Safety is very important to InterManager members and developing an effective safety culture is one of the central pillars of our General Principles of Conduct and Action. Collating these statistics on behalf of the industry enables us to proactively assist on a number of core safety issues and we are pleased that the IMO and other industry stakeholders are making use of them to protect the lives of seafarers."

Lithium-ion fire extinguishers from Sea-Fire



UK-based Sea-Fire has recently launched a new range of extinguishers to deal with the threat of lithium battery fires. The extinguishers contain AVD (Aqueous Vermiculite Dispersion) which is described as 'the only agent that contains, cools and extinguishes lithium battery fires and can be used in both portable and fixed fire safety systems, including sprinklers.' The extinguishant works by creating a film over the fire and depriving it of oxygen, quickly putting the fire out whilst the AVD remains non-toxic to humans, plants and animals.

Sea-Fire's AVD range is available from 500ml aerosols for small appliances aboard like mobile phones right up to 9 litre cylinders. Larger wheeled units are available on request. Sea-fire says the range of batteries that can be tackled are usually the smaller marine types found in outboards and some tenders, up to around 750Wh.

Typhoon International launches Hudson 50N buoyancy aid

Typhoon International has added the new Hudson 50N Buoyancy Aid to its range of dinghy and watersports apparel and personal protective clothing. The Hudson 50N is available in three colours – black, orange and blue – designed to reflect the firm's new brand identity.

Typhoon International says the Hudson 50N has been engineered to offer comfort via its ergonomic fit. It provides a minimum bulk design with shoulder and waist adjustment. It also has an easy-to-reach chest pocket, front zip fastening, and adjustable buckle. Additional features include a quick-release front clasp, removable crotch strap, elasticated side panels and convenient unisex fit. The Hudson 50N buoyancy aid meets strict EU safety, health and environmental protection requirements and the international standard for personal flotation devices.



Kongsberg introduces new underwater mountable thruster with permanent magnet motor



Kongsberg Maritime has added a new size of underwater mountable thruster with a 3.7-meter propeller and 4.2 MW power output to its range. Suited to a range of vessels including drill ships, wind farm vessels, and production vessels, the new UUC PM 355 thruster delivers 81 tonnes of bollard pull and features a permanent magnet (PM) motor. The UUC PM 355 has a compact design with less space required in the machine room thanks to the integrated PM motor.

Kongsberg Maritime has more than 25 years of experience in the development of underwater mountable thrusters, which can be exchanged without the need for drydocking, while the vessel remains in the water. Installation of the UUC range can be done at depths of up to 50 meters.

"Our UUC range of underwater mountable thrusters remains a popular choice across a range of offshore applications where minimising downtime is a priority," said Kongsberg Maritime product line manager Pasi Villanen.

Chinese outboard maker delivers first 300hp twin electric powertrain system

ExploMar, the Chinese outboard manufacturer, has delivered what it says is the world's first 300hp twin electric power-train system to an Italian customer and successfully conducted sea trials. This marks the first global application of the 300hp twin-engine electric power train system. An 11m (36ft) rigid inflatable boat, equipped with the WAVE 300 twin electric powertrain system, carried six passengers during the test and reached a speed of 38kt. The 11m RIB, newly built and owned by the Italian pioneer in new energy marine technology AS Labruna srl, is equipped with two WAVE 300 electric outboards and two HEDB 125 batteries, delivering a total power of 600hp and a battery capacity of 250kWh, providing robust output power.

The WAVE 300 is ExploMar's first electric outboard product, redefining electric outboard design with a ground-breaking approach. The company has applied axial flux motor technology to high-performance boats for the first time, achieving a 300hp power output in an electric outboard with lighter weight and a maximum output torque of 655Nm per unit.



New high-thrust MJP X-HT waterjet targets the crew transfer vessel market



Marine Jet Power (MJP) has launched a new waterjet, the X-HT. Designed for exceptional efficiency in low to medium speed applications (up to 35 knots), the new high thrust waterjet is particularly targeted at wind farm crew transfer vessels (CTVs) but has wider applicability for various workboats.

The X-HT continues the legacy of MJP's X-Series, but is a high thrust variant offering capabilities tailored for vessels that require high thrust at slower speeds, making it well-suited for the specialized needs of wind farm support vessels.

The series has a compact design that allows for larger diameter jets to be installed in narrower hulls, optimizing performance without compromising space. Additionally, the lower-input power capability of the X-HT ensures it remains lightweight and cost-effective to operate.

"We are excited to expand our X-Series line with the high thrust (HT) variant," said Jonas Tegström, CEO of MJP, adding that the new variant "combines our cutting-edge technology with practical enhancements that meet the evolving needs of our customers, particularly in the wind farm sector, providing superior efficiency and thrust in a compact, economic package."

Cox Marine's 350 V8 diesel outboard has received Tier III approval from the US Environmental Protection

Cox Marine is proud to announce that the latest addition to its product line up, the 350 V8, a 350hp variant of its V8 diesel outboard architecture has successfully achieved EPA Tier III approval for commercial and recreational applications. The certification allows the British outboard and diesel pioneer to open its order book in anticipation of production, which commenced in August.

Adam Gurr, Product Portfolio Director at Cox Marine, added, "The V8 marked the dawn of a new era in outboard technology, offering a unique propulsion solution designed specifically for the marine industry. The 350 V8 showcases the potential of this platform with its advanced capabilities, setting a new standard for marine propulsion."

Image credit: Cox Marine



Volvo Penta unveils new D8 IMO III range



Volvo Penta has unveiled a number of new engine models in its popular D8 diesel range designed for smaller vessels that have thus far been exempt from IMO III regulations.

The new models, including the D8 IPS-600, D8 IPS-650, D8 IPS-700, D8 450 hp, D8 510 hp and D8 550 models, utilise common-rail fuel injection and twin-entry turbo with charge air cooling to deliver power outputs of up to 550 horsepower. Although designed for commercial applications, the new engines could also have applications in the luxury yacht sector.

"As emissions control areas expand, vessels must comply with more stringent IMO III standards. Historically, there weren't any IMO III solutions for smaller high-speed vessels, so they were exempt from restrictions. Now they must comply, so we have leveraged our IMO III technology for an expanded range of D8 solutions," said Volvo Penta director of commercial marine, Jan-Willem Visser.

Getting paid...

By Mike Wall



Many mariners, and others, enter the marine surveying profession for different reasons. There are several, including the job satisfaction, variety of work, continually learning, etc. However, if we are honest with ourselves, the main reason is to make money. The ultimate aim is to build a successful company which will provide an adequate pension when we ultimately retire.

However, to do so we need to get lots of work and to get paid for it in a timely manner, cash flow being the lifeblood of any company. Without it we are unable to pay our staff, overheads and other obligations. Most clients pay within a month, some better clients even sooner. Unfortunately, there are several out there who do not.

Several companies went to the wall during the Covid-19 situation as many clients were unable to pay. However, the situation still pervades with some companies struggling to survive. So how is this happening?

Some of the less scrupulous clients state that "We cannot pay until we have been paid by our client." These companies act as clearing houses/claims handlers in

that they act on behalf of the underwriters in appointing surveyors, adjusters, lawyers, etc, and carry out the case handling. Although they appoint the marine surveyor they state in the letter of appointment that they are not responsible for paying the invoice which should be directed to their client. Letters of claim are then bounced back and forward between the two with lack of any action on payment. Another excuse used is that they do eventually pay.

The problem is attributable to the current system. When the assured pays the premium the underwriter immediately invests it in a long-term high interest bearing entity. Don't get me wrong. This is a common practice in business. The problem is that the excuse for non-payment

given by the underwriter is that they cannot recover the funds to pay the surveyor for two years. This is evidenced by the number of invoices owing to companies which are more than two years old.

I have been publishing a free monthly email newsletter 'FLASHLIGHT' for 24 years to around 3,000 marine surveyors around the world with the circulation list increasing monthly. It is mainly a collation of articles and information which I believe will be of interest to marine surveyors.

Some years ago I realised that the publication could be used for naming and shaming delinquent clients who were not paying their marine surveyors' invoices. This has been fairly successful, particularly with smaller clients. However, it has been unsuccessful in recovering monies from two particularly bad offenders who are mentioned every month in FLASHLIGHT.

Many of the more experienced survey companies will no longer accept work from such clients so that the claims handlers have to find newer, less experienced surveyors, to do their work. The new surveyors see this as a great compliment but eventually realise that they do not get paid for many months and drop the client.

One of the suggestions to reduce the effects is to add a 10% penalty to the invoice. If the invoice is paid within 10 days the penalty is dropped. Some have suggested that this should be 20% to offset the interest that the underwriter would be earning on investing the surveyor's fees. Several have gone to the wall because of this situation thereby reducing the pool of surveyors available to clients. It is almost as if marine surveyors are a 'throw away resource'.

Perhaps the commercial ship surveyors should also take a leaf out of the book of pleasure craft surveyors who usually insist on being paid before the report is issued?

I hope to develop a web page which will include a database of chronic bad debtors to which survey companies can refer when accepting appointments.

When 'naming and shaming' these unscrupulous delinquent bad debtors we will also be asking whether such entities are solvent in that they cannot pay their creditors.

Underwriters and marine surveyors have a mutually exclusive relationship. All that surveyors are looking for is a timely system of payment.

Mike Wall can be contacted by email at mikewallassociates@gmail.com



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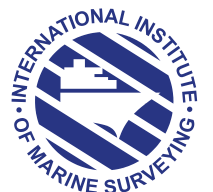
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A day in the life of Martin Pittilo

FIIMS

In this edition's *A day in the Life of* feature, Mike Schwarz is in conversation with Martin Pittilo FIIMS, who is the most recent addition to the IIMS management board. Martin is a successful yacht and small craft marine surveyor based in the southeast region of the UK.



Q1. Let me start with a slightly odd question. You have an unusual surname, and I am curious as to its origins. What can you tell me about the origins of your surname?

A. That is a good question and one I get asked a lot. The family is from Fife in Scotland and the name originates from there. I on the other hand have never lived there, but we went every year on holiday as children.

Q2. I know readers of The Report magazine are fascinated to know how others discovered and entered the profession. You had a successful career with Lloyds Register based in London. Please explain what your motivation to become an independent small craft surveyor was and how valuable the experience and knowledge you gained at Lloyds Register proved to be.

A. My last job at Lloyd's Register (LR) was as one of the senior managers reporting directly to the Marine Director with a team of around 14 people working for me. This was a challenging and prestigious role, but I wanted a change. Sailing has been ingrained in me from an early age, and I had been aiming to work in a small vessel environment since I was at university. Spells sailing cross-channel with the Junior Offshore Group and LR

Yacht Club went some way towards this, but I decided to branch out alone and set up my own marine surveying business.

The main lesson from LR, which has stood me in good stead, was that communication, systems and processes are extremely important even in a micro business, and that everyone learns and works differently. The pseudo MBA LR Management Development Program I undertook also gave me a good grounding in running a business, which I use both in my own company and with my IIMS management board involvement.

Q3. What is your proudest moment as a marine surveyor and why?

A. I am always proud when I can contribute to marine surveying organisations, whether the IIMS or others. I have been involved on committees at various levels from committee member to association president. I have been involved with the IIMS, YDSA, RYA and British Marine as a representative. I am always proud to be allowed to have the chance to give something back and attempt to positively steer the organisation forward.

Q4. Technology is changing at a fast pace, particularly with the onslaught of AI (artificial intelligence). Marine surveyors are not immune to this change. What are your views on how a surveyor should embrace these developments both in terms of acquiring new knowledge but also adapting working practices?

A. AI is developing, but right now needs to be used with a great deal of care. The same principles apply to AI as applied in the 1990s to increasing processor speeds; in that a lot of checking and thought is needed to get something accurate and sensible out of the systems. Whatever happens, I think that the physical aspects of the job will continue, but that careful use of AI will help speed things up and accelerate some of the more tedious parts of the job. It is already frightening what it comes up with though; ask it to generate a basic survey report for a given type of boat, and it will! And it is better than a lot of the reports that



I have previously seen sent in for assessment. We are at an interesting juncture in technology. We will have new surveyors who over-embrace it and more established ones who under-embrace it. I think some clear guidance will be needed as to how best it can be used for all aspects of the surveyor's job: marketing, sales, accounting, surveying, report writing, checking, and client relations.

Q5. We seem to talk endlessly about where the next generation of marine surveyors will come from for the career seems less appealing than it used to be. As you look back over your career, what has given you most satisfaction and what can you say to spark enthusiasm for those who are considering entering the surveying profession.

A. When I left university, I followed the traditional path of finding a job in a corporate firm and working my way up the ladder. I now think that

setting up my own company has been a great move forward, and I am happy that I did so. I don't think we will have a problem with the next generation of surveyors, because the younger generations still want to go boating, but the ownership model they prefer is completely different to previous generations. They want experiences, not ownership. So, the interest in boats will always be there, but the types of work will be changing from purchase work to more coding-type work. A good reference if people want to know about the different approaches from the generations is found in a piece of work carried out a few years ago by British Marine, which was referred to as the "Futures project".

The challenge however will always be the interaction with customers. This is as critical as the technical side. Delivering bad news in a way that is understood and appreciated whether doing coding surveys, or condition surveys, is always a real satisfaction. Seeing the realisation of what needs

doing and why is very satisfying. This is one area that takes a lot of imagination and diplomacy and is an area that AI will take a lot of catching up with!

Q6. The role of mentoring is important. Even the most successful surveyors can point to someone earlier in their life who mentored and inspired them. Were you lucky enough to have found a mentor and what are your thoughts on the role of mentoring?

A. I never had a mentor as such. I found and attended surveyor associations like the IIMS and training days. I think I learned more from the other senior (and generous) surveyors than I did from the formal teaching. What I learned most is that all surveyors seem to work in different ways, and you will develop your own working style. There were some very gifted individuals who showed me that care and attention were important, as is attitude. I suppose then that I had a lot of mentors, but no formal ones.

I have go-to surveyors to whom I will ask questions, and some surveyors who I would not believe their answers; and I think it is important to work out who to listen to and who to filter. I find I need to filter those who are most vocal as they are often not the person with the underlying expertise, no matter how much they think they are. The quietly spoken individuals often give the more knowledgeable and measured advice. I have different individuals that I will go to for different questions depending on my knowledge of their knowledge. So, my view on mentoring is it is the network of colleagues you build up that forms your mentor group.

I also think that it is important for surveyors to observe a number of more experienced surveyors so that they form their own view of how to survey, how to report, and how to deal with customers. Just relying on one guide results in mirroring the limitations of the mentor. Having multiple guides will expose the mentee to a wider set of techniques and equipment. However, pick your mentors and advisors very carefully.

One of the most memorable bits of mentoring advice I got was from a well-respected marine lawyer in the

yachting business struck a chord. I asked him what was in the scope of a pre-purchase survey. He replied, "Anything of material interest to the client". This has lived with me ever since.

Q7. How important is it for marine surveyors to be part of a recognised surveying membership organisation? What are the key benefits to the individual and does it give you a competitive edge?

A. I partially answered this in my previous answer. The main benefit I see is the interaction with and learning from others in the same profession. Some members are experienced, and some are not, but both bring something to the interaction, and both take something from it.

The other big benefit is the curation of information for the surveyor to help them in their

work. I think all of the surveyor organisations can do more of this. Accountants, for example, find it difficult to keep pace with all legislative developments that they need to keep up with. So, they act in groups. In the surveying field, the surveying organisations have a role in sifting and collating the information and making it easily accessible for their members. With the increasing pace of novel technologies as electrification, hydrogen propulsion, materials science, recycling, and autonomus systems, this is becoming more important.

With regard to membership organisations, it is important to distinguish those with robust membership processes and criteria, from those, for example, for who it appears that the only criteria are that they have done a course, or who have a level of "membership" that is cut price and anyone can apply for and get in at. Keeping the standards high and making this very clear to the public is incredibly important.



Q8. What is your favourite item in your surveyor's tool box and why?

A. Surveyors do not have tool boxes. We have toy boxes!

Seriously, the most used and reliable items in my "tool box" are the hammer, the eyeball and a deep curiosity when you find something that does not look right, or is different.

The hammer is really useful on so many levels. But it is often the neglected tool when it comes to surveyor training. It is difficult to find examples of all the things that a hammer will reveal for a training course. This is one area you can pick up better from mentors. The rest of the tools fill in the picture of what is happening, but the hammer and the eyeball are often the start point.

The eyeball and curiosity are fundamental to surveying. Working out what you are seeing in front of you and spending the time on research when you have not seen it before, or it does not look quite right are key to reporting well to the client.

Finally, I think that the most important "tool" that a surveyor can possess is humility. The ability to say that you don't know and will find out rather than making something up is so important and rarer than it should be. This is a fundamental value that a number of arrogant and vocal surveyors I have come across need to learn.

Q9. The saying 'every day is a school day' is one I hear often in the surveying world. Do you agree and what are your views on continuously learning?

A. You never stop learning. There is always something you find that you have never seen before, and the response to this should be to research it or ask a "grown up" who knows about it.

Courses are great and will give knowledge. Knowledge will help you know your limits, which I think is very important. Experience will help you apply the knowledge, and knowledge is what you get through mentoring.

Q10. Apart from a good technical book, what was the last novel you read for pleasure and why did it hold your attention?

A. It is a book called Trek, by Paul Stewart, and is about a group of four people who in 1955 decided to travel from Kenya to the UK via the Sahara in a Morris Minor. It is a fascinating, painful read, but is a very salutary tale about the importance of preparation and having the proper tools.

Q11. I know you split your time between the UK and Kenya for personal reasons. What can you tell readers (and me) who know nothing of Kenya about the country and your lifestyle when you are there?

A. Just go. The two words that come to mind are smiling and friendly. Yes, there is some chaos, but the sense of community means that it does sort itself out somehow. It is a very young country, which the older leaders are currently having to come to terms with. It is a democratic gem in Africa.

Kenya does not however have a history of leisure boat use, and it will take some time for the marine leisure industry to develop into a mature industry.

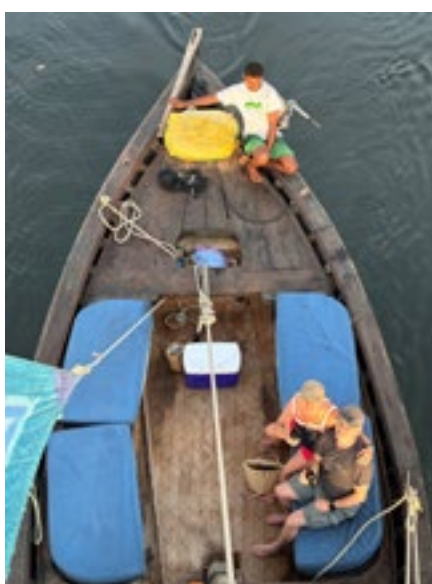
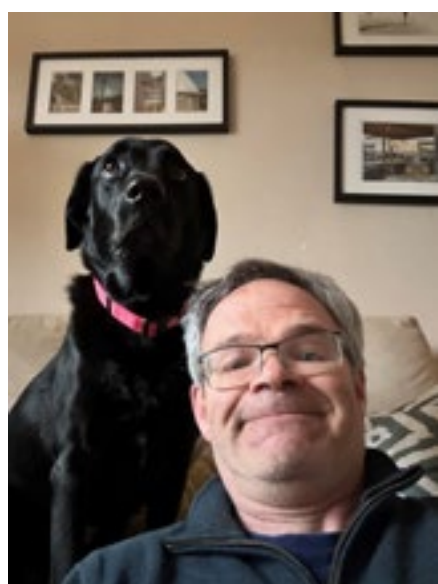
It is a safe, beautiful, friendly country, with a lot of contrasts from the extensive game reserves to the Rift Valley to the coast. There is amazing wildlife found in the reserves, but you can see wild monkeys in both Nairobi and on the coast.

Q12. When the day's work is done, how do you like to unwind and relax, and what hobbies do you pursue?

A. When in Kenya, three labradors take up an inordinate amount of my time.

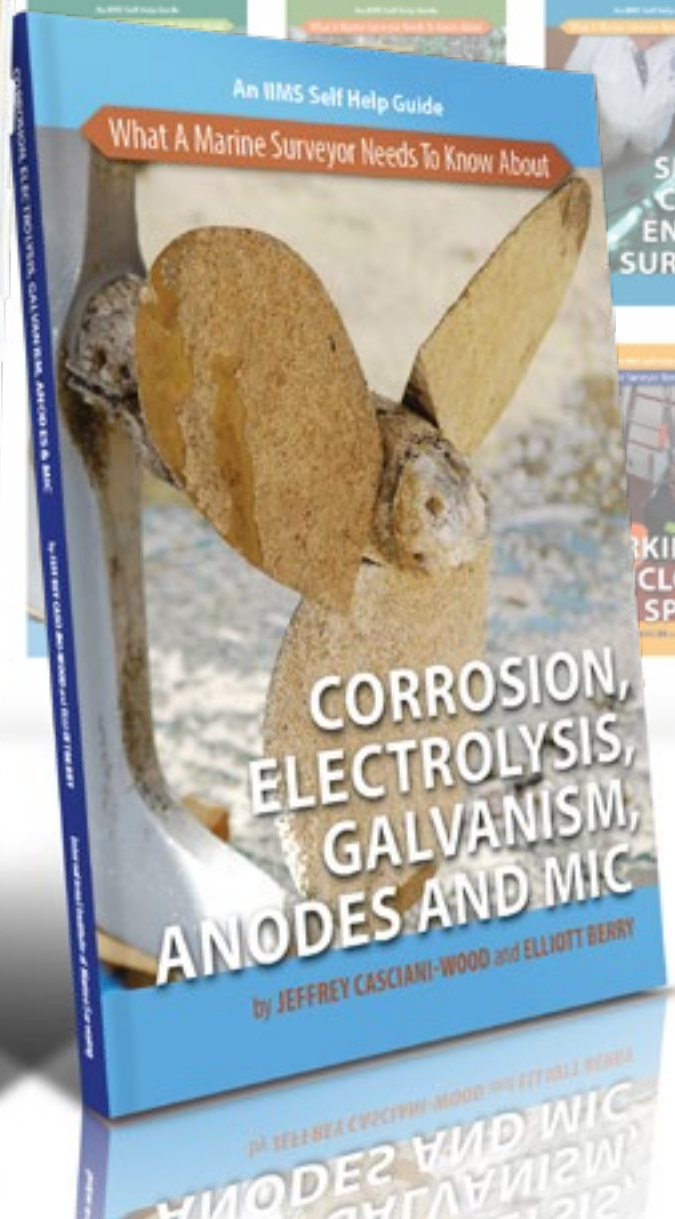
In the UK, I have two labradors I borrow when I am at home. They sometimes appear in the lens of the webcam when I am in meetings! They are great at lowering blood pressure and making me exercise.

I love hiking, reading a good book, mountain biking, and very occasionally I will go sailing. I used to sail a lot, but working on boats all the time, it has become less of an activity! Cooking for my partner is one of my favourite activities.



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