THE REPORT

The Magazine of the International Institute of Marine Surveying

JUNE 2022
ISSUE 100

INTERNATIONAL INSTITUTE OF MARINE SURVEYING

ISSUE 100

What should we learn from near misses?

Going to court

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Best practices for a successful superyacht refit

10 AWESOME SHIPS THAT WERE NEVER BUILT

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Contents

FRONT COVER

This edition's cover depicts a World War II Liberty ship and is reproduced from an original watercolour by IIMS in-house graphic designer, Craig Williams. The late Jeffrey Casciani-Wood was fascinated by Liberty ships. Space is devoted to his legacy in this edition and it seemed fitting to combine the image both in recognition of the special one hundredth issue of The Report and to celebrate his memory.

Editor's Letter

Dear Colleague

Welcome to the 100th edition of the Report Magazine, an auspicious occasion and milestone, one that could not go by unmarked. You may well wonder why the front cover depicts a Liberty ship - a class of cargo ship built in the United States during World War II. The answer is simply that our recently departed and much missed past President, Jeffrey Casciani-Wood, was fascinated by them. You will find several pages in this edition dedicated to Jeffrey's memory, his legacy and his work. I am grateful to IIMS in-house designer, Craig Williams, for his skill in painting the original cover for this edition.

From humble beginnings back in the 1990s, the Report Magazine has gone from strength to strength. These days, each edition is read by many thousands of marine surveyors around the globe, others with an interest in the sector and those, such as insurers and P&I Clubs, who touch the surveying profession.

This edition is unashamedly different. It is an excuse for me to bring together an eclectic mix of articles and features to celebrate the 100th edition. One of the more interesting features takes a look back at content from the Report Magazine in its early black and white days. When compiling the content, two things struck me. Back then, it was common to receive up to half a dozen letters to the editor from each edition. These days I get the odd one or two and I'd like more please! Let's get a dialogue going. If you have something to contribute, I welcome your comments and letters for publication in future issues. Please email any letters or contributions to **info@iims.org.uk**.

The second thing is my perhaps controversial comment and recognition that the boating and shipping world seems to have made little progress over the past quarter of a century in terms of the safety of life at sea. In those early editions of the Report, we were reporting details of ships colliding with each other, small craft sinkings and regular deaths at sea. Roll on 25 years and you will find similar stories in this issue. Recently I have heard of tour boats sinking, an allegedly intoxicated skipper hitting a buoy resulting in a fatality, ships grounding, hitting bridges and so on. So, forgive my cynicism, but what's changed? All of this is vexing, and I wonder what can be done so that we see significant and tangible improvements.

This edition marks the last column by outgoing President, Geoff Waddington, and the first by incoming President, Peter Broad. This 'changing of the guard' formally takes place at the online AGM on 7th June. I hope to see you online and even if you cannot make the event live, you can watch it on video on catch up. I would like to thank Geoff for his unstinting service, devotion to duty and friendship over what had been the most challenging two years.

The Murky Bilge is a new feature (see page 39) which will also appear in subsequent editions of the Report too. It was suggested by an IIMS member. Each issue, a genuine photograph will be published. The best answer sent by email to the address provided will receive a copy of the next Report Magazine as a prize.

Sadly, I do not have sufficient space in my column to trail all the excellent articles in this edition, although I would encourage you to read the special article entitled *10 Awesome Ships that were never built* (page 64).

Enjoy this special edition of the Report Magazine and here's to the next one hundred editions!

Survey well.

Mike

Mike Schwarz,
Chief Executive Officer

The President's Column

Dear Member

Earlier this year I commented on the ongoing effects of Covid and spoke of my hopes that all will soon be over. Well, having spent my two-year term as President partially in lockdown, then with social distancing prohibiting face to face meetings, then suffering restricted travel, now my term is coming to an end, and we are almost back to where we were over two years ago! By default, I will probably be remembered as the President of Zoom (or is that the President of Doom) because having weathered Covid and Brexit we are now faced with a war in Europe, which whether we like it or not will affect all of us. I can only hope and pray that the effects on the rest of the world remain economic, although I appreciate that this is of little comfort for those caught up in the full reality and horror of conflict. The alternative is too awful to contemplate.

This has all meant that despite enjoying my time as President I have not had the privilege to visit any regional branches, attend any face-to-face meetings or training days. As a result, I suspect that those members who tend not to read The Report, our industry leading magazine, may not even be aware of my presence over the past two years. Well, it is what it is or at least it was what it was and this June I will be handing over the reins to our incoming President, Peter Broad. He is a long-time friend of mine and, as such, I know that we will have a good man at the top.

Peter's appointment brings with it a certain balance. I have been involved in the large commercial shipping sector to a degree, but most of my attention, quite rightly, has been towards small craft. From June this year however, it will be the turn once again of the large commercial ship sector; but which ever area of surveying holds your interest, we all have a very professional and experienced leader and I wish him all the best.

As the outgoing 'small craft' President, I am taking this, my last opportunity, to rattle the cage of yacht and small craft surveyors once again. As an Expert Witness instructed by both lawyers and insurers, I can pay testament to that old saying that "surveyors spend more time involved in legal action against other surveyors than they do surveying boats" - many a true word is spoken in jest!

Even as I write this column, I have several (too many) such cases on my desk. Most are the result of poor report writing where the surveyor has not specified **clearly** what he/she could inspect and what he/she could not inspect. The next common issue is in regard to the surveyor's advice given

in his/her recommendations and how far one should go before entering the realm of consultancy. I for one (and I am sure Mike also), would be interested to hear your views on this subject. One statement often included from disgruntled clients is along the lines of "If I had known the severity of the defect and the cost implications, I would never have purchased the vessel". I do not consider that it is the surveyor's place to advise someone either to purchase or not purchase a vessel. It is the surveyor's job to inspect the vessel as closely as possible (within stated limitations) and record any present or potential defects, their cause and what actions should be taken in light of their severity. What you should take into consideration is that what you personally consider to be quite a minor defect, someone else may consider to be a very serious defect. I have heard it said "yes is has hull blisters, but in my experience no boat has ever sunk through osmosis". Perhaps not, but the hull repair in question turned out to include, lift out, clean off, mast removal, transport to a repair facility, gel peeling, hot vac treatment, infra-red lamp drying for a month, preparation, lamination, filling fairing, gel application, preparing, priming, painting, transport to hoist, mast replacement and launching with associated cost of materials, waste disposal, storage and office administration!

Following submission of his/her report, which includes all the necessary factual information, the surveyor may sometimes be contacted by his/her client to comment on the potential cost of rectifying the defects found. I believe this is where surveying ends and consultancy begins. Before the surveyor sets foot down the consultancy path, he/she should consider the implications. If you advise a repair cost which fails to cover the eventual cost of the repairs, you may be sued for compensation. Also, some things which you may consider to be repairable may turn out to be a constructive total loss. You may recommend a particular repairer who then turns out to be unsatisfactory and although not your fault it could still damage your professional reputation.

To avoid these and the many other pitfalls the secret is to have a sound marine industry-based knowledge in as many disciplines as possible, coupled with as much experience as you can gain on your own or through mentoring. I have long been an advocate of Professional Education and Standards, throughout both my career and more importantly throughout my time as a member of this fine Institute of ours. The IIMS may have started off as the 'New Kid on the Block' trying to break the mould of the long established 'Old Boys Club', which is generally how the other surveying institutes were perceived – having a self-proclaimed and therefore knowledgeable marine surveyor, a well-known chap who used to race yachts, or perhaps an ex-sea captain, someone who could "give you a good idea of how that boat is". The reality is that this is no longer acceptable. The modern-day boat is a long way removed from boats of the past and today's potential boat owner has probably far less boat knowledge or experience and therefore much greater expectations of what he or she requires from the surveyor.

The IIMS has made serious progress in dispelling any formally pre-conceived ideas, by becoming the 'Go to Institute' for education and training and the setting and maintaining of standards for surveyors. We have produced through the IIMS' subsidiary, the Marine Surveying Academy, accreditation schemes which have been accepted and adopted globally by the marine sector which is a rare thing in an industry steeped in tradition.

Some of these old attitudes are the corner stones of why certain sections of the marine industry, (ours included), face so many problems - the refusal to change with the times. My most hated expressions have always been "that's the way it's always been" or "that's the way we have always done it". Just because something has been done a certain way for fifty years does not make it right.

Taking up the theme of change, a favourite regulation of mine in MGN 280 says, *"a vessel over 12 meters requires a whistle and bell"* and *"over 20 meters in addition to the whistle the bell is required to be approved by a UK nominated body."* It may be all very well for a superyacht to pay in excess of £1,200.00 for a new shiny Lloyds bell with fancy bell rope to be displayed at the bow and polished daily by the crew. But what benefit is there to the average boat owner who would stick it in a box and put it away in a locker never to see the light of day. Either way, what is the point?

There are many more examples too. Distress flares, fire extinguishing systems and so on all need bringing into the 21st century. Before we change the rules and bring in maritime autonomous surface ships (MASS) operating without crew, perhaps we should clean out some of the old.

Some issues have been overlooked for years. I am not averse to being a bit controversial, so let's consider construction materials for vessels. No longer as popular as it once was but why is ferro cement (concrete) not a generally accepted material? MGN 280 states *"A vessel may be constructed of wood, fibre reinforced plastic (FRP) aluminium alloy, steel or combinations of such materials", "proposals for the use of other materials should be submitted to the Certifying Authority for consideration and approval".*

I may be biased having once owned a ferro cement sailing yacht. However, let's consider the facts, which are - concrete is fire retardant, largely impervious to oil contamination, inherently stiff and strong, resistant to rot, corrosion, UV damage and the long-term effects of being immersed in water. It is also simple and cheap to repair, even underwater. Sounds ideal to me! Have a look at these links in regard to WWI and WWII vessels - **https://bit.ly/3vNh7LP** and **https://bit.ly/3kBhsuE**. Some D Day Mulberry Harbour structures are still floating on the south coast of the England today. I wonder what the carbon footprint assessment would come out like for a concrete ship powered by sail.

It is also poignant to be going out on a high with the publication of the 100th anniversary edition of the Report Magazine. In my navy days I would have been accused of being 'Anchor Faced' but I am more impressed and prouder each and every year of this publication which now boasts a readership of many thousands. I was recently invited to attend Craig's 10th anniversary cake cutting and I must say what an amazing talent this man has and how much we benefit from his skills. Of course, the head of the team behind the success of the Report is our own CEO, Mike Schwarz, and I must take this opportunity to pay tribute to the amount of hard work and professional knowledge that he injects into everything he does on our behalf. I do get concerned at times though because to coin another phrase 'A willing horse'. And finally, my thanks to the Head Office management team and staff who collectively make the organisation what it has become.

Well, as they say 'That's all folks'. Although it is time for me to go, rest assured you haven't heard the last from me. I now have aspirations to attempt become the next MOG (Jeffrey Casciani-Wood) - if that is at all possible!

Geoff Waddington
I.Eng; IMarEng.M.I.Mar.EST; F.I.I.M.S. (President IIMS)

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June IIMS Report

From the incoming President – Peter Broad

It is with great pleasure that I write my first column as the incoming President of IIMS in this 100th edition of the Report Magazine for June 2022.

I must start by thanking Geoff Waddington for steering the IIMS ship through very stormy seas for the past two years. No one could have imagined in June 2020 that the Covid pandemic would have such devastating and long-lasting effects across the world and in our marine industry. The marine industry has actually been key to keeping the world going by maintaining the supply chains. But there have been huge sacrifices made by the sea staff who have had to endure extended service time onboard due to no reliefs being available or significant travel restrictions imposed on seafarers during the pandemic. This has still not been fully rectified and seafarers' liberty and mental health are of great concern to us all when attending vessels for survey. It seems strange that a surveyor with all the necessary Covid vaccination certificates can attend a vessel at an anchorage, but a seaman who has been onboard for over four months cannot pay off in the same port and go home to his family.

Not only has Covid had an effect on the crew of ships but also the survey cycles. We as surveyors must note that there have been significant and unprecedent 'extensions' to survey due dates by the Class Societies to enable vessels to continue to operate beyond their annual survey renewal dates. We must all be vigilant as to the effects of this going forward, especially for Hull and Machinery claims and Condition Surveys.

Certainly, IIMS has seen significant advances in the past two years, despite the pandemic. I must congratulate Mike Schwarz and the permanent staff for continuing to 'keep going' where many other individuals and organizations have fallen by the wayside. IIMS has, I believe, actually strengthened its global position as a professional organisation, by purchasing Murrills House as our permanent HQ. This was all initiated and managed by Mike with President Geoff and the Management Board in full support.

Geoff has worked closely with Mike and the Office Staff to keep things going through these past two years and we must thank him for his huge support at many different levels. I am sure that Geoff will continue to fulfil an active and strong role on the Management Board for many more years. 'Thank you, Geoff,' – from me and on behalf of the Membership.

I have been a member of IIMS since November 2000, when we had a membership of circa 426. I have really enjoyed being an active member of IIMS for these past 22 years and held various positions on committees and as In-Country Representative in South Korea, twice, over this time.

We have certainly matured and grown as an organisation, now with circa 1013 members, in 110 countries.

It is a great honour for me to become 'President' of IIMS and to help the Management Board and Mike, as CEO, navigate our way through sometimes murky waters for the next two years.

We are embarking on succession planning and diversity in the Management Board and look forward to welcoming new members to join the team to help keep the momentum of our international outreach and to promote the IIMS as the leading professional organisation for non-IACS marine surveyors, both for large commercial vessels, as well as under 24-metre craft, pleasure vessels and inland waterways narrowboats. The IIMS really does have a massive and diverse knowledge pool through our membership.

Let's all move forward as professionals and encourage new members to join us, as well as encouraging more clients to use IIMS surveyors as their preferred recognised qualifying organisation.

Peter Broad *FIIMS*
(Incoming IIMS President)

THE ELECTRIC RACEBIRD PROTOTYPE HAS COMPLETED A SERIES OF TESTS

The E1 Series electric foiling raceboat has taken flight for the first time on the River Po, close to San Nazzaro in northern Italy. The RaceBird prototype successfully completed a series of tests and performance runs with ex-powerboat champion Luca Ferrari behind the wheel. The testing schedule has consisted of straight-line tests, qualifying runs, and race simulations, with the focus on set-up and performance analysis and gathering data on the foiling and handling characteristics in different racing conditions.

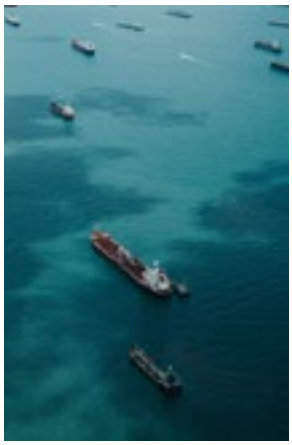
Engineers conducted a number of technical tests and systems checks to assess the overall performance and reliability of the boat and the various electrical components. E1 organisers also used the opportunity during the test to evaluate different elements of the racing format, including trialling autonomous buoys and cornering profiles, as well as testing the positioning of onboard cameras to be used in the world feed broadcast.

Photo credit: USCG

FAGAN TO BE FIRST WOMAN TO SERVE AS COAST GUARD COMMANDANT

President Joe Biden has nominated Adm. Linda L. Fagan to serve as the 27th commandant of the U.S. Coast Guard. Fagan will become the first woman to serve as Coast Guard commandant. She is currently vice commandant, having assumed the duties in 2021. The vice commandant is the vice service chief and chief operating officer, responsible for executing the commandant's strategic intent, managing internal organizational governance, and serving as the component acquisition executive. Previously, Fagan served as commander of the Coast Guard Pacific Area overseeing operations from the Rocky Mountains to the waters off the East Coast of Africa. Fagan is the Coast Guard's first-ever Gold Ancient Trident, as the officer with the longest service record in the marine safety field.

IBIA ATTEMPTS TO IDENTIFY SPREAD OF SINGAPORE'S CONTAMINATED HSFO



After the discovery of contaminated HSFO in Singapore, the International Bunker Industry Association has asked for help from its members to track the spread of the contamination.

Back in March, a VPS Bunker Alert gave notice of chlorinated hydrocarbons being found and identified in Heavy Fuel Oil (HSFO) deliveries recently made in Singapore. Immediately, MPA Singapore started investigating the suspected contamination of bunker fuels supplied to several ships in the port and had ordered the supply of the batch to stop.

According to the investigation, Glencore, a commodity trading and mining company, was the supplier of contaminated HFSO in Singapore, causing engine problems to several vessels.

RULES ON RUBBISH EXTENDED TO 100t SHIPS

Photo image: NOAA

The IMO has agreed that ships above 100t should provide a Garbage Record Book in which to record all disposal and incineration operations.

An amendment made in the IMO's International Convention for the Prevention of Pollution from Ships (MARPOL) has changed rules for smaller ships in garbage recording. MARPOL Annex V bans the discharge of all garbage into the sea, except as provided in other requirements related to food waste, cargo residues, cleaning agents and additives and animal carcasses. Under Annex V in the original requirements, only ships above 400t had to carry a Garbage Record Book, but now this will apply to much smaller ships.

Now all ships above 100t will have to carry a record book, with details of the time, date time of occurrence and details of the loss.

IMPACT OF DIGITAL TECHNOLOGY ON MARITIME SUSTAINABILITY IS THE SUBJECT OF THE OPTIMAL ROUTE REPORT

The Optimal Route report examines strategies to reduce greenhouse gases in shipping, offers guide to decarbonisation role of digital technologies. Inmarsat, the world leader in global, mobile satellite communications, has published a new decarbonisation report entitled the Optimal Route to explore the impact digital technology can make on shipping's greenhouse gas (GHG) emissions. Compiled by maritime innovation consultancy Thetius, and sponsored by the Inmarsat Research Programme, The Optimal Route – The Why and How of Digital Decarbonisation in Shipping provides evidence that digital optimisation offers a key strategy for owners set on meeting International Maritime Organization (IMO) CO2 targets for 2050.

Opening by identifying three key digital steps to achieve their decarbonisation objectives, the Optimal Report recommends that shipowners 'Know your numbers' as Step 1 in the process. Owners should be in a position to measure vessel performance against metrics including the Carbon Intensity Index (CII) and the Energy Efficiency Existing Ship Index (EEXI). Based on the findings, Step 2 recommends developing a roadmap for decarbonisation, to include a flexible approach to asset purchasing and development. Step 3 advises owners to participate in green corridor schemes to gain access to favourable ship finance.

The Optimal Route Report can be downloaded at **https://bit.ly/377thFM**.

WORK UNDERWAY ON FRANCE'S FIRST OFFSHORE WIND FARM

Installation of France's first offshore wind farm has begun, with the first turbine installed on April 12-13 and the remaining 79 scheduled to be in place by the autumn. The turbines will be installed in sets of four, with each one needing around 24 hours to be completed.

Luxembourg-based civil engineer firm Jan de Nul hasq been contracted to carry out the installation, with its jack-up barge Vessel Vole loading the turbines in batches of four before transporting them to the Saint-Nazaire Wind Farm 12km off the east coast of France.

"We are especially proud to support the country in its energy transition by paving the way for the delivery of the first electricity produced by the very first French offshore wind farm," said Philippe Hutse, offshore director at Jan de Nul.

WÄRTSILÄ INVESTS IN MARINE DIGITAL PLATFORM TO SUPPORT SHIPPING DECARBONIZATION

Wärtsilä Voyage, part of the technology group Wärtsilä, has completed an investment in Marindows, a Japanese company delivering an open digital platform for Japan's marine industry, in an effort to accelerate decarbonization and efficiency in the global marine industry.

Together, Marindows and Wärtsilä Voyage will be creating significant value for the Japanese market through their collaboration, which will include the areas of vessel optimization and autonomy. Safer, greener and more efficient operations are some of the benefits both companies set to bring to the market by reinforcing synergies and leveraging a digital ecosystem of applications that run on board and ashore.

"We can accelerate new value creation and technology adoption by supporting Marindows with our advanced platform and suite of technologies. At Wärtsilä Voyage, we're proud of our solid digital portfolio which supports the acceleration of maritime digitalization, cascading the positive effect on the whole shipping industry, the planet and the people," said Sean Fernback, President, Wärtsilä Voyage and Executive Vice President.

Photo credit: Wärtsilä

TILTING SAIL EXPEDITION YACHT UNVEILED

The latest creation of Steve Kozloff Designs is The Glory, a 170m, five-deck, ice class, triple-masted motor sailor with three Solid Sail mast systems, which can tilt 70 degrees to reduce the air draft from 244ft to 153ft.

The Glory is the latest design to fall under The Goliath Series; a range of customisable, purpose-built, steel-hulled ice class expedition yachts aimed at revolutionising the shipping, expedition and explorer market.

Bureau Veritas gave an Approval in Principle to Chantiers de l'Atlantique for its Solid Sail in March 2022. The Solid Sail system is the automated setting and dropping of the sails. Chantiers de l'Atlantique says the yacht can be pointed in any direction when raising or lowering the sails. The Solid Sail System has a 360-degree rotating mast and the Solid Sail material has a claimed 20-year-plus service life.

UPS TESTS SHORT SEA SHIPPING ACROSS NEW YORK HARBOR

United Parcel Service says it is running a pilot project to move trailers by barge across New York Harbor, an alternative to trucking on the region's notoriously congested roadways.

The experimental shuttle runs a 4.5-mile route across the harbor between Red Hook in Brooklyn, N.Y., and Bayonne, N.J. That compares to a nominally 19-mile highway route through Staten Island and over the Verrazzano-Narrows Bridge.

UPS is working on the project with the U.S. Department of Transportation's Maritime Administration, Red Hook Terminals, barge operator Hughes Marine, and the New York City Economic Development Corporation.

NATIONAL CARGO BUREAU TO LAUNCH A REMOTE CONTAINER INSPECTION SERVICE

National Cargo Bureau, a not-for-profit container inspection company, has launched a remote container inspection service based on the Hazcheck Inspections web-based container inspections database and access portal developed with their software division, Exis Technologies.

The new service from the National Cargo Bureau uses mobile devices to connect customers with their team of surveyors, so they can review and inspect container transport units remotely. The data and media files that the customer captures remotely via the device are automatically uploaded to the mobile platform.

There are two features to choose from; Workflow for Remote Container Inspections, or a Live Video option directly with a Surveyor. The remote inspections are performed via self-service workflows, with detailed instructions The workflows sent by the National Cargo Bureau are received on a mobile device(s) of assigned representatives.

After receiving the request, the user can start to complete the workflow without the need to install any app or content. The recorded information and media files are then analyzed by the surveyors to determine if the container transport unit is in compliance with applicable regulations and acceptable for ocean transport.

SEAFARER LIVES ARE BEING RISKED UNNECESSAIRLY DURING LIFEBOAT DRILLS

Seafarers are dying needlessly in lifeboat accidents when maritime legislation doesn't actually require vessels to be manned during drills.

InterManager, the international trade association for ship and crew managers, is raising awareness of this fact by highlighting a legislative change which means that it is not necessary for crew to be onboard when lifeboats are tested.

SOLAS regulation III/19.3.3.3 requires each lifeboat to be launched at least once every three months during an abandon ship drill, and manoeuvred in the water by its assigned operating crew. However, the regulation, whilst requiring each lifeboat to be manoeuvred in the water by its assigned operating crew, does not actually require that crew to be on board when the lifeboat is launched. Many of the lifeboat fatalities have occurred during launch of the lifeboats, often due to problems with the hooks.

Captain Kuba Szymanski, InterManager Secretary General, said: "This is an extremely important change which seems to have been missed by some ship operators and is still included in some Shipboard/Safety Management Systems. To prevent any further loss of life in this way we are raising awareness of the fact that seafarers are not required to be in the lifeboat when launching during drills."

Capt Szymanski commented: "It's important that everyone involved, particularly Port State Control officers, understand and apply this regulation correctly. The maritime community must do all we can to ensure the safety of seafarers."

Photo credit: Norman R. Wright and Sons

NEW PILOT BOAT DELIVERED IN QUEENSLAND

A new pilot boat has been delivered to Poseidon Sea Pilots of Queensland, Australia.

Built by local company Norman R. Wright and Sons, Buran has an FRP-composite hull, a length

of 15 metres, and all-weather capability. Buran is the second pilot boat in a series to be ordered by Poseidon Sea Pilots from the same builder. The first boat, Timbin, was delivered in late 2021.

COATINGS MANUFACTURER HEMPEL LAUNCHES NEW CO2 REDUCTION TARGETS

Photo credit: Hempel

By focusing on sustainability, organic growth and strategic acquisitions, Hempel grew its revenue to €1.8 billion in 2021. "Putting sustainability at the heart of how we do business is the right thing to do and the smart thing to do. To win key customers, we must deliver solutions and develop partnerships that answer to their sustainability challenges", said Lars Petersson, Group President & CEO of Hempel.

In February 2021, the company introduced Futureproof, a comprehensive framework and guide for embedding sustainability throughout the Hempel business. Futureproof lays out measurable Environmental, Social & Governance (ESG) goals, including CO2 reduction targets.

In November 2021, Hempel submitted its CO2 reduction targets, in line with a 1.5°C pathway, to be independently verified by the Science Based Targets initiative and expects validation in 2022. One such example is its new strategic partnership with GRI Renewable Industries, which will see it drive sustainability and cost improvements in wind tower production.

The company also saw increased demand for its more sustainable products last year, including its advanced hull coatings. In 2021, Hempel's hull coatings helped marine customers reduce CO2 emissions by 4.5 million tonnes, up from 3.6 million tonnes in 2020.

ABS AUTONOMOUS VESSELS WHITEPAPER PROPOSES A GOAL-BASED FRAMEWORK FOR FUTURE RULES TO ENABLE AUTONOMOUS VESSEL OPERATIONS

The ABS Autonomous Vessels whitepaper is designed to support the industry's increasing adoption of autonomous capabilities with a focus on safe implementation. It sets out 10 goals to create a framework for the design and operation of autonomous vessels and addresses key issues in implementation.

The ABS Autonomous Vessels whitepaper also includes an update on the outcome of the IMO's Maritime Autonomous Surface Ships (MASS) Regulatory Scoping Exercise, an important step on the road toward the development of requirements governing autonomous operations.

"To allow operations of fully autonomous vessels, the maritime industry requires regulations for their design. While this is an ongoing endeavor at the IMO, ABS is well placed to propose our own framework to support both safe innovation and adoption of autonomous technologies," said Patrick Ryan, ABS Senior Vice President, Global Engineering and Technology. "We are able to do this thanks to our industry-leading work with key players on cutting edge remote-control and autonomy projects all over the world. This extensive experience underpins the approach and the framework outlined in this whitepaper."

Download the whitepaper at **https://bit.ly/3uFdgQ0.**

CARS DAMAGED ON RoRo FERRY MAIDEN VOYAGE

Cars were damaged on the maiden voyage of a RoRo passenger ferry between the Norwegian port of Kristiansand and Dutch port of Eemshaven, Dutch media reported. The NL Times said the MS Romantika was 'significantly late' arriving in Norway, where the low quay meant cars and campers could not drive onto the ship without damaging their undersides.

"Passengers had to drive their vehicles onboard in a zigzag pattern, and wooden planks were used, but in the end, these caused more damage," the news platform said, quoting radio station RTV Noord.

The incident occurred just three days after Broekman Logistics was announced as strategic partner to Holland Norway Lines in Eemshaven, to act as booking agent for the freight as well as handling port agency operations for vessels entering the port.

MEMBRANE REPLACES PROPELLERS IN FISH-FIN INSPIRED OUTBOARD

Paris-based FinX says it'll launch its first product, the Fin5, later this year. The outboard engine composes of fish-fin inspired undulating membrane that replaces a propeller and is 100 per cent electric.

The product is in its final stages of development and will be a 'world-first' for the marine industry. The 2kW outboard engine, equivalent in thrust to a 5 HP standard engine, is designed for small boats and sail boats up to 3 tons.

The system works in the same way as a loudspeaker. There is a coil and a magnet, with an alternative current running through the coil to make the magnet oscillate and vibrate.

The design was inspired by fish and how they swim. To move, dolphins wave their caudal fin with a high amplitude at a low frequency. FinX uses this wave pattern to propel a watercraft using an undulating elastomer membrane. In order to mitigate the effects of pitching and maximise the power density of its engines, the FinX 'fin' is operated at low amplitude and high frequency.

CELEBRATING 10 YEARS OF PARTNERSHIP IN INNOVATIVE COMPOSITES

2022 marks a decade of joint venture partnership between ATL Composites Australia and M.u.H. von der Linden GmbH, based in Wesel, Germany, manufacturing the range of ATL's lightweight panel solutions including DuFLEX, DuraKore, and Featherlight composite panels to top European boat builders, architects and other creative industries.

Over the past 10 years, their Joint Venture company, vdL Composites GmbH has attracted a loyal clientele across Europe and they are proud of their well-deserved reputation for precision manufacturing of quality products, expert technical support and top customer service.

In that time, many significant products have been refined and new products developed as a result of their creative teams and in response to evolving industry requirements.

Photo credit: Strangford Lough & Lecale Partnership

ECO FRIENDLY MOORING TRIALS

A study at Strangford Lough in Northern Ireland is testing eco friendly moorings in an environmentally sensitive area.

Strangford Lough is a Special Area of Conservation (SAC) and the study is aiming to design and create advanced mooring systems to avoid or limit the damage caused to the sea floor by the swinging chain of traditional boat moorings. This project is being carried out in partnership with local mooring owners and work is being carried out by Cuan Marine Services ltd and funded through the NIEA Challenge Fund.

Traditional moorings can scour the seabed with the dragging of the mooring chain. If these moorings are located in sensitive habitats such as seagrass beds it can lead to damage and destruction of this habitat. Two test systems have been installed at Ballyhenry Bay - stirling and seaflex. The area will be resurveyed next year to see which has been more successful in allowing the seagrass to re-establish, according to the Strangford Lough & Lecale Partnership.

NEW MARINE SAILING MATERIALS RECYCLING INITIATIVE

Clean Sailors has launched ReSail - an initiative aimed at prolonging the life of sailing materials and resources.

The platform follows a pilot launched in the South West in 2021 and will allow sailors to search for and find local drop-off points, meaning products such as sails, bags and sheets can be upcycled and have a new life and purpose.

"We often forget that sails are in fact, highly engineered materials, built to last. We have a massive opportunity to help facilitate the reuse of existing end-of-life sail fabrics," said Clean Sailors founder and sailor Holly Manvell.

"We launched ReSail to give sails, and other sailing materials, the chance of a longer life, whether again in our sailing world or another industry. Through better understanding the construction behind such materials, we can significantly reduce the waste that, unfortunately, is created in our industry."

QUEEN'S AWARD GIVEN TO THE WIGHT SHIPYARD COMPANY

The Wight Shipyard Company, manufacturer of aluminium marine craft based in East Cowes, Isle of Wight, has been awarded the Queen's Award for International Trade in recognition of its work to increase British exports. The company builds high-speed passenger ferries, tourist vessels and commercial workboats for the windfarm support vessel market, both domestically and internationally. It was formed by entrepreneur Sir Charles Dunstone and business partner Peter Morton in 2016, with a vision to restore the UK's shipbuilding business.

"We are delighted to receive this recognition," says Peter Morton, chief executive. "The overarching ambition was always to see a revival in British shipbuilding to compete on an international stage. To do so, we understood and drove the need for efficiencies whilst nurturing a completely new generation of shipbuilders in order to produce world-beating products for both the domestic and international markets."

The domestic fast ferry market is significant in the UK. However, the Wight Shipyard Company has capacity to produce more boats than required so exporting and competing internationally has been vital to its development and success. Membership of Interferry, the shipping association representing the ferry industry globally, opened up the markets of Northern Europe, the Mediterranean, West Africa and South America.

FINDINGS OF CONSULTATION FOR MARINE GUIDANCE ON ELECTRIC VEHICLES ONBOARD PASSENGER RO-RO FERRIES RELEASED BY MCA

The UK Maritime & Coastguard Agency (MCA) carried out a public consultation on its proposed draft Marine Guidance into electric vehicles (EVs) onboard passenger Ro-Ro ferries, which ran from 25 October to 20 December 2021.

The proposal contained guidance on what is seen as a minimum standard required for the provision of charging systems for EVs on board Ro-Ro vessels. The guidance, as it was originally conceived, was to act as a minimum standard for vessels offering charging facilities, but during its development and in response to pre-consultation feedback, additional advice was added on damaged vehicle carriage (accident recovery, particularly from Islands) and fire-fighting provision for EVs.

The guidance was intended as a technical minimum standard should an operator chose to offer charging of EVs onboard, not as an endorsement of charging or to encourage vessel operators to offer charging facilities onboard.

The minimum safety standard required for charging of EVs will remain in the guidance. Whilst there are no UK-flag vessels currently offering charging that the MCA is aware of, there are foreign flag vessels that serve UK ports that offer charging of EVs onboard.

The proposed guidance that operators keep a record of charging operations has been reviewed and will be removed from the revised MGN.

Read the full article at **https://bit.ly/37a2vfX**.

RNLI FOWEY FINDS OVER 50% OF FLOTATION DEVICES FAULTY OR CONDEMNED AT A RECENT LIFEJACKET CLINIC

Photo credit: RNLI

This story, alarmingly, is not the first of its kind to reach IIMS. A similar lifejacket clinic at Eastbourne a couple of years ago also revealed a high level of defective flotation devices, some with serious flaws. But is seems the public is not listening and learning.

A recent lifejacket clinic organised by Fowey RNLI found an astonishing 50% were faulty or condemned. The lifejacket clinic invited a team from Ocean Safety Ltd in Plymouth to carry out vital safety checks on a total of 169 lifejackets.

Over 50 per cent needed a critical safety part replacing, Fowey RNLI says, meaning if they had been used in an emergency they may not have worked and could potentially have caused loss of life. Eleven lifejackets were condemned outright as being unfit for use. A further 51 needed new capsules, and 26 required replacement cylinders, both of which are critical elements in a fully functioning lifejacket.

Fowey RNLI Lifeboat station operations manager, Chris Ogg says it is extremely important to have lifejackets or any personal floatation devices regularly checked and serviced.

"Your lifejacket may save your life one day, but only if you maintain it properly," he says. "If a lifejacket is faulty, you are basically wearing a dead weight around your neck. People brought along a variety of lifejackets to be checked and it was eye-opening to see the terrible condition of some of them. One was so badly damaged inside, the material disintegrated when it was unpacked. Quite a few had heavily corroded CO2 bottles, out-of-date parts and damaged areas of material, meaning that they would have failed to inflate in an emergency."

"Many people don't appreciate that fabric is significantly affected by saltwater," says Ogg. "If lifejackets have been stored in damp conditions, for example on boats, critical elements such as the salt tablets used to trigger the inflation will absorb moisture. Defects can be revealed by them being regularly opened and inspected, and through manual inflation. We hope this vital water safety message reaches everyone who uses lifejackets, especially as the 2022 sailing and boating season gets underway."

REFRIGERATED CONTAINER CARGO CLAIMS ON THE RISE WARNS BRITANNIA CLUB

In the past two years, the Britannia Club has opened just over 250 claims files for allegedly damaged refrigerated container cargo carried on operators' vessels, with the number of such claims being on the rise recently.

Cargoes carried in refrigerated containers are many and varied, including meat, vegetables, fruit, live plants, flowers and medicines, all requiring their own bespoke temperature and atmosphere management.

Where there is the loss of the entire contents of a 40' high cube container, the claim cost can be substantial. Dependent on the nature of the product, the refrigerated container will be assigned an appropriate "set-point" carriage temperature, either frozen or chilled as stipulated by the shipper.

This temperature is to be maintained from loading the container at the shipper's facility, throughout the voyage until ultimate delivery to the receiver when the container is unloaded.

The other two settings that can be crucial to the successful outturn of certain products carried in refrigerated containers are the humidity and the air exchange rate.

The majority of claims arising, where a consignment is found in an apparent distressed condition upon receipt, are due to temperature abuse.

A MASTER'S GUIDE TO THE UK FLAG – LARGE YACHT EDITION 4 PUBLISHED BY THE MCA

The MCA has published a document called 'A Masters Guide to the UK Flag – Large Yacht' and has just updated it and released edition 4. The purpose of the 34 page guide is to provide easy to use information regarding United Kingdom merchant shipping regulations and administrative procedures. UK regulations and procedures may differ from those of other Flag Administrations and this guide will help to comply with UK requirements.

Some of the updates in edition 4 include the following:

- The latest version has been designed for electronic distribution, this version introduces links to supporting websites and documents.
- The content now references the requirements of the REG Large Yacht Code (previously LY3).
- Contact information for relevant MCA branches has been updated.

For the full list download the guide at **https://bit.ly/36X0IjK**.

STEAMING ON THE WEAVER

The Daniel Adamson (also known as 'the Danny') recently started its passenger cruise programme following a £5 million restoration.

According to the Daniel Adamson Preservation Society Trustee Les Green, more than 100,000 volunteer hours went into the restoration of the 1903 built steam ship, originally named the Ralph Brocklebank, with its Art Deco interior.

The last surviving steam powered tug in the UK, the Daniel Adamson was named after the leader of the ship canal movement and first chairman of Manchester Ship Canal Company. Relaunched in April, the Danny is offering 39 cruises this year, other routes including Manchester Ship Canal: Liverpool to Salford Quays and Liverpool to Ellesmere Port.

GOING BEHIND THE SCENES AT SEEND LOCKS

Photo credit: Canal & River Trust

The Canal & River Trust offered a different perspective on a familiar beauty spot when more than 350 people took a look below the water line at the new lock gates and repair works at Seend Locks on the Kennet & Avon Canal in the UK recently.

As well as experiencing the drained lock and seeing what is usually hidden under thousands of litres of water, there was a chance to chat with the team about the challenges and rewards of protecting and preserving the 200-year-old canal.

The flight of five locks, built near Seend Cleeve village, was constructed by renowned canal engineer John Rennie in the late 1700s. Originally a hive of activity with trade boats loaded with wool and ore, or stones from local quarries, the canal at Seend is now a haven for visitors and wildlife both on land and water.

MAJOR DREDGING TO START AT CHURCHILL'S BIRTHPLACE

The first dredge in 100 years of the Queen Pool Lake on the royal Blenheim Estate in Oxfordshire, England will be carried out by Land & Water, the UK marine civils contractor.

The work, which will take around nine months, will remove 300,000 m3 of silt - enough to fill the England football team's national stadium, Wembley, to the brim - from the lake at Blenheim Palace, where Winston Churchill was born. It is now home to the 12th Duke and Duchess of Marlborough.

"The dredge is one of the most ambitious civil engineering projects undertaken here at Blenheim over the last 300 years," said Roy Cox, Blenheim Estate's director. "It is vitally important to help ensure the long-term health of the lakes, surrounding waterways and parkland and the rich biodiversity that it supports as well as mitigating the risk of environmental damage."

CONDOR JOINS FLYING FERRY CONSORTIUM

Photo: Belfast Maritime Consortium

Condor Ferries has joined the Belfast Maritime Consortium and will operate a zero-emission commuter ferry service on Belfast Lough.

Beginning in 2024, the 30-minute ferry service from Bangor Marina to Belfast's Titanic Quarter will act as a pilot scheme for the passenger ferries currently under development by the consortium, led by Artemis Technologies. The vessels will be powered by the Artemis eFoiler, enabling them to 'fly' above the water, which produces minimal wake at high speed while using up to a reported 90% less energy than some conventional ferries.

"Belfast will get a glimpse of the future when the pilot service commences operation, but it is just the beginning," said Dr Iain Percy, chief executive and founder of Artemis Technologies.

REPORT bites

Japan's First LNG-fueled RoPax ferry is Launched by Mitsubishi.

The UK Hydrographic Office has joined an ambitious project to map the ocean floor by 2030. An MoU has been signed that will help to bring about the complete mapping of the world's ocean floor.

A university report has shown that a quarter of the world's rivers contain pharmaceuticals at potentially toxic levels.

Governor Kathy Hochul said that New York has signed a multi-state agreement to develop a proposal to develop a regional clean energy hydrogen hub.

The National Oceanic and Atmospheric Administration and its partners have confirmed the discovery of the wreck of a 207-year-old whaling ship found on the bottom of the Gulf of Mexico.

DNV has issued an Approval in Principle for the design of a green ammonia tanker that also runs on green ammonia developed by LMG Marin, Wärtsilä and Grieg Edge.

The southern hemisphere's first fully electric, carbon fibre commuter ferry has successfully completed its inaugural round trip with a Thordon seawater lubricated propeller shaft arrangement.

Emirates Team New Zealand and the Royal New Zealand Yacht Squadron have announced Barcelona as the host venue for the 37th America's Cup to be held in September and October of 2024.

According to the Egyptian Marine Insurance Consultations & Services, the Suez Canal Authority has announced the imposition of new penalty fine up to $10,000 in certain cases.

Safety Briefings

RISK ALERT FOR CONTAINER CARGO OPERATIONS ISSUED BY STEAMSHIP MUTUAL

The Steamship Mutual has issued a Risk Alert focusing on container cargo operations to highlight that training and reinforcement of safe work practices is of paramount importance not only to ensure an individual's personal safety but also to ensure that the work area remains safe for others.

The Club notes that incidents involving serious injuries and fatalities during container cargo operations on vessels are not uncommon and refers to contributory factors that can led to an incident and lessons learned from previous cases.

All parties involved in cargo container operations should recognise their shared interest in ensuring that cargo operations are carried out in a safe and efficient manner. Tools for supporting a safer working environment should include a near miss reporting system to improve safety awareness and a no blame safety culture that encourages the crew to speak out when they observe or experience unsafe working practices.

Download the guidance at **https://bit.ly/38s8SeM**.

SIGNIFICANT NUMBER OF SHIPS DO NOT COMPLY WITH BASIC NAVIGATION SAFETY REQUIREMENTS IS FINDING FROM THE AMSA FIC

AMSA conducted a Safety of Navigation Focused Inspection Campaign (FIC) over the period 1 August to the 8 September 2021 and, extremely concerning, they found that a significant number of ships failed to comply to basic navigation safety requirements.

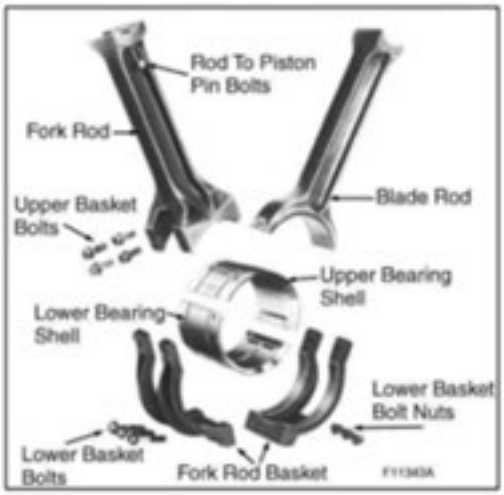
The campaign focused specifically on:
- The level of compliance with the safety of navigation requirements of International Conventions;
- The familiarity of the master and officers with their processes for ensuring safety of navigation.

The campaign took place as a core part of AMSA's Compliance Plan for 2021/22 and was scheduled for two months with a target of 200 inspections. Lockdowns in various states, and restrictions implemented to protect AMSA staff and the Australian public, meant that AMSA ceased the campaign early on 8 September 2021, after exceeding its target of 200 inspections.

The FIC results showed that a significant number of ships failed to comply to basic navigation safety requirements. The outcome and findings were:
- 278 ships were inspected during the FIC.
- AMSA detained 21 ships during the period of the FIC, 7 of which were directly attributed to the safety of navigation FIC. This shows that 33.33% of all detentions during the FIC related to safety of navigation, which is extremely concerning.

Read the full story at **https://bit.ly/3r3ePFw**.

ERROR IN MAINTENANCE LED TO DIESEL ENGINE FAILURE REVEALS NTSB REPORT



Left: EMD 710 cylinder arrangement showing the affected area in red. Center: EMD 710 connecting rod arrangement. (Photo credit: Dynamark Engineering)

An improperly tightened fastener led to a diesel engine failure on a Washington State Ferries passenger and car ferry near Bainbridge Island, Washington are the findings of a National Transportation Safety Board (NTSB) report.

Marine Investigation Report 22/06 details the NTSB's investigation into the April 22, 2021, catastrophic failure of the no. 3 main engine aboard the Wenatchee during a sea trial in Puget Sound. The failure led to the ejection of components from the engine and resulted in a fire in the no. 2 engine room. No injuries or pollution were reported, while damages were estimated at nearly $3.8 million.

The NTSB determined the probable cause of the mechanical failure of the no. 3 main engine was a connecting rod assembly that came loose and separated from the crankshaft due to insufficient tightening (torqueing) of a lower basket bolt during the previous engine overhaul.

"When installing fasteners, personnel should use a calibrated torque wrench, follow the manufacturer's recommended tightening guide and torque values, and verify that all required torque requirements have been completed," the Wenatchee report said. "Undertorqueing a fastener may cause excess vibration or allow the fastener to come loose, while overtorqueing may lead to failure of the fastener or the machinery component being secured."

Download the full report at **https://bit.ly/3DOv5iH**.

MOORING BUOY FAILURE CAUSED GROUNDING CAUSING DAMAGE OF $4.5M REVEALS NTSB REPORT

SM-3 mooring buoy: failed padeye (with three shackles) that separated from buoy (left), damaged top with padeye missing (center), and undamaged bottom padeye (right). (Source: Alaska Marine Surveyors and Northline Seafoods).

The fatigue failure of an unrated mooring buoy led to the grounding of a fishing tender during a storm near Bristol Bay, Alaska in 2020, according to the National Transportation Safety Board (NTSB).

On August 30, 2020, the fishing tender barge SM-3 broke free from its mooring buoy in a storm and went aground. No injuries were reported, but the vessel sustained $4.5 million in damage and left a three-mile-long debris field scattered along the waterfront.

SM-3 was a converted deck barge originally built in 1966. As an uninspected fishing industry vessel, no trained mariners were required on board, and the vessel's USCG safety oversight was limited to a stability test and a survey of her lifesaving equipment.

Download the report in full at **https://bit.ly/3ufDU25**.

REPORT bites

The UK government is planning to invest £4 billion in the country's regional shipbuilding industry as it prepares to publish refreshed National Shipbuilding Strategy.

Maersk has joined the initiative to accelerate transition to net zero steel industry.

Marine charging network operator Aqua superPower and Swedish electric boat maker X Shore have formed an alliance aimed at helping to drive infrastructure compatibility and standardisation.

Associated British Ports (ABP) has become the first ports group in Europe to use eMPX, the new digital Master Pilot Exchange.

Ocean Network Express (ONE) has announced a new partnership with Google Cloud to integrate artificial intelligence across its business.

A zero-emission ferry ordered by Danish ferry operator Scandlines will run on a 10 MWh lithium-ion battery energy storage system from Swiss energy storage solutions company Leclanché.

Massimo Perotti, chairman of Italian superyacht giant Sanlorenzo, has personally commissioned a 164ft (50m) trideck powered by hydrogen fuel cells.

Norway-based insurance company Hydor has ended its contract with a fleet of vessels that were discovered to be fishing illegally across the Atlantic by the Environmental Justice Foundation.

Danfoss Power Solutions' Editron division will power the UK's first high-speed passenger ferries, with the first vessel joining Uber Boat by Thames Clippers' fleet in autumn 2022.

Isle of Man Ship Registry has signed a memorandum of understanding with Houston-based technology company FuelTrust to validate vessels for the flag's Green Ship scheme.

Safety Briefings

HOW TO PROPERLY STOW AND SECURE CARGO CONTAINERS GUIDANCE ISSUED BY AMSA

AMSA has recently published stow and secure cargo containers guidance. AMSA aims to remind operators of the importance of stowing and securing cargo containers, and the potential danger to container ships navigating near intense low-pressure systems that occur off the east coast of Australia.

East Coast Lows are intense low-pressure weather systems that occur off the east coast of Australia. These systems are also referred to as complex lows or Tasman lows. Strong southerly winds, when combined with an easterly swell, can create extreme wave conditions where container ships are at risk of losing cargo overboard. In such incidents, swell size and interval may lead to excessive or even parametric rolling resulting in extreme acceleration forces on container stacks.

Guidance for avoidance of parametric rolling states:
One way of reducing excessive accelerations is for the master, as far as possible and practicable, to plan the voyage of the ship carefully so as to avoid areas with severe weather and sea conditions. The master should always consult the latest available weather information.

Download the guidance at **https://bit.ly/3KcpOU3**.

Enclosed Spaces

Guidance for merchant vessel operators

MCA PUBLISHES NEW GUIDANCE ON ENCLOSED SPACE ENTRY

Seafarers will be better protected as new UK rules come into force to tighten up safety for those involved in enclosed space entry onboard vessels. The updated legislation goes further than that currently required under international maritime law and is part of the ongoing commitment by the UK to seafarer welfare.

Enclosed spaces include chain lockers, cargo holds, duct keels and water tanks – or any area that has been left closed for any length of time without ventilation.

Six people have died over a ten-year period from 2009 to 2019 in UK ports while working in such spaces, which has led to this legislation being introduced. Although carrying out assignments in enclosed spaces is a necessary part of working on ships, the MCA is committed to reducing the risks and will continue to review how best to protect people in those environments.

Download the new guidance at **https://bit.ly/3DOv5iH**.

NTSB REPORT DETERMINES PROBABLE CAUSE IN MISS DOROTHY VESSEL TOWING FIRE

An engine room fire aboard a towing vessel started when diesel fuel spray hit an uninsulated section of the engine's exhaust system, the National Transportation Safety Board (NTSB) report has revealed.

On March 17, 2021, the towing vessel Miss Dorothy was pushing 14 barges upbound on the Lower Mississippi River, north of Baton Rouge, Louisiana, when a fire broke out in the engine room. The eight crewmembers aboard briefly attempted to fight the fire but were unsuccessful and evacuated to the barges. No pollution or injuries were reported and the vessel was declared a total loss at $2.4 million.

According to the NTSB's Marine Investigation Report fire alarms began to sound in the pilot house and throughout the vessel shortly after midnight. The pilot saw smoke that "grew in intensity very quickly" and flames coming from the starboard main engine in the engine room. The crew attempted to use fire hoses and handheld extinguishers to fight the fire. Shortly after, the chief engineer activated the ventilation shutdown and pulled the emergency fuel oil shutoff for the fuel tank that supplied the starboard main engine. However, air continued to be drawn in through open engine room doors and open or broken windows, and the shutoff valve remained open because the shutoff did not function as intended and the fire continued to grow despite the crew's efforts.

The captain ordered the crew to abandon ship, and the crew was rescued by a Good Samaritan vessel, which then secured the tow against the bank. The fire was extinguished several hours later by first responders and crew aboard the Good Samaritan vessel.

Regulations for towing vessels state that "piping and machinery components that exceed 220°C (428°F), including fittings, flanges, valves, exhaust manifolds, and turbochargers, must be insulated." Investigators found that the exhaust header leading from the individual cylinder heads to the exhaust manifold in the Miss Dorothy, which were subject to temperatures greater than 428°F (often higher than 600°F), near the suspected origin of the fire were uninsulated. NTSB investigators concluded it is likely that the uninsulated exhaust header acted as an ignition point for the atomized or spraying diesel fuel.

The NTSB determined the probable cause of the engine room fire was the ignition of spraying diesel fuel from a main engine's fuel system onto an uninsulated section of the engine's exhaust system. Contributing to the severity of the fire and damage to the vessel was the inability to effectively secure ventilation to the space and fuel to the affected engine.

Download the full report at **https://bit.ly/3K6DQqL.**

CONTAINER LOADED WITH DISCARDED LITHIUM BATTERIES CATCHES FIRE

The U.S. Coast Guard has issued a safety alert and is warning about the hazards of transporting discarded lithium batteries after a container illegally loaded with them caught fire while en route to the Port of Virginia, where it was set to be loaded onto a ship.

Thankfully the container was not loaded on a ship at the time. Rather, the container was being transported on a chassis from Raleigh, North Carolina when the discarded lithium batteries caught fire on the highway on August 19, 2021, resulting in loss of the cargo and significant damage to the shipping container.

It seems the shipping industry may have avoided another potential disaster since the container was intended for a maritime voyage to a port in China via a foreign-flagged containership. Upon initial investigation of the container, the responding fire department determined that the heat produced from the fire burned hot enough to create a hole through the metal container's structure.

REPORT bites

Dutch shipyard Royal Huisman has revealed Project 410, an 85-metre (280-foot) sailing yacht.

Isle of Wight boat builder Wight Shipyard has won a contract to build two catamarans that will be solely powered by batteries as they transport commuters and tourists up the River Thames.

During April volunteers at The Cotswold Canals Trust took receipt of the tenth work boat to join the restoration project's fleet.

Forecasts of any return to normality in port and shipping congestion has been pushed back to 2023 as external disruptions hamstring the market.

METSTRADE, the world's largest trade exhibition for the international marine industry, will feature significant improvements to its layout at the 2022 edition of the event.

The Ferretti Group has launched a Hong Kong initial public offering (IPO) valuing the company at up to US$1.2 billion, according to reports by Reuters.

Green hydrogen and green hydrogen-derived ammonia are the only scalable fuels that can achieve the emission reduction targets set forth in the Paris Agreement, a new report has found.

An improperly tightened fastener led to a diesel engine failure on the passenger and car ferry Wenatchee near Bainbridge Island, Wash., resulting in nearly $3.8 million in damages.

International bulk ships and cruise vessels visiting Australia will have access to the world's first 100 per cent renewable energy precinct to be located in Sydney Harbour.

Safety Briefings

The bill of lading listed "computer parts," not discarded lithium batteries, making responding to the fire more challenging. The Coast Guard said the incident could have been potentially catastrophic had the container caught fire after being loaded aboard the container ship.

Further investigation by the Department of Transportation (DOT) and Pipeline and Hazardous Materials Safety Administration (PHMSA) determined that the shipper failed to properly placard, label, mark and package the discarded lithium batteries, and identified the cause of fire to be residual charge/full circuit, which led to a thermal increase.

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"Your lifejacket may save your life one day, but only if you maintain it properly," he says. "If a lifejacket is faulty, you are basically wearing a dead weight around your neck. People brought along a variety of lifejackets to be checked and it was eye-opening to see the terrible condition of some of them. One was so badly damaged inside, the material disintegrated when it was unpacked. Quite a few had heavily corroded CO2 bottles, out-of-date parts and damaged areas of material, meaning that they would have failed to inflate in an emergency."

PARAMETRIC ROLLING RESPONSIBLE FOR MAERSK ESSEN LOSS OF CONTAINERS SAYS DMAIB REPORT

The Danish Maritime Accident Investigation Board (DMAIB) has published its report on Maersk Essen, the ship that lost approximately 250 containers on 16 January 2021 while the ship was en route from China to Los Angeles. The number of lost containers was later adjusted to 750.

Parametric rolling is the suspected cause of the loss of containers from Maersk Essen. Photo credit: DMAIB

Analysis

1 Loss of cargo: DMAIB has found that the cargo stowage and securing operations on Maersk Essen were open to uncertainties and variabilities which could influence both the forces acting on the container stacks and the holding capacity of the cargo securing equipment. By themselves, these uncertainties and variabilities did not have the potential to cause the container stack collapses seen on Maersk Essen.
2 Heavy rolling: The investigation of the heavy rolling on the day of the accident concluded that Maersk Essen most likely experienced parametric resonance, possibly in combination with pure loss of stability on a wave crest. This resulted in large roll angles building up during a six-minute period.
3 Weather routing: DMAIB has examined the tools for predicting risk of parametric resonance made available to the company's fleet. Common to them was that they were dependent on forecast data. Forecasts are encumbered by uncertainty and will vary depending on the weather suppliers' data sources and calculation models. The parametric risk calculators were found to be prone to this type of uncertainty, which can result in misleading indications of risk.

Conclusion

[1] Probable cause: The investigation determined that the heavy rolling was most likely a result of parametric resonance. The acceleration forces acting on the container stacks during the heavy rolling exposed the cargo securing equipment to stress loads which they were neither designed nor able to withstand. Maersk Essen's loading condition required the ship to avoid roll angles exceeding 19.18° in order to stay within the stress load limits defined in the ship's loading and stability computer. This limit was exceeded at the time of the container loss.
[2] Lessons learned: Detecting the risk of parametric resonance rolling based on forecast sea conditions can be problematic as they are encumbered by uncertainty. No matter how automatised and detailed the onboard tools for monitoring parametric resonance are, they are prone to the uncertainty of the forecasts which makes them unreliable as tools, unless a broad risk margin is applied.

Download the full report at **https://bit.ly/3JdjmeN**.

USCG SAFETY ALERT ISSUES ABOUT DANGEROUS GAS BUILD-UP IN FISH HOLDS

This story, alarmingly, is not the first of its kind to reach IIMS. A similar lifejacket clinic at Eastbourne a couple of years ago also revealed a high level of defective flotation devices, some with serious flaws. But is seems the public is not listening and learning.

A recent lifejacket clinic organised by Fowey RNLI found an astonishing 50% were faulty or condemned. The lifejacket clinic invited a team from Ocean Safety Ltd in Plymouth to carry out vital safety checks on a total of 169 lifejackets.

REPORT bites

The Port of London Authority aims for a 60% reduction in carbon emissions by 2025 and to achieve net-zero by 2040.

Wind power company Ørsted asked maritime authorities to declare 'no-sail zones' around eight of its European offshore wind projects after a rotor assembly fell into the sea at one site off Denmark.

The Chichester Ship Canal Trust, the self-funded, volunteer-led charity behind the canal, is celebrating their 200th birthday in style.

Thai superyacht marina Phuket Yacht Haven has announced updates on the various measures the marina is taking to support the environment.

X Shore, the Norwegian electric boat builder, and Aqua superPower, the maker of marine fast chargers, have announced a strategic alliance to promote electric boating in North America and Europe.

A deal has been signed for Cargotec's UK subsidiary MacGregor to supply equipment for four Pure Car and Truck Carriers that will be the largest in the world.

A proliferation of new digital solutions in recent years has resulted in an "overwhelming" software market that is difficult to navigate for shipowners, according to Kongsberg Digital.

Norwegian technology company Kongsberg Maritime has been commissioned to supply a complete propulsion and control system package for a forthcoming Scandlines zero-emission vessel.

Norwegian company Sunlit Sea is ramping up the production capacity for its floating solar technology by transitioning from manual to automatic production at its facilities.

Safety Briefings

Over 50 per cent needed a critical safety part replacing, Fowey RNLI says, meaning if they had been used in an emergency they may not have worked and could potentially have caused loss of life. Eleven lifejackets were condemned outright as being unfit for use. A further 51 needed new capsules, and 26 required replacement cylinders, both of which are critical elements in a fully functioning lifejacket.

Fowey RNLI Lifeboat station operations manager, Chris Ogg says it is extremely important to have lifejackets or any personal floatation devices regularly checked and serviced.

"Your lifejacket may save your life one day, but only if you maintain it properly," he says. "If a lifejacket is faulty, you are basically wearing a dead weight around your neck. People brought along a variety of lifejackets to be checked and it was eye-opening to see the terrible condition of some of them. One was so badly damaged inside, the material disintegrated when it was unpacked. Quite a few had heavily corroded CO2 bottles, out-of-date parts and damaged areas of material, meaning that they would have failed to inflate in an emergency."

AMSA LAUNCHES CAMPAIGN TO IMPROVE CONSTRUCTION BARGE SAFETY

Construction barge safety is the focus of a new campaign by AMSA. Photo credit: AMSA

AMSA has launched a new construction barge safety campaign focused on the importance of regularly reviewing risks as part of the safety management system to protect lives on these types of vessels.

All domestic commercial vessels are defined as workplaces in Work Health and Safety (WHS) laws. This includes construction barges which must meet the risk assessment requirements of state and territory WHS regulations, as well as the risk assessment requirements under the National Law administered by AMSA.

"These barges undertake different and high-risk activities daily so owners and operators must always assess changing safety risks," said Dr Michelle Grech, AMSAs Manager of Vessel Operations.

She added, "Regularly reviewing individual risks and reassessing vessel safety management systems to reflect the operation the barge is performing is vital to keeping vessels and people safe."

For this reason, a dedicated campaign website with a range of information and practical advice is available to support owners, operators and individual workers.

MAIB SAFETY DIGEST APRIL 2022 PUBLISHED

The MAIB Safety Digest April 2022 features 25 case studies and draws the attention of the marine community to some of the lessons arising from investigations into recent accidents and incidents. It contains information that has been determined up to the time of issue.

This information is published to inform the merchant and fishing industries, the recreational craft community and the public of the general circumstances of marine accidents and to draw out the lessons to be learned. The sole purpose of the MAIB Safety Digest April 2022 is to prevent similar accidents happening again.

In his introduction, Chief Inspector of Accidents, Andrew Moll, says, "I would like to start by thanking Bob Baker, Pete Dadds and Pip Hare for their introductions to the merchant, fishing and recreational sections of this MAIB Safety Digest April 2022. They each have a wealth of experience in their respective fields, and their introductions are very thought-provoking. If nothing else, please read their articles. That said, I hope you will read much more than that. There is a cautionary tale here for everyone, and when you have finished reading the digest please pass it on so others can benefit too."

Download the Safety Digest at **https://bit.ly/3KI57Wy**.

INTERIM INVESTIGATION REPORT RESULTED IN LOSS OF LIFE REVEALS BSU REPORT

The German Federal Bureau of Maritime Casualty Investigation published its interim investigation report about an accident with subsequent loss of life on board the Containership SEOUL EXPRESS, on 27 March 2021. On 27 March 2021, the container ship SEOUL EXPRESS was about 52 nm off the Mexican coast en route from Manzanillo, Mexico, to Long Beach, USA. The vessel was operating on a liner service between various ports in the Mediterranean, Central America and the west coast of North America.

Factors that contributed to the accident

In the course of the preliminary accident investigation (primarily evaluation of the files) several factors were identified that could have contributed to the accident and its consequences. These were then investigated more closely.

Sling construction for evacuation via the access hatch (simulated on 19/10/2021). Photo credit: BSU

They include:

- general dangers when working at height;
- implementation of the occupational health and safety on board;
- the general ship design framework (ladders in cargo holds with the risk of falling);
- the health condition and the fitness for sea service of the casualty;
- the emergency response management of the crew;
- the safety culture onboard and in the company as well as the implementation of ISM Code.

Download the full report at **https://bit.ly/3jgXrIR.**

REPORT bites

Six international energy companies have formed a partnership to establish the first green e-methanol plant in Asia.

The push to build big ocean wind turbine arrays off the U.S. East Coast could bring problems for marine vessel radar, requiring new planning to ensure wind power and other maritime operators can safely operate together.

The first floater of the Albanian Banja floating solar project has restarted its commercial operation following an incident last summer.

A new 163m deepwater pontoon able to berth superyachts up to 130m (427ft) has opened at Southport Yacht Club on Australia's Gold Coast.

Green shore power could reduce emissions in ports by more than 90%, as well as minimise noise and air pollution levels, a new feasibility study released by Scotland's Aberdeen Harbour shows.

Crimestoppers is offering a £5,000 reward for information that leads to a stolen lighthouse lantern, one of only three in the world, being recovered.

US Department of Energy has launched the fourth annual Marine Energy Collegiate Competition, established to build the workforce to lead the development of the marine energy industry.

The Leeds & Liverpool Canal at Rishton in Lancashire has been reopened following a six-month £1.7 million project to reinstate the canal for boaters following a breach.

Six Japanese companies have decided to form a strategic alliance aimed at reducing environmental impact through the development of the country's first methanol-fueled tanker.

Safety Briefings

CONSORTIUM SET TO ASSESS AND REPORT ON CONTAINERSHIP FIRE SAFETY FOR EMSA

A consortium led by the Danish Institute of Fire and Security Technology (DBI) will deliver a Formal Safety Assessment study on containership fire safety to the European Maritime Safety Agency (EMSA). The project aims to identify cost-effective risk control options for cargo fires on board container vessels.

Considering the constant increase in containership sizes and the frequency of fire originating in containers, the study will quantitatively assess the fire risks on board such vessels and evaluate new containership fire safety measures by comparing the risk reductions and the associated costs.

The project has been awarded to a consortium led by the Danish Institute of Fire and Security Technology (DBI) supported by Research Institutes of Sweden AB (RISE), the University of Southern Denmark (SUD), the Odense Maritime Technology A/S (OMT) and the classification society Bureau Veritas.

CARGO CLAIMS FROM DAMAGE DUE TO WATER ORIGINATING FROM CARGO HOLD BILGE SYSTEMS

The American Club has warned operators to be vigilant in light of a number of recent claims arising from damage caused by water originating from cargo hold bilge systems.

Specifically, the American Club says:

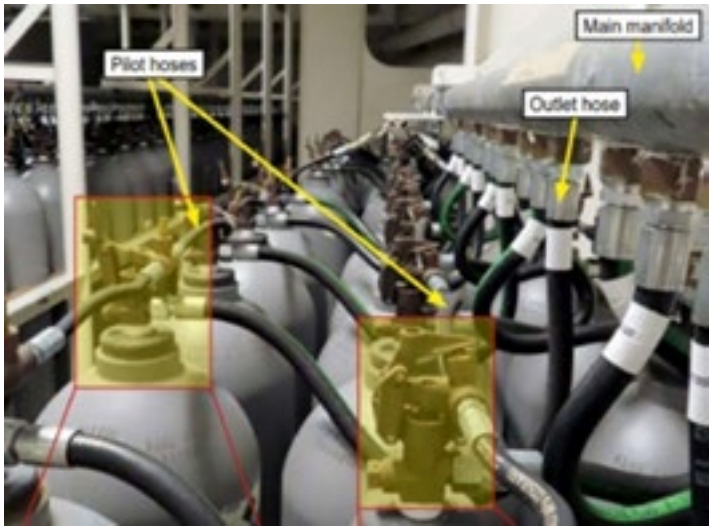
- Debris lodges in the non-return valves fitted in the hold bilge pumping systems, preventing them from operating as designed to ensure that water cannot flow back via the bilge line, into the hold bilge wells and thereafter into the cargo hold;
- Manually operated valves in the interconnected bilge, ballast and fire lines are left open following completion of operations, allowing water to enter the bilge line and into the bilge wells/cargo hold in the event of non-return valve failure.

Taking the above into consideration, vessel crews are urged to adopt the following preventative measures to ensure that cargo hold bilge systems are functioning properly so as to prevent such incidents.

Things to be aware of:

- A significant share of incidents has resulted from a lack of familiarity with the bilge system. The vessel's crew should be familiar with the unique characteristics of the vessel's bilge system. This includes understanding the schematic layout of the bilge system, mimic boards, remote actuators, any cross functionality with such systems as the ballast management system, emergency firefighting system, etc.
- Inspection and testing of cargo hold bilge system non-return valves should be included in routine pre-loading checks of the holds.
- Bilge system valves and pipework require to be periodically checked and maintained as part of the planned maintenance system.
- Rigorous procedures should be in place to prevent valves being left open when not in use.

Read the article in full at **https://bit.ly/3u5uvd0.**



MAIB ISSUES SAFETY WARNING AFTER DISCOVERY OF BLOCKED FIXED CO2 FIRE EXTINGUISHING SYSTEM PILOT HOSES

On 19 September 2021, a fire broke out in the auxiliary engine room on board the Finland registered roll-on/roll-off cargo ship Finnmaster while departing Hull. In an attempt to extinguish the fire, the ship's crew activated the machinery space's carbon dioxide (CO2) fire extinguishing system, but only half of the system's gas cylinders opened. The initial investigation identified that one of the CO2 system pilot hoses was blocked due to a manufacturing defect. Several coupling leaks were also found in the pilot lines.

Safety Issues

- The quality assurance processes of the pilot hose assembly supplier failed to identify that the hose couplings had not been fully bored through
- The onboard installation testing processes did not identify that some of the hose assemblies were blocked and that there were leaks in the CO2 system pilot lines
- Latent defects may exist in the CO2 fire-fighting systems on board ships supplied with potentially affected hose assemblies delivered from the same batch

Download the Safety Bulletin at **https://bit.ly/3LGBm2A**.

International Institute of Marine Surveying

Annual General Meeting 2022

Tuesday 7 June 2022 at 14.00 (UK London time)
Venue: Broadcast online via Zoom

AGENDA

1) Apologies

2) Minutes of previous AGM held in June 2021

3) President's Report (Geoff Waddington)

4) Chief Executive Officer's Report

5) Directors' Reports

6) Pre AGM election voting results on
a) Management Board re-election en-bloc
b) New Deputy Vice President nomination ratification

7) Pre AGM voting results on
a) Proposed fee structure for 2023 membership

8) Incoming President's Message (Peter Broad)

9) Fellowship & Honorary Membership awards

10) Any Other Business

If you are entitled to vote as an IIMS member, please do so before 17.00 on 6th June. Only paid-up full members are entitled to vote on IIMS matters. There is a proposal to increase the fees by a modest amount in 2023. Additionally, there is a proposal to vote the Management Board back en-bloc and, lastly, a proposal to endorse Mike Proudlove's candidature as the next Deputy Vice President. The link to the voting form only is at **https://bit.ly/3vW2YvE**.

After the event, starting at 17.00, IIMS plans to hold an informal garden party with food prepared in the garden available from 17.30. It is understood that most will not be able to join, but if you are local to our office in Portchester and would like to pop by (partners welcome) and do some networking whilst enjoying some food and drink (at our expense) we would love to see you. All we ask is to please let us know if you plan to attend in advance by completing a very simple online form at **https://bit.ly/3CEkeqW**. This same form can also be used to pre-register your online place at the AGM.

In a first for the Institute, Mike Schwarz has been in conversation with outgoing President, Geoff Waddington and new President, Peter Broad and two audio podcasts have been made. You can listen to both men, explaining how IIMS has survived the pandemic against all odds, strengthening our position in the process, and the relevance of the Institute to today's marine surveyor.

Listen to Geoff's podcast (run time 12 minutes) at **https://bit.ly/38flqX8**.

Listen to Peter's podcast (run time 31 minutes) at **https://bit.ly/39H1o8d**.

Member News

And finally - the IIMS President is presented with his medal

At the AGM held in 2020, Zarir Irani handed an imitation paper medal to the incoming President, Geoff Waddington, via a Zoom screen – all rather unsatisfactory, but all that could be done at that time. This was due to Covid preventing the official handing over in person from the outgoing President to the incoming one. Finally, we got Paul Homer (Chairman of Standards) to meet Geoff at the IIMS office in Portchester so that he could be formally presented with the President's medal.

Masts, Rigs & Sails online webinar – 6th July 2022

This webinar is being delivered by Nick Parkyn. The subject of Nick's webinar is Masts, Rigs & Sails, something of a specialism for him. It will be essential viewing for any yacht and small craft marine surveyor whose job it is to inspect and report on such equipment. The presentation will be broadcast live on 6 July 2022 from 09.00 (UK time). The video content may also be purchased for viewing later on demand for those who cannot make the live broadcast.

Nick has an extensive background in both the marine and information technology disciplines. An IIMS member, he is based in Queensland, Australia. His work in the marine industry includes marine surveying, yacht and small craft design and marine software development. He holds the DipMarSur Diploma in yacht and small craft surveying and has presented numerous papers at marine conferences and written many technical articles too.

In this extensive webinar, Nick plans to cover the following:

- Introduction
- Types of rigs
  Traditional rigs – Junk Rig – Lateen Rig – Crabs Claw – Gaff Rig – Bermuda Rig
- Apparent Wind
- Rig evolution for fast sailing craft: multihulls and foiling monohulls
- Wide head mainsails
- Mainsail configurations
  Interesting aspects of low-speed aerodynamics – Conventional soft sail – Soft sail double luff (wing) – Wing Mast with soft sail – Wing sail (Solid Wing Rig)
- Foresail configurations
  Conventional – Self-tacking
- Downwind sails
  Symmetrical Spinnakers – Asymmetrical Spinnakers
- Types of masts
  Conventional Fixed – Turbulators – Rotating – Rotating Wing Balestrom/Aerorig
- Masts configuration
  Un-stayed masts – Stayed masts – Bi-plane – Canting
- Spreaders, Diamonds and Jumpers
- Boom configurations
- Bowsprits/prods
- Mast Design Process & Construction
  Wooden masts – Aluminium Masts – Carbon Fibre Masts
- Boom Design Process & Construction
  Wooden Booms – Aluminium Booms – Carbon Fibre Booms

To reserve your place or to register for a copy of the video go to **https://bit.ly/3ra7oMC**.

RECENT NEW IIMS MEMBERS

Full members

Ante Babarovic	*MIIMS*	Croatia
Raymond Bracken	*MIIMS*	USA
Valerio Dell'Anna	*MIIMS*	Spain
Pradip Kumar Shaw	*MIIMS*	India

Technician member

Glen Murray-Dickson	*TechIIMS*	UK
John Waters	*TechIIMS*	UK

Associate members

Ulvi Esin	*AssocIIMS*	Turkey
Tyler Gordon	*AssocIIMS*	Canada
Snigdhajyoti Kar	*AssocIIMS*	India
James Kitagawa	*AssocIIMS*	Canada
Ivo Makjanic	*AssocIIMS*	Croatia
Himadri Shekhar Nag	*AssocIIMS*	India
Sean Phillips	*AssocIIMS*	UK
Andreas Wagner	*AssocIIMS*	Germany

Affiliate members

Samantha Bartlett	*AffilIIMS*	Caribbean
Cris Fletcher	*AffilIIMS*	Canada
Denis Serov	*AffilIIMS*	Russia
Wade Stubbs	*AffilIIMS*	Australia

Graduate members

Alexandra Booth	*GradIIMS*	UK
Kweno Edwards	*GradIIMS*	Trinidad & Tobago
Peter Hooper	*GradIIMS*	Spain
Michal Tomczyk	*GradIIMS*	Poland
Finlay Somerville	*GradIIMS*	UK

IIMS congratulates Peter Hooper and Alexandra Booth for completing their studies in the ***IIMS Professional Qualification in Yacht and Small Craft Marine Surveying***

IIMS congratulates Michal Tomczyk, Kweno Edwards and Finlay Somerville for completing their studies in the ***IIMS Professional Qualification in Commercial Ship Marine Surveying***

Capt John Noble donates new book to the IIMS library

Recently Capt John Noble HonFIIMS *(pictured right)* popped into the IIMS offices. His mission? John was keen to donate a copy of a new book to IIMS Chief Executive, Mike Schwarz *(left)*, published by the Nautical Institute entitled *Guidelines for the Maritime Expert Witness*, which he has collated, written the introduction to and edited. The 76-page guide is available from the Nautical Institute's website.

New WhatsApp group launched for UK Yacht & Small Craft Surveyors

Recently, IIMS launched its latest closed WhatsApp group, this one specifically for UK based yacht and small craft members. This brings the total number of groups now to more than 20, which includes the various student groups we manage.

Over 30 members have joined the group so far and there has already been a fair amount of dialogue and exchanges, including a discussion on public liability insurance, (given that marinas are now insisting on £5 million cover), an exchange on cancellation clauses in surveying contracts, payment terms and the general increase of repair costs. This is a great start and exactly what the group is for.

If you missed the announcement about the launch of the new WhatsApp group but are a UK based yacht and small craft surveyor, you are welcome and encouraged to join. Please email Rosie Webb at **info@iims.org.uk** and she can make the arrangements to include you.

Dear Sir

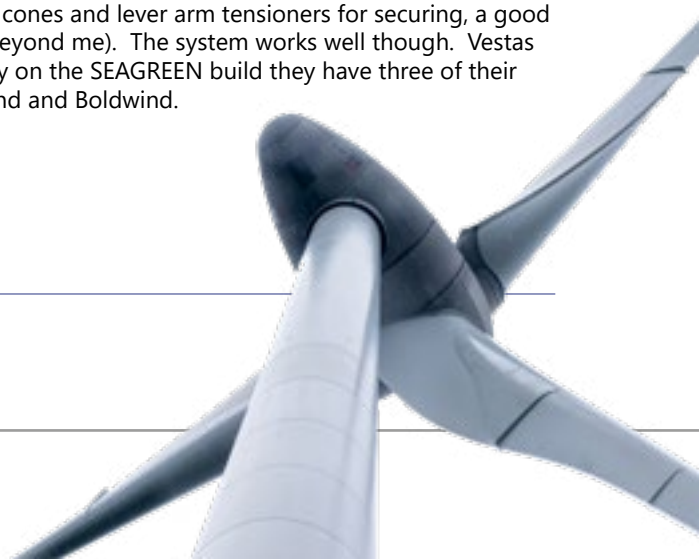
I read with great interest the story in the March News Bulletin regarding the windmill blades and various assets outsizing the available vessels. This is all too true.

We undertake a large amount of work with MVOW (MHI Vestas Offshore Wind) and supervise the transport of all their blades for offshore installations which is presently a bit of a workup as these are made on the Isle of Wight (IOW) and then barged to Fawley for painting and framing and then barged (again) into Portsmouth for loading to ships. Batches are now up to 15 x 80m blades per shipment, the blades weigh approximately 32-tonne a piece but with their large stacking frames on are almost 60-tonne each (the stacking frames are huge). There are logistical limitations in both the IOW which can only be accessed at HW and also in Fawley where the inlet width prevents anything much larger than Bladerunner II entering, so we can only move one blade at a time. Loading is a long operation with the turnaround time Fawley to Portsmouth being approx. 3.5hrs per blade, x 15 is three rather long blades working 24/7.

Vestas had an issue with ship supply as the typical geared ships with large enough hold to get blades stacked under deck and on deck are in short supply (so much so that we had the BBC Lisbon and BBC Livorno on permanent charter for almost two years for the Burbobank project build). Vestas soon realised that this was not cost effective and had their own ships build. We assisted in the loading and securing system integration and the training of the Portsmouth stevedores on how to use them as we use stacking cones and lever arm tensioners for securing, a good system (why no one thought of a uniform twist lock system is beyond me). The system works well though. Vestas still have several vessels on charter but around the UK. Currently on the SEAGREEN build they have three of their own specialised vessels running around - the Vestvind, Bravewind and Boldwind.

Lee Warltier

Managing Director
Sterling Global Marine Ltd



John Excell Award honours board is unveiled

The *John Excell Award for Outstanding Achievement* honours board is now on display in the Institute's boardroom. The award is made to a student who displays an exceptional level of learning, above expectations, during their IIMS Professional Qualification Diploma course on an as and when basis. The first two names on the board are Christopher Keenan and Matthew Willis, who were given the award last year.

New look IIMS website gives enhanced performance on mobile devices

If you have recently looked at the IIMS website **www.iims.org**.uk, you will have noticed a slightly redesigned home page. It utilises a more modern type font and the site and its pages have been given a bit of a makeover. But the significant difference is what has gone on behind the scenes, the biggest redevelopment since the site was launched in late 2014. The site has been redeveloped using Bootstrap 5 framework, replacing version 3. The biggest change that users will notice is that the site is now highly responsive on mobile devices. Bootstrap 5 was launched mid-last year. Already studying backend data, the performance of the site on mobile devices is seen to be greatly enhanced.

Whilst undertaking this development work, IIMS has taken the decision to migrate the website into a progressive web app (PWA) - the way the digital world is moving at pace. A PWA is a type of application software delivered through the web, built using common web technologies including HTML, CSS, JavaScript, and WebAssembly. It is intended to work on any platform that uses a standards-compliant browser, including both desktop and mobile devices. Since a progressive web app is a type of webpage or website known as a web application, they do not require separate bundling or distribution. Developers can just publish the web application online, ensure that it meets baseline "installability requirements", and users will be able to add the application to their home screen.

Craig Williams celebrates ten years with IIMS

In April, Craig Williams celebrated 10 years with the organisation and the Institute could not let that go by without a small celebration. Much of the published output you see from IIMS, including The Report Magazine, the monthly news bulletin and other brochures have been inspired by Craig's talents and we wanted to make a fuss of him to mark the occasion - and we did.

Report on a visit to the BAE SYSTEMS Govan Shipyard

By Geoff Waddington FIIMS, President

This year, on Saturday 9th April, my wife and I were invited to attend a Falklands War 40-year anniversary event at the BAE Systems Govan Shipyard in Glasgow. The day saw a gathering of members and families of the crew of the last HMS Glasgow, which was a Type 42 destroyer and the only surviving Type 42 of the original three. All three fought on the front line during the Falklands conflict, but HMS Sheffield and HMS Coventry were both tragically sunk with considerable loss of life.

On the 4th May 1982 HMS Sheffield was hit by one of two Exocet missiles fired at the front line destroyer group. The other missile was distracted by chaff from HMS Glasgow and another missile hit HMS Sheffield amidships at the bulkhead to deck join of the forward auxiliary machinery space forward engine room and main deck. This minimised the amount of initial damage, but the resultant fire swept through the ship and, having been abandoned by the survivors, she eventually sank.

On the 12th May HMS Glasgow was attacked by three waves of aircraft. Three of the first wave were shot down but one of the second wave managed to penetrate Glasgow amidships with a 1,000 lb bomb which, having hit her on the starboard water line, passed through the engine room, installed systems, fuel tanks, oil tanks, HP air reservoirs, electrics and so on without exploding, or more amazingly, not causing an associated explosion and fire. The bomb then very kindly exited at the port water line leaving Glasgow wounded but still capable of fighting on.

On the 25th May HMS Coventry was attacked by aircraft and sustained damage from three 1,000 lb bombs, two of which exploded. She caught fire, capsized and sank within 20 minutes. Following repairs HMS Glasgow remained in service until 2005 and was scrapped in 2009.

HMS Glasgow was selected to be the name of the first Type 26 Global Combat ship to be built by BAE Systems. Also present on the day were members of the BAE Systems team involved in the design and build and members of the crew of the present ship. The vessel was built in two halves inside undercover facilities and in April last year the two halves were taken outside and joined together.

Image courtesy of BAE Systems

Apparently, the lining up process only took 90 minutes. Once the two halves were in position, she was covered in for the remainder of the construction to take place. So, until the wraps come off there is little to see from outside.

On the day we were permitted to have a limited walk through the ship from the forward access tower through to the aft access tower.

HMS Glasgow is the first in a new generation of cutting-edge Type 26 frigates, designed and built in the ship's namesake city. Supporting more than 4,000 jobs across the UK, the programme is making a significant contribution to the nation's economic recovery by maintaining much-needed skills and capabilities. To date, more than £1bn has been invested across the programme's supply chain, with more than 100 suppliers globally.

The Type 26 frigate is an advanced anti-submarine warship, which will deliver critical protection of the Royal Navy's Continuous, At Sea Deterrent and Carrier Strike Group. The ships will replace the UK's Type 23 frigates, with the first set to enter service in the mid-2020s.

Each Type 26 will be equipped with a range of world-class capabilities including the Sea Ceptor missile defence system, a 5-inch medium calibre gun, flexible mission bay, Artisan 997 Medium Range Radar, and towed array sonars. The flight deck will be able to accommodate helicopters up to the size of a Chinook, while the mission bay can quickly adapt to house and deploy vessels, vehicles and containers both to water and to land via a gantry arm system.

The Type 26 is the original variant of BAE Systems' Global Combat Ship, which supports a close partnership between the Royal Navy, Royal Canadian Navy and the Royal Australian Navy. Australia and Canada both selected a variant of the Type 26 design for their anti-submarine frigate programmes, supporting greater operational, training and intelligence ties between the three nations.

Next in line is HMS Cardiff which is in build and work had also started on HMS Belfast which will be the third in line. The completion date for HMS Glasgow has yet to be confirmed.

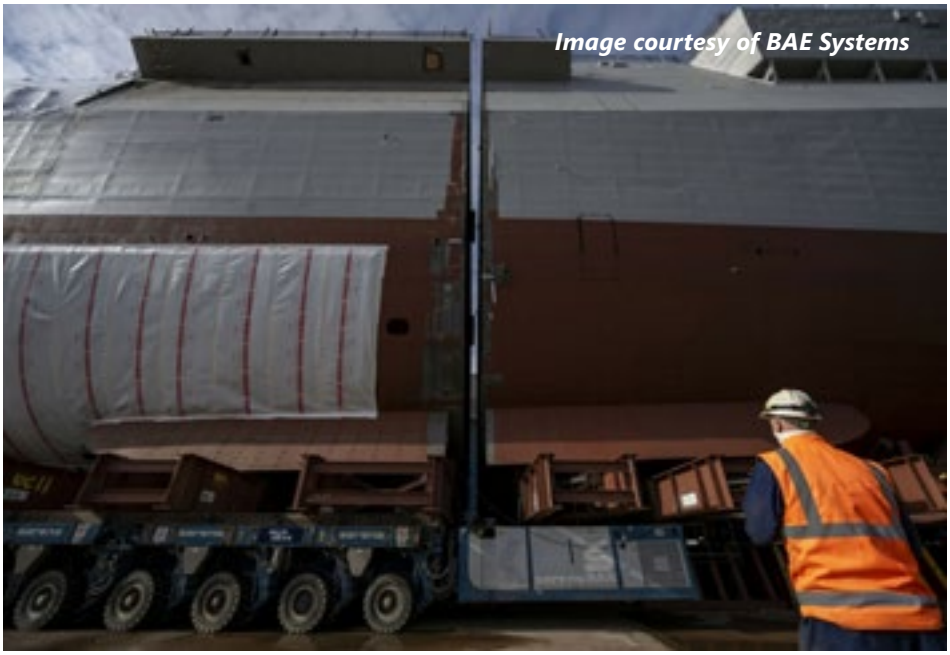


Image courtesy of BAE Systems

Image courtesy of BAE Systems

Image courtesy of BAE Systems

The s/v Midsummer

One member's dream in the spotlight

Based in Canada, Drew Korek is a long standing IIMS member. He has embarked on a challenging project to restore a 120' LOA topsail schooner called s/v Midsummer. She can carry a total of 12 crew and pax and is 94 mt GRT, with her displacement of 174 mt. She was designed as a sailing fishing vessel, built by the Van der Windt shipyard and launched in the midsummer of 1910, at Vlaardingen, Holland. Her hull is made of riveted wrought iron plates, and it is a testament to the remarkable craftsmanship of the Dutch shipwrights from a bygone era who made her.

She was originally christened Johanna Jacoba and was renamed a number of times before assuming her present name, the Midsummer. Currently, the vessel is lying in Kenya in need of tender loving care. Sadly, this beautiful little schooner has been at the mercy of elements of equatorial Africa since 2016 and these years have taken a toll on her. The merciless monsoons, scorching heat, no maintenance whatsoever and petty theft have all left their mark.

Once seaworthy, Drew plans to sail her to the UK or to Nova Scotia, Canada for additional restorative work. IIMS plans to follow Drew's progress over the coming months, and we wish him good luck and fair winds in his endeavours.

As soon as she is fully renovated, Drew plans for the Midsummer to be put to good educational uses. She will become a training vessel, a refuge and retreat for the Royal Marines and other service branches members and veterans suffering from PTSD.

There is no substitute for, and nothing better than, real sea time under sail on deck of a classic schooner like the Midsummer. It offers a unique experience and opportunity to learn the critical skills of seafarers - skills forgotten over time, such as wire work and sail making. Rarely does the opportunity come around to be part of working to rig a ship from the keel up, or to learn how sails are repaired.

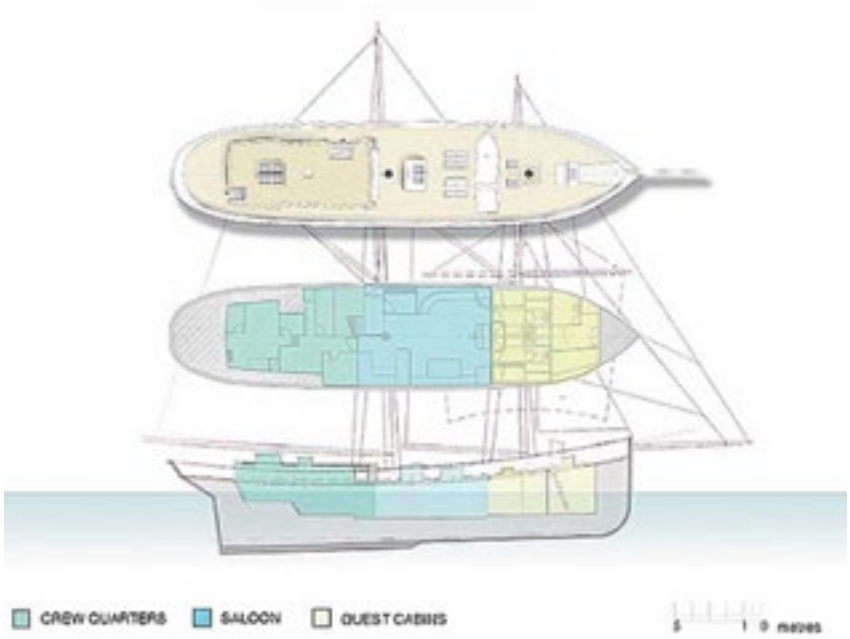
Furthermore, to earn some income towards her upkeep, she may carry boutique cargo, such as coffee, tea and wine from Avon Valley, Nova Scotia, to the UK and Europe.

As Drew says, "I've been looking for such a suitable vessel for the last few years. Five months ago, a mate from the Marine Corp gave me a lead towards this one, currently abandoned in east Africa by the British owners after she was run aground by her skipper. They had her salvaged, dry docked and fixed but there was a problem with the payment of the final bill and the vessel was arrested by court order."

Drew continues, "In 2016 she was a beautiful lady with a large price tag. But I negotiated her purchase for a fraction of the original asking price. She deserves saving from an inevitable, bitter end. She needs lots of tender loving care, but I know it can be done. The plan is to get her on the dry dock in mid-June. Once seaworthy we will bring her either to the south of England of or to Lunenburg, Nova Scotia for the re-fit by the end of September. Call me a crazy, romantic fool but I will see this project through."

Drew reports that he has a busy time ahead to get the key components organized for the Midsummer's drydocking in June. There is not much of the required materials readily available in Kenya. Midsummer requires new masts, sails and running rigging. The biggest challenge is to get the kit over there.

Revealing more of his plans, Drew said, "There is the option of sailing north, through Suez, to the Mediterranean, stopping there for final preparation for the Atlantic crossing. The alternative plan is to sail out of Mombasa in July down to Cape Town or Saldanha Bay, then cross the Atlantic with landfall at Recife or Natal. From there we can head up to the Caribbean. And then onwards to Lunenburg where she will have her deck sorted out. And in the spring, she will sail finally to the south of England."



Acknowledgements

Thanks to the Alpha Logistics Group for making this project possible and to the SECO shipyard for assistance with the dry docking.

Big thanks to IIMS who are giving media coverage and support.

Thanks for the vital support and commitment to tailor a set of sails for the Midsummer in expedited fashion from the Sail East Sailmakers.

Also, thanks to The Gen Dit Group for their commitment to promote the project mission objective - these are Royal Marines combat veterans and serving members of the Corp.

Appreciation given to Capt. Dan Moreland and the s/v "Picton Castle" for their support and declaration of advice in logistical matters and in sourcing the vital sailing ship components.

Doug Theobalds, Epifanes NA Inc., a marine coatings supplier based in Lunenburg.

John Edelman, Lunenburg Chandlery, for his help in obtaining unique sailing vessels items, both for the immediate passage need and for the re-fit further down the road.

The Big Boat Shed at Lunenburg who are schooner building specialists for their declaration of support, technical advice and assistance with the masts and spars replacement.

Support and technical assistance with all marine engineering needs from ME. Kiley Sampson is a long-time friend and one of the best.

Brettt Morash, Executive Director at Racing for Heroes and host of Racing for Heroes Radio on WVOX 1450AM.

The story is set to continue and IIMS wishes Drew and his team much success.

IIMS member and marine surveyor, Albert Weatherill, warns seized yachts must be decommissioned to mitigate safety and environmental risks...

Photo for illustration puposes only

Seized maritime assets

could pose a "significant risk" to ports, harbours and marinas if there is no requirement to ensure mega yachts detained under sanction rules are properly maintained, made safe, or deactivated, according to experienced marine surveyor, Albert Weatherill, managing director of Van Ameyde McAuslands and a long-standing IIMS member.

Safety concerns have been raised by Van Ameyde McAuslands, a global firm of marine surveyors and engineering consultants, following the seizure of a number of high-profile mega yachts thought to be owned by Russian oligarchs, as discovered in recent weeks by port authorities across Europe.

Albert Weatherill commented, "When a vessel is seized, it may no longer be in Class and under Flag, and any insurance, including P&I and H&M, is likely to have already been revoked. From that moment the yacht, by default, becomes a liability of the state."

In London's Canary Wharf, authorities seized the $38 million (c. €34 million) Phi. The $75 million (c. €68 million) Axiom was seized in Gibraltar, and in Italy, authorities boarded the $540 million (c. €496 million) S/Y A, one of the world's largest privately owned yachts. Yachts thought to be worth more than $16 billion (c. €14 billion) are being held across Europe, in Finland, France, Norway, Spain, and Germany.

Weatherill continued, "Without insurance, proper loss prevention measures need to be in place to avoid losses and claims. Potential litigation could run into millions of dollars if assets are not properly made safe or shut down correctly. These are not vessels that can be simply turned off and walked away from."

Normally, the annual upkeep of a mega yacht can exceed $50 million (c. €45 million), with flag state requirements calling for minimum manning and planned maintenance. However, according to the marine surveying firm, there is confusion over who will be responsible for carrying out routine maintenance, if any is being carried out at all.

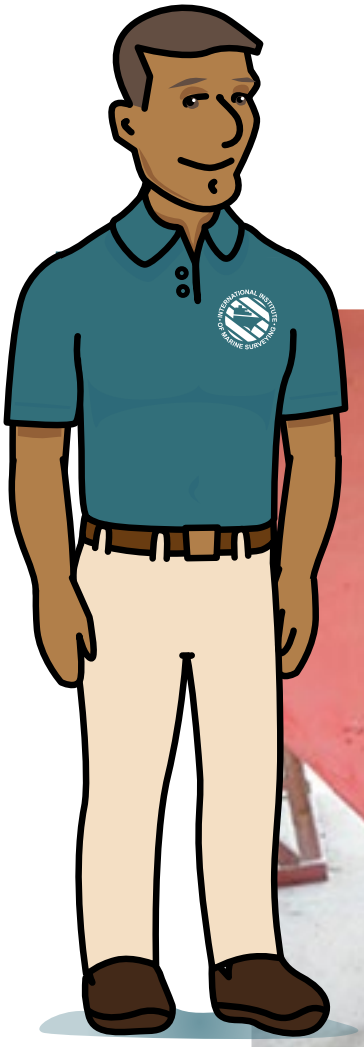
Van Ameyde McAuslands believes that seizing authorities should be aware of the need to take immediate action when a vessel is impounded. It believes that none of the seized yachts to date have been prepared for lay up or surveyed to prevent pollution or disruption to the port.

While it is difficult to predict how long these vessels are going to remain unused, in order to make them safe, machinery should be deactivated, systems drained down, discharge overboard valves closed, fire systems checked and engines prepared for cold lay-up in accordance with Classification Society and OEM guidelines.

Weatherill continued, "Manning, deterioration, damage, fire, theft, danger to people and property – these are all very serious issues. When vessels are dormant for long periods there is potential for things to go wrong and when there is no insurance safety net to fall back on, it's a big problem. We're in unchartered territory."

Article written by Annabelle Fox and first published online at Yachting Pages.

From the Murky Bilge



This is a new feature in The Report Magazine. Each edition we will publish a fresh image and invite comments from readers as to what they are seeing in the picture. The images have all been taken on survey.

Sometimes there may well be a right answer, but more often than not perhaps it is just an opinion as to what has happened. Get involved and send us your thoughts and opinions. We would love to hear from you.

On its annual haul-out the shipyard noticed this (see above image). What you are looking at is the cast iron fin keel of a 55-foot sailing yacht - bow to the left of the picture. The keel and vessel had not grounded.

Given the keel's shape it is difficult to see how the damage is even possible.

So, a local jester suggested "back-stay was over-tightened", but perhaps you could suggest something equally as likely, or you may actually know the answer!

Could it be that maybe the jester was right?

Anyway, suggestions and comments by email only to **murkybilge@gmail.com** please - the person who provides the "best" answer will be announced in the next edition of The Report Magazine. Additionally, they will receive a free printed copy of the next edition of the Report Magazine.

If any of you who have interesting photographs like the one above and are happy to share them for advice and opinion, please send them by email to **murkybilge@gmail.com** with a brief explanation and what should be the light-hearted discussion based on the image supplied.

Should your photo be published, you will be credited.

Obituary: Eur.Ing Jeffrey Casciani-Wood

CEng, FRINA, HonFIIMS, FLLA, FIDiagE 1930-2022

By Mike Schwarz

News reached the IIMS Head Office late in the evening on 16th February to inform me that Jeffrey Casciani-Wood (aka Mog) had passed away peacefully following a short illness.

Known to many in the marine surveying and diagnostic engineering fields, Jeffrey's passing leaves a huge hole in the IIMS family. His longevity and desire to continue to contribute to Institute life into his 90s marks him out as a unique and inspirational character. He was IIMS President from 1997-2000. There are many superlative adjectives and words that could be used to describe Mog, and all would be appropriate. Words and phrases such as a heavyweight, a legend, a giant, a humourist, consummate author, 'good bloke' and gentleman all fit. But he was those things and more.

I recall on my first day in post as CEO when he rang to introduce himself. I had been sitting in the hot seat for less than 30 minutes. He introduced himself simply as Mog. I replied that's an unusual name. He responded by telling me with gusto that it stood for **Moaning Old Git** and informed me how much he enjoyed making a nuisance of himself wherever and whenever he could and how proud he was of doing so. Our exchange of banter left a mark on me. We became good friends over the years and developed a healthy professional respect for each other, although both from very different backgrounds.

Jeffrey devoted so much of his professional life to the art of marine surveying, (an industry that he cared passionately about), even well after he stopped working. He was often the first name on the attendance sheet when a new training event or online seminar was announced, such was his continuing hunger for knowledge and a desire to keep his mind active. His mind remained sharp until the end. Jeffrey's legacy will live on for many years to come through the numerous articles and papers he wrote for the Report Magazine, from his videos stored on YouTube on steel bug attack, for example, and via the handy guides written by him and published by IIMS. Indeed he told me that his ***Small Craft, Ship & Boatbuilding Terminology*** handy guide, still a steady seller, was the culmination of 50 years work.

Jeffrey was always generous with his time for newbies making their way in the profession. I would occasionally call him and ask if he could help a fresh faced student and his reply was always positive. He loved passing on his knowledge and experience.

Mog was a devoted family man and used to tease me saying he had lost count of the number of grand and great grandchildren he had and would say, "Oh by the way another is on the way." My thoughts are with his family at this time as they mourn his passing.

Jeffrey Casciani-Wood was 'old school' and truly a one off who will be sorely missed by all who knew him. I doubt we will see his like again and in that sense, he is irreplaceable.

Rest in Peace Jeffrey Casciani-Wood.

Memories of Jeffrey Casciani-Wood

By Elliott Berry, FIIMS

As announced in mid-February, you will be aware that IIMS lost one of its Past Presidents and Honorary Fellows with the passing of Jeffery Casciani-Wood. This was both a huge personal loss to me and many others too, but it has also left a huge void in the fields of both marine surveying and diagnostic engineering.

Jeff was a long-standing member of both the International Institute of Marine Surveying and the Intuition of Diagnostic Engineers.

I have had the benefit of having the last 25 years with Jeff as initially my teacher, then as an employer, a colleague, and an employee - but more importantly as a great friend and mentor.

Jeff taught me everything I know about boats, ships and marine surveying as well as how to navigate the country by cafes, teashops and Little Chefs! He also taught me early on that for safety and sanity reasons it was best that I took responsibility for driving us to and from jobs and meetings. I have little doubt that his family would agree with this wholeheartedly.

Jeff was an incredibly clever and knowledgeable man with a voracious appetite for learning new skills, even into his 90s.

His career began on 1st January 1945 when he started pre apprenticeship training at the London graving dock, leading into a five-year apprenticeship as a shipwright.

In l95l Jeff went to sea in general cargo vessels, tankers and trawlers whilst also attending college to obtain formal qualifications.

Upon his return from sea in l957, he secured employment at Messrs. Green and Silley Weir Ltd as a Junior Draughtsman rising to Assistant Manager. During this period Jeff was also a Part Time Lecturer in naval architecture and ship construction at Poplar Technical College in London teaching these subjects to students at ONC level.

In l964, Jeff joined Hart Fenton & Co. Ltd. as Superintendent Engineer until l970 when he formed his own company as an independent marine surveyor.

Jeff considered the fields of marine surveying and diagnostic engineering to be of vital importance to the world and was extremely proud that both organisations were so inclusive.

Some of you may have known Jeff personally and others will have known him purely in a professional capacity, but Jeff always left an impression and leaves an extraordinary legacy behind him.

Many years ago, his daughter Marilyn gave him the nickname MOG (Miserable Old Git). He loved it and often used it to introduce himself by those initials.

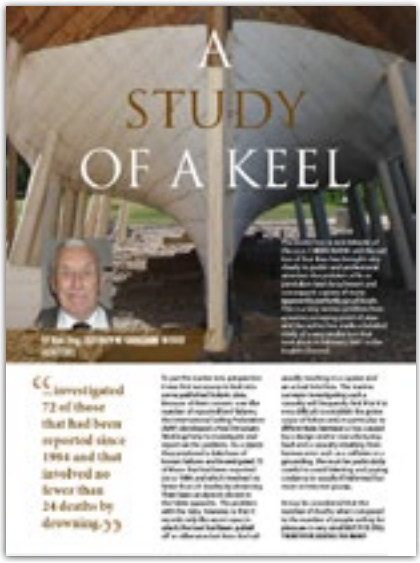
The last 25 years have absolutely flown by and every one of them has been a joy. I have Jeff to thank for that. I miss him terribly as a friend, colleague and mentor.

A selection of Jeffrey Casciani-Wood's published works

Jeffrey Casciani-Wood spent more than 70 years around boats and ships - designing them, repairing them, building them and surveying them. Always generous with his word count, he was a prolific author, producing content of a highly technical nature at times. Over the years IIMS has been pleased to publish a large quantity of his written work. Here is a selection of some of Jeffrey's articles published in The Report Magazine. Additionally, the Institute has published several handy guides which are available to purchase through the website and two one off publications on moisture meters and biological attack on iron and steel, which are freely available to download in pdf format.

A study of a keel

Originally published in The Report Magazine December 2014



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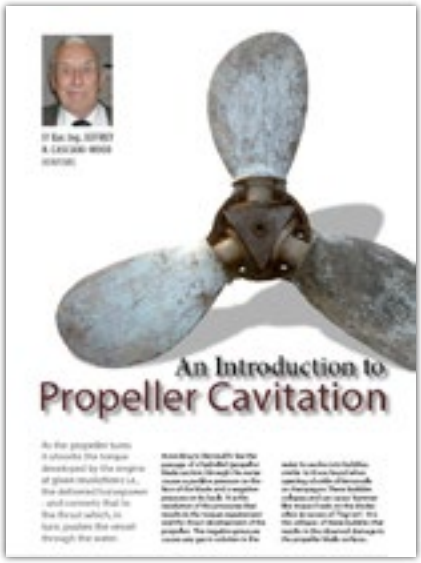
An introduction to propeller cavitation

Originally published in The Report Magazine December 2014



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An introduction to rust (Parts I and II)

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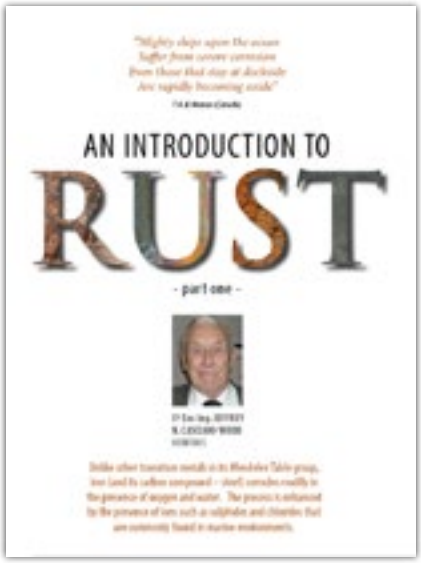

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Engine crankshaft deflection measurement

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Galvanism, Electrolysis & Pitting

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Handy guides...

by Jeffrey Casciani-Wood
(available in paperback & eReader pdf formats).

What A Marine Surveyor Needs To Know About Small Craft, Ship And Boat-Building Terminology

An introduction to lubricant sampling, analysis and test in predictive maintenance (Parts I and II)

Originally published in The Report Magazine March and June 2017

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Estimating a small craft's stability by means of rolling period tests

Originally published in The Report Magazine March 2018

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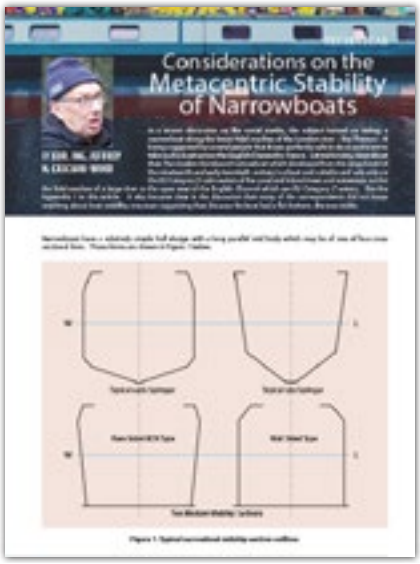
Considerations on the metacentric stability of narrowboats

Originally published in The Report Magazine March 2019



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Biological attack on iron and steel (short version)

Originally published in The Report Magazine December 2019

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What surveyors ought to know about fastenings (Parts I and Part II)

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Design of cathodic protection schemes for canal craft

Originally published in The Report Magazine June 2021

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What A Marine Surveyor Needs To Know About Small Craft Metal Hulls And Ultrasonics

What A Marine Surveyor Needs To Know About Corrosion, Electrolysis, Galvanism, Anodes And MIC

Surveying Rivets & Riveting (Parts I, II and III)

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An introduction to risk analysis

Originally published in The Report Magazine September 2021

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Jeffrey Casciani-Wood responds to Geoff Waddington

Originally published in The Report Magazine December 2021

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The Marine Surveyor's Role

Originally published in The Report Magazine March 2022

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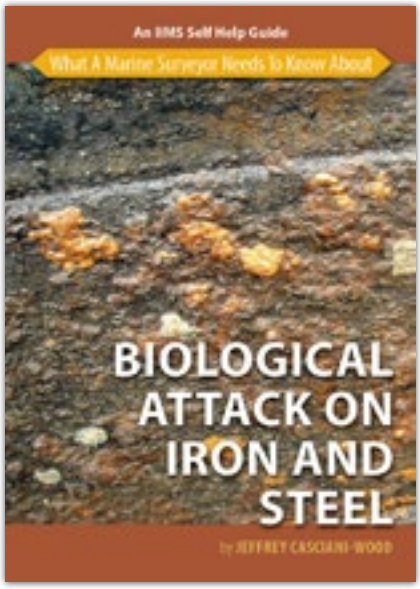
Biological attack on iron and steel (the long version)



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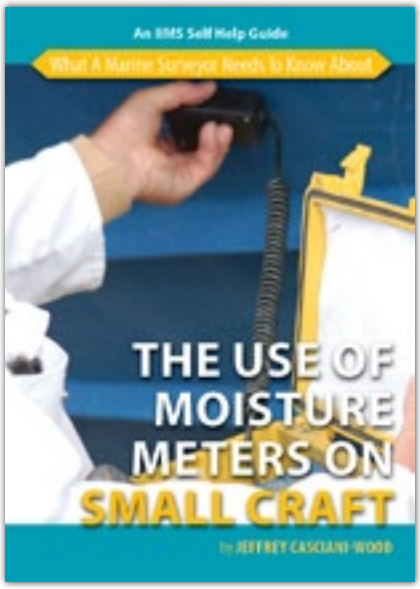
The use of moisture metres on small craft



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Going to Court

by James Newcombe *AssocIIMS*

One. Preliminary.

Marine surveying as a career is extremely rewarding. This will involve inspecting craft of various types, meeting new people, and in some cases making good friends. And most importantly, earning a reasonable stipend in which to pay the mortgage, feed and clothe your family, and occasionally, being able to take a well-deserved holiday.

However, like any career, there are downsides. Excessive paperwork, poorly maintained vessels, clients or vendors that are horrid, and the long hours can be trying to say the least. And the factor, the majority of us surveyors will fear, litigation, or being dragged in to court is always present. Over my brief career of eleven years, I have talked to numerous boat builders and students, wanting to become marine surveyors. The most detrimental point, is the future likelihood of being taken to court.

Personally, I have been to court four times now. Once, as to be highlighted, against myself, and three times as an expert witness. Although being an expert witness is a good learning experience, and financially rewarding, usually the case is against a fellow surveyor who has failed in their duty. Not a pleasant situation for future relationships, and to be honest, something I try not to volunteer my services for anymore.

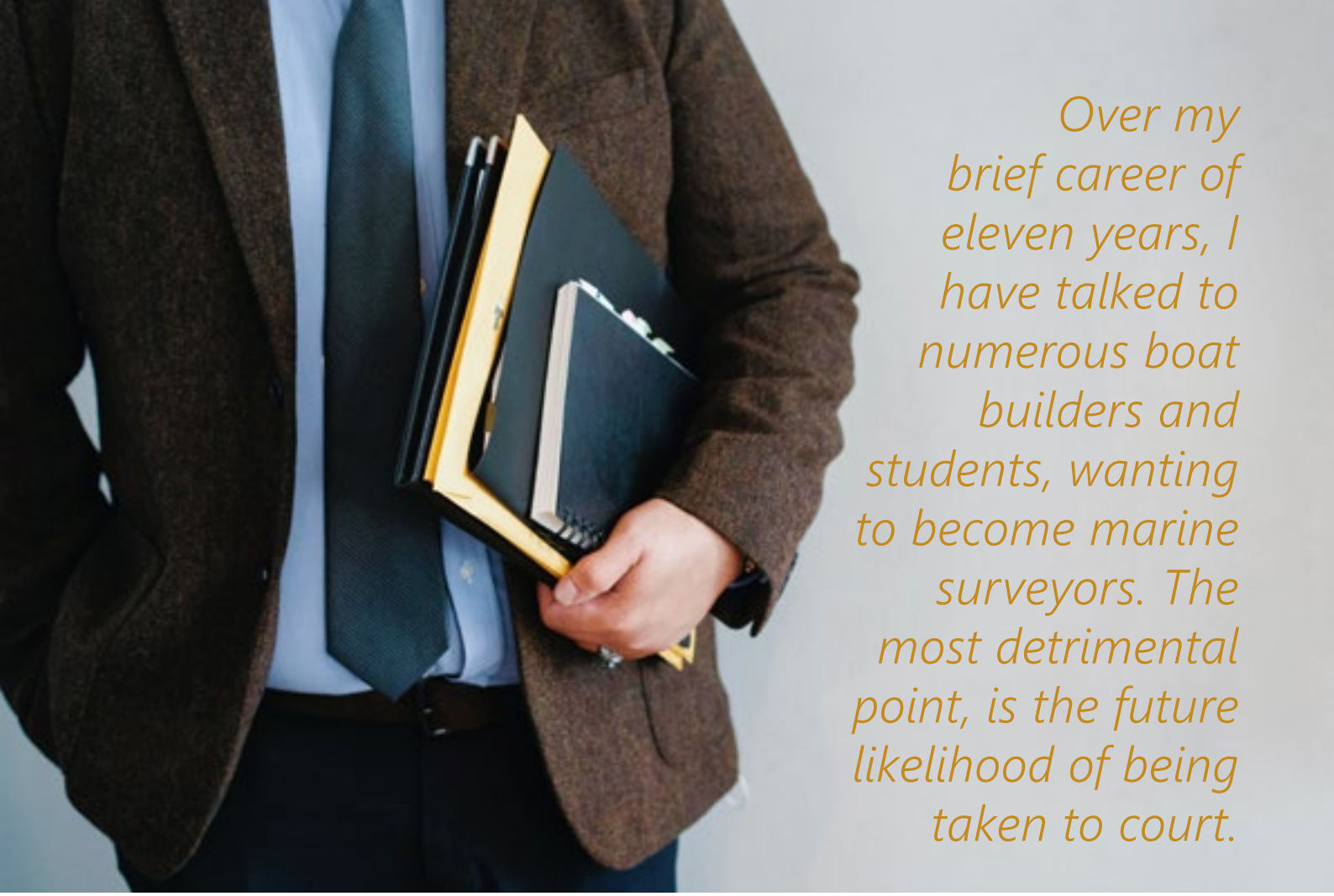
The case I will proceed to document, was against myself and others, several years ago. I will not name the vessel or parties involved, but can confirm that everything took place in New Zealand, in a disputes court. This is to outline my thoughts and fears, the tribunal itself, the end results, and my reflections after several years have passed. Hopefully, this will encourage people into the profession and not hinder them.

The case started with myself surveying a ten metre, fibreglass, motor launch, with an inboard diesel engine driving a stern leg. I surveyed the vessel as normal, with percussion and moisture meter testing being undertaken. Throughout the process I found several major faults. In particular, extensive delamination of the fore deck structure. Toward the end of the survey my client turned up, I pointed out the faults, and he decided to terminate the survey and purchase.

At this stage, there was aggression towards myself from the broker present, with condescending remarks and bullying being observed. As I had dealt with this broker many times in the past, I brushed his comments aside, drove home, completed the written survey for my client, and thought that was it. Unfortunately, this was only just the beginning of my dealings with this particular vessel.

Approximately six months later, an envelope arrived in my mail box, instructing myself to appear in disputes tribunal in three months. This was lodged by the new owner of the vessel, who had been in strife out on the water and had to be rescued. The vessel was saved with an expert witness taking photos and providing written testament.

And, so the process started. Probably the greatest fear for a surveyor was happening. I had been warned many times, and now I was on the chopping



Over my brief career of eleven years, I have talked to numerous boat builders and students, wanting to become marine surveyors. The most detrimental point, is the future likelihood of being taken to court.

block. My first reaction was fear, stomach cramps, and a complete loss of sleep. But the goal of this article is to explain how I worked through the process so others can deal with the process as well.

Basically, the owner was taking myself, the broker, and the brokerage company, to court for $30,000. Probably not a lot in the big scheme of things, but still not pleasant. His claim was that he had bought the boat from my survey, the engine had failed, the boat had flooded, and now there was structural damage. Initially he wanted full costs of the vessel, but changed for a lesser amount as he did not want to go to a higher court.

The first thing I did was contact my insurance company. To this day, I cannot fault in any way, their professionalism, and willingness to help. They immediately assigned two in-house lawyers to my case. This alone, proves that insurance premiums are well worth their value. It is good to have someone watching your back.

The two main arguments forwarded by myself were a), the vessel was sold six months after I actually surveyed it and b), the vessels owner was not my original client, and had obtained my survey from the broker illegally.

So then began the home work. I went over my own survey with a fine-tooth comb, looking for any faults which could trip me up. I then managed to get all invoices and documentation for the vessel with repairs undertaken since the incident. I also found that during delivery, on a truck for 600 kilometres, the vessel had filled up with rain water. This because I tracked down the cartage contractor and interviewed him. Further investigation also found that the owner had been warned not to use the vessel until, the engine had been checked and serviced because of water immersion. He decided to ignore all advice and proceeded to use the vessel, and get in trouble.

I also researched his expert witness, his qualifications, which were minimal, his quoting process, and his personal friendship with the vessel owner. By researching his business, which was not registered, his home location, and his socio-economic situation, I felt I had covered all bases.

Obviously, the most important point to me, was the brokers use of my survey. Before the trial started, the brokerage company contacted myself, and asked if I would work with them against the vessel owner. As soon as I replied in the negative, all relationships and communications shut down.

By now several months had passed and I had gathered together substantial evidence. The unfortunate thing, when a surveyor first encounters this situation, a lot of sleepless nights are the result, and slowly the business starts to suffer. I was completely obsessed with the case day and night, and still feel sorry for friends and family who had to deal with my thoughts.

Finally, I had all of my documentation secure and went to the insurance company office. They had a court judge assess my findings, sign and signature all of my paper work, and rubber stamp the documents as ready for use. I then asked the court register to not be present at the trial, as the travel distance was too great, but to be at a phone conference. This was accepted.

Two. Court.

So, for the first time in six months, I was calm and collected. I had all of the documentation required, had researched the case inside and out, and felt I could do no more preparation. Because I was not appearing in person, but via telephone, I could have worn my everyday clothes and gone to the conference room as I pleased. Instead, I wore my best clothes, had a haircut and shave, and used my best luggage to transfer my paperwork. I also was thirty minutes early, which gave myself ample time to prepare my notes for easy access.

The actual case was scheduled to last for two hours, but ended up taking five hours.

I presented my case, especially the fact that my intellectual property had been stolen, the time between my survey and the vessel purchase, and the ineptitude of the vessel owner.

The brokers also responded, stating that I had verbally allowed them to use my survey, that the vessel owner was incompetent, and that the amount of money being sued for was excessive.

The complainant also responded. He agreed of his incompetence, said he had been misled by the brokers, and that I was not a good surveyor.

However, the brokers had another surveyor inspect the vessel stating that the vessel was damaged due to the owner's incompetence, and that access to the damaged structure was only possible by cutting away exterior panels.

I again argued my case for intellectual property theft, and in the procedure learnt that the arbitrator had not read one single piece of evidence I had supplied! I also had the vessel owner admit that he was not my client!

Everyone went for a break after several hours, and on returning, the arbitrator ruled to some extent in the vessel owner's favour because, "this case and stress had effectively ended his relationship with his girlfriend", and "because of his lack of experience, the brokers and surveyor were obliged to help him in time of need".

Go figure.

However, she did agree that the vessel owner was also at fault due to his incompetence. There were two choices.

a), a payment of $10,000 to be paid to the vessel owner by myself and the brokers, even though we were in the right, or,

b), the case proceeds to a higher court with a sitting judge and jury.

Personally, I would have liked to have gone further, as I knew I was in the right. I quickly telephoned my insurance company during a recess and was advised to pay out. The costs, time, and stress, were just not worth it. They had my back, believed in me, but no matter how hard I prepared, would the judge and jury read my documentation?

That night I drove home, had a pleasant dinner with my family, and paid the account. This was the biggest sense of relief I had in many months. Done.

Three. Thoughts and Lessons.

This case was one of the most stressful times in my life. In my 25 years as a boatbuilder, I had never had any comebacks, clients not pay, or any negative feedback. At the time, although new to surveying, I never had a single, negative feedback. To have people lie, condescend, mock, abuse, and try to humiliate myself, certainly came as a shock. Maybe I was too trusting of people, but I came away have learnt plenty.

ONE. Easy to say now. Do Not Stress. Life goes on. After a total of nine months, countless sleepless nights, after many hours of preparation, I paid the equivalent of two surveys to the vessel owner. Take a breath, and start researching. Most important, are you in the wrong? Sometimes a quick pay-out will prevent a lot of wasted time.

TWO. Do not survey vessels for a living unless you are qualified to do so. Belong to a reputable institute such as the IIMS, who will help in your time of need. If a boatbuilder coming into the profession, make sure you are qualified and time served as well. Nothing can beat education and qualifications. You have to know what you are talking about.

THREE. Mentors. Talk to mentors and other surveyors. They have been through this as well. All advice is good advice. Stay away from negative people, and glean as much information as you can. I ended up getting a good reference from a fellow surveyor which was read during the dispute. Did it help? No harm was done. I also reached out to several good clients and brokers that I knew well. Not only did they offer legal help, but I knew they had my back.

FOUR. As a surveyor you should have insurance regardless. Make sure you pay your premiums on time, develop a relationship with your insurers, and promote clients their way. Because I paid out the vessel owner, I never needed a payment by my insurance company. In fact, the payment was less than my excess fees. They honoured my company, and did not charge a single cent for their services. This is despite the fact, they spent countless hours on my case.

FIVE. Preparation. I spent countless hours researching the vessel, make, model, builder, and previous faults. I knew everything about the brokers and vessel owner. Their jobs, home locations, previous employment, even what cars they drove. I researched previous cases and facts, and knew the whole case word for word. Admittedly, the attention to detail was possible too much, but I did not want to lose due to poor research and not being prepared.

SIX. The best move was participating by conference call. I arrived early, had food and drinks to hand, and was well rested. The best point though, was being able to spread all of the paper work on the large desk and having everything to hand. Several times I was at an advantage as I waited for other parties to wade through their documents. This gave time to relax and think.

SEVEN. Roll with it. After five hours of deliberation, I had to make the call as to pay out or not. I could have refused, hoping at the next proceedings, my documents would actually be looked at. I chose to pay. The amount of time invested, stress, and worry, I felt, was not justifiable. Even though you have the evidence, the argument, in your favour, you are not going to win against an arbitrator who favours someone who's relationship is in trouble. All said and done, emotions came in to play. Whilst the brokers swore and cursed, at the vessel owner and myself, I made sure I was always professional, polite, and courteous. I would have liked to have send many things, but bit my tongue.

Since the case, the brokers involved have tried to disrupt my business, talked behind my back, and have been vindictive in many ways. A lot, I learnt from other parties. The marine scene is small. As said before, "loose lips sink ships".

But, instead of a negative result, the whole case turned my business around. I improved my report methods, surveying techniques, and relationships with clients. My feelings in the New Zealand marine industry about intellectual property rights is well known and respected. The brokerage involved, prior to the case, supplied forty percent of my annual work. Now they supply two percent of my work per annum, yet my company surveys over two hundred vessels per year.

As a surveyor, I learnt to always back myself, be proficient, keep learning, and work with the upmost integrity. Marine surveying is possibly one of the better professions for someone with an interest in nautical matters. Being taken to court is a downside. However, approached properly, this actually became the positive turning point of my business.

THE GREAT DISCONNECT report

Key finding: shipowners pay an average of $3.1 million in ransoms due to cyber attacks

Recent research explores the maritime industry's relationship with cyber security risks and makes recommendations to shipowners and operators to improve how those risks are managed within their organisations.

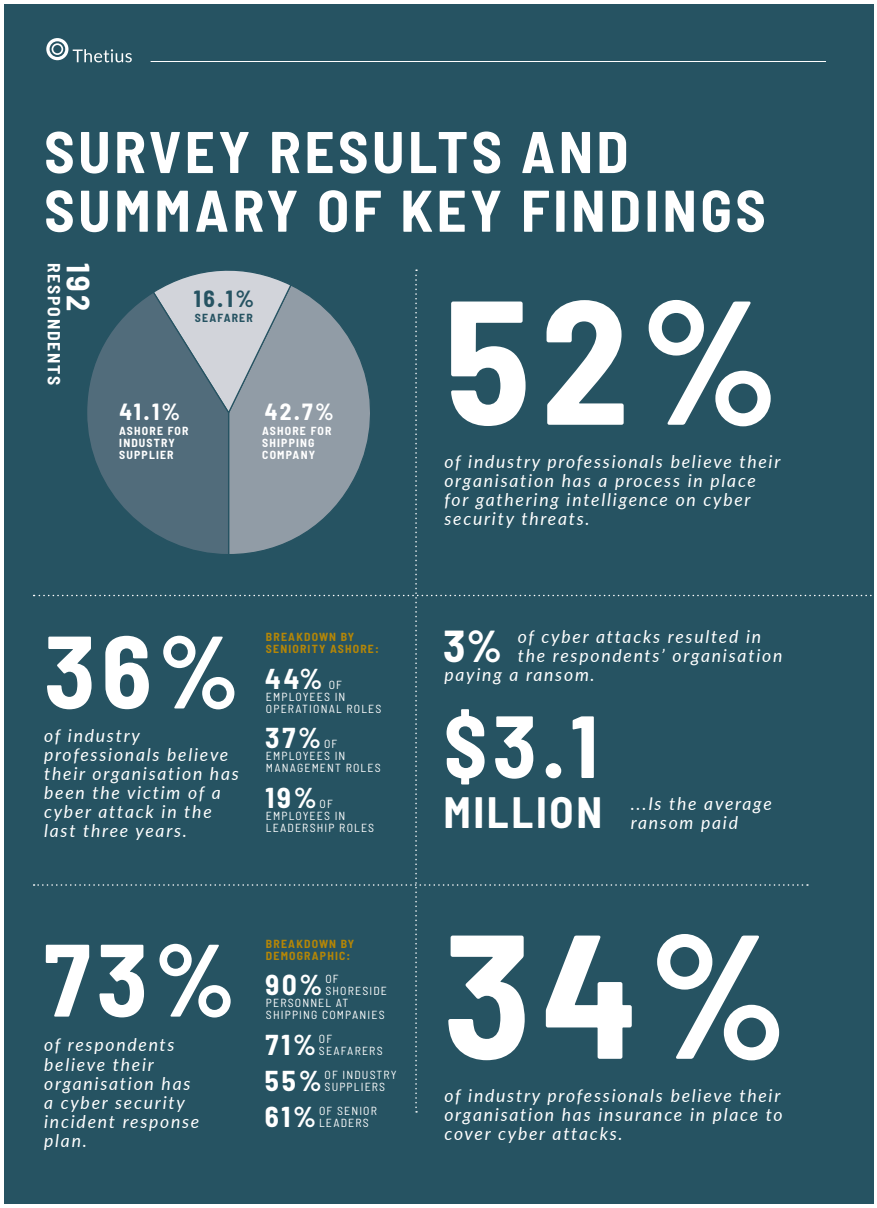


Image credit: CyberOwl, Thetius, HFW

The Great Disconnect report is a collaboration between produced by maritime cyber security company CyberOwl, maritime innovation agency Thetius and law firm HFW. After taking into account the views of more than 200 industry professionals through a combination of an industry survey and research interviews conducted with cyber security experts and stakeholders, the report attempts to shed light on the cyber security readiness of shipping.

However, the authors note that maritime has still a lot to do in order to be better protected from cyber-attacks, and for this reason it presented a 4-point plan for the industry to follow in order to enhance its cyber resilience.

Speaking at the launch of the Great Disconnect report, Chris Bhatt, Chief Commercial Officer, Aon explained that "shipping is not taking responsibility, as it passes it all to IT, saying it is their job." For this reason, he suggests for maritime to spend money to assess vulnerabilities and find potential risk points.

Agreeing with Mr. Bhatt, Ronald Spithout, an industry expert in maritime digitalisation, added that, "As of now shipping has taken half measures regarding cyber security, in order to be compliant. However, these measures are not enough to really protect itself."

According to the Great Disconnect report, within maritime organisations, there is a disconnect between the perceived and actual readiness to respond to an attack. Whether at sea or ashore, the more senior a member of staff is, the less likely they are to know if their organisation has suffered from a cyber-attack.

In fact, at sea, 26% of seafarers do not know what actions are required of them during a cyber security incident, and 32% do not conduct any regular cyber security drills

or training. Ashore, 38% of senior leaders either don't have a cyber security response plan or are unsure if their organisation has one.

Similar issues exist across the maritime supply chain, with a disconnect between the security standards ship operators are working to and the standards that the industry's suppliers work to says the report, adding that this problem is compounded by the fact that many operators have little to no control over the security of systems that are installed onboard, creating a disconnect between the exposure for the ship operator and their ability to control the risks.

According to the report, 44% of industry professionals reported that their organisation has been the subject of a cyber-attack in the last three years, with the key findings of the report noting that:

- 52% of industry professionals believe their organisation has a process in place for gathering intelligence on cyber security threats;
- 36% of industry professionals believe their organisation has been the victim of a cyber-attack in the last three years;
- 73% of respondents believe their organisation has a cyber security incident response plan;
- 3% of cyber-attacks resulted in the respondents' organisation paying a ransom - $3.1 million is the average ransom paid;
- 34% of industry professionals believe their organisation has insurance in place to cover cyber-attacks.

What is more, 83% of shoreside employees at shipping companies agree that they regularly conduct cyber security training and drills in their organisation, but only 67% of seafarers agree.

Additionally, when questioned if their organisation has appropriately addressed cyber risks in the fleet's safety management system, 87% of seafarers and shoreside employees at shipping companies agreed with this statement.

An average, cyber-attacks cost ship operators $182,000 per year. For 1 in 12 ship operators (8%), the average cost of cyber-attacks is $1.8 million per year.

Finally, another interesting finding is the fact that 54% of shipping companies spend less than $100K per year on cyber security management.

Image credit: CyberOwl, Thetius, HFW

The Great Disconnect report recommendations

As the maritime threat landscape is constantly evolving, and the industry needs to remain alert to and learn to adapt to the threat continually, the report suggests certain recommendations in order for shipping to be protected from cyber risks:

1. Set up dedicated cyber security directorate within fleet operations that covers both IT and OT security: It is critical that the directorate takes overall responsibility for security and is given the authority and resources to be able to gather data-driven evidence of the actual state of cyber security within the fleet assets and operations on which to base its decisions for improvement.
2. Implement comprehensive cyber incident training and drill programme: The programme should be based on practical scenarios that reflect the actual setup and security posture of the organisation, its people, processes and technology.
3. Develop minimum security standards for suppliers and partners: This can be designed as a supplier code of connection which sets a minimum cyber security standard for the supplier before they are permitted to connect to vessel systems or access to data from the vessels.
4. Conduct urgent review of insurance policies and seek specific legal guidance on ransom payments: All vessel operators should conduct an urgent review of insurance policies throughout their organisation to understand any risks that are not fully covered. Operators should also seek legal advice on ransom payments specific to their circumstances and incorporate the findings into their cyber security response plan.

Download the full report at **https://bit.ly/37Ur3JP**.

10 best practices for a successful superyacht refit

By Xavier Mercado, CEO and founder, ptw Shipyard

Refits are part and parcel of the life cycle of every superyacht. This is a project that every captain, owner and crew member will experience at some point in their superyacht story. Whether it's a repair, rehaul or renovation, refits are always major undertakings and can easily overrun on timing and costs if not managed correctly. Xavier Mercado Rabella, CEO of ptw Shipyard in Tarragona – Spain, gives us his top 10 expert tips for ensuring a successful superyacht refit.

Xavier considers a superyacht refit to be successful when it is completed on time, within an agreed budget and to an acceptable standard. He explains that Superyachts are continuously growing in complexity and intricacy, so best practices are vital to a successful conclusion. Throughout every stage of the superyacht refit process, from specification to delivery, a positive synergy between owner teams and the shipyard must be maintained to ensure that the work is carried out in an effective and efficient manner. From his extensive experience with superyacht refits, these are his top 10 best practices.

1 Preparation

Preparation is the first step in any successful refit and probably the most crucial step in the entire process. Careful preparation is key and can eliminate the vast majority of issues, delays and budget overruns in any superyacht refit. It is important to ensure that you stay focused on the goal and that everyone involved is on point and clear about what is expected. Draw up a worklist and consider the possibility to include other essential maintenance or works such as annual surveys or painting so as to maximise your shipyard visit.

Ensure that you begin your planning early and with more than enough time to realise the entire project. Know exactly what your vessel needs, be realistic and have a clear understanding of what is required to realize the project. Refits are never a "just wing it" situation and a full plan should be set in stone before your arrival at the shipyard. Owner, captain, crew and shipyard should all be on the same page and have a clear understanding of the end goal.

2 Organisation

Once you have ascertained what needs to be achieved in the refit you need to begin organising the entire project. Superyacht refits often involve a number of mini-projects and ensuring that each step is carefully planned and organised can ensure a smooth flow and best use of shipyard and contractors time thus reducing costs and maintaining deadlines.

While it's fair to say that refits can be notorious for churning up the unexpected, looking at the big picture goes a long way to reducing the possibility of unwanted surprises. Assess the yacht's needs from a realistic point of view because fully understanding the vessel is your best indicator to possible hiccups which may be encountered.

3 Budget

The refit budget is one of the major aspects of the project and likely to be the one area where everyone differs on what the final figure should be. An owner will of course want as low a figure as possible; the shipyard will be pushing the bottom-line upward while the captain and project manager will be somewhere in the middle trying to achieve the best outcome while ensuring all goals are achieved to a high standard.

However, only once the project's parameters are decided can the budget really be accessed because without a clear vision it's impossible to know what the scope of the project will be. Begin by drawing up a clear and concise brief of the superyacht refit project, including all the yachts' specs and data to allow an accurate evaluation of the project by technicians, designers, and engineers.

Preparation and planning are key components to staying within budget as last minute changes or surprises can quickly cause your budget to spiral into overspending. Having a realistic knowledge of lead times allows for parts to be sourced and delivered at the best possible price and eliminates dead time at the yard.

4 Expect the unexpected

That said, you should always allow for some delays in your plan as there are always unforeseen issues that can arise from any refit. Having penalties in place to minimize delays is of course acceptable practice but understanding what you're asking of the yard and being realistic will provide you with a more definitive timeline than just coming up with an arbitrary date.

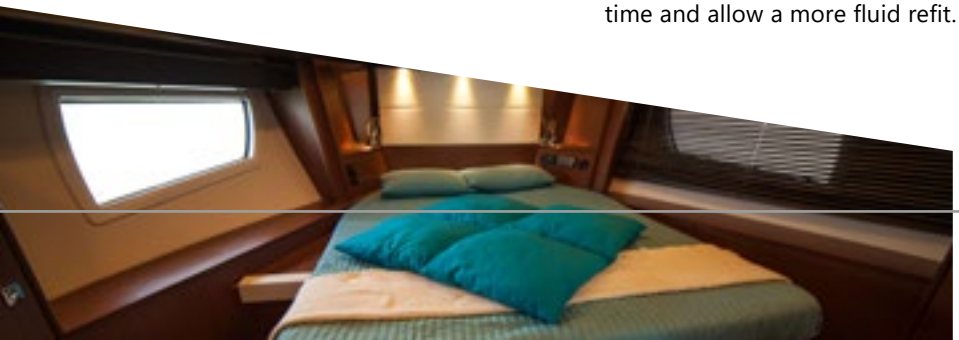
Be open-minded about the advice and recommendation from the shipyard on a particular product or service over another, as sometimes the least expensive may not be the best option and shipyards have experience from previous projects, which helps. Remember refits are their business, it's what they do best and their history and knowledge working with products will hold more proven insight. It's vital that the captain, owner and shipyard work together to prioritise the work list and devise a plan that anticipates potential unseen issues that may arise during the superyacht refit project. To save time and avoid delays it's a good idea to discuss and agree a backup plan that includes acceptable optional changes to save time and allow a more fluid refit.

5 Research

Putting time and effort into your shipyard research will pay dividends in the end. Refits are an expensive business and there is a vast array of yards offering services in the superyacht arena. Take the time to get to know who you're working with, experience and technical knowledge are fundamental for the preparation of a refit so do your research and ask for recommendations from other captains and owners. Be careful when choosing a yard just because it offers the cheapest quote, as this does not mean that you are getting the best value for money. Though it's vital to be meticulous about your budget you need to understand why a quote is so cheap and compare the quote with other yards to avoid any nasty surprises.

6 Location

When selecting a shipyard ensure that the location you choose for your refit is a logical one for your country and superyacht cruising ground needs. Different yards are better equipped to deal with different types of projects and vessel sizes, so reach out to your peers and the superyacht community to ask for recommendations to ensure that you find the best possible yard to take on your specific project. Getting to know the shipyard in advance of the refit will also improve a refit experience immeasurably, so pre-visits are ideal and can ensure the technical team can hit the ground running once the vessel arrives at the yard, saving time and ensuring a smooth refit process from the outset.



7 Collaboration

As well as thorough preparation, a successful refit also needs both owner crews, contractors and the yard to work coherently. Taking time to build strong relationships with the shipyard staff and acquainting yourself with the security provisions and emergency services at the yard will make all the difference and ensure a successful outcome.

8 Crew involvement

The owner crew can be a valuable missing link between the shipyard and owner to guarantee the best quality and project outcome. Having the crew involved in the refit keeps them informed with what the shipyard is doing but also they are the ones who know what areas of your superyacht needs most attention as they are the people who work on, live in, and maintain it. They can assist the yard in making decisions, improving the quality of the work as well as checking and reporting so as to keep the refit on point and within budget.

9 Project management

Choose a project manager who is well prepared, organised, unflappable and offers regular scheduled updates but also knows how to get the best out of all project members. The project manager needs to be able to schedule each aspect of the refit project and allow an appropriate amount of time for workers to effectively do all aspects of their job, so they are not working on top of one another. Everyone needs to know their exact role, what is expected of them and how they fit into the wider schedule so as to align all the works at the yard.

10 Communication

It must be said that communication is fundamental to every aspect of the superyacht refit process from planning to completion. Lack of communication and miscommunication are the main factors of a refit going off course. From the outset it is vital to give clear and precise instructions that don't leave any room for misinterpretation. Make sure you provide a proper and detailed description of all the works to be executed.

The first step should be a meeting of the project manager, captain and crew to draw up a thorough yacht refit worklist so there is a clear and concise idea of the scope of what the superyacht will undergo. This will also allow for more accurate budgeting and timings and it is imperative to have this from the outset of the process. This worklist will benefit everyone as it details exactly what work the client wants and guides the shipyard through what needs to be done allowing them time to plan any additional work and ensure the budget is not compromised. All job changes or additions to this worklist should be done in writing so that all amendments can be tracked and back checked to avoid slip ups and further delays.

Another option to help with communication during a large superyacht refit is to secure the service of an Owner Representative. This representative will act in your interest, taking a key role throughout the refit process and act on your behalf in all discussions and decisions with the shipyard, surveyor, class external subcontractors, etc saving you time and money. The Owner Representative will also handle all discussions with Flag convenience and provide you with tax savings through the TPA inward process.

Taking all of the above factors into account will ensure that a superyacht is back on the water on time, with the superyacht refit completed within budget and will help to engender a solid and lasting relationship between owner teams and the shipyard.

Superyacht refits are no longer seen as just necessary servicing to ensure the safe operation of the vessel. Nowadays they are viewed as legitimate contenders to new builds. However, even the most straightforward refit projects should never be undertaken lightly. Every step needs to be meticulously planned and thoroughly managed throughout. Definite specifications and planning, accurate yard assessments, sourcing knowledgeable and experienced management teams are all absolutely essential to ensure that owners get the refit they desire from the project conception.

About ptw - Shipyard

ptw Shipyard is a modern, full-service shipyard in the ancient port of Tarragona, one an hour from Barcelona. The shipyard's CEO and founder is Xavier Mercado.

Over the last three years, there has been significant investment in staff and facilities to create a centre of excellence for all aspects of superyacht repair and maintenance – a one-stop shop to cover all superyacht needs from upholstery and joinery to hydraulics and specialist electronics.

With a travel lift able to take vessels of up to 300 tonnes, ptw is able to accommodate yachts up to 45m in length on their extensive hard standing, and also has the capacity to work on larger yachts of up to 120m in the client's berth.

ptw has built up their own specialist in-house teams dedicated to every aspect of yacht repair and maintenance. This includes carpentry and interiors, engineering and mechanics, yacht paint, electrics and systems.

By keeping these services in-house, ptw believes it is able to ensure they provide a better overall service to their customers. ptw prides itself on building strong relationships with crews and many loyal yachts return year after year.

Keep it Clean

By Chad Fuhrmann

With the maritime industry's growing awareness of its environmental responsibilities, water treatment companies are focused on improving the cleanliness of wastewater discharge and the efficiency of various treatment options.

It's a fact so commonly known that it's almost a cliché – that the seas occupy over two-thirds of the earth's surface. As the ubiquitous medium across which vessels pursue their commercial objectives, the abundance of seawater makes it particularly easy to overlook as a vital resource. But its functionality on board ships is so pervasive that salt water has become critical for daily activities.

As Samuel Taylor Coleridge astutely observed, sailors of yore suffered no shortage of water, just the potable type. And while rum was – and arguably (maybe) still is – a fantastic means of boosting morale, it did little to support longevity and health. It wasn't until the 18th century that inventors had created distillation plants that converted brine into distilled water, a technology that was universal until the late 20th century when reverse-osmosis systems came into wide use.

What both approaches have in common is the salt water media, further demonstrating its functionality in multiple shipboard applications. Likewise, with the evolution of propulsion methods and pumping equipment and overall improvements in design and materials, seawater replaced more permanent ballasting methods and became the vehicle for vastly improved hygiene and sanitation on board.

WASTEWATER DISCHARGES

What's taken on board must eventually be discharged.

Improved conditions and convenience onboard ocean-going ships did not come without its drawbacks. With the increasing environmental awareness of the late 20th century, "The maritime industry was increasingly held responsible for the emission of pollutants in the

environment," explains Benjamin Jeuthe, Head of Marketing for Germany's Hamann AG, a leading manufacturer of sewage treatment plants for the marine industry.

Significant penalties accompanied severe restrictions on what could be discharged from vessels and where. The most important of these regulations is, of course, the International Convention for the Prevention of Pollution from Ships (a.k.a., MARPOL). Although originating from a series of tanker accidents, MARPOL focuses on several specific environmental threats.

Sewage was perhaps the most egregious contaminant of ports and waterways, and ships were an obvious source. As the maritime industry grew in size along with ever-larger vessels, the more obvious this pollution became. Hamann, as a pioneer in the industry, realized that addressing this issue was what Jeuthe calls "an obligation of the maritime industry towards society as a whole." Since 1972, the company has supplied the industry with sewage-specific treatment equipment that not only complies with applicable regulations but, above all, respects the marine environment.

Wastewater treatment systems have been in marine applications for several decades now and are periodically subject to changing and updated regulatory requirements. As regulatory efforts encompass more types of discharge from vessels, companies providing treatment services and equipment continue to deliver innovative solutions.

Norwegian-based Scanship, a subsidiary of VOW ASA, started with comprehensive advanced wastewater purification (AWP) systems in the early 2000s. Since then, it's set new standards of efficiency, reducing up to 90 percent of wastewater contaminants – among the very few suppliers achieving such results, according to Bjorn Bache, VOW's Chief Commercial Officer.

BALLAST WATER DISCHARGES

A more recent development was the recognition that vessels transiting long distances inevitably introduced foreign organisms through their ballast water discharges, wreaking havoc on ecosystems. As a result, international regulatory bodies have focused more recent efforts on limiting ballast water exchange in order to mitigate the threat of invasive species.

Current guidelines call for vessels to undertake ballasting and deballasting at least 200 nautical miles from port and in water depths of at least 200 meters. While vessels don't have to deviate from established routes in order to specifically meet these criteria, the guidelines still impact transit times and stability concerns and present operational restrictions.

These concerns resulted in the development of ballast water management/treatment systems (BWMS/BWTS), providing a mechanism by which biological contaminants in ballast water can be eliminated and creating options for vessels regardless of location.

Among the systems Damen Green Solutions offers is a modular, plug-and-play BWTS that's the result of a partnership with Erma First. "Our client needed a temporary ballast water treatment solution," explains Damen Sales Manager Rutger van Dam. The oneTANK system uses a chemical solution that is neutralized after use and is the world's smallest BWTS system.

"For owners working with smaller vessels that aren't dependent on frequent ballast operations," he adds, "oneTANK is a great solution, portable enough to be housed in a twenty-foot container with straightforward installation and removal."

Another unique, but non-chemical approach to BWTS is Purestream™ from Atlantium Technologies, a global leader in water treatment. "The introduction of UV treatment was a significant milestone for the industry," states Atlantium CTO Ytzhak Rozenberg. "We took it one step further with the introduction of our Hydro-Optic™ UV technology."

Ultraviolet (UV) light has long been used in potable water applications. By applying it during ballasting, Purestream upends the ballasting/deballasting process, adding flexibility to when and where such activities can take place and making the entire process more efficient.

PARADIGM SHIFT

Equipment and service providers see a paradigm shift among their clients and within the industry itself. According to VOW's Bache, stricter regulation is forcing equipment manufacturers to not only comply with the rules but to anticipate what comes next. The focus is not strictly on meeting the letter of the law but also on protecting the ocean and environment, which requires disruptive thinking.

The once cavalier approach to seawater usage is undergoing a shift by necessity, and not just because of regulatory restrictions. Given increased public scrutiny, customers are demanding higher performance and quality from their vendors. "We put a lot of effort into ensuring that our customers can meet the required standards with our systems in day-to-day operation," states Hamann's Jeuthe. "That is often a completely different matter than obtaining type certification from the authorities."

Customers see the impact the maritime industry is having on the environment. "Pollution to our oceans is being better controlled and awareness is increased among both passengers and operators," says Bache, in a nod to the increased attention toward environmental, social and governance (ESG) issues. As such, environmental stewardship not only assures compliance with applicable laws but becomes critical in developing a positive reputation and drawing in new customers.

RISING DIGITAL TIDE

The entire maritime industry is fixated on the evolution toward carbon-neutral operation and improving overall efficiency. Compared to net-zero campaigns shoreside, wastewater treatment technology is evolving along the very same path but with a focus both below the waterline and above the stacks. The ultimate goal is not only zero emissions but zero discharges.

With this objective in mind, VOW is pursuing technologies that replace traditional incinerators. Using proprietary hydrolysis and pyrolysis processes, its Scanship subsidiary is developing a low-carbon method for handling the sludge generated from wastewater, food waste and garbage disposal. Recycling and recirculating allow for extracted water to be further treated in the connected subsystems while the resultant dry biomass can be converted to green energy and biochar for a myriad of applications both onboard and shoreside.

Hamann's Jeuthe points to the rising digital tide as a further driver of wastewater treatment technology: "More efficiency will go hand-in-hand with more complex process engineering as well as increased sensor technology, automation, connectivity and subsystem integration." He expresses confidence in Hamann's readiness for a new future, "We are already building up human resources, know-how and production capabilities to drive this increased digitalization."

For its part, Atlantium's Rozenberg points to his company's history of successful innovation, global network of service providers and thousands of existing installations: "We're focused on continuing to deliver optimal performance and ROI and are always looking forward to meeting the unique demands of the next challenge."

WISER STEWARDSHIP

The earth's massive volume of seawater is increasingly viewed as an irreplaceable ecosystem, and the maritime industry – recognizing its essential responsibility – is working diligently to shed its negative environmental characterization, whether deserved or not.

Alongside advances in fuels and energy storage, wastewater treatment systems play a critical role in reconfirming the industry's perspective and reputation as the most efficient means of transport per ton of cargo. Using current and developing water treatment technologies, it will have a significant and beneficial impact on the environment as well as on other industries.

Chad Fuhrmann is the founder and owner of REvolution Consulting X Engineering.

This article first appeared on the Maritime Executive website and is published here with their permission: https://www.maritime-executive.com

Smells like Sustainability: harnessing ammonia as ship fuel

Article by Hendrik Brinks, Principal Researcher and Christos Chryssakis, Business Development

Hendrik Brinks *Christos Chryssakis*

Ammonia is one of the most promising future fuels in the maritime world but introducing it to the fuel mix is far from straightforward. What are some of the biggest challenges that need to be overcome? And what are DNV and other companies doing to tackle them?

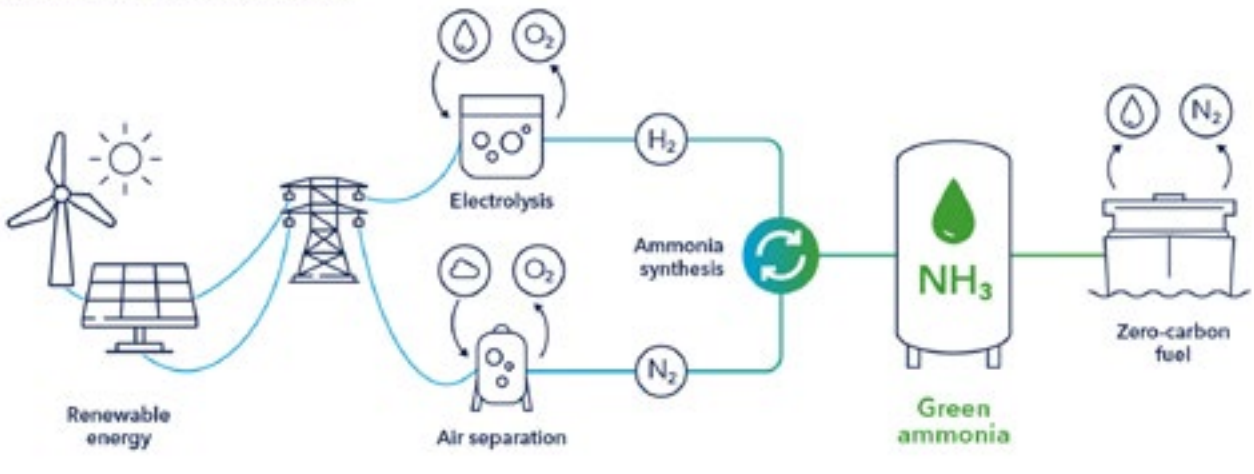
It smells pungent and if a mere 0.5 per cent of the air you breath consists of it, it will kill you. And yet ammonia is being heralded as one of the best zero-carbon fuel options for deep-sea shipping in particular. In this article we will highlight some of the central questions that need to be answered before ammonia-fuelled ships can hit the water, including the supply, sustainability, engine technology and the necessary safety considerations.

Supply: Shipping will have to compete with other industries

Today, around 80 per cent of the global ammonia supply is used as fertilizer. Where will the ammonia for shipping come from? This is an issue that remains to be resolved, and production would have to ramp up significantly to meet the future demands of both shipping and global agriculture.

"In the context of decarbonization it's important to understand that when we talk about ammonia's great potential for shipping, we mean green ammonia. The fuel's sustainability credentials vary depending on how it is sourced," explains Hendrik Brinks, Principal Researcher for Zero Carbon Fuels at DNV.

Green ammonia - production and use



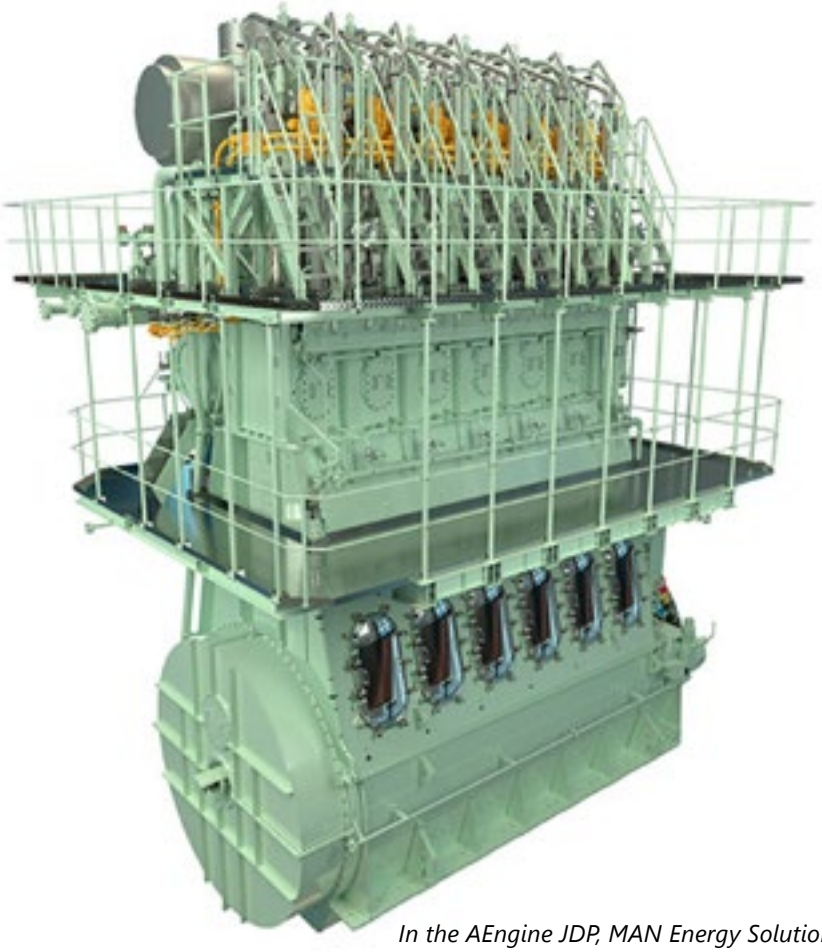
Fuel suppliers working on framework for green ammonia production

The fuel can be categorized as "brown" (produced from fossil sources), "blue" (produced from fossil sources with carbon capture) or "green" (produced from renewably sourced hydrogen in a process called electrolysis). "While the production of blue ammonia results in 85 per cent less CO2 emissions than brown variants, only green ammonia is a zero-carbon fuel," he adds.

The crux is: green ammonia is currently not produced anywhere. This is expected to change over the coming decade. "Several fuel suppliers are already doing a lot of work on the necessary framework for producing green ammonia, including certification, technology and costs," says Brinks.

Engine technology: First ammonia-fuelled engine by 2024

While the supply of green ammonia will take time, the development of engine technology is progressing fast. In the AEngine joint development project (JDP), MAN Energy Solutions, Eltronic FuelTech, the Technical University of Denmark and DNV are working together on developing the first dual-fuel ammonia-powered combustion engines. With combustion testing scheduled for this spring, MAN's two-stroke model is expected to go to market in 2024.



In the AEngine JDP, MAN Energy Solutions, Eltronic FuelTech, the Technical University of Denmark and DNV are working on the development of the MAN ME-LGIa ammonia-burning engine.

"As an engine designer we are agnostic when it comes to the different fuel types," says Peter H. Kirkeby, Principal Specialist, Dual-Fuel Engines at MAN Energy Solutions. "Ammonia has generated a lot of interest, especially from the deep-sea ship segments, and it has a lot of potential – but developing an engine that is powered by ammonia has been a challenge. One of the biggest hurdles is how to burn ammonia efficiently to extract the maximum amount of power while making sure the engine is still a compact design."

Combustion: Ammonia burns more slowly than other fuels

Unlike diesel oil, ammonia has a very slow flame propagation, which means it burns much more slowly. Its autoignition temperature is also a lot higher, at around 630°C – diesel oil burns at 210°C. This means that sustaining combustion once it gets started is also more difficult with ammonia than with other fuels.

"And, of course, you also need to ensure that the engine allows for the usual performance peaks that come with acceleration, etc. We are planning for a final fuel mix that would contain around 95 per cent ammonia and 5 per cent of a pilot fuel such as marine gas oil. In the future this could even be biofuel," says Kirkeby.

Harmful emissions could be mitigated by combustion process

Mitigating harmful emissions is another significant challenge, even with green ammonia. While carbon-free, ammonia contains a lot of nitrogen, and burning it is likely to result in both nitrogen oxide (NOX) and nitrous oxide emissions. Kirkeby explains that NOX emissions weren't so much of an issue for the engine manufacturer. "They are well-regulated and the abatement technology for NOX – selective catalytic reaction – is already used on many ships and should also be suitable for ammonia. Nitrous oxide emissions are the greater challenge. N2O, or laughing gas, is a very aggressive greenhouse gas that is 283 times stronger than CO2. Our approach is to use the combustion process itself to mitigate these emissions."

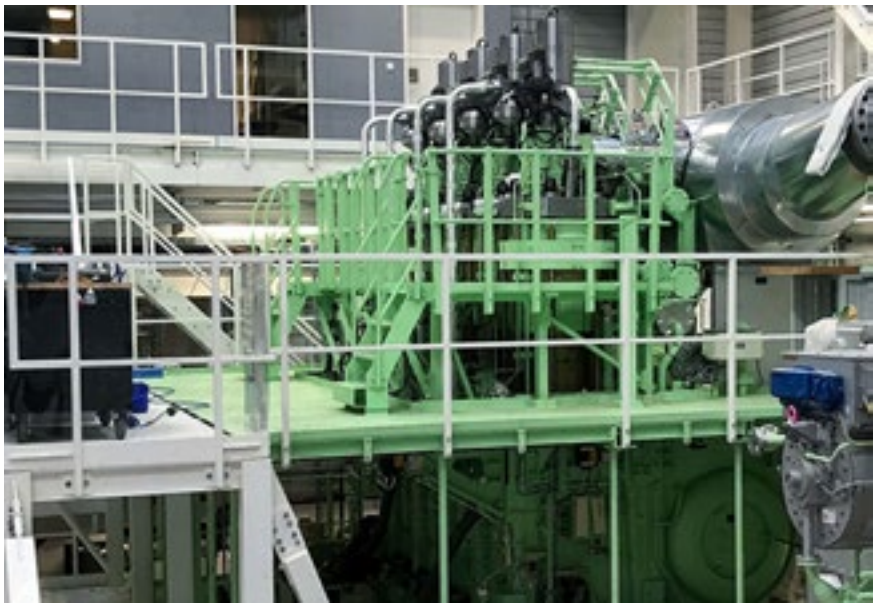
We have to make it a very simple system that can also handle ammonia – meaning that it is modular enough to allow for easy troubleshooting and for crews to have straightforward maintenance procedures even though the fuel is a toxic substance.

Peter H. Kirkeby is Principal Specialist, Dual-Fuel Engines at MAN Energy Solutions. He says, "Through combustion tuning, we can either stay clear of that window or we can go into

the temperature and pressure range where it's decomposed again. In the diesel cycle, which is the one we use, you have very good control over this."

This is how it could be done: burning ammonia generates nitrous oxide emissions inside a certain pressure and temperature window during the combustion process.

The final challenge has been to adapt the well-established two-stroke engine system to ammonia without changing the fundamentally good things about it. "We have to make it a very simple system that can also handle ammonia – meaning that it is modular enough to allow for easy troubleshooting and for crews to have straightforward maintenance procedures even though the fuel is a toxic substance."



The MAN Energy Solutions test bed plays a crucial role in the development of ammonia combustion technology, which, while carbon-free, must ensure safety and avoid corrosion.

Ammonia tankers ideal first users

Looking ahead, the first engines will likely be installed on ammonia tankers. Currently there are about 200 gas tankers that can take ammonia as cargo and typically 40 of them are deployed with ammonia cargo at any point in time. These kinds of vessels could be ideal candidates as they already have the fuel as cargo and crews with experience in handling ammonia. Other segments such as bulk carriers and containerships could follow suit. DNV expects the first ammonia-fuelled vessels to hit the water in the second half of this decade, but large-scale uptake of this technology is not expected until the early 2030s.

The safety of ammonia systems and operational procedures is at the top of the agenda in DNV's work on this fuel. In the AEngine joint development project, DNV is handling the safety aspects and will be performing risk assessments with regard to hazard identification (HAZID), hazard and operability (HAZOP) and failure mode and effect analysis (FMEA).

Safety: Mitigating ammonia toxicity

DNV class rules for ammonia as ship fuel were published in July 2021, paving the way for technology development. They include provisions for storing, handling and bunkering ammonia on board. Some of the aspects to consider here include the use of toxicity zones and venting masts in specific locations.

The engine technology itself would be fitted with double wall piping, so that the pipe containing ammonia is surrounded by a ventilated space, making it easy to detect leaks. "This is a common standard for all alternative fuels," explains Christos Chryssakis, Business Development Manager and Alternative Fuels Expert at DNV. Additional solutions such as double block and bleed valves ensure that systems can be separated for maintenance.

"Our class rules for ammonia are based on experience with ammonia as a refrigerant and as cargo. We are constantly updating these rules, as ongoing research offers further insights into the necessary margins to ensure that systems are not only safe but also practical in their handling," says Chryssakis. "Carrying out risk assessments on the first designs for ammonia-fuelled vessels will be an important next step."

Looking beyond operations on board ammonia-fuelled vessels, DNV recently completed studies on ammonia bunkering operations in the Ports of Amsterdam and Oslo, examining the potential ramifications of a large ammonia leak in ports. "We looked at worst-case scenarios, including the implications of leaks in the port-side supply infrastructure and on a bunker vessel. The Port of Oslo lies in a residential area – so the stakes are particularly high here," explains Chryssakis.

"We defined external safety zones and risk-reduction measures, looking at the radius which would be affected by an ammonia leak. For the Port of Oslo, we found that in principle using a bunkering vessel with refrigerated ammonia would come with an acceptable risk level, because the residential area in Oslo would not be affected by a leak. But there is still work to be done to ensure safe handling on board."

"There are many parts to this puzzle and it's essential that we have them all in place for ammonia to safely enter the marine fuel market," says Hendrik Brinks. "We will need rigorous safety procedures, the inclusion of ammonia in international regulations as well as engine designs that control harmful emissions and allow for straightforward maintenance protocols. And of course, highly skilled crews that are trained to handle ammonia and green ammonia in sufficient supply. Only then can ammonia reach its full potential as one of the most promising green fuels

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The Challenging Project that is Dry Docking

Image for illustration purposes only

by Capt. Yiannis Kapageridis, QA Superintendent, TMS Tankers.

This article first appeared on the SAFETY4SEA website and is republished here with our thanks.

Every project and therefore dry dock will have a distinct beginning and end. The life cycle of the project includes four stages: initiation, planning, execution and closure. These series of four stages consists of the entire duration of a project. In order to clarify the confusion between the terms "project" and "project management" we could simply think that the "project" refers to a temporary endeavour with a specific goal.

"Project Management" involves effectively planning the process of achieving a specific goal within given constraints, and then making sure that all necessary actions are carried out. Essentially, Project management and Dry dock Management is the application (or use) of knowledge, skills, tools and techniques to meet project requirements.

The Project Management Triangle

Success in project and in this case dry dock management is defined by the "Project Management Triangle" model. This triangle traditionally contained the three primary and competing constraints of schedule, cost and quality that a project manager has to effectively balance in terms of scope in order to deliver on the project objectives.

In view of the project triangle constraints, each dry dock project should be:

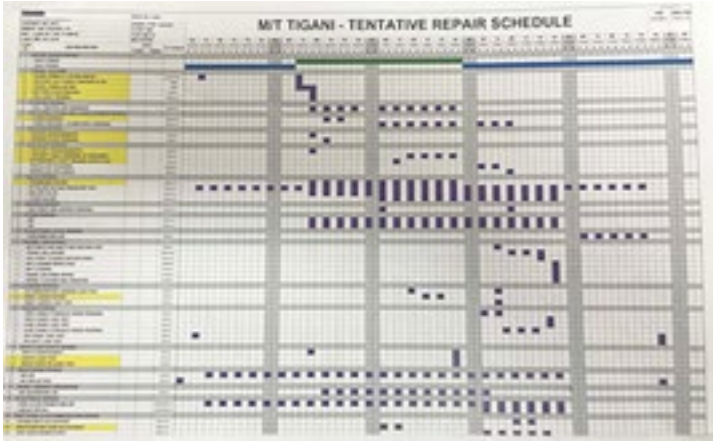
- On budget: The cost of the dry dock should be within the frame of a budget taking into account any money reserves and margins for unforeseen issues.
- On schedule: Proper planning such as no delays and minimize off hire time.
- Within Scope (quality requirements): the work to be done. To create a Work Breakdown Structure (WBS) to verify and control scope within specific quality criteria.

Developing an initial schedule

One of the toughest parts of a ship repair project manager's job is to coordinate all available resources and ensure they are used optimally and effectively.

There are three primary tools that can be utilized in order to develop the project's schedule and budget:

- Gantt chart
- Network diagram
- Work breakdown structure (WBS)



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We will focus on the Gantt chart. This is actually a method of graphically representing the project (dry dock) schedule as a timeline of summary activities, work packages and schedule activities so that the timing of each activity can be clearly seen.

One of the benefits of a Gantt chart is that it allows the project manager to see at a glance how much schedule flexibility an activity has in order to make adjustments to the schedule to achieve an optimal project schedule.

Work Breakdown Structure (WBS)

As part of the dry dock managing team, it is vital that you are aware of what the WBS involves. The key purpose of the WBS as a project management tool is to enable the supervisor manager and the team to organize, plan and define the project's total scope of work. In essence is the hierarchical decomposition of the work to be executed by the shipyard team.

The WBS can be represented in two main formats:
- List format - Graphical format

Image used for illustrative purposes only

The list format can accommodate a lot more information and a sample can be found in figure below.

Creating a WBS is a structured but flexible process where work and deliverables are arranged into logical clusters. These clusters can then be broken down further to form smaller discrete components. The smallest work component or lowest level deliverable of any branch of a WBS is called a "work package". A deliverable – oriented WBS provides many benefits to the project, including the following:

- Better communication to project sponsors, stakeholders and team members
- More accurate estimation of tasks, risks, timeline and costs
- Increased confidence that 100% of the work is identified and included
- A foundation for the control process within the project

Project compression strategies

It's often the case that one or more of the drydock constraints (scope, quality, schedule, budget, resources and risks) will make it difficult or even impossible for a project to meet its planned objectives. Where this occurs, the project will need to be balance. Balancing the drydock project means to adjust the plan, for example the scheduling of activities or allocation of resources, or even its main objectives (time, cost, quality and scope) to achieve organizational objectives. In other words, a project parameter such as budget or schedule duration cannot be changed without affecting other parts of the project.

In this article, we will focus on two particular methods of balancing a project:
- Fast Tracking: Is a technique that compresses the project schedule by allowing activities to be performed in parallel for some portion of the time rather than completing activities in sequence that are not dependent on one another.
- Crashing: is a strategy that compresses the project schedule by adding resources to a project.

Where there is a projected shortfall in time, funding, or resources available, the situation should be assessed realistically in order to allow for proper remediation where possible.

The essential project team
A big factor in successful project and therefore drydock management lies in selecting the right project team members for the job, understanding the interpersonal qualities of different team members, building positive team sentiment and assigning responsibilities effectively.

How to create a positive team environment

There are four general areas in which a project manager can ensure that the work environment is positive:
- Ground rules: Rules should be communicated from the beginning to all team members and these should be upheld. Ground rules serve to establish specific values and contribute to the way team members interact.
- Team identity and significance: Individual should be unified by the project goal and understand how they contribute to that goal both individually and as a team.
- Clear listening: Team members need to be able to communicate and listen effectively to successfully solve problems.
- Effective meetings: Meetings should be well organized and should enhance collaboration to achieve high levels of productivity. There should be a clear purpose and agenda for each meeting, which is published ahead of time for more formal meetings.

Once team members are working in an environment that is positive and where they feel they are respected and valued, they will likely form relationships with fellow team members and take personal ownership of their work and of the project's goal.

10 awesome ships that were never built

By Christopher McFadden

IIMS is grateful to Christopher who researched and authored this fascinating article, which was originally published on the Interesting Engineering website https://interestingengineering.com. It seemed a great way to celebrate the 100th edition of The Report Magazine by publishing it.

Christopher graduated from Cardiff University in 2004 with a master's degree in geology. Since then, he has worked exclusively within the Built Environment, Occupational Health and Safety and Environmental Consultancy industries. He is a qualified and accredited Energy Consultant, Green Deal Assessor and Practitioner member of IEMA.

Any fan of the history of the high seas will be more than familiar with some of the most famous ships in history. Whether it be the RMS Titanic, HMS Victory, USS Enterprise, so on, so forth.

But, for every massively successful and famous ship launched, there are equal numbers of less famous, or even completely forgotten ships throughout history. This is especially the case for proposed ships that either never left the drawing board or were aborted in dry dock.

Progress in any technological field is as much a matter of trial and error as it is scientific and technological innovation. Sometimes proposals for new things, like ships, are a roaring success, other times a complete and absolute failure.

Here are some prime examples of the latter: Some of these proposed, but aborted designs.

1. Germany's WW2 carrier that never was: The Graf Zeppelin

Photo source: pilot_micha/Flickr

One of the most infamous massive ships that were never actually completed was the Graf Zeppelin. Partially completed by the outbreak of WW2, the ship would suffer from a combination of poor planning and resource management.

Originally planned to be the first of two aircraft carriers, the Graf Zeppelin would have been able to carry around 42 aircraft at any one time. Her keel was laid down at the end of December 1936 at the Deutsche Werke shipyard in Kiel.

Named after the German general Graf (Count) Ferdinand von Zeppelin (who also invented the airship of the same name), the ship was launched in 1938 and was around 85% complete at the start of WW2.

She was 861 feet (262.5m) long, had a beam of 118.8 feet (36.2m), and a maximum draft of 27.9 feet (27.9m). If ever made operational, she would have had a maximum displacement of 33,500 long tons. Long tons are British imperial tons or around 1.12 US "short" tons.

At launch, she was powered by four Brown, Boveri & Cie geared turbines with sixteen oil-fired, ultra-high-pressure LaMont boilers. This gave her around 200,00 shaft horsepower (149,140.0 kW) and a top speed of 33.8 knots (62.6 km/h; 38.9 mph).

She was originally planned to carry a complement of navalized Junkers Ju 87 "Stuka" dive bombers, Messerschmitt Bf 109 fighters, and Fieseler Fi 167 torpedo bombers. Though, some plans had been made to make an entirely new aircraft for her.

While her main offensive and defensive power would have been her aircraft, she also came with some serious onboard firepower too from her 8 number 15cm SK C/28 medium naval guns. These guns served as the secondary armament on the German Navy's Bismark-class and Scharnhorst-class battleships.

Her hull was also bristling with various anti-aircraft guns of various calibers. If she had ever been completed, she would have been very capable of defending herself at sea with or without air cover.

Ultimately, she was never completed. She remained moored in the Baltic for the entirety of the war spending some time as a highly expensive lumber store. Her massive naval guns were requisitioned for coastal batteries, and, at war's end, was scuttled to prevent her capture by Soviet Forces. Incredibly, her hull was actually raised by the Soviets in 1946, before being sent to the bottom of the sea after being used for target practice.

2. HMS Lion would have been a very formidable battleship

Photo source: Historium

HMS Lion was to be the first of a class of six battleships for the Royal Navy that were originally designed in the late 1930s. A large, beefier version of the highly successful King George V-class of battleships, she (and the rest of her class) would have been some of the most powerful warships of the day if ever completed.

The ships were designed to be the frontline of the Royal Navy's next war on the sea, but that war came a little too early for these ships to ever see the light of day. The first of the so-called "post treaty" battleships for the Royal Navy, these ships were to bring the most advanced technologies of the day into the fleet.

Each vessel was designed to be armed with no less than 9 number 16 inch (406mm) main guns, located over three turrets (2 fore and 1 aft). HMS Lion and another of her class had their keels laid down in September of 1939, with a third on order by the outbreak of the Second World War.

Each of the vessels would have been powered by 8 Admiralty 3-drum boilers capable of putting out 130,000 shaft horsepower (97,000 kW). This would have been enough power to provide each ship with a top speed of 30 knots, or 56 kph.

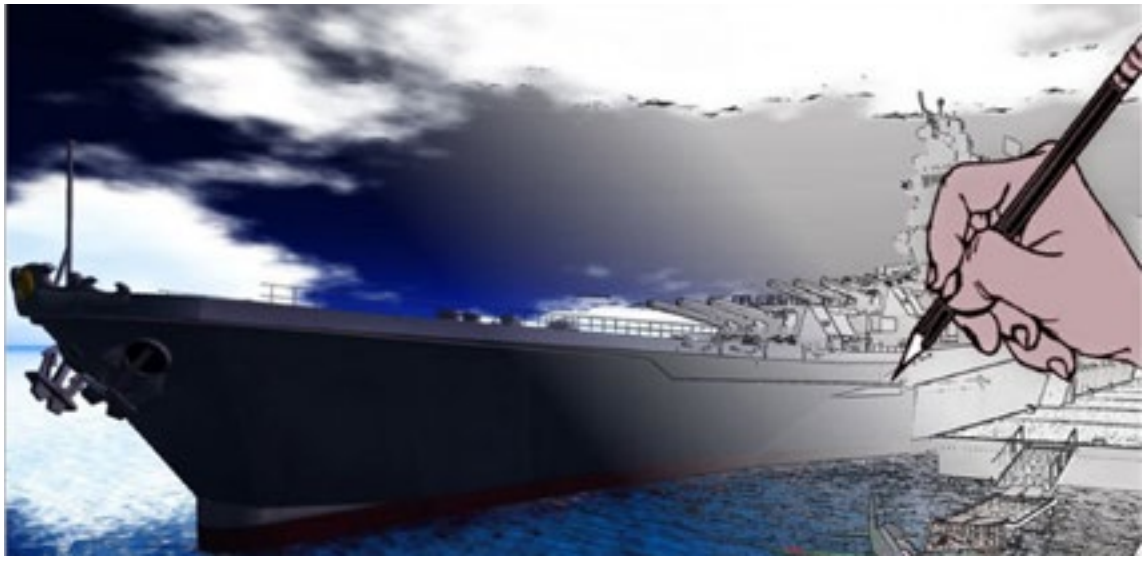
The ships were designed to be 780 feet (237.7) meters long, with a beam of 108 feet (32.9 m), and a draught of 34 feet 10.4 m). Such ships would also be heavily armored, with their 14.7 inches (373m) thick belt armor, 6 inches (152mm) of deck armor, and 15 inches (381 mm) of thick turret front armor.

Their construction was soon suspended and some modification was made to their design during the early years of the war. By 1942, however, the two existing, partially-completed ships were scrapped.

Of the other ships of the class, none were laid down, but plans were presented to modify one of the existing hulls to a hybrid battleship-come-aircraft carrier with two 16 inches (406mm) turrets and a flight deck. Work on this design began in 1944 but was soon abandoned after the conclusion of the war.

3. The A-150: like the mighty Yamato only on steroids

Photo source: Seb/Flickr



The Japanese Yamato-class of battleships were some of the most powerful warships ever built, but even they would have paled in comparison to the A-150s. Based on the Yamato and her class, the A-150, called the "Super Yamato" by some, would have been the most heavily armed and armored warships ever built, if completed.

In keeping with the Imperial Japanese doctrine to ensure their main warships were leagues ahead of their enemy's in firepower, these ships would have been armed with six 20.1 inches (510 mm) guns. To put that into perspective, the largest guns fielded on Allied battleships of the day were 16 inches (406 mm) with the Yamato herself "only" being armed with 18-inch (457 mm) guns. These were, at the time, the largest naval guns ever fielded on a warship. The proposed 20.1 inches (510 mm) guns of the "Super Yamato" ships would have dwarfed even these.

Much like the Yamato-class, the superstructure of the ships would also be bristling with "many" 3.9 inches (100 mm) caliber guns and a nest of anti-aircraft weapons. Their displacement would likely have been very similar to the Yamato-class, though likely larger given the vessels' main armament and requirement to also resist similar caliber weapons hitting the vessel.

The proposed armor belt of the ship was far beyond the steel mill capability of Japan at the time and would, therefore, require "double strakes of armor plates" over their most vital parts. While less effective than purpose-built single plates, this thickness of armor would have made them very formidable opponents in ship-to-ship combat.

Beyond some scant evidence of their plans, little else is known of these vessel designs beyond the fact that they would probably have displaced 70,000 long tons and had belt armor about 18 inches (457 mm) thick. From what can be garnered, designs for the ships began after the completion of the Yamato and Musashi in the late-1930s with work more or less complete by 1941.

However, at this time the Japanese navy had shifted focus to building aircraft carriers and other smaller capital ships in preparation for the upcoming Pacific conflict.

For this reason, no A-150s were ever laid down, and most of the details of the ships were apparently destroyed before the war's end. If these ships had ever been built, the outcome of the Pacific Theatre may very well have gone very differently.

However, considering how disappointing the Yamato and her sister ship were during the conflict, it probably quite likely that these "Super Yamatos" would have suffered much the same fate as their "smaller" predecessors.

4. The Whale Ship never left the drawing board

Photo source: Thomas Angermann/Flickr

Developed, at least in concept, by a Broadway musical set designer, the Whale Ship is another mighty ship that never came to be. However, interestingly, while the ship remained something of a pipe dream for its designers, it did have an impact on ship design.

Conceived by industrial designer Norman Bel Geddes, through his private design studio, the ship formed part of the design studios' more ambitious designs including a bubble-shaped car, a nine-deck amphibious plane, and a vision for a future city called "Futurama". Before you ask the question, yes this is what inspired the animated sitcom.

The studio's concept for a new ultra-modern ocean liner, the Whale Ship, was first unveiled in the early-1930s, and it was unlike anything ever seen before.

Resembling a cross between a more modern submarine and a torpedo, and incorporated other design features that were way ahead of their time. The vessel's size, for example, was far beyond anything seen in an ocean liner at the time, and her design was completely revolutionary.

According to the concept art, she would have been 1800 feet (549m) long and weighed 82,000 tonnes. The vessel would have enough room to carry 2,000 passengers and be crewed by around 900. Apparently, though not really explained as to how, the ship would be fast enough to reduce the journey between Europe and America to a single day. There was also a hangar that would fold open and extend out as a platform for launching the aircraft. Although it is unclear how the planes would return to their hangar.

While a model of the ship was built, no serious attempt to translate the concept into reality was undertaken. Though the model of the ship did feature in a 1938 Hollywood film, "The Big Broadcast", that satirized the intense rivalry of ocean liner companies.

Although the ship never made it off the drawing board, some of the features of the ship would become standard in modern modes of transport. For example, Geddes' attention to streamlining in his ship design.

Today, great pains are taken to make transportation like cars, trains, etc, as streamlined as possible. Her shape is also very reminiscent of modern nuclear submarines. While there is no apparent link between the Whale Ship and modern submarine designs, the resemblance is, we think you'll agree, almost uncanny.

5. The World City Phoenix would have been a literal floating city

Photo source: knudehansen

Back in the 1980s, plans were afoot to build a ship so large, that it would dwarf even the mighty Oasis of the Seas. The brainchild of one Knut Kloster, the World City Phoenix was a truly ambitious design for a ship.

Kloster was a Norwegian tycoon of cruise ships who co-founded the Norwegian Caribbean Line, today known as the Norwegian Cruise Line. Famed for his fantastical visions of the future, Kloster dreamed of an enormous cosmopolitan floating city that would offer its patrons unapparelled luxury and freedom to roam the oceans of the world.

At that time, the largest ocean liner afloat was The Norway, with a total displacement of around 70,000 tonnes. The World City Phoenix, by Kloster's estimation would exceed 250,000 tons, be 1,247 feet (380 meters) long, 253 feet (77 meters) wide, have 21 decks, and would be able to accommodate more than 5,00 guests and about 2,600 crew members.

The ship would feature public spaces, with guest accommodations around the outside of the hull. Bars, cafes, restaurants, shops, boutiques, art galleries, spa and fitness centers, pools, jogging tracks, cinemas, casinos, places of worship, libraries, museums, planetariums, TV and music production facilities, even a university campus were all to be included within the ship's long list of facilities.

The ship was to be so large that it would even incorporate a marina to host guests' own private vessels for those ports too small for the ship to moor at.

This behemoth of a ship would be powered by two 20-MW diesel-electric motors supplemented by eight diesel generators. The ship would also come with two variable-pitch propellers that would be 7 meters in diameter. Bow thrusters and four stern thrusters were to also be part of the design to maximize the ship's maneuverability.

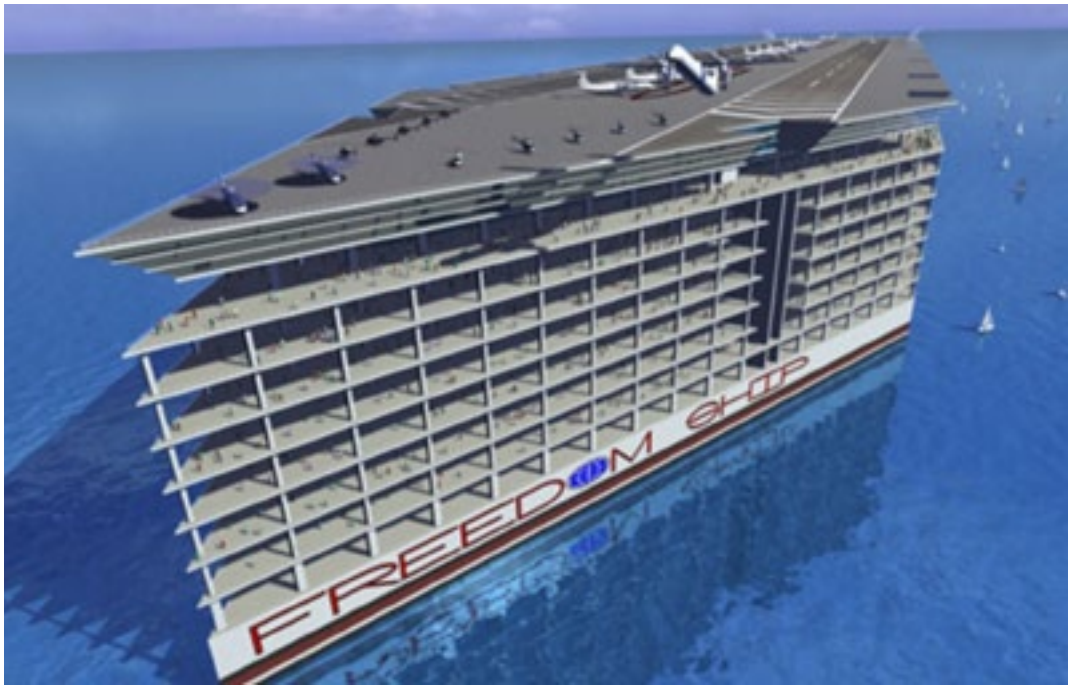
At the time, some industry experts projected the ship would cost somewhere in the order of $800 million to $1.2 billion to construct.

Knut Kloster defined the World City Phoenix as "the largest and most exciting passenger vessel on earth, a premier resort, a fabulous destination in and of itself, a world-class conference and business center."

Although Kloster's World City was never built, in 2020, marine consultancy Knud E. Hanson announced the designs for a much smaller version - an expedition cruise ship named Phoenix World Village.

6. The Freedom Ship was an absurd design

Photo source: Freedom Ship



Another interesting, if completely bizarre, concept for a ship that never left the drawing board was the Freedom Ship. According to its design, the vessel would be a total of something like 0.85 miles long (1.37 km), with a total of something like 25 decks stacked up like some mockery of a multistorey parking lot.

The ship would also be around 750 feet (229m) wide and have a total floor area of somewhere in the region of 1.7 million square feet. Incredibly, this is still, sort of, a proposed ship that could one day be built for real.

Initially proposed in the early-1990s, the proposed ship would continuously circumnavigate the planet, stopping regularly at various ports of call. It was envisioned more as a place for residents to live, work, or retire than as a cruise ship.

If it is ever constructed, the Freedom Ship would be about four times longer than the famous "Allure of Seas".

Like the World City Phoenix, this ship would have been a kind of floating city that could support something like 70,000 people at any one time. She would rise about 350 feet (107 m) out of the water, and even came with her own airport on the top deck, schools, parks, hospitals, and, of course, a casino.

The vessel was proposed to be powered by solar and wave energy, and she could, apparently, stay at sea pretty much indefinitely.

Freedom Ship is a very ambitious design and has been estimated to cost $10 billion if anyone dared to build her for real.

7. RMMV Oceanic would have been the Titanic's big sister

Photo source: AntonLogvynenko/ Wikimedia Commons

Conceived in the 1920s, the Oceanic was another aborted mega-ship. Partially finished by Harland and Wolff for the White Star Line, she was never completed.

Oceanic would have been the third ship to bear the name after the 1870 and 1899 predecessors. The former was the White Star Line's very first ocean liner, and the second their flagship for a time. For this reason, the name had always had a special significance for the company.

In the early 1920s, the White Star Line envisaged a new ship that would modernize transatlantic voyages for the company but plans for the ship took a back seat for a time as restrictions on immigration to the United States came into force for a time during the decade.

However, the rise of the so-called "tourist class" in the 1920s saw the White Star Line take another look at the ambitious ship.

When Lord Kylsant joined the White Star Line as its head honcho, the scope for the ship increased dramatically. So much so, in fact, that plans for her would mean she would break the symbolic 984 foot (300m) length and 30 knots (56 kph) top speed for ocean liners of the day.

Her keel was laid down in June of 1928 at the Harland and Wolffe shipyards in Belfast in just ten days, but after slow progress construction ground to a halt in 1929. The reasons for this were a combination of the technical challenges associated with the ship's design, but also the onset of the Great Depression at the time.

The project wasn't helped by the fact that Lord Kylsant was sent to prison in the early-1930s after being convicted for some financial shenanigans. The British government refused to provide financial assistance for the project, and the ship's construction was finally ended.

Oceanic would never leave the drydock and what had been completed of her hull was broken up on the slipway in 1930. Within the White Star Line fleet, Oceanic was thus replaced by two smaller ships, MV Britannic and MV Georgic, both inspired by its profile.

For many ocean liner enthusiasts, the Oceanic is probably the most famous of "what ifs". If history had been a little different, she would have become one of the world's most famous ocean liners of all time.

She would most certainly have been the largest, and possibly fastest, of her kind in her day, but the financial problems the White Star was facing, together with the drop in passenger numbers and the effects of the Great Depression did not allow the realization of this ambitious project.

8. HMS Habukkuk was put on ice fairly early on in her planning

Photo source: 99percentinvisible

Perhaps one of the most famous ships that never came to be is the "iceberg aircraft carrier" conceived under Project, or HMS, Habakkuk (named for the prophet Habakkuk, who, in the Old Testament, said: "... be utterly amazed, for I am going to do something in your days that you would not believe, even if you were told.") Technically not made from ice but a special material called pykrete, the ship was an attempt by the British to design a nye-on unsinkable ship to combat the threat of German U-boats in the Atlantic Ocean.

At the time of the ship's design, German "Wolf Packs" of submarines were causing havoc for Atlantic convoys that Britain relied heavily on for resources. Air cover was possible near to land, but in the middle of the Atlantic very few, if any, aircraft had the range to offer aerial support and counter submarine warfare to protect convoys on their perilous journies.

While the Royal Navy did have a number of aircraft carriers, and some were used for escort duty, they were deemed too valuable to sacrifice if the war was to be won.

And so, one of the wilder plans was to develop a ship made partially of ice and wood pulp that should, in theory, be incredibly resilient to torpedo attacks. The ship was the brainchild of one Geoffrey Pyke who worked for the British Combined Operations Headquarters - a special department founded to harass German operations on the continent.

Several variants were designed, including the very large Habakkuk II, a self-propelled vessel made primarily of pykrete and steel. It would have been around 3,927 feet (1,200 meters(long and 591 feet (180 meters) wide but very slow. Another variant, Habakkuk III, was a much smaller ship that would have been considerably faster.

Scale models and a prototype of the ship were developed and showed some promise. However, the project was later shelved due to its rising costs, ever-changing requirements, the need to actively keep the pykrete cool, and the development of longer-range aircraft and specialist escort carriers. These factors ultimately undermined the entire purpose of the ship.

9. There were plans to convert Iowa-class battleships into hybrid aircraft carriers

Photo source: baloogancampaign

Imagine a ship that has the massive guns of a battleship with the flight deck and power projection capabilities of an aircraft carrier? While this might sound fanciful on the surface, it was actually a proposed project not once, but twice!

Called by some the Iowa-class Battlecarrier, the last two of the planned six Iowa-class battleships were almost turned into one of the strangest ship designs you've ever seen. But there was some logic to the apparent madness of the proposal.

The Iowa-class of the battleship was an incredibly powerful ship, but, more importantly, very fast for their size. Fast enough, in fact, to be one of the few large capital ships able to keep up with aircraft carrier strike groups of the period.

To this end, the unfinished USS Illinois and USS Kentucky were planned to be converted to include some flight decks and armaments similar to the U.S. Navy's Essex-class of aircraft carriers. However, this never came to pass during the Second World War.

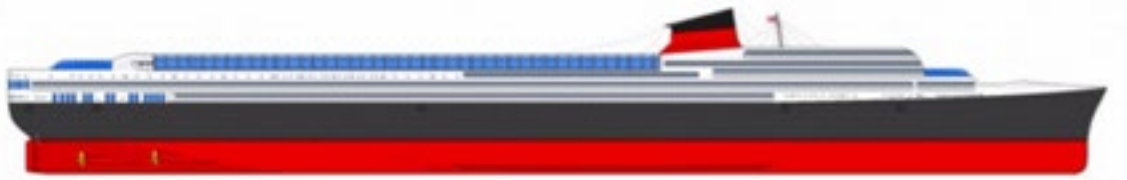
And that, for a time was the end of the story. At least, that is, until the Cold War. When the Soviets developed a hybrid battlecruiser and aircraft carrier known as the Kiev-class (Project 1143 Krechyet) in the 1970s, a fresh look was taken at potentially doing something similar in the US Navy.

This prompted a return to the idea of converting some Iowa-class battleships into half-carriers by removing the rear turret and installing an at short take-off and landing aircraft flight deck. The plans would call for the provision of around 20 AV-8B Harrier "Jump Jets" being carried on the ship.

Despite the four existing Iowa-class battleships returning to service in the 1980s under the Reagan administration, the Cold War would come to an end within the decade, rendering both the Iowa-class battleships once again obsolete but also sinking the idea of the Iowa-class carriers once and for all.

10. The French once made plans for a 100,000-ton cruise liner

Photo source: Ocean Liners Blog



During the 1930s, something of an arms race was underway between two of the largest ocean liner companies of the 20th-century, Cunard and the French Compagnie Generale Transatlantique (CGT). This came to a height with the intense rivalry seen between their top-of-the-line ships the Queen Mary and the Normandie respectively.

The former was faster and more profitable but was the older and more aged vessel of the two. To cement their dominance of the transatlantic liner market, Cunard ordered and completed the Queen Mary's sister ship, the first Queen Elizabeth, to be completed by 1940.

CGT needed to do something about this if they were to ever remain relevant and so they put together plans for a new ocean liner that would dwarf both of Cunard's mighty ships - La Bretagne. This ship was to be massive and, most importantly, had to be faster than either Queen Mary or Queen Elizabeth.

According to some remaining plans for the ship, she would have had a displacement of a whopping 100,000 and been able to travel at no less than 35 knots (64 kph). To this end, CGT executives recruited the services of a Russian ship designer by the name of Vladimir Yourkevitch who designed the Normandie.

He provided two potential designs, one a larger version of the Normandie and another, a much more ambitious design that was very ahead of its time. Opting for the more conventional design, CGT approached the French Government for funding for this massive project - as they had done for her predecessor.

However, this was not to be. The German invasion of France in 1940 the subsequent collapse of the French Republic, not to mention the capture of CGT's port of Le Harve for the next four years killed the Bretagne project for good. By the time war finally ended, CGT had lost Normandie in a catastrophic fire in New York. Building Bretagne was now ultimately pointless and the project was officially canceled in late 1945.

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The Web is for Everyone:

Self-Sovereign Identity - Realisation and Application to Marine Surveying / IIMS (Part 2)

By Nick Parkyn

"The future is still so much bigger than the past."

This article (Part 2) builds on Part 1 where we made the case for proof and trust on the internet. This article will describe the emerging software building blocks and platforms that will enable proof and trust and describe some simple use cases applicable to marine surveying.



Initiatives and platforms

Decentralised Web: Social Linked Data (Solid)

Solid is a web decentralization project led by Tim Berners-Lee, the inventor of the World Wide Web, developed collaboratively at the Massachusetts Institute of Technology (MIT). The project "aims to radically change the way Web applications work today, resulting in true data ownership as well as improved privacy" by developing a platform for linked-data applications that are completely decentralized and fully under users' control rather than controlled by other entities.

The goal of Solid is to allow users to have full control of their own data, including access control and storage location. To that end, Tim Berners-Lee formed a company called Inrupt to help build a commercial ecosystem to fuel Solid.

This project aims to radically change the way Web applications work today, resulting in true data ownership as well as improved privacy.

Solid (derived from "social linked data") is a proposed set of conventions and tools for building decentralized social applications based on Linked Data principles. Solid is modular and extensible and it relies as much as possible on existing W3C standards and protocols.

True data ownership
Users should have the freedom to choose where their data resides and who is allowed to access it. By decoupling content from the application itself, users are now able to do so.

Modular design
Because applications are decoupled from the data they produce, users will be able to avoid vendor lock-in, seamlessly switching between apps and personal data storage servers, without losing any data or social connections.

Reusing existing data
Developers will be able to easily innovate by creating new apps or improving current apps, all while reusing existing data that was created by other apps.

Solid's central focus is to enable the discovery and sharing of information in a way that preserves privacy. A user stores personal data in "pods" (personal online data stores) hosted wherever the user desires. Applications that are authenticated by Solid are allowed to request data if the user has given the application permission. A user may distribute personal information among several pods.

The user retains complete ownership and control of data in the user's pods: what data each pod contains, where each pod is stored, and which applications have permission to use the data.

Inrupt

Inrupt is a commercial start-up co-founded by CEO John Bruce and CTO Sir Tim Berners-Lee. The company grew out of the work Tim and his team at MIT were doing on the open technology called Solid Inrupt is building a commercial ecosystem to fuel Solid's success and protect the integrity of the next phase of the web. Its mission is to restore rightful ownership of data back to every web user and unleash a new wave of innovation for developers, for business, for everyone

Sovrin

A functional identity metasystem needs more than just technical standards. We often hear that the internet is a product of standards, and while that's true, it also only exists because

people strung cable, wrote code, created rules, built organizations, and formed alliances. Self-sovereign identity (SSI) has similar needs and meeting them won't happen just because we define nice open source software. A functioning network for an identity metasystem is a social system, and building it requires a means of building coherence to align the actions of people and organizations. We created the Sovrin Foundation to do that. Sovrin is a global, decentralized self-sovereign identity network based on open-source distributed ledger technology. It is based on the Hyperledger Indy Project hosted by the Linux Foundation and licensed under Apache 2.0. It allows people and organizations to create portable, self-sovereign digital identities. It uses a public permissioned ledger governed by the Sovrin Foundation. The ledger is a cryptographic database that is provided by a pool of participants worldwide. The Sovrin Foundation is a non-profit organization established to administer the Governance Framework governing the Sovrin Network, a public service utility enabling self-sovereign identity on the internet. The Sovrin Foundation is an independent organization that is responsible for ensuring the Sovrin identity system is public and globally accessible.

MATTR

MATTR believes that for the next generation of the internet to be successful an open and interoperable 'web of trust' must be created. MATTR have been focused on building to open standards and the principle of choice in the marketplace. MATTR contributes extensively to a number of specifications and emerging standards for protocols, components, and data formats across the Decentralised Identity ecosystem.

Creating a "web of trust," allowing people and organisations to protect what is theirs, easily prove who they are, and share only what they need to get things done online.

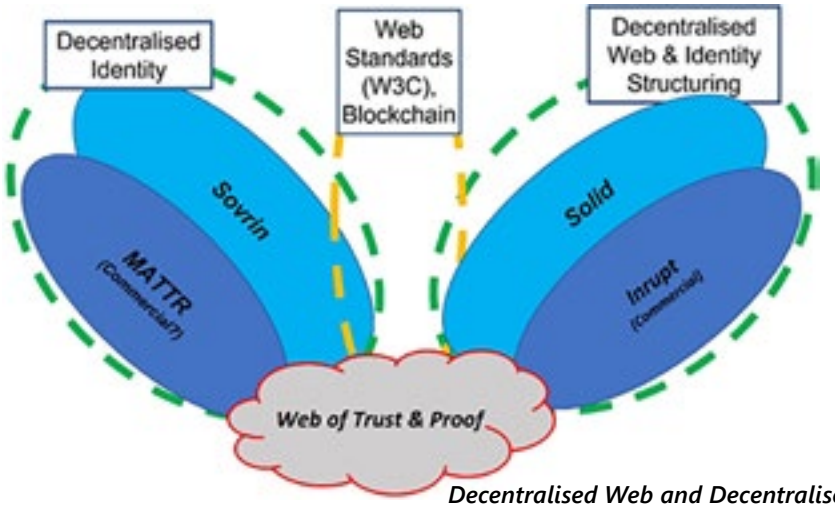
- Claire Barber
CEO of MATTR

Distributed Ledger

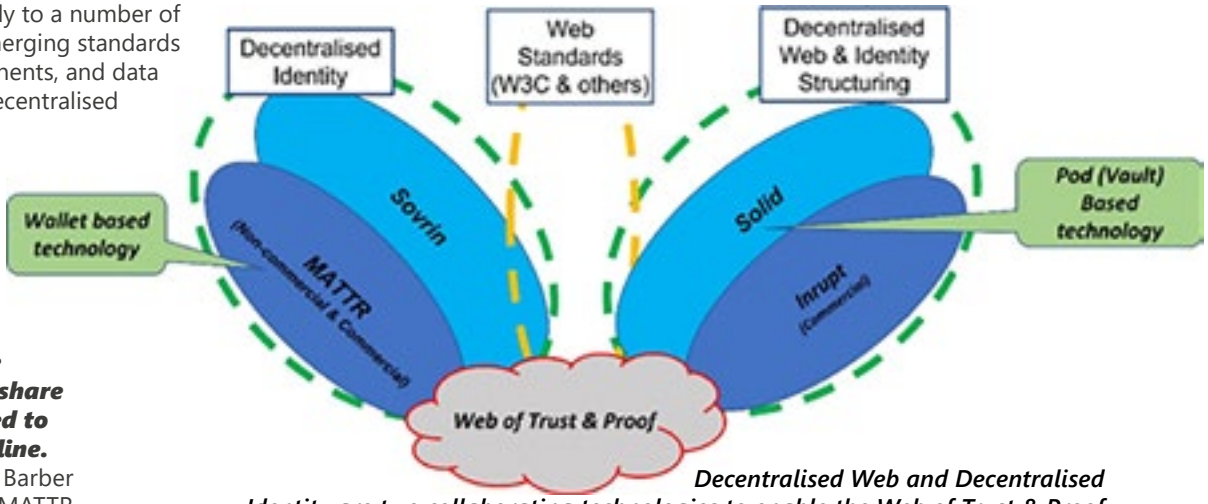
A distributed ledger is a database of information held and replicated independently by participants in a network called nodes. A blockchain is a specific subtype of a distributed ledger that provides a more secure distributed consensus. It is also called a shared ledger or referred to as distributed ledger technology. It can be a single ledger having layered permissions or consisting of multiple ledgers maintained by a distributed network of nodes. It is a consensus of shared, replicated and synchronized digital information geographically spread across multiple sites or institutions. Updates on a distributed ledger can be independently created and recorded and are voted over to ensure a majority consensus is reached Depending on whether the network participants or nodes need permission to access and make changes to the ledger makes the distributed ledger public or private and permissioned or permissionless. Distributed ledgers operate to organize data on a broad structure, blockchains operate much more specifically to organize data and update entries.

By design, a blockchain is resistant to modification of the data. It is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way.

Blockchain is a technology used for distributed ledgers and is suitable for many applications, consequently blockchain is also associated with crypto currency including Bitcoin, but the usage is specific to the application.



Decentralised Web and Decentralised Identity are two collaborating technologies to enable the Web of Trust & Proof

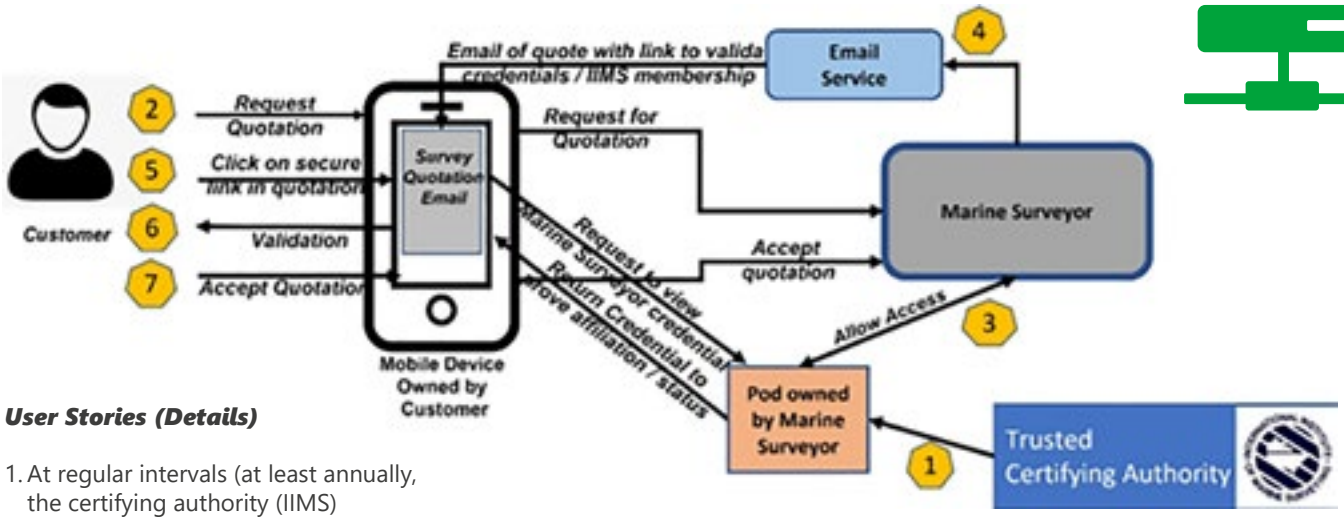


Decentralised Web and Decentralised Identity are two collaborating technologies to enable the Web of Trust & Proof

In the remaining part of this article to allow understanding and application of the technologies presented I will describe some scenarios with application to the IIMS and marine surveyors. In the Information Technology (IT) we refer to these real-world scenarios as "Epics" with associated "User Stories" to allow a better understanding and application of the technologies presented.

Epics and User Stories

Epic 1a: Customer verifies marine surveyor credentials

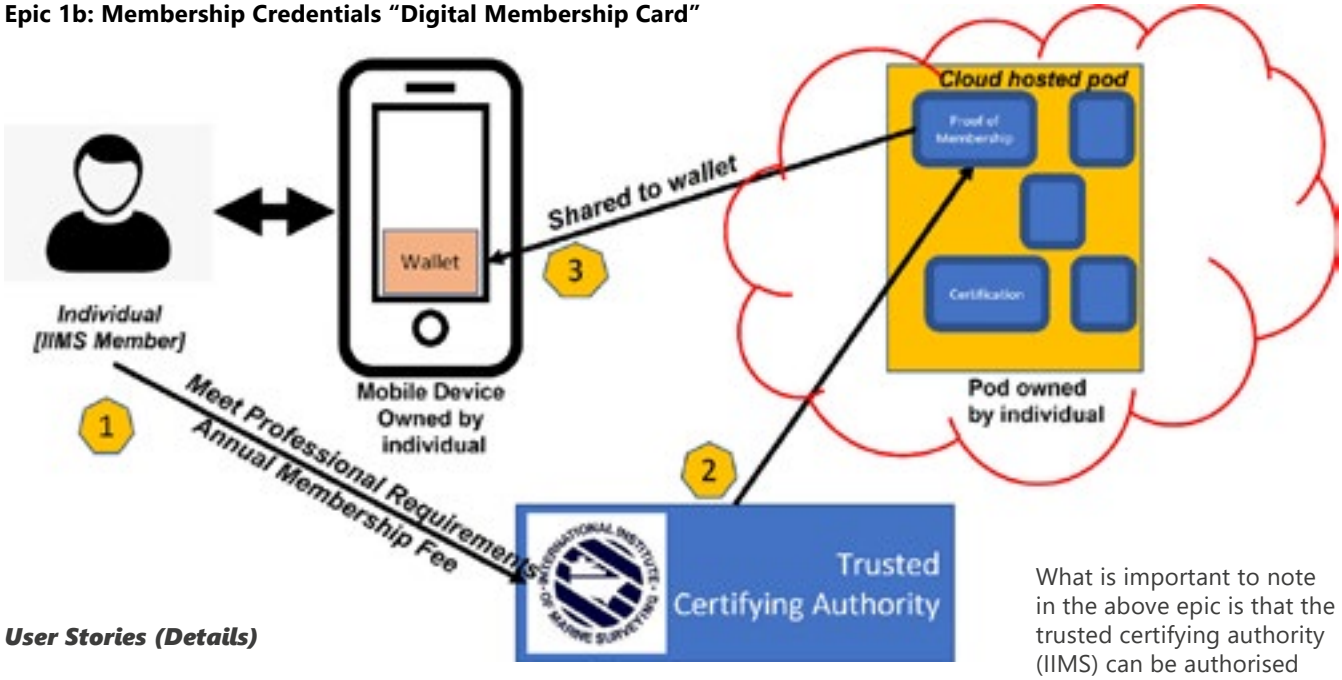


User Stories (Details)

1. At regular intervals (at least annually, the certifying authority (IIMS) updates credentials in the IIMS member's pod to update member status, surveyor certification, CPD status (see story 1)
2. Customer requests quotation for survey through interaction with Surveyor website
3. Surveyor prepares quotation and system creates link to allow one time read access to pod to validate credentials of the surveyor
4. Surveyor system sends email with embedded secure validation link for marine surveyor credentials to allow a one-time validation of the credentials of the marine surveyor
5. The customer clicks on the secure one-time validation link to validate the credentials of the surveyor from trusted pod data
6. Trusted copy of marine surveyor credentials are provided to the customer
7. The customer can then click the link to accept and move forward with the survey

What is important to note in the above epic is that the trusted certifying authority (IIMS) can be authorised by the owner of the pod to put and update credentials directly into the pod which ensures authenticity of the credentials. The pod owner can grant read access to third parties to view only those credentials which are necessary for any particular interaction.

Epic 1b: Membership Credentials "Digital Membership Card"

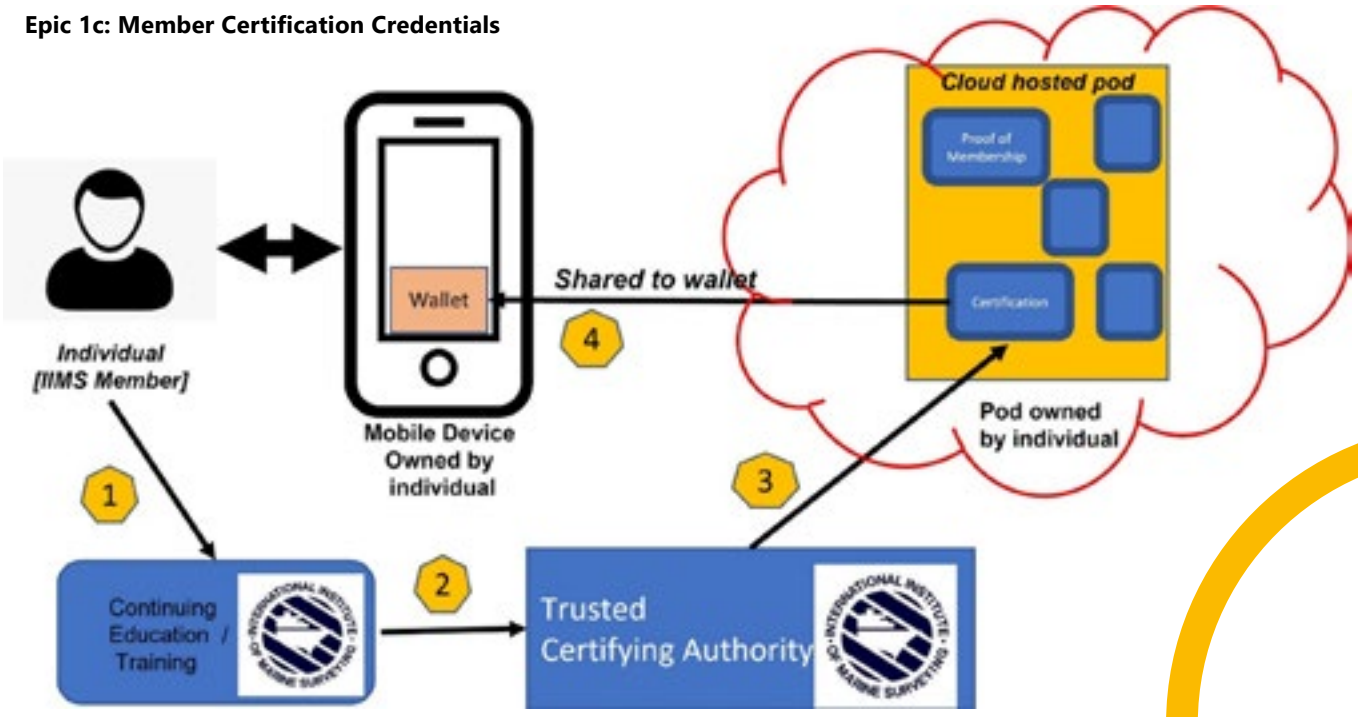


User Stories (Details)

1. If the member meets the requirements and code of conduct of membership and pays their membership fee, they are a member of the IIMS
2. An associated proof of membership "digital membership card" is placed into the pod owned by the member
3. Member (pod owner) can share this digital membership card to their wallet so it can be shown to third parties when required

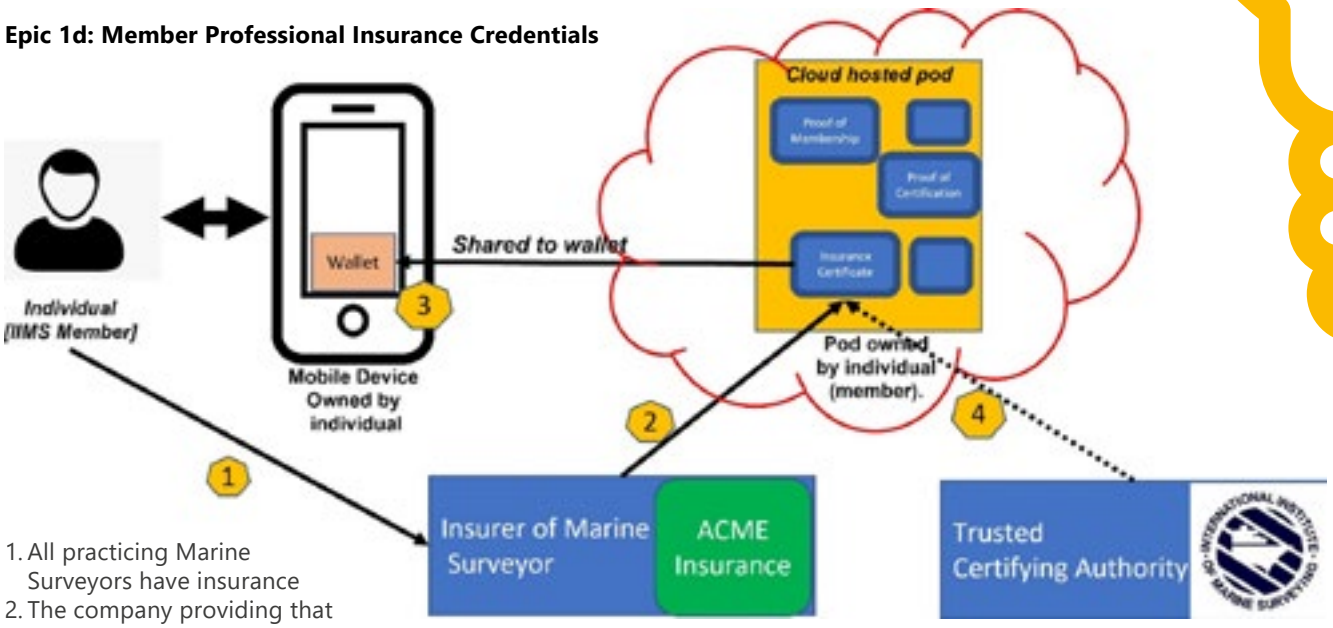
What is important to note in the above epic is that the trusted certifying authority (IIMS) can be authorised by the owner of the pod to put and update credentials directly into the pod which ensures authenticity of the credentials. The pod owner can grant read access to third parties to view only those credentials which are necessary for any particular interaction.

Epic 1c: Member Certification Credentials



1. By further education and training, the member builds their certifications
2. Trusted Certifying Authority (IIMS) or other, controls and issues certifications
3. As the member receives certifications, they are inserted by the Trusted Certifying Authority into the pod owned by the member
4. Member (pod owner) can share the certifications to their wallet so they can be shown to third parties when required

Epic 1d: Member Professional Insurance Credentials

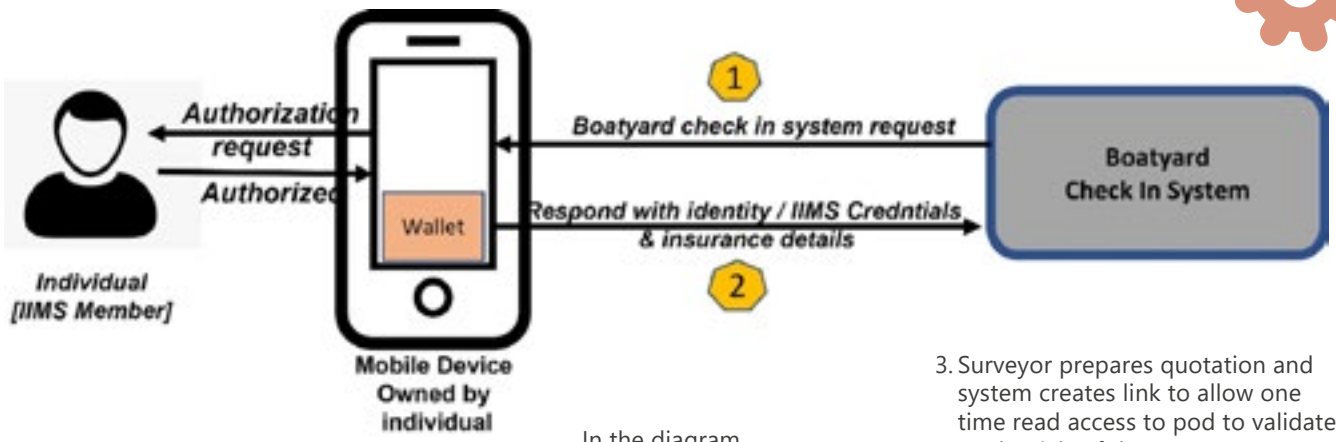


1. All practicing Marine Surveyors have insurance
2. The company providing that insurance, ACME Insurance in this example issues proof of insurance credentials which it places into the pod of the insured surveyor for the duration of currency of insurance
3. In this case the Insurance Company is the Trusted Certifying Authority
4. Member (pod owner) can share the certifications to their wallet so they can be shown to third parties when required
5. Other trusted third parties, like IIMS could, based of trusted relationship and requirement of membership, have access to the pod of the IIMS member to validate currency of insurance.

The examples provided are only a small subset of what is possible with this emerging technology which has specific application in further enabling certifying authorities like the IIMS.

"The future is still so much bigger than the past."

Epic 2a: Boatyard Validates Surveyor Credentials from Wallet

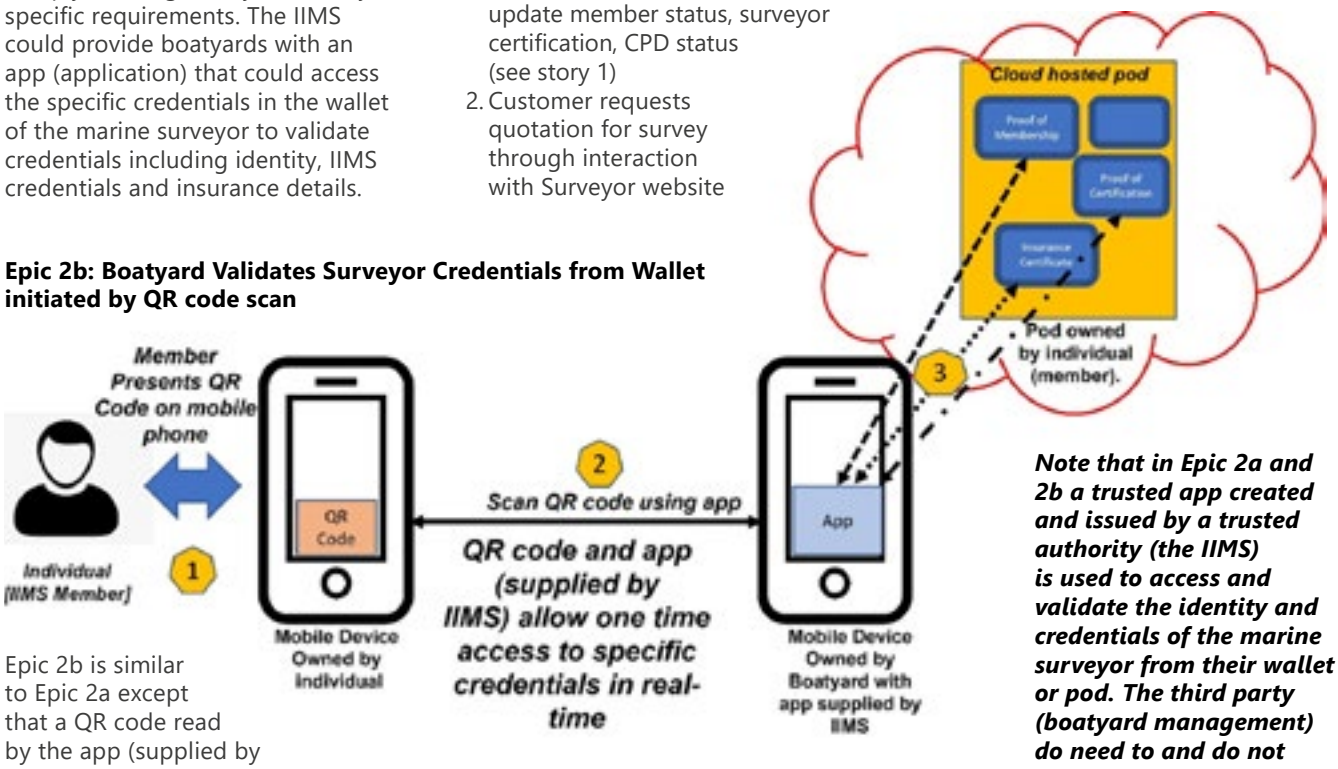


All boatyards as a requirement of entry wish to validate the person entering to ensure their identity and that they comply with regulatory and boatyard specific requirements. The IIMS could provide boatyards with an app (application) that could access the specific credentials in the wallet of the marine surveyor to validate credentials including identity, IIMS credentials and insurance details.

In the diagram related to Epic 2:

1. At regular intervals (at least annually, the certifying authority (IIMS) updates credentials in the IIMS member's pod to update member status, surveyor certification, CPD status (see story 1)
2. Customer requests quotation for survey through interaction with Surveyor website
3. Surveyor prepares quotation and system creates link to allow one time read access to pod to validate credentials of the surveyor
4. Surveyor system sends email with embedded secure validation link

Epic 2b: Boatyard Validates Surveyor Credentials from Wallet initiated by QR code scan



Epic 2b is similar to Epic 2a except that a QR code read by the app (supplied by the IIMS) initiates the validation of the identity and credentials held in the pod (not wallet).

1. Marine surveyor presents QR code on display on their mobile device
2. Boatyard management scans the QR code using the trusted app (supplied by IIMS) which then initiates validation of the identity and credentials of the marine surveyor
3. The trusted app then validates the identity and credentials of the marine surveyor by accessing their Pod.

Note that in Epic 2a and 2b a trusted app created and issued by a trusted authority (the IIMS) is used to access and validate the identity and credentials of the marine surveyor from their wallet or pod. The third party (boatyard management) do need to and do not directly access or sight the identity credentials and other credentials of the marine surveyor as the trusted app accesses the credentials and provides the validation.

You may wish to add a sidebar to describe QR codes

A QR code (Quick Response code) is a matrix or two-dimensional barcode invented in 1994 by the Denso Wave (Japan). A QR code consists of black squares arranged in a square grid on a white background, which can be read by an imaging device such as a camera, and processed using Reed–Solomon error correction until the image can be appropriately interpreted. The required data is then extracted from patterns that are present in both horizontal and vertical components of the image.

Note: description adapted from Wikipedia

BIMCO's EEXI transition clause for time charterparties DEADLINE LOOMING

By Siddharth Mahajan, Senior Loss Prevention Executive and Wan Jing Tan Singapore both from Gard P&I Club based in Singapore

The deadline for compliance with the IMO's Energy Efficiency Existing Ship Index (EEXI) is looming. Are charterparties flexible enough for the transition phase? How should parties approach the new time charterparties which they are entering into to cater for the vessel's EEXI compliance?

The IMO aims to reduce the carbon intensity of shipping by at least 40% by 2030, and is pursuing a reduction of some 70% by 2050, compared to 2008 levels. To date the IMO has implemented a number of measures to steer the industry towards its climate goals on the reduction of greenhouse gasses, such as introducing the Energy Efficient Design Index (EEDI), and regulations for nitrogen oxides (NOx) and sulphur oxides (SOx). Last year the IMO adopted regulations to improve the efficiency of vessels. One of the new measures introduced was the Energy Efficiency Existing Ship Index (EEXI) which is primarily targeted at older and less efficient tonnage. Many have labelled it as the "ticket to trade" post 2023.

To assist the industry in managing their charterparty risks during the transition phase, BIMCO recently issued the EEXI Transition Clause for Time Charterparties, which is timely and helpful and therefore a welcomed clause. It is the first of a series of BIMCO's carbon clauses. BIMCO will also be issuing clauses on Emissions Trading Schemes (ETS) and the Carbon Intensity Indicator (CII) regime. In this article we focus on the EEXI Transition clause and how it can be tailored to better suit parties' intentions.

Setting the stage: Introducing IMO's technical decarbonisation measure - EEXI

EEXI is an extension of the Energy Efficiency Design Index (EEDI) framework to bring the design efficiency of existing tonnage on par with new ships. It is a measure of the ship's energy efficiency. A vessel's EEXI is dependent on its design that is fixed, and not on any operational factors that may vary, for which there is another metric, CII (Carbon Intensity Indicator). EEXI in simple terms is CO2 emissions divided by transport work and is expressed in grams-CO2 / ton mile. A simplified formula is shown here:.

Siddharth Mahajan

Wan Jing Tan

$$EEXI = \frac{ME\ and\ AE\ emissions - Energy\ savings}{Deadweight\ x\ Speed}$$

Image source: Bureau Veritas

Pathways to attaining EEXI

Like EEDI, EEXI is a non-prescriptive, performance-based mechanism leaving it to the owners, managers, and operators to decide which methodology to use to comply with the regulations. From the above formula, it is apparent that EEXI is a function of the

(a) installed engine power in the numerator, which is one of the most important parameters to determine EEXI; and in the denominator
(b) vessel's speed, and
(c) deadweight.

Owners can choose to influence the numerator and/or the denominator to attain the required EEXI. Broadly speaking, the available energy efficiency measures fall into one of the following three categories:

power limitation (EPL), Shaft Power Limitation (SHaPoLi) and engine derating to reduce the output power of the engine and consequently the vessel's operating speed.

Installing energy saving devices or energy efficiency technologies to reduce hull resistance or improve propeller thrust, such as low friction coating, hull air lubrication system, wind assisted propulsion, waste heat recovery system and other innovative energy efficiency technologies (ref. IMO circular MEPC.1/Circ.896).

Engine modification for lower or zero carbon fuels, such as LNG and ammonia.

Power optimisation, such as engine

Compliance with the EEXI may require changes to the design of the vessel and/or machinery onboard. When deciding which countermeasures to adopt to meet the EEXI regulations owners would need to consider many different factors such as:

Time required for installation;
Costs involved;
Payback time for the improvements installed;
Age of the vessel and expected remaining trading life;
Speed loss;
Marketability of the vessel;
And owners would need to ensure that any modifications carried out on the vessel will satisfy Charterers' and terminals' vetting policies.

Power limitation

As various classification societies have highlighted, such as DNV and Lloyd's Register, the majority of the vessels are likely to adopt Engine Power Limitation (EPL) or Shaft Power Limitation (SHaPoLi) as such modifications are the least invasive and are less expensive faster to implement. This, however, may have a negative impact on the vessel's speed. The older the vessel, the higher the power limitation required, which translates to a higher drop in maximum service speed.

- EPL: It is an overridable semi-permanent limit on ship's maximum power, i.e. a reduction in the power delivered to the propeller and is one of the least intrusive methods. It can be in the form of a password protected software or a mechanical stopper to limit the amount of fuel to the main engine (ref: IMO Resolution MEPC.335(76)). Owners may need to collaborate with the engine maker and their classification society to ascertain if there will be any adverse effect on the engine, such as increased vibrations, when continuously operating at lower speeds.

- SHaPoLi: Ships with a multi engine setup may choose SHaPoLi, where a control unit will be fitted for calculation and limitation of the power transmitted to the propeller(s) by the shaft. This measure limits the shaft power instead of the main engine itself. Like EPL, it is a semi-permanent solution and crew will be able to use the unlimited or reserve shaft power when needed for safety.

Evidencing compliance

Impacted vessels will have to demonstrate compliance to their Flag State or recognised organization, i.e. the relevant classification society, by the first annual, intermediate or renewal survey for the International Air Pollution Prevention Certificate (IAPPC) on or after 1 January 2023. Following verification, an International Energy Efficiency Certificate (IEEC) will be issued and the EEXI technical file will be endorsed. Vessels built post 2013 are likely to have sea trial evaluated EEDI and this can be used to assess compliance with EEXI. However, for older vessels, the process will be less straightforward since all the required documentation may not be available, such as the original sea trial reports. In such cases, the IMO will use a statistical mean of distribution of ship speed and engine power to obtain an approximate reference speed (ref. IMO Resolution MEPC.333(76)). This method however imposes a penalty of up to 1 knot.

BIMCO EEXI Transition Clause for Time Charterparties (EEXI Transition Clause)

Taking a closer look at the EEXI Transition Clause, it is made abundantly clear that it is the owners' duty to comply with the EEXI regulations when they are implemented in 2023.

The EEXI Transition Clause is largely focused on the most popular type of EEXI Modifications, which is power limitation or optimisation.

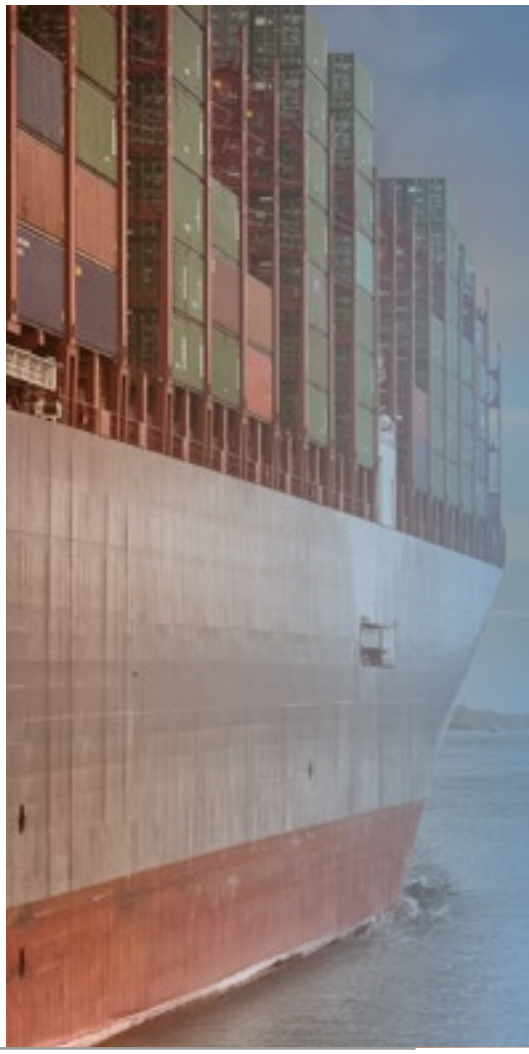
The EEXI Transition Clause allocates the time and costs of installation required for power limitations and the process under which it can be carried out. Owners are to use reasonable endeavours to plan and carry out such modifications without any loss of time to charterers but are ultimately allowed to take the vessel out of service, if necessary, to carry out such modifications. Costs and time for such modifications to be carried out are on owners' account. Owners are to give at least 3 weeks' notice on the anticipated timeframe and location of such modification works.

Once owners inform charterers of their plan for power limitation, charterers are obliged to provide the vessel's itinerary to owners and to keep owners updated on any possible changes.

Owners are required to provide charterers with the specification of the modifications and the estimated new performance warranties without any undue delay.

After the implementation (and certification) of the modifications, owners are to notify charterers of the new maximum speed and consumption figures of the vessel, and if the new maximum speed and consumption figures are lower than the existing performances warranties in the charterparty, they will replace the existing performance warranties. Charterers are not to instruct the vessel to sail at a speed which exceeds the new maximum speed.

Finally, the EEXI Transition Clause provides that any other EEXI modifications, i.e. categories 2 and 3 as mentioned in the Pathways to EEXI paragraph above, are subject to the agreement and approval of charterers, not to be withheld unreasonably or delayed by charterers.



Refining the EEXI Transition Clause further

For owners or charterers who are looking at incorporating the EEXI Transition Clause into their charterparties, here are some non-exhaustive considerations to bear in mind during your discussions.

Energy efficiency technologies/engine modification

Owners, who are considering installing such technologies or carrying out engine modifications to burn low-carbon fuel, should negotiate for the right to carry out such modifications under the charterparty. The default position under the EEXI Transition Clause is that any modifications other than or in addition to power limitation are subject to charterers' approval and agreement. Owners could remove the uncertainty of having to seek charterers' agreement or approval for such modifications to the vessel.

It is in charterers' interests to agree to a proposal for installation of such modifications, which will improve the vessel's performance and efficiency. This will benefit long term time charterers. Not only will the carbon footprint be reduced, a more efficient and better performing vessel will directly affect the vessel's Carbon Intensity Indicator (CII) rating, its tradability around the world and in particular, the emissions units required to comply with any applicable Emissions Trading Systems (ETS). Given the focus of many voyage charterers on reduction of GHG in their operations, the modifications to the vessel will no doubt increase its marketability – a clear incentive for the time charterer to cooperate with the owner in modifying the vessel to reduce carbon emissions.

Should charterers be inclined to agree, parties should discuss and agree on a process for such modifications to be carried out, including but not limited to the notice to be provided to charterers such that there is minimal disruption to charterers' operations, costs of the installation and certification of the modifications and the accompanying off-hire from the time the vessel is no longer at charterers' disposal until the vessel is redelivered back to charterers after the installation and certification of the modifications.

The installation of energy efficient technologies may also require parties to consider how the other charterparty obligations are affected, such as:
Who owns the technologies and who is responsible for maintaining the same? If owners installed the technologies at their time and costs, it would form part of the vessel's hull and equipment. If charterers contributed to the same, then parties will need to discuss how to account for the value of the technologies when the vessel is redelivered.

If the technologies improve the vessel's performance and efficiencies, parties should also consider updating the vessel's warranties, including any efficiency warranties.

What is the interplay with off-hire when the technologies break down? A breakdown in such technologies may not result in the vessel sailing at a reduced speed but it could affect the emissions for a specific voyage. Where charterers are responsible for the emissions for the voyages carried out (particularly when the vessel is sailing in a jurisdiction which is subject to an emissions trading scheme), parties will need to work out the formula to calculate the additional emissions caused by a malfunctioning technology on board the vessel.

Power Limitation

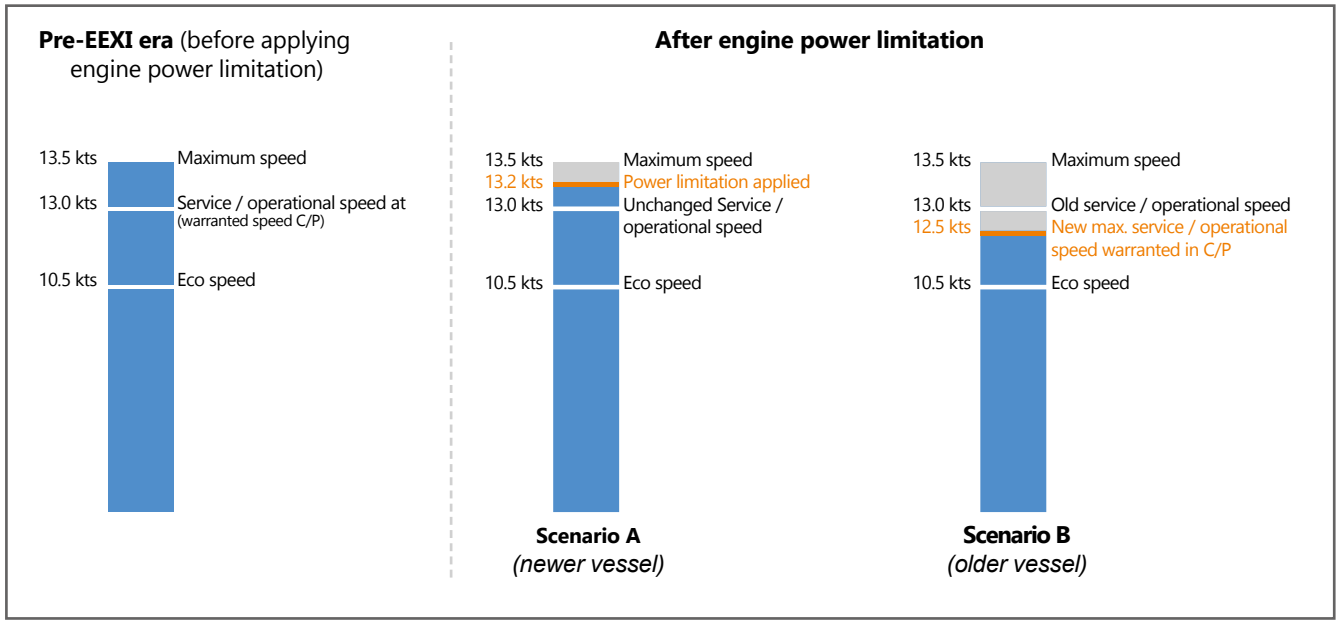
The EEXI Transition Clause is particularly useful for owners who are looking at power limitation as an option for EEXI modifications. In calculating the vessel's updated speed and performance warranties, however, owners should pay attention to the type of limitation carried out and the effect on the vessel's new service speed, particularly in light of the engine manufacturer's recommendations.

Paragraph C(V) of the EEXI Transition Clause refers to "new maximum speed" after power limitation and provides that the "new maximum speed" will replace the existing warranted "maximum figures" if lower than the existing warranted maximum figures. Ordinarily, a vessel's speed and consumption warranties in the charterparties are not based on the vessel's maximum speed, but rather the operational or service speed for ballast and laden conditions. A vessel very rarely sails at its maximum speed for extended periods.

As an example, a vessel with a maximum speed of 13.5 knots may have its warranted service speed at about 13.0 knots without any power limitation. As previously discussed, an older vessel may require a relatively higher power limitation in order to comply with EEXI Regulations as compared to its younger counterpart in the same segment. If the vessel's new maximum operational or service speed after power limitation is below 13 knots as in Scenario B below (for older vessels), the owners will need to take into consideration the following before revising the vessel's performance warranties:

(a) this new reduced operational speed; and
(b) the impact on the vessel and its engine, if any.

Ideally, the updated performance warranties should reflect the vessel's new safe maximum operational or service speed. Another thing to bear in mind, for older vessels, is the possibility of the imposed speed penalty, as explained in the Evidencing Compliance paragraph above.
There have been some enquiries on whether the reduction in the vessel's performance will allow a charterer to negotiate for a new hire rate. That is a commercial discussion for parties. The EEXI Transition Clause does not give charterers an automatic right to do so.



Simplified hypothetical scenarios showing how power limitation may or may not affect vessel's operational speed

Key takeaways

Plan early:
Shipowners have less than a year to go in order to ensure that their vessels comply with the EEXI Regulations. It is paramount that owners take steps to properly understand and ascertain the modifications which need to be carried out to the vessel in order to comply with the EEXI regulations. This requires a thorough discussion with all stakeholders, including engine makers and classification societies.

Collaboration is key:
When negotiating new long-term time charterparties, parties need to have a discussion to prepare for the vessel's upcoming EEXI modifications, if any. Compliance with the EEXI regulations will, at the end of the day, benefit all parties who are trading the vessel. Owners and charterers cooperated and collaborated to implement the MARPOL 2020 sulphur regulations. They will need to continue such cooperation to comply with the EEXI requirements.

Verify the figures:
Once the modifications are completed, owners should carry out the necessary trials and calculations prior to updating the vessel's performance warranties in the charterparty and this will require proper coordination internally between the shipowner's commercial and technical management.

Updated IMO procedures for Port State Control: What's new?

IMO has published updated guidance procedures for Port State Control (PSC) with IMO Resolution A.1155 (32), which was adopted on 15 December 2021. SQE MARINE explains what's new in the revised resolution, which replaced previous version Resolution A.1138 (31).

What are the IMO Procedures for PSC?

IMO procedures for PSC provide a detailed guidance to Port State Authorities, featuring the following :

1. Chapter 1 – General

Includes provisions for PSC general information, ships of non-Parties, ships below convention size, definitions, professional profile of PSCOs and qualification and training requirements of PSCOs.

2. Chapter 2 – Port State Inspections

Includes general procedural guidelines for PSCOs, initial inspections, clear grounds and more detailed inspections

3. Chapter 3 – Contravention and Detention

Includes identification of a sub-standard ship, submission of information concerning deficiencies, Port State action in response to alleged sub-standard ships, responsibilities of Port State to take remedial action, guidance for the detention of ships, suspension of inspection and the procedures for rectification of deficiencies and release.

4. Chapter 4 – Reporting Requirements

Includes Port State reporting, Flag State reporting and reporting of allegations under MARPOL.

5. Chapter 5 – Review Procedures

Includes the reporting of comments.

There is also a list of 19 Appendices with additional and more detailed guidance for PSCOS, Good Practices and convention specific compliance requirements.

What's new in the revised resolution with procedures for PSC?

The main chapters (1 to 5) of the procedures remain without changes. Some changes have been incorporated in Appendices as follows:

- Appendix 4 - Guidelines for Investigations & Inspections carried out under MARPOL Annex II

- Part 1 para. 1.6.4 reference updated to include Harmonized System of Survey and Certification 2021.

- Part 4. New para. 5.10 incorporated with provisions for electronic record book (ERB) use and the provision of a standalone form or a copy of surveyor's report to accompany the electronic record book entry. An example form of Cargo Record Book Endorsement is included.

Appendix 7 Guidelines for Control of Operational requirements

This Appendix was totally reformed and categorized in two Parts:

Part 1: Initial Process

Part 2: Guidance on Specific Inspection Activities

Part 1.

- Para. 1. New Para 1.6 Definitions & Abbreviations was incorporated to include definition of Operational Control and Functional test as below:

- Operational control: A control inspection to confirm the master and crew are familiar with essential shipboard procedures with respect to the safety of the ship and crew and protection of the environment and are able to apply such procedures. It includes a check on the effectiveness of communication and interaction and familiarity of the crew, including the human interface.

- Functional test: A test of an item to prove the correct operation and function of equipment. Functional tests may be carried out during an initial or more detailed inspection.

- Para. 3
In the previous version, the PSCO was not required to intimidate/interfere during drill nor offer advise but just to observe. However, in the updated PSC Procedures, a major change is that PSCO should devise the scenario (in co-operation with the Master) and control it, since there is an element of uncertainty on the part of the ship's officers as to how a drill will progress and is more realistic to the actual onboard situation facing crew members in a critical situation.

Additionally for all actions involving operational activity, briefing/ meeting/debriefing is to be held.

Detailed instructions for witnessing and assessing drills are provided in Para. 7

- Para. 4
Additional requirements highlight difficulties to communicate with non English speaking crew. Additional new guidance has been incorporated for passenger ships safety centre.

- Para. 5 (new) – Assessing the ship with respect to operational requirements.

A list of findings that may lead to detention has been included.

A key highlight of the updated guidance is the inclusion of the following paragraph:

In relating to the deficiency, it is critical to note that having the necessary equipment installed and operational does not provide a capability as required by Convention unless the master and crew are familiar with the operation of the equipment and associated procedures as required by STCW Section A-I/4.4.

- Para. 8 (new) – Detention under Operational Requirements.

Procedures identify a sub-standard ship as being one where operational safety is substantially below the standards required by the relevant convention and specifically, in the case of operational requirements, where there is: "insufficiency of operational proficiency, or unfamiliarity of essential operational procedures by the crew".

A list of operational procedures related to conventions is provided and includes:

- SOLAS regulation XI-1/4;

- MARPOL Annex I, regulation 11;

- MARPOL Annex II, regulation 16.9;

- MARPOL Annex III, regulation 9;

- MARPOL Annex IV, regulation 14;

- MARPOL Annex V, regulation 9;

- MARPOL Annex VI, regulation 10; and

- STCW, Article X and regulation I/4 and section A-I/4.

Part 2

- Para. 1
Provides detailed guidance on specific inspection activities as per para. 1.1 to 1.10 (previous version Appendix 7 para. 13-22). No changes have been included.

- Para.2
Muster list requirements remained same with previous version with the addition of checking the familiarity of crew with their duties included in muster list.

Additional communication requirements during drills have been included with key personnel. A list of what is considered to be key personnel (but not limited to it) is provided:

For drills, key crew members could be but are not limited to:

- bridge team including GMDSS operators who must also be able to communicate with the shore and other vessels;
- fire parties;
- damage control parties;
- boat preparation parties; or
- passenger muster personnel on passenger ships.

Appendix 18 – Renamed to read: Guidelines For Port State Control Under MARPOL Annex VI

- Para.2.1.2 revised to include 3 additional items:

Item 2. International Energy Efficiency Certificate (IEE Certificate) (regulation VI/6) including its supplement.

Item 18. Ship Energy Efficiency Management Plan (SEEMP) including, where applicable, the methodology that will be used to collect the data required by regulation 22A of the Annex and the associated Confirmation of Compliance in respect of that methodology Item 19. for the year 2019 and onwards that the ship has, no later than 1 June of each following year, the Statement of Compliance – Fuel Oil Consumption Reporting.

- Para. 2.6.12 (New)
The PSCO should verify whether the ship has been subject to a major conversion (regulation VI/2.24) or there have been changes to the ship in respect of aspects which are covered by the EEDI Technical File.

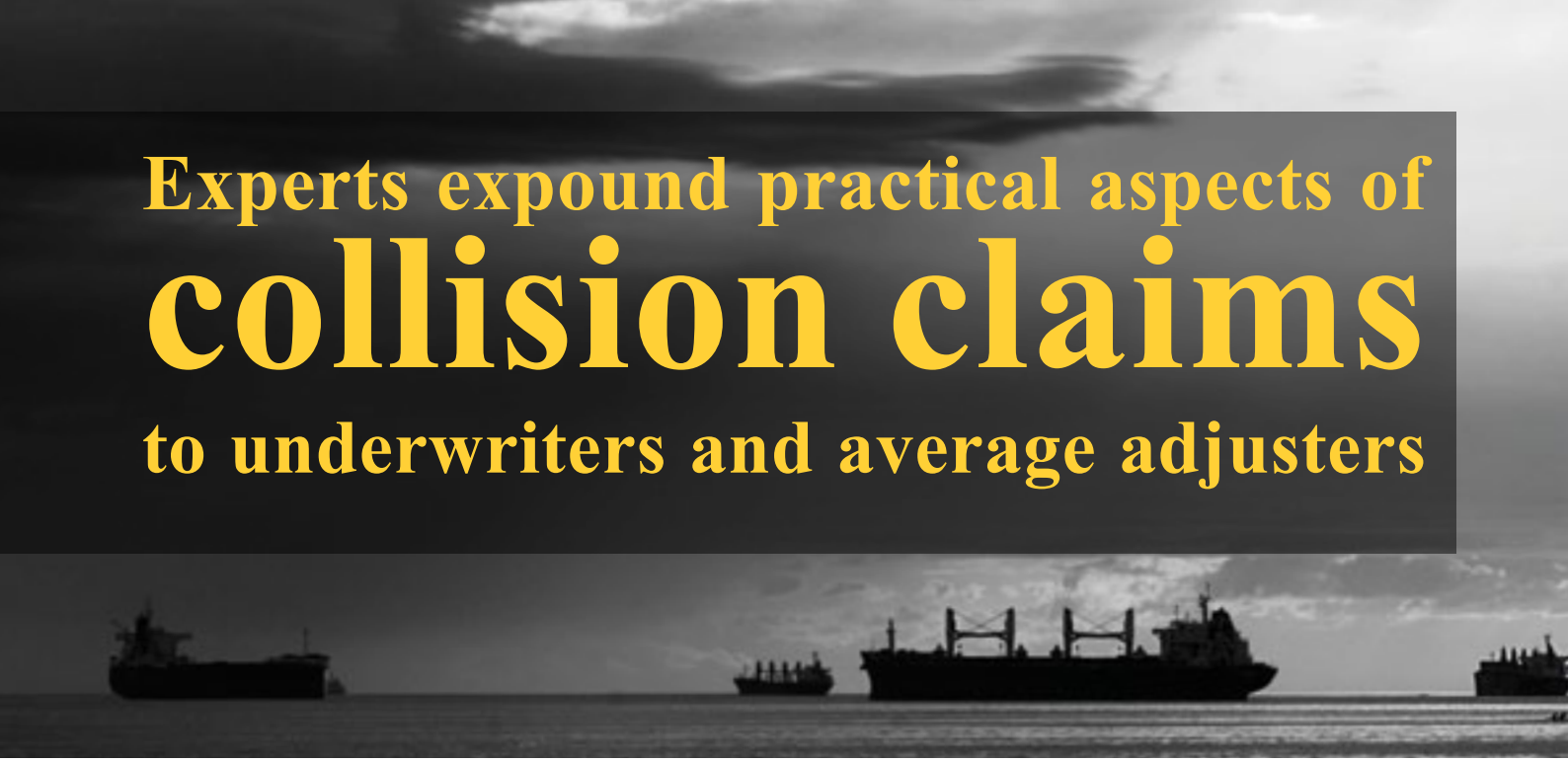
- Para. 2.7
For detainable deficiencies has been revised to include the following items:

2.absence of valid IEE Certificate, EEDI Technical File or SEEMP;

3.absence of a valid Statement of Compliance – Fuel Oil Consumption Reporting covering the year 2019 and onwards from 1 June of each following year.

Chapter 3 has been revised to include guidance for ships of non-parties and ships not required to carry the IEE Certificate.

This review of the updated IMO procedures for Port State Control was compiled by SQE Marine.



Experts expound practical aspects of collision claims

to underwriters and average adjusters

A raft of consequences faces shipowners, insurers and adjusters in dealing with the aftermath of ship collisions, speakers at the latest joint seminar in London of the Association of Average Adjusters and the International Underwriting Association made clear.

Casualties harbour potential cost implications for salvage, wreck removal, cargo damage, damage to ship, oil pollution, crew and passenger personal injury, limitation of liability, damage to fixed and floating objects, and claims from port authorities.

Alistair Johnston, partner at CJC Law; Chris Zavos, partner with Kennedys; and Michiel Starmans, director of the legal department at Amsterdam-based Spliethoff Group, set out in their talk on 24th March 2022, what they called Practical aspects of collision claims. Mr Starmans is current chairman of the Association of Average Adjusters.

The three speakers outlined how amid the complex interplay of factors early assessments can be made as to which ship might be to blame, the role of the Collision Regulations, and where parties might commence court proceedings if needed.

They ranged in their presentation over principles of collisions and liability, apportionment, forum shopping, limitation and security, insurance, quantum, and single and cross liability.

To illustrate the multiple factors that might be at play, Mr Johnston posed an imagined scenario of a laden handymax bulk carrier on voyage from Chile to India, which on its way out of inner anchorage at Singapore proceeding south westerly, collides in port limits during dense fog with a south easterly voyaging container vessel bound for Greece.

In that supposed instance, carriage contracts of relevance were that the Greek-owned bulk carrier was on voyage charter to a Portuguese entity, and the bill of lading was issued to shippers in Chile. The German-owned containership was on time charter to a US entity, and the charter had a vessel-sharing agreement with a Greek company and a Turkish company.

The collision bulkhead of the handymax is breached and water damages the cargo in number one hold. Residual bunker oil in the empty breached double-bottom heavy oil fuel tank causes a small oil slick, with the risk of pollution. On the boxship, extensive damage is caused amidships with containers underdeck being smashed; some containers on the forepart topple, and one crushes and kills a seafarer.

To start to deal with such casualties, the need was to go back to basic principles and the law of tort: that every ship owes a duty of care to all other users of the seas, said Mr Johnston. The objective standard of care was "good seamanship" (the ordinary skill and care of each seafarer according to their rank) plus observation of Navigation Rules. Should those two branches of the standard of care conflict, the first prevails. There is a burden of proof on the claimant to prove loss plus negligence or want of good seamanship which led to loss (causation).

Mr Johnston said that for quantum (the amount of damages awarded to a successful party in a claim) it was critical to assemble evidence as soon as possible: "Getting evidence together, the key pieces of information, makes it so much easier for everyone involved."

What we needed to look at straight away is who is going to be the paying party and who the receiving party, said Mr Johnston. "We are looking at how blameworthy were the parties." The Collision Convention 1910, incorporated into English Law by the Maritime Conventions Act 1911 (now section 187 of the Merchant Shipping Act 1995) lays the groundwork for apportionment of liability for damage. It says that the liability to make good the damage or loss shall be in proportion to the degree in which each ship was in fault.

Introducing the principle of liability in proportion to blame, the owner of a ship involved in a collision is liable to make good the damage suffered in proportion to that ship's fault. (Distinct from that, liability for death and personal injury is joint and several.)

Mr Johnston highlighted the navigational general principles laid down by the International Regulations for Preventing Collisions at Sea 1972 (known for short as Colregs). Rule 7 says: "Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists." Rule 19 stipulates that in restricted visibility "every vessel shall proceed at safe speed… A power-driven vessel shall have her engines ready for immediate manoeuvre."

The only real defence available to liability is the so-called "agony of the moment" where a vessel is put into a collision situation by the actions of another vessel, being under time pressure to react: "sudden and great danger." This does not apply when a ship has contributed to creating the dangerous situation.

Under the Merchant Shipping Act, shipowners and salvors may limit their liability in accordance with the rules of the Collision Convention for claims "in respect of loss of life or personal injury or loss of or damage to property…occurring on board or in direct connection with the operation of the ship…"

In the notional collision example advanced by Mr Johnston, parties would have to consider which limitation of liability convention was applicable. Given the differing protocols among jurisdictions, parties might have a choice in this case of Singapore, UK (although there was no direct UK involvement, parties would consider the standing of English law and practitioners' expertise in shipping matters), Germany, Greece, Mexico, India, Chile, or US. The financial implications for damage assessed could vary considerably, and Mr Starmans emphasised the difficulty that adjusters occasionally faced in the whole question of "forum shopping."

In principle there is a right of full and complete indemnity for loss suffered by negligence of the other party. Restricting factors were remoteness of damage and pure economic loss. Claims arising might typically be for repairs; loss of earnings; costs of arriving at, lying at, and leaving the repair port; salvage; survey fees; and superintendence.

If a ship is considered lo st, the owner recovers the reasonable market value of the vessel at the date of loss plus interest, and loss of earnings.

For harbour damage, there is strict liability. On the question of personal injury, representatives of the deceased could sue either vessel if both ships were at fault, and recover 100% from either, subject to limitation.

Mr Zavos said evidence in collision liability cases depends less than it used to on the recollection of those on board or surveys of the speed and angle of blow. These days, voyage data recorders and automatic identification systems provided a more accurate account of what happened – this is not to say that the evidence of those on board is irrelevant, but the focus is more now on the attribution of fault and relevance and interaction of the collision regulations.

Mr Zavos said that protection and indemnity (P&I) cover would generally fill any gaps in hull and machinery cover, including claims related to "fixed and floating objects." For contact with such objects, the provisions of the Merchant Shipping Act did not apply. There is a rebuttable presumption that the responsibility lies with the moving object. He said that the financial limit of collision liability cover under International Time Charter-Hulls clauses is generally three-quarters of the sum insured "any one collision" plus three quarters of legal costs incurred with the consent of underwriters.

Most collision cases are resolved without recourse to the courts, particularly once issues on jurisdiction and limitation have been resolved between the parties, the speakers outlined.

INDIAN COASTAL CYCLING EXPEDITION

Chasing Dreams!

By Milind Tambe HonFIIMS

As I take to pen this article, I remember the words of Langston Hughes who said, "Hold fast to dreams, for if dreams die, life is a broken-winged bird that cannot fly".

When I swallowed the anchor after 15 years of naval service, way back in early 1998, I had a dream!

Having sailed around the Indian Subcontinent and having seen many a shore from the seas, having braved the occasional stormy seas and the cyclones, having enjoyed rounds of Rum along with fellow seafarers along the docks, having seen many sunrises and sunsets from the seas, it was my dream to walk along the entire coast of the Indian Peninsula - about 7,500 kilometres of it in total - including the Islands of Lakshadweep, Andaman and Nicobar, and to see every kilometre of it and watch the sea from the shores! Such a wonderful dream it was!

Back in 1998 (as any young 30 something would do) I set off to work towards my dream. I was working hard to make enough money to put food on the table and partially support a family of 5 then. Times were good, luck was on my side - I was working longer and longer hours.

As any aspiring and hardworking young man, I was climbing the rungs of the so called "Corporate Ladder". Success of one assignment leading to another challenging assignment. From being an Assistant to someone to managing an SBU of the firm (working for a pay cheque) .... to setting up my own little enterprise.... saw me gain 'Social Status'.

A house of my own followed, then another one and then an office premises of my own. A Scooter that was switched for a hatch back car – then a sedan and an SUV, countless personal possessions, dining at the best restaurants. I was realising small materialistic dreams. I was being honoured and felicitated at the best of the Institutions. Maslow's Theory of Hierarchy of Needs was working perfectly!

Roll forwards to New Year's Eve 2019. I suddenly realised I could not hide the salt and pepper beard. The hourglass was turned and I was close to start the second innings of my life - the ONLY life I had.

2020 started with a bang on the personal front - and then COVID happened. Depressing news all over India and the world of people succumbing to COVID. With a hospital opposite my home, the low-pressure alarms of the Medical Oxygen Bank were a constant reminder that more and more people were having a tough time, who did not manage to be fit and immune enough.

That was a 'Warning Bell'. I was not going to be a part of the game called COVID. I needed to work on my overall fitness levels and be as agile and fit as possible (not that I was not fit, but just that I needed to work on going a notch higher). As an avid trekker I opted for a winter trek along with three of my friends to a Himalayan high-altitude lake at Bramhatal. That required me to undergo a workout regime to give objective evidence of my fitness.

At the flag off ceremony at Goa

Displaying the sponsors branding

At INS Vishwakarma

Felicitaion by Lions Club Kakinada

Milind talking to school children in rural India

Media breifings at Chennai

Chennai Naval Veterans felicitating the team

At heritage site in Pondicherry

I turned all my focus to that project and started to jog and cycle, ensuring I improved my fitness levels than earlier set benchmarks. The trek went off fantastically and there strolling by the frozen Bramhatal lake, my dream of walking all along the coast of Indian Peninsula flashed back, even though I had not forgotten it. But it certainly had taken a back seat. Not anymore!

I started to flip the document with route plans and places I would want to stop by during the walk that I had been silently compiling. I realised 7,500 Kilometres was a long distance to cover on foot and especially in these trying times. After a little thought and it dawned upon me why not pedal along the entire coast. It is always better to realign plans than to abandon them totally!

I was already riding my son's MTB for my fitness regime for the trek. Why not continue and practice a little more for the ride? I would have loved to do that on the recumbent trike that I had bult myself, but considering that I would be riding off-road on several stretches, the trike would have been a bad choice. She was built primarily to ride on paved roads, and not off-road.

Thus started the preparation to realign and remap routes for the bicycle to hug the coast for most of the journey keeping in mind to circumvent steep ascents at the cost of distance and time. But that was fine and at least I was getting closer to my dream.

Having my marine consultancy business to manage, I decided to break the 7,500 Km long journey into four stages. The first was from Mumbai to Goa, the second from Goa to Kanyakumari, the third from Kanyakumari to Kolkata and the fourth from Koteshwar to Mumbai. The islands would be reserved for some time later once I could complete these four stages.

I had not done any long cycle rides earlier. The longest I had done were 40 Kms rides when I was in High School. I did some longer rides gradually increasing the distance and saddle time. I started to practice being on the saddle riding for hours, only to notice getting off the bicycle with a sore butt and stiff thighs making me uncomfortable for the rest of the day. There were instances

Overhaul time in Pondicherry

The team at Kochi

Naval veterans welcoming the team at Kochi.jpg

At Lakhpat Fort along west coast of Inida.jpg

Road side repairs a daily affair

when I felt like quitting, but then I realised that I was just experiencing discomfort and not pain. I had to manage my discomfort to ensure it does not become a pain. **I needed to do the same thing differently to reduce the discomfort.** I started to read about bike fit and tweak my bike to suit my physiology. And within the next few days the discomfort was gone. I did an 87 kilometres long ride on the last day of 2020. A 100 Kilometres ride followed soon.

I was lucky to have four friends all younger than me, willing to share my dream and pedal along. Thus started the Indian Coastal Cycling Expedition on the 13th of February 2021. We completed Stage 1 at Dabolim on 21st Feb 2021.

Come 21st April 2021, I suffered a massive personal loss, and that further strengthened my resolve to live my dreams and to see it through.

I embarked on the Indian Coastal Cycling Expedition on 14th Nov 2021 from Goa and completed that on 22nd Feb 2022 back in Goa along with a cycling friend of mine. It took 102 days and 5,300 kms of the coast was covered – a few hundred Kms could not be done due to COVID lockdowns in the respective states.

Every day of the 102 day long expedition has a story, but here I sum a few valuable life lessons I learnt on the way.

"Hold fast to dreams, for if dreams die, life is a broken-winged bird that cannot fly"

"Change is a normal part of our lives, but it is uncomfortable for the vast majority of people because it makes them feel like they've lost control"

"In the journey of life, it is so easy to be engrossed with and focused on your own journey, that sometimes we fail to identify why someone is slowing down or may be someone is having a problem. Understand how important it is to look out for others and be with them"

"Let out the child in you and you will never grow old"

"Do not limit your challenges, but challenge your limits"

"Do not let obstacles define your experience"

How we cooked

On the famous Pamban Bridge

At Chennai

At the southernmost point at Kanyakumari

Flaunting some attitude

First hand evidence of climate change

Wayside shelter at Dhanushkodi.

The cycles and the setup

A little piece of history

By Geoff Waddington FIIMS, IIMS President

The following is a little piece of background history ahead of a more in-depth feature being written for the September edition of the Report Magazine, which will include an article on the individual history of the vessels with which I have been involved.

When I left the Royal Navy in 1994, I was working as a Ship Repair Manager at Husbands Shipyard in Marchwood on Southampton Water in the UK. When the shipyard closed in 1999, I continued to operate the old pre-war slipways for another 15 years. In 1999 the old, covered slipway shed facilities were taken up by the British Military Powerboat Trust (BMPT) which at the time was under the guiding hands of Mr Richard Hellier. Under his guidance a team of skilled volunteers and enthusiasts restored a selection of Britain's historic small craft.

Even in his retirement, Richard Hellier remains passionate about the preservation and restoration of Britain's small historic vessels. I say British, however, I also recall a German Motor Torpedo Boat S130 arriving at the yard one day (see image below).

In order to continue to preserve this historically important collection of vessels, they have now become part of the collection of Naval History at the Portsmouth Naval Base Property Trust, in Portsmouth Dockyard. The collection is under the guidance of Mr Diggory Rose, who is also passionate about the preservation and restoration of British historic vessels.

During the time since my days at Husbands, I have been involved in the capacity of a surveyor to lend whatever assistance I could to these experts in restoration and the team of skilled and dedicated volunteers and enthusiasts who carry out this invaluable work. Some of my involvement has been to bring these vessels into a commercially code compliant condition to allow them to be enjoyed by 2nd World War veterans and others. There are still some historic vessels, which remain in the hands of other organisations and individuals, and I offer a service to them also.

My involvement as an IIMS MCA coding surveyor brought all of this to the attention of our CEO, Mike Schwarz, who has an enthusiastic interest in all of this history. He has encouraged me to share some of this history with readers of the Report Magazine. Some of those I have been involved with since my time at Husbands have been Mr Richard Hellier of the BMPT, Mr Brian Patterson (initially) and more recently Mr Diggory Rose of the PNBPT, Mr Alan Watson of the Medusa Trust and Mr John Phipps of D-Day Revisited.

During the second world war Husbands suffered an early set back to their war work when on the night of 29/30th December 1940, the yard was bombed and both building sheds set on fire. Two of the minesweepers in them were too badly damaged to be repaired. The above image is a photograph of the largest shed which was rebuilt and one of the earliest covered slipways in the UK. The photograph was taken after the 1999 demise of the yard. The black and white photo below is of the yard in the 1940's, with the above building on the right and the 1,000-ton capacity open slipways on the left.

Unfortunately, there is now very little remaining at the old Husbands Shipyard site and at the water's edge at Cracknore Hard - only the old office building (once the Ship Inn) and the jetty remain, at the end of which is a floating piece of Mulberry Harbour.

Mulberry harbours were temporary portable harbours developed by the UK during the Second World War to facilitate the rapid offloading of cargo onto beaches during the Allied invasion of Normandy in June 1944. After the Allies successfully held beachheads following D-Day, two prefabricated harbours were taken in sections across the English Channel from the UK with the invading army and assembled off Omaha Beach (Mulberry "A") and Gold Beach (Mulberry "B"). Source: Wikipedia

HSL 102 (High Speed Launch 102)

ST 1502 (Sea Plane Tender 1502)

The British Powerboat Company built many of the historic vessels which I am involved with. In 1913 Herbert Scott-Paine with Noel Pemberton Billing both, of whom had an interest in aviation, opened the Supermarine factory at Woolston, Southampton. High speed aircraft evolved into high-speed motorboats and in 1927 Hubert Scott-Paine bought the Hythe Shipyard and formed The British Powerboat Company. In the 1930's Scott-Paine then entered into a collaboration with T.E. Shaw (the famous Lawrence of Arabia), which was to be of great service to British Powerboats. Throughout that decade the success continued with cruisers, racing boats and new classes of military boats. Next door was the Hythe flying boat facility which was taken over by Supermarine Vickers and later BOAC building the short Sunderland flying boats. The boats built initially for the RAF included amongst others the 100 class HSLs (see HSL 102 below).

In 1935 the British Powerboat Company received the first orders for MTBs from the Royal Navy. These WWII craft included the MGB/MTB types (see MGB 81 below). The production of boats at Hythe had much reduced after the war and the decision was taken to close the yard late in 1946.

The present home for most of these vessels is now the pontoons outside or inside of Boat House 4 in the Portsmouth Historic Dockyard. This boathouse was designed by naval architects for the construction of small naval vessels. The building was originally intended to extend as far as Victory Gate to the south, but construction was halted at the outbreak of World War II. The temporary corrugated iron clad wall of 1940 to the southern elevation remains to this day.

ML 1387 'Medusa' (Harbour Defence Motor Launch)

MGB 81 (Motor Gun Boat 81)

It is very sad that all these little shipyards, which came into being to satisfy the needs of building a supply of small vessels to support the war effort, have all but disappeared along with a much larger civilian ship building industry in the UK. But I salute the relatively small group of people who fortunately provide the expertise to ensure these wonderful little ships continue to give good service.

Regulation will shape future shipowner strategy in the coming decade

By Stamatis Fradelos, Vice President, Regulatory Affairs, ABS

Regulation is a constant presence in the global shipping industry, but regulation will have an arguably greater impact in the coming decade than at any time since the inception of MARPOL or the introduction of the first sulfur Emission Control Areas.

The environmental regulations already in the process of implementation and those still under development represent a radical shift towards lowering and ultimately removing carbon emissions from the industry.

And unlike some previous regulations that set a baseline and remain in place, the IMO's carbon reduction targets will see restrictions tighten as the years progress, while new regional rules will bring shipping into the European carbon market for the first time.

At the same time, the process of reducing SOx emissions that began in Europe and spread to the United States will be further extended, if a new emissions control area for the Mediterranean Sea is adopted.

IMO GHG strategy

Arguably the most important global regulatory development shipowners need to have in mind while considering future strategy is the IMO GHG initial strategy, adopted by Resolution MEPC.304(72) on 13 April 2018.

The ambitions of member states to reduce carbon emissions further and faster than originally envisioned saw the initiation of a revision process by MEPC 77 in 2021.

Influential IMO member states have proposed that IMO should adopt an ambition of zero emissions for the international shipping sector by 2050, together with strengthening the level of ambition for 2030 and to introduce an additional level of ambition in 2040 to ascertain that the full transition to zero-emission shipping is realized in 2050.

The discussion on the revision of the strategy will continue at the upcoming MEPC meetings with the aim of a finalized and adopted text at MEPC80 in summer 2023. If IMO adopts a stricter strategy, maritime decarbonization efforts will need to be promptly aligned with the revised strategy.

The IMO's 'mid-term measures' which are expected to be finalized by 2025/26, include the International Maritime Research and Development Board (IMRB) supported by flag administrations and most of the shipowners' associations.

Funded by a mandatory payment $0.624 per tonne of CO2 emissions corresponding to about $2.00

> Arguably the most important global regulatory development shipowners need to have in mind while considering future strategy is the IMO GHG initial strategy, adopted by Resolution MEPC.304(72) on 13 April 2018.

per tonne of liquid fuel oil (MGO/MDO/LFO/HFO) purchased. Approximately five billion US dollars will be gathered over the life of the programme – to be invested in

R&D projects for decarbonisation while cross-checking of payments against emissions will be reported in IMO DCS.

The Marshall Islands and Solomon Islands have suggested a more aggressive version with a mandatory payment of $100 per tonne CO2 equivalent by 2025, with upward ratchets on a five-yearly review cycle. This would likely mean a price on all GHG emissions by 2030 in the range of $250-300 tonne CO2 equivalent.

A submission by Norway has introduced three possible concepts. These include a fuel GHG intensity limit under which a ship could only bunker and use fuels with a CO2 or GHG emission factor below a certain level. This would be subject to a stepwise approach similar to the sulphur requirements in regulation 14, MARPOL Annex VI.

Also proposed is emissions cap and trading, similar to the EU ETS with the agreed cap determining the total amount of greenhouse gases that a ship can emit and emission allowances traded as needed through auctioning or other allocation processes.

Finally, carbon intensity indicators and credit trading/fleet averaging is proposed, based upon the recently approved Carbon Intensity Indicator and rating scheme. Ships that do not meet the target would need to acquire credits from ships that surpass the requirement. Under a fleet averaging scheme, emission credits could be redistributed between ships within the same company.

Well to Tank and Tank to Wake

Also important to monitor will be the development of the lifecycle GHG/carbon intensity guidelines (LCA) aim to incentivize the uptake of sustainable alternative low-carbon and zero-carbon fuels. These guidelines provide well-to-tank and tank-to-wake GHG emission factors for all fuels and electricity used onboard a ship.

Although the well to tank emissions are not accounted for in international shipping, the LCA Guidelines will provide information to ship-managers and charterers on the sustainability of the fuels, both for GHG and other emissions, so they can make informed decisions during the selection of the fuel to be used on board.

Tank to wake emissions now include methane (CH4) and nitrous oxides (N2O)-equivalent CO2 emissions. In addition fugitive emissions such as methane slip are being considered with the introduction of a slip factor expressed as % of fuel mass while default emission and slip factors per fuel type, engine/converter type are proposed.

The draft text sets the Global Warming Potential (GWP) of methane over 100 years at 29.8 for fossil and at 27.5 for non-fossil methane and the GWP of N2O over 100 years at 273, however there was a call during the discussion at the ISWG-GHG11, fairly supported, to account for GWP20 instead of 100.

A carbon source factor (SF) may be introduced according to IPCC accounting principles when calculating the tank to wake GHG emissions. This factor determines if tank to wake CO2 emissions should be accounted for in the IMO GHG inventory for international shipping (SF = 1) or not (SF = 0) and should be multiplied with the CO2 emission factor for the specific fuel. For properly certified biofuels and fuels produced with carbon capture, where the captured CO2 is accounted in national GHG inventories of any UNFCCC member countries, the SF could be zero.

EU Impact

The European Union's 'Fit for 55' package of measures and in particular, the extension of the EU ETS to shipping and the FuelEU Maritime Regulation are subject to negotiation in Brussels while shipowners put efforts to introduce amendments to the originally proposed text.

Concerning the revision of the EU ETS, discussions include the definition of the 'commercial operator' in a bid to make charterers equally responsible for carbon emissions as well phasing-in the implementation between 2023 and 2025 or 2026.

> "The objective of the ABS Regulatory Affairs department is to support our clients in coping with forthcoming regulations and providing to the regulators the feedback from ship operators in order to assist in the development of a fair regulatory framework, assuring level playing field."

Operators face volatile compliance costs based on the fluctuating carbon price which reached almost 100 euros/ton of CO2 at the beginning of February, fell to around 60 Euros/tonCO2 due to the war in Ukraine and quickly recovered to around 80euros/tonCO2.

Regarding FuelEU Maritime, discussions include whether to lower the ship size threshold from 5,000 GT to 400 GT and the role of the independent verifier for the penalty calculation.

Operators have already started calculating their compliance costs and fuel compliance options. Fossil LPG and LNG burned in engines with low methane slip seem to be a compliant option up to 2040 based on the default values provided into the regulatory text for calculation of the GHG intensity.

It is expected that discussions will continue this year, with the EU Parliament starting negotiations with the Council in June. Legislative text for EU ETS and FuelEU Maritime will be concluded by the co-legislators and in trialogues with the Commission and adopted, after which the ESSF sub-groups will start discussing and formalizing the necessary Delegated and Implementing Acts – a process which is not expected before 2023.

A new ECA?

Another consideration for operators planning their fuel selection strategy is that countries bordering the Mediterranean Sea have set out a proposal to designate the Mediterranean Sea as an Emission Control Area for Sulphur Oxides. The proposed 'Med SOx ECA', would operate in accordance with Regulation 14 and Appendix III of MARPOL Annex VI, to take effect from 1 January 2025, setting the sulphur content of fuel oil used on board a ship within its boundaries not exceeding 0.10% m/m.

Specifically, the proposed Med SOx ECA includes all waters bounded by the coasts of Europe, Africa and Asia, as well as:

- the western entrance to the Straits of Gibraltar,
- the Dardanelles,
- the northern entrance to the Suez Canal.

The designation of the proposed Med SOx ECA is supported by an acknowledged need to prevent, reduce and control emissions of sulphur oxides and particulate matter from ships.

Conclusion

The objective of the ABS Regulatory Affairs department is to support our clients in coping with forthcoming regulations and providing to the regulators the feedback from ship operators in order to assist in the development of a fair regulatory framework, assuring level playing field.

We have already started working with shipowner associations and the department has a new, additional objective to enhance ABS' engagement with administrations and regulatory bodies and support the industry with compliance guidance offering detailed insight and guidance on the impacts of today's unprecedented and dynamic regulatory environment.

About ABS

ABS is defined by a vision, a mission, and a core set of traits. As important today as they were in the past, these characteristics define how they approach their work. Founded in 1862, ABS is a global leader in providing classification services for marine and offshore assets. Their mission is to serve the public interest as well as the needs of their members and clients by promoting the security of life and property and preserving the natural environment. ABS' commitment to safety, reliability and efficiency is ever-present. ABS continues to lead in industry safety metrics – including a record three-year achievement for zero lost time work-related incidents for 2017 - 2019.

Today, ABS is working in a rapidly changing business environment where global markets are shaped more frequently by digital technology and data analytics. They are applying advanced technology, digital tools, capabilities and improved core processes to drive safety excellence, greater performance and efficiency. ABS continues to be a trusted advisor and partner, supporting marine and offshore business ventures for both traditional and non-traditional clients.

Reviewing early editions of The Report Magazine

As part of the celebrations to commemorate the 100th edition of the Report Magazine, we have looked back to some of the much earlier versions, including the first edition. The editorial content was always high class, but the layout and graphic design certainly left a bit to be desired. But it is clear that despite lacking the luxurious glossy feel of today's Report Magazine, those early editions were well read and thumbed. The following extracts have been pulled from the first ten years' editions of the publication.

Extracts from the Summer 1997 edition of The Report

On retiring from the role of President, David Linacre commented, "I have enjoyed my role as President very much. I particularly enjoyed the trips to Calais, France, especially once the refreshments were organised although on my first attendance, we were only supplied with one thimbleful of very strong French coffee all day!"

Incoming President, Jeffrey Casciani-Wood said, "It is of course something of an achievement to be elected by one's peers to be President of an International Institution and I feel a great sense of pride."

Extracts from the Autumn 1997 edition of The Report

In this edition, the editor published an article to mark the end of Canberra, known for many years as Britain's favourite cruise ship as she bid farewell on 30th September.

Peter Mitchell wrote: One definition of a profession is 'the holder of a body of knowledge'. Doctors hold the body of medical knowledge, naval architects the knowledge of how to build ships and so on. There can be no doubt that our members also hold a considerable amount of knowledge about marine surveying. But this knowledge is dispersed and diffused around the world. It needs to be collected, formalised and recorded for future generations of marine surveyors.

Extracts from the Winter 1997/98 edition of The Report

Glenda Jackson, Minister of Shipping, announced on 19th August that a new marine agency was to be formed to take forward the work of the Coastguard Agency and the Marine Safety Agency will be created next year.

Editor, Robin Gilmore, in his introduction touched on a point not lost on marine surveyors of today when he said, "Sadly I return from this happy, caring environment to learn of more surveyors suffering the threat of legal action. We seem to be following very quickly in the path of our American friends, where every professional lives with the fear of possible litigation."

A message of thanks was published by Terry Lilley. He commented, "May I take some space in The Report to record my thanks to the membership for a Brunton Compass. The kind thought behind this gift will always spring to mind whenever I look at it and certainly, I will never again lack direction."

Extracts from the Spring 1998 edition of The Report

Albert Weatherill wrote to The Report to extol the virtues of his new PC, as follows, "Computer technology seems to advance at breath-taking speed. Last Christmas I purchased a new system for £2,000 which, at that time had a relatively impressive specification of a 133 MHz Pentium Processor, 16 Mb of Ram and a 1.6 gigabyte hard drive. Two thousand of my hard-earned pounds would, I incorrectly assumed, have purchased me a system that would have been sufficient for some time to come. Little did I know that this specification would seem slow, antiquated and embarrassing to describe before I had barely unpacked the various cardboard boxes!"

The subject of moisture meters was clearly a hot topic back then. In his article entitled ***Beware of the man with the Moisture Meter***, Nigel Clegg said, "If ever there was a subject guaranteed to create heated debate in yachting circles, it would have to be osmosis, yacht surveyors and their moisture meters. The problem is twofold. Firstly, electronic moisture meters, like any test equipment, are subject to certain limitations, which few people are aware of. Secondly, osmosis is very much a chemical phenomenon, which is often difficulty to grasp for those with more mechanical backgrounds." Do you sense Nigel's frustrations?

Extract from the Summer 1998 edition of The Report

Editor, Robin Gilmore, covered off the launch of a new piece of European legislation. He commented, "With the Recreational Craft Directive now in place in Europe it remains to be seen the long-term effect on the boating industry and consumer. Certainly, there has, in recent months, been much discontent, particularly by the small boatbuilder about the cost of compliance with the legislation. The task of this compliance, particularly to the small boatbuilder, is a burden that is both unfortunate and undesirable and one which ultimately may see the loss of our traditional craftsmen."

Extracts from the Spring 1999 edition of The Report

The lead editorial in this edition opened with this statement: It is undoubtedly becoming more and more apparent, and I must say it does worry me, that in general terms the quality of experience is gradually being devalued and undermined in favour of youth and qualifications. I learn of various examples where an individual has been placed in a position of authority largely through qualification, but has however lacked the necessary experience, with serious consequences.

A review of the annual dinner that year revealed that the wine flowed well with no complaints of any shortages. The correspondent wrote, "During our port and brandy session our guest speaker Mr John Guy, rose to his feet. It was with some trepidation that members were concerned as to the content of his speech. I am pleased to report however, that he gave a very light-hearted ten minutes on the lines of a stand-up comedian."

Extracts from the Winter 2000 edition of The Report

The editor wrote as follows:
Once again I learn with alarm and sadness of two more tragic fishing vessel accidents in the UK and this is just in the UK within the past few days. If one were to add up all the accidents at sea, both pleasure and commercial, around the world I am certain the results would be unacceptable. I believe that many of these tragic incidents are avoidable, and we must strive to continue to develop even higher standards within the industry to ensure this terrible toll diminishes."
Reading this, one wonders how much progress we have made over the past twenty plus years. Ed.

A letter to the editor read as follows:
Thank you for your letter of 13th December 1999 informing me that I have been awarded a Diploma in Marine Surveying. I enjoyed the course enormously and feel this Diploma is just what is required in the fragmented industry that is marine surveying. *Roger Samways*

Extract from the Spring 2001 edition of The Report

Responding to a letter published in the Report Magazine by Mr J Silson, Assistant Editor of Yachting Monthly, replies, "You should not be too hard on the surveyors you have talked to. Surveyors report on the condition of the yacht, not its design or intended use. They should certainly be able to comment on structural integrity. But this has nothing to do with the depth of the hull. A boat with low freeboard and a shallow canoe body can be just as strongly built as a deep, long-keeled hull."

Extract from the Winter 2001 edition of The Report

Ian Wilkins, then IIMS Secretary wrote, "For two months this year I was travelling a great deal and used a Psion pocket computer together with a mobile telephone to send and receive emails. This combination of hardware is potentially of great use to a marine surveyor."

Extracts from Issue 4 2001 edition of The Report

Written by author unknown:
While most industry associations have a clearly defined membership and work programmes with a sharp focus, the International Institute of Marine Surveying is faced with the challenge of serving a very broad church - perhaps the broadest of any in the maritime sector. Marine surveyors come in all shapes and sizes, providing a vast array of services to a client base that encompasses every party involved with the design, construction and operation of ships, boats and marine structures.

Letter to the editor from Peter Crowley:
Just a quickie to say thank you and the IIMS for an enjoyable evening. I felt pretty rough before and was not at my best - until I arrived and bumped into old friend after old friend - and then made some new ones too. A perfect combination of setting, booze, food and company. I hope the bill will be worth the pleasure you brought to us all.

An item from the President's Report of that year noted the numbers of members continued to grow and was standing at 427. We have had one specific membership problem this year when it was identified that a full member had achieved his membership on the basis of forged documents. The individual is no longer a member of the Institute.

The President added, "The Institute is progressively becoming accepted as an organisation that believes in setting real standards and we will continue to strengthen this by continuing to actively promote the profession."

Marine Surveyors & Consultants Summit 2001
It was reported that the basis of the forum was to discuss the merits of a 'Quality Charter' for marine surveyors and consultants. A draft of the charter has been circulated and comments invited. The International Institute of Marine Surveying has been pleased to become involved in this process.

Letter to the editor
Dear Sir,
I was particularly interested in the document *Marine Surveyors and Risk Issues*. Here in Canada (and elsewhere in the world) we have the ongoing problem that anyone can hang up their shingle and call themselves a marine surveyor. Thereafter it is a case of caveat emptor. As IIMS continues to grow and flourish the problem may be resolved in time, but in the meantime the Institute only represents a tiny fraction of people acting as marine surveyors. *Clifford Parfett*

Extracts from Issue 1 2002 edition of The Report

Notice is hereby given of IIMS Certifying Authority registration: May we advise that the necessary administration is now in place and will, therefore, allow the immediate commencement of examinations within individual member's categories, as detailed in the codes.

Letter to the editor:
I had reason to speak with my insurance broker when he passed on the 'good' news that at the next renewal my firm's P&I insurers are pulling out of that particular insurance field due to the high numbers of claims for the so-called osmosis effect. He then advised me that the insurance companies remaining in the field intended to pick and choose the surveyors they will insure and that annual premiums will undergo a massive hike of up to 80%! *Jeffrey Casciani-Wood*

Extract from Issue 2 2002 edition of The Report

Taken from Institute notes:
Email is rapidly becoming the most efficient way of sending and receiving information. To this end, the Institute has begun sending out notifications of meetings and information by email to members. The major benefit of email is that it is practically instant (well the same day at least)!

Extract from Issue 1 2003 edition of The Report

Letter to the editor
Dear Sir,
I noticed that last week a boatyard in Holland suffered a massive fire where some eighty - yes eighty - boats were destroyed. On subsequent visits to boatyards in pursuance of my business, places which are by their very nature high risk fire areas, I suddenly became aware of the almost total lack of any real fire fighting equipment. No fire hoses, no extinguishers, no fire safety plans and no instructions for boat owners as to what to do in the event of a fire.

Extract from Issue 3 2003 edition of The Report

Letter to the editor
Dear Sir,
Having recently been informed of a case in which a small coded vessel sank mainly due to the lack of freeboard, it has occurred to me that I seem to be one of the few surveyors that actually measure a vessel's depth and several freeboards during a pre-purchase survey. As these measurements affect the stability, strength and therefore, the seaworthiness, why don't the majority of surveyors take the time to measure them?
Elliott Berry

Extracts from Issue 3 2002 edition of The Report

Much of this edition was given over to the safety of marine surveyors in the workplace. In his opening comments the editor said, "Marine surveyors wish to be acclaimed for being professionals. This mark of professionalism starts with your own considerations for personal safety and the safety of those around you. Do not let the side down by taking unnecessary risks and becoming yet another statistic."

The new super tanker plague
It was reported that from 1995 to 2001 an average of 408 tankers broke apart at sea or barely escaped that fate according to INTERTANKO. The leading cause was collision, but nearly as many suffered 'structural/technical failures', often a euphemism in marine circles for excessive corrosion. Blame it on super-rust, a virulent form of corrosion that has destroyed hundreds of ships and could sink the oil industry.

Extracts from Issue 4 2003 edition of The Report

Training and accredited certification of ISM auditors
Since the ISM code came into force, there has been a surge in demand for system auditors for executing mandatory internal audits in shipping companies and auditors performing ISM certification on behalf of the authorities. This situation has created a demand for standards of auditor competence and a system for evaluation of such competence.

Letter to the editor
Dear Sir,
According to The Metro, a freely distributed London newspaper, a national register is to be set up to weed out unqualified tricksters who pose as social workers. New legislation, it says, will make it illegal for anyone to use the title social worker unless he/she is properly entitled to do so. If Her Majesty's Government can do it for them, why can't they do it for our marine surveying profession?
Jeffrey Casciani-Wood.

The Report

Extracts from Issue 1 2004 edition of The Report

John Lawrence has been appointed as Chief Executive of IIMS. His background lends itself to running a membership organisation. He also brings with him many years' experience in the area of training and education, albeit not in the marine sector. John will explain and share his plans and proposals at the next Annual General Meeting.

Guide to Port State Control Inspections
The top five port state control regions detained over 3,500 ships in 2003. New rules in 2004 will make it even more important for ships to be properly prepared for inspection. A new guide will provide useful checklists of the convention certificates and documents to be carried on different types of ships.

Extract from Issue 2 2004 edition of The Report

Letter to the editor
Dear Sir,
I read with interest the Institute's decision to enforce some form of CPD upon its members and would suggest this necessitates some members, such as myself, removing ourselves from membership. This is unfortunate. I enjoy reading The Report and find some of the articles particularly helpful. But the fact remains that members who are one-man operations barely have time to take vacations each year and an appointment with the doctors or dentist appointment brings Murphy's law into the equation. *Capt C Hanily*

Extracts from Issue 3 2004 edition of The Report

EU environment -
Ministers decide less sulphur in fuel
The EU Council decision of 28th June 2004 will reduce the sulphur content of inland shipping fuel to 0.2% by 2007 and 0.1% by 2010. High sulphur content in fuel may endanger human health and can lead to acidification of lake and forest ecosystems.

Osmotic blistering - Kevin Piper wrote:
As a small craft surveyor of some 25 years standing, I have observed the continually changing attitudes relating to the issue of osmotic blistering on GRP craft over some 36 years.
Due to the fact I work in East Anglia, 50% of my inspections are on boats operating on the Broads or Fenland waterways. It will come as no surprise that almost all the inland waterways inspected have some form of osmotic blistering.

Letter to the editor
Dear Sir,
I have scribbled this in Starbucks whilst waiting for my passport. An increasing and alarming number of reports have come to my attention concerning the poor standard of examiners currently carrying out CA Cde of Practice examinations. I would concede that the reports are not confined to just one Certifying Authority. Nevertheless, I feel that IIMS should be cognisant of the situation and attempt to ensure that none of its examiners are tarred with the same brush.

Extracts from Issue 1 2005 edition of The Report

More on gas installations on small craft.
Correspondent, Peter Mitchell, wrote, "Soon after retiring I bought an old wooden boat. The gas bottle was stowed in a cockpit locker that drained thro, the engine compartment into the bilge. I ditched the lot. In its place is a stainless steel, methylated spirit, two burner stove. Meths is a little expensive in the UK. But the main advantage is that if the kettle takes too long to boil, I can at least drink the meths!"

Letter to the editor
Dear Sir,
I have increasing concern that some of our members are not using the Tramax Skipper moisture meter properly. I have seen reports issued where high readings have been observed, but incorrectly interpreted. Even the reference to what the readings indicate and the scale used is incorrect. *Eugene Curry*

The Report
The Journal of The International Institute of Marine Surveying

Extract from Issue 4 2004 edition of The Report

Letter to the editor
Dear Sir,
I have just got round to reading the Report and whilst not wanting to be over pedantic, I would like to draw your attention to the spelling in the article on page 4 - Sewing Forces. Perhaps the spell checker on your word processing software accidentally corrected it? However, it does not look clever to the outside world when we do not appear to know the correct spelling of our terminology, ie. Sueing Forces. Scott Maclaren

Extract from Issue 2 2005 edition of The Report

Annual Dinner report
Once again this was a grand affair held in the Court Room onboard HSQ Wellington. The Wellington is still regarded as our spiritual home and she always welcomes us aboard. Th gathering of 80 people brought friends from South Africa, Korea, Latvia, Norway, the Netherlands, Canada, Gibraltar and the UK.

Extracts from Issue 3 2006 edition of The Report

Survey Fees & Expenses by Capt Barry Thompson
Barry commented in his article that "Surveyors are not all equal, a situation that arises because, amongst other things, their primary disciplines, their training and experience differ markedly. As a consequence, it is expected that there will be a range of fees they charge in any one port in any one country. It can reasonably be stated that the most trained, experienced and competent surveyors can be expected to command the highest fees."

Relaunch of a legend
It was reported that Wiltshire based broker, Simon Walworth, has taken on a very special commission – the sale of the legendary racing yacht Bloodhound, once owned by the Queen. Even without her Royal connections, Bloodhound is a very special boat with a list of achievements as long as her mast.

Extracts from Issue 4 2006 edition of The Report

ISM does not tackle human errors
The ISM Code does not adequately address the human factor, DNV Maritime Solution director, Jan Erik Granholdt, told guests at an SMM presentation. "The yardstick has been well prepared, but the processes to meet it are lacking, " he said.

Letter to the editor
Dear Sir,
Imagine a surveyor taking his precious laptop on to a ship and turning round a moment later to see it sizzling into a goo on the surface of some hot throbbing machinery! The International Transport Intermediaries Club has constructed tales of such hot hardware to illustrate what could prove to be highly costly new liability concerns. *James Brewer*

Extracts from Issue 4 2006 edition of The Report

Shipping stereotypes: Lancelot the surveyor
In his way Lance has become one of the ancient monuments on a small island off Hong Kong. His neighbours to his face call him Captain, but in general he goes by the name of Captain Fatty. His really old pals in the curry club call him Fatso. But still at a good old age when most of his peers are shuffling around Ramsgate or the Gold Coast, Lance gets up some mornings each week and catches the ferry to touch base with his few remaining clients to deliver a report as he always does in person, or just to share a few jars with the boys.

And finally – the printed word
We are frequently told that there is no future for the printed word, which is fighting a losing battle against the sheer speed and immediacy of electronic publishing. You might suppose that your editor would be pleased about this. But he is not. Neither does he believe it to be true.

Refrigerated container cargo claims on the rise warns Britannia Club

In the past two years, the Britannia Club has opened just over 250 claims files for allegedly damaged refrigerated containerised cargo carried on operators' vessels, with the number of such claims being on the rise recently.

Cargoes carried in refrigerated containers are many and varied, including meat, vegetables, fruit, live plants, flowers and medicines, all requiring their own bespoke temperature and atmosphere management.

Where there is the loss of the entire contents of a 40' high cube container, the claim cost can be substantial. Dependent on the nature of the product, the refrigerated container will be assigned an appropriate "set-point" carriage temperature, either frozen or chilled as stipulated by the shipper.

This temperature is to be maintained from loading the container at the shipper's facility, throughout the voyage until ultimate delivery to the receiver when the container is unloaded.

The other two settings that can be crucial to the successful outturn of certain products carried in refrigerated containers are the humidity and the air exchange rate. The majority of claims arising, where a consignment is found in an apparent distressed condition upon receipt, are due to temperature abuse. This can occur due to a number of reasons:

- Cargo stuffed into the refrigerated container whilst at a temperature significantly different from the carriage set-point temperature. Refrigerated containers are not designed to cool cargo to the set-point, with the result that it takes many days for the core of the cargo to be cooled to the required carriage temperature.
- The temperature of cargo to be stuffed into a refrigerated container should be at or very close to the set-point temperature.
- Incorrect set-point temperature.
- Refrigerated container malfunction.
- Refrigerated container failure.
- Lack of electrical power, either post stuffing and prior to loading, whilst onboard due to the refrigerated container not being plugged in upon receipt on board, the socket being inadvertently switched off or the plug removed in error during the voyage, whilst in transit ports or while in transit to the receiver at/from the final discharge port.
- Excessive voyage length, due to port congestion, deviation due to Covid restrictions or other reasons, or vessel breakdown, reducing the usable life of the product upon delivery to receivers, or causing its deterioration prior to delivery.

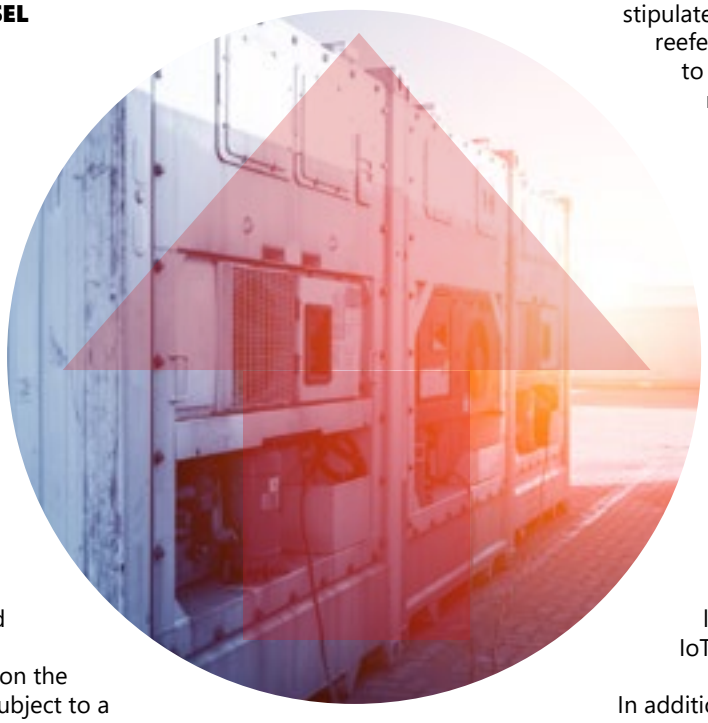
BEFORE LOADING

Prior to delivery to the shipper for stuffing, all refrigerated containers should be subject to a Pre-Trip Inspection (PTI) on behalf of the carrier, conducted by a suitably qualified person. The PTI will include a visual inspection of the container's structure and refrigeration machinery and a function test of the plant.

In case of a failed test, the necessary repairs should be carried out before re-testing. Where stuffing is delayed or the shipment cancelled, it is recommended that the carrier's procedures stipulate the maximum validity of a PTI prior to stuffing, after which a new PTI will be necessary.

The required set-point temperature and any humidity range and/or air exchange requirements are usually stipulated on the Bill of Lading/Sea Waybill, with often only a required set-point temperature detailed. All required carriage conditions should be set prior to container stuffing and the container cooled to the set-point before being filled.

ON BOARD THE VESSEL



Refrigerated containers should be stowed allowing safe access for periodic checking and for repairs. Britannia recommends that they are stowed no higher than the second tier from the deck or lashing bridge, and when on the second tier, a properly secured and rigged working platform should be fitted along with a safe means of access.

Access for checking and conducting repairs on refrigerated containers on the second tier should be subject to a risk assessment.

We are aware of refrigerated containers being stowed three or four tiers from the deck or lashing bridge, where checking during the voyage and the provision of repairs would be unsafe, if not impossible in the case of major repairs being necessary, such as changing a compressor says Britannia Club.

Upon loading, the vessel should ensure that all refrigerated containers designated as containing cargo that is temperature controlled, should be plugged in, the plug locking collar engaged on the socket, power switched on, and the socket box access securely closed to prevent spray and water ingress.

The refrigerated container function and temperature should also be checked every six hours and records of time and date, and delivery and return air temperatures kept.

INTERNET of THINGS (IoT) TECHNOLOGY

Internet of Things (IoT) refers to a network of interconnected devices and objects connected to the Internet, and it has also been introduced to the world of refrigerated containers.

In fact, some refrigerated container operators today offer IoT as part of their service, which allows the shipper to remotely pinpoint the container's real-time location as well as monitor and maybe even adjust some of the container's settings.

While this is all very convenient for the shipper, it does provide some concerns to the carrier, who is ultimately responsible for monitoring the container's performance during its voyage, particularly as the container settings can now be altered remotely and without their knowledge according to Britannia.

For this reason, the carrier needs to ensure that for containers installed with IoT technology, the contract of carriage clearly states that:

- The setting instructions, which may be stipulated on the bill of lading or on the reefer manifests/instructions provided to the ship for each container, remains the legally binding instructions in terms of the container's settings, and which the ship shall monitor during the voyage.
- Changes to these instructions should be communicated in writing, so that there is a clear paper trail of the instructions provided by the shipper to the ship.
- The carrier cannot be held liable for any remote changes to the settings which has not been notified to the ship as agreed by the contract.
- The carrier shall not be held liable for any malfunctioning of the IoT module.

In addition, the carrier should continue to monitor the containers installed with IoT technology in the same manner as with conventional refrigerated containers to ensure that:

- At loading the refrigerated container is in a good working condition and that the settings are as prescribed by the bill of lading or reefer manifest/ instructions.
- During the voyage the container continues to work satisfactorily and maintains its set values.

Any indication of error, sign of faults or changes to the container's settings should immediately be reported to the shipper for its clarification and further instructions.

Finally, the ship should be able to document that they have monitored the refrigerated container during the voyage as required and, if there is any sign or suspicion of the container malfunctioning, preserve evidence in order to reject a potential claim.

CASE STUDY:

Methanol dilution and gas free procedure innovation

SWAN & CO

By Swan & Company (Marine Surveyors) Ltd.

Large client savings realised by re-designing a single operation

At Swan & Company (Marine Surveyors) Ltd., we are world leaders in marine bulk management, cargo survey, vessel suitability, vessel tank cleaning/self-cleaning systems, marine gas oil testing, and training. We have a combined team experience which stretches past 70 years, and because of our knowledge and experience within the industry, we are in a position to make industry defining changes which help our clients realise hugely beneficial savings. By re-designing and implementing procedural changes in one operation alone, we have provided the following savings for our clients:

Client savings over a 12-month period – Methanol Dilution & Gas Free				
				
3477 tonnes of waste eliminated	**8536.244** kg co2e savings	**£173,859** cost saving	**52hrs 20min** time reduction	**162** Road tankers for transfer eliminated

How did we create these savings by re-designing one operational procedure?

At Swan & Company we have realised cost savings of nearly £800,000 over a period for our North Sea clients by changing one procedure alone, driven by an operational commitment to safe, intelligent, and extremely efficient working methods and innovation. Our in-house developed *Methanol dilution and gas free innovation* enables us to realise significant cost savings for our clients, as well as highly positive environmental improvement, without compromising operational or personal safety.

In 2020, Swan & Company (Marine Surveyors) Ltd., celebrated 50 years of service to the oil and gas industry. Over the years we have provided a specialist service to some of the world's biggest oil producers in various locations all around the globe, saving these operators millions of pounds in the process. Our primary role is to oversee the facilitation, and transfer of specialist drilling fluids and powders in bulk. We ensure that these operations are carried out to the highest of standards, ensuring the utmost efficiency, whilst always maintaining the highest level of safety.

Methanol is a product that we have specialised in for many years, and something which has many volatile tendencies. As this product holds so many dangers, we have a set of very specific and precise operational procedures, working methods, and risk assessments that we always follow meticulously.

Methanol is first and foremost extremely flammable, with a flash point of 12 degrees. Because of this, and to make the carriage of bulk Methanol as safe as possible, one of the provisions we insist on is the removal of oxygen from the supply vessel system prior to loading. This is done by inerting the system with nitrogen, and then continually 'padding' with nitrogen throughout the entirety of having Methanol on board. When the tanks have been emptied, and then tank cleaning is required, the atmosphere of these tanks need to be returned to the correct and safe level of oxygen – 20.9%. The procedure to achieve this was, for many years, to fill the utilised tanks with fresh water to 100% capacity which would displace the nitrogen – the tanks would then be emptied, and atmosphere would be returned to normal. The water used to displace the nitrogen would then be classed as waste and would need to be discharged to shore for disposal (Methanol washings). With different vessels, come different shapes and sizes of tanks, sometimes these tanks can be as big as 200m^3 each. There were times when close to 400 tonnes of waste would be created just to clean two Methanol tanks – a hugely negative reportable amount over the course of a year for any client.

We decided to invest some time and money into creating an entirely new way of returning Methanol tanks to working standard after use, but whilst doing so dramatically reducing the amount of waste created. This would lead to far more positive environmental impact, large monetary savings, and hugely reduced carbon footprint by taking road tankers used to transfer waste off the road.

We spent approximately two years researching and developing ways in which to return an atmosphere within a vessel tank to normal working levels in a safe, efficient, and quick manner. The aim was always to remove the need to fill vessel tanks with fresh water, thus removing the creation of huge amounts of waste, and huge amounts of disposal costs.

In early March 2019 we conducted an initial trial of the procedures we had created on a vessel in Aberdeen port. The trial was the first of its kind anywhere in the world and was designed to put into action a newly developed procedure that dilutes methanol residues safely, leading to a discharge to shore of minimal Methanol washings whilst gas freeing the vessel tank and making safe for entry. We utilize quayside machinery in line with strictly detailed working Methods, procedures, and risk assessments to do this. The aim was to reduce the waste disposal by a minimum of 85% and therefore create the huge environmental and cost savings.

Initial Trial Findings - Impact

- **As stated, the standard way for a vessel to get nitrogen out of a special product tank after the discharge of Methanol has been to entirely fill the tank with fresh water. This procedure dispels the nitrogen as the tank fills. When the tank is then emptied, the atmosphere returns to a safe working standard with normal oxygen levels. The main issue with this procedure is that it creates a lot of waste washings for waste disposal, and therefore extremely large disposal costs and negative environmental impact for the client. The special product tanks on the trial vessel were 146m3 each. Instead of using 146m3 of fresh water to fill the tank, after collaboration with The Methanol Institution UK, we implemented the use of only 10m3 of water in order to reach a safe dilution level. A huge saving of waste washings, environmental impact, and disposal costs.**
- **Reducing the waste disposal by 136m3 – huge environmental saving, huge client cost reduction.**
- **We then utilised a specialist piece of quayside machinery to return the tank to normal working atmosphere.**
- **Time taken to return the tank atmosphere to 'gas free' status and fit for entry by utilizing the quayside equipment was less than 50 minutes. (The time to discharge 146m3 of waste flushings would be approximately 2-3 hours, so large time savings also).**
- **The entire operation ran safely, smoothly, and efficiently from start to finish.**

We have now rolled out our innovation to all clients in the North Sea and our procedures have been accepted as industry standard, with savings of 3,477 tonnes of waste over the past 12 months alone. The vast reductions of waste production also lead to a reduction of road tankers on the road transferring waste, contributing to carbon footprint improvements, and a large decrease in pumping time which in turn improves vessel turnaround time and the eradication of vessels having to be on specific berths to discharge waste. We have an extremely detailed tracking system in place which documents every aspect of every job we oversee; these documents and key performance indicators are used to create performance and savings reports for our clients. In 2021 we saved one of our clients 3,477 tonnes of waste creation, and in the process saved them £173,859 in disposal costs. The importance of environmental protection cannot be understated, and we have come to understand that our clients look to us to not only ensure operations on the quayside are efficient and safe, but we can introduce factors which guarantee that the impact of certain operations are as environmentally friendly as possible.

In addition to the vast savings we have created, the new process has meant that our clients no longer have to move their large supply vessels to a designated waste (berth) facility to pump large volumes of waste to shore tanks to then in turn be removed by road tankers for processing at shore plants. This saves a lot of time both in the pumping process and movement around the harbour which can at times by extremely busy, waiting times for harbour movement can run into several hours. The vessels instead can discharge a far smaller volume directly to the road tankers and clean the tanks as a continuous operation on the same berth reducing vessel turnaround times.

The feedback we have received since we created our procedures have been extremely positive, see below examples:

"I want to thank you and the Swan & Co. team for your continued commitment and support by providing cost saving and efficiencies through the innovation projects highlighted below. We have enjoyed a partnership with Swan & Co. for many years now, more than I care to mention, but we are extremely happy with your service and ability to help on so many levels. Thank you for the support in these tough times. We truly appreciate any initiatives that make our operations more efficient and cost effective."

"Swan & Co's methanol tank cleaning process is a great innovation which not only delivers cost savings but also massively reduces our waste footprint. As part of our duty of care and as a responsible operator we are always looking for ways to reduce and avoid waste generation where possible. This in turn also reduces our carbon footprint as it minimises road miles of sending waste to our waste disposal facility. This innovation has also helped minimise the need for change of berths and minimises operational delays. I hope this innovation becomes industry standard for methanol tank cleaning process very soon."

We are a relatively small company, but we have a workforce with over 70 years of combined experience in this very specialised position. Each team member joined Swan & Co. from a specifically selected sector of the industry which allowed us to piece together a team consisting of aspects of experience that complement each other in a very effective manner.

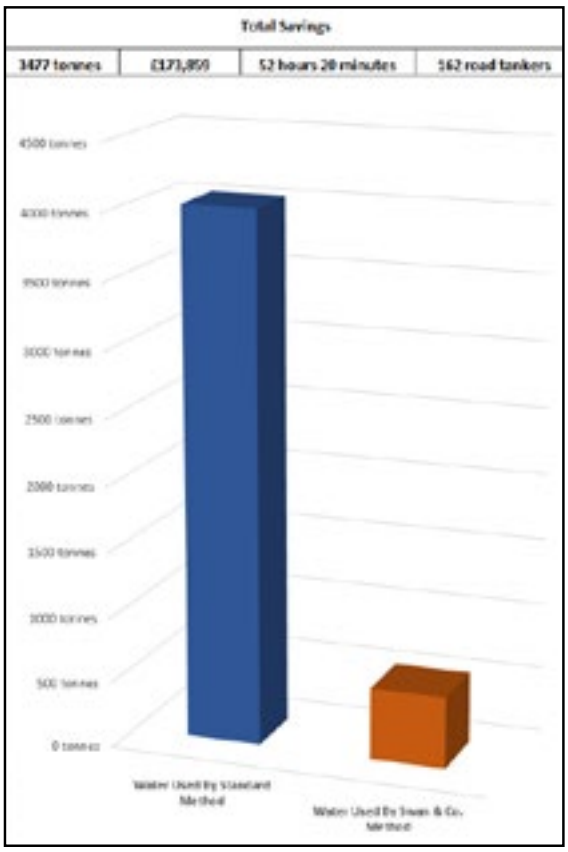
Our combined experience allows us to identify our clients 'invisible issues' that can contribute to large unnecessary cost, wasted time, unsafe acts, contamination, inefficient vessel usage, and poor performance in general to name but a few. In recent years we have worked to improve client performance all over the world. We have been able to save clients millions of dollars through different operations in Azerbaijan, Brunei, Trinidad & Tobago, Africa, America, and in the UK where we have a hub in Aberdeen.

We have further ground-breaking innovations and projects in development which will result in a 90 percent reduction in vessel tank cleaning costs and the time, waste, and damage to the environment currently generated.

With the integration of greener power supply, it is critical that the oil industry looks to work more efficiently and to develop better strategies and procedures to allow the best possible outcome.

The application of advanced technology and better ways of working should mean that there is no need for the oil industry to go the same way as the coal industry did in the UK and we are working very hard to help in many ways to prevent that from happening, allowing entirely better working partnerships.

Recent world events have also highlighted that the transition to green energy is not going to happen as quickly as the world would want to and at Swan and Company (Marine Surveyors) Ltd. we have the experience and knowledge to contribute to make things better in the way that we work.



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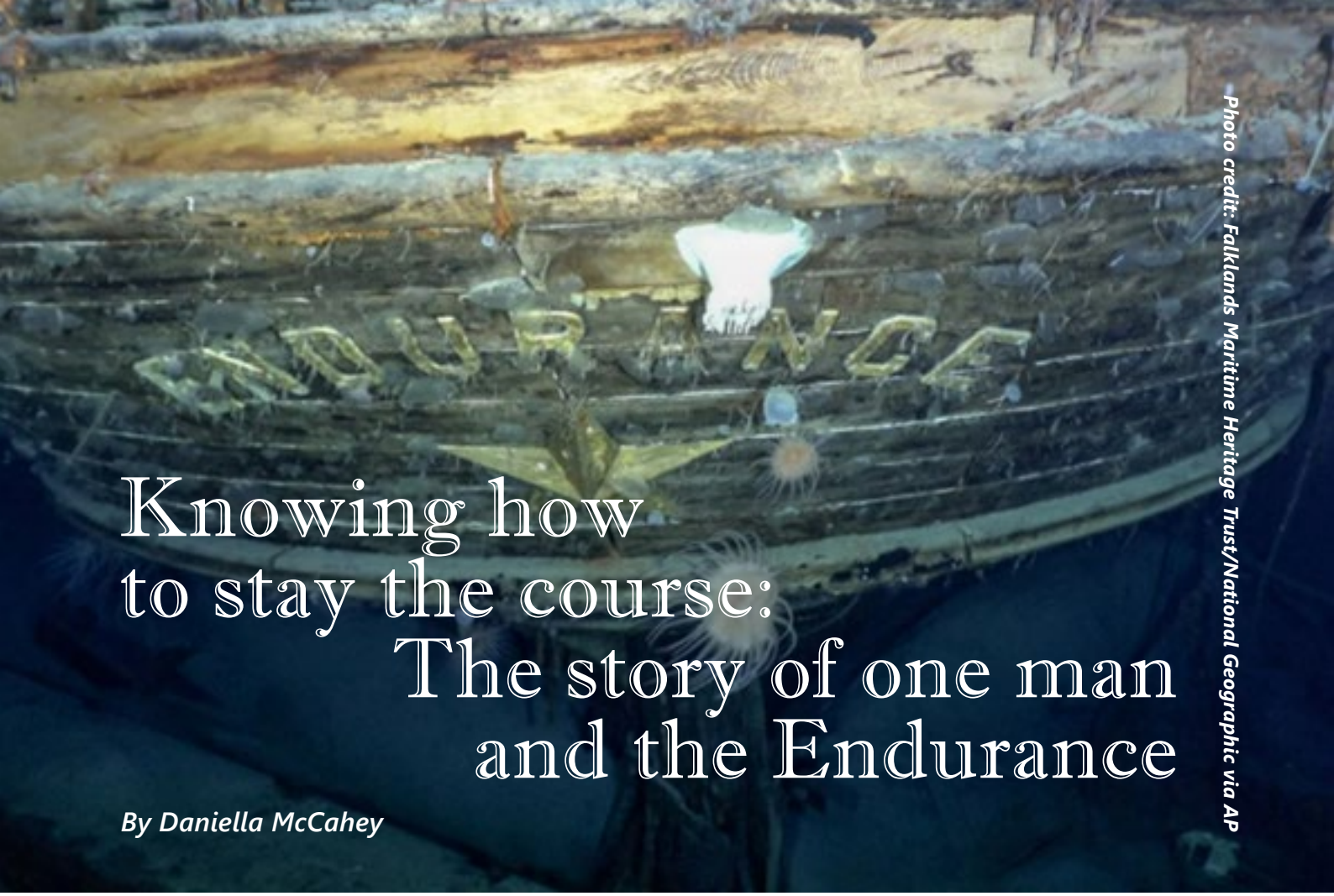

Photo credit: Falklands Maritime Heritage Trust/National Geographic via AP

Knowing how to stay the course: The story of one man and the Endurance

By Daniella McCahey

When the wreck of Ernest Shackleton's ship Endurance was found nearly 10,000 feet below the surface of Antarctica's Weddell Sea in March 2022, it was located just 4 miles from its last known position, as recorded by the Endurance's captain and navigator, Frank Worsley, in November 1915.

Photo credit: Hulton Archive/Getty Images

Frank Worsley. National Library of Australia via Wikimedia Commons

That's an astonishing degree of accuracy for a position determined with mechanical tools, book-length tables of reference numbers, and pen and paper.

The expedition looking for the ship had been searching an undersea area of 150 square miles – a circle 14 miles across. Nobody knew how precise Worsley's position calculation had been, or how far the ship might have travelled while sinking.

But as a historian of Antarctic exploration, I was not surprised to find out how accurate Worsley was, and I imagine those searching for the wreck weren't either.

Sir Ernest Shackleton aboard the Quest (Image credit: Mirrorpix)

Navigation was key

The Endurance had left England in August 1914, with the Irishman Shackleton hoping to become the first to cross the Antarctic continent from one side to the other.

But they never even landed on Antarctica. The ship got stuck in sea ice in the Weddell Sea in January 1915, forcing the men off the ship into tents pitched on the frozen ocean nearby. The force of the ice slowly crushed the Endurance, sinking it 10 months later, and kicking off what would become an incredible – and almost unbelievable – saga of survival and navigation by Shackleton and his crew.

Shackleton's own leadership has become the stuff of legend, as has his commitment to ensuring that not a man was lost from the group under his command – though three members of the expedition's 10-man group in the Ross Sea did perish.

Lesser known is the importance of the navigational skills of the 42-year-old Worsley, a New Zealander who had spent decades in the British Merchant Navy and the Royal Navy Reserve. Without him, the story of Shackleton's survival would likely have been very different.

Ernest Shackleton, left, with members of his crew at their encampment on the frozen ocean after the Endurance sank. Photo credit: Underwood & Underwood/Corbis via Getty Images

Marking time

Navigation requires determining a ship's location in latitude and longitude. Latitude is easy to find from the angle of the Sun above the horizon at noon.

Longitude required comparing the local noon – the moment when the Sun was at its highest point – with the actual time at another location where the longitude was already known. The key was making sure the time measurement for that other location was accurate.

Making these astronomical observations and doing the resulting calculations was difficult enough on land. On the ocean, with few fixed land points visible, amid foul weather, it was nearly impossible.

So, navigation largely depended on "dead reckoning." This was the process of calculating a vessel's position using a previously determined position and incorporating estimates of how fast and which way the ship was moving. Worsley called it "the seaman's calculation of courses and distance."

Aiming for land

When the Endurance was crushed, the crew had to get themselves to safety, or die on an ice floe adrift somewhere in the Southern Ocean. In April 1916, six months after the Endurance sank, the sea ice on which they had camped began to break up. The 28 men and their remaining gear and supplies loaded into three lifeboats – the James Caird, Dudley Docker and Stancomb Wills – each named for major donors to the expedition.

Worsley was in charge of getting them to land. As the journey began, Shackleton "saw Worsley, as navigating officer, balancing himself on the gunwale of the Dudley Docker with his arm around the mast, ready to snap the sun. He got his observation and we waited eagerly while he worked out the sight."

To do that, he compared his measurement with the time on his chronometer and written tables of calculations.

A last hope of survival

Once they managed to arrive on a little rocky strip called Elephant Island, off the coast of the Antarctic Peninsula, they still faced starvation. Shackleton believed that the only hope of survival lay in fetching help from elsewhere.

Worsley was ready. Before the Endurance was crushed, he had "worked out the courses and distances from the South Orkneys to South Georgia, the Falklands and Cape Horn, respectively, and from Elephant Island to the same places," he recalled in his memoir.

The men used parts of the other lifeboats to reinforce the James Caird for a long sea journey. Every day, Worsley "watched closely for the sun or stars to appear, to correct my chronometer, on the accuracy of which our lives and the success of the journey would depend."

On April 24, 1916, Worsley got "The first sunny day with a clear enough horizon to get a sight for rating my chronometer." That same day, he, Shackleton and four other men set off under sail in the 22.5-foot James Caird, carrying Worsley's chronometer, navigational books and two sextants, used for fixing the position of the Sun and stars.

The boat journey

These men, in this tiny boat, were going from one pinpoint of rock in the Southern Ocean to another, facing high winds, massive currents and choppy waters that could push them wildly astray or even sink them. The success of this voyage depended on Worsley's absolute accuracy, based on observations and estimations he made in the worst possible environmental conditions, while sleep-deprived and frostbitten.

They spent 16 days of "supreme strife amid heaving waters," as the boat sailed through some of the most dangerous sea conditions in the world, experiencing "mountainous" swells, rain, snow, sleet and hail. During that time, Worsley was able to get just four solid fixes on the boat's position. The rest was "a merry jest of guesswork" to determine where the wind and waves had taken them and adjusting the steering accordingly. The stakes were enormous – if he missed South Georgia, the next land was South Africa, 3,000 miles farther across more open ocean.

As Worsley wrote later:

"Navigation is an art, but words fail to give my efforts a correct name. … Once, perhaps twice, a week the sun smiled a sudden wintry flicker, through storm-torn cloud. If ready for it, and smart, I caught it. The procedure was: I peered out from our burrow – precious sextant cuddled under my chest to prevent seas from falling on it. Sir Ernest stood by under the canvas with chronometer, pencil, and book. I shouted 'Stand by,' and knelt on the thwart – two men holding me up on either side. I brought the sun down to where the horizon ought to be and as the boat leaped frantically upward on the crest of a wave, snapped a good guess at the altitude and yelled 'Stop.' Sir Ernest took the time and I worked out the result. Then the fun started! Our fingers were so cold that he had to interpret his wobbly figures – my own so illegible that I had to recognize them by feats of memory."

On May 8, they saw floating seaweed and birds, and then spotted land. But they had arrived at South Georgia amid a hurricane, and for two days had to fight being driven by wind onto an island they had spent weeks desperately trying to reach.

Finally, they came ashore. Three of the six men, including Worsley, hiked across unmapped mountains and glaciers to reach a small settlement. Worsley joined a rescue boat back to get the other three. Shackleton later arranged a ship to collect the rest of the men from Elephant Island, all of whom had survived their own unimaginable hardships.

But the key to all of it, and indeed the recent discovery of the Endurance's wreck, was how Worsley had fought desperate conditions and still repeatedly managed to figure out where they were, where they were going and how to get there.

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What should we learn from near misses?

Safety and performance are often perceived as conflicting aspects of shipping. In the aftermath of an untoward event, typical safety interventions or fixes bring about more stringent procedures or more procedures, retraining, replacement of people, and changes to work conditions, argue Professor Andy Smith, School of Psychology, Cardiff University, and Dr Romanas Puisa, Thales Group.

These changes are not necessarily for the better. Consequently, the interventions can be postponed, amended or waived. Neither 'just culture' nor retributions - i.e. carrot or stick - seem adequate. Fortunately, there have been significant advances to resolve this conflict to a win-win situation. Early safety integration through systems engineering practices and system safety allows for safer designs at a lower cost.

In turn, onboard safety management can benefit from the ideas of resilience engineering and the positive view on safety management (aka Safety II). The assumption here is that failure is the flip side of success, and hence constraining work to improve safety inevitably inhibits performance. Instead, we have to learn how people effectively work at the fringes of safety and performance and yet manage to avoid accidents. "Near misses", which are specific instances of successful accident prevention, represent the ultimate source of knowledge for future success.

The International Safety Management (ISM) Code requires reporting and analysing near misses, incidents, and accidents, identifying risks, and developing safeguards. The Code reasons that "it makes good business and economic sense because it can improve vessel and crew performance and, in many cases, reduce cost". A near miss is defined as a sequence of events and/or conditions that could have resulted in an accident without timely and effective recovery. Hence, a near-miss is safety management at work. The Code contains a separate chapter on near-miss reporting and investigation.

Strangely, near misses are often perceived as close calls, symptoms of poor safety management and, hence, as highly undesirable. This negative connotation has roots in the accident pyramid (aka Bird's triangle), familiar to safety professionals. The pyramid is commonly misinterpreted as suggesting more incidents for every significant accident and even more near misses or events with no consequences. Hence, more critical events can be prevented if more anomalies are identified.

Although it may have been reasonable for occupational accidents in the 1930s, it is inappropriate today. There is no systematic relationship between small and big failures with pre and post-incident events in modern socio-technical systems such as large passenger and cargo ships and oil platforms. When it comes to near misses, the situation is notably different. Near misses have no consequences and represent normal safety management activities.

Near misses are normal because safety hazards are normal, especially when performance is at its maximum (e.g., moving through a highly congested waterway such as the Dover Strait). This profile is apparent because current maritime assists are so complex that design errors are frequent, and procedures are often underspecified. Also, the operational environment changes constantly (technology ages, undergoes upgrades, people come and go, the market transforms and requires adjustment), adequate procedures can become inadequate, and investigation recommendations can become irrelevant.

Hence, near misses should mean that hazardous conditions were detected in time and effectively responded to, which makes near misses priceless for learning about accident prevention. There are many learning opportunities since near misses are typically considerably greater than the number of incidents and accidents.

Reclassifying near misses as successes of prevention will make it easy to encourage their reporting, which will change the current situation where near misses reporting has been seen as an unnecessary burden, and investigation recommendations as costly and introducing yet another set of procedures. Blaming human error as a root cause, which has aggravated the situation and led to cover-ups, will also become pointless.

However, mere reporting of near misses is not enough. The way near misses are described has to change, for the utility of current near misses descriptions is not conducive to learning from them. Descriptions focus on what happened and when and have little information on how hazards were detected, responded to, and the resources (time, skills, technology, communication, etc.) that proved vital.

A related question is what event should be considered a near miss in the first place. Many hazardous events are so frequent that they are considered normal and expected, and it is difficult to say if an event would have led to an accident if it had not been resolved. Hence, reporting near misses is inherently subjective, at least for now.

Turning the near-miss information into knowledge is the ultimate aim. That definitely should not be just another set of dos and don'ts. Instead, or in addition, the analysis should reveal the role of the overall safety management system (SMS) in accident prevention, highlighting good and bad features within the system so that the performance of the SMS as a whole can be better understood.

In summary, a few research questions still need to be addressed to learn from near misses about safety at high performance:

- What events should be considered as near misses? Should they be all events that would lead to accidents if inadequately attended to or only those events that could be referred to as close calls?
- How can one effectively report near misses to become conducive to learning? That is, how does one maximise the utility of near-miss analysis and uptake? Does it require developing a new taxonomy (to capture how hazards were detected, responded to, and what resources proved vital) or perhaps using a myriad of sensors and AI?
- How to map near-miss information to SMS, where people are just one part? This may sound complex, but it does not need to be. There are examples in the research literature of how seemingly complex safety management systems are represented as simple hierarchical structures that are easy to understand and communicate. Thus, technology's contribution (or lack thereof), management and responsibility structures, communication with other vessels, and used regulations and rules need to be highlighted.

The Emperor has no clothes

The SAFETY I vs SAFETY II

proposed and debated by Dr. Dominic Cooper

Abstract

Relatively new to safety, Resilience Engineering (RE) is known by various pseudonyms: Safety-II, Human & Organizational Performance (HOP) and Safety Differently. Collectively termed New-View, they have created a stir amongst OSH practitioners by challenging them to view key areas of occupational safety in a different way:

[1] how safety is defined;
[2] the role of people in safety; and
[3] how businesses focus on safety.

When subject to critical scrutiny, New-View's major tenets are shown to be a collection of untested propositions (ideas, rules, and principles). New-View's underlying RE philosophy is predicated on repeatedly testing the boundary limitations of systems until a failure occurs, which paradoxically requires more risk controls that create the very problems New-View criticizes and attempts to address – constraints, complexity, rigidity, and bureaucracy. This continuous threat-rigidity cycle indicates New-View's raison d'etre is somewhat circular. New-View entirely lacks any new associated practical methodologies for improving safety performance: it uses traditional Safety-1 methodologies to tackle actual safety problems. Moreover, no published, peer-reviewed empirical evidence demonstrates whether or not any aspect of New-View's propositions are valid. Currently we don't know how, or if, New-View improves safety performance per se, or if it reduces or eliminates incidents/injuries. The extant Safety-1 literature suggests that New-View's propositions lack substance. The inescapable conclusion, therefore, is 'the emperor has no clothes' and that ideology and emotion has triumphed over science and practice. It is also clear that the OSH profession has an immense crisis of ethics across its entire landscape.

"Safety II" or "Safety Differently" have made headlines in recent years as an evolutionary complement of the conventional safety thinking, referred to as 'Safety I'. The new safety concept comes to dislodge the interest from 'what goes wrong' to 'what goes right', reminding that safety management should not only be reactive, but proactive as well.

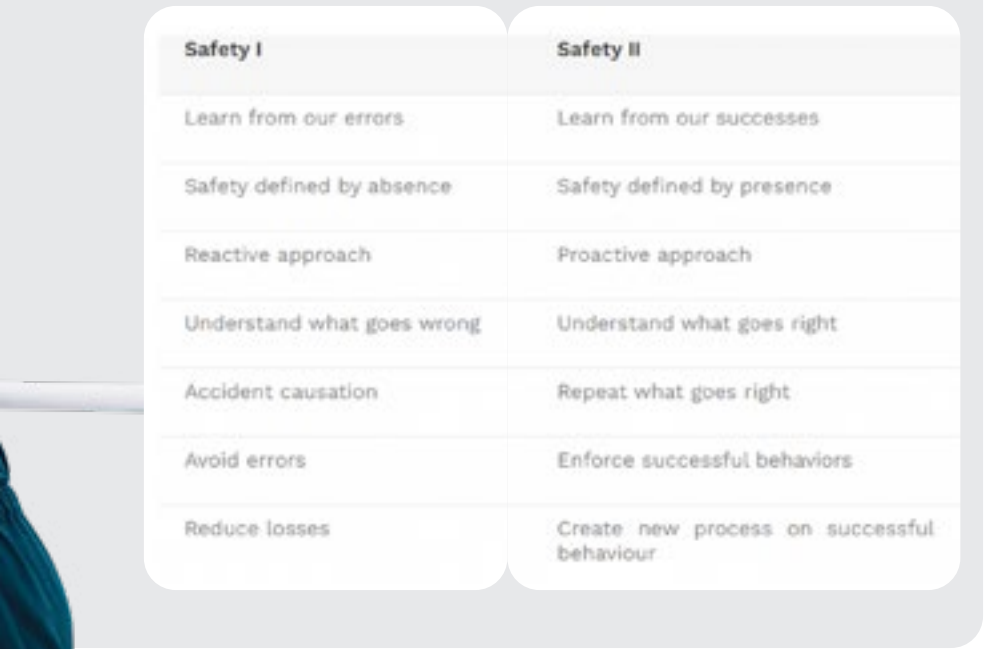
However, recent research approaches Safety II, or the "New-View" as it is framed, as a collection of untested propositions, questioning whether these are valid or not.

What exactly is the New-View?

Officially seen as "Resilience Engineering (RE)", this New-View concept has emerged in recent years aiming to redefine the way in which health and safety practitioners see safety, the role of people in safety; and how businesses specifically focus on safety. As a leader in the Safety II concept, Professor Erik Hollnagel says the term is concerned with ensuring how and why things go right, rather than how and why they go wrong, as is the case with the Safety I concept. Meanwhile, the closely related term of "Safety Differently" rejects the notion of "human error" as incident causation, viewing them as symptoms of system problems affecting Human Factors, according to Professor Sidney Dekker who has led research on the topic.

While the conventional approach focuses on prevention of harm through standards and rules, Safety II focuses on promoting long-lasting resilience by promoting the human ability to work safely without adhering to the rule book. For example, an accident investigation under the scope of Safety I is to identify the causes of adverse outcomes, while risk assessment aims to determine their likelihood. On the contrary, accident investigations under Safety II seek to understand how things usually go right, as this forms the basis for explaining how things go wrong.

For shipping, an industry particularly vulnerable to safety and heavily reliant on rules and regulations, progressing from traditional safety approaches can be challenging, if not risky. Human error is estimated to account for around 80% of maritime accidents, but this cause is pretty vague and "barely scratches the surface of an incident investigation", Alvin Forster from the North P&I Club said.



Safety I	Safety II
Learn from our errors	Learn from our successes
Safety defined by absence	Safety defined by presence
Reactive approach	Proactive approach
Understand what goes wrong	Understand what goes right
Accident causation	Repeat what goes right
Avoid errors	Enforce successful behaviors
Reduce losses	Create new process on successful behaviour

The "New-View" Criticism

Challenging this new approach, a position paper by Dr. Dominic Cooper, a pioneer of behavioural safety and award-winning author, sparked discussions on a Safety I versus Safety II debate, arguing that there has been no peer-reviewed empirical evidence demonstrating whether any aspect of New-View's propositions are valid and whether the New-View actually increases safety or reduces accidents. After being reviewed for over 15 months, the paper sparked controversy and nurtured the safety I vs Safety II debate. The challenges regarding New-View, according to Dr. Cooper, surround the following areas:

How safety is defined

While the dipole "Safety I = working safety" – "Safety II = working safely" is an appealing way to approach conventional thinking on safety, Dr. Cooper argues that focusing on what goes right also presupposes a corresponding understanding of what goes wrong.

New-View writers and advocates have not defined a set of practical processes, tools, activities or combinations thereof, by which to improve safety per se. They rely on existing Safety 1 methodologies while persuading companies to adopt their ideas, he noted.

The role of people in safety

While Safety 1 sees people as "problems to be controlled", New-View sees people as responsible contributors to solutions. However, the paper argues, the new concept misses the link of employee engagement, considering that engaged employees are less likely than non-engaged employees to experience safety incidents. According to Dr. Cooper, New-View advocates do not appear to offer new employee engagement practices, different than Safety 1 practices.

"The New-View writers' need to explicitly call for companies to cede all decision-making power for safety to employees could be seen as a risky proposition: not least because it may blur boundaries between managerial and employee job roles that could cause relationship problems and may also require much more effort be put into safety communications to ensure everyone has necessary safety information at the right time and the right place."

How businesses focus on safety

At a time when progress on safety has reached a plateau in many industries, Dr. Dekker has argued, "it seems that doing more of the same is simply going to get us more of the same – not something different." The new concept provides people with the opportunity to encounter safety as an ethical responsibility rather than a bureaucratic obligation.

However, New-View advocates do not specify exactly what safety, as an ethical responsibility, actually means, says Dr. Cooper. An issue with increased safety bureaucracy is that some regulators use one-size-fits-all action-level goals for every business, either small or big, but this does not mean that SMSs are not vital in every organization. For instance, a major issue identified on the aftermath of Deepwater Horizon disaster was the lack of efficient SMS, strongly supporting that an SMS is vital for low-frequency events.

What does this mean for the future of safety?

Amid the complex nature of safety, it is probable that Safety II serves as progress rather than a replacement of Safety I, making the two concepts complementary. Indeed, from the very start of Safety-II emergence, Dr. Hollnagel underlined that "Safety II is not a new discipline or a new practice but rather a new perspective on what happens and how it happens."

Additionally, in an industry where human error is attributed to the majority of casualties, the view of humans as a safeguard and not a liability will be the foremost challenge. A starting point for organizations interested in a more progressed way of thinking is to emphasize on enhancing their employees' resilience, as the ability to monitor things and handle situations, but the role of standards and regulations cannot be underestimated.

Both Safety 1 and New-View use exactly the same Safety 1 methodologies to tackle safety problems, albeit they might be used in different configurations. The inescapable conclusion, therefore, is 'the emperor has no clothes' and that ideology and emotion has triumphed over science and practice, concludes Dr. Cooper.

How to identify phishing emails

IIMS is grateful to North P&I Club who have tackled the distressing issue of phishing emails which, given their authenticity these days, catch many people unawares. The Institute publishes this article with thanks to North P&I Club.

In this article, The North P&I Club looks at how to stay safe on the Internet.

Phishing - a definition

Phishing attacks are the practice of sending fraudulent communications that appear to come from a reputable source. It is usually done through email. The goal is to steal sensitive data like credit card and login information, or to install malware on the victim's machine. Phishing is a common type of cyber-attack that everyone should learn about in order to protect themselves. Phishing starts with a fraudulent email or other communication that is designed to lure a victim. The message is made to look as though it comes from a trusted sender. If it fools the victim, he or she is coaxed into providing confidential information, often on a scam website.

Below there are some useful hints and tips to have in mind when receiving a suspicious email:

- Always assess the context of an email, do you know the sender and were you expecting an email from them or is it completely out of the blue or making an unusual request?-
- If your organization utilizes spam filter warnings within the email subject or use warning banners to advise that an email has been sent externally to your organization, be suspicious if the email is portraying to be from a work colleague internally but is marked as external.
- Is the sender hassling you to do something or to take an action? Never feel rushed into taking an action, it's a common tactic to hurry you into making a mistake.
- Is there an incentive to open an attachment? For example, something nice if you comply such as a gift voucher or something nasty if you don't i.e., a fake speeding ticket or fake legal summons using fear in the hope to convince you to click a link or open an attachment.
- Does the domain name/email address look correct? Hover your mouse over the email address or right mouse click to check the email properties. Does the spelling of the email address look correct or have letters been replaced to fake a domain name such as use of 'rn' to look like an 'm'?
- Is the email addressed to you personally or is it just generic i.e. Dear Sir or Madam? Does its structure look genuine? Many Phishing emails are not personalized, is something just not right? Trust your instinct and report/ always ask for help if unsure.
- An email contains a request for money/change of bank details held on file or to provide personal details. Please be wary of unexpected requests.
- Remember genuine email accounts can also be hacked. Please be wary of the content of an email if the style of a message from a contact that you know suddenly changes i.e., the way they address you or their grammar/use of language changes or they ask you something odd and unexpected such as clicking a link or opening a strange and unexpected attachment.
- If unsure of the legitimacy of an email portraying to be from a contact, verify its authenticity by contacting them directly via independently verified contact details not from the details displayed within the email just received! Pick up the phone and verify.

Recently, Hapag-Lloyd announced that its IT security team has found a copy of its website on the web, which is very likely to be used for a spear phishing attack. This means that e-mails are used to redirect users to this site and when they log in with their personal access data, which are then tapped by criminals.

These kind of fake websites are usually a one-to-one copy of the real pages and can therefore usually only be recognized as malicious pages via the domain or Internet address.

The art of communication (is not dead)

In his occasional series of business management articles, Mike Schwarz considers one of the core skills - being able to communicate effectively.

DEFINITION

communication, n. The imparting or exchanging of information by speaking, writing, or using some other medium. The successful conveying or sharing of ideas and feelings.

Let's face it we communicate each and every day of our lives with our families, friends, colleagues and others in our extended network by one means or another. But how effective are you as a communicator, and does it matter anyway? Oh yes, it most certainly does!

Put simply, communication is the act of transferring information from one place, person or group to another. Every communication involves (at least) one sender, the message and a recipient. This sounds simple, but communication is actually a complex subject.

This article attempts to tackle the following aspects of communication:

1. Understanding how we use communication
2. Types of communication
3. The power of listening
4. Barriers to effective communication
5. Dealing with challenging encounters
6. Personality and communication styles
7. Get rid of distractions
8. Feedback to your communication

1. UNDERSTANDING HOW WE USE COMMUNICATION

The transmission of the message from sender to recipient can be affected by a huge range of things. These include our emotions, the cultural situation, the medium used to communicate, and even our location. The complexity is why good communication skills are considered so desirable by employers around the world. The look for accurate, effective and unambiguous communication and those skills are not easy to find.

Remember, it takes at least two to communicate and, therefore, communication is fundamentally a two-way process. For it to be successful the person being communicated with has to listen, understand and respond or react.

An effective communicator thinks about and understands their intended audience, chooses an appropriate communication channel through which to deliver the communication and hones their message to the recipient to ensure the message has less chance of being misunderstood.

2. TYPES OF COMMUNICATION

The distinct categories of communication include the following:

[1] Spoken or Verbal Communication - this includes face-to-face, telephone, radio or television and other media as appropriate.

Words are very powerful when used correctly. They have the power to build or destroy. Words can build bridges that allow people to reach a level of understanding. Words can also destroy relations. Be very careful when choosing your words because people are usually judged by the words they use.
Words that communicate positive values and optimistic words are words of strength that will help you reinforce your opinions and convince your recipient of your message. Using appropriate words to put forward your point of view makes you a master at the art of communication.
Choose the right vocabulary for each communication
Choosing an appropriate vocabulary usually reveals your level of language proficiency. For example, an expanded vocabulary sets you apart which enhances the process of communication allowing you to convey your message to a large audience with great accuracy and efficiency. In order to communicate better, you should choose your vocabulary according to your target audience. For example, you should use an expanded vocabulary when addressing professionals, while a more basic vocabulary might prove more effective when addressing an uninformed audience.

[2] Non-Verbal Communication. These mediums cover body language, gestures, how we dress or act, where we stand, and even our scent. There are many subtle ways that we communicate (even unintentionally) with others. For example, the tone of voice can give clues to mood or emotional state, whilst exaggerated hand signals or gestures can add to a spoken message.

Despite the extreme importance of verbal communication, non-verbal communication is essential to get your message across. A large percentage of non-verbal communication falls into the following categories:

Speaking Posture
Changing body position (sitting, standing or kneeling) during presentations can have a huge effect and impact on the nature of the message you are sending. For example, sitting creates a more casual, laid-back environment while standing gives the impression of seriousness and professionalism.

Eyes
It is well known that "eyes are the window to the soul". Looking into the eyes communicates caring. It is a sign of respect and understanding. On the other hand, speaking with others while looking around communicates a lack of interest.

Arms
Your arms are another important factor. When it comes to arm body language, there are a few strategies that are commonly used. Expanding your arms helps you appear larger in an attempt to reach out to your audience. This can either have a friendly or threatening effect depending on the context. Actions like crossing the arms while speaking communicates fear, closure, and defensiveness which implies your argument is weak. Likewise, hiding your arms gives the listener an impression of dishonesty and deceit as if you were hiding something.

Hands
It is important to use the hands to communicate for illustration as keeping your hands by your side suggests stiffness and the feeling of being uncomfortable. Dynamic movement of your hands will keep the audience engaged and interested in what you have to say.

[3] Written Communication - this includes letters, e-mails, social media, books, magazines, the Internet and other media. Until recent times, a relatively small number of writers and publishers were very powerful when it came to communicating the written word. Today, we can all write and publish our ideas online freely at will, which has led to an explosion of information and communication possibilities.

[4] Visualizations - by graphs and charts, maps, logos and other graphical designs which can all communicate messages.

3. THE POWER OF LISTENING

Listening intently to the opinions of others, their points of view and asking for clarification to avoid misunderstanding is very beneficial in many ways:

- Gives you time to think over the words said to you and helps you understand the group/person you are communicating with.
- Provides you the chance to decide the perfect approach to the group/person you are communicating with.
- Emotionally prepares your target audience to listen to you since you listened to them carefully, because it is well known that people want to be heard. So give them 100% attention they will give you theirs in return.
- Provide you with enough time to take notes instead of relying on memory alone to be able to analyze it later.

Listening will allow you to accurately identify your audience which will help you communicate with them better by adapting the techniques that most suit them.

4. BARRIERS TO EFFECTIVE COMMUNICATION

- The use of jargon. Avoid using over-complicated, unfamiliar and/or technical terms and acronyms.
- Avoid taboos at all costs. Some topics may be completely 'off-limits' or taboo. Taboo subjects may include, but are not limited to, politics, religion, disabilities, sexuality and sex, racism and any opinion that may be seen as unpopular.
- Lack of attention, interest, distractions, or irrelevance to the receiver.
- Differences in perception and viewpoint.
- People often hear what they expect to hear rather than what is actually said and jump to incorrect conclusions.
- Cultural differences. The norms of social interaction vary greatly in different cultures, as do the way in which emotions are expressed.
- Language. Remember that not everyone speaks the same language as you.

A skilled communicator must be aware of these barriers and try to reduce their impact by continually checking understanding and by offering opportunities for appropriate feedback.

Be calm and collected - don't shout and avoid delivering your communication when you are angry

5. DEALING WITH CHALLENGING ENCOUNTERS

Some examples of challenging communication encounters include:

- The angry person
- The know-all
- The insulting person
- The rude recipient
- The demotivated person
- The uncooperative person
- The reticent recipient
- The persistent person

No matter what form of communication being used you need to be prepared to deal with any, or all of the above, whenever they pop up.

6. PERSONALITY AND COMMUNICATION STYLES

Tone

When it comes to your delivery tone, it is important to avoid monotony as it creates a sense of disinterest in the topic. Instead, your tone should change according to the context of the communication to capture the attention of your audience. This ensures that a large portion of what you said was taken in by the audience.

Pace

The speed of your communication tells others a lot. Speaking slowly and clearly communicates thoughtfulness which implies that you want others to hear and understand your message. Speaking fast communicates that you are excited, encouraging your audience to be interested in the topic at hand. When working on how to pace your communication it is often helpful to have a listener that you can observe in order to change your pace accordingly to their reactions.

Emotions

Similar to your tone, emotions are an amazingly effective form of communication. It is important that you show emotions but without getting emotional. If you can control your emotions, you will be an extremely effective communicator.

Enunciation

Arguably this is the hardest verbal communication skill to master. To ensure that the listener clearly understands your message, you need to ensure that you are speaking clearly making communications easier as a clear pronunciation of the words makes it easily understood by the audience.

7. GET RID OF DISTRACTIONS

Be intentional about putting away things that can rob your conversation of the level of value it deserves. Turning off your mobile phone, closing your tablet or computer, taking the earpiece(s) off your head are ways to do this. Not only can you not give mindful attention to the communication with other things vying for your mind's attention, but these distractions also actually demonstrate to others that they are not important enough to have a meaningful conversation with you.

On the positive side, there are benefits when you put away anything that can intrude upon your interaction with others. Benefits include:

- Being able to converse in a more meaningful way.
- Showing mutual respect, which has a strong probability of elevating your relationship.
- Increasing the chances of actually getting something accomplished.
- You are able to better focus on each other and upon the topic or agenda.

8. FEEDBACK TO YOUR COMMUNICATION

The final part of your communication strategy is to invite and get feedback. This happens when the recipient lets you, the sender know that they have received and understood your message.

Recipients of messages are likely to provide feedback on how they have understood the messages through both verbal and non-verbal reactions. Effective communicators pay close attention to this feedback as it is the only way to assess whether the message has been received and understood as intended.

Bear in mind that the extent and form of feedback will vary with the communication channel. Feedback during a face-to-face or telephone conversation will be immediate, whilst feedback to messages conveyed via text or the internet will be indirect and may be delayed.

Back in Time

The wonders of the UK's inland waterways network and its history

Adapted from an original article by ***Marco Stojanovik***

The United Kingdom's modern canal system emerged in the late 18th century in response to the changing demands initially of the industrious revolution and then of the Industrial Revolution. This period saw the development of a number of new inventions, discoveries and technologies, which allowed for the mass production of goods. This in turn widened employment opportunities, leading to mass urbanization as millions left the country to work in trade, industry, and manufacturing in cities. As the manufacturing processes sped up across Britain, output increased, prices fell, and markets expanded.

Before the Industrial Revolution, the majority of goods were produced and distributed locally on a small-scale. Now, however, with the mass production of goods and commodities, large quantities needed to be moved to markets further afield around the country. An economic and reliable transport system was required.

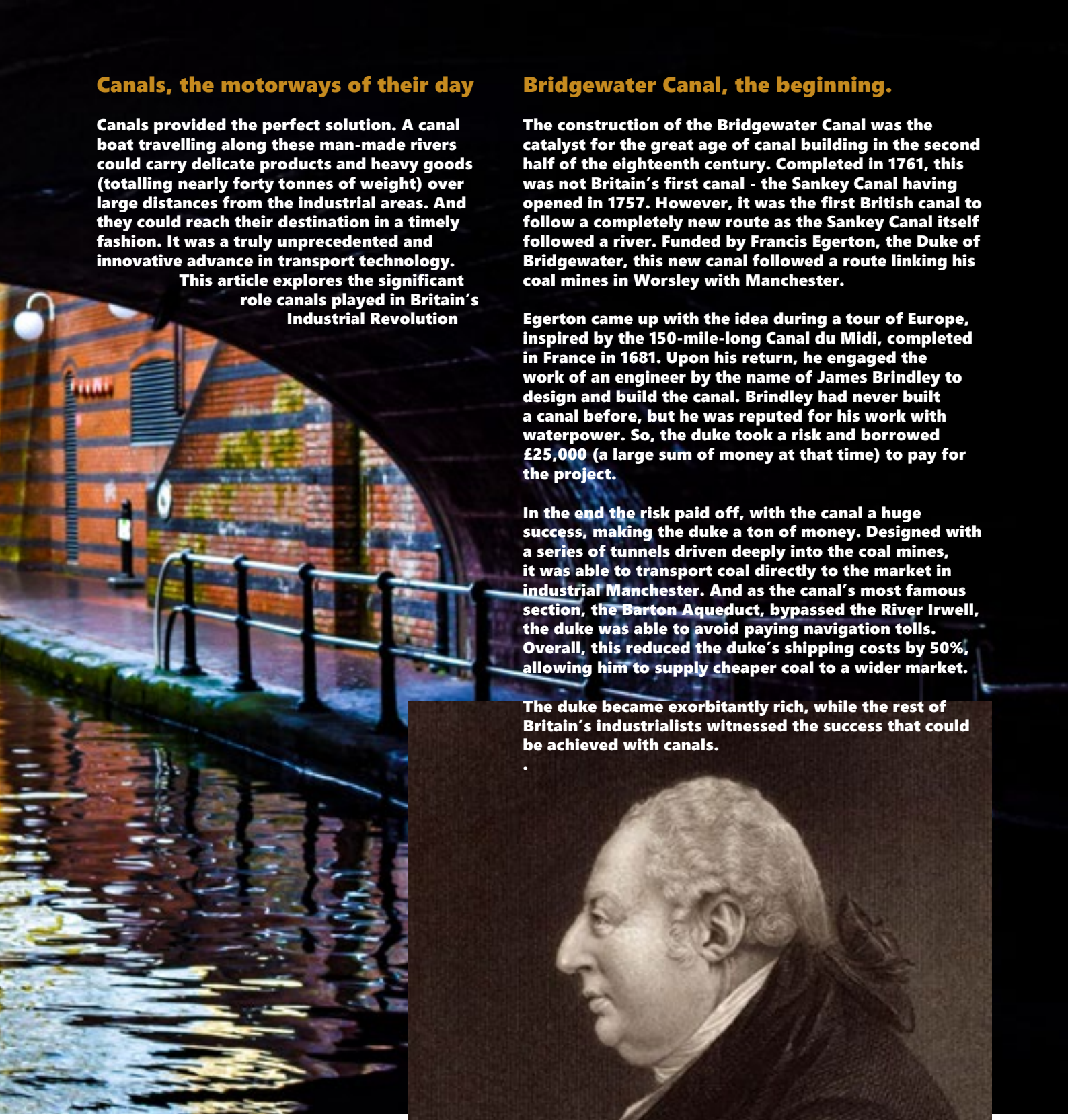
Roads, often no more than simple tracks in those days, were poorly suited to handle such large weights and the necessary vehicles to move this produce did not exist. Even along the higher quality roads, travel based on horses carried risks when transporting fragile items (such as glass and china) and was inefficient to move goods such as fresh produce to markets quickly enough.

British waterways were favoured instead. Goods had long been exported and imported through large seaports such as Liverpool, Bristol and London, and there were thousands of navigable rivers in Britain to link to the ports. However, by the time of the Industrial Revolution, the problem was that these rivers didn't link to the industrial north and the Midlands, and so there was no inland waterway network to connect the mass-produced goods with the consumer-based south and ports for export.

Canals, the motorways of their day

Canals provided the perfect solution. A canal boat travelling along these man-made rivers could carry delicate products and heavy goods (totalling nearly forty tonnes of weight) over large distances from the industrial areas. And they could reach their destination in a timely fashion. It was a truly unprecedented and innovative advance in transport technology.

This article explores the significant role canals played in Britain's Industrial Revolution



Bridgewater Canal, the beginning.

The construction of the Bridgewater Canal was the catalyst for the great age of canal building in the second half of the eighteenth century. Completed in 1761, this was not Britain's first canal - the Sankey Canal having opened in 1757. However, it was the first British canal to follow a completely new route as the Sankey Canal itself followed a river. Funded by Francis Egerton, the Duke of Bridgewater, this new canal followed a route linking his coal mines in Worsley with Manchester.

Egerton came up with the idea during a tour of Europe, inspired by the 150-mile-long Canal du Midi, completed in France in 1681. Upon his return, he engaged the work of an engineer by the name of James Brindley to design and build the canal. Brindley had never built a canal before, but he was reputed for his work with waterpower. So, the duke took a risk and borrowed £25,000 (a large sum of money at that time) to pay for the project.

In the end the risk paid off, with the canal a huge success, making the duke a ton of money. Designed with a series of tunnels driven deeply into the coal mines, it was able to transport coal directly to the market in industrial Manchester. And as the canal's most famous section, the Barton Aqueduct, bypassed the River Irwell, the duke was able to avoid paying navigation tolls. Overall, this reduced the duke's shipping costs by 50%, allowing him to supply cheaper coal to a wider market.

The duke became exorbitantly rich, while the rest of Britain's industrialists witnessed the success that could be achieved with canals.

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Francis Egerton, the Duke of Bridgewater

A pioneer of canal construction, the duke is famed as the "father of British inland navigation", who commissioned the Bridgewater Canal, often said to be the first true canal in Britain, and the modern world. The canal was built for him by his agent John Gilbert with advice from James Brindley to service his coal mines at Worsley, in Lancashire. The completion of his first canal led the duke to undertake more ambitious work. In 1762 he obtained parliamentary powers to provide an improved waterway between Liverpool and Manchester by means of a canal. The difficulties encountered in its execution were still more formidable than those of the Worsley canal, involving carrying it across Sale Moor Moss. But the genius of John Gilbert, his agent and Brindley, his engineer, proved superior to all obstacles although at one period the duke's financial resources were almost exhausted, the work was carried to a triumphant conclusion. Both canals were completed by the time Bridgewater was thirty-six years of age, and the remainder of his life was spent in extending them and in improving his estates. During the latter years of his life, he derived a princely income from the success of his enterprise. ***Source: Wikipedia***

Josiah Wedgewood and the Trent and Mersey Canal

Inspired by the success of the Bridgewater Canal, Josiah Wedgwood, a Midlands pottery manufacturer and entrepreneur, instigated a number of similar projects. Josiah Wedgewood was the founder of Wedgewood china, a founder of luxury goods manufacturing in England.

Wedgwood realised early the profits he could make by transporting his products by water. If he was to expand his business, he knew he would have to be able to export his pottery over large distances and in a quick and economical fashion. The rough and bumpy roads of the day, however, were too slow and risky, and risked easily damaging his fragile pottery. He thus integrated his factories with canals to ensure his delicate products could be transported all over Britain in one piece.

The most impressive project that Wedgwood was involved in was the Trent and Mersey Canal. This canal was also designed by James Brindley in 1766 as part of a network to link England's four great rivers – the River Mersey, River Trent, River Severn, and River Thames. Wedgewood wanted the canal to bring in materials to his potteries at Stoke-On-Trent, and so with the help of two of his friends, Thomas Bentley and Erasmus Darwin, successfully petition Parliament for the route.

Eventually opening in 1777, the 93.5 miles (150.5km) long canal was England's largest ever civil engineering project at the time. It ran through the east Midlands, west Midlands, and northwest England. And it overcame several natural problems such as the rolling hills of Staffordshire through the use of large tunnels.

The Trent and Mersey Canal allowed Josiah Wedgwood and other pottery factory owners in Stoke-On-Trent to transport their goods in larger volumes and at significantly reduced prices. In turn, the local potteries became one of the great ceramic centres of the world, transporting products all over the country and overseas.

As well as pottery, the canal moved raw materials (such as iron, coal and timber) and other goods all around the United Kingdom in large volumes. Serving as a crucial link between the industrial north and consumer-based south, it made it easier to mass produce consumer goods, contributing significantly to the industrial growth of the country.

Canal Mania

King's Norton stop lock

It soon became apparent that having a stake in canals could make you vastly rich and so people began to invest widely in them. By the 1790's Britain was experiencing a so-called "Canal Mania", with people investing their money into practically every canal project they could. Over 50 canals were approved to be constructed by parliament during this period, and by 1800 they extended over 6,000km across Britain.

The canals were funded mostly by private venture capital, built as joint stock companies. With this, the first modern management structures were put in place. For many, the canals made a significant profit.

The canals linked coasts and navigable rivers, making British industry extremely more profitable. In the Midlands especially they served as the only real realistic means of water transport, allowing the region to boom.

The Kings Norton stop lock (pictured) is the only guillotine-gated canal stop lock in existence. It was built between 1793 and 1816 to control the flow of water from the new Stratford Canal into the lower-level Worcester and Birmingham Canal. Canal gates were a point of pride during this time and canal companies were fiercely protective of their own water supplies. They therefore sought to separate them at all costs, and many canal gates were created as a result. The Kings Norton stop lock is one of the best examples of this.

Impact of the Canals

Bow lock (pictured) is steeped in a rich history. Constructed in 1850, it initially served as a pound lock for barges to pass through. Bow Locks was extremely popular when first constructed, mostly because it was toll free. So, when the lock's owners decided to introduce a toll system it faced a massive backlash. An innovative compromise was reached. Next to the lock were flood gates, which provided the same access to the canal - but only when the tide was right. These gates were kept completely free, but the lock would still have a toll. That way, boat owners had the choice between the two, but only if they got the time of day just right!

Bow lock

The canal was widely heralded as a symbol of progress in the early Industrial Revolution. William Bray, for example, wrote in his Sketch of a Tour in Derbyshire and Yorkshire (1783), "'These undertakings are truly stupendous, and strongly mark the spirit of the enterprise which is so much the character of the present age."

Indeed, the canals were a revolutionary feat of engineering, playing a major role in the industrialization of Britain. They were extremely important in facilitating the transportation of a greater volume of goods, more quickly, easily, and in a far cheaper manner. In doing so they dramatically reduced the costs of moving raw materials to factories and finished goods to market.

The canals allowed many new markets to open in various locations, with goods produced on scale transported all over the country. Further, as seaports could now be connected to inland trade, products could also easily be shipped to destinations overseas.

Coal particularly was able to be exploited in greater numbers, moved further, and sold cheaper. From 1760 to 1800, ninety of the one hundred and fifty canal acts passed by parliament were for coal purposes. This allowed industries such as iron that were heavily dependent on coal to fulfil their demands and flourish.

Moreover, many jobs were created following the success of the canals, with more markets opening and many more goods being produced. For example, many new opportunities arose in mining, hardware, the potteries, and other industries. Canal stock companies – able to sell shares and buy land – also brought in wide investment and jobs to areas around construction. All gave the working man the opportunity to expand his business into an industry.

Jobs were also created on the canals themselves. A new, paid labour force called navigators, or "navvies", emerged to build the huge canal network. These men worked long and hard to construct the canals, using picks, shovels, wheelbarrows and gunpowder. Workers were also employed to load and unload the canals. With more people earning money, they were able to spend more on the new markets and further fuel the industry's growth.

Decline of the Canals

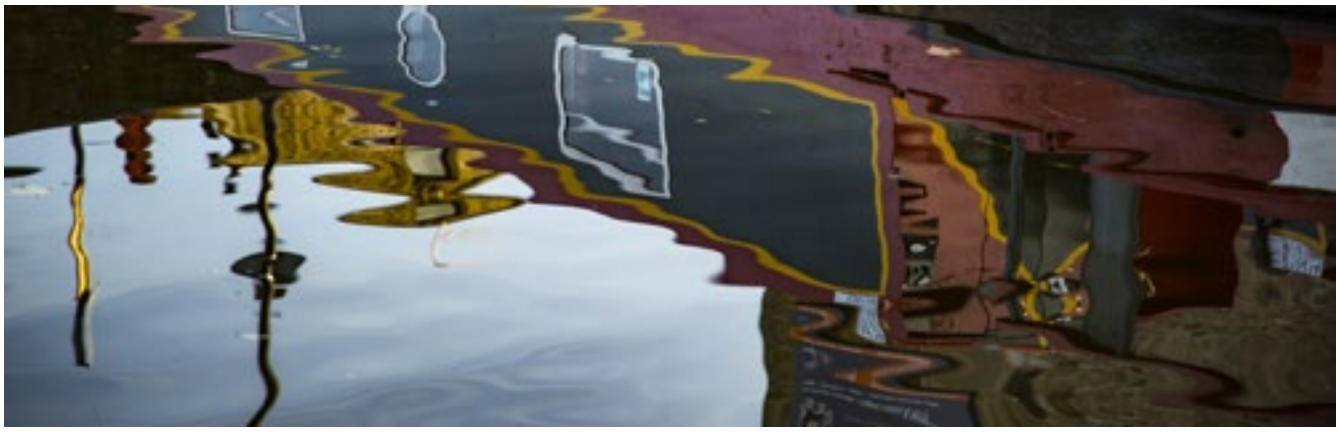
Despite the benefits of canals, they still had their issues. As not all areas were environmentally suited for them, they could not extend entirely across Britain. Instead, they were largely restricted to operating in the Midlands and North West England, with some major areas across the country such as Newcastle in the North East having relatively few. Neither were the canals all connected by an organized national network.

Further, as there was no central planning, different builders built different size canals. This meant different sized canal boats were needed on different canals, which limited movement as boats didn't always fit on canals built by another engineer.

The canals were also dependent on viable weather temperatures. In the winter they could freeze solid, while the sun of a hot summer could dry them out easily if they were not topped up with water regularly.

Moreover, although a faster and more efficient means than other transport, their speed was still limited. As such, items still had to be ordered well in advance, food that rotted quickly couldn't be transported this way in the time before refrigeration, and the canals were not attractive for passenger travel. Eventually, better roads were constructed, and better horse drawn carriages developed, which were more comfortable for passengers.

But it was the introduction of the railway in the 1830s that dealt the final death blow to the canals as a major network for freight. Although they managed to remain competitive for some time, by the 1850s the railways had replaced the canals as the primary method of transport in Britain.



UK Canals Today

In 1947 under the post-World War II Labour government, Britain's canals were nationalised. In the decades that followed, the canals were gradually restored and reopened, primarily for leisure purposes. Restoration projects have been largely undertaken by enthusiastic volunteer groups and local canal societies and trusts.

The canals are now managed by the Canal and River Trust, which actively supports many of the ongoing restoration projects. The Inland Waterways Association is a charity which also promotes the ongoing protection and conservation of the canals.

Today there are thousands of miles of navigable throughout the United Kingdom. Canals are now primarily considered to be a source of pleasure to the many people who use them. It is possible to rent residential boats for a holiday and cruise around parts of the canal network. Other people live aboard canal boats all year round. Living onboard a canal boat can be very different from living in a bricks-and-mortar home, however many people find that it is a very interesting and rewarding experience.

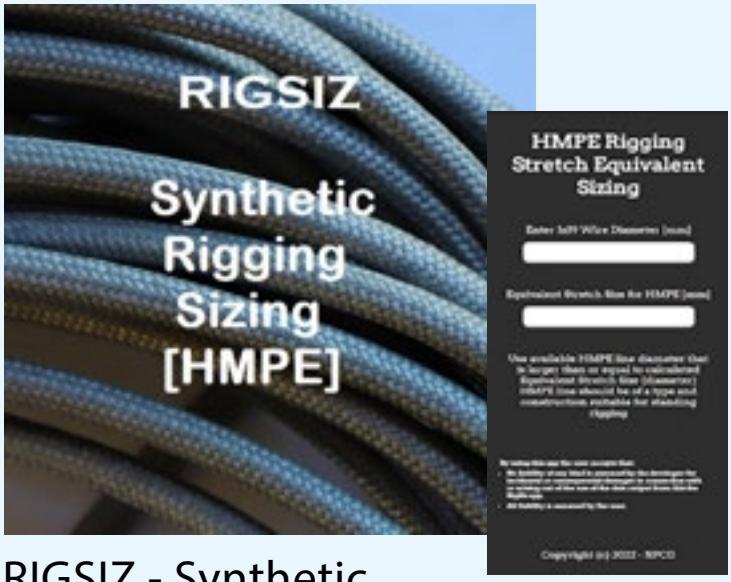
The canals are great places to spot wildlife and interesting plant life. Thousands of species of fish, birds, insects and mammals now live in or close to Britain's canal network. Some animals which were previously nearly extinct in the UK, such as otters, have now been reintroduced to some of the country's more peaceful stretches of canal.

NEW PRODUCTS

New power technologies from Alfa Laval

The new Alfa Laval E-PowerPack has been developed to convert waste heat into electrical power, in the process reducing fuel consumption and CO2 emissions. The PowerPack is a self-contained solution designed to generate electricity from different heat sources on board including exhaust gas waste heat and engine jacket water.

"Alfa Laval is pursuing a wide range of technologies to support decarbonisation, both independently and with partners," says Lars Skytte Jørgensen, vice president technology development, energy systems, Alfa Laval Marine Division. "Fuel cells and many other innovations are in the pipeline, but the first critical step is to leverage the existing energy on board. The E-PowerPack does that in a revolutionary way, while building on Alfa Laval's many decades of waste heat recovery experience."



RIGSIZ - Synthetic Rigging Sizing (HMPE)

RigSiz is an easy-to-use calculator app that calculates the equivalent stretch sizing for HMPE (Spectra / Dyneema) standing rigging. Moving to synthetic rigging can represent a cost effective "upgrade" for any type of sailing craft. When moving from wire rope rigging to synthetic rigging, determination of the equivalent synthetic rigging size is a complex calculation.

Size for synthetic HMPE (Dyneema / Spectra) standing rigging is not chosen by the equivalent strength but by equivalent stiffness (stretch sizing). The equivalent stiffness (stretch) size (diameter of the HMPE rope rigging) is calculated by the RigSiz calculator application. Use the available HMPE line diameter that is larger than or equal to calculated diameter Since only standard sizes (line thickness) of HMPE rope is available, the stock size larger than or equal to calculated value must be used.

RigSiz is a valuable tool for Yacht Designers, Riggers, Marine Surveyors and Owners when specifying, inspecting, and upgrading to synthetic (HMPE) rope rigging.

The Android version is available from the Google Store
https://play.google.com/store/apps/details?id=net.cloudfront.d3g1wlf9rubozx.twa
A version for Apple will be available soon.

Nexxiot's up-close cargo tracker

Digitisation company Nexxiot has launched the latest in its line of monitoring sensor devices, 'Cargo Monitor', which differs from its existing products by tracking cargo on a much closer scale.

Whereas existing products are focused on monitoring the position, movement, handling activities and use of each container while it is shipped, the Cargo Monitor includes a more powerful transceiver, which is placed inside the container itself. It is then able to monitor the transport of higher value and more conditions-sensitive products such as perishables, pharmaceuticals, electronics and so on, and provide real-time data on conditions such as cargo damaging shocks, humidity, temperature and security issues.

New Raymarine Moncon system

Raymarine's YachtSense Ecosystem is an onboard and remote monitoring solution that gives boaters control of their Raymarine equipment and vessel systems from a mobile device.

The YachtSense Ecosystem incorporates a new Raymarine mobile app, that provides onboard and off-boat integration capabilities. The app integrates with the YachtSense Ecosystem and Axiom displays.

The Raymarine mobile app allows boaters to set up and modify their vessel profile, and backup and transfer waypoints and other data. Boaters can also monitor instruments and NMEA2000 sensors, receive alerts, and view engine telemetry from their phone or tablet. The app also transforms a mobile device into a full-function Axiom remote station, allowing users to stream and control chartplotters from anywhere onboard.

Lightweight anchors from Crazy Lobster

One of Crazy Lobster's latest product ranges is a series of carbon fibre anchors developed with Guy Royer, inventor of the FOB anchor.

The anchors are around a third the weight of an equivalent steel model with a shape and surface design that ensures it can quickly dig in and hold securely on a seabed. A standard metallic chain completes the anchoring set-up.

The anchors are manufactured with epoxy resins and carbon fabrics supplied by Sicomin, have been tested by top yachting racers, with Yann Elies using one during the 2019 Figaro championship and Gery Trentesaux carrying one aboard his JPK 39 Courrier Recommandé, winner of IRC Class C in the 2019 Rolex Fastnet Race.

Crazy Lobster's anchors are around a third the weight of a traditional steel anchor

French electric outboard manufacturer unveils new model

Last January French electric outboard motor brand TEMO signed its second round of financing and raised €1.5m to expand its range and boost exports. The company is now taking pre-orders for its second engine, the TEMO·1000.

Designed to fit large dinghies and/or small sailing boats up to 8m, the engine is portable, silent, powerful and benefits from an interchangeable battery system. A sleek design and weight of just 13kg, the TEMO·1000 is easy to handle and install while its 1000W motor, specially designed propeller and optimised efficiency offers a static thrust of 28kg (equivalent to 3hp), allowing propulsion of a six-person dinghy or a sailing boat up to 8m in length.

NEW PRODUCTS

A new range of AES range of batteries is available in the UK from DC Battery Technologies

The new AES range offers fast charging, an extensive cycle life and partial state of charge (PSoC) operation to reduce sulphation. The batteries are suitable for off-grid energy applications including marine uses and electric vehicles where back-up power is required.

"Renewable energy is one of the sectors that is really embracing new battery technology and these AES solutions are specifically designed for use in solar, renewable, wind and hybrid energy applications," said Stuart James, DC Battery Technologies MD. "With their rapid charging and PSoC functionality, organisations in the renewable energy sector can rely on AES for back-up power solutions to maximise uptime and extend cycle life."

The AES series of sealed AGM batteries can be charged at 0.6 C10 which means that the batteries can be charged in less than an hour when they are discharged down to 50% stage of charge (SoC).

New compact battery from Mastervolt

The new MLI Ultra 1250 is the most compact battery in Mastervolt's range offering five times more energy storage and 70 percent more space and weight savings compared to traditional lead acid batteries.

The MLI Ultra 1250 has a lifespan of 3500 cycles and a depth of discharge (DOD) of 80 percent due to the nearly complete absence of self-discharge and the minimal build-up of the 'memory effect'. As with the entire MLI Ultra series, the MLI Ultra 1250 can be recharged within 60 minutes.

"At Mastervolt, we're committed to designing and innovating the next generation of Lithium-Ion batteries and alternative energy sources," said Brett Dibkey, President of ASG. "The official launch of the MLI Ultra 1250 represents an exciting milestone in our path to lead the industry in this effort, and we're thrilled to bring this revolutionary design to market."

Electrification for Mercury

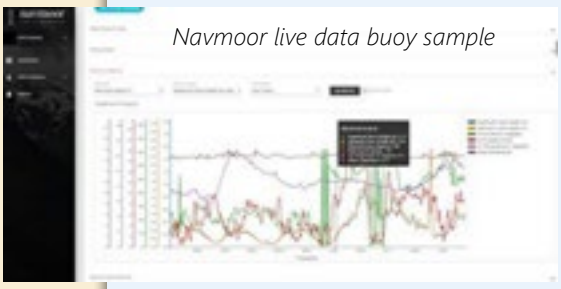
Mercury's Avator outboard motor

The Avator outboard is the first step towards the company's formal release of five electric outboard products scheduled for later this year and into 2023.

"We are excited to formally announce this bold new phase of our vision for the future that only Mercury Marine can deliver," said Chris Drees, Mercury Marine president. "Electrification is strategically important to us, and this concept provides a first look at how we intend to deliver on our commitment to being the industry leader in both internal combustion products and electric propulsion. We are taking efficiency to a new level, opening up new ways to enjoy the boating experience."

The engine is widely expected to be a low to mid horsepower motor with features such as swappable batteries and enhanced portability. It is understood the cowling will open up to expose the removable battery pack. The batteries can be switched on the go or removed for charging or storage.

NEW PRODUCTS

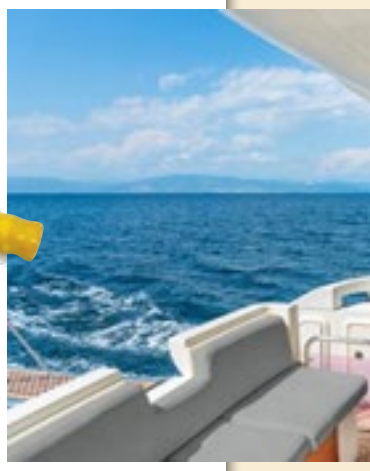


Navmoor live data buoy sample

New concept smarter than the average buoy

Navmoor has released its 'smart' buoy, concept, which is available in new buoys or if customers prefer, can be added as a bolt-on to their existing hardware, the company says.

The company's monitoring module can be added to any existing lantern power supply or self-contained unit to provide both verification that a light is working and confirmation that the buoy is correctly positioned via a GPS receiver, says managing director Chris Newell. It means ports and harbours can add monitoring to existing lateral and Cardinal buoys or buy new. It also means the number of buoys required is reduced – thus cutting maintenance costs.



New sustainable flare packs from Pains Wessex

Pains Wessex, part of the Wescom Group which manufactures pyrotechnics for the commercial and leisure marine markets, has launched a sustainable flare pack. The packs can be purchased with a 100 per cent sustainable, eco-friendly, biodegradable, compostable and recyclable reinforced paper bag and a polybottle reused for storage onboard.

Polybottles are rugged, water-resistant storage bottles that carry flares when onboard at sea, so distress signals can be easily retrieved in an emergency. Due to their buoyancy and waterproof nature, polybottles are often made of plastic-based material, with a much longer lifespan in comparison to leisure flares, for example, that are sold with up to four years' service life.

This new solution is designed to combat the unnecessary waste of plastic polybottles and ensure a sustainable circle of habit for flare owners, with the handy, fit-for-purpose refill bag used to return any previous flares for safe disposal.

30% lighter roof system from Makefast

Despite the uncertainty of the last two years, Makefast has continued to design and develop products to complement its existing range of marine systems.

Makefast's new Blind creates instant privacy

The new products are a Louvred Roof, a Privacy Blind and a Sliding Console Mechanism, each allowing a boat owner to set the mood on board and to create flexible spaces which can be either cosy and intimate or filled with light and air. All of the products can be tailored to suit different applications and are manufactured using marine grade 316L stainless steel and self-lubricating composite components to ensure smooth operation in potentially harsh environments.

The Louvred Roof is around 30% lighter than previous systems. It features tilting louvres that retract along a stainless-steel track that can match the profile of a boat and allows the user a choice of shade and ventilation styles.

New chemical-free fabric

Evohide Mistral FRee is the latest addition to Morbern's MorGreen collection of eco-friendly coated fabrics produced without any chemical fire-resistant additives. The fabric is vegan friendly, phthalate-free and REACH compliant. It is formulated with bio-attributed PVC resins that originate from agricultural and forestry biomass and bio-based plasticisers that are derived from USA-sourced soya bean oil – the fabric uses 75% sustainable content.

The polyester backing fabric is 100% recycled, made from used plastic water bottles. The fabric achieves the European Fire Norm EN1021 (Part one and two) required for IMO MED Wheel mark accreditation. The combination of the ISCC and RSB certified renewable ingredients makes Evohide suitable for all indoor and outdoor upholstery applications.

New range of cleaning and maintenance products

Oxford Products has developed a range of British manufactured cleaning and maintenance products, specifically formulated for the marine market.

Three key products in the new Oxford MINT Clean, Restore and Protect product range are Fender & Plastic Cleaner, Stain Removing Gel and a RIB Tube Restorer. The Fender & Plastic Cleaner is designed to clean and restore PVC fenders and dinghies without streaking or scratching and is available in a 500ml size. The Stain Removing Gel is a non-drip gel developed to clean and remove yellow/brown transom or waterline marks and limescale.

"It's also highly effective for removing rust on metal parts," explained Daniel Tomson, Oxford MINT product manager.

Major update to Navico app

The app is designed to enable the crew on a vessel to remotely mirror the B&G or Lowrance MFDs and control it from a remote location on a mobile or tablet device. Another update is the weather overlay on the charts which includes key data such as wind, gust, precipitation, air temperature and pressure.

"We designed these updates to really help sailors in planning, sailing and to improve safety at sea" said Simon Conder, global head of brand, B&G. "Adding more key and real-time data for users to take advantage is vital for us in developing this app, as is providing more innovative and new features; and the new anchor alert feature is another great example of that."

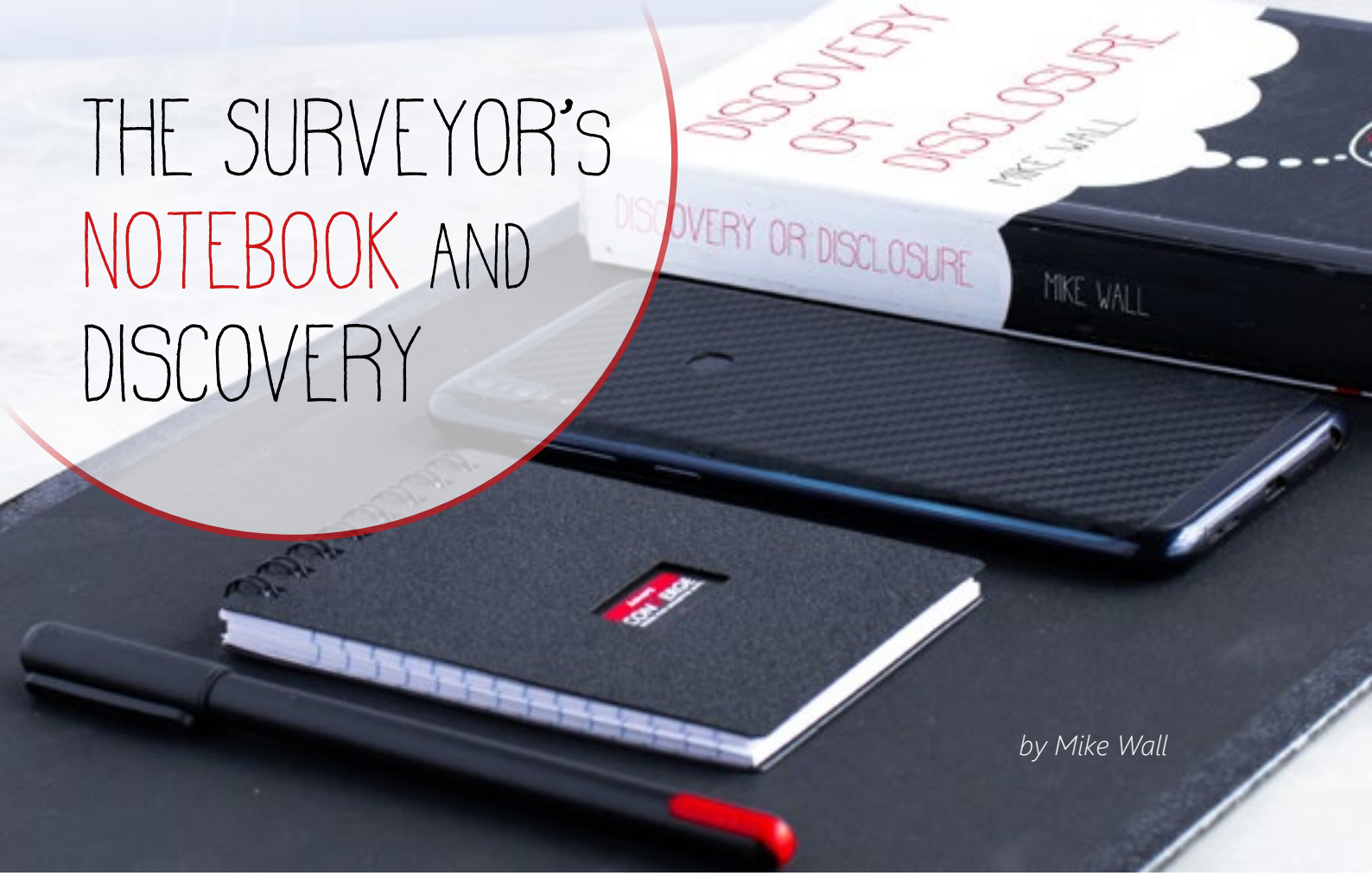
New IP69k certified lights

The new Discover Series D3 underwater LED light from OceanLED is rated at IP69k against water ingress. Both the Discover D3 and Explore E2 are IP69k certified against water ingress.

"IP69k goes one step further than the industry standard IP68, giving you additional protection and peace of mind," explained Lee Hirons, OceanLED marketing manager.

In addition, the rear of the light is protected from in-hull temporary submersion for boats where rough seas and waves sometimes flood the stern. The Discover D3 has been manufactured using OceanLED's signature optics (90° x 20°), for optimal lighting effect.

THE SURVEYOR'S NOTEBOOK AND DISCOVERY



by Mike Wall

The majority of marine surveyors carry a notebook during their surveys, inspections and investigations to record relevant information. Some surveyors may use a Dictaphone or Smartphone to verbally record information. Whichever is used, it is important to remember that the notebook is a legal document and that the recorded information may be revealed in court during litigation under the rules of 'discovery' or 'disclosure'.

Notebooks are usually A6 paper size and around 20 mm thick so that they fit neatly into a boiler suit top pocket. They should be easily accessible and used frequently, no matter how good you are at remembering what you have seen. Checklists may also be pasted into the notebook for easy reference for new surveyors or when senility is setting in.

A new page is started for every new job with the vessel's name, job number, date, place and type of survey recorded. Then follows relevant and pertinent information relating to the surveyor's findings. This may also include a schedule of events with dates, times, locations with times in 24 hour format for easy sorting.

TIP: Rip off the top corner of the last page so that you can find the next page easily when ready to make an entry.

The surveyor may also find it useful to record aspects of photographs which have been taken, particularly when related to similar pieces of equipment, eg, pistons, hatch covers, etc, as most cameras and smartphones do not accommodate such notes.

There is an old saying that 'A picture says a thousand words'. For a surveyor this means that a picture or graphic can replace a thousand words in a report. As an example, try to describe a ship that you have recently surveyed in less than one thousand words. Your description should include the number of holds, watertight bulkheads, hatch covers, cranes, water ballast, fuel and fresh water tanks. Not easy!

This is why most surveyors draw a plan view of the vessel they are visiting before they start the survey, particularly when surveying hull damage. This should show the main deck outline showing bulkheads and their frame numbers, holds, hatches and deck cranes. It may also show the forepeak tank, double bottom, after peak and wing ballast tanks. A useful trick is to have an A6 sized Perspex sheet with the main deck outline cut out. This can then be used repeatedly as a template for the ship's plan. It can be stored in a cardboard pouch on the inside of the notebook back cover.

Before digital photography came into being, diagrams and sketches were particularly useful in faxed or emailed preliminary reports. The

ability to send digital photos has greatly enhanced communicating and reporting of findings to clients, reducing the need for diagrams.

However, as previously stated, there will be times when the surveyor needs to explain the operation of a piece of equipment or the sequence events leading up to a casualty. This is when diagrams or sketches come into their own. The surveyor is advised to learn basic technical drawing techniques as these help make drawings more understandable for the client.

The notebook, being used frequently, will become tattered and worn so that it may need the occasional reinforcement with packing tape. This is particularly important as all such information in most jurisdictions is required to be retained for several years. The cover should thus show the range of job numbers and dates of survey for easy access.

Discovery or Disclosure

The law in most countries stipulates that there should be no surprises in court. This means that both sides must disclose to each other information relating to their case, ie, all information is discoverable.

The term 'discovery' identifies the process by which a party to civil proceedings is obliged to disclose to the other parties all documents relevant to the issues in the litigation. The definition of documents is extremely wide-ranging and includes information stored electronically. The rules of discovery in court proceedings are intended to ensure that each party is in a position to evaluate the strengths and weaknesses of its case in advance of trial. The process of discovery involves the disclosure of one party's documents to the other. Either party can seek documents from the other which they believe may strengthen their case.

If the other party in a dispute is aware of a report having been issued by a surveyor to his client which might strengthen their case, they are entitled to request discovery of the report and the court will support such a request. Hence, a report issued as a consequence of a survey carried out during normal duties to a client will come under the rules of discovery. This includes any information recorded in a notebook.

However, under the law of evidence, a client's privilege to refuse to disclose, and to prevent any other person from disclosing, confidential communications between the client and his or her attorney is termed 'Attorney-client privilege'. This protects the client from having to disclose confidential communications and/or evidence. Whatever is communicated professedly by a client to his counsel, solicitor, or attorney, is considered as a confidential communication.

A means of circumventing the rules of discovery is for the client's lawyers to instruct the surveyor to carry out the investigation and report to them, not the client. The client will then get to see the report in the lawyers' offices.

The reader may thus see that it is imperative that the surveyor's report and any other recorded information must be accurate in all details. The surveyor should also be aware of the rules of discovery when issuing his report. If in doubt, check with the client.

The above is an introduction to discovery for the marine surveyor. It is a wide and deep subject about which much has been written. There are more authoritative and comprehensive writings on the subject which the surveyor may wish to reference.

Surveyors should be very careful what they write in their notebook especially if the information is to be used in a final report. Unprompted comments and opinions should be avoided, eg, 'this ship is a disaster waiting to happen!', whether joking or not as these could be used against you and your client at a later date. Stick to the facts and only your findings. If such records would be detrimental to your client's case, avoid writing anything in your notebook. An 'in confidence' phone call or email to the lawyer will be more appropriate.

It is therefore imperative that your notes should be correct in every detail otherwise the opposition counsel will take you apart in the witness box with the result that you may lose the case for your client and your credibility as a marine surveyor/expert.

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BEING A WITNESS – TIPS AND POINTERS

THE PREPARATION

By the time you get to the stage of formal witness statements a solicitor should be involved and should be controlling all aspects of the litigation. However, it is always good to know what to expect and to understand the techniques, many of which are transferable and quite beneficial to use when drafting your reports for clients.

The first main rule is always use plain English as we all should do when writing reports.

Take time to identify the following and remove where necessary, which is probably most of the time!

- **Surplus Words**
- **Connecting Words and Working Words**
- **Compound Prepositions**
- **Superfluous Word Clusters**
- **Which Who and That**
- **Legalistic Language**
- **Explain technical words and phrases as necessary for the reader**

Try to use short sentences by:

- **Using tabulation where appropriate**
- **Using the active voice rather than the passive**
- **Using base verbs**
- **Removing jargon**
- **Considering your word order**
- **Review and remove misplaced or misused words**

Also, think of your reader i.e. client or Judge as being hard of hearing, over eighty years of age and having no knowledge of what you are explaining or talking about. This is a very good starting point. Do not assume anything.

Always make sure with witness statements, and for reports, that you have:

- **Collated all the information that is to be used**
- **You have cross-checked with your list of issues to make sure you have dealt with everything**
- **Always undertake a final read, has everything been covered?**
- **Have you gone far enough i.e. if you identified a problem have you stressed the urgency to repair or investigate etc.?**

When you get to the stage of preparing for Court your solicitor should:

- **Manage your expectations as a witness the same as you should manage expectations of your clients**
- **Arrange a conference with them and the appointed barrister before the Court date**
- **Explain procedures to you**
- **Undertaken individual meetings with nervous witnesses**

You should now be prepared for Court!

Don't panic, keep calm and tell the truth.

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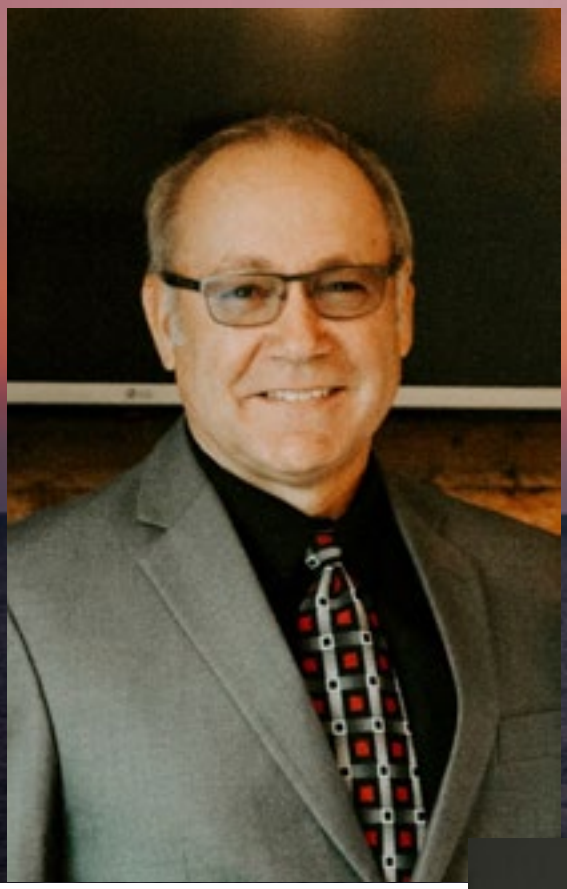
A day in the life of...

Scott Kennedy *MIIMS*



Recently, Scott Kennedy took up the post of Chairman of the IIMS Canada Branch at the Annual General Meeting following Lachlan Mackenzie's decision to step down. Mike Schwarz went in search of the new man at the top to find out more about him and his background.

Q1. Before you settled on a career in marine surveying, what did you do before after leaving school?

Both my grandfather and father were ship's Masters so I guess it was inevitable that a life at sea was my calling. I graduated from the Canadian Coast Guard College in 1984 and started as a navigation officer right away. By 1990 I had earned a Master Mariner's Certificate. The adventure and comradery of a sea going career was only surpassed by the adventure and thrill of starting a family. So, in 1991 an opportunity presented itself to come ashore and become a Marine Surveyor for the Canadian marine administration (Transport Canada Marine Safety & Security).

Q2. What made you decide a career in marine surveying was for you and have you ever regretted it?

During the last three years of my sea going career, I had worked as Chief Officer aboard Canada's largest Search & Rescue ship off the east coast of Newfoundland & Labrador... the north Atlantic, is a rather unforgiving body of water. Unprepared vessels and mariners are no match for the power of the ocean, and Search & Rescue operations in the north Atlantic seldom have happy endings. I felt if I could do

something to prevent a maritime accident 'before it happens', I would continue to serve mariners and save lives. That was the decision point for me to become a Marine Surveyor. I could be home with my family and work to improve the safety of mariners.

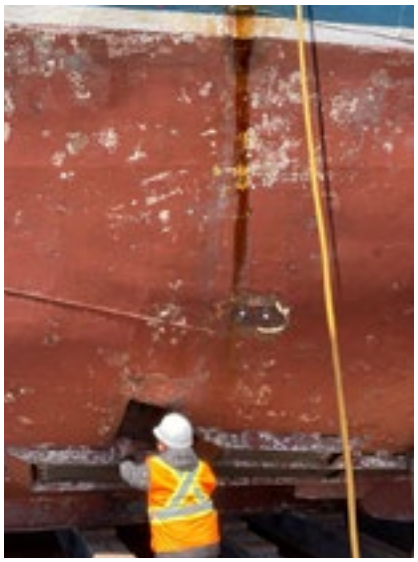
I had worked as a Marine Surveyor and Examiner of Master & Mates until about 1997 when I had then become a Station Manager. I continued functioning as a Marine Surveyor but then added duties such a managing an office and a vessel inspection program and mentoring and guiding new Marine Surveyors. In 2007, I had become the Regional Director for Transport Canada Marine Safety & Security Atlantic. I was now in a position to influence both national and international policy on marine safety and vessel inspection standards working closely with Class and other maritime administrations.

I retired at the end of 2017 from Transport Canada. I recall during my exit interview saying "I've enjoyed every single day of my career...some days were pretty tough.. but that simply motivated me for the next day."

In 2018 I started my own marine surveying and consultancy company, going back to my roots of vessel inspection.

Q3. What would you say are your surveying specialisms?

Vessel inspection has always been my comfort zone, however now I find myself more and more assisting vessel owners with the enigma of the government marine regulatory quagmire (some of which I may have held the pen on in my previous career). Sorting through new regulatory requirements, policies, and procedures can sometimes be intimidating for vessel owners. I spend a lot of time consulting on new builds and vessel importations.



Q4. What are the main challenges of carrying out your job in Canada and are there benefits to having the IIMS network in your country, which is geographically vast?

In Canada, it's difficult to be all things to all clients. We are a vast country with four distinct marine areas: East Coast, West Coast, Arctic Coast, and of course the Great Lakes. Each client base has their unique demands. The benefit of having a national marine surveying body, such as the IIMS, is having the ability to network with other marine surveyors. The IIMS has created 'WhatsApp' groups that I've used several times to network with others who a deeper subject matter expertise than I do in a specific area.

Q5. How important is it for a surveyor to keep abreast of changing technologies and to keep learning new skills? I ask this question given that you have recently undertaken and passed the new Professional Qualification in Marine Corrosion.

I believe it's vital to keep current with both technological changes and regulatory changes. The IIMS provides great training opportunities such as Professional Qualification in Marine Corrosion for example. Each spring and fall, Transport Canada hosts the Canadian Marine Advisory Council (CMAC) which provides regulatory updates and consultation opportunities. In addition, we are not only marine surveyors, but business owners as well. I think it's also important to keep abreast of business best practices. Many businesses die of 'indigestion', not 'starvation'. It's too easy to become complacent. To be successful you need to be a good marine surveyor and a good business operator.

Q6. Having recently taken over the reins as Chairman of the IIMS Canada Branch, what do you think are the opportunities for further development?

I'm excited to be the new Chairman of IIMS Canada Branch. We have a great Committee of experienced and dedicated team members from across the country. Amongst our priorities will be to increase our membership, increase IIMS brand recognition in Canada, and to leverage the IIMS benefits to a broader scope to make IIMS the organization of choice in Canada for marine surveying services.

Q7. What are the key challenges facing the surveying profession, including any new regulations, in North America over the next couple of years?

Like many other marine administrations, Transport Canada is delegating more and more statutory inspection programs to third parties, introducing self-inspection programs and domestic safety management systems, and re-active Government Orders such as COVID measures, Right Whale Protection measures, and Southern Resident Killer Whale protection. These programs require marine surveyors to be both nimble and informed if they want to be on the leading edge of the wave as our clients' needs expand.

Q8. What are the best bits of the job that give you most satisfaction and which parts are more trying?

I think at the end of the day, knowing you did a good job for a client and a good job for the mariners that work on the vessel is so satisfying. I recently did a re-flagging for an Offshore Supply Vessel. After a week with the vessel and crew I had left with confidence both vessel and crew were well prepared for their new operations.

The trying parts of the job..... it's important to know your client base, and more important that you select a client base that aligns themselves with your own values and ethics. That can be a difficult part of job.

Q9. What one secret can you reveal about Scott Kennedy that readers of The Report Magazine will not know?

I was a 'Game of Thrones' fanatic, so much so my wife and I went on a GOT vacation to Croatia. We sat in the real 'Throne'... luckily I didn't loose my head!

Q10. As this article is appearing in the 100th edition of The Report Magazine, can I persuade you to say something about the value and content of the publication.

The 100th edition of The Report Magazine is truly a remarkable milestone. I think its one of the best industry periodicals available to marine surveyors. The depth, diversity and relevance of the content material is informative and usefully to the everyday marine surveyor. I look forward to each edition.

Q11. Once your box of tools is stored in the garage for the night, how do you like to relax and unwind?

I have three pastimes that keep me well occupied during down time... playing hockey, trap shooting, and wine.

Q12. If you could travel to one place in the world you have never visited before, where would it be and why?

An interesting question... just prior to the pandemic there was an IIMS training course on Large Yacht surveying planned for Malta. We often travel to Europe in the fall but have never been to Malta. So, the planning had started for Malta. Then the pandemic hit. So now, I think a train ride through the Canadian Rocky Mountains is in order for this fall. Good food, good wine, and beautiful scenery...and our grandchildren live near there too.

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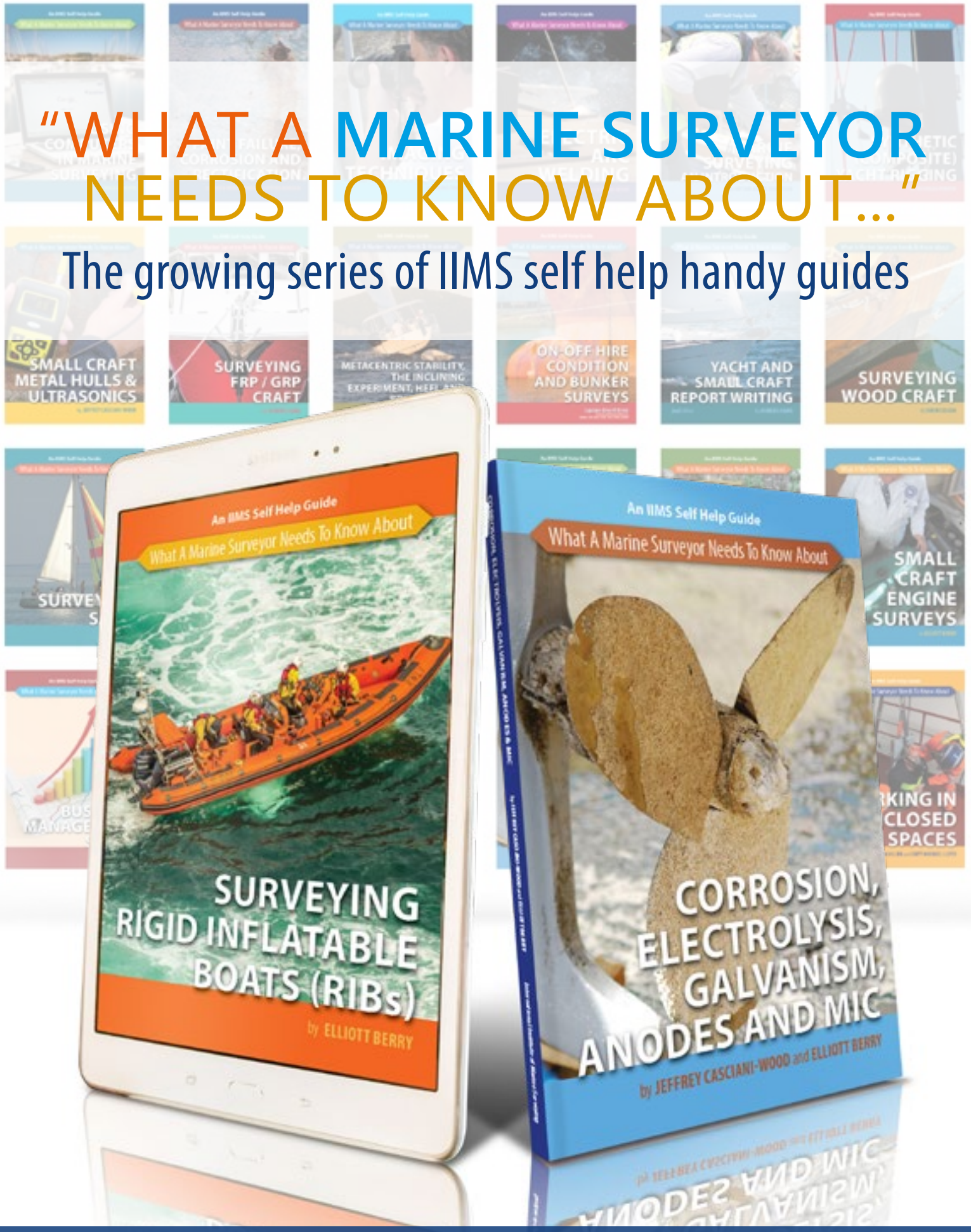

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