



Poseidon Principles

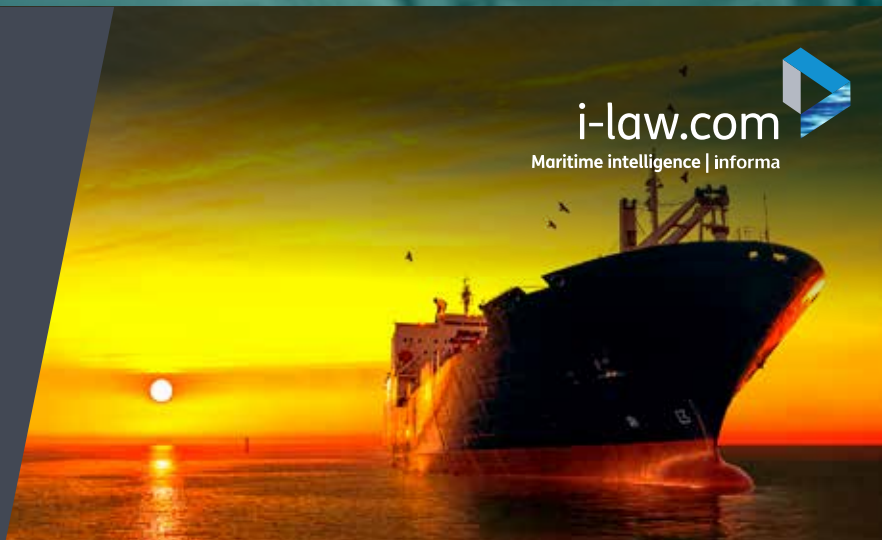
One year on

- Decarbonisation ever more critical
- Piracy risks on the rise again
- Cross-border disputes reaching the courts

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IN BRIEF

Shipping costs

The cost of shipping goods from China to Europe has more than quadrupled since the beginning of 2021, hitting record highs as a shortage of empty containers stemming from the pandemic disrupts global trade. This is according to shippers and importers, who report the cost of shipping a 40-ft container from Asia to northern Europe has increased from about \$2,000 in November to more than \$9,000. Factors including Covid-19 delays mean that congestion at ports is contributing to higher prices, with shipping lines charging extra fees to compensate for longer waiting times. It also raises the risk of increased claims and consequential disputes.

Chemical tanker guide

The International Chamber of Shipping has launched a new edition of the standard reference guide for those working on tankers carrying chemical cargoes. The fifth edition of the "ICS Tanker Safety Guide (Chemicals)" provides chemical tanker operators and crew with up-to-date best practice guidance for safe and pollution-free operations on ships regulated under MARPOL Annex II. This includes oil tankers operating in accordance with Annex II when they are carrying chemical cargoes.

Dry bulk standard

RightShip and Intercargo have launched a new quality standard for the dry bulk sector, DryBMS. The standard will be governed by a new NGO to be established later this year and will support the improvement of safety in dry bulk operations. Both RightShip and Intercargo have strongly and consistently advocated the need for significant improvements to dry bulk safety standards. In August 2020 both organisations combined their expertise to create a single framework for the whole industry. Supported by the International Chamber of Shipping and BIMCO, DryBMS now exists as a simple set of best practices and key performance indicators, and raises the bar on safety, environmental and operational excellence.

Neptune Declaration calls for seafarer protection as they work through pandemic

IMO secretary-general Kitack Lim has welcomed the industry-led Neptune Declaration, which calls for seafarers to be designated as key workers and for cooperation to end the current Covid-19-related crew change crisis, which is not only putting seafarers in a desperate situation but also threatening the safety of shipping and world trade.

He has urged more companies, including charterers, to get involved and show their support for seafarers. In December, the United Nations General Assembly adopted a resolution on international cooperation to address challenges faced by seafarers who are supporting global supply chains during the Covid-19 pandemic. To date, Lim has received 53 notifications from member states and one from an associate member to confirm that they have designated seafarers as key workers. Lim has now urged more governments to consider seafarers as key workers.

Meanwhile, a global network of crew change hubs would help alleviate the humanitarian crisis seafarers face at present, according to the Maritime Authority of Jamaica (MAJ). They could offer a short-term solution to the barriers presented by global travel restrictions, ensuring vital crew changes could take place and facilitating trade and logistics to the benefit of the world economy, the flag state advised.

Rear Admiral (ret'd) Peter Brady, MAJ director general, explained: "In the Caribbean for example, several smaller states still have not re-opened their borders. With a hub, seafarers would be able to move more freely. Some natural crew change hubs already existed pre-Covid-19, by virtue of the concentration of shipping, and we suggest that more could be developed to deal with the current stagnation of crew travel in parts of the world."

He added that a future challenge will be motivating seafarers to continue their career in light of the crises and hardships they have endured during the pandemic. "The industry and individual companies must take steps to address crew retention by improving and increasing welfare benefits to seafarers onboard. Introduce benefits such as access to gymnasiums, to internet connections to enable crew to keep in touch with their families, and provide online counselling and opportunities for studying," Brady recommended. "Access to a safe and efficient vaccine may also put ships' crew at ease." *MRI*

New flag performance table published

The International Chamber of Shipping (ICS) has published the latest Flag State Performance Table (2020/2021) which finds that many of the largest flag states – including the Marshall Islands, Hong Kong (China), Singapore, the Bahamas and Cyprus – continue to perform to an exceptionally high standard, with traditional flags and open registers performing equally well. ICS secretary general, Guy Platten, said: "The Table clearly indicates that distinctions between 'traditional' flags and open registers are no longer meaningful. Alongside several European registers, and flags such as Japan, we have seen many open registers among the very top performers."

Among the 10 largest ship registers (by dead weight tonnage), covering more than 70 per cent of the world fleet, none have more than two indicators of potentially negative performance, and five have no negative indicators at all. Platten concluded: "There are still a number of smaller flag states that have a lot of work to do to considerably enhance their performance and shipowners should consider very carefully the prospect of using these flags, which may be perceived to be sub-standard."

The ICS Flag State Performance Table provides an invaluable indicator of the performance of individual flag states worldwide. It analyses how the countries included deliver against a number of criteria such as port state control (PSC) records, ratification of international maritime Conventions and attendance at IMO meetings. Due to the unprecedented nature of the Covid-19 outbreak, the previous period's Flag State Performance Table (2019/2020) was not published. To maintain a complete and accurate record of port state control performance of flag states in 2019, ICS has published the relevant PSC data on the last page of the report, corresponding to information released in 2019 by the Paris MOU, the Tokyo MOU and the US Coast Guard in their respective annual PSC reports. *MRI*

Gulf of Guinea safety essential after crew death on container ship

Maersk is calling on authorities to launch an “effective military capacity” in the Gulf of Guinea to increase safety for vessels and crews following two piracy attacks on its vessels in less than a month. Maersk, the world’s biggest container shipping line, says security for vessels and crews off the western coast of Africa is so poor that it may be life-threatening to sail in the pirate-plagued waters.

Maersk is proposing a strategy in the Gulf of Guinea to curb the rising number of assaults, armed robberies and kidnappings. The strategy offers both a short-term solution and a long-term plan.

Meanwhile, IMO secretary-general Kitack Lim has expressed his deep concern about the escalation in the number and severity of attacks on ships and crew in the region. He insisted on the need for all stakeholders to work together to restore security and reduce the threats to the safety and security of crews and vessels operating in the area.

The urgency of the situation has been underlined by the attack on the container ship *Mozart* on 23 January 2021, which resulted in a fatality and the kidnapping of 15 seafarers. Lim said that the IMO has been taking action to enhance the coordination of initiatives among stakeholders, including facilitating meetings with representatives of the industry, the Nigerian Maritime Administration and Safety Agency and the Interregional Coordination Centre for the Implementation of Regional Strategy for Maritime Safety and Security in Central and West Africa.

Lim also highlighted that ships need to implement the IMO-endorsed Best Management Practices for West Africa to avoid, deter, delay and report attacks.

The IMO intends to convene a maritime security working group focusing on the Gulf of Guinea at the next session of the Maritime Safety Committee, MSC 103, scheduled to take place in May 2021. This will provide an opportunity for member states and international organisations to discuss further collaboration and possible action to address the existing problems. **MRI**

Improving seafarer mental health in traumatic situations

News of the fatal pirate attack on the Turkish-flagged boxship *Mozart*, which left one seafarer dead and 15 others kidnapped, brings into sharp focus the need for urgent psychological first aid and professional mental health assistance in such situations, where the remaining crew onboard need to be supported, according to Christian Ayerst, CEO at Mental Health Support Solutions (MHSS). Ayerst said: “Such news is likely to increase anxiety in the seafaring community, especially for those entering areas known for piracy attacks.”

Charles Watkins, clinical psychologist and managing director at MHSS, which specialises in providing mental health support, added: “Such an attack by pirates raiding a vessel can cause serious mental and emotional wounds among the crew. They may feel a range of cognitions and emotions like anxiety and/or survivors’ guilt. This may traumatise them, understandably.

They may go through a range of PTSD symptoms or other symptoms related to trauma. They’re also likely to worry about how events could have unfolded differently and picture other scenarios. This is a lot to process and may take some time to recover. They should all be professionally supported with access to psychologists to assure all of them have access to the help they need and deserve.”

MHSS is creating a psychological first aid (PFA) course designed to educate crew on how to deliver PFA in a traumatic situation before professional support can get involved.

The company also runs a series of workshops to help train seafarers to cope under stressful situations but also prepare them should they be kidnapped. It aims to provide seafarers with tools to give them resilience in extreme situations to manage things, but also relaxation therapies such as meditation and breathing techniques.

• For more on piracy, see pages 18 and 19. **MRI**

IN BRIEF

New simulator

The Thome Group has recently invested in the installation of a new Full Mission Navigation Bridge Simulator. The new system was formally opened, following all relevant Covid-19 protocols, at the TSM Building, Makati City, in the Philippines. Using Kongsberg Digital’s latest K-Sim navigation simulator, trainees will be able to use equipment that looks, feels and has the same functions as real onboard equipment, while operating in a safe training room environment. The new visual system, which has a 320-degree view, brings to life geographic locations, different weather conditions and other nearby vessels so trainees can experience a better seascape and interact with multiple scenarios.

Swedish ratings

The Swedish Club has reported that, once again, S&P Global Ratings has affirmed its A- rating for the Club. In making its decision, the ratings agency pointed to The Swedish Club’s resilient capital position in a volatile year. It also commented on the Club’s disciplined underwriting and risk control, supporting the Club’s controlled underwriting results. The Swedish Club has demonstrated a combined ratio of 98 per cent across a seven-year average, positioning it ahead of its peers. This news comes alongside AM Best again awarding The Swedish Club a financial strength rating of A- (excellent) and a long-term issuer credit rating of “a-”, with a stable outlook.

New laboratory

Brookes Bell – the global technical and scientific consultancy – has officially opened its new high-end laboratory. The new 8,000 sq ft facility has been developed in Bidston, Wirral, near Liverpool in the UK, and will help to reinforce the multi-disciplinary technical and scientific services Brookes Bell currently offers, allowing the company to develop business opportunities beyond its existing marine and energy clients, responding to interest and enquiries from new customers.

IN BRIEF

Navigation pay

The Middle East Navigation Aids Service (MENAS) has signed a cooperation agreement with Inchcape Shipping Services that will contract the ship agency company to collect navigation aids dues from the ships it looks after in the Middle East Gulf. This is a huge step forward in its effort to ensure shipowners are able to pay for navigational aids provision in the waterway. The agreement, covering all Inchcape offices in the Middle East, is the first one in a series to formalise and standardise the collection of nav dues processes and accountabilities across all ship agencies working with MENAS on the collection of nav dues. More than 2,000 vessels rely on MENAS equipment and services each month.

Remote surveys

Classification Society ClassNK has been working on the advancement of surveys using digital technology, and published "Guidelines for Remote Surveys Version 2.0". Incorporating outcomes of investigation and examination for providing the standards in the application of remote surveys to ensure reliability equivalent to conventional witness surveys with transparency, the guidelines have described the types of surveys that can be applied, the types and amounts of information required for remote surveys, and the requirements for communication technologies.

Hot surfaces

The loss prevention team at the UK P&I Club has produced its latest "Inside Ship" animated training video focusing on shielding of hot surfaces in the engine room. The need for good insulation of hot surfaces is vital as many engine room fires originate from oil leakages spraying onto hot exhaust surfaces. Most vessels have well-insulated exhaust systems when delivered, but during overhaul or maintenance of engine parts, insulation may be damaged, exposing hot surfaces. Such hot spots can be at the base of an exhaust pipe support or the flanges between connecting parts. On-board risk assessments often reveal exhaust systems are inadequately insulated.

Need for careful cleaning highlighted

Cleaning a ship's submerged parts from barnacles and other growths while the ship is in the water can transfer invasive species to local marine environments unless it is properly cleaned and the debris is captured. To combat this problem, and to provide clarity and quality assurance to shipowners, ports and government authorities, BIMCO and the International Chamber of Shipping (ICS) have published the first industry standard on in-water cleaning of ships.

"This standard will help protect the environment in the port. Not only that, it will also help every organisation that is part of this process by raising the minimum standard of cleaning several notches higher and ensure that the end result is both a clean ship, and safe working practice," says David Loosley, BIMCO secretary general.

The organisms growing on a ship increases its drag through the water and can reduce fuel efficiency of the ship by as much as 35 per cent, leading to higher fuel bills and higher CO₂ emissions. It is therefore important to remove the growths every couple of years.

A number of countries and regions have put biofouling management high on their agenda, with regional and national regulation on the drawing board or already in place. This includes the USA, Australia, the Baltic Sea region, New Zealand, Hawaii and California.

John Stawpert, manager (environment and trade) at the ICS added: "This new industry standard establishes a benchmark for safe and environmentally sound underwater hull cleaning, an issue that is of increasing concern to the international community. We hope that this first step by industry bodies will allow cleaning companies to demonstrate that their products protect the marine environment, and that shipowners can be confident that their ships are cleaned to a safe and effective level around the world. With these industry standards port authorities can also have confidence that underwater hull cleaning can be completed with minimal risk to the environment by independently approved cleaning companies working to proven high standards."

According to the industry standard, at least 90 per cent of macro fouling must be captured by the cleaning company, and effluent water coming back into the sea is required to have removed organisms and materials down to a microscopic size (0.000001 m). **MRI**

Warning of dangers posed by hypothermia for seafarers

The UK Club has issued crew health advice on hypothermia. Sophia Bullard, crew health director at UK P&I Club, has warned: "Due to the nature of their vocation, seafarers are often exposed to the elements and sub-zero conditions. This can result in the body losing heat faster than it can produce it, and with core temperature dropping below 35°C, hypothermia is extremely likely. Hypothermia is a very serious condition that can cause hospitalisation and death in extreme cases, as well as mass disruption to crew onboard and cost to ship operators."

She added: "There are various contributing factors leading to hypothermia but among the most common are wearing wet or inappropriate clothes for the environment, drinking alcohol or taking drugs that causes blood to cool more quickly, as well as major trauma." Among the obvious symptoms, she said, are "Shivering, exhaustion, confusion, memory loss, slurred speech, and trembling hands. However, these symptoms can also occur with a huge range of other conditions, so it's important to assess environmental factors. These include how long the person has been exposed to cold or whether they have been involved in an accident."

In terms of treatment, she recommended: "The first step is to get them to a place where you can begin assessment and treatment. If the person is conscious, remove any wet clothing and wrap them in a blanket, sleeping bag or something similar. Make sure you also cover their head but not their face, and as long as they're able to manage their own airway, give them a warm drink. If the individual is unconscious, assess their breathing and if it's undetectable begin CPR and continue the rewarming process. In some cases, hypothermic victims who are rewarmed can be successfully resuscitated." **MRI**

North P&I Club

NEW CHAIR

North P&I Club has elected James Alexander Tyrrell as its new chair of the board, succeeding Pratap Shirke, with Ioanna Procopiou becoming the Club's first female vice-chair. James, a director of Arklow Shipping, previously served as vice-chair of the North board. His appointment continues an unbroken tradition for the North chair to be appointed from a Club member.

Ioanna, who takes the seat occupied by James, is managing director of bulk carrier specialist Sea Traders SA – also a North member. A board member of the Union of Greek Shipowners Association and the Cypriot Shipowners Association, she is also already a member of North's board of directors.

Pratap Shirke, while stepping down after nine years as chair, will remain as a board member and also chair of North's Dublin-based subsidiary – North of England P&I DAC.

The Standard Club

SENIOR TEAM BOOST

The Standard Club has bolstered its senior team with two new appointments in 2021. Laura Linturn joins as chief information officer and Alex Miell joins as head of people and culture.

Laura joins following a career break to complete an MSc in Computing and Information Systems. Prior to that Laura was at AXA XL where she held the role of VP head of IT change controls and sourcing. Before this she held senior technology roles at XL Catlin, and AXA UK.

Alex has more than 20 years of experience in HR in a variety of roles largely in technology, financial services and professional services, notably Pearson Group, MoneySupermarket Group and DWF.

TT Club

BENELUX UNDERWRITER



TT Club has announced Marcus Kuling's appointment as a specialist underwriter in the Benelux region. He will be based in Rotterdam as part of the Thomas Miller BV team and solely dedicated to servicing the TT Club's European membership.

Marcus will underwrite TT Club risks as part of the Thomas Miller team based in the Netherlands. Marcus has crucial local knowledge and much experience in marine insurance from working as both a broker and underwriter in the Netherlands throughout his career, with companies including AON, AEGON, Generali and Amlin.

Optio Group SPECIALTY LAUNCH



Optio Group, the specialty managing general agent, has launched Marine Specialty, led by Angus Bailey, who will be based in London and report to Paul Western, group chief underwriting officer. With an initial focus on marine war and kidnap and ransom risks, Angus will be responsible for developing Optio's marine specialty proposition. Angus previously led Seacurus, a trading name of Castel Underwriting Agencies. Prior to that, he served as an underwriter at Barbican.

Thomas Miller Specialty CLAIMS MOVE

Following a strategic review of its operations in Hamburg, Thomas Miller Specialty (TMS) has announced it has moved its claims operations to the Thomas Miller Claims Management offices in Newcastle with immediate effect. In addition, Hamburg is now fully operational as the European hub for all TMS businesses. A further aspect of this strategy includes the founding of the London branch of Thomas Miller GmbH as an important additional part of the company's Brexit strategy.

CJC TWO NEW DIRECTORS

Campbell Johnston Clark (CJC) has appointed two new directors, with Singapore-based senior associate Will Pyle and Newcastle-based senior associate Alex Hudson promoted.

Recently, Will has advised on disputes arising from delays caused by the Covid-19 pandemic. He is also part of the CJC team in Singapore advising on a case involving the substantial loss of containers at sea, and a container ship fire. Alex specialises in P&I and FD&D matters covering a wide range of

charterparty, bill of lading and general contract of affreightment disputes. Having joined CJC as a newly qualified lawyer, Alex also holds the distinction of becoming the company's first fully "home-grown" partner.

Apollo Syndicate 1969 NEW HEAD OF MARINE AND ENERGY LIABILITY

Apollo Syndicate Management has named Rob Johnston as head of marine and energy liability at Apollo Syndicate 1969. He will join the business in April, reporting to Simon Mason, head of marine and energy. Rob joins from MS Amlin, where he has managed several significant portfolios since 2014 and was most recently a marine and energy liability senior underwriter. Prior to that, Rob worked as an underwriter at The Navigators Group for more than six years, focusing on energy liability and offshore energy.

Dryad Global FIRST NON-EXEC DIRECTOR



Dryad Global has announced the appointment of Teresa Peacock as its first non-executive director. Teresa is currently managing director at Spinnaker Global and a member of the Maritime UK's Diversity Taskforce, a board member of the Women's International Shipping & Trading Association (WISTA UK) and a part of the All Party Parliamentary Group for Women and Work.

Wikborg Rein NEW ADMIRALTY MANAGER



Law firm Wikborg Rein is expanding its marine casualty and emergency response team with the hire of new Admiralty Manager Matt Berry. Matt, a former mariner and a qualified solicitor, joins from Ince. He began his career at sea with James Fisher, working on coastal product tankers, before joining Shell in 2003 to work both ashore, in the oil fleet operations department, and at sea on Shell's oil and gas fleet. He subsequently spent 11 years in the Admiralty Department of Ince.

Silver bullet for green shipping in ship financing?

Shipping regulations are always in a state of flux. Here, lawyers from ASD, an International Union of Marine Insurance Professional Partner (IPP), consider two of the most pressing issues of the day – the climate and cyber risks. First, **Stephanie Landauer** and **Lars Kortländer**, of ASD law firm, ask whether the Poseidon Principles will prove the answer when it comes to green ship financing

In November 2017 three global shipping banks (Citi, Societe Generale, and DNB) initiated a broad discussion on climate risk in ship finance and “greener” shipping, supported by the industry (AP Møller Mærsk, Cargill, Euronav, Gram Carriers, Lloyd’s Register and Watson Farley & Williams) and experts (Global Maritime Forum, Rocky Mountain Institute, and University College London Energy Institute).

During 2018 several workshops around the world were held and by February 2019 the Poseidon Principles were drafted, resulting in their launch on 18 June 2019 in New York and the formation of the Poseidon Principles Association as their governing body, which provides guidance to existing and prospective signatories on the processes for the management, administration and development of the Poseidon Principles.

The Poseidon Principles are an agreement and commitment between and by the finance sector and the shipping industry to incorporate the IMO’s policies on climate change – especially the

IMO’s Initial Greenhouse Gas Strategy introduced in April 2018 – into ship finance decision-making processes, in particular by introducing and including certain new clauses and paragraphs into loan agreements. The signatories to the Poseidon Principles voluntarily commit themselves to several targets as set out in the IMO’s Initial Strategy, with the two most ambitious ones being a reduction in carbon intensity of international shipping by at least 40 per cent by 2030 and the total annual GHG emissions from international shipping to be reduced by at least 50 per cent by 2050 (both compared to 2008).

The Poseidon Principles, a framework for assessing and disclosing the climate alignment of ship finance portfolios, consist of the following four enumerative principles.

Principle 1: Assessment of climate alignment

Signatories will measure the carbon intensity of their shipping portfolios on an annual basis and assess their climate alignment

A milestone for maritime safety and security

Now, **Anna-Lena Wülbern**, of ASD, considers cyber risk and the evolving regulatory landscape

Following the IMO Resolution MSC.428(98), adopted on 16 June 2017, the IMO Guidelines on Maritime Cyber Risk Management (MSC-FAL.1/Circ.3) provide that from 1 January 2021 every safety management system must be documented as having included cyber risk management in line with the International Safety Management Code no later than a vessel’s first annual document of compliance audit.

This resolution recognises “the urgent need to raise awareness on cyber risk threats and vulnerabilities to support safe and secure shipping, which is operationally resilient to cyber risks”, and calls on the industry to “expedite work towards safeguarding shipping from current and emerging cyber threats and vulnerabilities”.

The Guidelines on Maritime Cyber Risk Management contain recommendations to the shipping industry on a broad and general basis, having in mind that the level of cyber security needed by a specific vessel mainly depends on the level of cyber-related systems on board.

In essence, the Guidelines contain general statements on what is meant by cyber risk (section 2.1 – Background) and a description of the measures that should be included (section 3 – Elements of Cyber Risk Management).

The Guidelines identify vulnerable systems that must be taken into account (section 2.1.1). These are (but not limited to) bridge systems, cargo handling and management systems, propulsion and machinery management and power control systems, access control systems, passenger servicing and management systems, passenger facing public networks, administrative and crew welfare systems, and communication systems.

A proper cyber risk management strategy should take into account that threats to the cyber security of a system can be caused not only by malicious actions like hacking or introduction of malware, but also by unintended consequences of benign actions like software maintenance or user permissions (section 4.1.4). Such actions expose vulnerabilities or exploit a vulnerability in the cyber system.

Furthermore, to protect a system from threats, vulnerabilities must be identified and eliminated. Such vulnerabilities can result from inadequacies in design, integration and/or maintenance of systems, as well as lapses in cyber discipline (section 2.1.5).

Last but not least, organisations must be able to control their cyber risk management plans to react properly and timely to threats and vulnerabilities (section 2.1.9).

The instruments of a proper cyber risk management strategy should cover the following to encompass the activities and desired outcomes (section 3.5):

relative to established decarbonisation trajectories, whereas the decarbonisation trajectory is a figure resulting from how many grams of CO₂ a single vessel can emit to move one tonne of goods one nautical mile over a certain timeframe. This assessment should be based on a robust, industry-appropriate methodology.

Principle 2: Accountability

Signatories recognise the important role that classification societies and other recognised organisations play in providing unbiased and accurate data. They support and rely on the mandatory regulation established by the IMO for collecting data on fuel consumption from ships, especially for ships with a gross tonnage of at least 5,000.

Principle 3: Enforcement

Signatories commit to comply with the Poseidon Principles in their new business activities. They will use standardised covenant clauses and work together with their clients and partners to meet this requirement. This way it can be assured that the accurate and appropriate assessment of climate alignment and relevant data is met and collected and furthermore it creates an equal burden on all signatories. The third Principle “simply” aims at imposing a duty by the lender to annually disclose on a confidential basis the relevant data that the borrower has to report.

Principle 4: Transparency

Signatories are required to report their portfolio alignment score on an annual basis. All signatories’ scores will be published annually by the Secretariat (an organisational body of the

- Identifying personnel roles and responsibilities, the affected systems, assets, data and capabilities.
- Protecting the system by risk control processes and measures, as well as contingency planning.
- Detecting a cyber event in a timely manner.
- Responding to a cyber event by providing resilience and restoring impaired systems.
- Recovering cyber systems by backing them up and by restoring systems impacted by a cyber event.

The ISM Code has always required companies to protect vessels, personnel and the environment against all risks and, therefore, also against cyber risks. However, the new IMO Guidelines take into account the importance of cyber security and specify the requirements that have to be met. The Guidelines, supplementing the existing ISM Code, can be seen as a milestone to increased awareness and higher security.



Anna-Lena Wülbern, associate, ASD

Poseidon Principles Association), not only to support awareness of the Poseidon Principles, but also to evaluate on a comparable basis if and how the ambitious goals of the Principles are met.

Implementation/enforcement

For lawyers, the focus lies on the third Principle. We are assisting in drafting new clauses, but also evaluating, discussing and explaining, as well as amending and pushing forward the existing clauses and paragraphs that shall be or have been implemented in (loan) contracts both for the financial sector as well as the industry coping with climate change and related topics.

The Secretariat of the Poseidon Principles Association will, on request, provide to any interested party a pro forma clause and supporting definitions. Having reviewed the pro forma clause and definitions we can confirm that the clause has the right intention but must – and this is the clear instruction – be amended and adjusted to each separate case, taking into account particularly the governing jurisdiction, not least regarding the data protection law.

To take the imposition of certain standards to the next level, the lenders may demand even further actions from the borrower, such as operating only a fuel-efficient fleet, or by financing the purchase of a specific “greener” vessel, or by imposing certain other targets throughout the lifespan of the vessel and the loan. However, from our point of view, the aim of the clauses and terms must be to balance greener shipping with the price of business operations. The legal challenges are numerous, taking into account the fairly young area of legal questions that arise thereunder.

The outlook

Reducing the carbon footprint of humankind, here of each and every vessel sailing, is an ambitious goal long overdue. The Poseidon Principles are a good step in the right direction, but by far not the end of what is possible. It is not a silver bullet but combined with more stringent clauses in loan agreements it can be a weapon more than worth mentioning. It is now up to the lawyers to draft clauses that comply with the interests of their clients as well as the rules and regulations in force in the relevant country, by always keeping in mind the underlying doctrine the Poseidon Principles offer.

In our opinion, the Poseidon Principles already are an instrument to promote greener shipping and may actually assist in changing the mindset of the industry by not only looking into making profits but also keeping an eye on our planet. *MRI*

- *IUMI recently held a webinar with the IMO to discuss the IMO’s strategy on the reduction of GHG emissions. For a recording and slides of the session see iumi.com/education/webinars/webinar-recordings-and-slides/imos-strategy-on-the-reduction-of-ghg-emissions-and-ways-to-achieve-it_1611672836*



Stephanie Landauer



Lars Kortländer

Stephanie Landauer, senior associate, and Lars Kortländer, senior associate, of ASD

A year on for Poseidon Principles

Now **Kate Silverstein** and **Emily Widdrington**, of Watson Farley & Williams, take a look at the first annual report on the Poseidon Principles

The Poseidon Principles are a global framework for assessing and disclosing the climate alignment of financial institutions' shipping loan portfolios. They establish a common baseline to quantitatively assess and disclose whether those portfolios are in line with adopted climate goals, namely, the IMO's goal of reducing shipping's total annual greenhouse gas emissions by at least 50 per cent by 2050 (taking 2008 emissions as the baseline).

The Poseidon Principles launched on 18 June 2019 with 11 founding signatories including Citi, DNB and Societe Generale, and are a reflection of the desire by many ship financiers to contribute to the shipping industry's decarbonisation challenge. Signatories to the Poseidon Principles are required to assess and report on, on an annual basis, the climate alignment of their ship finance portfolio. Currently there are 22 signatories representing a shipping loan portfolio of approximately US\$150 billion – more than a third of the global ship finance portfolio. The 11 additional signatories are made up of nine additional banks including BNP Paribas, Credit Suisse and SEB, and two export credit agencies – Bpifrance Assurance Export and Export Credit Norway.

The Poseidon Principles Steering Committee's expectation is that many more financial institutions will join, and with China's recent pledge to achieve carbon neutrality by 2060 the hope is to also see more Asian institutions becoming signatories to the Poseidon Principles.

On 16 December 2020 the first Poseidon Principles Annual Disclosure Report was published marking an important moment for the initiative with 15 signatories reporting on the climate alignment of their ship finance portfolios. (Note that not all signatories were required to report as there is no obligation to do so in the first year of a signatory joining.)

What are the key takeaways from the first Poseidon Principles Annual Disclosure Report?

Climate alignment scores

The report and published results make for interesting reading, with a climate alignment score being attributed to each reporting lenders' shipping portfolio. A score of 0 per cent or a negative score indicates a ship finance portfolio is "carbon aligned" and is in line with or lower than the required decarbonisation trajectory

set out in the Principles, while a positive score means that any given portfolio is "misaligned" with the applicable trajectory.

The report highlights a wide range of scores from the 15 reporting banks with individual scores ranging from -44.94 per cent to +32 per cent. Three of the shipping portfolios are "carbon aligned" and report a score of 0 per cent or lower, while 12 portfolios are "misaligned". The average reported alignment score across all reporting signatories was +1.2 per cent (meaning that the 2019 greenhouse gas emissions in respect of the reporting signatories' shipping portfolios were on average 1.2 per cent above the relevant decarbonisation trajectory).

“The first Poseidon Principles Annual Disclosure Report marks a significant milestone for global ship finance and for climate finance reporting as a whole. I commend my fellow Signatories for their pioneering efforts to be transparent and accountable for their role in promoting responsible environmental behavior. Together, we will review the Principles to ensure that they are practical and effective, and that further adverse impacts are identified for inclusion in due course”

Michael Parker, chairman, global shipping, logistics and offshore, Citi, and chair of the Poseidon Principles Association

Key trends in the report

Delving deeper into the results reveals that whether or not a ship finance portfolio is "carbon aligned" can be impacted by a number of factors such as a signatory financing a high number of energy-efficient ships or, conversely, lending higher amounts to a small number of very energy-efficient ships. It therefore follows that a highly leveraged portfolio comprising a small

number of ships can significantly impact results and a large loan on a misaligned vessel in a portfolio could have a substantial effect on the overall result.

A huge amount of data has been reported on by the founding signatories and certain trends have been identified which will no doubt be further analysed. Interestingly, the results (anonymised with no individual vessel being able to be identified) did not always reflect a correlation between the age of a vessel and its carbon alignment, highlighting that other factors affect carbon intensity – for example, vessels on long-haul routes are more carbon efficient than those involved in short sea trading routes due to speed of sailing and time in port.

This data emphasises what is already known, that to achieve the IMO’s 2050 carbon emissions goal there needs to be a focus on both existing vessels and how these can be operated in a more carbon-efficient way as well as on newer more energy-efficient ships. This is important given that the required decarbonisation trajectory under the Poseidon Principles falls by a further 11 per cent in the next five years and financiers and shipowners will need to work together to achieve these targets.

Will the report encourage new signatories to join?

The report noted that there was positive participation from ship owners providing the necessary information in respect of more than 90 per cent of the relevant debt to the signatories for them to meet the required reporting requirements which resulted in the reporting process progressing smoothly. It is likely that going forward the process will become even more streamlined, paving the way for new signatories to join a more established regime.

For any financiers who may be concerned that their portfolio score will reflect a carbon misalignment, given that 12 out of the 15 portfolios are misaligned it now seems to be an excellent time to take steps to become a signatory. More importantly, the focus is not on the day one results; the intention is to focus on the ability to improve and the steps taken in time to meet or improve on the decarbonisation trajectory.

How was information collated and how might this change in the future?

The first reporting process was clearly a success and the procedure for reporting the data is set to be made easier. For the first annual report each signatory wrote to their customers and requested the relevant data and statement of compliance. Going forward the hope is to streamline the process by creating an independent data exchange platform which would make the data collection and calculation process simpler for all concerned. With the data potentially appealing to other commercial sectors like insurance, and given similar data is required to be provided

to signatories to the Sea Cargo Charter, the demand for such a platform is certainly there.

It was at the request of shipowners in the drafting group that the Principles should include a standardised covenant. This covenant language was prepared with the help of Watson, Farley & Williams and is now being incorporated into most new financings that the firm are seeing. It is encouraging that, even without this covenant, owners have generally been willing to share their data for reporting purposes which, after all, is the same information required to be shared with the IMO. Changes are also being made to the confidentiality provisions in financing agreements to expressly permit disclosure of relevant data for calculation purposes where signatories use third-party providers to run the calculations. These third-party providers are, in some cases, offering to carry out an informal assessment of potential signatories’ portfolios based on currently available data so that potential signatories have a rough idea of the climate alignment score they are likely to report – this will hopefully lead to further signatories to the Principles.

What does the future hold?

It has been suggested that the scope of the Poseidon Principles could be expanded to include other greenhouse gases or, if ratified, any expansion of the Principles may also look to cover the requirements of the Hong Kong convention on sustainable ship recycling. The Poseidon Principles Association has suggested that any expansion will be in line with applicable worldwide legal and regulatory developments (eg future IMO regulations) but should also be driven by the signatories with cooperation from ship owners so that a level of control and self-regulation that is fit for purpose is maintained.

The methodology behind the Poseidon Principles ensures that no type or size of vessel is put in an unfavourable position; it is the carbon intensity of those vessels relative to their respective carbon trajectory that is important. Now that the results from the first year of reporting have been received, there is scope for the assumptions underpinning the trajectories to be revisited having the benefit of seeing the first cycle complete.

Summary

However the Poseidon Principles may develop in time, one thing is clear from the first annual report – a transparent approach to reporting on the fundamental issue facing the industry has been successfully achieved by a cooperative and collaborative approach between financiers and ship owners. Although there is work to be done to achieve a more aligned climate score across the board, this reporting process will continue to be an important annual feature in the shipping space. *MRI*



Kate Silverstein

Emily Widdrington

Kate Silverstein,
partner, and Emily
Widdrington,
senior associate,
at Watson Farley
& Williams

Trading clean air

Rachel Hoyland, of Hill Dickinson, considers what effect the EU Emissions Trading Scheme has on the shipping industry

Political will to take action on climate issues has increased in recent years. As appreciation of the need to stop our planet warming uncontrollably mounts, so too emissions reduction strategies and targets are multiplying, becoming increasingly ambitious, even competitive, as they do.

For industries with a limited geographical range, the international climate action landscape will be but a backdrop to the national rules which govern it directly – whether in line with international action or not. However, for an industry which is continually crossing national borders, such as shipping, both the national, continental and international landscapes will have a direct impact on it and, where there is no global consensus on any aspect of regulation, operators within that industry will likely be required to comply with multiple regimes, where they exist, in the course of normal operations.

In relation to greenhouse gas (GHG) emissions from shipping, a current debate is whether local level regulation is helpful in accelerating the global reduction of emissions, or whether it is disruptive to global efforts to reduce emissions.

At an international level, most of the world's shipping fleet is regulated by the IMO, the maritime division of the United Nations. The IMO is committed to reducing GHG emissions from shipping and is pursuing a globally applicable strategy to achieve this.

While there are clearly advantages to regulating a global industry at global level – consistency and global certainty being amongst them – a criticism sometimes levelled at the IMO is that, as a member organisation including almost every nation in the world and operating by consensus, it is simply not capable of moving fast enough to respond effectively to the current climate crisis.

One tool the IMO intends to deploy in its strategy for reducing GHG emissions, alongside technical and operational measures, is the use of market-based measures. However, these are not scheduled for consideration until 2023 and beyond. Meanwhile, the EU, which also has its own, and arguably more ambitious, GHG emission reduction goals, has recently surged forward on this front with a vote to apply a significant market-based measure to shipping in the EU, by way of including emissions from shipping in the EU Emissions Trading Scheme (EU ETS), with effect from 1 January 2022 onwards.

Below, we take a look at the role market-based measures have to play in achieving emissions reductions, and at the specific measure which the EU will soon deploy.

The role of market-based measures

Market-based measures, such as emissions trading, emissions-related levies and emissions offsetting, are economic tools which, alongside operational and technical measures, such as the development of alternative fuels or the slow steaming of vessels, also have a role to play in decarbonising the shipping industry.



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If deployed well, market-based measures should have the effect of making undesirable polluting behaviour less economically viable than desirable, greener, behaviour and should thus incentivise changes in behaviour which are aligned with GHG emission reduction goals.

Market-based measures are tools which form a potential bridge between the ambition to do things differently and the development and implementation of climate-friendly technologies and behaviours. They can support and accelerate change by:

- Creating funding streams for the development of new cleaner technologies, by imposing levies on polluting behaviour and technologies; and
- Once available, driving the uptake of new technologies, and other changes in behaviour, by making greener options less costly, either in contrast to penalties imposed on polluting behaviour and technologies and/or by way of subsidies for greener options.

International market-based measures have been considered by the IMO in the past, although talks were halted in 2014 due to significant differences of opinion. Market-based measures are now back on the IMO's agenda but are not scheduled for consideration ahead of 2023.

Following their consideration, it is likely that the implementation of any measures adopted will not be achieved for several more years at least. This means that international market-based measures are unlikely to come into force ahead of 2025. Some commentators say this will be too little too late and that by deferring the discussion, adoption and implementation of international market-based measures the industry is missing a valuable opportunity to make progress towards its decarbonisation goals.

“The EU Emissions Trading Scheme operates on a cap and trade system whereby a cap on emissions is set and companies buy at auction, and then trade, emissions allowances permitting them to produce emissions within the cap”

In contrast, the EU is able to move more swiftly and, advancing its agenda to be climate-neutral by 2050, voted in September 2020 to apply a significant market-based measure to shipping from 1 January 2022 onwards and by way of including emissions from shipping in the EU’s already well-established Emissions Trading Scheme.

This is a move which has divided opinion in the shipping community. It has been met with applause from some – who welcome the application of market-based measures to shipping at the earliest opportunity – and by concern from others – who believe a global industry should be regulated at global level and fear that a patchwork landscape of regional regulation may undermine international efforts to control emissions, distort global trade and potentially create confusion and challenges to compliance.

So, what is the EU ETS and how might the inclusion of emissions from shipping affect the shipping industry?

EU Emissions Trading Scheme (EU ETS)

Established in 2005, the EU ETS was the world’s first international emissions trading scheme. It operates on a cap and trade system whereby a cap on emissions is set and companies buy at auction, and then trade, emissions allowances permitting them to produce emissions within the cap.

In addition to the “penalty” for polluting imposed by the initial cost of purchasing emissions allowances for anticipated emissions, the ability to trade allowances means companies are further rewarded or penalised within the market for their ability to keep their level of actual emissions within the anticipated level, either by the revenue from sales of spare allowances or by the cost of purchasing additional allowances.

Furthermore, if a company produces emissions outside of its allowances heavy fines are imposed, acting as a further incentive for companies to strive to reduce their emissions. In time the cap on emissions is reduced meaning that fewer and fewer emissions are permitted. As the allowances are sold initially at auction the price of allowances is set by market demand.

In the early years of the scheme it can be anticipated that, while the tide of behaviour is still turning from polluting to clean,

emissions allowances will fetch a high price because companies anticipate producing large quantities of emissions. As it becomes increasingly easy for ships to produce fewer GHG emissions it can be anticipated that over time demand for allowances will slacken and the price may drop. Although, as the number of allowances available in the market will also decrease over time, the price is unlikely to fall drastically, and could in fact increase, despite a reduction in total demand in time.

The auctioning of emissions allowances, together with the imposition of fines on companies exceeding their allowances, will generate revenue for the Commission. Currently, it is anticipated that 50 per cent of this revenue will go towards a Maritime Transport Decarbonisation Fund, established specifically to support decarbonisation of the maritime sector, and that 50 per cent will go to supporting the EU’s wider climate strategy and its recovery from the Covid-19 pandemic.

A pre-cursor to the effective inclusion of shipping in the EU ETS, and the first step in the EU’s three-step strategy for reducing GHG emissions from shipping, is to gain a picture of the current GHG emission position. This is so that the Commission can set the cap on emissions at an appropriate level and so that shipping companies can sensibly anticipate their likely future emissions and thus their need to purchase emissions allowances with the EU ETS.

Effective from 1 January 2018, the Monitoring Reporting and Verification Regulation, (EU) No 2015/757, as amended by Delegated Regulation (EU) No 2016/2072, (the EU MRV), has regulated the collection of data on the current GHG emission position and that data now forms the pictures which will inform shipping’s inclusion in the EU ETS, in alignment with the EU’s GHG emission reduction goals.

EU Monitoring Reporting and Verification Regulation (EU MRV)

With effect from 1 January 2018, this Regulation requires ships of more than 5,000 gt, loading or unloading cargo or passengers at ports in the European Economic Area (EEA), to monitor their annual fuel consumption, related CO₂ emissions and other parameters. From 2019 onwards, shipping companies have been obliged, by the 30 April each year, to provide to the Commission and the flag state a verified report of data collected in the previous year. By 30 June in each year, ships calling in the EEA are required to carry on board a document of compliance, issued by the Commission, confirming that the ship has fulfilled its monitoring, reporting and verification obligations for the previous year. An annual report, detailing the CO₂ emissions and energy efficiency of ships calling in the EEA, is now published each year by the Commission.

Modification of the EU MRV

In September 2020 the EU Parliament voted to adopt a number of modifications to the EU MRV, including extension of the Regulation from 2022 onwards to cover methane emissions. Modifications to the EU MRV must now be negotiated with member states before a final text for the revised Regulation can be developed. Some of the proposed modifications to the EU MRV go to the inclusion of shipping in the EU ETS and also introduce a goal-based operational CO₂ standard for shipping companies.



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Impact on shipping

Once shipping is included in the EU ETS, voyages from 2022 onwards falling within the remit of the scheme will carry an additional cost – the cost of emitting CO₂. Parties engaged in shipping touching the EEA will also carry an additional regulatory risk – that of exceeding their permissible level of emissions. Assuming the EU ETS framework will mirror to a large extent the EU MRV, the voyages subject to emissions caps will be those into or out of the EEA, or between ports in the EEA, made by ships of more than 5,000 gt which are loading or unloading cargo or passengers in the EEA.

It remains to be clarified which party in the shipping chain will have responsibility for ensuring compliance with the EU ETS, and which party's allowances will be used in respect of any single voyage. However, the EU MRV includes scope for various entities with responsibility for the operation of the ship to fulfil the monitoring, reporting and verification obligation. If the EU ETS requirements are aligned with the EU MRV requirements, it can be anticipated that time and bareboat charterers, as well as ship owners and managers, may bear responsibility for compliance with emissions caps and for holding sufficient allowances for voyages touching the EEA.

Where there are a number of potential candidates responsible for compliance in any shipping chain, it will be prudent to insert provisions in charterparties which clarify which party is to bear responsibility for compliance and how liabilities arising as a result of failures in compliance are to be dealt with.

Another area to be clarified is how additional emissions costs will be absorbed along the shipping chain, and whether they will be felt in consumer markets. Research undertaken by the NGO Transport and Environment indicates that, even if costs were passed directly to consumers, the final impact on the price of goods would be insignificant, given the economies of scale achieved by moving goods by ship, and that emissions costs per voyage would add only a few cents per item to the price of goods such as bananas, iPads and diesel (per litre) in consumer markets.

A further point of speculation is whether emissions costs in the EU will drive a preference for calls in ports outside, but close to, the

EEA. If the EU ETS applies to inward and outward voyages to the EEA, and if there is a cost attached to those voyages proportionate to the amount of fuel burned, this in theory creates an incentive for shipping parties to minimise emissions costs in the EU by shortening the inward and outward journeys to the EEA, as far as possible, by calling at ports nearby but outside the EEA in preference to calling in the EEA, or before proceeding to or from the EEA.

While in many instances factoring in a port call in preference to or outside of the EEA may result in no net economic benefit to shipping parties, due to the extra fuel burned, time lost or lack of comparable market, there will be some cases where a change in the order of port rotations will be possible and may result in economic benefits. For example, a container ship sailing regularly from the US to a non-EEA port close to the EEA and a port in the EEA, and due to discharge cargo in both, may find there is an advantage to be gained by calling in the non-EEA port first, so as to shorten the inbound journey to the EEA port and thereby pay a lower sum in emissions allowances.

Given that the UK has completed its exit from the EU ahead of the EU ETS becoming operational for shipping, and that the UK is geographically very close to the EEA border, it remains to be seen whether the inclusion of shipping in the EU ETS will cause an increase in trade in UK ports as it is deflected from neighbouring EEA ports. If so, this development might increase the overall number of port calls in the UK and increase the attractiveness of the UK as a transshipment hub for deep-sea vessels. [MRI](#)



Rachel Hoyland

Rachel Hoyland, senior
associate, Hill Dickinson

Seeking protection beyond the regulation

Julian Clark, at Ince, looks at cyber risks in the maritime space

With cyber attacks and hackers becoming increasingly sophisticated by the day, the level of threat to the maritime industry is at an all-time high. Cyber security needs to be viewed as one of the industry's greatest challenges alongside the drive for decarbonisation and wider sustainability.

However, given the increasing complexities within the shipping industry, many organisations – understandably – are struggling to keep up with the challenge, or to fully appreciate the seriousness of the issue and the potential commercial, operational and reputational risks they face. In conjunction with this, the new IMO cyber security guidelines, while a welcome step in the right direction, need to go further in order to properly mitigate this risk exposure.

In the last few years, there have been a number of high-profile cyber attacks within the maritime industry that highlight the potential impact on operations and financial costs faced by shipowners and managers. Following Maersk being an unintentional target of the NotPetya ransomware cyber attack in 2017 – which cost more than £300 million in losses – there have been a swathe of attacks on major shipping organisations including Mediterranean Shipping Co, Cosco Shipping Lines, Carnival, CMA CGM and most recently the IMO itself. Cyber attacks have increased by 400 per cent since February 2020, and attacks on operational technology (OT) by 900 per cent in the past three years. It is now unarguable that the threat is both tangible and very real.

The increasing threat of cyber attacks has risen on the back of the maritime industry's continued digitalisation. This led the IMO to develop new regulations which stipulate that, from January 2021, all ship owners and managers must ensure that systems and management for handling cyber security risks are incorporated into vessels' safety management systems (SMS) from the date of the next annual audit of the SMS. While this is in progress, the reality is that companies are not sufficiently protected even if they are compliant with the new regulation. In fact, it is a "level one solution to a level four threat".

The lack of adequate protection is particularly prevalent in relation to OT cyber attacks. Indeed, just 42 per cent of organisations protect their vessels from OT cyber threats, demonstrating the lack of collaboration between IT and OT domains in maritime. Additionally, an alarming 92 per cent of the estimated costs arising from a cyber attack are uninsured, and the access and limits of cover are often restricted, which has serious risk management implications for ship owners and managers.

This is the context that makes it critical for ship owners and managers to take an integrated, fully comprehensive approach to protecting their organisations against cyber threats. At a time when shipping companies are already burdened with many challenges as the industry transforms, the devastating impact a cyber attack can have on their operations cannot be ignored. Critically, they need to move beyond just basic compliance and away from a "tick-box" approach to cyber security.

The solution

Although there are a number of separate service elements available in the industry which aim to tackle some of the issues that can arise from cyber attacks, the shipping sector has long lacked an integrated, combined offering to help provide an answer to the problem. One that brings together all the essential elements that an organisation needs to fully protect itself from cyber threats. Given the magnitude and complexity of the issue, it is only an integrated approach providing both advisory and action that can fully protect companies from the sophistication of cyber threats in today's market.

One example which addresses this market need is Ince's recent venture with Mission Secure to launch an industry-first integrated legal advisory, consultancy and technology implementation cyber security solution. It is a practical example of the way forward for shipping companies in mitigating the risks associated with cyber attacks and the increasing regulatory burden. The initiative can provide legal advisory to ensure compliance, as well as the latest military grade, advanced technology that protects on-shore and on-vessel OT networks. Also offered is 24/7 cyber security monitoring, threat hunting, and incident response support to ensure continual vessel resilience, as well as legal and crisis management services to help ship owners and operators in the event of a cyber attack.

The way forward

At a time when the maritime industry is undergoing unprecedented change and regulatory transformation, it is crucial that the shipping community comes together to solve the challenges facing the industry. Delivering fully integrated and all-encompassing solutions requires collaboration between industry partners with specialist expertise, and the creation of transparent ecosystems. We need to develop a "Kite Mark" internationally recognised industry standard that will not only protect ship owners and operators, but help them navigate the increasing challenges, stimulate growth, thrive and seize the opportunities that change always brings. *MRI*



Julian Clark

Julian Clark, global senior partner at Ince

Navigating a safe path

Captain Hiroshi Sekine, of the UK P&I Club, considers ECDIS and safe operation, and offers a case study

There is no doubt the introduction of the electronic chart display and information system (ECDIS) has improved the safety of navigation. However, the efficacy and safety of ECDIS largely depends on the ability of its user and human error can still occur.

The transition from paper

ECDIS was required to be installed on all ships in 2018 to replace conventional paper charts. Masters and navigators who use the system are required to attend training to acquire the necessary knowledge and level of competence to operate the technology. They are also required to hold a certificate of completion.

For those who grew accustomed to paper chart navigation through the years, problems have arisen with the use of ECDIS due to its multi-functionality and operability. Issues have also evolved due to the differences in navigation techniques with the change from paper charts. Therefore, accidents related to the operational use of ECDIS continue to happen and must be analysed to assist future safe navigation.

Case study: *Muros* grounding incident and ECDIS

On 2 December 2016 the Spanish-registered bulk carrier *Muros* (2,998 gross tonnes) was on passage between Teesport, UK, and Rochefort, France. Night visibility was good and there was a south-east wind of six to 15 knots. The vessel's electronic navigational instruments, comprising of ECDIS, radar and bridge navigational watch alarm system (BNWAS), were operating correctly. However, the echo sounder had been switched off after leaving Teesport and the BNWAS had been set to alert at three-minute intervals.

At 02.48 on the morning of 3 December, *Muros* ran aground on Haisborough Sand on the east coast of the UK. It had attempted to manoeuvre clear of the shallows but was unsuccessful. The crew were not injured and there was no marine pollution. Six days later, the ship re-floated with the assistance of a tugboat.

As a result of an investigation into this accident, the UK's Marine Accident Investigation Branch (MAIB) identified the following facts:

- The vessel initially set a passage plan to cross Haisborough Sand. The voyage plan on ECDIS was revised by a second officer (2/O) three hours before the grounding. However, the revised plan was neither confirmed nor approved by the master.
- A visual check of the track on ECDIS, using a small-scale chart, did not identify that it was unsafe. A warning that shallow water is dangerous is automatically indicated by a function called "check route". This warning was ignored.
- Although the 2/O was monitoring the position of the vessel using ECDIS, the 2/O took no action when the vessel crossed a 10 m safety contour indicating shallow water.
- The performance of the 2/O was impacted by the time of day; the 2/O had a low level of consciousness and may have periodically fallen asleep.
- After grounding, the 2/O changed the chart view from "standard" to "all".



Passage planning

The 2/O had planned *Muros*' voyage while the vessel was in port at Teesport. *Muros*' master checked and signed the voyage plan after the vessel had sailed from Teesport, whereupon they realised the intended route was via the North Hinder Junction rather than the Sunk TSS. The master was more familiar with the route via the Sunk TSS and so instructed the 2/O to amend the voyage plan accordingly.

Revised plan

The 2/O used the ECDIS mouse and cursor to "drag and drop" several waypoints included in the original voyage plan further to the west. After scanning the route change, the 2/O noticed that the revised track appeared to pass close to Haisborough Sand. The 2/O did not zoom onto a larger chart scale because they thought the course line was more than one mile from the shoal water indicated by a safety contour. On saving, ECDIS automatically executed its "check route" function and many potential charted hazards along the route were displayed. However, the 2/O cleared the window showing the hazards without checking them.

Post-accident examination

In the investigation of the grounding accident, carried out on 10 December 2016, it was found that:

- The audible alarm was not functioning.
- The depth settings were:
 - Deep draft safety contour: 10 m
 - Safety contour: 8.5 m
 - Shallow contour: 10 m
 - Safety depth: 7 m
- The guard zone was not active.
- The contours and depth settings were password protected, with *Muros*' deck officers unaware of the password so could not adjust them.

- The cross-track distance (XTD) was set to 0.5 miles and route alarms were selected
- With the Teesport-Rochefort route selected, more than 3,000 warnings were indicated on the “check route” page, including the risk of grounding on Haisborough Sand.
- The 2/O did not routinely use the “check route” function.

The master’s philosophy regarding the use of ECDIS was that, outside pilotage waters, the vessel should stay clear of the blue areas. When navigating in pilotage waters, the master’s viewpoint was to follow the advice of the pilot and to keep within buoyed channels. The master had confidence in the 2/O’s ability to use the system effectively.

Conclusion

Muros’ revised track passed directly over Haisborough Sand. Since the depth of water over the central area of these shallows was less than 5 m and the height of tide was 1.2 m, it was inevitable that *Muros*, which had a draught of more than 6 m, would run aground.

The ECDIS system and functions intended to prevent grounding were either overlooked, disabled, or ignored. In amending the voyage plan, though the 2/O reviewed the revised route visually by simply using the “drag and drop” function, the 2/O did not identify that the track across Haisborough Sand was unsafe.

“The ECDIS system should become an integral part of the navigator’s thinking to avoid accidents. Watch officers need to use the full range of tools within ECDIS and should not speedily navigate through the ECDIS screens like a video game”

The “check route” function highlighted the dangers over Haisborough Sand. However, the 2/O did not examine this highlight further because it was among approximately 3,000 other warnings, many of which were connected to the pilotage segments of the voyage plan.

The 2/O implemented the change to the voyage plan immediately after their takeover on the bridge. This conflicts with the 2/O’s watch-keeping duty.

- The intended track across Haisborough Sand was unsafe and grounding was inevitable with the vessel’s draught and the depth of water available.
- The route across Haisborough Sand was planned and monitored using ECDIS. However, system and procedural safeguards intended to prevent grounding were either overlooked, disabled, or ignored.
- The 2/O’s visual check of the revised route did not identify that the track across Haisborough Sand was unsafe, nor that it did not conform with the buoyage in the area.
- The revision of the passage plan conflicted with the 2/O’s watch-keeping duties.
- The master did not check and approve the revised route.
- The 2/O’s monitoring of the vessel’s position may have been impacted by circumstances which could have reduced their

awareness and may have caused them to fall asleep for brief periods.

- Audible alarms and guard zones are meant to alert on-duty personnel of an imminent danger. Disabling these alarms removed the ECDIS barriers.
- The use of the “standard” chart view limited the level of information displayed and the reliability of visual checks when passage planning was prone to error.

ECDIS and the human element

From studying ECDIS-related accidents, it is apparent that these have largely occurred not from technical problems within the ECDIS system, but either from user error or improper duties of bridge crew. The most common errors are:

- Failure to use the alarms.
- Failure to use the guard cursor.
- Failure to use the automatic navigation check route function.
- Insufficient chart scale and safety contours.
- Insufficient knowledge and training of crew.

As a principal priority, the ECDIS system should become an integral part of the navigator’s thinking to avoid such accidents. Watch officers need to use the full range of tools within ECDIS and should not speedily navigate through the ECDIS screens like a video game. There needs to be a conscious effort for them to use the system and not perform their duties as if they were still only using paper charts. During the watch, frequent position checks by other means are also mandatory.

Radar confirmation continues to be of paramount importance, and good look-out by the OOW (Officer on the Watch) will also solve many of these problems. It is important to remember that the human eye is the most important tool for collision prevention.

All stakeholders, such as seafarers, companies, organisations and states, need to fully engage with ECDIS and a complete understanding and use of the system should be the best tool to meet navigational challenges. Ship owners, or rather the management companies, need to prioritise establishing the navigation method using ECDIS for their own ships, thereby setting the standard for various parameters including the frequency of position fixing and verification, and the method and standard for formulating a voyage plan.

The introduction of ECDIS is of huge benefit to navigation – it is the 21st century equivalent to the introduction of radar, GPS and AIS. There is no doubt that, with its firm establishment within navigational procedure, ECDIS’s contribution to safe navigation will be immense. *MRI*



Captain Hiroshi Sekine

Captain Hiroshi Sekine, senior loss prevention executive, UK P&I Club

Maritime piracy hotspots persist during 2020

Kristin Urdahl, of Gard AS, reviews a tough year for shipping during the Covid-19 pandemic, made harder by increased piracy attacks

Adding to the Covid-19 hardships already faced by seafarers, 2020 saw a year-on-year increase in global piracy, with a record 130 crew kidnapped in the Gulf of Guinea, a continuing rising trend of armed robberies against vessels in the Singapore Strait and no improvements for robbery incidents in South America.

Global piracy and armed robbery numbers increased in 2020, according to the International Maritime Bureau's Piracy Reporting Centre (IMB PRC). Its latest annual report lists a total of 195 actual and attempted attacks in 2020, up from 162 in 2019, and the agency attributes the rise to an increase of piracy and armed robbery reported within the Gulf of Guinea as well as increased armed robbery activity in the Singapore Strait. The figures are broken down as three vessels hijacked, 161 vessels boarded, 20 attempted attacks, and 11 vessels fired on. The report also warns of an alarming trend in kidnap for ransom incidents. Globally 135 crews were kidnapped from their vessels in 2020, compared to 134 in 2019, with the Gulf of Guinea accounting for more than 95 per cent of crew numbers kidnapped.

The incidents recorded by the IMB PRC in 2020 were fairly evenly split between vessels at anchor and vessels underway. Attacks on vessels at berth are still less common and accounted for only 7 per cent of all incidents recorded in 2020. While the typical merchant vessels, such as tankers, bulk carriers, container vessels and general cargo vessels were involved in more than 80 per cent of all the incidents recorded in 2020, the data from the IMB PRC shows that all types of vessels were targeted. Incident reports from tugs, fishing vessels and various offshore support vessels, and even an FPSO and a drilling ship, are also part of the 2020 statistics.

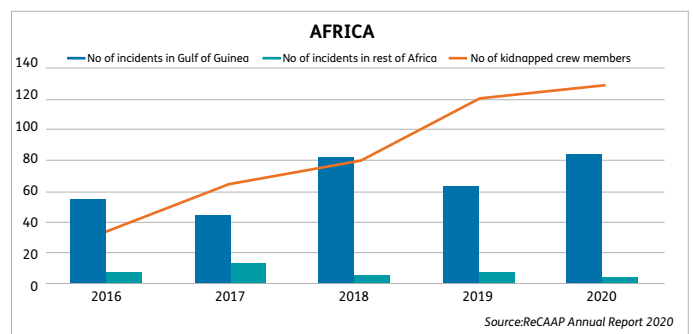
There is reportedly no evidence to suggest that the coronavirus pandemic has had an immediate impact on security threats at sea. However, it could be argued that the pandemic, at least in time, may indirectly affect the overall risk related to piracy and armed robbery at sea. Crew fatigue and a reduction in a crew's ability to perform security procedures diligently may impact the safety level of a vessel. Congestions at anchorages of crew change hubs could provide increased opportunities for perpetrators. Likewise, a worsening of the economic and political conditions of a country can potentially create motivation for increased criminal activity, including at sea.

What we do know is that the level of threat from piracy and armed robbery at sea, as well as the opportunity for and modus operandi of the perpetrators, differs from one geographical region to another and may also change quickly. The general advice to shipping companies with vessels operating in piracy prone

regions is therefore to continue to maintain a heightened state of vigilance, closely monitor the situation via the IMB website, stay in close contact with local agents as well as with regional authorities, conduct voyage specific risk assessments and adopt and implement relevant preventive measures following best management practices and other available industry guidelines.

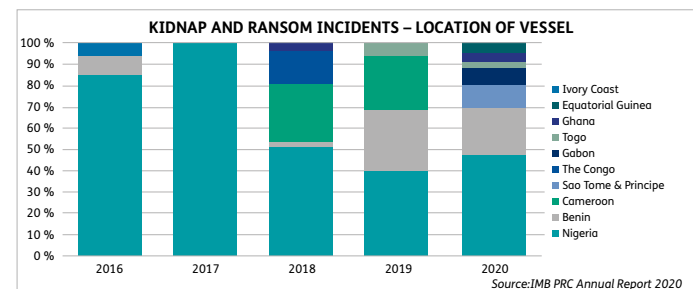
Africa

There is no doubt that the Gulf of Guinea presents a serious and immediate threat to the safety and security of crews and vessels operating in the region. The IMB PRC recorded a total of 84 piracy and armed robbery incidents against vessels in the Gulf of Guinea in 2020, a year-on-year increase of more than 30 per cent for this region alone. The region accounted for all three vessel hijackings that occurred in 2020, as well as nine out of 11 vessels that reported coming under fire.



The Gulf of Guinea region also recorded the highest ever number of crews kidnapped, with 130 crews taken in 22 separate incidents. Of particular concern is the fact that attacks are increasingly violent, the use of guns were reported in more than 80 per cent of the incidents in the region in 2020, they occur farther from shore, and larger groups of seafarers are kidnapped per incident.

The urgency of the situation in the region is further underlined by the fatal attack on the container vessel *Mozart* on 23 January 2021. According to the IMB PRC, the vessel was underway around 98 nm NW of Sao Tome and Principe when she was boarded by an unknown number of pirates, resulting in one crew being killed and 15 crew members kidnapped. The agency therefore warns masters and crews to be extra cautious and to take the necessary precautionary measures when transiting the Gulf of Guinea. It further reminds vessels to go for direct berthing if possible, not drift off the coast, and to keep at least 250 nm from the coast.



The situation off Nigeria continues to be the main concern for vessels and crews trading to the Gulf of Guinea. While the majority of incidents and number of crew kidnapped in the region can still be attributed to Nigeria, the fact that pirates are being observed attacking vessels further out to sea also affects Nigeria's neighbouring countries. According to the IMB PRC,

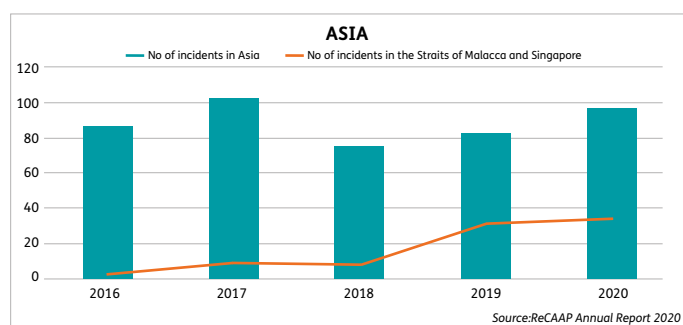
Benin, Ghana, Angola and Guinea, in addition to Nigeria, represented the top five locations for incidents recorded in the Gulf of Guinea in 2020. The IMB PRC's data for the last five years also shows that an increasing number of successful kidnap and ransom attacks are now taking place outside the Nigerian EEZ.

On the positive side, the IMB PRC recorded only four incidents in the African continent *outside* the Gulf of Guinea region in 2020, down from seven in 2019. All four were robbery incidents and took place at the Nacala Anchorage in Mozambique. While no piracy incidents off Somalia and in the Gulf of Aden have been reported to the IMB PRC in 2019 and 2020, the agency advises that the Somali pirates continue to possess the capability and capacity to carry out attacks in this region and cautions ship operators and masters against complacency when operating in the Somali basin and wider Indian Ocean.

Asia

Asia also experienced an increase in the overall number of piracy and armed robbery incidents at sea in 2020. According to the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia Information Sharing Centre (ReCAAP ISC), a total of 97 incidents were reported in Asia in 2020, which is a 17 per cent year-on-year increase compared to 2019.

The majority of incidents in Asia in 2020 were categorised as "armed robbery" with a low severity level involving no physical



harm to vessels' crew. Of the 97 incidents reported, nine occurred in India, five in Bangladesh and 83 in south-east Asian countries. ReCAAP ISC's 2020 data also confirms the past trend where the majority of incidents, except those reported from the Singapore Strait, occurred to vessels while at anchor/berth.

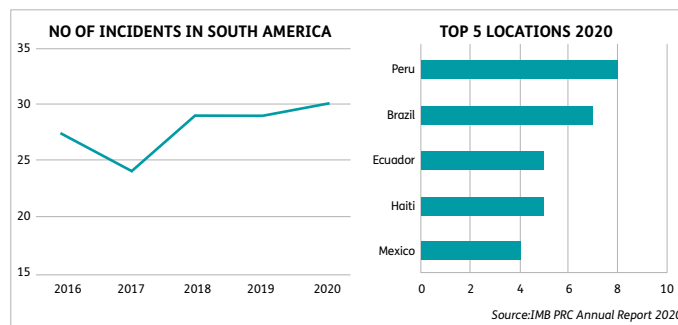
The following areas of concern have been particularly highlighted in ReCAAP ISC's 2020 annual report:

- **Sulu-Celebes Sea and eastern Sabah region.** No merchant vessels were involved in kidnap and ransom incidents in these waters in 2020. However, an incident in January 2020 involving the abduction of crew from a fishing trawler in Malaysian waters off Eastern Sabah demonstrates that kidnap for ransom remains a serious threat in this area.
- **Philippines.** There has been an increase in the number of robbery incidents at ports/anchorages in the Philippines in 2020. 13 incidents were reported in 2020, up from seven in 2019, of which nine occurred at Manila Anchorage, three at Batangas Anchorage and one at General Santos Harbour Anchorage. In two of the incidents at Batangas Anchorage, crews reported to have been threatened by robbers carrying knives.
- **Singapore Strait.** The increase in robberies in the Singapore Strait continued into 2021. A total of 34 incidents were recorded in the Singapore Strait in 2020, compared to 31 in

2019. However, unlike 2019, when there was a more even split between incidents occurring in the Strait's westbound and eastbound lanes, close to 90 per cent of the incidents recorded in 2020 occurred in the eastbound lane. The majority of these also involved bigger vessels, mostly bulk carriers and tankers, rather than tugs and barges. To provide insight into the incidents in the Singapore Strait, the modus operandi of the perpetrators and recommendations to the industry, ReCAAP ISC issued four Incident Alerts in 2020.

South and Central America and Caribbean waters

With a total of 30 piracy and armed robbery incidents recorded in the South and Central America and the Caribbean waters in 2020, the IMB PRC's five-year statistics shows no sign of improvement for this region. The beginning of 2020 came with a warning about a maritime threat in the Southern Gulf of Mexico. The nature of the threat was a series of four piracy incidents that took place between 4 April and 15 April 2020, all four incidents involved attacks on offshore support vessels and some involved crew injuries and theft. While the IMB PRC has recorded no additional incidents in the Gulf of Mexico in 2020, various media reports have described a steep increase in the number of attacks on maritime oil infrastructure in Mexico since 2016 – some even refer to an average of 16 attacks a month between January and September 2019. Although these numbers are unconfirmed, they do suggest that there could be a significant degree of under-reporting of incidents in the Gulf of Mexico.



The Callao Anchorage in Peru has been regarded as a robbery hotspot for many years and 2020 was no different with eight incidents recorded, two less than in 2019. However, an alarming new trend is the increase in the number of robbery incidents in Brazil near Macapá City at the mouth of the Amazon River. Seven incidents were reported from this area in 2020, a trend that has continued into January 2021.

Vessels operating in South and Central America and Caribbean waters are reminded to stay vigilant and maintain strict anti-piracy watch and measures, especially while at anchor. **MRI**



Kristin Urdahl

Kristin Urdahl, senior loss prevention executive, Gard AS

Early considerations in cross-border contractual disputes

The complexity of a cross-border dispute can, at times, appear overwhelming. However, it does not need to be, writes **Alex Hudson**, of Campbell Johnston Clark

When seeking to manage a cross-border dispute it is essential to understand the core issues in dispute, the applicable forum and law and, importantly, the costs of non-resolution. These issues along with the early marshalling of evidence will inform the level of any settlement or of any award/judgment if the matter cannot be resolved. Without this understanding cases cannot be effectively settled or fought. Therefore, when faced with a potential dispute, the first step should always be to take a step back, breathe and consider the following.

Early assessment

When a dispute arises out of a maritime contract it is first necessary to consider which law applies to the dispute and which court/tribunal has jurisdiction to determine the dispute. These issues should be considered early and in tandem with whether there is a pending time bar or a party is entitled to security for its claim.

Conducting this early assessment is key. A party should also find a systematic way to gather, analyse and review all evidence relating to pending or potential litigation. This will assist in making an informed decision about how to proceed.

Is litigation the answer?

Too often parties become entrenched at an early stage in a dispute without considering the potential costs of not settling matters. Cross-border litigation is often expensive and without guarantee of success or, perhaps worse still, without guarantee of making a recovery following success – the so-called “pyrrhic victory”.

Of course, a party should never be seen as a pushover in commercial discussions and, importantly, must set out its position clearly and succinctly; however, the process should not be allowed to run away with itself.

Therefore, at the outset, and as part of any early case assessment, all parties should consider whether there are any mechanisms available for resolving their dispute without resorting to court proceedings or arbitration (alternative dispute resolution (ADR)).

A number of contracts have ADR mechanisms built in. The English courts also require the parties to consider ADR as a means to settling the dispute without commencing proceedings as part of its pre-action protocols. However, even if the parties are not compelled by contract or law to consider ADR, it should be kept in mind throughout. It may be that a simple meeting between well-prepared commercial operators could lead to a creative resolution that would not be possible if the parties relied too heavily on their lawyers from the outset. A lawyer’s role is to assist its client in managing the client’s dispute – not the other way around.

Which court has jurisdiction?

Maritime disputes are inevitably international. In almost 10 years in the industry, the author has not come across a dispute between British companies relating to an issue/incident involving a UK-flagged vessel in UK territorial waters and with solely British parties, interests and/or insurers involved. While there are many British companies involved in shipping of course, it is rare to find disputes that have no international element at all. For this reason, when considering a dispute, early consideration must be given to which court or arbitral tribunal has jurisdictional competence to resolve the dispute.

The purpose of this article is not to provide a detailed guide on jurisdiction. Suffice to say, in establishing jurisdiction, the English courts will consider (pending post-Brexit final clarification) the Hague Convention on Choice of Court Agreements (Hague 2005) and its own common law rules. Both of these will, ordinarily, give effect to a contractual agreement – preferably a written exclusive jurisdiction clause.

If a particular jurisdiction has not been clearly agreed in the contract, or if the agreement does not provide for a particular court to have exclusive jurisdiction, early consideration should be given as to whether a competitive advantage can be gained from issuing proceedings early in an alternative jurisdiction.

“A party should not always fall back on the forum and law agreed in the underlying contract. This may result in a draconian, time consuming and expensive means of resolving a dispute – a sledgehammer to crack a nut”

Why is jurisdiction important? Different jurisdictions may apply different limits on liability or time bars or may award more costs. Different jurisdictions also work to vastly different timescales or have varying levels of effectiveness when it comes to enforcing a judgment or award. For instance, in certain jurisdictions it is far easier and cheaper to enforce a London arbitration award than an English High Court judgment.

The issue of jurisdiction is therefore potentially of great tactical significance. A party should ensure that, where possible, it commences proceedings in the forum that is most advantageous to it. Even a defendant, when faced with the prospect of a dispute, should give consideration as to whether it is able to “seize jurisdiction” in an advantageous forum by way of issuing a counterclaim or a claim for a declaration of non-liability.

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Which law applies?

The instruments that currently determine governing law, Rome I (Regulation (EC) No 593/2008 on the law applicable to post 2009 contractual obligations) and Rome II (Regulation (EC) No 864/2007 on the law applicable to non-contractual obligations) continue to apply post-Brexit. EU member state courts will ordinarily respect an express choice of English law and English courts will ordinarily respect an express choice of the law of an EU member state.

Absent an express choice of English governing law made in a contract, Rome I provides specific rules for determining governing law. These generally fall back on the law of the country where the service provider/seller/characteristic performer of the contract is resident. Rome I may not apply to transferable bills of lading in the hands of a third party or to arbitration agreements. However, English common law will generally give effect to any written agreement between the parties here.

Why is the governing law important? For a party to understand its rights and obligations under a contract it is necessary to understand which law governs those rights and obligations. This could be the difference between success or total defeat if, for example, one law does not recognise a cause of action or provides a particular statutory limitation (time bar) period.

Resolution and reducing costs

Notwithstanding the above, a party should not always automatically fall back on the forum and law agreed in the underlying contract. This may result in a draconian, time consuming and expensive means of resolving a dispute – a sledgehammer to crack a nut.

It is always open to the parties to agree an alternative more appropriate forum or to modify or waive any contractually stipulated procedural steps. For instance, the LMAA Small Claims Procedure 2017 mandates a sole arbitrator, streamlines the arbitration process and eliminates the right of appeal. While this may not be appropriate for all types of dispute, streamlined and cost-effective solutions should always be considered.

Furthermore, parties should always look to:

- (1) employ innovative means to limit costs – for instance by agreeing contingency fees, blended rates, fee estimates and/or fee caps in advance;
- (2) dispose of unmeritorious claims through any summary judgment mechanisms available;
- (3) adopt interim relief procedures where possible/effective; and/or
- (4) modify the procedure – such as by dispensing with witnesses (fact or expert) or agreeing a documents-only resolution.

Legal issues and marshalling evidence

Having considered the applicable forum, law and costs of not resolving the dispute by ADR, the next stage is to begin to build a case. This will ordinarily require a detailed analysis of the legal points in issue (which are often fewer than they originally appear) and the marshalling of evidence to support a party's position.

The evidence required to substantiate a claim or a defence will, of course, vary depending on the dispute. However, what rarely changes is the evidential burden of proof. As a matter of English law, the burden of asserting a set of facts or circumstances of a dispute lies on those who make an allegation. The alleging party must establish, on the balance of probabilities, that the facts as alleged favour their version of events. A failure to satisfy this burden of proof will cause a claim or defence to fail, irrespective of the actual circumstances or the merits of the law.

This provides a useful starting point in analysing a party's evidence. A party's first consideration should always be "can I obtain and disclose sufficient evidence to substantiate the fact and circumstances on which my legal argument relies"? If not, it is better to know at an early stage and before significant costs are incurred.

How can international law firms assist?

While parties are or course capable of resolving disputes amicably without external legal input, solicitors can provide valuable assistance in navigating the minefield that is international dispute resolution.

Early informed decisions in the process on issues such as law, jurisdiction and evidence can be the difference between a successful (and hopefully) early resolution of a dispute and years of time, effort and costs.

In addition to advising on their particular area of law, reputable international law firms should be able to draw on specialist expertise and connections and facilitate the multi-disciplinary team necessary to deal with all aspects of a cross-border dispute and achieve a cost-effective outcome. [MRI](#)



Alex Hudson

Alex Hudson, a director at
Campbell Johnston Clark

Stacking up the risks

Sudhir Malhotra, at the Standard Club, looks at container securing and stack collapses, analysing the causes and solutions



In a highly commoditised and competitive container freight market, the shipping of containers has increased exponentially through the decades – in 2019 the international liner shipping industry transported 226 million containers around the world with a cargo value of more than US\$4 trillion.

As container ships have grown larger to accommodate this rapid commercial demand, more containers are being carried above deck than ever before. Container stack collapse incidents have recently been on the rise, putting vessels, their crews and the environment in danger. These incidents can result in significant financial losses to the container industry and their marine insurers, plus reputational loss for the carriers.

Why have these incidents been on the rise and what can be done to prevent such incidents from occurring?

Bigger, stiffer ships

Economies of scale have resulted in ever larger container ships being built. Ultra-large container carriers (ULCCs) today can come with a length of 400 m and a beam of 61 m – more than three times wider than the first vessels built. With a deck capacity of up to 24 bays, 24 rows and 12 tiers, ULCC's carriers today can carry nearly 14,000 teu above the holds.

But the large beams of these giants result in them having relatively large metacentric heights (GM), meaning the vessels are very stable and therefore stiff. This in turn can result in very high rolling accelerations when the weather deteriorates, generating similarly high loads in the container lashing and securing gear.

More powerful ship engines

Increasing commercial pressures means that container ships usually have to keep to very tight operating schedules and they need to be as fully utilised as possible. As a result, they have increasingly powerful engines, not only to provide the high speeds required but also to enable speed to be maintained during bad weather.

The consequence is that, at times, container ships can be driven hard and certainly during bad weather this severely increases the loads on the container lashing and securing gear.

Higher wind loading

Almost all container stack collapses at sea occur in rough weather with strong winds. When fully loaded, the deck stacks

on modern container ships present additional windage areas more than 25 m high. Combined with large freeboards, the stacks act like giant sails to amplify a ship's motions as the weather deteriorates, further adding to lashing and securing loads.

Parametric rolling

This is a phenomenon where sudden heavy rolling occurs in head or following seas owing to variations in waterplane area. Although very rare, it tends to affect vessels such as containerships which have large bow and stern flares.

Occurrence of parametric rolling is difficult for masters to predict as it requires certain conditions to be met. These include larger waves with a wave length equal to the ship's length and a wave encounter period that is half the ship's natural roll period.

The phenomenon can trigger violent rolling of more than 30° in a very short period of time, which in turn can lead to extreme loads on container lashings and securing gear.

Synchronous rolling

For beam and quarter waves, if a container ship's natural roll period synchronises with the experienced wave period, resonance can occur resulting in similarly violent rolling motions. These affect larger, beamier ships more which have shorter natural roll periods.

Following a large container stack collapse in January 2019, the Dutch Safety Board confirmed that large, wide container ships using the shipping routes north of the Wadden Islands in the North Sea are at risk from synchronous rolling during north-westerly winter storms.

Phenomena such as ship contact with the seabed in shallower waters during extreme roll and heave motions can result in large additional loading in container lashings and the securing gear. On rocky seabeds they can also severely damage the hull.

Green water and wave impacts

These can occur in heavy weather and when extreme ship motions result in water flows over the deck. On container ships this can cause high impulsive loading on container stacks and potentially trigger a collapse.

Steep waves with high horizontal speeds breaking against the side of a container ship can also generate additional forces in container lashing and securing gear.

Improper container stowage

Stack collapses could occur if the stack weight of a deck container stack exceeds the maximum permissible stack weight stipulated in the vessel's approved cargo securing manual (CSM). The CSM also specifies the maximum permissible GM of the vessel. This is to ensure that loads on container lashings and securing gear are not exceeded. If the vessel is loaded improperly and exceeds the maximum GM, then stack collapses could occur in rough weather. Furthermore, the distribution of weights in a container stack directly affects a vessel's stability. If heavy or overweight containers are inadvertently loaded into the upper tiers, it could result in catastrophically high forces on the lashing gear and collapse of the stack.

Incorrect packing of containers

This can lead to both internal cargo damage and, more seriously, container stack collapse. If contents within a container shift, it could potentially damage a container – and a stack of containers is only as strong as its weakest member. A container damaged due to shifting cargo could collapse and lead to a domino effect, resulting in an entire bay collapsing.

Structurally weak containers

These are containers that become seriously degraded with factors such as rough handling, forklift damage, inadequately secured contents, wear and tear, and overloading. These along with other factors could lead to structural failure of the container, which in turn could cause the stack above it to collapse. Effective stacking of containers relies on the strength of the corner posts to support the weight of the containers above. Damage to a corner post, in particular buckling, can seriously degrade its compressive strength and lead to collapse of a container stack.

Inadequate container securing or seriously degraded and damaged lashing material

This could also lead to stack collapses. The success of a safe stack on deck largely depends on the twistlocks and other lashing equipment operating correctly once they are placed within the stack. Missing twistlocks, unlocked twistlocks, damaged lashing gear, and lashings becoming loose in a seaway are examples of inadequate securing.

While lashing and securing gear is class approved, it is not usually inspected by a classification society. Replacement of sub-standard equipment is the responsibility of a ship's crew, who must keep a watchful eye out for damaged or worn components and arrange for them to be replaced without delay.

As a consequence of ship motions, a complex interplay of accelerations and forces will affect the ship and cargo. Each cargo stack will experience slightly different lateral and vertical forces during a ship's motions at sea such that, in the event of large motions, adjacent stacks can clash. As a result, an entire stack of containers could fall over, which could then fall overboard or fall against another stack of containers. Stack collapses due to clashing are often progressive in that when one stack begins knocking into adjacent ones, the forces are much higher.

Conclusions and solutions

Despite proper packing of containers, correct weight declarations (VGM requirements), and proper stowage and securing on ships

(CTU Code guidance), factors ranging from severe weather and rough seas to more catastrophic and rare events like groundings, structural failures and collisions can result in containers being lost at sea. Understanding the cause of such collapses is the key to preventing them from occurring again and to appreciate who is liable for the incident.

As container ships have become larger, beamier and thus stiffer, the only significant enhancement in deck lashing and securing systems has been the provision of lashing bridges. While larger container ships provide commercial advantage to shipowners, these are often being staffed with fewer and fewer crew members. Given the highly commercial and systems-driven nature of the container trade, crew members might sometimes think their role is reduced to that of passive bystanders. This must not be allowed to happen; they must always be able to react quickly and make the correct decisions.

Crew members need to be mindful at all times of the factors which could contribute to a container stack collapse. Indeed, proper training given to crew members could enhance their nuanced understanding and therefore enhance situational awareness on board container vessels. A proper understanding of the loading and lashing software and its limitations will go a long way to preventing such losses from occurring. Similarly, a thorough understanding of the trim and stability booklet, the CSM and the limitations stipulated within them must be considered and strictly adhered to by ships' crews and officers.

There are many variables. Crew need to appreciate the limitations of the CSM and correctly interpret its content. A correct stow requires innovative planning both ashore and on board. While approved software and advanced programmes can be used, it is ultimately the crew members and cargo planners who need to make considered and informed decisions on loading.

Crew members must also not let commercial pressure dictate their actions; a sharp eye on cargo operations should be kept at all times to ensure that errors are prevented.

Similarly, a sharp eye should be kept on the condition of the lashing and securing gear on board, which should be regularly evaluated for damage and deterioration in quality and should be removed and replaced as necessary. While at sea, regular checks and tightening of the lashing gear, including turnbuckles and associated check nuts, will help keep the containers safely stowed.

Finally, since heavy weather is always a causal factor for stack collapses, a sound and well considered passage plan, an understanding of the dynamic forces affecting the vessel and proactive and effective weather routing for container vessels will go a long way to preventing such incidents from occurring in the future. *MRI*



Sudhir Malhotra

**Sudhir Malhotra, marine
surveyor, Standard Club**

EU database shows higher emissions than initially reported

The EU Monitoring, Reporting and Verification system has shown that in 2019, CO₂ emissions from ships were 12 million tonnes higher than originally announced, raising familiar questions about its reliability and future use as the bedrock of EU emissions regulations, writes **Anastassios Adamopoulos** of *Lloyd's List*

The European emissions database was anticipated by many to set the standard for emissions reporting and transparency in shipping. More than a year and a half into the process, it risks falling below expectations.

For those paying attention, the annual European shipping CO₂ emissions had supposedly fallen in 2019. That is what the European Union's official emissions data told us, anyway. However, it turns out the data was somewhat inevitably false.

The problem is that the data itself was not – or does not appear to have been – wrong. It was just different to what it is today. And that will most probably continue to be the case in a few months' – and perhaps even a year's – time.

According to the latest data, in 2019, the ships sailing to and from and calling at ports in the European Economic Area emitted 145.5 million tonnes of CO₂. That is almost 9 per cent higher than the 133.5 million tonnes of CO₂ the data originally showed for 2019 when first published in late June last year.

This increase also means that CO₂ emissions of EEA-related voyages actually grew from 2018 to 2019 – albeit by less than 1 million tonnes of CO₂.

To be fair, the number of ships that emitted CO₂ in 2019 also jumped from 10,843 reported in July 2020 to 11,866 in February 2021. So the increase in emissions itself makes sense in that regard.

The composition of the different sectors' share in the 2019 emissions has also not changed much within the two time periods. Containerships are still the biggest single polluting segment, accounting for more than 30 per cent of total CO₂ emissions, despite representing higher than 15 per cent of the total fleet. Meanwhile, ro-pax ships have the highest proportional emissions relative to their fleet.

What is problematic here is that there is any change at all. Why have more than 1,000 ships been added to the database since it went live on 30 June 2020? Why is the data constantly being revised, when all companies should have handed relevant information to verifiers by 30 April 2020?

The problem partly springs from a lack of real clarity with regard to authority. The European Commission has been clear that it bears no responsibility for the contents of the database and that this rests with the verifiers. The verifiers, on the other hand, are often simply responding to clients who act belatedly. Such companies will not be too fussed about acting quickly unless legally required to do so.

This cycle is so profound that the amendments are not limited to the most recent data. Even the 2018 EU Monitoring, Reporting and Verification database continues to be amended. In fact, there have been 245 different versions of the 2018 database. The last was published on 20 January 2021.

The MRV database, the cornerstone of EU emissions policy and the pride of the bloc, is still a database in flux where monumental changes are allowed freely without any real impediment. This is hardly a new phenomenon and to anyone tracking emissions and data, it will come as little surprise. *Lloyd's List* has written extensively on this matter in the past.

However, the shortcomings do not appear to have been rectified and the inconsistencies persist just as the European Commission pursues unprecedented measures on shipping's GHG emissions.

The Commission is looking to include shipping into its Emissions Trading System and will likely require ships to have carbon-intensity limits on the fuels ships burn. The MRV will be the foundation – and, to some extent, the implementation tool – for both these policies.

The MRV is arguably the most transparent emissions database in the broader maritime sector today. It can be a massively useful tool for anyone invested in the sector and allows for public scrutiny of individual ships and therefore individual companies. The significance of this cannot be understated.

Yet for it to serve the purpose of a policy tool, the EU needs urgently to address the shortcomings that have been clear and evident for some time.

There have been efforts by the European Parliament to reform the MRV and address some of the challenges. However, this has yet to move forward and it is still unclear when negotiations for this proposal will recommence.

Time is running short. If the EU wants to take the reins on shipping decarbonisation, it must strengthen its signature database and prevent the data divergences that are harming its credibility.

- *This article is part of a special report on "Transparency in shipping" which can be found at lloydslist.com*



EU faces call to back green hydrogen and ammonia for shipping

Green ammonia and hydrogen are expensive, but the European Commission should help the industry to send a clear signal of demand for it to reduce production costs, the group says in a letter, reports **Anastassios Adamopoulos** of *Lloyd's List*

The European Union is being urged by the maritime sector to stimulate the development and use of green ammonia and hydrogen by the shipping industry.

Commodity trader Trafigura has joined a group, including the Hydrogen Europe association and the Transport and Environment lobby, in writing to the bloc advocating support for the deployment of the zero-carbon fuels. Other signatories involved are shipping companies DFDS, CMB, Torvald Klaveness, Viking Cruises and classification society Lloyd's Register.

The group said green hydrogen and ammonia could provide a sustainable and scalable solution because they can deliver zero-carbon propulsion and could be produced in "virtually unlimited quantities".

But it also acknowledged that these fuels are currently very expensive compared with fossil fuels. However, the group claimed production costs could be reduced with economies of scale.

"To justify large investments in electrolyzers and ammonia plants, European maritime fuel policy needs to send a clear demand signal for the potential investors by focusing on these green fuels and their relevant propulsion technologies," the letter said.

The group wants the commission to stimulate the development of green ammonia and hydrogen through the FuelEU Maritime, an upcoming regulatory proposal from the commission that will aim to regulate the carbon fuel intensity of ships calling at European ports.

Trafigura invested in green hydrogen provider H2 Energy in December, CMB is developing a dual fuel hydrogen-powered engine and DFDS is backing a green hydrogen project in Germany.

The group also explicitly warned the commission that ships using crop-based biofuels to cut down on emissions would be even worse than fossil fuels.

"And while some advanced biofuels could provide emissions reductions, they are limited in sustainable bio-feedstock availability," they said.

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Though they are promoted by some as a potential option in shipping's zero-carbon future, the prospect of biofuel use by shipping is worrying for some stakeholders across the maritime sector due to their, at times, controversial sourcing and the negative environmental side effects they can have, such as deforestation.

One concern with the FuelEU Maritime's likely focus on the carbon intensity of a ship's fuel is that it would push owners to use biofuels to comply, as other low-carbon fuels are not as available.

The FuelEU Maritime proposal was set to be published in March but could be delayed. *Lloyd's List* understands the commission's scrutiny board has asked the Directorate General for Mobility and Transport (DG Move), which is responsible for the proposal, to reconsider some of its content and to take into consideration comments from the impact assessment it conducted in the past year.

This is closely linked to the DG Move's decision to target shipping fuels' carbon intensity specifically and not the energy efficiency of the entire ship. This omission has raised concerns from both the shipping industry and European lawmakers.

The European Parliament's transport committee has adopted a report calling on the commission to target the technical and operational performance of the ship as well, not just its fuel's carbon intensity.

European shipowners welcomed this decision as they fear that regulating just the fuel's intensity will put the onus on owners and operators to source low-carbon fuels.





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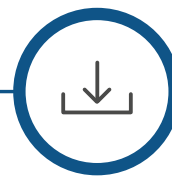
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