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Maritime law in 2018: a review of developments in case law

Understand the most important maritime law developments of 2018

Written by Dr Johanna Hjalmarsson, this article summarises and explains the essential developments in maritime law in 2018, including the law of contracts of carriage, marine insurance and the sale of goods.

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IN BRIEF

Plastic guidelines

A new set of publicly available guidelines for monitoring plastics and microplastics in the oceans will help harmonise how scientists and others assess the scale of the marine plastic litter problem. The guidelines for the monitoring and assessment of plastic litter and microplastics in the ocean have been published by the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). The guidelines cover what to sample, how to sample it and how to record and assess plastics in the oceans and on the shoreline, including establishing baseline surveys. They include recommendations, advice and practical guidance for establishing programmes to monitor and assess the distribution and abundance of plastic litter.

Decommissioning hub

Accountant and shipping adviser BDO said that, while the spring statement by the UK Chancellor of the Exchequer did not contain any shipping-specific initiatives, it did include some measures which could be of interest to the maritime sector. In particular, the government called for evidence to identify what should be done to further strengthen the position of Scotland and of the UK in general as a global hub for decommissioning. Detailed legislation was published in respect of the new capital allowances for structures and buildings which was announced in 2018. This relates to a new 2 per cent capital allowance which will be available in respect of the construction costs (including land alteration and improvement expenditure) of new commercial non-residential structures and buildings. Very broadly, buildings must be used for a commercial purpose. This applies where a contract was entered into on or after 29 October 2018.

Passenger vessel fine

The US Coast Guard said the owners of two vessels in Florida that were operating illegal passenger charters despite specific COTP orders to cease such operations have been convicted in the federal court and sentenced to substantial fines (totalling US\$100,000) and probation and, in one instance, 180 days of home detention.

IMO GHG study must be based on realistic economic growth

BIMCO has proposed that its fourth IMO greenhouse gas (GHG) study does not include unrealistically high gross domestic product (GDP) growth projections to predict future transport demand – and thereby emissions – of the shipping industry.

“It is imperative that the industry – and the world – base discussions and actions to reduce emissions from shipping on credible and realistic projections. If not, we risk making the wrong decisions and spending resources ineffectively,” said Lars Robert Pedersen, BIMCO deputy secretary general.

BIMCO argues that the Fourth IMO GHG Study should avoid scenarios 1 and 5 of the International Panel on Climate Change (IPCC) Shared Socio-economic Pathways (SSP), as these scenarios project considerably higher and unrealistic short- to mid-term economic growth (as much as two percentage points higher) than current economic trends and OECD (Organisation for Economic Cooperation and Development) projections. It should be noted that only the lowest of the five SSPs (scenario 3) has compounded growth in line with current OECD projections.

“The previous study’s most pessimistic projection of a 250 per cent increase in CO₂ emissions from shipping has since proven to be totally unrealistic, given the actual and projected economic development of the world. Unfortunately, the 250 per cent projection has frequently been used as a stick against the shipping industry and to shape regional policy. BIMCO wants to avoid that happening again,” Pedersen said.

BIMCO has collaborated with CE Delft, the consultancy that modeled and calculated the Third IMO GHG Study’s projections in 2014 for future GHG emissions from ships. The revised calculation includes the most recent OECD GDP projections. The report highlights that when using a more realistic GDP growth scenario, the shipping industry is projected to achieve an absolute reduction of 20 per cent versus the target of an absolute emission reduction of 50 per cent by 2050 compared to 2008.

“We will need new solutions, in addition to traditional efficiency measures, to reach the 2050 target. But to pick the right solutions, we need realistic projections,” Pedersen said. **MRI**

Work continues on ballast water management and biodiversity protection

The IMO contributes to the protection of biodiversity through its Ballast Water Management (BWM) Convention, which requires ships to manage their ballast water to limit the spread of potentially invasive aquatic organisms. Work on the experience-building phase of the BWM Convention (EBP) was highlighted at the annual meeting of the Joint International Council for the Exploration of the Sea (ICES), Intergovernmental Oceanographic Commission of UNESCO (IOC) and the IMO (ICES/IOC/IMO) Working Group on Ballast and Other Ship Vectors, which was held in the UK. The group provides scientific support to the development of international measures aimed at reducing the risk of transporting non-native species via shipping activities.

The EBP involves data gathering and analysis, and the group discussed sampling and analysis work conducted by its members that could be submitted to the EBP. The group also discussed standard operating procedures for collection of treated ballast water samples, which were developed by the group and agreed by IMO’s Sub-Committee on Pollution Prevention and Response (PPR) to be included in the data gathering and analysis plan for the EBP. Moreover, the group highlighted progress in the development of a standard for ballast water monitoring equipment, which is expected to be further discussed by IMO’s Marine Environment Protection Committee.

The IMO’s Biofouling Guidelines also address bioinvasions via ships’ hulls and contribute to protecting the ocean environment. The group discussed the review of the Biofouling Guidelines, which is to be undertaken by the PPR Sub-Committee. The group will input its views into this work. The review of the guidelines comes as the IMO begins to implement a global project to build capacity in developing countries for improved implementation of biofouling management. **MRI**

IN BRIEF

Apprentice push

During the UK's National Apprenticeship Week (4 to 8 March 2019), DFDS called for new apprentices to boost the maritime industry. Through promoting its apprenticeship schemes, DFDS hopes to boost seafarer ratings by encouraging those looking for a career path, or wanting to change careers, to consider training for a role at sea with them. In September 2019 the ferry company hopes to take on a full cohort of apprentices, which amounts to nine deck and three engine apprentices. It currently has eight apprentices in training; five on the deck scheme and three on the engine scheme. Since launching the apprenticeship scheme in 2012, DFDS has seen three groups of deck apprentices and two groups of engineering apprentices qualify and take up full-time employment within the company.

New ground

This year, and in the coming years, BIMCO will be publishing a string of new publications in close corporation with Witherby Publishing Group. With the new business area, BIMCO will be covering a lot of ground that currently reflects the core business areas in the organisation, in addition to new publications covering areas such as contracts related to offshore, cyber security, ice navigation and more. The BIMCO Shipmaster's Security Manual is an example of how expert knowledge can be gathered for the benefit of a large variety of players in the industry. The manual has recently been updated with guidelines on cyber security on board ships and guidelines on migrant rescue at sea.

App launch

The International Institute of Marine Surveying (IIMS) has launched a new free app for iOS and Android devices that makes finding a commercial, or yacht and small craft marine surveyor by area, or specialisation, fast and simple. It will make the search for a surveyor easier for the boating and yachting public, brokers, P&I Clubs, marine insurers – in fact anyone needing the services of a marine surveyor on an occasional or ongoing basis.

Europeans act to contain oil spill

Following the fire on board *Grande America* which subsequently sank on 12 March in the Bay of Biscay, the European Maritime Safety Agency (EMSA) has been providing emergency assistance at the request of the French authorities.

It was reported that the Italian-flagged vessel, a vehicle carrier with container capacity, had been carrying 15,000 tons of cargo (860 tons of which were dangerous goods) and approximately 2,478 tons of bunkers (comprising 197 tm gas oil/2 211 tm fuel oil/70 tm lube oil).

Sports-car maker Porsche has said it will have to restart production on a limited-edition 911s, with a Porsche Brazil spokesperson confirming that it had 37 new cars on board the ship, including four rare 911 GT2 RS being shipped from Hamburg, Germany to Santos, Brazil, which come with a price tag of more than US\$293,000 each.

EMSA received a report alerting it of the incident via the EU vessel traffic monitoring and information system SafeSeaNet. EMSA's CleanSeaNet satellite service was activated by the French authorities to support in the detection of oil spills, lost containers and wreckage. Both SAR (synthetic aperture radar) and optical acquisitions were provided. In addition to the detection of containers, the images identified an oil spill. CleanSeaNet satellite services continue to monitor the area of the incident to track the evolution of the spill and localisation of containers.

Two of EMSA's standby oil spill response vessels were scheduled to be on site rapidly. *VN Partisan* has on board the standard equipment arrangement for mechanical recovery of oil. The arrangement comprises sweeping arms, an offshore boom, and high-capacity skimmer system. It is supported by radar-based oil slick detection and a remotely piloted aircraft system (quadcopter) operated by a trained pilot. The heated storage capacity of the vessel for recovered oil is 1,000 m³.

Ria de Vigo also has on board the standard equipment arrangement for mechanical recovery of oil, with a heated storage capacity for recovered oil of 1,500 m³. **MRI**

Global tank container fleet reaches 604,700 units – 10.8 per cent up

ITCO, the International Tank Container Organisation, has published its seventh Annual Tank Container Fleet Survey. This year's survey estimates that, at 1 January 2019, the global tank container fleet had reached 604,700 units worldwide, compared to the figure of 552,000 on 1 January 2018, a year-on-year growth of 10.8 per cent. The number of tank containers produced last year also showed a significant increase. In 2018 a total of 59,700 tank containers were built, compared to 48,500 in 2017, an increase of more than 11,000 units over the previous year.

The survey shows how, numerically, the industry continues to be dominated on a global level by a relatively small number of major tank container operators and leasing companies. The top 10 operators account for more than 225,000 tanks representing nearly 60 per cent of the global operators' fleet of 381,700 units. The top 10 leasing companies account for 227,000 tanks, about 82 per cent of the total leasing fleet of 286,000. The top three leasing companies account for 150,000 tanks, almost 55 per cent of the total fleet.

Reg Lee, ITCO president, said: "This year's ITCO Tank Container Fleet Survey again shows significant growth in the tank container business during the past 12 months. The expansion of the tank container industry underlines the fact that this mode of transport is safe, reliable, economic and sustainable.

"There are a number of reasons for this growth. The trend continues to successfully convert certain cargoes – which were previously shipped in drums or transported in chemical tankers – to tank containers. In addition, China has seen a significant growth in the use of tank containers for domestic transport of bulk liquids. These factors have contributed to high levels of demand for the services of ITCO members – in all sectors of the industry – reflected in higher equipment investment and utilisation." **MRI**

IN BRIEF

Risk tracking

Aon is partnering with software company Skytek to provide real-time monitoring of insurers' marine risks and identify accumulations for enhanced underwriting and reinsurance programmes. Aon has established a new consultancy based on the Skytek system – supported by the European Space Agency – that uses real-time satellite tracking allowing re/insurers to visualise the precise location of their insured risks alongside crucial vessel and cargo information. Aon's experts work hand in hand with the re/insurer to then analyse the potential accumulations and make recommendations specific to their portfolio for efficient reinsurance programmes and underwriting insights.

Trade high

Trade through the Port of London reached 53.2 million tonnes last year, a level last seen over a decade ago, following strong growth in containerised cargoes, particularly at the newest container terminal on the river, DP World London Gateway, which attracted a number of new services. Port bosses say that long-term growth in the port will be secured through further development at London Gateway and investment in major new projects – Forth Ports last month gained development consent for its new £200 million port terminal, Tilbury2.

Women's day

On International Women's Day 2019 (8 March), the IMO put the spotlight on women in the maritime sector. This year, IMO's World Maritime Day theme was "Empowering Women in the Maritime Community". The IMO said it is committed to gender equality and advancing women in the maritime sector. IMO's Women in Maritime programme has, in the past three decades, helped women reach leadership positions in the maritime sector and bring a much-needed gender balance to the industry by giving them access to high-level technical training. The IMO has launched a video trailer for a forthcoming film to showcase success stories of how IMO's Women in Maritime programme has benefited women in ports, on the shoreside and on ships.

Broker accused of breach of authority in a dispute after a non-performing contract

The International Transport Intermediaries Club (ITIC) recently represented a shipbroker accused by an owner of breach of warranty of authority in a dispute arising under a non-performing contract of affreightment (CoA). The shipbrokers had negotiated the terms of a CoA between the charterers and the ship owners, receiving all their instructions from an agent purporting to act for the charterers.

The CoA provided for a minimum of 18 shipments to take place in a 12-month period but, when the charterers failed to nominate any cargoes during the period of the CoA, the owners began proceedings against them, claiming damages of US\$3.1 million. In their defence, the charterers denied being a party to the CoA and alleged that neither the shipbrokers nor the agents had authority to negotiate or enter into the CoA on their behalf.

The owners then joined the shipbrokers into the proceedings, alleging that they had breached their warranty of authority by representing to them that they were authorised by the charterers to conclude the CoA. They added that, if the brokers did not have such authority, then they would be liable for the loss suffered.

Liability for breach of warranty of authority does not, under English law, depend on any negligence on the part of the shipbroker. It is, however, specifically covered under the ITIC's rules. The shipbrokers maintained that they had not purported to represent the charterers and said the owners had known that the brokers were acting on the agent's instructions. The agents, meanwhile, claimed they had been authorised to conclude the CoA.

After filing their defence, the charterers did not take an active part in the proceedings. The matter went to mediation between the remaining parties but did not settle on the day. Following mediation, the owners indicated that they would be willing to accept a substantial reduction in their claim. The brokers and agents were able to negotiate a split of the settlement, with the agents paying the largest proportion. ITIC reimbursed the shipbrokers' contribution of \$260,000. **MRI**

Ocean Infinity locates *Stellar Daisy*

Ocean Infinity, the seabed survey and ocean exploration company, has located the wreck of the lost South Korean tanker, *Stellar Daisy*, at a depth of 3,461 m in the South Atlantic Ocean, approximately 1,800 nautical miles due west of Cape Town. *Stellar Daisy* sank on 31 March 2017, transporting iron ore from Brazil to China. Tragically, 22 of the 24 crew were lost.

Working from *Seabed Constructor*, the search operation involved the deployment of four autonomous underwater vehicles (AUVs) which, after 72 search hours, explored approximately 1,300 km² of seabed. Representatives of both the South Korean government, who awarded Ocean Infinity the contract to conduct the search, and the families of *Stellar Daisy*'s crew, were present throughout the operation.

Ocean Infinity claimed its AUVs are the most technologically advanced in the world, capable of operating in water depths from 5 m to 6,000 m. The AUVs are not tethered to the vessel during operations, allowing them to go deeper and collect higher quality data for the search. They are equipped with a side scan sonar, a multi-beam echo sounder, a sub-bottom profiler, an HD camera, a conductivity/temperature/depth sensor, a self-compensating magnetometer, a synthetic aperture sonar and a turbidity sensor.

Oliver Plunkett, Ocean Infinity's CEO, said: "We are pleased to report that we have located *Stellar Daisy*, in particular for our client, the South Korean government, but also for the families of those who lost loved ones in this tragedy." **MRI**

LISCR DEPARTURE

The Liberian International Ship and Corporate Registry (LISCR) has confirmed that Scott Bergeron has departed the organisation. The Cohen family, in particular Adam Cohen and Elan Cohen, continue to lead the organisation as executive chairmen.

Alfonso Castellero has been elevated to the role of chief operating officer. Christine Doherty continues in her role as chief financial and administrative officer and Benson Peretti continues as senior VP of global services.

Skuld CHIEF LEGAL OFFICER APPOINTED

Skuld has announced that Hilde Søbstad Løvskar has been appointed chief legal officer. Hilde now heads the corporate legal department and joins Skuld's executive management team.

Hilde started in Skuld as an intern in June 2009. She became a maritime trainee in Skuld and participated in the Norwegian Shipowners' Association's trainee programme. Since 2012 Hilde has been corporate legal counsel.

Willis Towers Watson NEW HEAD OF MARINE

Willis Towers Watson has named David Ripton as its head of broking, global marine in its corporate risk and broking unit. David joins from Marsh where he held the position of CEO for Marine UK since 2014. David brings more than 30 years of marine insurance experience in the global London marketplace.

David will be part of the global marine management team and will report to Ben Abraham, global head of marine, and Philip Smaje, global head of broking.

Pioneer NEW PROJECT CARGO UNDERWRITER

Pioneer Underwriters has appointed Andrew Corton as a project cargo underwriter, to be based in London and reporting to Brook Styles, underwriter in marine specialty. Andrew will underwrite project cargo and specialist cargo risks as well as supporting Brook on the general cargo portfolio.

Andrew brings 35 years of insurance industry experience to Pioneer and joins from Pembroke Managing Agency, where he was divisional director for

cargo. He moved to Pembroke in 2011 after spending seven years at Travelers. Prior to this, Corton held cargo roles at Phoenix Assurance Co (now RSA), Bruce & Wright and CI de Rougemont. He began his insurance career at Trinity Insurance Co in 1984.

ISSETA SECRETARY ELECTED

The Inflatable Safety and Survival Equipment Technical Association (ISSETA) has elected the Danish self-proclaimed "liferaft man", Erik Søndergaard, as Secretary. Erik has held various leading management positions for both Survitec and VIKING Life-Saving Equipment and comes with extensive knowledge about the maritime industry. He retired a few years ago and looks forward to again being a part of the industry he loves so much.

Since 2000, Ian Brindle has served as secretary of ISSETA. During his 19 years, Ian has led the organisation in times of change – both on the member side, but also with major changes in rules and requirements for products and services, especially concerning new hybrids.

ClassNK NEW VP

Hiroaki Sakashita has been appointed as senior executive vice president as well as executive director of ClassNK. Hiroaki began his career at Japan's Ministry of Transport in 1980. During his period in the government he has played vital roles in maritime administration including regulatory oversight and industry development. He assumed the position of director-general of the Maritime Bureau in 2015, and deputy minister for technical affairs, Minister's Secretariat in 2016. He joined ClassNK in 2018 as executive consultant.

HMM NEW CHIEF EXECUTIVE

Hyundai Merchant Marine has appointed logistics expert Bae Jae-hoon as chief executive. He will focus on customer relations and was chosen because of his broad understanding and capabilities in terms of sales negotiation, global management and organisational management, said Hyundai Merchant Marine.

Prior to a six-year stint in a logistics company, Bae spent 20 years with LG Group in the electronics industry.

CTI OVERSEER ROLE

The Centre Testing International Group (CTI) has appointed Captain Herbert Soanes to oversee its global maritime business. He will be based in Rotterdam.

Previously, Herbert was Misuga Group's chief commercial officer for Europe and the Americas; prior to which he was senior vice president at DVB Bank, responsible for risk mitigation functions in its global shipping and offshore business.

COSCO BIMCO AWARD

Captain Xu Lirong, chairman of COSCO Shipping, received the President's Award at the BIMCO Conference in Shanghai for his excellent life-long service to shipping. China Merchants Energy Shipping received the award for Best Shipping Company of Greater China Area 2019.

Xu became one of the youngest captains in China, the first president of Shanghai Shipping Exchange as well as presiding over the merger of COSCO Group and China Shipping Group. The Award is given to honour an individual or company who has made a significant contribution to shipping and the maritime industry.

CSA 2020 CLEAN SHIPPING AWARD

The Clean Shipping Alliance 2020 (CSA 2020) has won the Clean Shipping category of this year's Green4Sea Awards. CSA 2020 was presented the award for its significant contribution towards cleaner shipping following a judging process involving both open nominations and votes.

CSA 2020 represents 37 prominent shipping companies to provide a public voice for those shipowners with experience of exhaust gas cleaning systems and to ensure the wider shipping and ports industry has independently verified information on which to base their emissions abatement decisions. Its members together operate more than 3,000 ocean-going vessels.

Chalos & Co OF COUNSEL NAMED

George Chalos and the Chalos & Co team are pleased to announce the addition of maritime law veteran, Michael Chalos, as Of Counsel to the firm. Michael has represented many clients involved in high-profile litigation, including the successful defence of the captain of *Exxon Valdez*.

Renewal season goes with a swing

Tough competition dominated this year's P&I Club renewal season, with no general increase declared. We report on the mood of the market

Pricing is under pressure ahead of the 20 February 2019 deadline for the marine protection and indemnity (P&I) renewal for shipowners. Competition in the sector remains strong, exacerbated by a growing fixed-premium market, according to a new special report by AM Best.

The P&I sector is dominated by the members of the International Group of P&I Clubs (International Group), which collectively insure approximately 90 per cent of the world's ocean-going tonnage. Of the 13 Clubs, 12 have announced that they will not apply a general increase to P&I premium rates for the 2019/2020 policy year. The report, titled "P&I Clubs' Balance Sheets Strong but Performance Under Pressure Amid Strong Competition", also notes that no general increases were announced for the 2017 and 2018 renewals.

The report stated: "As mutual insurers operating for the benefit of their members, the 13 principal Clubs must balance the need to maintain their financial stability with the economic constraints of their membership. With free reserves across the International Group at a high level, bolstered by several years of positive earnings, balance sheets are strong and Clubs are finding it difficult to justify general increases to members."

It also warned: "Only two Clubs, Shipowners Mutual P&I Association and Skuld, have achieved underwriting profits in each of the past five years. Both Clubs have benefitted from average loss ratios below 75 per cent, which compares to a five-year average of 78 per cent for the combined International Group."

AM Best warned: "For 2018/2019, it expects the Clubs to return another combined underwriting loss as competitive market conditions due to overcapacity have continued to negatively impact call income."

Gard

With the closing of the 2019 P&I renewal on 20 February, Gard announced its net tonnage had increased by more than seven million in the last 12 months and, with total owners' mutual now in excess of 214 million gt, 99 per cent of existing tonnage stayed with Gard.

Bjornar Andresen, Gard's group chief underwriting officer, said: "The fact that new and existing members are trusting Gard to be their P&I insurance partner is a tremendous vote of confidence in both our business model and the service we offer. Another 5 million gt committed at renewal for delivery to the Club in the current year is a clear sign that that there is enthusiasm to share risks with quality members."

Andresen added: "In terms of service, our strategy of delivering local support where members and clients are located and casualties occur, is proving its value. There has been a positive development of the portfolio across most geographical areas."

London P&I

The London P&I Club saw further growth in its mutual owned entry following the conclusion of the recent P&I renewal season.

The Club's director of underwriting, Reto Toggwiler, said: "Our mutual membership saw year-on-year growth of approximately 3.5 million gt or 7 per cent. This result is evidence of the strong commitment shown to the Club by existing members and by the new members that we were pleased to welcome, drawn from a number of different countries around the world."

Toggwiler added: "Everybody at the Club is grateful to members and brokers for their support in achieving an encouraging outcome which underlines the importance that shipowners attach to the London Club's service-focused and understanding approach to P&I."

It found net incurred claims have been relatively low in the past three years, however the cost of claims has been increasing "due to an upward trend in shipowners' liability limits and technological advances that now allow deep water wreck removal". *MRI*

P&I Clubs: Key Figures 2017/2018

Company Name	Gross Premiums Written (USD millions)	Profit/(Loss) Before Tax (USD millions)	Capital & Surplus/Free Reserves (USD millions)	Solvency II Solvency Capital Requirement (SCR) Ratio (%)
American Steamship Owners Mutual P&I Assn	86	27	75	-
Britannia Steam Ship Insurance Assn Ltd	208	26	430	244
Gard P&I (Bermuda) Ltd ¹	696	90	1249	232
Japan Ship Owners' Mutual P&I Assn	202	27	227	-
North of England Protection & Indemnity Assn ²	368	104	450	188
Shipowners' Mutual P&I Assn (LU)	218	49	342	195
Assuranceforeningen Skuld (Gjensidig)	433	89	338	158
Steamship Mutual Group ²	295	41	516	-
The Swedish Club	151	25	212	266
The London P&I Club ²	102	13	195	226
The Standard Club Ltd	342	46	462	-
UK Mutual Steam Ship Assur Assn (Bermuda) Ltd	362	43	640	202
West of England Ship Owners Mutual Insurance Assn	214	35	309	211

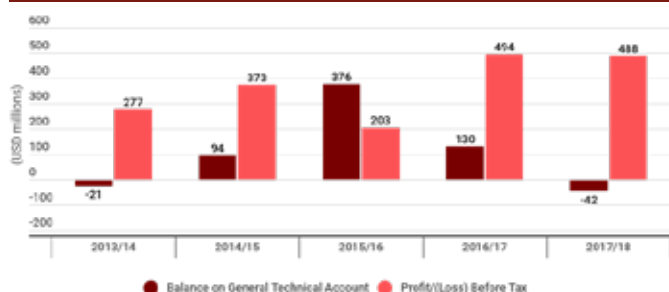
Notes: ¹ Includes marine and energy business. ² Combined accounts.
Source: AM Best data and research

Skuld

Skuld announced a positive outcome from renewals with a 4.3 per cent net increase in mutual P&I gross tonnage year-on-year from 2018 to 2019, including committed tonnage for delivery throughout 2019. Completing on 20 February 2019, Skuld's committed mutual P&I tonnage now stands at 95 million gt. In a continuously competitive P&I market, Skuld continued to grow its business organically as well as attracting a significant number of quality new mutual members in the Far East, Europe and the US. Significant growth was also recorded in all commercial P&I business lines, including charterers and offshore.

Ståle Hansen, Skuld president and CEO, said: "In an increasingly pressured P&I market, we are very pleased to announce another positive P&I renewal outcome. This success is largely due to the dedication of our talented team, which collaborates across our network of offices and departments to deliver our members, clients and brokers with the service and competence they rely on. Our diversified product offering and excellence in service levels are reflected in our loyal membership. We take pride in delivering insurance solutions that truly meet the requirements of clients' high-quality tonnage, through fair dealing, and this is why they choose to stay with Skuld."

P&I Clubs: Financial Performance of the International Group



Note: combined accounts of the 13 principal clubs of the International Group (the whole of the International Group is not captured). Source: AM Best data and research

North

North P&I Club has successfully concluded its 2019 renewal and, for the first time in the Club's 159-year history, is projecting total entered tonnage to exceed 200 million gt. Paul Jennings, North P&I Club's chief executive officer, said: "Our 2019 renewal strategy was very clear. We provided ongoing support to members dealing with persistently challenging trading conditions through our decision not to declare a general increase. To reduce the risk of more significant premium increases in coming years we reviewed and adjusted members' premiums and terms to reflect performance and exposure to ensure that they made an equitable contribution."

Savraj Mehta, North P&I Club's chief underwriting officer, said: "We are very pleased to report that we are currently projecting our total entered tonnage to exceed 200 million gt for the first time. Early indications show that we are expected to reach P&I owned gross tonnage of 147 million, representing a year-on-year increase of 5 million gt. FD&D gross tonnage is projected to reach 95 million, a 5 million gt increase on last year, while chartered tonnage is expected to exceed 60 million gt."

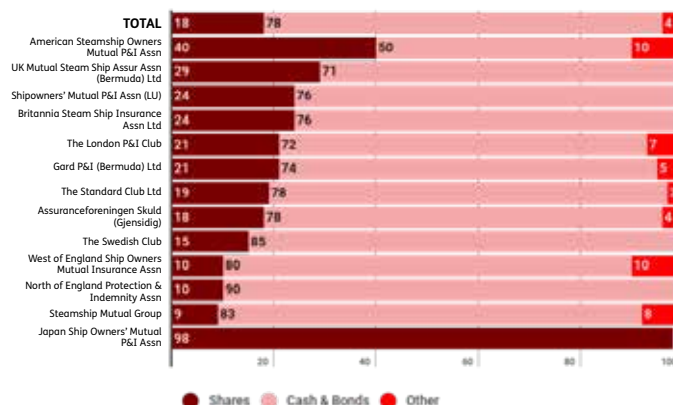
Swedish Club

For the fourth year in succession The Swedish Club has announced a zero per cent general increase for the forthcoming P&I year. The decision was made by the Club's board in consideration of the general market view that premiums are not in proportion with expected claims outcome.

Lars Rhodin, managing director of The Swedish Club, said: "In a number of shipping sectors the market remains weak and we have a commitment to support members at this crucial point."

Rhodin added: "At the same time, we must balance this with the fact that we have seen premium erosion for a number of years, to the extent there is a danger of the formula becoming unworkable. For the benefit of our members and the long-term future of the Club, we need to ensure premiums remain in line with exposures. Claims inflation alone runs at a pace of 3 per cent. The current year of P&I underwriting for the Club is expected to be balanced. Members premium will be adjusted based on records and exposure."

P&I Clubs: Investment Split 2017/2018 (%)



Source: AM Best data and research

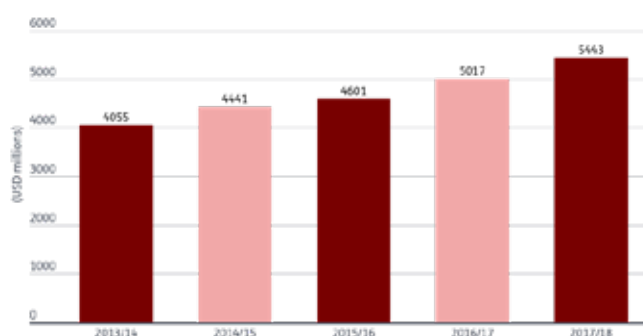
UK Club

The UK P&I Club said it had a good renewal achieving growth by attracting quality tonnage. The Club's mutual owned tonnage now stands at more than 144 million gt, a net increase of 5.4 million gt of mutual business in the year.

- Mutual tonnage at the start of the new policy year is 144.3 million gt.
- A further 3.3 million gt committed to the Club, at agreed rates, as part of renewal negotiations.
- 99 per cent of the existing entered ships renewed.
- Chartered tonnage remains around 100 million gt.

Andrew Taylor, chief executive of Thomas Miller P&I, said: "The UK Club and its Board greatly appreciate the continuing commitment of the membership and the support of the insurance broking community during the 2019 renewal. We are pleased that the Club's high standards of service and commitment to quality attracted more tonnage from existing members and new business to the UK Club."

P&I Clubs: Free Reserves of the International Group



Note: combined accounts of the 13 principal clubs of the International Group (the whole of the International Group is not captured). Source: AM Best data and research

West of England

The West of England has announced a positive renewal period with continued support being seen from new and existing members and a modest increase in renewing premium.

Owned mutual tonnage has grown over the year to 90 million gt including the addition of new members at renewal and a further 1.5 million gt has already been committed to the Club for the forthcoming policy year.

Continued strong performance by the Club in key markets - including Europe and Asia - means that total entered tonnage is now forecast to grow to 132 million GT during the 2019/2020 policy year and there was also a particularly positive renewal for its fixed premium offering.

Tom Bowsher, West of England CEO, commented: "We have previously said that premiums in the industry are at unsustainable levels, so this was not a year for rapid tonnage growth. We were pleased to achieve our renewal objectives and to see continued confidence in the Club from new and existing members."

Looking to the future

The International Chamber of Shipping (ICS) has called for a comprehensive review of the IMO STCW Convention which establishes global standards for the training and certification of around two million merchant seafarers. **Esben Poulsson**, of ICS, looks to the future and **Stewart Inglis**, also at ICS, explains some of the background behind this move

A global industry requires global standards, says **Esben Poulsson**. “In 1978 universal standards for seafarer training and certification were first established with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW). The objective of the STCW Convention remains very much current and necessary to promote safe, secure and environmentally sound shipping operations.”

The availability of a global supply of seafarers to shipowners, and the mobility of seafarers, both rely on the regime established by the STCW Convention. “Contrast what STCW puts in place compared with other industries, such as medicine, which do not have a single internationally recognised qualification,” says Poulsson, “and the shipping industry can be seen to be truly global in terms of its regime for seafarer training and qualifications.”

The Manila Amendments

The STCW Convention was radically revised in 1995, at the request of ICS, with a further set of major amendments – the Manila Amendments – adopted in 2010.

The Manila Amendments were adopted with the aim of keeping the STCW Convention and Code updated and to address a number of inconsistencies. They introduced new capacities and certificates, such as for electro-technical officers, new training and certification requirements, for example, security-related training; and new competences, such as in the use of ECDIS.

However, ICS views the 2010 amendments as a form of interim revision. “The Manila Amendments were essentially a large package of different sets of amendments that were introduced without any consideration of potential structural changes that might be needed to accommodate them or any consideration of

Why change is needed

Based on feedback from shipowners and operators, ICS is concerned that the STCW Convention is facing a number of challenges in meeting its objective. These challenges can be categorised as related to the content, structure or implementation of the STCW Convention.

Content

The feedback provided to ICS by shipowners and operators indicates that companies are:

- Identifying areas where seafarers require additional training prior to being assigned to ships to address gaps in competence, even though the gaps should have been covered in training that achieves the minimum standards of competence established by the STCW Convention; and
- Finding that some seafarers do not have an appropriate level of competency to serve in the capacities or perform the functions specified on their certificates issued in accordance with the STCW Convention, without additional training or seagoing experience.

On the basis of the above feedback, ICS has identified challenges related to the contents of the STCW Convention and Code, such as:

- Some of the abilities specified in the standards of competence established in the STCW Code may no longer reflect the abilities required by seafarers now, or in the near future; and
- Some of the minimum requirements to qualify for certification under the STCW Convention may no longer be at a level considered appropriate for seafarers to be competent to perform the functions required now, or in the near future.

Structure

The feedback provided to ICS by shipowners and operators indicates that:

- The STCW Convention is seen as an amalgam of disparate requirements developed over time. This has resulted in inconsistencies, the need for interpretations and posed difficulties for harmonised implementation;
- There is seen to be a reluctance to use some of the flexibility afforded by the structure of the STCW Convention and Code (eg the functions and levels of responsibility). This is despite the possibilities of flexibility it offers; and
- The quality, perceived status and nature of the use of IMO model courses is seen as confusing and has resulted in the need for clarifications.

On the basis of the above feedback, ICS has identified challenges related to the structure of the STCW Convention, such as:

- A holistic review of the structure of the STCW Convention has not been undertaken since the 1995 amendments, meaning there has been no recent assessment to determine whether the structure remains suitable or appropriate;
- Amendments adopted to the STCW Convention and Code over the years, have introduced a significant number of new concepts and requirements without sufficient consideration being given to the ability of the structure to accommodate them and facilitate their implementation; and
- There is widespread reliance on the IMO model courses to assist with implementation of the STCW Convention, to the extent that the current relationship between the STCW Code and the IMO model courses raises questions as to whether the structure remains suitable or appropriate.

how to facilitate implementation or address existing difficulties in that regard,” says Poulsson.

Now almost 10 years since the adoption of the Manila Amendments, ICS and its members have made the decision to share the concerns of shipowners and operators regarding the STCW Convention at the IMO once again and request its review.

Calls for a comprehensive review

Speaking in Manila at the end of 2018, Poulsson called for a comprehensive review of the STCW Convention and Code, noting that timely action at IMO on the STCW Convention would be essential. He said: “The STCW Convention must deliver seafarers competent to perform the functions required on board ships, and continue to be recognised as setting the global standards for training and certification of seafarers.” However, based on feedback from shipowners in the past few years, ICS has documented a number of challenges facing the STCW Convention and Code.

Stewart Inglis explains: “Some of these challenges may be related to the content of STCW, whereas others are more linked with its overall structure and the resulting implications for implementation of the Convention.”

ICS has already begun its preparations for a future comprehensive review at IMO, including the identification of some possible aims and priorities for the exercise.

Implementation

The feedback provided to ICS by shipowners and operators indicates that:

- There are difficulties experienced and expected related to the timely training and certification of seafarers following amendments to the STCW Convention and Code; and
- The list provided in MSC.1/Circ.1163, which indicates the parties confirmed by the Maritime Safety Committee to have communicated information which demonstrates full and complete effect is given to the relevant provisions of the STCW Convention, is not seen by companies as a reliable or useful source of information related to the training and certification of seafarers.

On the basis of the above feedback, ICS has identified challenges related to implementation of the STCW Convention and Code, such as:

- Experience has shown that transitional provisions, on more than one occasion, have not provided sufficient time for all stakeholders concerned to meet their responsibilities and obligations with regard to amendments to the STCW Convention and Code;
- There is insufficient transparency in the communication and consideration of information on implementation required under the STCW Convention; and
- There is insufficient robustness and dynamism with the system of reporting and monitoring of implementation of the STCW Convention.

A changing world

These include ensuring that the STCW Convention is designed to respond or adapt to the pace of technological, regulatory and operational developments; that the reporting and monitoring of implementation of STCW Convention is sufficiently transparent and robust; and that the structure of the STCW Convention itself facilitates harmonised and consistent implementation.

“A holistic and comprehensive review of the STCW Convention is the only way to afford the convention its best chance at responding to whatever the future may hold, including the increasing automation of ship systems and equipment,” explains Inglis.

He continues: “It should also be structured with sufficient flexibility to hit the moving target of a changing world fleet. The arrival of new technology is already changing the functions that seafarers perform on board and the skills and training they will require, so our standards surely must soon change too.”

“A holistic and comprehensive review of the STCW Convention is the only way to afford its best chance at responding to whatever the future may hold, including the increasing automation of ship systems and equipment”

Industry concerns

“We want to play our role in ensuring that this special international regime continues to meet its objectives and the needs of the industry,” says Inglis. “For this reason, ICS has made a submission to the next meeting of the IMO’s Sub-Committee on Human Element, Training and Watchkeeping being held at the end of April this year, where it will outline some of its concerns and highlight the need to begin a comprehensive review as soon as reasonably practicable.”

He adds: “Factor in that a comprehensive review leading to a revision of the STCW Convention is likely to require around ten years to fully come into effect, you can see we do not have much time to lose deciding on whether to begin the review or not.”

Esben Poulsson has the final word: “IMO responded positively in the early 1990s to the industry requests to address serious concerns about training standards in many of the newly emerging seafarer supply countries. We hope the industry’s concerns will be positively received in the same way again. With timely action at IMO and the involvement of all stakeholders concerned, we should be able to manage change and ensure a bright future for international shipping – this should be the starting point for all discussions at IMO.” *MRI*



Esben Poulsson



Stewart Inglis

Esben Poulsson,
chairman, and
Stewart Inglis, a
senior advisor at
the International
Chamber of
Shipping

Regulatory challenges and the new wave of technology coming to the rescue

Stringent regulations aimed at eradicating financial crime have far-reaching implications for the shipping industry, as all entities related to a vessel must be thoroughly screened for potential links to corruption before the vessel is engaged. Pinpointing potential risk, however, is not always straightforward, as **James Mirfin**, at Refinitiv reports

The impact of anti-money laundering (AML) and countering the financing of terrorism (CFT) legislation is being felt well-beyond the banking sector and is extending into all aspects of industry, including shipping.

The implementation of regulations, including the European Fourth Money Laundering Directive (4MLD), and further changes embodied within 5MLD, along with country-specific legislation, such as Sapin II in France, require organisations to conduct thorough and rigorous due diligence before entering into any relationship with a customer or third party. More commonly referred to as know-your-customer screening (KYC), this due diligence is an ongoing requirement for many organisations.

Because risk changes through time, KYC screening needs to be refreshed and organisations must monitor third-party relationships on an ongoing basis to ensure that they are not transacting with individuals or entities linked to financial crime.

This strict regulatory landscape presents unique challenges for the shipping industry. Organisations transporting cargo by sea run the risk of unwittingly engaging a vessel that is compromised. This can result in reputational damage, financial loss, the seizure of goods and even the inclusion of individuals or companies on national and international anti-terrorist and anti-criminal watch lists.

Engaging a vessel that has previously been associated with illicit activities or currently appears on a sanctions list, such as the US Office of Foreign Assets Control (OFAC) is a significant risk, but other risks include engaging a “phantom ship” that has been hijacked, stolen, leased or bought and subsequently registered with false information about its identity, ownership, dimensions and/or characteristics.

Severe penalties

The penalties can be severe and OFAC may impose substantial criminal and civil fines. Depending on the programme, criminal penalties can range from fines of US\$50,000 to \$10,000,000 and even imprisonment from 10 to 30 years for wilful violations. At the same time, civil penalties can range from \$250,000 or twice the amount of each underlying transaction to \$1,075,000 for each violation.

Indirect risks must also be taken into account, such as investing in businesses and partnerships that have subsidiaries or associates with shipping concerns that might be involved in or

associated with unethical or illicit activities. But understanding exactly who you are dealing with is not always straightforward. The true identity of a third party can be obscured by complex ownership structures making it difficult and timely to establish beneficial ownership. While there may be legitimate reasons for anonymity when it comes to ownership, there are other reasons that are just plain illegal, such as criminal activities or money laundering.

“As anti-money laundering legislation develops there is evidence that its impact is being felt beyond vessel ownership, reaching into financing through to marine insurance”

The problem of beneficial ownership

The situation has been recognised by the Financial Action Task Force (FATF), the international standard setter when it comes to combatting money laundering and terrorist financing.

According to FATF, the key techniques used by criminals to obscure beneficial ownership can be categorised within three broad methods: generating complex ownership and control structures through the use of legal persons and legal arrangements; using individuals and financial instruments to obscure the relationship between the beneficial owner and the asset, including bearer shares, nominees, and professional intermediaries, and; falsifying activities through the use of false loans, false invoices, and misleading naming conventions.

As anti-money laundering legislation develops there is evidence that its impact is being felt beyond vessel ownership, reaching into financing through to marine insurance.

In April of last year, *Lloyd's List* published an article quoting Maritime and Merchant Bank as saying it was “canning up to 15 per cent of loan applications under ‘know-your-customer’ stipulations, with attempts to set up deals via trust companies almost certain to be rejected”.

Choosing the right tools

As a company that provides regulatory technology and risk intelligence, we know how difficult it can be to implement an effective KYC programme without the right tools and data. We



are seeing demand for the same tools and data we supply to the financial services sector from the shipping industry and as a result we're incorporating more shipping-related data into our services.

In March 2019, a syndicate of 15 maritime insurers based in France sought a technology solution to help support their continued compliance with legal and regulatory requirements under Sapin II and 4MLD. The Syndicat des Assureurs Maritimes de France had concerns about managing the additional compliance burden resulting from these regulations and turned to Refinitiv to help simplify their KYC processes and meet their regulatory obligations in a more reliable and cost-effective manner.

“To remain fully compliant with evolving legislation, a dynamic approach is needed and data on which decisions are based should be secured from high quality, trusted sources”

Implementing a tech-enabled approach

Although screening alone can never hope to eradicate corruption, it remains our best defence against financial crime. To fully screen for potential vessel-related risk, companies need certain key information, including the country in which a vessel is registered and the identities of all individuals and entities related to or associated with it. This information can be difficult to find, as criminals often seek to obscure vessel ownership and/or the destination of shipments.

A thorough and rigorous three-stage approach is recommended as the best strategy to mitigate maritime risk:

- As a first critical step, organisations need to ensure that they can access reliable data on all sea-going, self-propelled merchant vessels to establish identity, location and ownership information. This data should include previous vessel names and current and previous ownership structures. It should cover all IMO numbers and should be updated regularly to ensure dynamic tracking of ownership, management, name and flag changes. The goal is to screen operators, movements, ownership and names, both current and previous.
- The next step in the process will invariably focus on screening against a global risk intelligence database. An appropriate risk screening solution will help flag maritime vessels appearing on sanctions, watch and enforcement lists, including intelligence on vessels registered in, associated with, or under the flag of, an embargoed country or entity. Additionally, information on non-embargoed vessels that are directly associated with sanctioned countries, entities and individuals (even if these vessels do not appear on any sanctions or enforcement lists) should be included. Details of relevant sea ports in embargoed countries and any connections to money launderers, sanctioned entities or individuals can also be analysed with the right technology. In some instances there can also be close links to the databases of major government and transnational maritime surveillance and tracking agencies and, where relevant, records of connected registered owners and beneficial owners.
- As a final step, organisations should conduct detailed enhanced due diligence (EDD) checks on any suspicious entities flagged during the screening process.

Protect your reputation

Given the complexities of risk and the stringent nature of regulatory requirements, organisations should not underestimate the importance of taking appropriate steps to understand and pinpoint potential maritime risk. Best practice incorporates a holistic approach to identifying all vessels and related entities; and then screening these for financial crime risk before engagement. Where further investigation is warranted, EDD should be carried out. To remain fully compliant with evolving legislation, a dynamic approach is needed and the data on which decisions are based should be secured from high quality, trusted sources.

When it comes to tackling financial crime, forward thinking organisations are harnessing technology to help them cut through noise, pinpoint risk and make more informed decisions about who they do business with. *MRI*



James Mirfin

James Mirfin, global head of financial crime and digital identity services at Refinitiv

The digital future is here

Nazery Khalid evaluates the adoption of Industrial Revolution 4.0 among marine industry players

The wave of digitalisation and automation is sweeping the world at a furious pace, affecting the way we live and do business and shaping the course of civilisation. So profound are the impacts that this wave is triggering that it is being dubbed as Industrial Revolution 4.0 (IR 4.0) following other phases of industrial revolutions that have shaped history and even influenced the course of civilisation.

In a nutshell, IR 4.0 fuses separate technologies and electronic devices, enabling the integration of physical and digital domains that have enabled manual work to be replaced by machines and information to be stored, processed and shared across the globe at tremendous speed and capacity.

The coming together of these two realms has created tremendous changes and disruptions to our lives and to trade, economies, businesses and industries. In business and country competitiveness indices and rankings, cyber aspects such as availability of “infrastructure”, internet penetration rate and high-speed internet connection are now commonly used as main criteria. We now even rank wi-fi availability as a key determinant in choosing our accommodation when we travel.

The building blocks of IR 4.0 are a plethora of devices, systems and solutions which have not only become more pervasive in our lives but have also become indispensable. They include additive manufacturing (also known as 3D printing), artificial intelligence (AI), augmented reality (AR), autonomous machines, big data analytics, blockchain technologies, cloud computing, internet of things (IoT), machine learning, nanotechnology, predictive analysis, robotics, smart sensors, systems integration and virtual reality (VR). Many of these can now be integrated and interoperable with one another on platforms that enable them to communicate and also share voluminous amounts of data with one another in real time.

It is amazing to think that the storage, processing and retrieval of data and multiple functions that required expensive, bulky computers and refrigerator-size servers a short few decades ago and multiple functions such as communications, photo taking and video recording, are now available in compact devices that can be held in the palm of our hands. These smart devices are poised to become increasingly powerful and capable.

Swimming with the tide

Digitalisation is now a key determinant of decisions by investors, businesses and industries in deciding where to do business. In response, an increasing number of countries are formulating national digital frameworks and masterplans to respond to challenges and reap opportunities arising from IR 4.0.

In the marine industry, more companies are seen to embed digital agendas into their business strategies and recalibrate processes and operations to suit the digital environment. They

range from practitioners – for example shipowners, shipbuilders/repairers, fabricators, terminal operators and maritime ancillary services providers – to regulatory authorities such as port authorities, customs and security agencies.

There are many instances of practitioners using aspects of IR 4.0 in their operations. These include the application of:

- real-time information by shipping companies to send and receive data on cargo transported by their vessels;
- blockchain technology by parties along maritime trade supply chains, such as exporters, importers, shipping companies, freight forwarders, terminal operators, port authorities, and regulatory agencies, to track, inspect and clear cargos and settle their payments;
- sophisticated AI-enabled e-navigation features such as electronic charts and technologically driven eco-friendly, fuel efficient features;
- cutting-edge computer-aided design and VR-enabled software by naval architects to design ships and share draft designs through the cloud with shipowners, consultants, marine equipment and systems manufacturers and classification societies;
- management information systems by port operators to plan container loading and offloading and to track containers in port yards, and big data analytics and predictive analysis to analyse and forecast port throughput volumes, value and variety and cargo origin and destination;
- remotely controlled, autonomous vehicles and robotics in repair and maintenance work at yards to check the integrity of vessels and offshore structures;
- vessel tracking and management system and automatic identification system to monitor and manage movements of ships and traffic along busy sea lanes and at harbour waters to ensure navigation safety;
- cyber-security equipment, systems and solutions to protect data in cyberspace;
- eco-friendly technology to monitor energy consumption and emissions from ports, shipyards and ships to reduce carbon footprints and enhance energy efficiency;
- big data analytics in supply chain management, procurement, inventory management, assembly line, customised manufacturing and service-oriented activities such as customer relationship management.

Cyber makes better

As IR 4.0 features and technologies increasingly make their way in the marine industry, players who have adopted automation and digitalisation are discovering the benefits of doing so. These include experiencing an increase in productivity and operational efficiency and a step-up in competitive advantage; and discovering innovative, value-adding and high margin products and services which enable them to serve niche segments in the industry and expand their business and markets.

Adopting IR 4.0 technologies has also enabled them to elevate the skills of their workforce, a valuable and potent asset to any company. Their skills and innovation can lead to differentiation and customisation of products/services which contribute to their company's bottom line.

Applying high-end technologies and going digital have also led companies in the marine industry to operate in a more safe,

sound and eco-friendly manner, hence boosting the sustainability of their business. It also helps them tremendously in making informed, better decisions and conceptualising strategic plans based on solid data and predictive analysis.

All these are certainly helpful to players in an industry still facing a decade-long headwind and reeling from overcapacity, low demand for shipping services, tight financing, slow economic growth, intense competition and the introduction of new regulations governing their conduct.

“Marine industry stakeholders must embrace and adopt to IR 4.0 or risk being left behind by other industries in attracting investment and in improving productivity, efficiency, customer experience and cost”

Challenges abound

As much as it has opened up new vistas of opportunities, IR 4.0 also poses curveballs of challenges to the marine industry which facilitates much of global trade and is crucial to its economic growth and development. Some of the challenges faced by the industry stakeholders in adopting digitalisation include:

- Putting in place an enabling ecosystem with adequate infra and infostructures and a solid regulatory and institutional framework (driven by a masterplan with clear objectives and range of incentives to foster/facilitate IR 4.0 investment, adoption and immersion). This is especially the case for developing and under-developing countries where infra and infostructures are still lacking or need to be further developed.
- Closing digital gaps between nations, businesses, industries to enable widespread digital connectivity among the parties across the maritime supply chain.
- Attracting investment to put in place and upgrade infra and infostructures to create a conducive environment for IR 4.0.
- Preparing skilled and innovative human capital to operate in a highly automated and digitalised business landscape.
- Recalibrating education, training and vocational systems and even learning process and society's perception to cater to market demands for digital economy workers.
- Creating and enhancing awareness of industry stakeholders of various aspects of IR 4.0, its importance and the challenges and opportunities it presents and changing their mindsets to automate and digitise their processes and operations.
- Opportunities abound in many areas in the vast marine industry, especially those which are still labour intensive and still use a manual, bricks and mortar approach.

By applying aspects of IR 4.0 practitioners in the industry stand to increase their efficiency and productivity, as well as generally doing things better. This should trigger positive results such as improved products and service offerings, lower costs, increased customer satisfaction, unlocking of value in businesses, spurring of innovation and generating more revenue and profit.

The following are areas which offer potential for players in the marine industry to apply IR 4.0 elements into their business:

- Design of ships, port cranes/equipment, offshore structures (eg oil rigs, topsides and modules), terminals and shipyards

using IoT, 3D elements, software integration and AI-backed simulation.

- Marine engineering incorporating elements such as IoT, AR, VR and AI-backed simulation.
- Setting up of workshops at shipyards incorporating IoT, 3D printing and advanced materials.
- Fabrication/assembly, MRO (maintenance, repair and operations), outfitting and furnishing of ships and offshore structures using IoT, robotic welding, sensor communication, systems integration and automation.
- Testing of ships, for example during a tank testing stage, and inspections using IoT, systems integration and automation.
- Operations of ships, cargo handling at terminals and overseeing of shipbuilding/ship repair and fabrication projects using IoT, data simulation, visualisation, big data analytics and cyber security.

Welcome to the future

IR 4.0 is no longer knocking on our door. It is already here, it is here to stay and will continue to unleash powerful disruptive, game-changing forces to our lives and the way we conduct business and run industries. Marine industry stakeholders must embrace and adopt to IR 4.0 or risk being left behind by other industries in attracting investment and in improving productivity, efficiency, customer experience and cost.

Those slow to undertake digitalisation, change management, cultural transformation and technology adoption and immersion will lose competitiveness and relevance as the physical and business landscapes undergo irreversible changes triggered by the digital and automation revolution.

It is encouraging to see many aspects of IR 4.0 have already found their way into various activities in the marine industry, from the regulatory/administrative side to the business aspects. However, there is still much for industry stakeholders to do before they can optimise the technologies and reap the opportunities offered by the digital economy. While some have done well to gain leverage on IR 4.0 technologies and apply them to their processes and operations, and have become more efficient and productive and even profitable as a result, there remain challenges, as outlined earlier, that they still need to overcome before they can fully integrate their businesses and immerse their activities into digitalisation and automation.

A holistic approach is needed at not only an organisational and industry levels but at a national level to put in place an enabling ecosystem to allow IR 4.0 to be accepted by marine industry stakeholders and for them to flourish in the digitalised economy. *MRI*



Nazery Khalid

Nazery Khalid, renowned Malaysia-based commentator of the marine industry and regular contributor to *MRI*

Control on the bridge

We are living in a world of data and how we use and correctly manage it is today's challenge. But with the increase in workload onboard, the use of optimised control rooms can relieve the pressure and improve efficiencies and safety on board today's ships, believes **Pankaj Sharma**, of Columbia Shipmanagement (CSM)

Shipping is actively embracing digitalisation and now is the time for the industry to start investing in the technology if it doesn't want to get left behind.

We are not operating ships like we did 10 to 15 years ago and if you ask what the most recognised piece of technological development is today, most people will say the smart phone. But this was an enabler of something much bigger – high-speed data.

Looking forward, shipping can be an enabler of new technology itself as modern developments in satellite communications start to revolutionise communications and potentially bring better communications to the shipping industry. If we use digitalisation, we will be reaping the benefits. If we learn how to integrate and break the silos, we will then be leading the way.



One of the key trends starting to emerge in the shipping industry is through the use of high-tech onshore optimised control rooms which can closely monitor vessel performance and, by analysing the data collected, help to improve efficiency and enhance safety. With pre-fed algorithms, we will be able to tell if a ship deviates in any way and can react quickly to this if needed.

The technology to bring these control rooms online and into reality is being pioneered by companies such as Rolls-Royce and Kongsberg. In the shipping world, Maersk has been operating an optimised control room in Mumbai for its vessels for the last few years so applying this knowledge to the optimised bridge for CSM was the logical next step.

Companies such as CSM have a variety of customers and needs, so we put our heads together to create the necessary solutions through the control room. It is not just about cutting operating costs, but also saving time and achieving other vessel operating efficiencies. The idea behind it was to create a platform that would enhance vessel operations.

The control room will be manned 24/7 by qualified personnel who will optimise vessel safety, crew rotation and training, performance (speed, consumption, delay, weather routing), disaster avoidance, maintenance (including preventative maintenance through sensor and camera technology) and

contractual compliance. Web-based, it can be easily uploaded to other offices and clients' offices allowing remote monitoring.

Development of the optimised control room takes on three principles: one is to be smart and move from being a reactive system to be a proactive system. Another is that it should have leading indicators for alarms and alerts. Last, but not least, results should be given in real time, so that at the end of a voyage a vessel can be reviewed quickly to see if it has over consumed on any part of the journey.

For the alerting system, alerts and alarms are sent through to the office at Limassol that warn the crew in the office of any deviation made or anomalies in the way the vessel is being operated at the time. Once the alert has been received, the office runs a full investigation to see what is happening. If any corrective measures need to be taken, these are then reported back to the vessel. This is done so that no extra work is created for the crew onboard, but all the time the vessel is being continuously monitored.

The data is reviewed through data analytics, which is quicker and more in-depth and allows for the voyage to be reviewed along the way. If anomalies are found in the data, the investigation afterwards will look into how many vessels have completed that voyage in the previous 24 hours and the data that they have gained from those vessels. Also, the system operates on a traffic-light warning system with red alerts signalling the most severe and amber being less so.

The red warnings are the first to be monitored, with the data being cross checked across two different systems. After identifying where the issue is coming from the company can then carry out the corrective methods that are required. If, for instance, the data says it is the hull that is causing the alert, we can then look at getting hull cleaning done.

Furthermore, by using analytics instead of quarterly reporting, the data can be analysed more quickly and errors can be rectified in a fraction of the time. The analytics also use machine learning, so the software is constantly learning and developing with the data that is coming in to it.





Currently, the firm is tracking 200 vessels, 80 of which are being tracked in real time with an average of three to five voyages completed a day. We are focusing on longer voyages at the moment, with shorter voyages at a later stage.

When we started the development, we went through various service providers. What we found was that the market was very fragmented and, in most cases, did not cover the safety aspect in port. What we needed to do was to find solutions that we could harmonise into our own. Enhanced e-learning is a critical part of this. A web and app-based e-learning platform enables seafarers to access and complete their training assignments at their own pace and even without having network connectivity.

Training has become a hot topic again for the maritime industry with the new wave of technology hitting the market. Keeping up with the technology has been a key factor as more shipowners look to adopt this technology onboard.

E-learning enables a new learner experience by harmonising the training and courses for seafarers and fleet wide activities worldwide. The new system can be used at the seafarers' convenience and from any location: office, onboard vessels, at their homes, or even when travelling.

The e-learning courses on offer allow seafarers to complete interactive courses either through computers or mobile devices to download the courses and generate the certificates at the end of the course. In addition, points and badges can be earned and facilities to post comments and view webinars is also catered for through the e-learning solution.

The captured data helps monitor the effectiveness of the training along with attendance, providing feedback on participation or even managing results on how quickly the workforce is improving through skill awards.

Developed alongside Adobe, the platform is supported by an inhouse team that uses the latest in advanced authoring

software. The e-learning management system provided by Adobe Captivate Prime, allows companies to align all online and offline enterprise-wide learning initiatives. This latest learning tool will enable masters and managers to create continuous development programmes for their teams by enrolling them through specific courses and also be able to monitor and chart progress.

With the new digitalisation revolution comes the issue of cyber security, for which the company has ensured the necessary precautionary steps have been taken to ensure its customer data is secure. All our systems are meeting the required standards and using the latest solutions for protection. Ransomware today can bring down a whole company as we've seen happen with Maersk recently, and the impact that had.

Future proofing is key for companies to stay afloat during the change that new technology will bring both in operation of vessels and also how the industry will work. The optimised bridge is starting to gain popularity with shipowners as the technology develops, concern about the safety of data is still high, but as the technology gains momentum and the take up of the technology happens more, it is expected that further solutions will be developed. *MRI*



Captain Pankaj
Sharma

Captain Pankaj Sharma, master mariner and manager of Columbia Shipmanagement's performance optimisation control room

ECDIS – elephant on the bridge?

ECDIS, the satnav of shipping, is still one of the least understood items on the bridge. **Captain Yves Vandeborn**, of The Standard Club, says shipowners and their bridge teams need to get more involved in discussing these safety-critical systems, including conducting regular navigation risk reviews

It sits brightly on every ship's bridge but could ruin the lives of everyone on board. Despite this, bridge team members are not comfortable talking about the electronic chart display and information system (ECDIS) in case they reveal the truth: that they don't fully understand it.

ECDIS is a wonderful piece of equipment, showing the precise, real-time position of your ship on the latest navigational chart wherever you are in the world. It can also incorporate overlays from the Automatic Identification System (AIS), Navtex and ARPA to give you a complete picture of your surroundings at sea.

Unfortunately, it can also lead to complacency and catastrophe. The former can take many forms: from individual watchkeepers becoming over-reliant on ECDIS or over-estimating their ability to use it, to a general assumption by shipowners that everyone on their ships completely understands it.

What owners sometimes overlook is that there are many brands of ECDIS on the market, each with their own way of operating. It is very likely that ships within an owner's fleet have different brands fitted. Just because someone has been trained on one system does not mean they can safely use others. While all systems should now comply with International Hydrographic Organization (IHO) data standards (IHO, 2000 and 2014), there are still no standard operating or familiarisation procedures.

Furthermore, individual masters and navigators may have their own personal preferences for ECDIS settings, which they may fail to mention to subsequent watchkeepers.

Typical pitfalls

Like all computer systems, the "garbage in, garbage out" rule applies. As with car sat navs, in which farm tracks can sometimes be flagged as freeways, ECDIS chart data can be inaccurate – especially in more remote parts of the world.

IHO specifies six "category zones of confidence" (CATZOC) for chart information, to show how accurate the data is likely to be, and these are now embedded in all IHO-compliant systems – but users need to switch on these overlays to see them. For example, charts in the best zone, A1, are accurate to around 5 m for position and 0.5 m for depth, while in the fourth zone, C, they are only good to 500 m and 2 m respectively. Zone D charts are simply classed as "worse than ... C" and the sixth zone, U, are "unassessed". Mariners ignore the ECDIS CATZOC layer at their peril.

In addition, while satellite positioning is usually accurate to 1–2 m, it too can let you down. Reasons for a global navigation satellite system (GNSS) giving the wrong location include damage to the ship's satellite antenna, electromagnetic interference from solar storms, lack of available satellites overhead and, more recently, as part of a cyber attack. Mariners should therefore regularly cross-check their position based on what they can actually see around them.

Another common ECDIS pitfall is confusion between the "safety depth" and "safety contour" settings. Safety depth simply greys out all soundings which are deeper than a specified value. Safety contour, on the other hand, is the first chart contour under the ship's safe draft. ECDIS will highlight this with a thicker line and contrasting tints either side and sound an alarm if the ship crosses it. There appears to be confusion among navigators between these two settings, which are often found to be wrongly configured.

Over-reliance from navigators

Over-reliance on ECDIS chart data accuracy recently resulted in a cargo vessel grounding in the Mediterranean on a charted shoal. During passage planning the second officer consulted several sources, such as pilot books, the Admiralty list of radio signals and temporary and preliminary notices to mariners. One thing which was not checked, however, was the value of the CATZOCs for the ECDIS charts to be used along the route.

“Given the importance of ECDIS to ship operations and its inherent risks, shipowners need to take a much closer interest in their equipment and how it is used”

During the voyage, the vessel's destination was changed, requiring an alteration of the route. The subsequent alteration took the vessel closer to the shoal than the original passage plan. Despite this decrease in clearance, no reference was made to the accuracy or reliability of the electronic navigation charts which depicted the shoal. The changes to the track reduced the passing distance between the vessel and the shoal to a few hundred metres. The margin for error had been significantly reduced.

Unfortunately, the depiction of the shoal on the charts was inaccurate. They had been compiled by the local hydrographic authority and used data from only a single source. This data had been gathered using analogue techniques in the 1960s; the CATZOC value for the area was "U" for unassessed. The age and lack of information regarding the value of the CATZOC data should have served as a red flag for the crew. The failure to check the CATZOC data meant that this red flag went unnoticed.

Post incident, the locally produced electronic navigation chart was compared to data from the British Admiralty chart series. The British Admiralty charts had been compiled using information from a variety of sources and more accurately depicted the location of the shoal. When the grounding position was plotted on the British Admiralty chart it showed the ship's position within the extent of the shoal, whereas the ECDIS of the ship depicted the vessel in safe, deep water.

Anatoly Menzhily/Shutterstock.com



The shoal patch was covered by a pair of sectored lights. The respective red and green sectors of these lights overlapped covering the shoal in question. A vessel observing both the red and green sectors would be inside this overlap. Details of the lights were contained in the pilot book for the area. These lights and their significance for navigation were not considered by the second officer during the planning of the passage.

Navigation risk reviews

Given the importance of ECDIS to ship operations and its inherent risks, shipowners need to take a much closer interest in their equipment and how it is used. They should start by standardising on just one or two brands across their fleet so that their navigators can more readily swap between vessels.

Shipowners should also review their navigation procedures to ensure that all bridge team members, from masters downwards, are fully and equally proficient in the use of their chosen ECDIS brand(s). This includes being aware of all its potential shortcomings and how these risks can be mitigated.

To do this we recommend that shipowners conduct regular navigation risk reviews. These should focus both on compliance and competency, and should be undertaken during actual seagoing voyages so that masters and navigators can be observed in action. Gaps in individual knowledge and proficiency can then be identified and addressed through additional training and familiarisation.

We have been conducting our own navigation risk reviews for many years and witnessed a lot of behaviour that conflicts with the ship's International Safety Management (ISM) Code-compliant safety management systems (SMS). It can involve deck officers at all levels of the bridge team, all of whom are certified competent to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended (STCW). The upshot is that shipowners cannot rely on ISM and STCW compliance to ensure that ECDIS is being used properly.

Interestingly, when hazardous behaviour has been observed in inexperienced junior deck officers, it has frequently occurred with the tacit approval of senior deck officers present on the

bridge. Examples include failure to do routine instrument checks, poor record keeping, over-reliance on a single navigation aid, failure to cross-check ARPA data, failure to use visual safety techniques, failure to challenge pilots during pilotage, and relying on auto-pilot in controlled waters.

Navigation assessments

We therefore also recommend that shipowners conduct periodic navigation assessments in line with Nautical Institute or Oil Companies International Marine Forum guidelines. They should involve a fully independent assessor spending a number of days closely observing how the bridge team performs during a short coastal passage, including how they communicate with each other, how they check and use ECDIS and other equipment, and how well they follow operational and record-keeping procedures.

An independent and highly experienced navigation assessor will be able to offer invaluable mentoring and advice to all members of the bridge team, master included, after observing dangerous behaviour. This includes encouraging senior deck officers to be more proactive in sharing the benefit of their experience and knowledge with juniors.

It is important for masters to show leadership with regard to ECDIS, immediately picking up on any incorrect or inappropriate usage of the system by other officers. All bridge team members should also be encouraged to discuss any and every concern or query they have with ECDIS operation or management. It should not be allowed to become the "elephant in the room". *MRI*



Captain Yves Vandeborn

Captain Yves Vandeborn, director of loss prevention, The Standard Club

Autonomous ships and the cyber security challenge

Captain Konstantinos Atmatsidis, of Prevention at Sea, considers the risks of the technological change ahead

The research and development (R&D) on autonomous ships dates back to the 1960s and 1970s with the use of small vessels by the coastguard and the military. We have recently seen the shipping industry introducing larger scale cargo and passenger ships in autonomous ship R&D. The current interest by key shipping industry stakeholders in such ships is not limited to R&D and the development of these ships; it has extended to cover a new regulatory and operational framework for autonomous ships.

The use of autonomous vessels has already begun with many routes being tested, while new companies and R&D centres have been created, focusing on the development of such vessels:

- The world's first fully autonomous ferry in the archipelago south of the city of Turku, Finland was demonstrated with great success by Rolls-Royce and Finnish ferry operator Finferries (the car ferry Falco was navigated autonomously during its voyage between Parainen and Nauvo and the return journey was conducted under remote control navigation);
- An 8-m autonomous unmanned surface vessel developed by iXblue was successfully tested;
- Wilhelmsen and Kongsberg joined forces and created the world's first autonomous shipping company named Massterly; and
- A new R&D centre for autonomous ships was opened by Rolls-Royce in Turku, Finland.

In addition, the IMO has begun to shape a regulatory framework on how safe, secure and environmentally sound maritime autonomous surface ships (MASS) operations may be, while at the same time DNV GL has released guidelines on autonomous and remotely operated ships.

“The concept of autonomous ships is a reality and gradually will lead to the extensive use of the systems on ships that rely on digitisation, integration and automation”

The removal of the human element seems to be the biggest benefit of autonomous shipping via the decrease of human errors on board as well as the decrease of crew and accommodation costs. On the other hand, large investment is called for in new technologies and human capital to adopt the new technologies while in parallel new risks will be raised and the shipping industry should be ready to manage and eliminate them.

But is this the future?

According to Rolls-Royce Marine, by 2030 the autonomous ships will dominate the oceans. However, Maersk CEO Søren Skou has

cast doubt regarding the progress of autonomous ships. In any case, the concept of autonomous ships is a reality and gradually will lead to the extensive use of the systems on ships that rely on digitisation, integration and automation. As technology continues to develop, information technology (IT) and cyber risk will be a major concern for the shipping industry.

What is the current picture?

According to guidelines from the International Chamber of Shipping (ICS) on cyber security on board ships, both cyber security and cyber safety are important because of their potential effect on personnel, the ship, environment, company and cargo. Cyber security is concerned with the protection of information technology (IT) and operational technology (OT) systems, information and data from unauthorised access, manipulation and disruption. Cyber safety covers the risks from the loss of availability or integrity of safety critical data and OT.

Based on several reports issued during the past few years regarding the current state of cyber security in the shipping industry, we could recognise the following as the main cyber security vulnerabilities:

- Lack of cyber security awareness and training;
- Lack of sound cyber and information security risk management principles;
- Outdated and ageing IT and OT systems and platforms;
- Lack of “security by design” for all critical maritime information and communication technology (ICT) components;
- Limited cyber security culture among vendors, suppliers and contractors;
- Lack of cyber security aspects in the maritime regulations and policies which currently consider mainly the physical aspects of security and safety; and
- Lack of better contractual insurance conditions related to the cyber security aspects that may improve insurers’ actuarial models and their offers to the involved maritime stakeholders.

Incidents faced by the shipping industry during the last few years have shown that cyber threats and attacks are a growing menace. In June 2017 the shipping industry faced the first major cyber attack against Maersk which was confirmed by the company’s announcement dated 28 June 2017.

Almost a year later, on 24 July 2018, a new cyber attack affected Cosco’s operations. The Chinese shipping and logistics company said that its vessels were not impacted and that the performance of its main business operation systems was stable. However, Cosco’s terminal at the Port of Long Beach was affected.

On 20 September 2018 the Port of Barcelona reported a cyber attack with the organisation announcing the incident on Twitter, informing that several of its servers had been impacted. A few days later, on 27 September 2018, the Port of San Diego

issued an update from its CEO Randa Coniglio regarding a cyber security incident that was first reported on 25 September.

In addition to the aforementioned incidents, in early 2018, according to Secureworks, a Nigerian threat group that appeared to be focused solely on the shipping industry, dubbed “Gold Galleon”, tried to steal hundreds of thousands of dollars from unsuspecting ship managers and service providers via the use of basic email scams and publicly available hacking software.

In view of these incidents, the need arose for a discussion to commence development of a regulatory framework relating to cyber security. The IMO has given shipowners and managers until 2021 to incorporate cyber risk management into ship safety, giving the industry one more issue to deal with. IMO Resolution MSC.428(98) identifies cyber risks as specific threats, which companies should try to address as far as possible in the same way as any other risk that may affect the safe operation of a ship and protection of the environment.

“BIMCO guidelines include new information on how to segregate networks, manage ship-to-shore interfaces and handle cyber security during port calls”

The Oil Companies International Marine Forum has incorporated cyber risk management in their tanker management self assessment, TMSA 3, under elements 7 and 13. KPI 7.3.3 includes cyber security as an assigned responsibility for software management in the best practice guidelines.

BIMCO together with other leading shipping organisations, launched a set of guidelines in January 2016 to help the global shipping industry prevent major safety, environmental and commercial issues that could result from a cyber incident on board a ship. The second version of the guidelines was released in July 2017 and includes new information on how to segregate networks, manage ship-to-shore interfaces and handle cyber security during port calls. The 2017 version also has a chapter on insurance cover. The guidelines have been aligned with the recommendations given in the IMO Guidelines on cyber risk management.

The US Coast Guard published a draft copy of its planned Navigation and Vessel Inspection Circular (NVIC) entitled “Guidelines for Addressing Cyber Risks at MTSA Regulated Facilities” on 12 July 2017. The draft NVIC provides guidance on how to develop and implement measures and activities for effective self-governance of cyber vulnerabilities, which shipowners and operators may find useful.

The UK Department of Transport (DfT) published its “Code of practice: cyber security for ships” on 13 September 2017, providing a management framework that can be used to reduce the risk of cyber incidents that could affect the safety or security of a ship, its crew, passengers or cargo.

Last but not least, the International Group of P&I Clubs’ poolable cover includes claims arising from cyber risks. However, due to the lack of a detailed regulatory framework for sound and prudent cyber risk management of claims with a cyber element it may be difficult for a shipping company to prove that it operates a prudent cyber risk management process to avoid

liability. As more and more potential cyber risks are identified, P&I Clubs will expect to see sound risk assessment and closer management of cyber risk with proper policies, systems and training courses for both ashore and onboard operations and personnel.

As the shipping industry embraces information technology, it becomes exposed to cyber risks: therefore alongside these technological developments and the use of new generation operating systems and ships, the shipping industry needs to ensure the security and resilience of its ICT infrastructure, by focusing on prevention, preparedness and awareness, as well as the development of effective and coordinated mechanisms to respond to new and increasingly sophisticated forms of cyber attacks and cyber crime.

To minimise cyber threats while at the same time continuing the digitalisation of daily operations the following basic measures are recommended:

- Training and awareness with regards to cyber security should be provided to personnel onboard and ashore;
- Monitoring and control of network ports, protocols and services;
- Secured configuration for hardware and software;
- Email and web browser protection;
- Anti-virus and anti-malware software should be installed, maintained and updated on all personal and work-related computers onboard;
- Essential information and software-adequate backup facilities should be available to ensure data recovery following a cyber incident;
- Ensuring wireless access to networks to be limited to appropriate authorised devices;
- Critical safety and security updates should be provided to onboard and shore systems;
- Onboard and shore networks should be partitioned by firewalls to create safe zones;
- Security and safety critical equipment and cable runs should be protected from unauthorised access; and
- Network operations and expected data flows for users and systems should be established and managed so that cyber incident alert thresholds can be established.

Conclusively, it is needless to say that the way forward involves the need for close cooperation with key stakeholders of the shipping industry to create the proper conditions to safely welcome autonomous ships.

- *The full text of this article can be found online at www.maritime-risk-intl.com **MRI***



Captain Konstantinos Atmatsidis,
maritime advisor/analyst
at Prevention at Sea

Minimising the risk of burns at sea

Captain David Nichol, at UK P&I Club, warns of the risks if a seafarer suffers burns at sea

Burns can be some of the most painful and dangerous of personal injuries that may be inflicted both at work and in domestic situations. Unfortunately, there are still a worrying number of seafarers suffering appalling physical pain, disfigurement, amputations and loss of life as a result of burns.

Burn injuries are bad news whenever and wherever they occur, but when they happen at sea, remote from shore medical facilities, the consequences may become dangerously aggravated. A serious burn will require prompt professional medical attention and special facilities, both of which are unlikely to be available on a merchant ship navigating in mid ocean. For this reason, it is particularly important that seafarers are fully aware of the risks presented by hot (and cold) appliances and systems, as well as the necessary safety precautions to take, while both on and off duty.

What is a burn?

A burn is defined as damage to skin tissue which causes the affected skin cells to die resulting in swelling, blistering, redness, charring and tissue loss. The most common causes of burn injuries to crew on board ships may be summarised as follows:

- Steam and hot fluid burns;
- Contact with heated surfaces;
- Exposure to hot or burning solids, liquid or gas;
- Chemical burns;
- Electrical burns; and
- Cold burns.

Classification of burns

The severity of a burn is graded according to the depth of the injury through the skin. Skin has an outer layer (epidermis) and a deep layer (dermis). The latter contains the sweat glands, hair follicles and nerves relaying sensation and pain to the skin. First degree burns affect only the outer skin layer, causing redness, mild swelling, tenderness and pain. Second degree burns extend into the deeper skin layer (the dermis): superficial,

second degree burns cause deep reddening, blister formation, considerable swelling and weeping of fluid. Deep second degree burns may not be easy to distinguish from third degree burns immediately after the injury and pain may be severe because of damage to the nerve endings.

Third degree burns involve the whole thickness of skin and may extend to the underlying fat, muscle and bone. The skin may be charred, black or dark brown, leathery or white according to the cause of the burn. In this instance, pain may be absent due to destruction of the nerve endings.

Treatment

The treatment of burns will depend on the cause of the burn, how deep it is and how much of the body it covers. Ship's masters need to be fully aware of the potentially life-threatening complications that may present in a casualty due to the loss of the protective skin layer, including infection, hypothermia, dehydration and shock, even in the case of burns of a relatively minor bodily extent. It is therefore of vital importance that burn injuries are quickly assessed and professional medical advice obtained as soon as possible, even if they initially appear to be trivial. The apparent seriousness of burn injuries can be easily misjudged by laymen, with casualties in the early stages presenting as being alert or not even in great pain due to the effects of shock or the destruction of nerve endings. This can engender complacency and delays in seeking appropriate medical attention with sometimes tragic consequences.

“In the event of a crew burn incident, the master, ship manager or telemedicine service will often require or recommend the vessel deviates to the nearest port or place where medical facilities are available to administer appropriate treatment”

The high risk of burn injuries leading to serious complications means that in the event of a crew burn incident, the master, ship manager or telemedicine service will often require or recommend the vessel deviates to the nearest port or place where medical facilities are available to administer appropriate treatment.

To reduce the risk of serious burn injuries to ships crews, UK P&I Club recommendations include the following:



- Raise awareness to the potential risks of burn injuries;
- Carry out ship specific training and familiarisation on burn hazard recognition and safe working practices;
- Apply meaningful risk assessments and permits to work to operations which may expose crew to burns;
- Always wear proper work clothes and personal protective equipment; and
- Be aware of correct first aid actions and always seek prompt professional medical advice.

CASE STUDY 1: Leaking steam system valve

When conducting early morning rounds of the engine room, the first engineer noticed the auxiliary boiler steam dump valve gasket was leaking. He therefore instructed the second and third engineers to stop the boiler and drain all steam and water from the system. After later being informed by the third engineer the system was drained, the first engineer started work on opening up the valve to check the cause of the leak. However, during removal of the valve bonnet, steam and hot water was discharged from the joint. The first engineer suffered extensive burn injuries to arms, left leg and back, requiring medical evacuation by helicopter for treatment ashore. Although the accident report did not explain why steam and water was still present in the system after reportedly being drained by the third engineer, it is evident the line had not in fact been properly drained and isolated from other parts of the system. Care should be taken when breaking open joints, ensuring that securing bolts are slackened off to the minimum and as far as practicable, keeping well clear.

CASE STUDY 2: Leaking hydraulic pipework

A fitter was instructed to replace leaking hydraulic pipework associated with the cargo hold hatch cover operating system. An oxy-acetylene torch was being used to apply heat to the connecting flange bolts to disconnect the pipe joints. During this work, hydraulic fluid within the pipework leaked out and was ignited, engulfing the fitter and the burning gear in flames. Nearby deck crew quickly doused him with water and closed the valves on the oxy-acetylene cylinders. Fortunately for the fitter, the vessel was at a port anchorage enabling him to be transferred to a local hospital burns unit in good time, where he was assessed as suffering from second degree burns over 15 per cent of his body. The accident was caused by a failure to properly assess the risks involved with this work and poor working practices. A proper risk assessment and observance of the relevant safety management system permit to work for hot

work should have identified the potential for residual hydraulic oil or vapours being present within the pipes. Using burning gear in this manner on pipework, drums or other vessels which may contain inflammable liquids or vapour is extremely hazardous.

CASE STUDY 3: Chemical drain cleaner

An assistant cook was using chemical drain cleaner to clear a blocked sink waste pipe in the galley. After pouring in the fluid, a sudden release of back pressure from the drain caused the chemical to splash into his face, resulting in burns to the exposed skin and eyes. The seafarer was evacuated ashore for medical treatment and was assessed to have sustained serious damage to the cornea of one eye with the effect that his sight was permanently impaired. In this incident, it was apparent the crew member failed to appreciate the hazard presented by drain cleaning agents, which are highly aggressive chemicals. The work was improperly supervised and there was a failure to wear appropriate personal protective equipment. This is a clear demonstration that an apparently routine task involving the use of chemicals can result in very serious consequences.

CASE STUDY 4: Air conditioning unit charging

The second engineer noted the quantity of refrigerant gas within one of the accommodation air conditioning units was at a low level. With assistance of a junior engineer, a cylinder of spare refrigerant gas was taken to the air conditioning room and connected to the system charging port by flexible hose. When the system was charged, the second engineer shut the valves of the cylinder and charging port. However, when the hose was disconnected, gas was released under pressure from the charging port, impacting both of his hands and producing a burning sensation. In accordance with advice contained in the relevant MSDS, other crew members responded by bathing his hand in lukewarm water in the engine room workshop. As the vessel was at a port anchorage, the second engineer was soon transferred ashore to hospital. Investigation into the incident determined the air conditioning unit charging port valve was defective and had failed to close properly before the hose was disconnected. The sudden expansion of the escaping gas caused rapid cooling of the surrounding environment, including the second engineer's leather gloved hands, a process known as adiabatic cooling. Although the failure of the valve could not reasonably be foreseen, it serves as a lesson to take great care when handling compressed gases. However, the crew actions were commendable in giving appropriate first aid enabling the seafarer to make a full recovery. *MRI*



Captain David Nichol

Captain David Nichol, risk assessor at UK P&I Club

IMO under pressure to tighten 2020 reporting

With less than nine months to go until the 2020 sulphur cap comes into effect, governments are trying to add safeguards against potential fuel oil quality and availability issues by tightening data and reporting requirements, reports **Anastassios Adamopoulos** of *Lloyd's List*

Fuel oil suppliers, inspection authorities and fuel testing agencies are coming under the microscope as governments and regulators try to allay persistent concerns about 2020 sulphur cap-compliant fuel oil availability and quality.

The European Union, major flag and shipping states, as well as shipping lobbies, are pushing the IMO and member states to develop a more comprehensive fuel oil data collection and analysis policy, amid widespread underreporting from states. However, views are divided over whether some of the measures should be mandatory or voluntary.

The pressure follows the IMO's self-imposed order last year to improve on this front, as a compromise resulting from a highly controversial proposal to introduce an experience building phase post-2020 meant to address discomfort about compliant fuel oil compatibility and safety felt by some.

“The onus to populate the IMO's Global Integrated Shipping Information System database falls on IMO member state governments”

Two separate proposals to the IMO's Marine Environment Protection Committee, which meets in mid-May, want to strengthen the data being held on the IMO's Global Integrated Shipping Information System, known as GISIS. The onus to populate this database falls on IMO member state governments. However, contributions have been lacking.

As of February 2019 only five countries have submitted required information to the IMO about compliant availability in their fuels and terminals. Equally scarce is information on compliance. Only three countries have informed the IMO on



cases where vessels have reported non-availability of compliant fuel, and 11 countries have informed the organisation of cases where fuel oil suppliers have failed to meet fuel oil regulations.

While this dearth of reporting currently relates to issues around the 0.1 per cent sulphur Emissions Control Areas that are already in effect, rather than the 2020 global sulphur cap, the IMO has acknowledged mandatory underreporting as a problem in its internal audits.

The EU's submission to the MEPC meeting, the only high-level environmental meeting that will occur before the 2020 rules kick in, calls not only for enhancing existing reporting requirements, around fuel availability and fuel oil supplier violations, but wants to also add new ones, the bulk of which centre around bunker providers and inspectors.

The bloc wants governments to report to the IMO the number of detentions they have had related to sulphur cap compliance as well as the cases where fuel oil on board a ship has been tested and the sample analysed. They also want to require information on cases in which authorities have sought to verify the contents of the bunker delivery note and to disclose where they have penalised fuel oil suppliers whose fuel does not match the note.

EU countries also believe the reported data should not simply cover sulphur content, but other fuel quality parameters as well.

Making these additions mandatory, however, will likely face opposition from those states pushing for a more voluntary approach.

A separate submission backed by a powerful coalition of shipping associations, major flag states as well as Canada, India, Japan and the US, calls on the IMO to develop and adopt a clear data analysis and reporting plan that targets fuel oil availability, compliance and quality. This coalition, which focuses on technical improvements to GISIS that make reporting information easier, was quick to say, however, that reporting on matters that are not subject to the sulphur cap regulation should clearly be voluntary.

“The obligation for administrations to report on fuel availability could be made more effective by requiring testing agencies to provide information not just about the sulphur content, but also about ports, dates and quantity of the fuel oils supplied”

“However, if such information has utility for subsequent analysis, its reporting should be considered and encouraged,” the proposal read.

They also called on those countries that are not subject to the sulphur cap to assist with any relevant information they may have on fuels availability and quality.

Fuel testing agencies in contention

The proposals are meant to pile the pressure on governments and the IMO. But they are also bringing external players into the mix. The EU front is keen to make other stakeholders, namely those who actually know the truth about the fuels

EU challenges governments to prove sulphur cap enforcement

*If the industry genuinely wants a level playing field when it comes to 2020, the EU's more stringent approach to transparency and reporting should be carefully considered, writes **Anastassios Adamopoulos** of Lloyd's List.*

European Union member states are stealthily manoeuvring to force the hand of governments around the world to reveal how much they are doing to enforce the 2020 sulphur cap when it comes into effect in just over eight months.

The EU wants the IMO to beef up its data collection system concerning compliant fuel oils. The proposal is meant to help address concerns about the safety and availability of these fuels.

But hidden just below the surface is a clear call on governments – including its own member states – to demonstrate what measures they are taking to enforce the sulphur cap.

New proposed requirements ask authorities to report to the IMO how many times they inspected the validity of bunker delivery notes, whether they penalised faulty fuel oil suppliers and whether they detained non-compliant ships.

Rather than paying lip service to enforcement and the level playing field the industry so desperately seeks, the EU wants governments to prove they are working. Flags are already supposed to inform the IMO of cases in which fuel oil suppliers have failed to comply with the regulation. The EU now wants authorities to go further by proving they are testing fuels and verifying the contents of samples.

The information may not necessarily paint the whole picture. Some jurisdictions may be willing but simply be unable to test and verify bunker fuels, or to punish violating bunker suppliers, whereas others have both the expertise and the means to carry on with this mission and may choose to do so only just enough to appear to be seen as responsible with the reporting.

But if these requirements were to pass, the information and perhaps equally importantly the lack thereof, would be strong indicators of governments' commitment to at the very least be taking a shot at compliance and would provide information about how the cap is being enforced globally.

first-hand, come forward with information that could help paint a better picture.

“The current obligation for administrations to report on availability could be made more effective by requiring testing agencies to contribute to the monitoring programme by providing information not just about the sulphur content, but also about the ports, dates and quantity of the fuel oils supplied,” the proposal suggests.

In this field too, the EU appears to stand alone.

The shipping associations and the flag states revealed in their own proposal that they mulled having testing agencies submit their data to the IMO but ultimately rejected the idea.

“The co-sponsors concluded that reporting should be limited only to member states due to legal considerations and the need to preserve the integrity of the reported data, as the IMO secretariat is not expected to validate the reported data prior to analysis,” they said.

They did however add that countries should collaborate with third parties, like testing agencies, if such voluntary submissions are indeed allowed in the future.



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