the global SEAFARER Volume 6 | Issue 2



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Wherever you are, so are we

When sea safety becomes unsafe

Accidents, audits, and regulations increase safety clutter, and once there, it's hard to get rid of

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entered its final year, and cooperation

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Nautilus Professional and Technical Forum gets to grips with maritime education plus technical updates and a long-awaited win for the human element at the IMO



Reconstruction of the semi-trailer parking arrangement, with inset view of the space (post-accident) Image: MAIB

MAIB warns of 'extreme risk' following investigation into crew fatality during ferry cargo loading



Accident Investigation Branch (MAIB) based on the initial findings of its investigation into the fatal crushing of a crewman.

On 20 July 2021, the bosun suffered the fatal injuries during cargo loading operations of the ro-ro cargo ferry Clipper Pennant in Liverpool, UK. He was marshalling tractor unit drivers who were loading semi-trailers when he was crushed between a moving trailer and the vessel's structure.

Key safety issues highlighted in the bulletin include: 'Where tractor units are being used to

GOVERNMENT GUIDANCE

What does the UK government mandate in terms of health and safety aboard? www.gov.uk/health-and-safety-on-ships

position semi-trailers, there is an extreme risk of crushing injuries, particularly where the semitrailer is manoeuvring close to the ship's structure, with limited means of escape for crew on deck.'

The bulletin also draws attention to the UK Maritime & Coastguard Agency's Code of Safe Working Practices for Merchant Seafarers (COSWP) which provides guidance for safe operations on vehicle decks.

Where tractor units are being used to push semitrailers, safety procedures must be in place to ensure that deck crew are not standing in the vehicle's path. Operators of vessels with roll-on roll-of vehicle decks are advised to:

MENTAL HEALTH ONBOARD

Mission to Seafarers releases videos explaining how an officer can help improve crew wellbeing: bit.ly/mental-health-onboard



 review their cargo handling procedures to identify the hazards associated with stowage spaces where there may be limited areas for escape • conduct a specific risk assessment for all such spaces. These spaces should then be marked and, unless appropriate mitigating measures can be put in place, not used ensure that onboard safety procedures and crew safety briefings reflect the guidance in COSWP Section 27.6.3 MAIB safety recommendations may be made after all aspects of the accident have been

investigated. If applicable, such recommendations will be published in the MAIB's final report. 🚺

In brief

Stellar Banner grounding report released

nautilusfederation.org

The Maritime Administrator for the Marshall Islands has released its report into the grounding of the VLOC Stellar Banner, concluding that the master's decision to deviate from the planned route contributed to the casualty alongside poor bridge resource management (BRM) and the shipping company's unclear guidance.

On 24 February 2020, the Marshall Islands registered vessel, managed by Polaris Shipping, contacted the bottom after departing from Brazil while laden with iron ore. The hull was damaged, resulting in flooding.

After several hours, it was determined that water was flooding the damaged voids and tanks faster



 Image: Republic of the Marshall Islands Maritime Administrator

than the fixed and portable pumps could pump it out. Based on this, the master moved the vessel to shallower water and intentionally grounded the ship on 25 February 2020.

On 12 June 2020, the Stellar Banner was scuttled with the remaining cargo onboard, approximately 55-60nm north east of the entrance to the Baía de São Marcos approach channel. All hazardous materials had been removed before the ship was scuttled.

The investigation concluded that the master's decision to deviate from the planned route during the outbound transit within one nautical mile of a 20m shoal based on limited hydrographic information had contributed to the casualty. It also found the company's navigation watchstanding procedures did not provide clear expectations and guidance regarding the use of BRM by members of the bridge team.

An image from space of the Ever Given stuck in the Suez Canal Image: Sentinel Hub/Wikimedia Commons

Despite the industry's attempts to draw attention to the ongoing crew change crisis, the biggest shipping story of 2021 was undoubtedly the containership Ever Given becoming wedged across the Suez Canal. How can we stop such an incident happening in future? **Captain Hamid Sarwar** offers some instruction on the calculations needed to manoeuvre ships in canals and rivers

EDUCATION AND

n the Suez Canal in 2021, in the wake of the Ever Given incident, it was perhaps prudent to highlight the issues and factors involved in navigating such waterways and to discuss

how the manoeuvrability of a ship was affected while approaching shallower or narrower waters.

Ships are unique as compared with the other transportation industries like rail, road or air transport, in the sense that ships are moving in and are affected by two very different mediums: water and air.

Forces exerted on a ship by both of these fluids (air and water) are dependent on the speed of their movement and the exposed area of the ship. In other words, as a ship is partially submerged in the water and partially exposed to the air, we need to consider both the aerodynamics and hydrodynamics when it comes to discussing a ship's movement.

Aerodynamics and hydrodynamics

Force exerted by the air/water can be calculated by using the formulae, driven from the Kinetic Energy formula KE (Kinetic Energy) = $\frac{1}{2}$ m v², as follows:

 $= \frac{1}{2} \times \rho \times V^2 \times A$

where F = Drag force (Newtons)

- Density of the medium (air/water)(Kg/m³)
- Speed (Velocity) of wind/current (m/Sec)

A = Area of ship exposed to wind/current (m²)

From the above formula, we can appreciate that the Area of the ship exposed to the wind or current (water flow) is a critical value, along with the speed (velocity) of wind/ current, in the calculation of the drag force.

Wind force will depend on the windage area of the hull above the waterline, and superstructure/deckhouses/deck cargoes etc. Current force will depend upon the wetted surface area of the hull underwater: all the areas below the water line.

It is the flow of air/water which exerts a force on the hull and all exposed areas of the ship; the flow can be measured using various instruments and then is available as real time values. These measured values can then be compared with the forecasted values to make a better navigational plan. Even the instruments onboard the ship can give a very good indication of the actual flow.

To get an idea of how much force is exerted on every square metre of the exposed area of the ship, and to compare between the wind force and the water force: Assume a wind/current speed of 2.5m/s (approx. 5 knots and typical values for air and water densities)

V = 2.5 m/s

 ρ = Density of the air = 1.2 kg/m³

 ρ = Density of the water (sea) = 1025 kg/m³

Nautilus member Captain Hamid Sarwar, a 'passionate' shiphandler who has over 15 years' shiphandling training experience Air $F = \frac{1}{2} x \rho x V^2 x A$ $F = \frac{1}{2} x 1.2 x (2.5)^2 x 1$ $F \approx 3.75$ Newtons Water $F = \frac{1}{2} x \rho x V^2 x A$ $F = \frac{1}{2} x 1025 x (2.5)^2 x 1$ $F \approx 3200$ Newtons

If the wind speed reaches 40 knots (20 m/s) then the force exerted will be:

Air $F = \frac{1}{2} \times \rho \times V^2 \times A$ $F = \frac{1}{2} \times 1.2 \times (20)^2 \times 1$ $F \approx 240$ Newtons

From this comparison it can easily be seen that water force is much greater than the air force due to the difference in the densities of the two mediums. Wind speed of about 30 knots (15m/s) exerts about the same pressure as 1 knot (0.5 m/s) of current.

A moving ship displaces the water equal to its underwater (submerged) volume, which in turns flows in all the different directions available, including flowing to the sides of the ship, providing the additional flow over the rudder and increased rudder efficiency but also creating a pressure force along the sides of the ship. So, because of the flow of water, a moving ship (let's say at 5 knots) can keep steerage for quite some distance even when the engine/propellers are stopped just by using the flow of water over the rudder, because of the forward motion of the ship. Distance travelled does of course depend on other factors e.g. propeller type, loaded/ballast condition and directional stability of the ship.

Where a ship is moving in shallow/confined waters, the water displaced may have very limited areas to go, and hence an increased flow may be experienced along the sides of the ship. This increased flow/velocity is the cause of three phenomena: 'bank effect', 'interaction' and 'squat'. The additional force exerted on the hull of the ship is the cause of reduced manoeuvrability of the ship in shallow/confined waters and has the potential to cause serious difficulties in steerage and coursekeeping ability of the ship.

Mariners have experienced the effects of passing close to fixed or floating objects, and there has been guidance provided by different industry bodies on this subject area. Speed limits imposed within the approaches or passing a terminal are made for this very reason. Waterways like canals, rivers and dredged channels in the approaches to a harbour, with shallow waters around, present increased risk.

Focus on the Suez Canal

The blockage factor is the proportion of a midship's section of a ship / cross sectional area of the channel, river or canal. As we can see from fig. 1 (overleaf), a ship with similar dimensions can exhibit significant \rightarrow



Fig. 1: a ship with approximately 400m length, 60m beam and 16m draught in a section of the Suez Canal

blockage factor. This would mean that there would be a very limited space either side between the ship and the edge of the dredged channel for the flow of the displaced water. In fact, considering the dimensions of the dredged channel, it would not be much more than about 40m either side.

Water displaced by the above-mentioned ship: Vol = 400 x 60 x 16 = 384000 m³

Assuming half of the water is moving ahead of the ship as bow wave and the other half is flowing either side of the ship i.e. 96000 m³ flowing either side of the ship, and also assuming a ship's speed of 13 knots, OR 13x1852=24076m/hour, which equates to about 401m/ minute.

In other words, a 400m ship will travel its own length in about one minute. That implies a flow rate of 96000 m³/minute OR 1600 m³/sec

Focusing on the flow of water near the after end of the ship (i.e. rudder position) using the Flow rate formula O = Av, where:

- = refers to the liquid flow rate measured as 0 m³/sec - (1600 m³/sec)
- = refers to the area of the channel in Α m^2 - (Dredged Area 25x40 = 1000m²)
- = refers to the velocity of the liquid in m/s v
- = 1600/1000 = 1.6m/sec OR 5760m/hour, V which equates to about 3.1 knots

Going back to our hydrodynamics formula to work out the force exerted on every square metre:

Water

 $F = \frac{1}{2} \times \rho \times V^2 \times A$ F = ½ x 1025 x (1.6)² x 1 F ≈ 1312 Newtons

If the ship stems that flow precisely and manages to stay in the exact centre of the channel, then this flow does not cause any concern, but if the ship moves to one side of the channel or creates an angle with that flow (current) then there is an imbalance created which would result in an increased turning radius or reduced rudder efficiency.

That imbalance or angle can be created by the wind, as with the pivot point being forward, the ship would have a tendency to head into the wind or change course where the rudder was applied, and a little turning moment induced.



 Fig. 2: a ship with approximately 400m length, 60m beam and 16m draught in this section of the Suez Canal and at an angle to the channel creating an imbalance to the flow of water

Conclusion

Increased flow of water around the hull of a ship can exert a significant force, and in turn affect the manoeuvrability of the ship. Turning circle, steerage and course keeping are the factors most affected. It can then become increasingly difficult to maintain a steady course as the ship experiences additional turning movements due to the flow of water and continuation of the imbalance between the port and starboard sides of the ship. This increased water flow is experienced whenever a ship moves from deeper and relatively open waters to confined waters.

In the above scenario, squat and its associated effects on manoeuvrability have not been considered, but we should note that a ship of similar dimensions and moving at similar speed in such waterways can easily experience a couple of metres of additional sinkage (squat), thus increasing the displaced water and the flow of water at either side. Squat can also reduce the steerage as the pivot point of the ship is changed.

Only by gaining a better understanding of all these factors and phenomena, to appreciate their effects on manoeuvrability of ships, can we be confident that never again will an incident of this type happen. 🕕

Is augmented reality the future of training and work?

As technology seeks to transform the ways we work, there must be equal access to training and education for all. The ETF is collaborating with European institutions on a just transition, writes Estelle Brentnall

he European Transport Workers' Federation (ETF) organised a webinar in November on remote support, maintenance and skills with augmented reality. with the support of the Rotterdambased STC Group, an educational and research institution for the shipping, logistics, transport and process industries.

It was an opportunity to discuss the future of work in our waterborne transport sectors.

We were shown a live demonstration on how remote interventions on ships can be quickly carried out with augmented reality assistance.

We started an honest dialogue with our social partners in the waterborne transport sectors and the European Commission on the increased use of modern techniques based on augmented reality for a variety of tasks, and

whether workers are put at their heart, also within the context of the advent of so-called 'green' technologies.

We were shown by the European Commission a new initiative to support the quality, transparency and take-up of micro-credentials across the EU. It aims to:

 develop European standards which address requirements for quality and transparency

· explore the inclusion of microcredentials in qualifications frameworks



The future of work? Image: Getty Images

 make it easier for individuals to store and showcase to employers acquired microcredentials through Europass and its Digital Credentials

With long-term implications, our general 'take aways' from that webinar can be summed-up as follows:

 importance of reorienting education and training, and strengthening VET systems to ensure the rapid acquisition of the necessary skills

 importance of supporting collective bargaining and social dialogue to anticipate and adapt skills and develop on-the-job training. This goes hand in hand with securing for all the provisions of, and participation in, training



Estelle Brentnall, European Transport Workers' Federation Image: Diego Ravier / Hans Lucas

 importance of encouraging interaction between education institutions and companies, and setting up homogeneous systems of evaluation and validation of non-formal learning

As trade unions, beyond training, our crucial ask to European institutions and member states is to keep a human-centred approach and invest at EU and national levels to accompany the transition, in a just and inclusive way.

This investment must directly benefit workers, and not only research and innovation. Trade unions need a much greater role in designing and delivering a just transition. 🚯

For further information: A European approach to micro-credentials: bit.lv/3Ft7TWY

Presentations made during the webinar can be obtained by writing to: e.brentnall@etf-europe.org

Estelle Brentnall is head of maritime at the ETF. Previously she worked for the International Transport Workers' Federation (ITF) and has been responsible for the food, drink and tobacco sectors of the European Federation of Agriculture, Food and Tourism workers. She studied maritime law (LLM) at the universities of Southampton, UK and Nantes. France.

THE BLAME GAME



A case that dragged on for 10 years shows it is in the owner's best interests to blame the master and crew for accidents after vessel departure, maritime consultant **Ulrich Jurgens** writes

he recent UK Supreme Court (UKSC) decision on the CMA CGM Libra case has generated huge internet traffic – a likely indicator of the judgment's importance to the shipping industry.

The judgment confirmed rulings by the UK Court of Appeal and the Admiralty Court, and as a UKSC decision, it cannot be appealed. The ruling has statutory character, and even if the UK parliament wanted to change the law, it could not, as it involves the Hague Rules, which are beyond its reach.

The Hague Rules are an international convention fixing certain uniform rules of law relating to bills of lading. Depending on the circumstances, those rules allocate, restrict or exclude liability of carrier and ship.

The Hague Rules are from 1924 and an amended version (the Hague-Visby Rules) has existed since 1968. The seaworthiness obligation is in the same terms in both instruments.

According to the UKSC, the appeal 'concerns the scope of a shipowner's obligation to exercise due diligence to make a vessel seaworthy' under those rules.

The Hague Rules, however, talk about the 'carrier', which may not be the same person or entity as the shipowner, so we should be aware that any liability restriction under the Hague Rules may not apply to an owner. In practice, though, shipowners commonly incorporate the liability terms of the Hague Rules through a 'Clause Paramount' into their charter parties, and 'carrier' can be understood to include 'owner'.

The owner has its P&I Club and lawyers for liability cover and criminal defence. But those available funds and expertise will only benefit the master when it helps the owner

The decision clearly demarcates the liability for loss of either the owner or cargo interests (usually the charterer). The judgment's impact will extend far beyond the borders of the UK, given that English law is frequently chosen to settle international cargo and ship damage claims.

In assessing their personal risk, the master of a cargo-carrying vessel can therefore assume that the owner, the ship and the master's own role will be affected by the Hague Rules when damage to cargo or ship occurs.

FACTS OF THE CASE

The facts of the CMA CGM Libra case are rather simple. In brief and very broad terms, a container vessel is deliberately navigated off its passage plan course and grounds on an uncharted shoal. A note on the paper chart referred to a preliminary Notice to Mariners without saying what this contained. The Admiralty Court at first instance therefore found that when leaving the port of Xiamen, 'a source of danger was not clearly marked as it ought to have been'. The salvage cost resulting from the grounding was some US\$9.5 million.

The vessel flew and still flies the Maltese flag. A maritime incident investigation report about the grounding cannot be found on the Maltese Administration's website, and an email request for a copy of the report was not answered.

SEAWORTHINESS

Seaworthiness of ships is a term which trips easily off the tongue in shipping and seafaring circles but may mean different things to different people and will also depend on the relevant context.

In the UK, the duty to make the ship seaworthy is also addressed in section 42 of the UK Merchant Shipping Act 1995 (MSA 95) but it is not quite the same as the obligation under the Hague Rules.

First, the MSA 95 requirement applies to UK ships only. Secondly, both owner and master have the implied obligation that in every contract of employment they 'shall use all reasonable means to ensure the



seaworthiness of the ship for the voyage at the time when the voyage commences and to keep the ship in a seaworthy condition for the voyage during the voyage'. Thirdly, for example, a locally required document which may make the ship unseaworthy under the Hague Rules may not have any effect on the seaworthiness requirement of the MSA 95.

The UKSC only dealt with seaworthiness for the Maltese-flagged CMA CGM Libra under the Hague Rules.

RESPONSIBILITY

Those Rules require in Art. 3 that 'the carrier shall be bound before and at the beginning of the voyage to exercise due diligence to ... make the ship seaworthy'. According to the UKSC, therefore, 'the carrier will be liable for a negligent act of navigation or management which causes the vessel to become unseaworthy before and at the beginning of the voyage, but not so liable if the same act does so after the voyage has commenced'.

The UKSC confirmed that the Hague Rules import different liabilities at different times (calling it 'temporality'). However, it was also stressed that, regardless of who may have carried out a task before the vessel sets sail, it will be the owner who will be liable for the lack of due diligence. This, by default, excludes the master, but the master's position is mentioned in the next Article.

Article 4 covers events potentially occurring after departure when several liability exemptions apply to owner and ship. For \bullet example, neither owner nor ship are

Landmark Libra ruling finds negligent passage planning can render a ship unseaworthy

The UK Supreme Court ruled that negligent passage planning by the master and officers can render a ship unseaworthy.

The case had gone to court because of a dispute between the owners and some of the cargo interests over the US\$9.5m salvage costs. The cargo interests claimed they were not responsible because the owners had failed to exercise due diligence to ensure the ship was seaworthy, while the owners said they were not liable because Hague-Visby rules exempt them from the consequences of negligent navigational decisions by seafarers.

The owners also contended that because the ship was equipped with everything necessary for safe navigation - including a competent crew – the crew's failure to safely navigate the vessel did not amount to a lack of due diligence by the carrier.

The accident occurred after the Maltese-flagged ship left a buoyed fairway soon after departing for Hong Kong. The 131,332gt vessel ran aground on a shallow area which although uncharted – had been the subject of recent notices to mariners warning that many of the depths shown on the chart outside the fairway were unreliable and that the waters were shallower than noted on the charts.

The Supreme Court upheld that the defects in the vessel's passage plan and the relevant working chart had rendered the vessel unseaworthy. Judges noted that while the passage plan had not referred to the ship leaving the fairway, it also made no reference to the warnings concerning depths being less than shown on charts, and no areas in the plan had been marked as 'no go' areas.

The 47-page judgment held that the passage plan had not been prepared in a 'prudent' way and it was defective because 'a source of danger when leaving Xiamen had not been clearly marked as it ought to have been'. The master's decision to leave the fairway had been negligent, the judges agreed, but it was unlikely that he would have made that decision if there had been a warning on the chart.

responsible for loss or damage arising or resulting from an act of the master, or the servants of the owner, in the navigation or management of the ship.

PRESSURE

On the CMA CGM Libra, the master and his officers (the 'servants') made two errors. Firstly, they did not follow the IMO Guidelines for Voyage Planning. According to the Admiralty Court it would have been required that 'the presence of numerous depths less than those charted outside the fairway to be noted on the chart'. Thus, the passage plan which had to be prepared before the vessel sailed was defective.

The second error was made when the ship left the planned route and navigated outside the fairway. Thereby it entered a danger area of uncharted wrecks and isolated shoals, and then grounded.

Whereas the owner was found to be liable for the first error, owners could have in principle excluded liability for the second error. However, the first breach was causative for the second, as neither the passage plan nor the chart contained the necessary warning. Consequently, the grounding 'was caused by the actionable fault of the owners', as the Admiralty Court put it.

INTERESTS

What does this mean for master and crew? To find out I will first look at the interests of an owner before addressing the same for master and crew.

An owner (or their P&I Club) will usually and understandably do everything possible to avoid being held accountable and liable. It follows that it is potentially of great benefit to an owner when in case of cargo loss or damage, the error cannot be traced to an event before the voyage began. Rather, it is in the owner's interest to prove the master or crew made an

LEGAL SUPPORT FROM YOUR UNION

Reliable support for masters to navigate the undetected administrative and legal shoals following an incident is vital. The owner has its P&I Club and lawyers for liability cover and criminal defence. But those available funds and expertise will only benefit the master when it helps the owner.

Unless independently wealthy, or protected by an organisation, a master has commonly no assets other than savings and any property. With possible solicitor's fees of over £500 per hour (according to current UK government guidelines), costs for barrister and court plus a potential loss of income, the master's assets may evaporate very fast.

It does not seem sensible to ask whether union membership is affordable; the question appears to be whether it is affordable not to be a union member

error in navigation or management of the ship after departure. Under civil law the owner would then not be liable, and neither would the master or crew.

Particularly for the master, though, such relief can come at a heavy price, because the owner's (or P&I Club's) investigation may be the first step that pushes the master into the realm of criminal liability.

If, for example, the CMA CGM Libra grounding were to happen on a UK-flagged ship, the Merchant Shipping (Safety of Navigation) Regulations 2020 would apply. These make it an offence by the master, punishable on summary conviction or indictment, not to comply with the voyage planning requirements of SOLAS. It is also an offence under the Maltese Merchant Shipping (Safety Convention) Rules.

CRIMINALS

SOLAS mandates that the voyage plan identify a route which ensures sufficient sea room for the safe passage of the ship. By default, a grounding proves the opposite.

The groundwork for criminal proceedings against the master may be laid when the collection of evidence begins immediately after the incident. At that moment, a master appears to personally be at their most vulnerable and might also not be clear thinking. Confronted with, for example, representatives of owner or manager, surveyors, inspectors, investigators, P&I Club, lawyers, the police and the media, the master may make statements which they later regret.

In the UK, criminal liability for the owner is different. Under the Safety of Navigation Regulations, only the master will have committed an offence and may face fines or imprisonment. The owner, though, may have helped that to happen by attempting to push the responsibility for the incident onto the master for errors in navigation and management of the ship after departure.

Co-operation and trust between owner and master, core components of any master's employment contract, could decline or disappear. Being sacked by the owner is, therefore, an additional realistic consequence for the master and affected officers.

Whereas a charterer will only want to prove that the reason for the loss can be found before departure, irrespective of who could be blamed for it, the owner will want to find the master at fault after departure.

Nautilus Federation backs Australian unions in Svitzer negotiation

The Nautilus Federation is assisting two affiliated Australian unions after Svitzer threatened to terminate long-standing agreements that protect the terms and conditions of maritime professionals.

Since 2019 the Australian Maritime Officers' Union (AMOU) and the Australian Institute of Marine and Power Engineers (AIMPE) have been engaging with Svitzer, a subsidiary of A.P. Møller-Mærsk, to renew the established enterprise agreement.

The parties almost concluded negotiations prior to the pandemic. However, Svitzer has since threatened to terminate a long-standing enterprise agreement and port operating procedures, claiming the deal is unworkable due to damage to the business during the pandemic.

arrangements would harm important terms and conditions for AMOU/AIMPE members, and substantially reduce pay. 'We are concerned to hear that Svitzer has taken an aggressive stance,' a letter sent to Svitzer and Maersk by affiliates of the Nautilus Federation said. 'We do not believe that such threats are beneficial for global industrial relations between



Terminating these longstanding

Nautilus supports UKHO fair pay campaign

Prospect members have shared their experiences on the impact of austerity

of members at UKHO are dependent on a second income stream

of members feel that pay austerity has impacted

work morale

feel austerity has impacted the business as a whole

Nautilus International is supporting a fair pay campaign which seeks a pay settlement to address the cost-of-living crisis affecting civil servants at the UK Hydrographic Office (UKHO).

The campaign is organised by Prospect, the trade union for engineers, managers, scientists and other specialists in both the public and private sectors.

Prospect deputy general secretary Garry Graham has written a letter to UK defence minister Baroness Goldie highlighting the good work of civil servants at UKHO and explaining that poor pay conditions are putting this at risk.

The letter states that a decade of austerity has cut the pay of civil servants in real terms, as the cost of living rises. 'Any continuation of pay austerity will, we strongly believe, lead to haemorrhaging of staff from our departments as workers struggle to pay the bills and seek



Svitzer, Maersk, and unions with which the companies generally have good working relationships."

AIMPE federal secretary Martin Byrne said: 'Svitzer has taken a strategy in negotiations which is based on legalistic advice and ignores the practical operational requirements of the towage operations around Australia. Svitzer has tried to exclude workplace delegates from negotiations and has repeatedly threatened the termination of the current collective agreement.

AMOU executive officer Mark Davis said: 'We hope that with the encouragement of Nautilus Federation affiliates, the company will resume negotiations on a constructive basis and achieve an agreement acceptable to both the company and to the maritime professionals working there."

alternative employment. Put simply, many of our members cannot afford to continue working within the civil service, should pay austerity continue.'

Prospect found that 80% of members at UKHO feel that their pay does not reflect their skills, experience, and responsibilities, with one member feeling like the 'government does not appreciate how UKHO provide an essential service'.

Prospect is urging the government to provide a pay remit and the resources to cover the cost of living increases and revise the pay structure. This aims to help relieve the hardship of employees and to retain and attract people with skills and experience to UKHO.

'If the UK is to continue supporting maritime trade, the Royal Navy and Safety of Life at Sea, it is essential that our excellent workers are fairly paid, and that UKHO is able to attract people with the skills and expertise required.'



IMPROVING YOUR 'BILL OF RIGHTS'

Nautilus director of legal services Charles Boyle, a recognised expert in the Maritime Labour Convention, explains proposed amendments to the document

he Maritime Labour Convention, 2006 (MLC) - often referred to as the 'Seafarers' Bill of Rights' – covers many aspects of working and living conditions onboard, such as: wages, hours of work and rest, paid annual leave, repatriation, crewing levels, accommodation, food, medical care, welfare, training, and recruitment and placement. Currently ratified by 98 states representing over 91% of global shipping, it lays down the basic rights to which seafarers are entitled.

AMENDMENTS

Unfortunately, the Covid-19 pandemic has seen some

actors disregarding their obligations under the MLC - ranging from governments denying shore leave and transit they are legally bound to facilitate, to shipowners failing to properly repatriate seafarers. There have even been cases of shipowners trying to change the repatriation destination in seafarers' employment agreements (SEAs), to avoid bearing costs arising from hotel quarantine.

As a living document, the Convention itself aspires to continuous improvement. For an international instrument it contains a relatively straightforward amendment procedure, so that it can be updated to ensure that it is still

Government and shipowners said that they were committed to maintain and strengthen protection for seafarers. At the upcoming negotiations in May, we will see how far this goodwill extends

providing effective protection for seafarers and is kept up to date with developments within the industry.

The next meeting of the Special Tripartite Committee (STC) - consisting of representatives for seafarers, shipowners and government - will take place in May 2022. The seafarers' group is currently chaired by Nautilus International general secretary Mark Dickinson, and has put forward the following amendments for consideration by the committee:

- Recruitment and placement services to issue adequate information to seafarers about their system of protection to cover shipowner liabilities, including details of how to make a claim
- Where the shipowner is not the employer of the seafarer, the provision of a contractual indemnity to the seafarer through the SEA, against monetary loss arising from the employer's failure to meet its obligations, so

Charles Boyle, director of legal services

or contradictions

- making the shipowner liable in contract law (not just flag state statutory laws)
- Shipowners to repatriate seafarers to their home address or other agreed address (not just to a national airport) and to be responsible for: pay, allowances, food, and accommodation until repatriated;
- necessary medical treatment until the seafarers are medically fit to travel
- The MLC financial security provision be increased to cover eight months' wages (currently it covers four months' wages)
- A requirement that food be 'healthy' and that inspections ensure that it is of adequate quantity and nutritional value; that potable water should be provided 'free of charge'
- Seafarers to be issued with all necessary 'appropriately fitting' Personal Protective Equipment (PPE)
- Seafarers to be provided with access to ship to shore communications including internet facilities 'free of charge' and port states to ensure provision is made available for free wi-fi for seafarers within its ports and associated anchorages
- Together, these amendments will represent a serious step towards improving the wellbeing of seafarers. and tackle some of the deficiencies exposed during the pandemic – as well as longstanding issues like abandonment and poor access to medical care which have been exacerbated by Covid.

THE NEGOTIATIONS

- I attended the 'Future Proofing the Maritime Labour Convention' event held by Seafarers' Rights International (SRI) during London International Shipping Week 2021. I also represented Nautilus at the International Labour Organization's second global forum on the MLC. At both events, government and shipowners said that they were committed to maintain and strengthen protection for seafarers.
- Governments have also put forward their own amendments - one on mandatory reporting of seafarer fatalities at sea, the other clarifying the maximum duration of service periods onboard.
- At the upcoming negotiations in May, we will see how far this goodwill extends.
- Nautilus is looking forward to what will prove to be a very challenging meeting of the STC. This is the most extensive list of potential amendments put forward to date. Not only will the substance of the proposals be debated but, even when agreed, the drafting of the changes will need to be meticulous, so that they fit well within the Convention without creating ambiguity
- However, Nautilus is optimistic about the prospect of a positive outcome, and we will be pushing hard for changes to remedy the Convention's shortcomings, which have been exposed by the pandemic.



Read the **full** list of proposed amendments to the Maritime Labour Convention at bit.ly/MLC_2022

WHEN SEA SAFETY **BECOMES UNSAFE**

Shipmaster Nic Gardner is no stranger to the demands of safety paperwork onboard, and for her BSc dissertation she investigated the concept of 'safety clutter'. She explains what this means and how her research has revealed ways to tackle it

> n 2018, an article in the journal Policy and Practice in Health and Safety labelled a concept seafarers are intimately familiar with: safety clutter. This is 'the accumulation of safety procedures, documents, roles and activities that are performed in the name of safety, but do not contribute to the safety of operations'.

> Safety clutter is inexorably increasing at sea. Accidents, audits, and regulations increase it, and once there, it's hard to get rid of.

There is a body of work showing that excessive paperwork normalises falsification, and increases fatigue and human error – and worryingly, increased paperwork also gives more opportunities for criminalisation. In a 2019 seafarer survey by the Nautilus Federation, 46% of respondents believed incorrect paperwork was the most likely cause of seafarer criminalisation - and as safety clutter increases, this will only get worse.

THE NATURE OF SAFETY CLUTTER AT SEA

For my recent undergraduate dissertation, I surveyed seafarers looking at the causes and impact of safety clutter in the Merchant Navy. While only a small survey, the results suggest that safety clutter does exist at sea, and some sources can be identified.

Not all paperwork and procedures are bad, of course, and some were found in the survey to be useful, including:

'If we're going to be drowned in paperwork in the name of safety, there should at least be an offset that increases the quality of mental health'

- ship familiarisation (94.6% in favour)
- risk assessments involving the people doing the job (87.5%)
- standard operating procedures (83.9%)
- informal risk assessments (82.1%)
- onboard incident investigations (78.6%)

However, respondents objected to firms providing safety paperwork without adequate support and resources, and many identified specific sources of safety clutter, including unrealistic procedures, duplication, safety bonuses that encourage non-reporting, and non-ship-specific maintenance plans.

EFFECTS OF SAFETY CLUTTER AT SEA

Most survey respondents reported spending a lot of time on paperwork, and senior

compliance, and resistance to change. If this person could overhaul the system, they would reduce senior officers' paperwork, so 'the captain could work more with the chief engineer and the chief officer more with the second engineer on safety items', using the time to improve safety communication and cooperation

They noted that, during a recent refit, the safety officer spent too much time on a computer. In response, they reduced the safety officer's paperwork, allowing them to spend more time with the workers. That led to measurable safety improvements, so they permanently removed the safety officer from 'things they're wasting their time on that an office should do'.

AVOIDING SAFETY CLUTTER AT SEA

Poor implementation can ruin even useful paperwork and procedures, but there are some simple steps companies can take to avoid turning useful systems into safety clutter:

- Excessive safety paperwork onboard ship is creating dangerous 'safety clutter

officers were the least likely to feel they had

One response summed up many of the

opinions expressed in the survey: 'There are

practical limits to the amount of paperwork

that can be done ... procedures [should] truly

add to the safety of the ship, not just make it

and frustration with companies and systems,

appear more safe.' Others expressed cynicism

including suggestions that companies 'resolve

safety issues in days or weeks instead of 6-12

'If we're going to be drowned in paperwork

'How can we be more safe when we have

so much work to do [and] are more fatigued

One safety manager identified barriers to

paperwork reduction, including culture,

Several extended responses identified

negative effects of paperwork, including

mental health, workload, reporting, and

in the name of safety, there should at least

be an offset that increases the quality of

months' and 'stop covering up'.

pressure to falsify records:

and distracted by paperwork?'

REDUCING SAFETY

CLUTTER ONBOARD

mental health'.

the freedom to do things they considered

important to safety.

While some safety paperwork and procedures are essential, these responses should give companies food for thought, and colleagues at sea could also think about how they can reduce safety clutter.



FURTHER READING

Nautilus Federation (2019). An investigation into criminalisation of maritime professionals. Available to Nautilus members at www.nautilusint.org

A longer bibliography is included in Nic Gardner's BSc dissertation for the University of Sunderland.

- involve seafarers in developing onboard systems • ensure procedures are realistic and ship-specific avoid duplication
- provide prompt and meaningful responses to reports • provide resources, including equipment, training, and appropriate crew levels
- ensure safety-related quotas or rewards incentivise desired behaviours
- encourage a paperwork-reduction strategy

AJ Rae et al (2018). Safety clutter: the accumulation and persistence of 'safety' work that does not contribute to operational safety. Policy and Practice in Health and Safety, 16(2)

A Cox et al (2008). What works in delivering improved health and safety outcomes: a review of the existing evidence. HSE Books

B Vandeskog (2015). The Legitimacy of Safety Management Systems in the Minds of Norwegian Seafarers. TransNav, the International Journal on Marine Navigation and Safety of Sea Transportation, 9(1)

NUCLEAR POWER: A TRIED AND TESTED GREEN TECHNOLOGY nautilusfederation.org

Russian icebreakers

among the very few

like this one are

nuclear-powered

surface vessels in

use today

vessels

As the maritime industry moves to decarbonise, safety regulations are lagging behind innovations, and seafarers could be at risk from accidents relating to fuels such as hydrogen and ammonia. But there is a low-carbon fuel with decades of use and safety regulations already in place. **Odd Rune Malterud** of the Norwegian Union of Marine Engineers makes the case for nuclear

> ew energy sources for ship propulsion, manoeuvring and operation are currently in the spotlight, along with innovative engine technologies to improve the protection of the marine environment.

Environmental regulations have been developed, but 'human element' safety aspects have been overlooked. The regulatory regime must fully take into consideration the safety aspects for maritime workers and the practical viability of any new propulsion technology for shipboard working and living.

Technological and operational changes to reduce vessel emissions will affect the health and safety of engineers, electricians, and their shipmates - who will face challenges such as high voltages, toxicity, corrosiveness, and fire and explosion hazards.

Health and safety must be central to any proposals for reducing emissions from shipping, not an afterthought. Therefore, engineers must be directly involved in creating and enforcing safety standards to ensure that all seafarers have the right competence and opportunities to serve onboard any type of ship without being criminalised and return home safely.

POOR UNDERSTANDING OF **GREEN MARINE TECH**

For a chief engineer who has been responsible for the MARPOL regulations for many decades, it is difficult to understand why politicians only focus on carbon reduction without thinking of the consequences of introducing fuels such as ammonia, which could put both crew and environment at risk by the use of toxic additives, corrosive liquids, very high pressure, and temperatures ranging from the bottom to the top of the scale

To gain credibility, politicians should at least understand the context that a ship operates in the world's largest cooling medium – and that issues such as energy density, storage, weight, flashpoint and infrastructure including bunkering are crucial for safe operation.

They should also appreciate the critical difference between developing new technology in a laboratory and its use at sea. Issues of temperature, humidity and vibration combine with the need for crew members to have adequate competence to operate the technology safely.

READY-MADE SAFETY REGULATIONS FOR NUCLEAR

There are no maritime safety regulations in place for the implementation of lithium batteries, hydrogen or ammonia, to name just a few potential fuel sources. However, for nuclear powered merchant vessels, the International Maritime Organization (IMO) has had dedicated regulations available since 1962 in Chapter VIII of the Convention on Safety of Life at Sea (SOLAS).

MARITIME NUCLEAR POWER IN ACTION

Energy from nuclear fission is already used in vessels. Such vessels are powered by a steam turbine where the boiler is heated with energy from a small reactor. The first submarine of this type, the USS Nautilus, was completed in September 1954. A few hundred such submarines were eventually built for the US, Russian, British and French navies. These boats are often equipped with long-range missiles.

The USA and Russia also have naval vessels (surface vessels) powered by nuclear energy. The first nuclearpowered surface ship was the Soviet icebreaker Lenin, which was launched in December 1957, and Russian nuclear icebreakers are still in use.

Around 1960, a few nuclear-powered cargo ships were built, but none of these original vessels are in operation any more. However, a newer Russian nuclear cargoship has been in service since 1988: the Sevmorput.

This vessel is powered by a single KLT-40 nuclear fission reactor with a thermal output of 135 megawatts. The reactor core contains 150.7 kilograms (332 lb) of 30%, 40%, or 90% enriched uranium in uranium-zirconium alloy and has reportedly required refuelling only twice. The nuclear power plant onboard the vessel produces 215 tons of steam per hour at a pressure level of 40 atm (4,100 kPa) and temperature of 290C (554F). In an emergency, steam can also be produced by a diesel-powered boiler (50 t/h, 2,450 kPa, 360C).

MOLTEN SALT REACTOR

There are also alternatives to the use of uranium as a nuclear fuel. A molten salt reactor (MSR) is a class of nuclear fission reactor in which the primary nuclear reactor coolant and/or the fuel is a molten salt mixture.

The low pressure and low temperature reactor is based on a technology of more than 50 years' standing that provides a high degree of nuclear power safety to produce clean electrical energy for propulsion and manoeuvring.

The nuclear fuel used - thorium - is much less radioactive than uranium fuel and accidents such as nuclear meltdown are almost impossible.

NEXT STEPS FOR NUCLEAR

According to the United Nations Intergovernmental Panel on Climate Change (IPCC), nuclear power is one of the few energy sources that can contribute significantly to global electricity production without the accompanying emissions of CO2 and other greenhouse gases. This is a message we should take onboard in shipping.

Given the nuclear accidents of the past such as Three Mile Island and Chernobyl, politicians and the general public can often be understandably wary of nuclear power. But the maritime sector has a strong safety record and good regulations in place for its use on

In contrast, some of the new low-carbon fuels being proposed for shipping are unproven and carry a risk of serious accidents at least as high as nuclear, if not higher

It's time for our industry to look again at nuclear as part of our long-overdue efforts to cut greenhouse gas emissions, for the safety of our seafarers.



Concerns are sometimes expressed about the weight of a molten salt reactor onboard ship, but even if surrounded by a 1m-thick concrete shell, on a 68,220-dwt tanker the weight and size will only create an additional 6,500 dwt - not to mention the fact that the ship can do without HFO storage tanks



COUNTING THE COST OF PIRACY

Piracy takes a physical and psychological toll on seafarers in high-risk areas, and causes economic difficulties for coastal states and shipping companies. **Saffiyah Khalique** reports on the latest industry figures

n the last year, there has been a robust effort on a global scale to tackle the effects of piracy on the maritime industry, particularly in the Gulf of Guinea, and governments in piracy hotspots have amped up their anti-piracy initiatives. For example, Nigeria launched its Deep Blue Project to physically crackdown on piracy, as well as tackling the issue from a legal perspective through the Suppression of Piracy and other Maritime Offences (SPOMO) Act.

Shipping organisations such as BIMCO and Danish Shipping have taken an international lead on calling for the industry to do more to address piracy, with their Gulf of Guinea Declaration signed by organisations from across the industry including maritime charities, shipping companies and trade unions.

Nautilus International has not been idle either. The

Netherlands branch of the Union has been lobbying the Dutch government to allow protection onboard for seafarers for over a decade. In 2016, Nautilus joined with the Royal Association of Dutch Shipowners (KVNR) and 24 other maritime organisations in an open letter to the Dutch Parliament warning about the potential consequences of not allowing private security. This included putting seafarers at an increased risk of attacks by pirates and undermining the Dutch Flag.

As of January 2022, the Dutch Parliament has approved a law that allows them onboard. Now shipowners can legally hire armed security details, and seafarers will no longer have to rely only on distant naval vessels for protection. Nautilus, KVNR and the Dutch Organisation for Captains (NVKK) were involved in this legislative process beginning in 2018.

There is a cause for cautious celebration, with reported piracy and armed robbery incidents hitting the lowest figures since 1994, according the to the ICC International Maritime Bureau

PROGRESS SHOULD NOT BE MET WITH COMPLACENCY

Thanks to these efforts there is a cause for cautious celebration, with reported piracy and armed robbery incidents hitting the lowest figures since 1994, according the to the ICC International Maritime Bureau (ICC IMB). The organisation's annual report for 2021 shows an overall decline in monthly incidents from a high of 16 in January to 11 in December.

The IMB notes the progress made off the coast of Somalia and in the Gulf of Aden, with only one incident reported in 2021. International navies patrolling the area have coordinated and liaised with merchant and fishing fleets in the region to help identify and apprehend pirate groups.

However, the IMB warns that Somali pirates still retain the capability and capacity to carry out attacks, stating that vessels should not be complacent. It also recommends vessels be cautious to not mistake fishermen for pirates in some heavy fishing areas.

Further progress has been noted in the Gulf of Guinea with an overall reduction in reported incidents from 81 in 2020 to 34 in 2021.



The IMB attributes these changes to the increased presence of international naval vessels and cooperation with regional authorities, including the robust actions of the Royal Danish Navy in neutralising a suspected pirate group in late November

However, the IMB warns that despite the decrease in reports and kidnappings, the Gulf of Guinea still remains a high risk area for seafarers, as the region continues to account for all kidnapping incidents globally, with 57 crew being taken in seven separate cases. The organisation describes the pirates operating in the Gulf of Guinea states, Nigeria in particular, as well-armed, violent, and with a history of attacking crews far from the coast. Vessels are advised to take extra precautions when operating these waters.

SEAFARERS STILL AT RISK

The maritime community must remain vigilant despite these positive signs. The IMB reports that Southeast Asia now has the highest rates of piracy and armed robbery, with 56 incidents across the year. There were 35 reported attacks in the Singapore Straits, compared with 23 in 2020. A general warning was issued in December 2019 regarding the Straits, and this remains valid today. The IMB notes that many of the attacks in this area occur during the night. They are also on the increase, with the attacks apparently carried out by one or more groups targeting passing ships, including tugs or barges, to rob them. The IMB advises vessels operating in this area to remain vigilant and to maintain adequate anti-piracy/ robbery watches and measures; from reported incidents it appears that the pirates will abort an attempted attack once they are spotted, the alarm raised, and the authorities notified.

Overall incidents of piracy and armed robbery remained steady towards the end of 2021, with 11 in October, 10 in November and 11 in December. However, they are lower than the January figures. Members will also be pleased to hear that there has been a decrease in the use of guns and knives, dropping from 69 and 46 incidents in 2020 to 34 and 38 respectively. There has also been a decrease in the use of violence against seafarers,



Read the full ICC IMB Piracy report at bit.ly/imb-piracyreport-2021



with rates of assault, hostage-taking, injuries and kidnapping all falling. However, there has been a small increase in threats made against seafarers and one death, the first the IMB has reported since 2019.

The IMB warns seafarers to be aware of incidents in other parts of the world. Two containerships were approached and fired upon during their river passages in Ecuador in the last quarter.

THE COST OF PIRACY

In December 2021 Stable Seas, a transnational maritime security research organisation, released a report titled 'Pirates of the Gulf of Guinea: A Cost Analysis for Coastal States', which investigated the economic costs of piracy to the region.

The report looks at the direct and indirect costs of piracy and armed robbery. It found that direct monetary costs of piracy are low in comparison to the high cost of anti-piracy initiatives, increased security measures, indirect financial losses and the psychological toll suffered by seafarers.

Part of the report includes an original survey of more than 120 ship operators and security officers aimed at understanding how increased piracy threats are affecting the business decisions of dozens of companies working in the Gulf of Guinea.

The survey was sent to BIMCO and INTERTANKO, as well as security officials associated with the Marshall Islands Registry. Data was collected anonymously between 1 October and 15 November 2021, receiving 122 responses, mostly from representatives of the companies currently operating in the region. Stable Seas also sought the opinions of those not operating in the area, to gain a better understanding of the extent to which piracy is deterring companies from entering or returning to the Gulf of Guinea.

53% of respondents active in the region reported that piracy and armed robbery have directly caused them to decrease the scale of their activities. Over a third of respondents who were not operating in the region indicated that they would do so if piracy was reduced. Stable Seas notes that whilst these findings cannot be monetised, they do indicate that a sustainable solution to piracy would bring increased shipping volume and the associated economic benefits to coastal states relying on imports.

The report refers to a Nautilus article from 2019, India bans seafarers from Gulf of Guinea, to illustrate the concerns governments outside the Gulf have for their seafarers.

The findings also indicate that seafarers themselves are aware of the risks posed by piracy, and are also aware that they are entitled to specific protections under international law. 51% of survey respondents indicated that they were paying increased labour costs for shipping in the region, while the High-Risk and Extended Risk Areas for the Gulf of Guinea that formalise seafarer rights in these areas are having an increasingly significant impact on shippers attempting to operate there. In particular, the conditions that allow the right of refusal to sail in the International Bargaining Forum (IBF) listed areas and to be repatriated at the company's expense are having an impact (see opposite page – **Know your rights**).

KNOW YOUR RIGHTS

The most recent update to international employment rights for seafarers captured by pirates came into effect on 26 December 2020. The new rights – set out in the 2018 amendments to the ILO Maritime Labour Convention - ensure that a Seafarer Employment Agreement (SEA) will remain in place while a seafarer is held captive by pirates on or off the ship. This still holds even if the seafarer's contract expires or is terminated by the shipowner, ensuring that seafarers will still be paid their full wages whilst in captivity and receive any other entitlements due from the shipowner under the terms of their SEA, collective bargaining agreement or national law of the flag state. These entitlements could include holiday pay and pension contributions.

According to the International Transport Workers' Federation (ITF), seafarers working on vessels that are covered by the International Bargaining Forum (IBF) and Total Crew Cost (TCC) agreements are entitled to be informed at the time of assignment if the vessel is bound for or may enter any Warlike Operations or High-Risk areas, and an up-to-date list of IBF Warlike Operations areas should be kept onboard and made accessible to the crew. Seafarers are also entitled to know if they are entering a Warlike Operations area while at sea.

Entitlements depend on the area entered. If a vessel enters a Warlike Area you:

- have the right not to proceed to such an area and are entitled to repatriation at the employer's cost
- are entitled to double compensation for disability and death
- are entitled to be paid a bonus equal to 100% of the daily basic wage for the duration of the ship's stay – subject to a minimum of five days' pay
- have the right to accept or decline an assignment in a Warlike Area without risking losing employment or suffering any other detrimental effects

There is also employment protection in place if a seafarer becomes a captive because of piracy or hijacking inside or outside the IBF and ITF designated areas. For vessels covered by non-IBF (TCC) agreements, the areas are designated by the ITF.



Incidents of actual and attempted piracy or armed robbery

Incidents of actual and attempted piracy or armed robbery by region January 2017-December 2021

GULF OF GUINEA

2017: **43** 2018: **82** 2019: **61** 2020: **81** 2021: **34**

SINGAPORE STRAITS

2017: **4** 2018: **3** 2019: **12** 2020: **23** 2021: **35**

GULF OF ADEN

2017: **3** 2018: **1** 2019: **0** 2020: **0** 2021: **1**

Incidents of Piracy and Armed Robbery from January 2017-December 2021

2017:	180
2018:	201
2019:	162
2020:	195
2021:	132

Source: The ICC International Maritime Bureau for statistics

SKILLSEA STATE OF PLAY

The EU-funded SkillSea project has now entered its final year, and cooperation between European countries is still going strong - including contributions from the post-Brexit UK. Sarah Robinson reports on the latest updates

Developing training for seafarers using new green marit technology has been an important aspect of the EU-funded SkillSea project

April 2022 nautilusfederation.org

killSea is a four-year project to identify the skills European maritime professionals will need in the years to come.

It kicked off with a report by Norwegian University of Science & Technology and Liverpool John Moores University in the UK, identifying ways in which maritime education and training could be improved.

The research team examined four key trends which are having an increasing influence upon the future skills and competence needs of those working in the shipping industry: sustainable development, collaboration among clusters, digitalisation, and education.

Progress on SkillSea has been covered regularly by the Nautilus Telegraph, and readers can find these articles online at **www.nautilusint.org** using the search term SkillSea. Since the last of these progress reports, further development work has been carried out on a number of initiatives under the SkillSea banner, which we can report on as follows.

SKILLSEA SEMINARS

Four online seminars were organised between December 2021 and February 2022: two focusing on future-proofing skills for maritime professionals and two on green skills. Attendance was strong from maritime education and training institutes, national authorities and students. For those unable to attend, presentation handouts are available on the SkillSea website skillsea. eu. Further seminars are planned in 2022 and will be communicated to interested parties once scheduled.

GREEN SKILLS PACKAGE PILOT

A green skills educational package developed by educational partners across Europe reached pilot stage in 2021 and was taken up by Fleetwood Nautical Campus (Blackpool and the Fylde College) in the UK.

The package uses various formats to help students get to grips with the measures needed to improve energy efficiency and reduce emissions in shipping – with participants attending lectures, discussing podcasts and webinars, and even analysing bunker delivery notes and tank levels to evaluate vessel performance.

Students ranged from new entrants to the industry to an experienced master looking to gain additional knowledge, and the college reported that: 'Across the board the students were thoroughly engaged with the experience and commented on how they enjoyed the variety of tasks."

QUALIFICATION MAPPING TOOLS

One of the remits of SkillSea was to help different maritime education and training (MET) institutions assess the level and scope of their courses and map these against courses offered elsewhere. Three tools have now been launched for this:

- Tool 1: Strategy Direction Location
- Tool 2: Transcript International Transfer
- Tool 3: Strategic Evaluation MET

Further information on all these developments can be found in the regular SkillSea newsletters at bit.ly/skillsea_newsletters

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2022

24 Professional and technical



the global SEAFARER

International regulatory and guidance update

Enclosed spaces

At a recent Nautilus Professional and Technical Forum, members shared their expertise on preventing harm from entering enclosed spaces onboard ship. Their contributions are being fed into ongoing work on enclosed spaces, including that of the Human Element Industry Group (HEIG), a group of maritime industry and membership bodies which works closely with the International Maritime Organization (IMO)

HEIG's 18 month-long Enclosed Spaces Project identified problems including relying on equipment such as breathing apparatus as an everyday safety measure rather than designing the dangers out of a ship.

The group is now preparing a submission to the IMO with recommendations for tackling the above problems. The aim is to update the document IMO 1050(27) Revised **Recommendations for Entering** Enclosed Spaces Aboard Ships, which was last amended in 2011.

The UK Maritime & Coastguard Agency (MCA) has also recently completed a consultation on revised enclosed space regulations, which will implement changes to the SOLAS Convention that require mandatory drills and carriage of atmosphere testing equipment. The regulations will also extend the requirements to non-SOLAS vessels.

Human element

Another ongoing HEIG initiative is to ensure that human element issues are given due consideration when IMO regulations and guidance documents are being drawn up, with a requirement to

demonstrate how seafarers' needs have been considered rather than just 'box-ticking'

This issue will be taken to the February 2022 session of the IMO Sub-Committee on Human Element, Training and Watchkeeping.

Environment

The IMO Marine Environment Protection Committee (MEPC) focused on climate change at its 77th session in December 2021. It invited IMO member states to contribute concrete measures for how the industry can tackle climate change, and is considering a levy on the use of fossil fuels in shipping.

The MEPC is also developing a strategy on dealing with plastic waste in the oceans, looking particularly at abandoned fishing gear.



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