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BREAKING THE ICE

We need to talk about polar navigation



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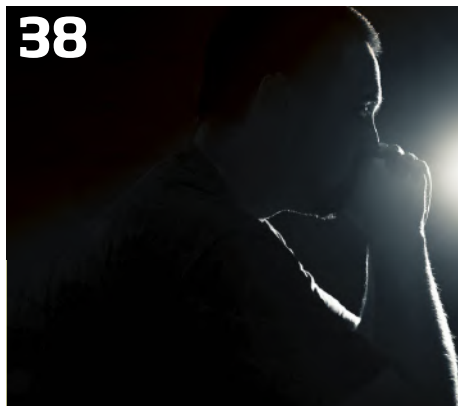
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The view from a US Coast Guard Hercules as it flew over the car carrier Sincerity Ace on fire 1,800nm NW of Oahu in the Pacific. Image: US COAST GUARD

FIVE DIE IN CAR CARRIER BLAZE

Five seafarers were feared to have died when fire swept through a Panama-flagged car carrier in the Pacific last month.

Sixteen of the 21 crew from the 59,408gt Sincerity Ace were rescued by ships which had gone to the scene, including seven by the US-flagged vehicle carrier Green Lake during an 18-hour operation in what were described as 'horrific' conditions.

Green Lake's master, Captain William Boyce, said survivors had reported that they had been trapped on the forward boat deck because of the heavy smoke, with decks so hot they melted their survival suit bags.

'They had to abandon ship one by one via man ropes 100ft to water into very rough seas,' he told the International Organization of Masters, Mates & Pilots.

'Winds were blowing a steady 25 knots, gusting to 30 knots, with a heavy 20-25ft northwesterly swell. Due to the sea state and our high freeboard, it was very difficult to manoeuvre, bring the ship alongside each survivor, and get them onboard with limited retrieval resources.'

Capt Boyce said he was proud of the 'incredible perseverance, teamwork and determination' displayed by his crew. **i**

Pilots warn IMO over access safety risks

Global efforts to improve the safety of pilot boarding arrangements do not seem to be paying off, the International Maritime Organisation (IMO) has been warned.

In a paper submitted to the IMO, the International Maritime Pilots' Association (IMPA) says the level of pilot ladder defects remains too high.

The paper also expresses concern over a number of fatal accidents in the past year which were linked to the use of unsafe pilot boats by port and pilotage authorities.

IMPA says it had hoped the inclusion of pilot ladders in ships' safety equipment regimes under changes to the SOLAS Convention adopted in 2011 would have had a positive effect by now on the standards of pilot

transfer arrangements. 'This has not happened to any significant degree,' it warns the IMO.

Checks carried out in 2018 showed that one in eight pilot transfer arrangements were found not to comply with safety standards, the IMPA report notes. Some of the most common problems were ladders not secured properly, steps not horizontal, ladders not against the ship's hull, and poorly rigged retrieval lines.

Wide fluctuations in standards were found between different ship types – with fishing vessels having a non-compliance rate of more than 38%, followed by bulk carriers and general cargoships with rates above 16%. Ro-ros, with a non-compliance rate of 8.64%, and gas tankers (6.67%) had the best standards. **i**

Report raises alarm over safety rules

A report on a fatal explosion onboard a construction service vessel off the coast of Brazil has questioned whether the current regulatory framework is sufficient to ensure safety on offshore vessels working in complex international operations.

One crew member died and four were injured in the incident, which took place during pre-commissioning pressure testing of the oilfield gas flow system onboard the 26,832gt Normand Maximus in the Santos Basin in February 2017.

The Norwegian Accident Investigation Board (AIBN) said the newly-built ship's aft deck had been filled with pre-commissioning equipment comprised of different components connected by pipes, hoses and valves. 'Many of the valves and individual components had been certified by classification societies, but the system as a whole had not been approved or certified by an external party,' it noted. An independent check and approval by an external party would have provided an additional tier of safety, it added.

The AIBN report pointed out that the regulatory framework for ships does not presently contain requirements covering the type of operation for which Normand Maximus was being used. **i**

Fire forces boxship to be evacuated

Fresh concerns over containership fires have been raised after the crew of the 7,510TEU Yantian Express had to be evacuated off the coast of Canada during a blaze which took more than a week to bring under control.

The German-flagged vessel was on its way from Colombo to Halifax when a fire that broke out in a container spread to other boxes, with the intensity of the blaze forcing the evacuation of the 23 crew. Three tugs helped to extinguish the fire and tow the ship to safety. **i**

Insurers urge masters to do their rounds

Marine insurers have urged ship masters to revive the practice of regular 'Sunday routines' to check safety and quality standards on their vessels.

The London P&I Club says its ship inspection programme has revealed a frequent failure to observe basic onboard procedures, with potentially costly consequences for owners and operators.

Many of the problems found by its inspectors are easily detectable, it adds, and should be spotted by masters and officers.

'With increased commercial pressure on the master, some simple and potentially "old-school" habits often fall by the wayside,' the club's latest StopLoss bulletin says.

'For instance, we consider that one of the most useful tools for maintaining a quality operation and safe working environment is the weekly captain's rounds,' it adds. 'When opportunity exists, an hour spent touring the ship with the chief officer can enable the master to detect housekeeping issues as they develop.'

'The experienced eye of the master can not only detect these issues at an early stage, but can also help the chief officer populate the weekly job list.' **i**

Crewman killed by falling hatch cover

The UK Marine Accident Investigation Branch has blamed a 'weak' safety culture for a fatal accident in which a seafarer was crushed by a hatch cover on a ship in the port of King's Lynn last year.

A cook/AB on the Liberian-flagged general cargoship SMN Explorer was killed when the open hatch cover fell on him while he climbed up the inside of it.

The MAIB said the accident resulted from procedural inadequacies and a lapse of supervision, with the cover toppling forward under the crewman's weight because its locking pins had been removed. **i**



Collapsed container stacks on the MSC Zoe. Image: HAVERIEKOMMANDO

Containers lost off Netherlands

Investigations were launched last month into the loss of more than 280 containers from the Mediterranean Shipping Company vessel MSC Zoe in bad weather off the Dutch coast.

A major clean-up operation had to be launched after containers – some filled with dangerous chemicals – began to wash up on beaches in the Netherlands and Germany. MSC said it had appointed a salvage company to search for the

containers at sea and it was collaborating with local authorities to recover boxes washed ashore.

Amid questions about the ship's stowage plan and lashing arrangements, Dutch authorities launched a criminal investigation into the incident. MSC said it took the loss of the containers very seriously and was analysing the reasons why they had gone overboard. **i**

P&I club concerned by bunker spills

As an investigation was launched last month into a spill of bunker fuel from the containership Maersk Gateshead in Hong Kong, a P&I club warned of the 'worrying frequency' of such incidents.

The spillage occurred as the Danish-flagged vessel was taking on bunkers from the tanker Carlung.

UK Club risk assessor Captain David Nichol said claim records show that pollution incidents relating to bunkering operations or internal bunker transfers 'remain all-too common'. The club has joined forces with the marine consultancy Brookes Bell to publish a guide that aims to reduce the rate of spills.

The most common causes of bunker spills are improper set-up of pipeline system valves, insufficient monitoring of tank levels during bunkering, excessive transfer rate or pressure, air lock, malfunction of valves and loss of containment from transfer pipelines, the club noted.

'Human error is also a major contributing factor, with many bunkering accidents attributable to crew complacency and fatigue, unfamiliarity with equipment, as well as poor communication onboard between the ship and barge.'

The guide advises shipowners and seafarers to ensure the following general precautions are adhered to:

- allow adequate safety margins when stemming bunkers. Stem only to 85% or 90% capacity, as dictated by the vessel's SMS procedures
- perform appropriate maintenance and testing of systems and pipelines, including calibration of remote tank gauges
- provide suitable instructions for operation and for emergency response, including bunker check lists and a bunker plan
- run regular bunker/oil spill drills to encourage familiarisation with bunker systems and procedures. **i**



◀ Celtica Hav suffered extensive hull damage, with multiple breaches along its length after grounding in the approaches to the port of Neath
Image: MAIB

Failure to plan pilotage led to ship grounding

Inadequate planning and monitoring of a cargoship's approach to a UK port resulted in a grounding which caused extensive hull damage, an investigation has revealed.

The Bahamas-flagged Celtica Hav grounded on a rock training wall in the approach channel to the port of Neath in March last year.

The 1,537gt ship suffered extensive shell plate damage to the bottom of its hull, leading to flooding of the engineroom and water ingress into several ballast tanks.

The UK Maritime Accident Investigation Branch (MAIB) said the pilot did not have full positional awareness when Celtica Hav left the dredged channel and did not fully appreciate the risk of grounding on the training wall.

'The pilot should have arrived on the bridge with a comprehensive written pilotage plan that referred to identified risks and associated hazards,' the report states. 'These ought to have been documented within the port's SMS and risk

assessments, and should have included the risk posed by the training walls.'

'However,' the MAIB found, 'the use of the port's documented pilotage plan had fallen into abeyance. This was probably because of its sparse content and a perception that it provided little assistance to either the pilot or master during the MPX and execution of the pilotage act.'

'The pilot's decision to steer the vessel himself meant that the bridge team were not engaged with the pilotage process, and the functional capability of the available electronic navigation aids was not used,' the report adds.

There was 'a general acceptance of low navigational standards and an over-reliance on the pilot's level of local knowledge,' the MAIB noted.

The report recommends that manager HAV Ship Management NorRus and Neath Port Authority improve the planning of pilotage and the quality of the master/pilot exchange. **i**

Investigators highlight dangers of disrupted routines

The risks of disrupted routines and high workloads have been highlighted in an investigation into an incident in which a ship's steering gear compartment was flooded during a ballasting operation.

Water from the compartment overflowed into the engineroom of the 11,754gt cement carrier Goliath some 60nm NW of Devonport, Tasmania, in March 2018.

The Australian Transport Safety Bureau (ATSB) found that the ship's departure had been delayed on the previous day, with the chief mate having to be roused from his sleep to deal with cargo issues.

On the day of the incident, the crew were involved in a number of tasks – including cargo inspections and onboard training across a number of shift changes – and navigation watches were adjusted to enable this to take place.

The report notes that a request to manually close the after peak tank ballast line valves had not been actioned or confirmed as expected because a crew member coming on shift had not been given information about the status of the valves.

The report reminds operators and crew that careful attention to detail is required to complete tasks and ensure up to date information is provided at shift changeovers.

'Disruption of normal routine, increased workload and changes of shift personnel increase the potential for error,' it points out. 'This is particularly important during shortsea voyages. All activities carried out during these times need careful and particular attention to ensure all individual tasks are completed and/or their status passed to new personnel.' **i**

Fresh alarm raised over low-sulphur fuel hazards

Renewed concerns over the safety problems being caused by the use of low-sulphur fuel have been raised by the International Union of Marine Insurance (IUMI).

Speaking in London last month, IUMI president Richard Turner said insurers are alarmed by the inconsistent quality of low-sulphur fuels and evidence of an increased risk of machinery damage.

IUMI says low-sulphur fuels can contain a high level of cat fines which onboard systems and processes often fail to filter out. Differences in flashpoint and combustibility are also evident.

Burning low-sulphur fuels brings the added risk of speed loss and the requirement for additional tank cleaning, Mr Turner added, and the switch-over from heavy fuels to low-sulphur alternatives increases the risk of a vessel losing power if this complex process is not managed correctly onboard.

IUMI is calling for regulations to force refineries to test and confirm delivery of compliant fuels. It also wants ship operators to enhance their systems, processes and training to protect vessels against the potential impact of using low-sulphur bunkers.

Helle Hammer, head of IUMI's policy forum, said the International Maritime Organisation has agreed to examine the problems. But, she warned, the target date for completing the work is 2021 – 'and that is too late'.

IUMI said it is also disturbed by the increasing rate of fuel contamination incidents. This includes biofuels, it warns, where added substances such as Fatty Acid Methyl Esters are sometimes found.

If action is not taken to reduce contamination, IUMI warns that the shipping industry may face situations which insurance will not automatically cover, as vessels could be deemed as being non-compliant with IMO rules. **i**

▶ Kongsberg Digital has unveiled the K-Sim Safety package – a simulator-based system for advanced fire-fighting training. It includes a full-mission interactive 3D walk-through animation of the entire engineroom and four upper decks



Insurers warn over mis-declared cargo

Marine insurers have called for action to tackle the risks of fires caused by mis-declared cargoes.

The International Union of Marine Insurance (IUMI) says it is concerned about the scale of recent shipboard fires, including those on the containership Maersk Honam and car carrier Sincerity Ace, in which a total of five seafarers died, as well as the blaze on the containership Yantian Express, which took more than a week to bring under control.

'A number of onboard fires are caused by mis-declared cargo and improperly shipped hazardous material,' IUMI noted. 'Carrier alliances

are adding more complexity to this growing concern as one shipping line will be carrying another's containers and relying on their performance to vet and screen cargo.'

IUMI said it welcomed initiatives such as the random container inspection programmes introduced by Maersk and the US National Cargo Bureau. 'IUMI believes there is a need for greater transparency over cargo carried on ships; the accumulation of values needs to be recognised and quantified; and more adequate protection should be made available to guard against and to fight onboard fires,' it added. **i**

Club calls for prompt responses to tackling engineroom fires

The Swedish P&I Club has published new guidance on dealing with engineroom fires, warning that such incidents are costing an average of US\$1.85m and highlighting lessons to be learned from three cases which demonstrate the importance of preparation and training.

Swedish Club senior technical advisor Peter Stålborg commented: 'Preventing an engineroom fire is the priority, but the time and effectiveness of the response is almost as important. Although a crew has taken all reasonable precautions, an engineroom fire can still occur without warning.'

'A swift and effective response within a

few minutes may limit the damage to soot washing and less than US\$200,000 in costs,' he added. 'Yet I have seen cases where delaying the response, or failing to operate the fire extinguishing system properly, has allowed the fire to intensify and spread, causing severe damage and costing more than US\$3m.'

Mr Stålborg said it is essential that insulation is maintained. 'Over time, when overhauling engineroom machinery and removing/refitting exhaust pipes, the insulation will deteriorate,' he added. 'An exhaust pipe system insulated to 95% is not good enough – it must be 100% intact, always.' **i**



◀ The Royal Navy frigate HMS Argyll rescued crew from the Italian-flagged Grande America, ablaze in the background
Image: Royal Navy

Fatigue may have led to fatal fall

Fatigue, stress and a high workload could have contributed to the death of an officer onboard a tanker in the UK port of Hull, an investigation has ruled.

The chief officer of the 6,597dwt Luxembourg-flagged Nabucco drowned when he fell from an accommodation ladder into the water at the ABP Terminal 1 jetty in Saltend in June 2017.

A flag state investigation found that the officer had been trying to stow an accommodation ladder as the tide was ebbing. However, he was not wearing a safety harness or a lifejacket, and no working aloft permit had been issued.

Investigators said the officer decided to stow the ladder after noticing that an AB assigned to the task had failed to start the job. It was noted that on the day of the accident, the officer had worked for about 14 hours, and time pressures, tiredness and an increased workload may have contributed to the accident.

The investigation also found that key procedures set out in the ship's safety management system were not being followed by crew, and it recommended that the German owner, GEFO, should review the effectiveness of its SMS. ⓘ

Corroded pipe caused crash

An Estonian-flagged ro-ro freight ferry wrecked a navigational aid off the coast of Sweden after suffering a blackout when seawater entered its fuel pipes.

The 15,412gt Regal Star broke down and drifted in heavy weather while on a voyage between Sweden and Estonia in October last year.

The Estonian Safety Investigation Bureau found that the main engines had failed because seawater had entered the fuel system as a result of corrosion in a fuel tank vent pipe. Investigators said the pipe fittings were of poor quality and of an 'inappropriate' design. ⓘ

Two injured during cargo hold work

Accident investigators have warned seafarers and shipowners of the need to follow safety procedures following an incident in which two crew members suffered serious injuries in a fall from a mobile scaffold tower.

The two seafarers were carrying out painting and maintenance work in the cargo holds of the 18,828dwt bulk carrier Shanghai Spirit when the tower toppled over as it was moved to enable them to paint the hopper tank edge.

An Australian Transport Safety Bureau (ATSB) report notes that the tower was top-heavy because the seafarers had remained on it as it was repositioned. Both crewmen had failed to use the required safety harness and associated safety lines, investigators added.

The ATSB said it had investigated similar accidents in the past, and it stressed the need for effective supervision and good safety management. 'Ship owners, operators and crew members are reminded to plan and undertake risk assessments for assigned tasks in order to identify any shortcomings in procedures and required risk-mitigation measures,' it added. ⓘ

Maersk to trial remote pilot

Maersk is preparing for one of its vessels to be piloted remotely through the busy Great Belt waterway off Denmark as part of a test project.

The 3,600TEU feeder containership Vistula Maersk will reportedly sail from Skagen in northern Denmark to Gedser in the south, with a pilot advising and monitoring the vessel from a shore-based control centre.

The Danish Maritime Authority has been working with Maersk, the DanPilot state pilotage service and the US firm Sea Machines Robotics to test the technology that will be used. ⓘ

▶ The Viking LifeCraft system has been officially approved by the Danish Maritime Authority after heavy weather trials in the North Sea, where it encountered waves of up to 10m high



Viking wins official approval for 'revolutionary' survival craft

The Danish company Viking has secured official approval for a revolutionary new liferaft system which, it claims, could radically improve the safety of large-scale ship evacuations.

Following successful heavy weather trials, Viking's LifeCraft has been approved by the Danish Maritime Authority (DMA) as meeting the requirements for replacing conventional lifeboats on passenger ships.

Viking describes the LifeCraft as 'an entirely novel and innovative concept' that will 'take the system far beyond the capabilities of existing lifeboats, marine evacuation systems or liferafts'.

Capable of carrying up to 203 people, the LifeCraft is an inflatable survival craft that is carried in a self-contained stowage and launching appliance either placed on deck or built into the ship's side.

The 16m craft has four independent electric engines at each corner, enabling it to turn 360 degrees on the spot, and Viking is now awaiting approval for the escape chute element of the system.

The company says LifeCraft is aimed at cruiseships and passenger ferries, which would be equipped with four of the systems, and it can be fitted to newbuilds or existing tonnage. ⓘ

Concerns raised at spate of stabbings

Nautilus is backing calls for shipowners to urgently implement conflict resolution and anti-bullying guidelines, following three knife attacks at sea in almost as many weeks.

The incidents were highlighted by the international maritime charity Sailors' Society, which runs a Wellness at Sea programme that includes training on crisis resolution.

In one case, the master of the tanker STI Guard had to be airlifted ashore for hospital treatment after being stabbed by another crew member. In another incident, a Serbian crew member onboard the containership MSC Marta injured three of his crewmates in a knifing incident off Guyana.

Sailors' Society CEO Stuart Rivers said that a further case, in which two crewmen were killed onboard a vessel in the Indian Ocean and six others were reported missing after jumping

overboard to escape the attacker, highlighted the need for action.

'We are urging shipowners to embrace conflict resolution training to make sure needless tragedies like this don't happen again,' he added.

Nautilus professional and technical officer David Appleton said he was concerned about the attacks and that they raised questions about seafarer welfare and crewing policies. 'While the circumstances of some of these deaths are unclear, we hope shipping companies are paying attention to guidelines which we helped draw up to combat bullying and harassment of crew,' he said.

'Operators also need to take careful note of the amended MLC guidelines on crew safety and welfare, which set out what the companies' policies and reporting procedures should be,' he added. ⓘ

SHIP SINKS AFTER FIRE OFF FRANCE

An Italian-flagged con-ro cargoship sank off the coast of France last month after a fire broke out in a container on the cargo deck and quickly spread through other containers and vehicles onboard.

In an eight-hour mission, the British Royal Navy frigate HMS Argyll rescued all 26 crew and one passenger from the 56,662gt Grande America, which was sailing from Hamburg to Casablanca at the time of the incident.

The crew were forced to evacuate the ship

some 140nm SW off the French port of Brest because of the severity of the fire. The Royal Navy went to the crew's aid after their float-free lifeboat was damaged in 5m to 6m seas and was unable to make headway.

Initial reports suggested the ship sank as a result of a list caused by the free surface effect of water used in attempts to extinguish the blaze. French authorities had to mount a major counter-pollution exercise to deal with a 10km-long oil slick from the wreck. ⓘ

P&I club bids to cut seafarer burn cases

Marine insurers have expressed concern over the high rate of burn injuries being suffered by seafarers.

In a bid to reduce what it describes as a 'worrying' number of burn injuries, the UK P&I Club has published a new 'best practice' guide which aims to raise awareness of the risks.

Senior loss prevention executive Captain David Nichol said the dangers needed to be taken extremely seriously – especially because the consequences of burn injuries at sea may become dangerously aggravated in the absence of prompt medical advice and treatment.

The most common causes of burn injuries

to crew onboard ships are contact with heated surfaces, steam or hot fluid burns, exposure to hot or burning solids, liquids or gases, chemical, electrical and cold burns, the club points out.

Its guide stresses the need for ship-specific training and familiarisation on burn hazard recognition and safe working practices and meaningful risk assessments and permits to work to operations which may expose crew to burns. Seafarers should always wear proper work clothes and personal protective equipment, be aware of correct first aid actions and always seek prompt professional medical advice, it adds. ⓘ

Research warns of emissions exposure

Nautilus has expressed concern about a new study which warns that cruiseship crews and passengers are being exposed to dangerously high levels of exhaust emissions in certain areas onboard.

Research by the US-based John Hopkins University conducted onboard four cruiseships over the past two years found levels of particulate matter (PM) comparable to concentrations in some of the world's most polluted cities.

The study, commissioned by the environmental organisation Stand.earth, measured air quality at multiple locations on the Carnival-owned ships Emerald Princess, Amsterdam, Carnival Freedom and Carnival Liberty.

Researchers said they found particularly high levels of ultra-fine exhaust

particulate matter (UFP) in the stern areas on the ships, with levels comparable to cities such as Beijing and Santiago.

'Studies have demonstrated UFPs have detrimental effects to the cardiovascular and respiratory systems, including a higher incidence of atherosclerosis and increased disease severity of asthma,' the report states. 'Even short-term exposure to UFPs from traffic exhaust is associated with adverse cardiovascular outcomes.'

The report warns that ship exhaust contains a wide range of harmful substances, including metals and polycyclic aromatic hydrocarbons. 'There is strong evidence that ship engine exhaust impacts air quality in port and coastal cities, but little is known about how ship engine exhaust may impact the

air quality on the deck of a ship,' it adds. 'This is of concern because tens of millions of passengers take cruises every year, and tens of thousands of people are employed on cruiseships.'

Nautilus professional and technical officer David Appleton commented: 'This report backs up a body of previous research that has shown the detrimental effect shipping has on air quality in and around coastal areas and the subsequent health impacts of those exposed. For those that live in these areas and for those living and working onboard, the 2020 sulphur cap cannot come soon enough.'

Carnival described the report as 'completely ridiculous' and said its tests showed that air quality on its ships meets or exceeds all regulatory requirements. **i**

Blockchain bid to speed up seafarer certificates

A project has been launched which aims to develop the use of blockchain technology to streamline the issue of seafarers' safety and training certificates.

Funded by the Lloyd's Register Foundation, the scheme involves companies such as Maersk Line and tanker operator Heidmar, along with a crew management firm, the Mission to Seafarers and several technology providers.

The project aims to streamline processes that can be slowed down by

inadequate access to validated seafarer certificates, safety documentation and paper-based certificate management by using a digital certification and endorsement process, based on a digital repository for verified crew documentation, training logs and an approval system.

Blockchain would enable individual seafarers to manage their certificate repository from original issuance, as well as allowing maritime administrations to manage the renewal and endorsement

across jurisdictions.

Gary Pogson, lead technical specialist with the Lloyd's Register Foundation, said: 'In such an international and distributed industry, it can be challenging to achieve robust mechanisms for providing a single, accurate record of crew education, training and experience and this has the potential to impact on safety. A way to address this is to bring together the multiple parties involved in the processes and build a system that works for them, establishing trust

throughout the network.'

Graeme Thomson, head of Maersk's Northern Europe manning office, said blockchain has the potential to significantly improve the transparency, authenticity and ease of crew certification – not only for ship owners and operators, but also, and most importantly, for seafarers.

'Building and maintaining an intuitive and user-friendly platform for the management of crew certification will bring hugely significant benefits to all stakeholders,' he added. **i**



Delegates to the ILO conference on gender balance at sea, including Nautilus representative Debbie Cavaldoro

International organisations agree joint plan at ILO to improve gender balance at sea

Seamen, shipowner and government representatives came together from across the globe at the International Labour Organisation (ILO) in Geneva last month to set objectives for improving the recruitment and retention of women seafarers.

Seafarers were represented at the meeting by a number of unions affiliated to the International Transport Workers' Federation (ITF) – including Nautilus International.

Following five days of intensive discussion, a 34-point conclusions document was produced which included actions for all parties to take to increase the number of females at sea, including:

- jointly addressing all issues related to the recruitment and retention of seafarers and the promotion of opportunities for women seafarers
- ensuring that the fundamental principles and

rights at work, especially in relation to equality of treatment and equal opportunities, are applied to all seafarers

- publicising opportunities for women at sea and ashore
- encouraging the inclusion of women's voices when developing policies and social dialogue

- identifying role models and establishing mentoring and networking programmes for women seafarers

'The meeting was incredibly constructive,' said Nautilus head of strategy Debbie Cavaldoro. 'It was positive that so many shipowners and governments were represented, and that through social dialogue we were able to come together to set in place a number of initiatives that will support seafarers in general and female seafarers in particular.'

One issue which was not resolved at the meeting was the

mandatory pregnancy testing of women seafarers, which is still permitted under the laws of a few countries. Despite strong opposition to the practice from the seafarers' representatives and many European government delegates, the shipowners and those countries which permit the practice argued that it was part of their duty of care.

Shipowner representatives told the meeting that pregnancy testing was permitted as part of the medical examination because the examination included a scan which could be harmful to pregnant woman and their foetus. They claimed that the results of any such test are confidential and not shared with employers.

However, ITF maritime coordinator Jacqueline Smith said the practice was blatantly discriminatory. 'Women with uncomplicated pregnancies are allowed to work on ships up

until a certain point, but shipping companies want to avoid the costs of support and standing them down when necessary,' she argued. 'It's absolutely ludicrous that the ship owners were so bold in saying: "We do this because we care".'

Ms Cavaldoro added that it was shameful that the practice was still allowed under national legislation in some countries, despite being in contravention of United Nations principles on non-discrimination. 'It is clear that compulsory pregnancy testing is being used in some sectors to deny women the right to work and make their own career and life choices,' she said.

The meeting did agree that mandatory pregnancy testing was a concern for many women seafarers and pledged to conduct further research and consideration. **i**

The meeting was 'incredibly constructive,' but not all delegates agreed to outlaw mandatory pregnancy testing

In brief

Dumping fine: Greek shipping firm Navimax was fined US\$2m and placed on probation for four years after being found guilty of breaching pollution prevention laws. A whistleblowing crew member had given the US Coast Guard two videos showing oily waste being pumped overboard from the tanker Nave Cielo in 2017.

Scrubber warning: the shipowners' organisation BIMCO has dismissed reports that China has banned the use of open-loop scrubbers in its emission control areas. But it has warned that a full ban could be adopted soon and owners need to ensure compliance with the rules.

Maersk checks: Maersk Line has begun a programme of random checks on containers in a bid to combat safety problems posed by misdeclared cargoes. The initial focus will be on shipments in and out of the US, the company said.

Sicilian strike: Italian seafaring unions called for a regional strike last month in protest at Liberty Lines' move to make 72 redundancies on the fast ferry service between Messina and Reggio Calabria in Sicily.

Eddystone medevac: a British seafarer was evacuated by a US Navy helicopter from the Foreland Shipping ro-ro cargoship Eddystone after an urgent request for medical assistance shortly before Christmas.

Fatal blast: three seafarers died and 23 were rescued following a fire and explosion onboard the Vietnam-flagged chemical tanker Aulac Fortune off Hong Kong last month.

NEW ZEALAND

Seafarers warned not to break 'drink-drive' rules

Authorities in New Zealand have warned seafarers not to break the country's 'drink-drive' laws, following a case in which a ship master was fined after being found to be more than three times over the alcohol limit.

Captain Saurabh Kumar Singh, master of the Panama-flagged oil and chemical tanker SG Pegasus, was fined NZ\$1,000 (€591) and was removed from his ship after being found guilty of exceeding the alcohol limit for a seafarer.

The case was brought after pilots in the port of New Plymouth became concerned about the master's behaviour after they boarded the 13,086dwt tanker to guide it out of the harbour. Capt Singh failed an initial breath test carried out by police who were called to the ship, and a subsequent test showed he had a reading exceeding 880 micrograms of alcohol per litre of breath, breaching the local limit of 250 micrograms.



TUNISIA

OOW 'ON THE PHONE'

The watchkeeper of a Tunisian ferry that collided with an anchored containership in the Mediterranean last year, pictured above, was busy making private phone calls at the time of the accident, an official report has revealed.

The collision between the 17,907gt ro-pax Ulysse and the 54,592gt CSL Virginia in October was the result of 'shared human error', according to the preliminary findings of a commission of inquiry. The Tunisian transport ministry report said that the ferry's OOW was alone on the bridge and on the phone, some distance from the radar, at the time of the collision. It said the containership's watchkeeper had not been aware of the radar alarms, and that the vessel, under pressure from the owners, had anchored in a sea lane. **i**

Capt Singh was also in breach of Anglo-Eastern Ship Management's dry ship policies, so the ship was held in port until a replacement master was sent out.

Maritime NZ regional manager Michael-Paul Abbott said the sentence should serve as a strong warning to seafarers. 'If you are over the alcohol limit, you will be prosecuted. Safety is paramount,' he stressed.

'The master's decision to drink while in charge of his ship put his crew, seafarers on other ships, and even the environment, local economies and communities at risk,' he added. 'While extremely disappointed with this master's actions to begin with, we are pleased with the prompt actions of the pilots in bringing this to our attention, the police for their support, and the shipping company for reinforcing their no tolerance approach to alcohol onboard the ship.' **i**

FRANCE

Crackdown on sulphur breaches

Authorities in France are clamping down on ships found to be in breach of sulphur fuel rules.

The Singapore-flagged containership APL Changi was held for three days in the port of Le Havre and had to pay a deposit of €80,000 to be allowed to sail ahead of a possible court case.

The 17,292TEU vessel was detained after a port state control inspection was reported to have shown the ship's fuel had a sulphur content of 0.16%, in breach of the 0.10% regional emission control area limit.

Another ship – an unnamed Antigua & Barbuda-flagged chemical tanker – was also reported to have been held after being found to have bunker fuel with a 0.23% sulphur content. **i**



Pictured above is the 110m wave-piercing catamaran Saint John Paul II, which is set to become the largest vessel of its kind operating in the Mediterranean when it comes into service later this year.

Built by Incat in Tasmania, the vessel began sea trials in mid-January before delivery to Malta-based Virtu Ferries. Named in honour of

the Pope who served from 1978 to 2005, Saint John Paul II will have a service speed of up to 38 knots and will complete the year-round crossing from Malta to Sicily, berth to berth, in around 90 minutes.

The Maltese-flagged vessel will carry up to 924 passengers and crew, and has 490 lane m of truck capacity or up to 167 cars. **i**

AUSTRALIA

Bulker job losses 'are a disgrace', unions warn

Australian seafaring unions have described a decision to replace domestic crews on two bulk carriers with low-cost foreign labour as a national disgrace.

They have accused the multinational companies BHP and BlueScope Steel of using the January holiday period to quietly sack nearly 80 Australian seafarers serving on the bulkers Lowlands Brilliance and Mariloula.

The ships currently operate the cabotage trade carrying iron ore between Port Hedland and Port Kembla and also take coal to China.

Unions have hit out at the lack of consultation on the 'bombshell' move and called for talks with both companies. 'This latest instance of social dumping exacerbates an already disastrous domestic labour market,' the Australian Maritime Officers' Union (AMOU) said.

AMOU president Timothy Higgs has

requested talks with the government on 'potential means of avoiding this further nail in the coffin of the Australian shipping industry'.

Unions said they had worked constructively with BHP and Bluescope to meet cabotage requirements, including pay freezes during economic downturns, and they pointed out that the companies had made combined profits of more than A\$13.5bn last year.

Labour MP Sharon Claydon said it was 'a travesty' to see two Australian companies turning their backs on the country's proud seafaring legacy, and she blamed the move on a lack of government protection for the industry. 'As a result we are now in the diabolical situation where there are only 14 Australian-flagged vessels and hundreds of highly skilled Australian seafarers are out of work,' she added. **i**

TUNISIA

SHIPMASTER IS FREED BY FRENCH COURT

A Turkish ship master facing a six-month suspended jail sentence after his ship ran aground off the coast of Brittany in 2011 has been freed after French judges ruled that he should not be punished for the accident.

Prosecutors had sought the suspended sentence and a €20,000 fine for Captain Rifat Tahmaz, after telling the Brest maritime court in October last year that he had committed a

'series of faults and errors' before the Malta-flagged general cargoship TK Bremen ran aground during a storm in December 2011.

Capt Tahmaz's defence team had urged the court not to treat him as a scapegoat, arguing that he had been abandoned by the authorities. The master's lawyer, Stanislas Lequette, welcomed the decision, noting that the case was 'surrounded by a strong emotional context'. **i**

In brief

Probe rejected: Danish police have rejected calls for a fresh investigation into the 1990 Scandinavian Star ferry disaster, in which 159 passengers died in a fire. They said new information, which alleges arson and insurance fraud, was inconclusive and could not be verified. Campaigner Mike Axdal, who survived the fire, said he isn't giving up: 'I will win this case. The question is just when.'

Relatives appeal: one year after 32 seafarers died in a collision between the Iranian-owned tanker Sanchi and the Hong Kong-registered bulk carrier CF Crystal, relatives of the 30 Iranian crew killed in the accident are calling for the publication of an investigation into the causes of the incident.

Fatal sinking: six seafarers died when the 40-year-old Russian general cargoship Volgo Balt 214 sank in the Black Sea after being overcome by bad weather while carrying coal to Turkey in heavy weather last month.

MSC boost: the container shipping firm MSC is this year set to close the gap with its nearest rival, Maersk, by taking delivery of 20 ships of a total capacity of 334,550TEU.

French stability: the French merchant fleet has grown by one ship over the past year, with the register now totalling 409 vessels over 100gt and employing just over 13,400 seafarers.

Wages won: the International Transport Workers' Federation has recovered unpaid wages for the crews of four Turkish-owned ships that were detained in the Russian port of Novorossiysk.

In brief

Honfleur hold-up: delivery of the first Channel ferry to be powered by LNG – the 42,400gt Brittany Ferries vessel Honfleur – has been delayed. Problems at the Flensburger yard in Germany mean the 1,680 passenger capacity ship will not be able to come into service on the Portsmouth-Ouistreham route this summer as planned.

Cable cut: A ship has been blamed for leaving the South Pacific nation of Tonga with no internet services. Investigators said there was evidence that an undersea telecommunications cable had been severed twice by a ship's anchor.

Crane crash: Canada's Transportation Safety Board has launched an investigation after the Panama-flagged containership Ever Summit was damaged by the collapse of a gantry crane while berthing in the port of Vancouver.

Asbestos review: French maritime unions have welcomed the decision of the seafarers' social security system (ENIM) to review the cases of several victims of shipboard asbestos exposure who had been refused compensation.

Sicily stoppage: Italian seafarer unions have staged a 24-hour strike in protest at the dismissal of 72 crew from the Liberty Lines high-speed ferry service between the Italian mainland and Sicily.

Shipmates stabbed: a crew member was handed over to authorities in Brazil after allegedly injuring three other seafarers onboard the Panama-flagged containership MSC Marta.

DENMARK

Standards cut to attract new ships, union warns

The huge growth in the Danish merchant fleet – up 26% by tonnage in 2018 – is on the back of declining regulatory and labour standards which, if not arrested, could lead to a backlash against the country's international register, DIS, a senior official at one of the main maritime unions has warned.

No other ship register grew faster than the DIS flag last year. Taiwan grew by 21% and Belgium by 12%. By November 2018, 708 merchant vessels with a total of 20.3m gt made up the Danish fleet.

John Ibsen, of the maritime section of the Dansk Metal union, said Denmark is seeking to compete with the less stringent regulatory standards offered by Singapore and some UK offshore jurisdictions.

In the past three months alone, he said, the Danish Maritime Authority has issued 24 consultation papers on relaxing regulations

such as health documentation, which will make it easier and cheaper to hire foreign crews.

Mr Ibsen warned that the continued weakening of regulations could test the union's long-term support for DIS.

But Jacob Clasen, executive director at the Danish shipowners' association, is bullish: 'We are pleased to see that many of these vessels have joined the Danish flag. It is a clear sign that years of hard work from authorities, politicians and the industry to drive down costs associated with running ships under the Danish flag are paying off.'

'With the removal of registration fees and special technical regulations coupled with competitive taxation rules, the Danish flag is today a natural choice for many shipping companies – both Danish and foreign – compared to other quality registers around the world,' he added. **i**



The Liberian-flagged HHL Amur under arrest off Aarhus
Image: Morten Bach

DENMARK

ITF INSPECTOR HELPS STRANDED CREW

An International Transport Workers' Federation inspector has provided support to 15 seafarers who were stranded in a Danish port following the collapse of the German shipping company Hansa Heavy Lift in December.

The 9,611gt HHL Amur was

arrested in the port of Aarhus as a result of unpaid debts. The Liberian-flagged ship was inspected by the Danish Maritime Authority and visited by ITF inspector Morten Bach, who said all crew members had received wages for December and had sufficient food

onboard. He praised HHL for its cooperative approach, as well as its awareness of the crew's needs.

HHL Amur has since been sold to the Dutch operator Spliethoff, switched to the Dutch flag and re-named Heerengracht. **i**



INTERNATIONAL

HALF OF MARITIME EMPLOYEES 'ACTIVELY SEEKING A NEW JOB'

Job insecurity is increasing among workers in the shore-based maritime sector, according to a new survey.

Research carried out by the agency Halcyon Recruitment shows that almost two-thirds of shore-based maritime staff are concerned over job security, and more than one in two are looking for a new post.

The survey of 2,800 staff showed that the proportion with worries about job security had risen from 56% to 62% over the past year, and those actively seeking a new job had increased from 28% to 54%.

A further 41% are not looking but are open to offers. 'It is unsurprising to see job security causing concern

to employees,' said Halcyon chief executive Heidi Heselstine.

'Volatile market conditions continue. Companies which are in a strong position financially are often investing by way of mergers and acquisitions. This is happening across all sectors – tanker, gas, dry, offshore, technology, finance, broking – and with some very big players.'

The survey also showed that 70% of shore-based staff feel their employer could do more to achieve a diverse and inclusive workforce and 25% believe they have been discriminated against at work because of their gender, race, nationality, age or education. **i**

INDIA

Seafarer jobs rise by 40%

The number of Indian seafarers has soared by more than 40% over the past four years, according to figures released by the country's government last month.

The number of Indian seafarers employed on ships worldwide increased from 108,446 in 2013 to 154,349 in 2017, said shipping minister Mansukh Mandaviya.

India now provides 9.35% of the global maritime workforce and has risen to third place in the list of the largest seafarer supplying nations, he added.

The government says changes to certification requirements and the relaxation of a ban on opening new maritime training institutes has helped to boost seafarer numbers, and measures to secure further increases are planned. **i**

AUSTRALIA

ITF HITS OUT OVER 'STARVING' CREW

The International Transport Workers' Federation (ITF) has condemned the mining and metals firm BHP in a row over conditions onboard a flag of convenience ship carrying coal to one of its terminals in Australia.

It accused the company of blocking requests for an ITF inspector to visit the Liberian-flagged Villa Deste at the Hay Point Coal Terminal in Queensland after complaints that crew were being poorly paid and badly fed.

ITF national coordinator Dean Summers said BHP had demonstrated 'an extraordinary failure to uphold basic ethical standards in their global supply chain' after it denied responsibility

for the condition on the 81,800dwt Greek-owned ship.

'Seafarers are starving at BHP's terminal in Queensland, and if BHP continues to deny the ITF access, ignoring these seafarers' most basic rights to be fed and paid, then it is no better than the worst flag of convenience operators,' he added.

Villa Deste's Greek owners, Evalend Shipping, denied there were any problems onboard. But the ITF said it had inspected another vessel owned by the company, Penelope L, last year and found the same issues: 'employing seafarers on the lowest conditions possible and supplying decaying food to the crew'. **i**

In brief

More spills: around 116,000 tonnes of oil was spilled into the oceans last year – the highest figure for 24 years, according to the International Tanker Owners Pollution Federation. More than two-thirds of the total was accounted for by the Iranian tanker Sanchi, which exploded and sank following a collision off China in January 2018.

Cabotage action: Nigerian authorities have detained the Liberian-flagged LPG tanker Navigator Capricorn as part of a clampdown on ships accused of breaching the country's cabotage laws. The Nigerian maritime administration said the action was being taken to ensure that there are jobs for 'an army of unemployed' domestic seafarers.

Breaking boost: Turkey has become the seventh nation to ratify the International Maritime Organisation's 2009 Hong Kong Convention for the safe and environmentally-sound recycling of ships. The convention needs to be signed by 15 states accounting for at least 40% of world tonnage before it can come into force.

Fine warning: ships operating in Turkish waters have been warned of 'drastic' increases in fines for pollution. P&I clubs say the authorities do not need to substantiate their allegations and it is up to the vessel to prove otherwise, making it difficult to challenge the penalties.

Flagging fortunes: Liberia has overtaken the Marshall Islands to become the world's second largest ship registry, according to industry analysts Clarksons. Panama continues to hold the top spot, with Hong Kong fourth and Singapore fifth.

In brief

Wages won: seafarers serving on the Russian-flagged cargoship *Modulus 2* have been given €40,000 owed wages thanks to the help of Finnish, Russian and French unions. French CGT/ITF inspector Laure Tallonneau managed to secure the payment when the Turkish-owned vessel was detained in the port of Brest.

Venezuela alarm: the Venezuelan oil company PDVSA has declared a 'maritime emergency' after Bernhard Schulte Shipmanagement announced that it would be removing crew from the tankers it manages for the state-run firm because of unpaid fees.

Italy increase: employment under the Italian flag has risen by 140% since 1998, according to a new report from the country's shipowners' association. Unions have welcomed the growth, but have criticised the owners for not training sufficient ratings or recruiting in southern Italy.

Hapag hold-up: Hapag-Lloyd Cruises has cancelled the planned April launching ceremony for *Hanseatic Nature*, the first of its three new 16,000gt expedition ships. The company has blamed construction delays at the Vard-Fincantieri shipyard in Romania.

Master charged: a Russian master has been charged with offences including operating a vessel under the influence of alcohol after the 1,546gt general cargoship *Eems Carrier* ran aground off the coast of Denmark.

Record earnings: Filipino seafarers serving on foreign-going ships sent home a record US\$6.14bn last year – up by 4.6% from 2017.

UNITED STATES

'Military to mariner' plan to increase US seafarers

US president Donald Trump has issued an executive order intended to make it easier for US Navy seafarers to transfer into the country's merchant fleet.

The White House said the 'bold step' was being taken in a bid to address the serious shortfall in the number of qualified, licensed professional mariners available to support the country's sealift and defence needs in the event of war or other national emergency.

The executive order will help veterans in services ranging from the Coast Guard and Marines to the Army and Navy with the costs of obtaining commercial qualifications and certificates, and makes it easier for them to

'receive appropriate credit for their military training and experience'.

The government says it will remove barriers to employment by identifying military courses and qualifications that could count towards merchant mariner training, so that certain veterans will no longer have to enrol in basic maritime classes.

The number of US merchant seafarers is reported to have dropped below 12,000. The Maritime Administration estimates that the country is currently some 1,800 seafarers short of being able to support a prolonged, full-scale conflict, with officials warning that this poses 'serious national security implications'. **i**



▲ The 1973-built *Matsonia* was found to have a cracked hull
Image: US Coast Guard

UNITED STATES

HULL CRACK FOUND ON EL FARO SISTER

Concerns have been raised after a 46-year-old sistership of the US-flagged containership *El Faro*, which sank in 2015 with the loss of all 33 crew onboard, was found with a cracked hull in the port of Oakland.

The crack in the 33,095gt *Matsonia* – which operates on the California-Hawaii service – was found during a dive inspection which was carried out when crew members noticed an oily sheen surrounding the ship soon after it arrived in the port.

Divers discovered a fracture in the ship's hull 15ft feet below the waterline adjacent to the starboard fuel tank.

The US Coast Guard said its inspectors were on the scene within an hour to conduct an assessment, and heavy fuel oil from the damaged tank had been transferred to other fuel tanks to reduce the flow of leaking oil before a full inspection and repairs were carried out. **i**

DENMARK

DIS extension is approved

Danish maritime unions have welcomed a European Commission decision to approve the extension of the country's DIS international ship register to offshore support vessels.

The Commission has given a long-awaited green light for proposals to enable companies using the DIS flag and operating specialist offshore vessels such as guard ships, platform support vessels and windfarm service vessels to take advantage of the income tax exemptions for their seafarers.

The Commission concluded that the scheme, which will run for 10 years, was in line with its state aid guidelines and would contribute to the competitiveness of the EU maritime sector and boost seafarer employment.

Sune Blinkenberg, general secretary of the SL officers' union, said he hoped the extension would enable Danish unions to negotiate on behalf of all seafarers working on such specialist vessels. **i**



▲ Oil leaks from the Hong Kong-flagged bulk carrier *Solomon Trader* following its grounding
Image: AMSA

SOLOMON ISLANDS

SHIP SPILLS OIL IN HERITAGE SITE

The owners of a ship which ran aground and spilled oil in a UNESCO World Heritage site in the South Pacific have denied that the crew were drunk or absent from the bridge at the time of the accident.

A major salvage and clean-up operation was launched when the 73,592dwt bulk carrier *Solomon Trader* grounded on a reef near Rennell Island in the Solomon Islands. Around 100 tonnes of bunker fuel and some of the bauxite cargo was reported to have been spilt.

The Australian Maritime Safety and salvage teams had managed to stop the fuel leaking from the Hong Kong-flagged vessel, but the reef

had been damaged and the ship was declared a constructive total loss.

Australia's Department of Foreign Affairs and Trade said it was 'profoundly disappointed' by the slow response of the ship's owners and insurers. And the Solomon Islands Maritime Safety Administration said it was investigating whether the grounding was linked to a 'lack of a crew posted on lookout/watch during that night'.

However, the owners, King Trader, and the Korean P&I Club said it was not true that the crew were intoxicated or absent from the ship at the time of the accident. **i**

AUSTRALIA

Union calls for action to end national fleet crisis

The Maritime Union of Australia has warned an inquiry that the country's shipping industry is in crisis – putting the nation's economic, environmental, and national security at risk.

Giving evidence to the Senate committee inquiry, the union called for urgent government action to support investment in new tonnage and boost the training and employment of Australian seafarers.

National secretary Paddy Crumlin said the Australian coastal fleet has halved since 2013, leaving just 12 vessels to operate in the expanding domestic trades. 'The result is a major drain on the economy, with the use of foreign vessels to transport Australian resource and agricultural exports, along with coastal cargoes, estimated to be costing the nation more than \$8 billion a year,' he added.

Mr Crumlin said current coastal freight

movements could sustain a fleet of up to 60 additional Australian ships and the government should reform cabotage laws and establish a new national strategic fleet.

The union's call came as a new report revealed the alarming scale of Australia's seafaring crisis – with more than half the country's maritime labour force now being older than 46 and only 8% under 30.

Research by Maritime Industry Australia Ltd (MIAL) warns that the national maritime skills gap will grow over the next four years, as shore-based demand for seafarers is set to rise by up to 18% at a time when increasing numbers are due to retire.

MIAL CEO Teresa Lloyd commented: 'The workforce is ageing, the opportunities to train and work in the industry are reducing, yet the need for qualified and experienced officers is as great as ever.' **i**

In brief

Kidnap concerns: the Romanian maritime union SLN has expressed concern after three Romanian seafarers were kidnapped from the product tanker *Histria Ivory* off the port of Lome, Togo, last month. The International Maritime Bureau reported a separate event, in which five crew were kidnapped from an offshore support vessel some 32nm SE of Brass.

Greek fall: the size of the Greek-controlled merchant fleet has declined for the first time in a decade. Figures released by the London-based Greek Shipping Cooperation Committee show that Greek interests now control 4,017 ships totalling 339m dwt – down by 131 vessels and 2.376m dwt since this time in 2018.

CMA CGM cuts: the French container shipping firm CMA CGM has announced a US\$1.2bn cost-saving scheme, despite announcing revenues of \$23.5bn for last year. The company increased its capacity by 9.3% during 2018, to a total of 20.7m TEU, and now operates 509 ships, 44 of which are registered under the red ensign.

NIS grows: the number of ships in Norway's International Ship Register (NIS) has risen to the highest total in more than a decade. More than 50 ships have switched to the flag over the past two years, and NIS-registered gross tonnage has increased by 14.3% since 2014.

Adnoc expands: the Abu Dhabi National Oil Company has announced plans to add more than 25 ships to its current fleet of 123 ships over the next five years, including oil tankers, gas carriers and bulkers.

Deckhand's death 'was caused by unsafe working practices'

A damning investigation report from the Cayman Islands Maritime Authority has concluded that a British crew member's death in 2017 was a result of poor working practices onboard the 81m superyacht Kibo.

Deckhand/assistant engineer Jacob Nicol died two years after an accident on 3 May 2015, when the Cayman-registered private yacht was at anchor off Portals Nous on the island of Mallorca.

The 22-year-old seafarer had been given the task of cleaning the rubbing strakes on the yacht's hull approximately 3m above the waterline. This involved working over the side of the yacht supported by a 'bosun's chair' secured to the yacht's bulwarks, under the supervision of the chief officer and the third officer.

After working over the side for about 50 minutes, Mr Nicol fell from the worksite into the water and sank below the surface. He was eventually rescued by colleagues, but the time

from the fall to being recovered back onboard was about 13 minutes.

Due to being deprived of oxygen while underwater, Mr Nicol suffered hypoxic brain injuries and was left severely disabled. He was repatriated to the UK, and on 7 June 2017 died of bronchial pneumonia brought on by his immobility following the accident.

A ruling of accidental death was recorded following an inquest at Birmingham Coroner's Court.

The Cayman Islands investigators noted that there had been nothing to arrest Mr Nicol's fall because no independent safety line was in use, despite being required by the yacht's technical manual. Once in the water, he was unable to help himself because he had become attached to a fender hook and was weighed down.

Mr Nicol was not wearing a lifejacket or other buoyancy aid. However, as the report points out: 'Had the lifebuoy in the vicinity

of the worksite been deployed as soon as the deckhand fell, it is likely that the deckhand would have been able to remain on the surface of the water until he could be recovered to the yacht.'

Since the accident, the fleet operator Y.CO has revised fleet operating procedures, improved supervision and conducted specific training onboard Kibo, and there have been revisions to the Large Commercial Yacht Code regarding safety requirements for working aloft and for over side work. In the light of these actions, the Cayman Islands report makes no further recommendations.

Nautilus international organiser Danny McGowan commented: 'We are pleased to see that the report has finally been released, though it is disappointing that it has taken quite so long. We hope that the report provides some assistance to Jacob's family, and importantly that it helps to prevent such situations from reoccurring.' **t**



Pictured left is the first superyacht launch of 2019 – the 58m Najiba, custom-built at Feadship's Aalsmeer yard in the Netherlands for experienced owners.

The aluminium-hulled vessel features two master staterooms for the owners and four staterooms for an additional eight guests, as well as accommodation for a crew of 14.

Najiba is fitted with two MTU 12V2000M72 diesel engines. It has a top speed of 16 knots and a range of 4,400nm at the cruising speed of 12 knots. **t**

New code aims to make boat deliveries easier

The UK has introduced a new code which aims to make it easier and cheaper to test, trial and deliver new boats.

Effective from 1 January 2019, the Intended Pleasure Vessels (IPV) Code permits the temporary commercial use of pleasure craft at sea for a number of defined purposes without

the current requirement for inspection.

The Code was developed by the Maritime & Coastguard Agency (MCA) in partnership with industry organisations including British Marine, the Royal Yachting Association, and the Yacht Brokers, Designers and Surveyors Association.

MCA chief executive Brian Johnson said the Agency had recognised the need for pleasure vessel users to have a simpler way of complying with existing regulations, and the Code had been produced with the help of a consultation. 'This really is a positive step for pleasure vessel users and the wider community,' he added. **t**

Malaysia seeks 'fast track' sale of superyacht seized last year

The Malaysian government is stepping up efforts to sell the 91.5m superyacht Equanimity, which was seized by the Indonesian authorities last year as part of a fraud investigation.

The Cayman Islands-flagged vessel was handed over to the Malaysian authorities, who are seeking to use the sale proceeds to offset the losses from the 'misappropriation' of money from the sovereign wealth fund 1Malaysia Development Berhad (1MDB).

The Malaysian government has appointed Burgess to handle the 'fast track' sale, which it hopes to complete by the end of March.

Equanimity has been given a guide price

of US\$130m following a full condition survey – around half the reported price paid for it in 2014. An initial attempt to sell the yacht through an auction failed last year.

The Malaysian government is said to be spending around \$500,000 a month to maintain the yacht, under the supervision of 21 crew members.

Burgess is reporting healthy interest in Equanimity, with as many as 20 interested buyers coming from the Middle East, Russia and other parts of Asia. CEO Jonathan Beckett said Equanimity is 'a yacht that must be considered as a key option for anyone looking at that sector of the market'.

Burgess says the sale of Equanimity is very different from that of the Indian Empress last year, in which Nautilus successfully fought to secure owed wages for the crew. 'This is a motor yacht like any other – in good condition and fully crewed,' said director Rupert Nelson. 'There is nothing negative at all about this boat.'

The yacht's former owner, fugitive businessman Low Taek Jho, has been accused by authorities of siphoning 1MDB funds for personal use – including buying the Equanimity. He has denied the claims, but has refused to return to Malaysia because he says he will not get a fair trial. **t**

'Dream' boat launched by Dutch builder

The Dutch builder Oceanco has launched its 33rd newbuild – the 90m superyacht Y716 DreAMBoat, pictured right.

The 2,950gt vessel can accommodate up to 23 guests and a maximum of 33 crew members. It will undertake sea trials shortly, with delivery expected before the start of the summer season.

Powered by twin MTU 4282hp engines, DreAMBoat features a cutting-edge IP computer operating system. It will have a cruising speed of 16 knots and a maximum speed of 18.5 knots. **t**



Rotterdam marina proposed **BIG PLANS**

A €12m plan to create a marina for superyachts in the port of Rotterdam was revealed last month.

The scheme – which is backed by a dozen companies from the maritime sector – would see facilities constructed in the western part of the Rijnhaven to handle up to 50 yachts of up to 100m length.

Developers say the project – which has been presented to municipal authorities for approval – could turn Rotterdam into an

important regional hub for the superyacht industry, as well as creating hundreds of new jobs.

The facilities could be used to accommodate newly-built superyachts awaiting delivery or preparing for sea trials, as well as those undergoing refits or maintenance work.

If the plans are approved, the backers say the marina could come into operation as early as 2020. **t**

A South Korean designer has unveiled plans for what would be the world's largest superyacht – a 229m vessel capable of accommodating up to 52 guests and 92 crew. Designed by Chulhun Park, with support from Palmer Johnson, the US\$800m trimaran vessel would be 49m longer than the current largest superyacht, the 180m Azzam, owned by UAE president Khalifa bin Zayed al Nahyan. **t**

ECDIS ENQUIRIES

A year-long research project carried out by accident investigators in the UK and Denmark has delivered some stark warnings about the safety of electronic chart display and information systems...



The International Maritime Organisation (IMO) is set to face calls for sweeping changes to the rules governing the use of electronic chart display and information systems (ECDIS) following in-depth research into the problems experienced by masters and officers.

A major safety study undertaken by the UK and Danish marine investigation authorities has highlighted major concerns over the design and operation of ECDIS and significant shortfalls in the way in which seafarers are training to use the systems.

The study was undertaken in response to a series of accidents – mainly groundings – over the past decade in which investigations revealed ‘a mismatch between the way ECDIS was used and the way regulators and the systems manufacturers expected it to be used’.

In a paper presented to the IMO, the investigation bodies provided

▲ The Dutch-flagged general cargohip Nova Cura was written off in 2016 after grounding on a reef off the coast of Greece in an accident that was blamed on ECDIS issues

some ‘headline’ findings from the study ahead of its publication later this year.

The report notes that seafarers consider that ECDIS contributes to safe navigation by reducing the workload of the bridge team and providing real-time positioning.

‘However,’ it adds, ‘it is clear that there are wide variations in the way that ECDIS is used due to, among other things, ship function, bridge equipment and ergonomics, manning, the degree of integration with other sensors, the requirements of safety management systems, the knowledge and familiarisation of operators, and the ECDIS model fitted.’

The paper points to a reliance upon training and familiarisation to overcome issues around system complexity and the lack of standardisation, and warns that ‘many of the training strategies currently adopted appear to fall short of individual expectations and requirements’.

As part of the study, British and

Danish investigators conducted fact-finding voyages of one to four days on 29 ECDIS-equipped ships and interviewed almost 130 deck officers.

Some of the most common complaints were:

- alarms (particularly AIS and in restricted waters)
- too much information displayed
- variations in the way information is grouped by different ECDIS models
- differing menu structures

Some of the most requested changes included:

- fewer alarms
- bigger screens and more touch-screen technology
- simpler systems
- standardised interfaces
- more integration, such as radar, digital publications and NAVTEX
- increased colour density and better fonts

Investigators found that many seafarers had difficulties recalling ECDIS training details because of significant time gaps between training and practical use. The quality and methods of training were found to vary considerably, and many seafarers said they preferred familiarisation to generic training.

‘There were significant variations among certified officers in the understanding of key features such as safety contour, safety depth and the criteria on which wheel-over positions and “predictors” were based,’ the paper adds.

Some marked inconsistencies were also noted in the way that officers use ECDIS for passage planning and route monitoring.

The full report – and accompanying recommendations – is expected to be published within the next few months. **i**



HAS THE MLC CHANGED YOUR LIFE?

Six years since the Maritime Labour Convention came into force, academics have started to assess the impact of the legislation on crews’ living and working conditions – with some sobering findings...

Almost one-third of seafarers consider that the Maritime Labour Convention (MLC) has not improved their living and working conditions, a new study has found.

Research published in the journal International Maritime Health shows that only 7.3% of seafarers believe that the MLC has resulted in significant improvements to their conditions.

Carried out by experts at universities in Germany and Denmark, the study was conducted in a pilot programme to investigate the impact of the MLC since it entered into force in 2013.

The report notes that the MLC now covers more than 90% of the world merchant fleet and sets comprehensive standards for such things as pay, hours of work and rest, accommodation, food, medical

care, employment contracts and social security.

Knowledge of the impact of the MLC is very limited, the researchers pointed out, and what research there is has presented a largely critical or ambivalent view. There is also an absence of research into seafarers’ views about the convention, the report adds.

In an attempt to redress this gap, the researchers carried out an

▲ Working at sea comes with particular pressures that are just starting to be understood
Pictures: US Coast Guard



online survey and organised a detailed focus group to gather views on whether the MLC has had an effect on such things as health and safety and onboard connectivity.

The research showed that 43.6% of seafarers felt the MLC has improved their conditions ‘somewhat’ – although almost half of those with more than 10 years’ experience said it had not had any impact.

Around 70% of ratings said the MLC had improved their conditions ‘somewhat’, while 38.5% of officers said they had not seen their conditions change for the better.

Researchers said they had identified a number of issues of particular concern to seafarers. More than two-thirds said they sometimes, often or always perform tasks for which they need more training and more than 16% had been exposed to threats or violence at work within the past two years.

‘Safety issues that worried the seafarers were especially the difference in training standards for crew from other nationalities, a risky work environment on the ship with exposures to, for example, noise, heat and weather, and the safety management overall,’ the report states.

There were also negative reports of stress, lack of motivation, boredom and a feeling of not being good enough, it adds.

Focus group participants – senior Danish officers – complained that the MLC had increased paperwork and administrative tasks, and also highlighted problems with low manning, high workloads and the difficulty in adhering to rest hour requirements.

However, just over 63% of all the participants were either rather or very much satisfied with their job.

The researchers said the results should be treated with caution because of the limitations of the study. But, they stressed, it is important that more work is done to assess the impact of the MLC. ‘The international nature of shipping demands that all stakeholders and nationalities get a voice,’ they concluded. **i**

TO THE MLC AND BEYOND

One of the world's leading vessel vetting organisations has trained its sights on seafarer working conditions. **TONY HONEYBORNE** of RightShip explains why...

The Maritime Labour Convention (MLC), which came into force in August 2014, sets out a seafarer's minimum working rights and ensures that the contract between a seafarer and shipowner provides fair living and working conditions.

RightShip is a safety and environmental risk assessment organisation, and we are known for our vessel vetting platform (Qi) and physical inspections. Every year, we conduct at least 1,200 inspections on 35,000 ships internationally.

Seafarer welfare has always

been a priority for us, and since the ratification of the MLC, the working and living conditions onboard a vessel have also been a serious consideration for our inspectors.

Increasingly, many of the world's big corporates are seeking a more ethical and transparent supply chain and strong corporate social responsibility, as both offer a significant reputational boost with customers and stakeholders. However, transparency and due diligence can be difficult to navigate because of complex and opaque supply chains.

The Sustainable Shipping

▲ Above and right: RightShip's inspections aim to support shipowners who exceed MLC requirements, and inspectors make a point of talking to any crew members they meet

Initiative (SSI) works with companies across the industry to encourage the adoption of labour standards to improve safety, security, living conditions, wages and rewards for workers. As an SSI member, RightShip last year introduced the new Health and Wellness Assessment (HWA) to run alongside its regular inspection regime. The voluntary assessment conducted by RightShip inspectors evaluates factors that are not immediately evident through a physical inspection of a vessel – all with the aim of recognising and rewarding ship owners and managers who go beyond basic compliance with the MLC.

The RightShip HWA recognises the direct influence that living and working standards have on seafarer wellbeing, work performance, safety and employee retention; and the questionnaire seeks to build a more comprehensive understanding of the working and living conditions onboard.

Led by myself, the roll-out of the HWA has been coordinated by RightShip's head office in Australia. Although the project is still in its trial phase, the RightShip HWA is already providing transparency around the onboard regime, highlighting shipowners who are taking their regulatory obligations seriously and going 'above and beyond' their statutory requirements.

To gather the best and most accurate feedback, the HWA is first given to the captain. After this, the RightShip inspector will make a point of talking to any crew they meet – the cook, the engineers – to gather their impressions and comments on shore leave and conditions onboard. During the trial, inspectors have been providing detailed feedback on the HWA questionnaire to determine if any changes should be made.

Generally, whilst the crew are very keen to take part in the inspection, a lot can be gathered by just looking around at simple things. Is the storeroom well stocked? Is the seafarers' accommodation clean and well lit? What are the mess room

facilities like? Is there karaoke, are there videos? Is there a permanent library? What recreation facilities are provided?

The HWA inspection also examines the catering onboard – including the budget and quality of the menu and cleanliness of the kitchen and meals area.

Another consideration is whether family support is available; for example, access to the internet. The questions aim to build up a picture of the mental and physical health of the seafarers in terms of exercise, quality of diet, social activities and the opportunities to speak to external agencies such as welfare providers.

Last but not least, the HWA assesses the actual working conditions – including hours worked, training provided, payment arrangements, access to union and health and safety representatives, frequency of shore leave, availability of crew transport and arrangements for medical appointments.

More and more ship owners and operators have come to terms with the need to provide internet access for their crew; however, sometimes a 'quick fix' does not provide the right outcome.

For example, gaining internet signal on a steel ship can be a challenge, needing many routers and cables to deliver a signal to different areas. Recently, a



◀ RightShip CEO Martin Crawford-Brunt



◀ Tony Honeyborne, RightShip's senior superintendent of dry cargo ship inspections

RightShip inspector spotted fire doors fixed open to enable internet wiring to reach individual crew cabins. So whilst the intention was good, the execution was not, and alternative arrangements had to be made.

Looking ahead, one issue that I see becoming more of a problem relates to restricted shore leave, resulting from the increased intensity of port security. There is a heavy reliance on the religious and welfare charities operating in the ports, where volunteers are needed to drive a bus right from the ship's gangway into town and back. Without such transport, the necessary security checks can take so long that few seafarers have sufficient time for such a valued excursion.

If a RightShip inspector onboard a vessel in Australia found a problem or had suspicions of a serious issue, this would be reported to the Australian Maritime Safety Authority (AMSA). Should AMSA's subsequent investigation reveal problems, the

vessel could be detained until the situation was resolved.

Fortunately, very few non-compliant ships call in Australia, simply because the port state control operations provided by AMSA stop poor operators from calling in the region. Substandard ship operators are unwilling to fix cargoes to areas where they face greater examination and are likely to be detained, preferring locations with far less scrutiny.

As the RightShip HWA reaches the end of its trial period, the decision has been taken to permanently incorporate a number of the most pertinent questions into the existing RightShip inspection. Charterers are beginning to regard crew welfare as an integral part of their vessel selection, and enough RightShip customers have asked for the additional level of reporting to make it worthwhile.

RightShip is confident that in time, the HWA will be as central to a ship's operations as environmental protection has now become. Once a 'nice to have', environmental sustainability is now a fundamental consideration in vessel selection.

RightShip CEO Martin Crawford-Brunt concludes: 'The HWA is a new service that we've developed since the ratification of the MLC. It's come about both as a direct response to our customers' requests and as something that's been driven by RightShip staff, many of whom are ex-mariners and are passionate about seafarer welfare and promoting best practice.

'We have all heard accounts of some appalling situations, and what we are trying to do here is recognise those operators who provide living conditions and a working environment that go above and beyond MLC requirements. It's about recognising and rewarding good management practices, and making that practice the norm.' **1**

CONSEQUENCES OF COMPLACENCY

Hundreds of people paid tribute in January to the 50 who died four decades ago in one of Ireland's worst shipping disasters, with relatives warning that lessons from the accident still need to be heeded...

'N ever forget' was the refrain last month as ceremonies were held to mark the 40th anniversary of Ireland's worst modern maritime accident.

A total of 50 people died when a series of explosions ripped through the 121,432dwt tanker *Betelgeuse* while it was discharging a cargo of Arabian crude at the Gulf Oil terminal on Whiddy Island in the Bay of Bantry on 8 January 1979.

Eyewitnesses first spotted a small fire just forward of the ship's manifold at around 0030hrs, and, within the space of just 10 minutes, the flames had swept across the vessel. Barely 20 minutes after that, a series of explosions split the tanker's hull, separating the No. 5 and 6 tanks and igniting much of the oil remaining onboard.

With the conflagration reaching a height of up to 300ft and temperatures estimated to have exceeded 1,000°C, the concrete unloading jetty crumbled.

Firefighters were unable to get near the vessel and had to direct their efforts into preventing the blaze from spreading to the tanks ashore.

All of the *Betelgeuse's* 41 French crew were lost in the disaster, along with the wife of one crew member, the ship's pilot, a cargo inspector, and six shore-based staff. A Dutch diver involved in the wreck removal operation was a later victim.

Built for the French oil company Total, *Betelgeuse* had been one of the biggest ships in the world fleet when launched and was barely a decade old at the time of the accident.

But an investigation commissioned by the Irish government into the causes of the disaster found that the ship was in a very poor state – with the structure being 'abnormally, seriously and significantly wasted due to corrosion'.

It was subsequently estimated that the wastage in the steel plating of the

ballast tanks was as much as 40%.

The investigation report concluded that 'an important cause of the excessive corrosion was Total's decision not to renew the cathodic protection in the permanent ballast tanks and/or its failure to have the tanks coated with a protective coating'.

The oil major was also criticised for its 'conscious and deliberate' decision not to renew seriously wasted longitudinals and other parts of the permanent ballast tanks when *Betelgeuse* was in dry dock in 1977. Total had failed to maintain *Betelgeuse* properly because it was planning to sell the ship as a result of the poor state of the tanker market at the time.

The 480-page investigation report also noted the adverse impact of unloading and ballasting procedures on the tanker's 'seriously weakened' hull.

The crew had commenced ballasting before discharge was complete, but *Betelgeuse* had no loadicator to help

them calculate the stress moments. The investigation concluded that the stresses caused by the ballasting had exceeded the critical buckling range in some of the ballast tank deck and side-shell longitudinals.

As the longitudinals failed, a sequence of disastrous events took place. The deck

Chevron and National Maritime College of Ireland cadet Kean Kervick is pictured with John Fitzpatrick, Stewart Inglis from the International Chamber of Shipping, Bishop of Cork & Ross Dr John Buckley, and Michael Kingston, as he received this year's *Betelgeuse* Memorial Safety Award. Mr Kingston said the bursary award was 'a story of huge positivity of safety awareness standards emanating out of such sadness'.

Image: Southern Star



◀ The French tanker *Betelegeuse* following the explosions and fire in Bantry Bay in January 1979. Image: Ian Vickery/Michael Kingston

and side-shell plating began to buckle and this was followed by progressive failure of the hull. Sparks from the tearing steel or severed electrical cables ignited vapours in the ballast tanks, and the explosions resulted in the failure of the bottom plating and the fracture of the hull.

Maritime lawyer Michael Kingston lost his father, Tim – a pollution control officer – in the disaster. Mr Kingston is now vice-president of the French and Irish association of the relatives and friends of the *Betelgeuse*, which organised last month's memorial event in Bantry, including a ceremonial mass and wreath-laying at the *Betelgeuse* memorial monument.

'This was a very important commemoration of a terrible maritime tragedy,' he said. 'It is hard to explain the enormity of the pain the relatives have suffered – 23 of the French bodies were never recovered.'

Mr Kingston – who has been involved in the development of the IMO Polar Code and of safety measures in response to the *Costa Concordia* and *Deepwater Horizon* disasters – said he hoped the anniversary event would also serve as a 'positive acknowledgement' of the way the *Betelgeuse* tragedy had helped to improve safety standards in the shipping industry.

This was a disaster that should never have happened, he said. 'The failures that took place – both on the ship, and at

the oil terminal – were some of the worst derelictions of duty in relation to safety in world maritime history.

'Working first hand in international maritime regulation, I cannot emphasise enough the impact and importance of lessons learned from the Whiddy Island disaster and the sacrifice of those who died and the positive change that it has led to,' he added.

One of the biggest lessons from the disaster is the importance of proactive safety initiatives by governments and industry, Mr Kingston said. *Betelgeuse* was not equipped with an inert gas system, he pointed out, even though their carriage on oil tankers had been agreed by the IMO in 1974.

Had *Betelgeuse* been equipped with an inert gas system, and had the No. 5 and 6 tanks been inerted, experts consider that the final, fatal, explosion which spilt the ship's hull would almost certainly have been prevented.

'Inert gas systems were not carried onboard *Betelgeuse* because the 1974 SOLAS Convention had not then been ratified by enough national legislatures,' Mr Kingston pointed out. 'In the absence of regulation, best practice in the industry was not applied. After the Whiddy Island disaster, Ireland ratified SOLAS 1974 and consequently the world brought it into force.'

'It is extremely important to acknowledge this and to highlight the importance of always adhering to best practice in the absence of regulation – throughout all industry sectors,' Mr Kingston added.

Even now, he added, there are 'quite staggering' examples of government complacency on safety issues, and Ireland is among a number of countries that have so far failed to ratify the 1993 international convention for the safety of fishing vessels or the 2007 convention on the removal of wrecks.

'Unfortunately, very often in the slow regulatory process, it takes another disaster to implement previously suggested regulation where industry continues to ignore recommendations,' he pointed out. **i**



PLAN BUT DON'T PANIC

Visions of fleets of 'robo-ships' running around the world's oceans may take much longer to become a reality than technology firms predict, a new study has concluded. **ANDREW LININGTON** attended an event to launch the report last month...

Automation is unlikely to lead to widescale seafarer job losses over the next 20 years, according to the results of a major new research project.

A two-year study undertaken by the World Maritime University and funded by the International Transport Workers' Federation (ITF) has concluded that new technology will cut global demand for seafarers by around 22% between now and 2040.

But it predicts that further growth in world seaborne trade will mean a continued demand for skilled and experienced seafarers – and especially engineer officers,

masters, deck officers and marine pilots – which will offset the impact of jobs lost through automation.

Entitled **Transport 2040: Automation Technology Employment – the Future of Work**, the report analyses trends and developments in shipping, road, rail and aviation, with an emphasis on the implications for jobs and employment for transport workers.

Researchers concluded that the introduction of automation in global transport will be evolutionary rather than revolutionary, and 'despite high levels of automation, qualified human resources with the right

Left to right at the report launch: ITF general secretary Stephen Cotton, World Maritime University president Dr Cleopatra Doumbia-Henry; and IMO secretary-general Kitack Lim

skillsets will still be needed in the foreseeable future'.

The research, which was unveiled in a conference at the International Maritime Organisation, suggests that the take-up of autonomous shipping will be slow, as a result of unclear economic benefits, high costs of investment, and the significant changes that will have to be made to the maritime regulatory regime.

The study says the impact of automation will vary across different regions, and workers will be affected in different ways, based on their skill levels and the varying degrees of preparedness of different countries.

But it recommends that unions, owners and maritime authorities do much more to collaborate on the development of new training programmes and new skillsets.

Professor Jens-Uwe Schroder-Hinrichs, who led the WMU research, said the results gave a generally positive message for

workers – although the impact of technology may be felt more strongly in sectors where there is no shortage of certain types of skills or safety concerns to be addressed.

The introduction of autonomous ships is likely to be slow, he added, as there continue to be some big questions about the business case and the global regulations that need to be changed to permit their use.

Medium and low-skilled jobs will be most at risk, Prof Schroder-Hinrichs said. Engineer officers, marine pilots, deck officers and masters are among the transport workers judged to have the lowest likelihood of being replaced by automation, while ratings are put in the medium risk category.

The report says that highly automated ships could cut crewing levels by between 16% and 24% over the next two decades, and global demand for seafarers could fall by up to 22% as a result. 'However, this does not mean a 22% reduction in the number of seafarers, as forecasts for future growth in seaborne trade suggest that the total number of seafarers will increase,' Prof Schroder-Hinrichs stressed.

He said the impact is likely to vary across different regions – with some countries much more prepared for automation than others. Many flag and port states have yet to develop strategies for maritime automation, the report notes, and none has so far produced an over-arching policy that combines regulations with innovation, competencies and skills, infrastructure and future business models.

However, he added, there is a significant potential for automation on inland waterways – with the strong environmental drive for modal shift likely to result in a big increase in waterborne transport within Europe in particular.

Prof Schroder-Hinrichs said there is a need to raise awareness of the

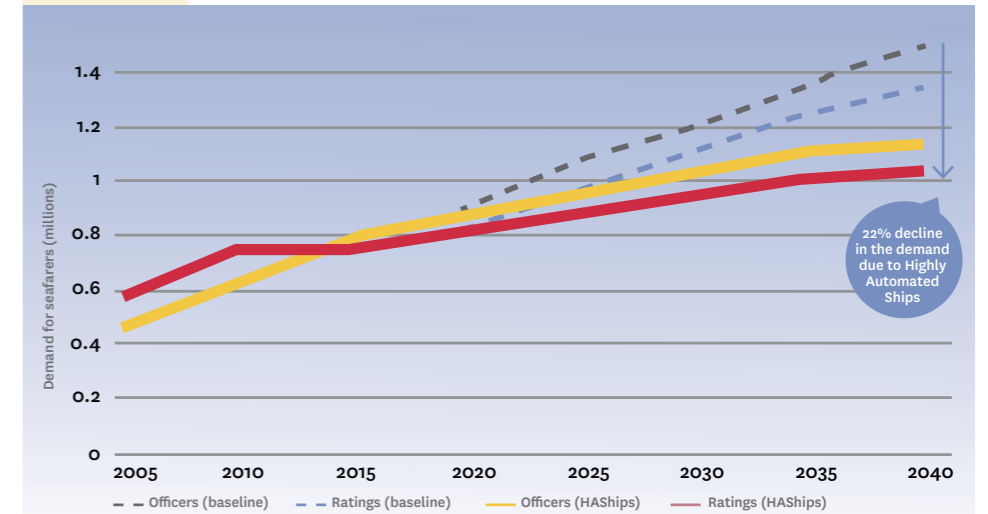


Figure 1: Simulations for the demand of seafarers

implications of introducing automated technologies in transport, and there should be 'intensive dialogue' between stakeholders such as trade unions and equipment manufacturers, as well as work to identify the core skills that will be required to successfully implement new technologies.

Countries also need to consider policies that will address the effects of further automation – such as who will pay for the re-training that will be required. Developing nations also need support to cope with the effects and to ensure they are not left behind, he added.

Opening the launch event, IMO secretary-general Kitack Lim said the report identified the need to consider how technology would affect seafarers and how their training and education will need to be developed. 'Member states and the industry need to anticipate the impact these changes may have and how they will be addressed,' he added.

ITF general secretary Stephen Cotton told the meeting that it was time to give transport workers a voice in a debate over automation which has so far been dominated by technology companies. 'We believe workers are at the very centre of this, and the proposals laid out by the manufacturers are not the answer to some of the

challenges we face,' he continued. 'Transport workers of today and tomorrow must be equipped with the required knowledge, skills and expertise for the jobs of tomorrow. The study provides the information needed to support these aims. The ITF remains committed to working in partnership to ensure our unions and members are central to developments in building the future of work.'

ITF maritime coordinator Jacqueline Smith said it is vital that new technologies are 'user-driven' and not simply imposed upon seafarers. 'It should not just be the manufacturers and technical companies trying to sell their products, as the variations in the same kind of technology can be very confusing,' she added. 'And who will be paying for the upskilling is a very big issue, especially in developing countries.'

World Maritime University president Dr Cleopatra Doumbia-Henry said the 'ground-breaking' research had highlighted the likelihood that the introduction of automated systems may be slower than is often predicted. 'The most fundamental message is that despite the growing levels of automation and technology, qualified human beings will continue to be the backbone of global transport,' she stressed.

TRAINED TO KEEP A COOL HEAD



With more and more ships operating in icy waters, the industry needs to be sure that crews are prepared properly for this challenging work. **NATACHA SOUTHWELL** therefore carried out a survey of ice navigators to determine whether the regulatory training requirements match the practitioners' opinions of the skills, knowledge and experience needed...



Maritime academic Natacha Southwell is a former member of the Nautilus professional and technical team

through the Northern Sea Route (NSR). It is therefore reasonable to expect that the next half century will see a gradual growth in shipping traffic in the NSR, the North West Passage and subsequently the Trans-Polar Route. Both all-year and seasonal ice

maritime operations will continue to present significant safety and environmental risks.

Despite these developments, there has been very little focused industry or academic research into the role of ice navigators in providing safe navigation in ice-covered waters. The idea for my master's degree research emerged from reading numerous articles on polar ship operations, but encountering very little in the way of in-depth reports on the skills and experience of ice navigators.

I wanted to explore this gap, against

the background of a rapidly changing technological environment. The research drew upon three strands: deck officer skills and experience set against the recent implementation of the IMO Polar Code; the human element; and current and emergent technological aspects of ice-covered maritime operations.

The study identified key points and themes around ice navigators' opinions of the IMO Polar Code, mentoring, simulator training, advances in technology, navigational systems and supporting infrastructure.

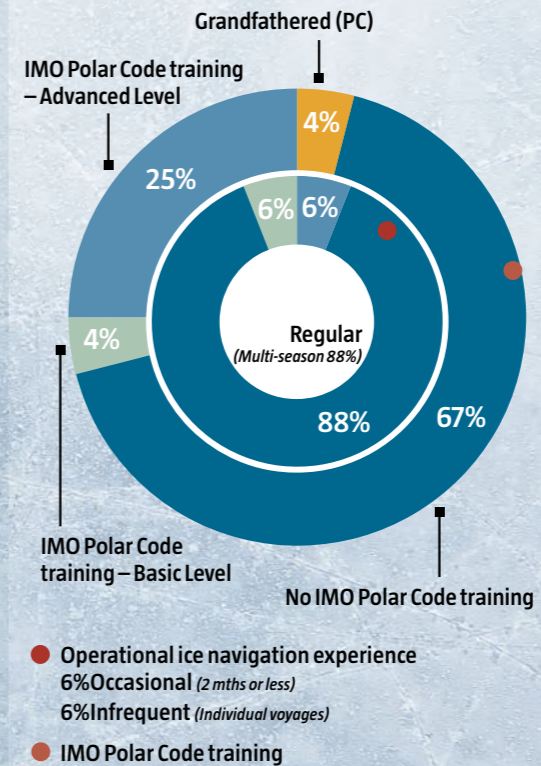
Central to the research was a survey completed by 48 deck officers – 82% of whom were ice navigators and 22% ice pilots. Their seagoing service included merchant vessels, icebreakers, research ships and naval ships, and 88% had regular multi-season experience of working in ice-covered vessels.

Although the main geographical ice navigation areas were centred around the Canadian Arctic, Baltic and Greenland, most participants bore out the highly mobile and diverse nature of ice navigation – with operational experience gained globally in the Arctic, Antarctic and Baltic Sea regions.

A key finding was the role of experiential knowledge in the development of ice navigation skills, with 91% considering on-the-job training and mentoring to be not only very important but also highly influential in the development of core skills.

Many respondents remarked on the importance of the ability to recognise different types of ice and to interpret ice conditions

ICE NAVIGATION OPERATIONAL EXPERIENCE & IMO POLAR CODE TRAINING



Conversely, concern over inexperienced ice navigators also featured highly in survey comments.

More than 60% of the participants had received IMO Polar Code training, and 89% viewed the implementation of the current mandatory Polar Code two-tiered SOLAS training requirements in a generally positive manner.

However, the omission of actual practical in-ice experience and competence requirements in Chapter 12 of the Polar Code was regarded by 53.5% of the survey respondents as being a major area of concern for future safety.

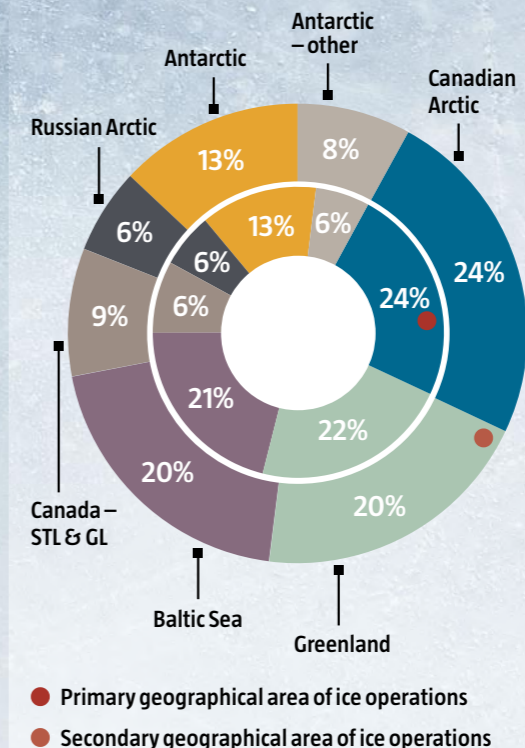
Many respondents remarked on the importance of the ability to recognise different types of ice and to interpret ice conditions. This is of particular importance given the wide variability of ice conditions encountered from year to year, time of year and geographical operations.

The integrated use of marine simulators in Polar Code training was viewed positively by 52% of respondents – although cautions were voiced about the extent to which simulators can replace practical ice navigation experience at sea.

The survey comments highlighted the importance of skills such as patience and prudence in achieving safe manoeuvring in ice – with several respondents noting the importance of gaining a 'feel' and having a respect for ice.

Part of my research aimed to explore the influence and application of existing and future technological systems, and much of the survey feedback expanded on the importance of harmonisation and enhancement of existing navigational systems in the first instance. Almost one-quarter of respondents said they thought the automatic integration of ice forecasts into an ENC platform would be very useful, while 61% saw it as marginally useful. Almost

GEOGRAPHICAL AREAS OF ICE NAVIGATION OPERATIONAL EXPERIENCE



- Primary geographical area of ice operations
- Secondary geographical area of ice operations

STL – St Lawrence GL – Great Lakes

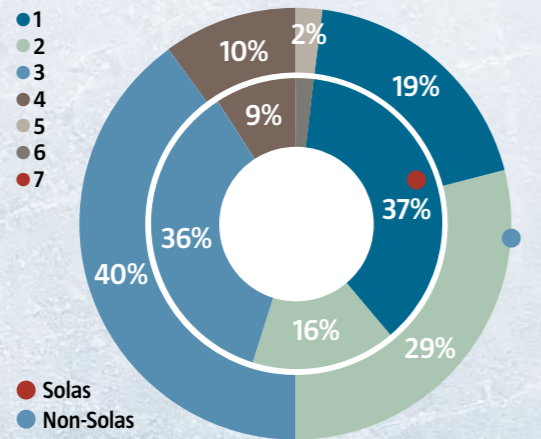
three-quarters saw a potentially positive impact on safety from the use of an automatic ice detection system, in conjunction with an ice classification system.

A wide range of views were expressed on emergent technologies such as forward and upward looking sonar systems for ice monitoring and unmanned aerial vehicles for tactical navigation support. The use of drone technology for timely aerial imagery was considered by 77% of respondents as having the potential to significantly or relatively enhance safety in ice-covered waters in the next decade.

The survey also identified some of the constraints experienced by ice navigators – including issues with data connectivity, concern over availability of icebreakers, commercial pressures, and insufficient hydro-meteorological data.

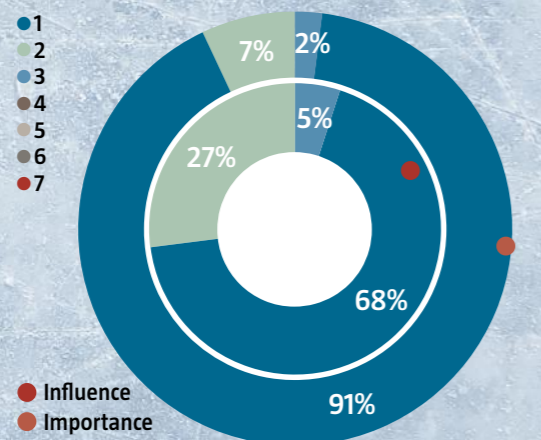
Several respondents noted bandwidth limitations as an issue for vessels operating in high latitudes – with availability of updated accurate ice and weather forecasts being a recurrent comment. Inadequate coverage of areas surveyed to modern hydrographic standards was seen as

IMPORTANCE OF POLAR CODE TRAINING SOLAS – NON-SOLAS



Responses to importance for overall safety of introduction of two-tier mandatory Polar Code training for a) SOLAS b) future mandatory training for non-SOLAS ships in polar regions. Key: 1 – Very Important 7 Unimportant

IMPORTANCE & INFLUENCE OF ON-THE-JOB TRAINING & MENTORING



Importance to overall safety & influence on the development of ice navigation skills through a) structured onboard on-the-job experience & mentoring b) mentoring programme at sea under supervision of competent officers.

a significant issue by 52% of participants, and concerns were also raised over the suitability and capability of vessels in ice-covered areas, the combined crew experience, and knowledge of the design limits and ice strengthening of the vessel.

The importance of appropriate manning levels and watchkeeping schedules was raised by many respondents, who highlighted the issue of fatigue for watchkeepers as a consequence of the intensity of operations in ice.

I hope this study has contributed in a small way to an understanding and a better appreciation of the significance of deck officer training, skills and competence requirements for maritime operations in ice-covered waters.

The findings demonstrate a contrast between the regulatory requirements for training and competency and the actual expectations of ice navigation competency and skills. However, at this stage it is too early to determine whether or not the Polar Code training requirements will prove to be sufficient to improve overall safety not only in polar regions but also in other ice-covered waters.

DISCHARGE DEBATE

In the absence of international regulations on the use of open-loop scrubbers, individual ports are taking matters into their own hands and imposing local bans. But manufacturers say these decisions have been taken too hastily and could lead to more problems than they solve ...

With a growing number of port authorities moving to impose bans on open-loop scrubber wash water discharges, the European Commission has called for urgent international action to introduce harmonised rules on their use.

And a leading P&I club has urged owners of ships using open-loop scrubbers to reduce the risk of seafarers being criminalised by ensuring that crew are informed of local discharge regulations before ships visit ports with bans or restrictions.

The Gard Club said it was aware of existing or proposed discharge regulations in ports in Singapore, China, India, Belgium, Ireland, Germany, Latvia, Lithuania, Norway, the United Arab Emirates and the United States.

'Various other coastal states and

ports are discussing enforcing similar bans citing the adverse effects of scrubber washwater on the marine environment,' it warned. 'It is therefore likely that the list of states/ports which currently regulate open-loop scrubber discharges in their waters will grow over time.'

The European Commission has tabled a paper at the International Maritime Organisation calling for harmonised rules to be set down to prevent major disruption to the shipping industry. 'The sooner uniform and unambiguous regulatory measures are developed and adopted, the better the potential pollution will be controlled and the less significant the economic impacts will be both on industry and administrations,' it warns.

The Commission paper – due to be discussed at the IMO's marine

environment protection committee meeting in May – notes a number of recent scientific studies which have highlighted the potential environmental damage that open-loop scrubber effluent may cause.

It questions whether current IMO guidelines on scrubber discharges are fit for purpose and also stresses the need for adequate port reception facilities to handle sludge and wastewater from exhaust gas cleaning systems.

Meanwhile, scrubber manufacturers have urged ports and maritime administrations not to make quick decisions to ban the use of open-loop scrubbers. The Exhaust Gas Cleaning Systems Association (EGCSA) said it was disappointed by new bans on washwater discharges and warned that this could set back progress on reducing emissions.

EGCSA director Don Gregory said the IMO had carefully researched scrubbers before giving the go-ahead for their use in reducing sulphur emissions. 'We urge other ports and other authorities to research the matter in depth before making hasty decisions inspired by exaggerated claims that may have a very significant, negative impact on the shipping industry,' he added.

However, one recent research report published by the German Environment Agency warned of the potentially damaging impact of polyaromatic hydrocarbons and heavy metals, such as zinc, cadmium, lead and nickel, in washwater. 'Further research is needed to better quantify and evaluate the total impact on the marine environment of this new and emerging source,' it argued.

Scrubbers have been seen as a convenient way to cut sulphur emissions Image: Getty Images



There have been worrying indications in recent years of a global rise in the seafarer injury and death rates – with particular concern about suicides. But when leading maritime academics tried to assess the true scale of the problem, they found themselves hampered by poor record-keeping in the industry...



Failure to maintain decent data on the health and safety of seafarers means vital lessons are being lost, the SIRC report warns
Image: Eric Hourri

DISAPPOINTING DATA

Seafarers appear to be suffering more work-related deaths and injuries than they were at the start of this century, according to a new study.

But the report, from Cardiff University's Seafarers International Research Centre (SIRC), warns that flag states are failing miserably to keep accurate data on the health and safety of their crews.

Seafaring, the report notes, is often cited as one of the most dangerous occupations. However, getting meaningful statistics to compare death rates in shipping with other industries is 'plagued with difficulties'.

SIRC has been seeking to tackle the problem through a long-term initiative to persuade flag states to collect and share accident and injury data. After what it describes as 'lengthy negotiations' with the top 30 flag states, it managed to secure agreements with seven maritime administrations to access their information.

Even then, SIRC experienced significant problems with the 'erratic provision of data' it received from the seven administrations. In what it described as 'one very good year', six of the seven provided data,

and in 11 of the 17 years studied it received data from five – although these were not consistently the same five administrations. In four years, SIRC received figures from four administrations, and in one year only three provided statistics.

Despite these challenges, researchers were able to determine that there had been a decline in the rate of seafarer fatalities between 2000 and 2008. However, they noted, the available statistics show a 'broadly rising trend' from 2008 to 2016 – strongest from 2011 onwards.

With the shipping industry increasingly concentrating on the wellbeing of crew, the study sought to identify accurate figures on suicide rates amongst seafarers. However, SIRC said this was not an easy task.

When reported suicides are compared with the overall level of deaths at work from accidents and natural causes, the study suggests that suicides constituted a relatively small proportion of total fatalities in the period between 2000 and 2016. Of a total of 1,039 fatalities over the 17 years covered by the study, 3.7% (38 cases) were identified as suicides. 'Most of these were identified in the period 2007-2016,' the report adds. 'Only four cases of suicide were

recorded in the period 2000-2006 (inclusive): one in 2001 and three in 2004. This suggests that until 2007 suicides were generally not recorded in such a way as to be identifiable – they were simply categorised as "fatalities" without further details being provided.'

The researchers also identified serious problems with the reporting of injuries suffered by seafarers. Normally, they note, there is a pyramidal relationship between minor injuries, major injuries and fatalities in workplaces – with fatalities accounting for a very small percentage of total incidents (the peak of the pyramid) and minor injuries representing the majority of incidents (the base of the pyramid).

'In our data, fatalities (excluding suicides) constitute quite a significant proportion of incidents, averaging 7.1% of all incidents across all years,' the report notes. 'This is in itself suggestive of significant under-reporting of injuries. However, under-reporting becomes even more evident when comparing the percentages of injuries as a proportion of all incidents recorded by each maritime administration.'

Data from one flag state indicated that fatalities constituted 87.3% of all incidents in the period, while at the

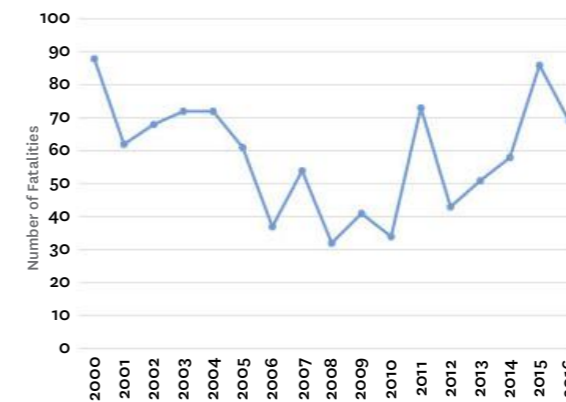
other end of the scale – where 'the reporting and recording of injuries is far more conscientious' – two administrations reported that fatalities only constituted 3.5% and 3.3% of all incidents.

'As a result of the evidence of significant under-reporting of injuries and the very different practices observed by the contributing maritime administrations, we are unable to report any meaningful trends or figures concerning injuries in this period,' the report states.

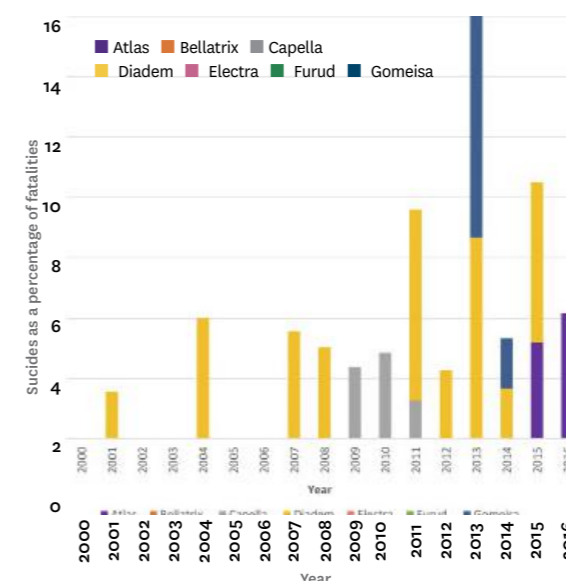
'It is particularly disappointing that notwithstanding the attention which has been drawn to this problem, under-reporting of injuries appears to be a problem of increasing, rather than diminishing, magnitude,' it adds.

SIRC said the availability of information about seafarer safety has been a concern since its launch in 1995 – and things are little better now. 'As the world fleet has flagged out to "open" registers, the problem has been exacerbated, as open registers have been identified as particularly problematic with regard to the collection of data and the provision of access to it,' the report points out.

'Considered over a very long period



Trends in seafarer fatality rates since 2000, as shown in the SIRC study



Data on seafarer suicide rates under seven different flags, drawn from the patchy records kept by the authorities

of time, there is little doubt that the shipping industry is generally becoming safer,' it adds. 'However, the trends revealed by these data suggest that in relation to seafarer mortality, the industry remains exposed. Having seen a decline in the numbers of seafarer deaths reported in the first eight years of the period 2000-2016, the data indicate that seafarer fatalities have increased, and for (combined) administrations where we have data for the whole 17-year period there were more fatalities, in numeric terms, in 2016 than there were in 2000.

'In terms of suicide, the data paint a grim picture if taken at face value,' the report points out. 'However, despite the sharp increase in recorded suicides in the period 2009 onwards, the evidence strongly indicates that this reflects poor recording practices prior to 2009.

'There are also strong indications that within almost half of this small sample of maritime administrations, the recording of suicides is still not undertaken or is obscured via classification processes which merge suicides with fatalities,' it explains. 'In numeric terms, therefore, the picture for suicides is likely to be much worse than represented in these data whilst at the same time we are unable to conclude from the information provided that suicides amongst seafarers are increasing.'

SIRC says the lack of decent data means there is little meaningful value to be taken from the figures it gathered on seafarer injuries. To make a proper assessment of the risks associated with working at sea, the report argues that much more reliable information is required on the number of seafarers and more consistent ways of reporting and recording of deaths and injuries should be in place.

Only then, SIRC warns, will it be possible to gain an accurate insight into death, injury and suicide rates and a proper understanding of the health and safety challenges facing seafarers. **1**

DISTURBING THE DEEP

There's a big focus on exhaust emissions from shipping at present. But new research is looking at the impact of noise emissions – and it could mean a fresh wave of regulatory requirements for the industry...

Seafarers often complain about the problems posed by noise onboard ships – especially the way it can interrupt sleep. But now pressure is growing for new rules to reduce noise from ships in response to increasing evidence about the adverse effects on marine life.

Measures such as routing schemes, slow steaming and better insulation are being put forward following a series of studies which show that underwater noise is disrupting the ability of marine animals such as whales, dolphins and seals to communicate, navigate, breed and hunt.

A project nearing completion in the UK is set to add to the pressure for change. The Centre for Environment, Fisheries and Aquaculture Science (CEFAS) has

just produced the first maps of shipping noise in UK waters.

The maps have been developed from measurements collected by special underwater noise-recording equipment at sites on the seabed around the coast. They reveal that the highest noise levels are in the English Channel (especially the Dover Strait, as might be expected) and along the UK east coast, particularly off the coasts of East Anglia, Humberside, Tyneside and Aberdeen.

High noise levels were also observed in the northern North Sea, apparently linked to ship traffic servicing oil and gas infrastructure.

The maps will be used to help shape a noise monitoring and assessment programme as part of the UK Marine Strategy. CEFAS has also been working to examine the

▲ An underwater hydrophone is deployed to measure noise levels in a US marine sanctuary
Image: NOAA

impacts that noise can have, to monitor trends, and to work with regulators and industry to assist in project planning to manage potential risks. A scientific paper will be published later this year to share these results more widely.

The CEFAS initiative mirrors work undertaken by the National Oceanic and Atmospheric Administration (NOAA) in the United States, which has produced a massive noise map extending into the North Atlantic. The scales – which show annual averages – range from red (115 decibels (dB) at the top) to orange and yellow, and then to green and blue (40dB at the bottom).

In another study, researchers used underwater microphones to measure the noise created by about 1,600 ships as they passed through Haro Strait, in Washington state. The two-year study found that the average intensity of noise next to all the ships was 173 underwater dB, equivalent to 111dB through the

air – similar to the sound of a loud rock concert. At a distance of around 1m, the noise from an oil tanker was around 200dB and from a tug was around 170dB.

Whales, the researchers found, would typically be subjected to noise of about 60 to 90dB – around the level of a lawnmower or a vacuum cleaner.

Measurements off the US west coast indicate that low frequency noise levels – those that best reflect noise from commercial shipping – are increasing by around 3dB every 10 years, representing a doubling of acoustic power at those frequencies every decade.

It's not just the decibels, however. Scientists say that marine life is being disturbed by a 'cocktail party effect' of noise from various sources, including oil drilling, dredging, and seismic surveys, which can travel for long distances underwater.

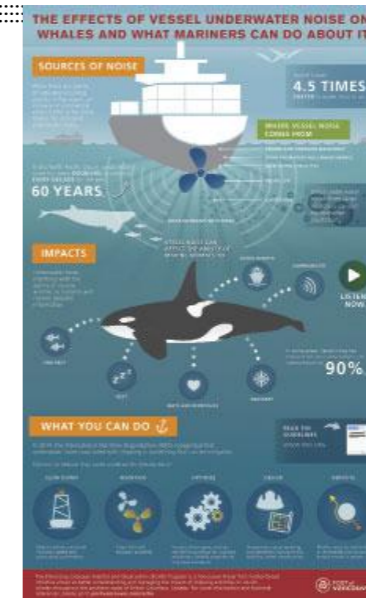
An experiment conducted in the early 1990s showed that sound emitted from Heard Island, near Australia, was picked up at sites in the northern and southern Atlantic and Pacific Oceans as well as the Indian and Southern Oceans, and sound from seismic airguns was recorded from more than 4,000km (2,500 miles) away.

'Being able to produce and detect sound is critically important to many marine species, so changes to the natural background soundscape may have more effects on ecosystem health than previously thought,' said NOAA fisheries biologist Jason Gedamke.

Many marine species use sound to find prey, avoid predators, locate mates and offspring, guide their navigation and locate habitat, and listen and communicate with each other.

Dr Nathan Merchant, head of the CEFAS noise and bioacoustics team, told the BBC that researchers are looking into the many ways in which marine life is being affected by noise.

'We know that chronic stress in



◀ Canada's port of Vancouver has produced a guide to reducing noise from ships

humans, for example, can have long-term health effects, and we're concerned for the same reasons in long term health effects in seals and other marine mammals,' he added.

The International Maritime Organisation (IMO) has, since the early 1980s, recognised the way that human health can be damaged by noise onboard ships, with the SOLAS Convention setting mandatory maximum noise level limits for machinery spaces, control rooms, workshops, accommodation and other spaces onboard.

But the IMO is now looking at ways to enhance existing non-mandatory guidelines, introduced in 2014, which aim to cut underwater noise from commercial shipping.

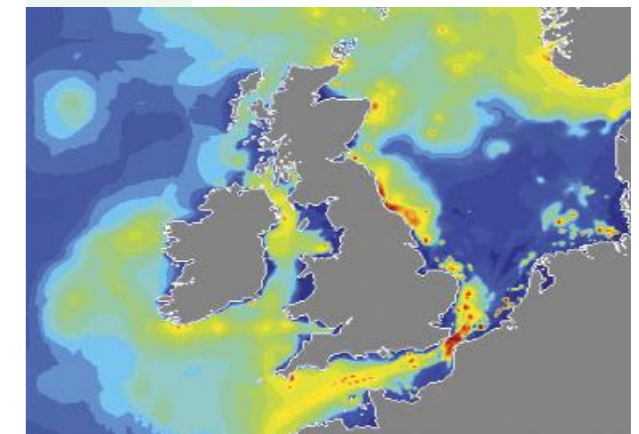
Efforts are concentrating on cutting noise caused by propeller cavitation – the biggest source of sound from shipping – as well as reducing the transmission of mechanical noise through the ship's hull through changes to hull form, onboard machinery, and various operational and maintenance recommendations such as hull cleaning.

Studies suggest that reducing ship speed can be especially effective in reducing noise. Researchers in Canada, looking at the impact of noise on beluga and bowhead whales and Arctic cod,

found 'substantial' benefits could be gained by cutting the speed of containerships and cruiseships from 25 knots to 15 knots.

The noise maps are also likely to lead to the creation of new routing schemes to avoid particularly sensitive sea areas.

However, the IMO agreed last year that a lot more work is required before tighter controls are introduced. Delegates at the Marine Environment Protection Committee noted that there are still 'significant knowledge gaps, and that sound levels in the marine environment and the contribution from various sources was a complex issue,



▲ The first acoustic map of waters around the UK, developed by the Centre for Environment, Fisheries and Aquaculture Science
Image: Cefas

so setting future targets for underwater sound levels emanating from ships was premature and more research was needed – in particular on the measurement and reporting of underwater sound radiating from ships'.

The work being carried out by the US NOAA could prove crucial to this. In 2014, the agency established a network of 10 undersea listening stations around the US designed to systematically measure ambient noise levels in the ocean.

This project is the first large-scale effort to monitor long-term changes and trends in underwater sound and, the agency says, will 'help scientists understand what ambient ocean sound levels are now, how they are changing over time, and what impacts man-made noise could have on marine life'. ⓘ



A NEW TAKE ON ANCIENT TECH

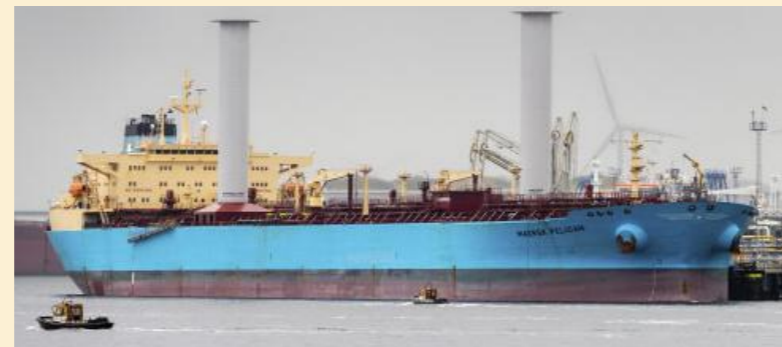
In the last few years, the maritime media has been full of articles about the rise of robot ships. But the future face of the shipping industry could be very different, with sail power staging a remarkable comeback...

As shipowners struggle to comply with increasingly strict environmental requirements, a growing number of operators are embracing the use of wind propulsion technology to cut their carbon footprint.

The progress was recognised last month with the classification society DNV GL giving its first design type approval certificate for an auxiliary wind propulsion system: Norsepower's 30m by 5m Rotor Sail, two of which have been installed onboard the 109,640 dwt oil LR2 product tanker Maersk Pelican in a trial backed by the UK government.

The Norsepower Rotor Sail is a modernised version of the Flettner rotor, a spinning cylinder that uses the Magnus effect to generate an aerodynamic force to propel ships. First trialled on a ship in the 1920s, the system can deliver fuel and emissions savings ranging between 7% and 20%. The system has also been installed on the 57,565gt Finnish-flagged ferry Viking Grace.

There are now six vessels with commercial rotor installations, including the 63,233dwt geared bulk carrier Afros, with four moveable Anemoi rotors, the ro-ro Estraden retrofitted with two rotors and in regular operation between Rotterdam and Hull, and the general



▲ Above: two Norsepower Rotor Sails are being trialled by Maersk Pelican

cargoship Fehn Pollux, with a single bow-mounted rotor.

These five vessels follow in the footsteps of the first modern Flettner rotor-fitted vessel, Enercon's E-ship 1, which has been in operation since 2009.

The Rotor Sail, or Flettner rotor, is just one of an increasingly wide range of systems coming onto the market. Other technologies include:

- ▶ **soft sail** – both traditional sail and new designs, such as DynaRig, originally developed in the 1960s
- ▶ **hard sail** – wingsails and foils. Some rigs have solar panels for added ancillary power generation
- ▶ **suction wings** (Ventifoil, Turbosail) – non-rotating wing with vents and internal fan (or other device) that use boundary layer suction for maximum effect
- ▶ **kites** – dynamic or passive kites off the bow of the vessel to assist propulsion or to generate a mixture of thrust and electrical energy
- ▶ **turbines** – using marine adapted wind turbines to either generate electrical energy or a combination of electrical energy and thrust
- ▶ **hull form** – the redesign of ship's hulls to capture the power of the wind to generate thrust

The technological advances, coupled with the environmental, economic and regulatory pressures, are leading a growing number of shipping operators to consider their use.

The International Windship Association (IWSA) says there is the potential for more than 10,000 wind-assisted vessels to be operating within the next decade. 'The way forward is full of exciting opportunities,' says IWSA secretary general Gavin Allwright. 'These activities follow some of the recommendations made in the EU report on wind propulsion market development, which forecast up to 10,700 wind propulsion installations on bulkers and tankers by 2030 if the facilitation framework is in place.'

Last year, he adds, was a very significant one for wind propulsion. 'We could say that a perfect storm is brewing for the uptake of primary [wind, etc] and secondary renewable energy [alternative fuels/energy storage] in shipping,' he points out. 'Policy, price, perception, providers and people are all starting to align.'

The world fleet accounts for more than 2% of global carbon dioxide emissions, and the industry will have to cut this by at least half over the next 30 years. Next year will see the sulphur cap come into place, and the IWSA reckons the pressure for change will intensify as conventional marine fuel costs increase. Retrofitting vessels with wind propulsion technology could deliver cost savings of between 10% to 30%, and for newbuilds fuel bills could be halved.

What do such systems mean for seafarers – extra workload, for instance? 'Most of the systems are fully automated on the larger vessels and will be fully integrated into the ship energy management systems in the future,' Mr Allwright says. 'They have weather stations onboard that help optimise the operations and weather routing software for voyage optimisation in the future. The installation and maintenance of the systems are fairly straightforward.'

Shipping industry perceptions of the technology are shifting, Mr Allwright adds, but he warns that the recent report by the UN Intergovernmental Panel on Climate Change on the impact of a 1.5C temperature change


should serve as 'a wake-up call to all of us, indicating we have only 12 years until we reach that seriously challenging and potentially catastrophic benchmark'. The study argues that a minimum of 45% CO₂ reduction will be required by 2030, he points out, 'so action is needed – deeper and faster'.

As well as the trials being undertaken on a growing number of ships, the past few years have seen detailed proposals being put together for wind-powered vessels. One, which has attracted the attention of the European Commission, is the Ecoliner project developed by the Dutch naval architects Dykstra. Intended as a multipurpose cargoship, the 11,850gt vessel would build on the company's successful use of the DynaRig technology on the superyachts Maltese Falcon and Black Pearl.

In the Netherlands, the Wijnne Barends general cargoship Lady Christina has reported positive results from trials of an eConoWind unit that uses the VentiFoil system, with savings of up to 800 litres of fuel a day during early tests.

In the UK, Windship Technology is promoting its plans for the Windship Auxiliary Sail Propulsion System (WASP) – claiming the use of its fixed wing technology could cut fuel consumption and emissions from bulkers and tankers by up to 30%, and result in savings of as much as US\$3m a year on fuel costs.

Also in the UK, the Smart Green Shipping Alliance is involved in a 12-month feasibility study to test Fastrig sail technology on a Danish-owned bulk carrier that imports biomass to British power stations.

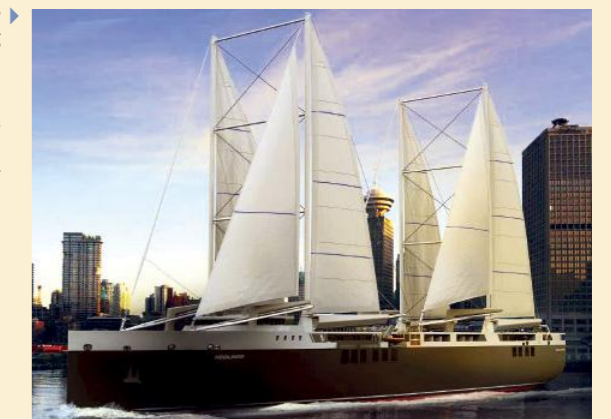
These are just a few of the projects now under way, and Mr Allwright notes: 'The movement in wind propulsion tech and project solutions is picking up pace. Our industry is a broad church and shipping has always had highly talented people in sometimes difficult positions, but there is increasingly a shift to a new generation of decision-makers that are focused on the triple bottom line, engineers and designers producing ever more innovative designs and customers demanding more action on emissions from shipping. Wind propulsion is a credible, viable and increasingly profitable option, and the industry is taking notice.' 

▲ Above left: the Ecoliner wind-powered cargoship concept;

▲ Above centre: the bulk carrier Afros has been fitted with Anemoi's Flettner Rotor system;

▲ Above right: a UK scheme will test sail technology on Ultrabulk vessels

▶ A French car firm is working with Neoline on plans for a wind-powered vessel to transport vehicles between France and Canada



A PROBLEM SHARED

The maritime industry is hemorrhaging crew members, and it's not about the pay. If we want to keep people at sea, we need to make ships happier places to work. **ANDREW LININGTON** reports on a recent cross-industry meeting that aimed to figure out what to do...

How do we turn all the good talk about seafarer wellbeing into effective action? That was the key question facing an industry 'think-tank' staged in London last month.

The event was organised by former Bibby Line cadet Andrew Cowderoy, who now runs the specialist maritime fitness firm ZS Wellness after his seagoing career was prematurely terminated by a serious illness in 2013.

'I established ZS Wellness with a very clear mission to educate, train and prevent seafarers from running the risk of loss of career or life and to educate the shipping industry to take a proactive rather than reactive approach to both physical and mental health,' he said.

Mr Cowderoy organised the think-tank meeting – which was attended by representatives from Nautilus, maritime charities, welfare organisations, crewing agencies, trainers and health experts – in a bid to identify ways of building on recent discussions about seafarer suicides, mental health and physical wellbeing.

'There is some fantastic work being done across the globe, but as an industry we are quite good at keeping it to ourselves,' he pointed out. 'There's a wealth of information out there and we don't want to keep reinventing the wheel.'

Opening the event, ImpactCrew founder Karen Passman said evidence showing a rise in mental health problems among seafarers is of concern, and there is a

broad consensus on the need to bring practices in the maritime sector into line with other industries.

She noted studies showing high rates of crew turnover – as much as 50% over 12 months in the superyacht sector – and said attention should be paid to the reasons why so many seafarers leave their jobs after fairly short periods.

'There is a perception that it is all about money,' Ms Passman continued. 'But money doesn't keep staff in the long-term and if people are unhappy they are not going to stay.'

Surveys had shown that low morale, bullying and unfair treatment cause a lot of problems, and around 16% of crew were moving on because of dissatisfaction with their jobs, with similar numbers leaving due to unhappiness with time-off and rotations. But almost two-thirds of junior crew leave because of poor leadership, she noted.

Steve Cameron, from the CMR consultancy, said wellness is much more than being free from illness – and it was generally accepted that a fit, happy and healthy crew would be safer and more productive.

However, he pointed out, the Seafarers Happiness



ZS Wellness founder Andrew Cowderoy addressing the 'think-tank'

Index run by the Mission to Seafarers had shown the average level of happiness to have fallen from 'a not particularly impressive' 6.69 out of 10 to 6.5 out of 10 over the past year.

Mr Cameron said reports to the Mission had identified the way in which poor connectivity at sea fuels stress and isolation felt by seafarers. 'There are worrying reports showing that social isolation carries more of a health risk than not exercising,' he added, 'and it might be twice as harmful as obesity.'

Liz Baugh, from Red Square Medical, said efforts should be directed towards tackling the high rates of cardiovascular disease and diabetes among seafarers. 'If monitored closely, there are things that can be done to reverse the effects of diabetes and it does not mean that the seafarer's career has to be stopped,' she added.

Mental health training should be embedded at every level of maritime education, Ms Baugh argued, and the standards of ships' medical chests should be improved so that they better reflect the wide range of conditions that seafarers can face at sea.

Whitehorse Maritime director Paul Shepherd said seafarers could benefit from the support provided through mentoring schemes, such as the programme operated by the Honourable Company of Master Mariners which not only helps its 250-plus mentees to deal with some of the demands of their career but also provides useful insight into the challenges that they face.

V. Group cadet training officer Lee Clarke agreed that mentoring could help to prepare young people for their first trips to sea – and introducing lifestyle and wellness training as part of STCW courses



Steve Cameron of the CMR consultancy

could also reduce the number of adverse experiences.

Seafarer medical examinations presently fail to address psychological conditions, he added, and there is a need for seafarers to be trained to recognise the signs of mental health problems among colleagues. Follow-up support is also needed for post-traumatic stress issues following accidents and incidents onboard.

Intermanager secretary-general Captain Kuba Szymanski questioned the shipping industry's commitment to combatting some of the worst problems affecting seafarers – pointing to difficulties in securing funding for further research into the impact of long hours and long

tours of duty on crew wellbeing.

'There is lots of research going on into seafarer wellbeing, but it is not being done in a joined-up way,' said Sailors' Society chief executive Stuart Rivers. 'Much more could be achieved if it was done in an integrated way.'

Mr Rivers said his charity had launched its Wellness at Sea programme to provide practical health and wellbeing advice – including a special app for seafarers. 'We would love to see this being used more fully and made available free of charge to every seafarer,' he added.

Freedom Training and Consultancy director Tracey Keane described another programme providing practical support to seafarers. Developed for the Royal Fleet Auxiliary following an earlier programme for the Merchant Navy Welfare Board, the safeguarding and suicide prevention scheme was launched in June 2018 and has already provided mental health awareness training for around 180 people.

Ms Keane said the scheme aims to get seafarers talking to each other and to empower them to openly



Freedom Training and Consultancy director Tracy Keane and UK P&I Club crew health programme director Sophia Bullard

Karen Waltham, managing director of HR Consulting at Spinnaker Global, closed the meeting with a call for shipping companies to adopt clear and consistent approaches to personnel issues



discuss the problems they face. More than 140 of those who have taken part report that they are now more confident about helping others, 22 are receiving support for issues that cause them stress and anxiety and eight are considering counselling.

'You don't have to be a mental health professional to help,' she explained. 'Just getting people to talk and open up about things makes a massive difference.'

UK P&I Club crew health programme director Sophia Bullard said the enhanced checks conducted through the marine insurer's pre-employment medical examinations are a beneficial option for owners, managers and seafarers. 'It makes good sense to carry out such tests, as many seafarers are ticking time-bombs with conditions that have not been identified,' she pointed out.

'Many seafarers see wellness as being all about trainers in green tights drinking green smoothies,' Mr Cowderoy added. 'As a former seafarer I wanted to come up with a solution that makes it as easy as possible for a seafarer to understand the importance of wellness at sea.'

The Wellship programme developed by his company uses smart technology to help seafarers devise keep-fit strategies, backed up by training and education and regular progress reviews. 'Through some really simple steps, people can transform themselves, and a happy and healthy crew are far more productive,' Mr Cowderoy said.


In a further attempt to coordinate and collaborate on seafarer wellbeing issues, he has launched the Global Maritime Wellness Network to bring everyone actively involved or interested into online communities, organising regular webinars with experts from around the world.

Closing the event, HR Consulting managing director Karen Waltham said shipping has a long way to go to catch up with other industries. Its approach to human resources is about 25 years behind the curve, she suggested, and training and HR are often the first casualties of shipping company budget cuts.

While big operators such as Maersk have strategies in place to address fundamental staffing elements such as resource planning, learning and development, talent development and succession planning, there are still a significant number of medium-sized shipping companies with no professionally-trained personnel in their HR departments, she added.

However, Ms Waltham said, things are starting to change and an increasing number of shipping firms are putting HR at the core of their organisations. 'The maritime sector is facing increasing competition from other industries for talent and it needs to be thinking strategically,' she argued.

If operators are to recruit and retain the skilled seafarers they will continue to require, they need to have clear and consistent approaches to HR strategies, she continued. This not only means competitive salaries and good benefits packages, but also good promotion opportunities, continuous staff training and development, regular and transparent communications, investment in corporate social responsibility, employee autonomy and a focus on employee wellbeing.

Ms Waltham ended on a positive note. 'We are trying to commit to doing something meaningful and making real change and a real difference,' she added. 'I think that in the last five years, change is being embraced much more by the shipping industry and seafarer wellbeing is absolutely pivotal to such a strategy.' 

the global seafarer

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