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NAUTILUS FEDERATION

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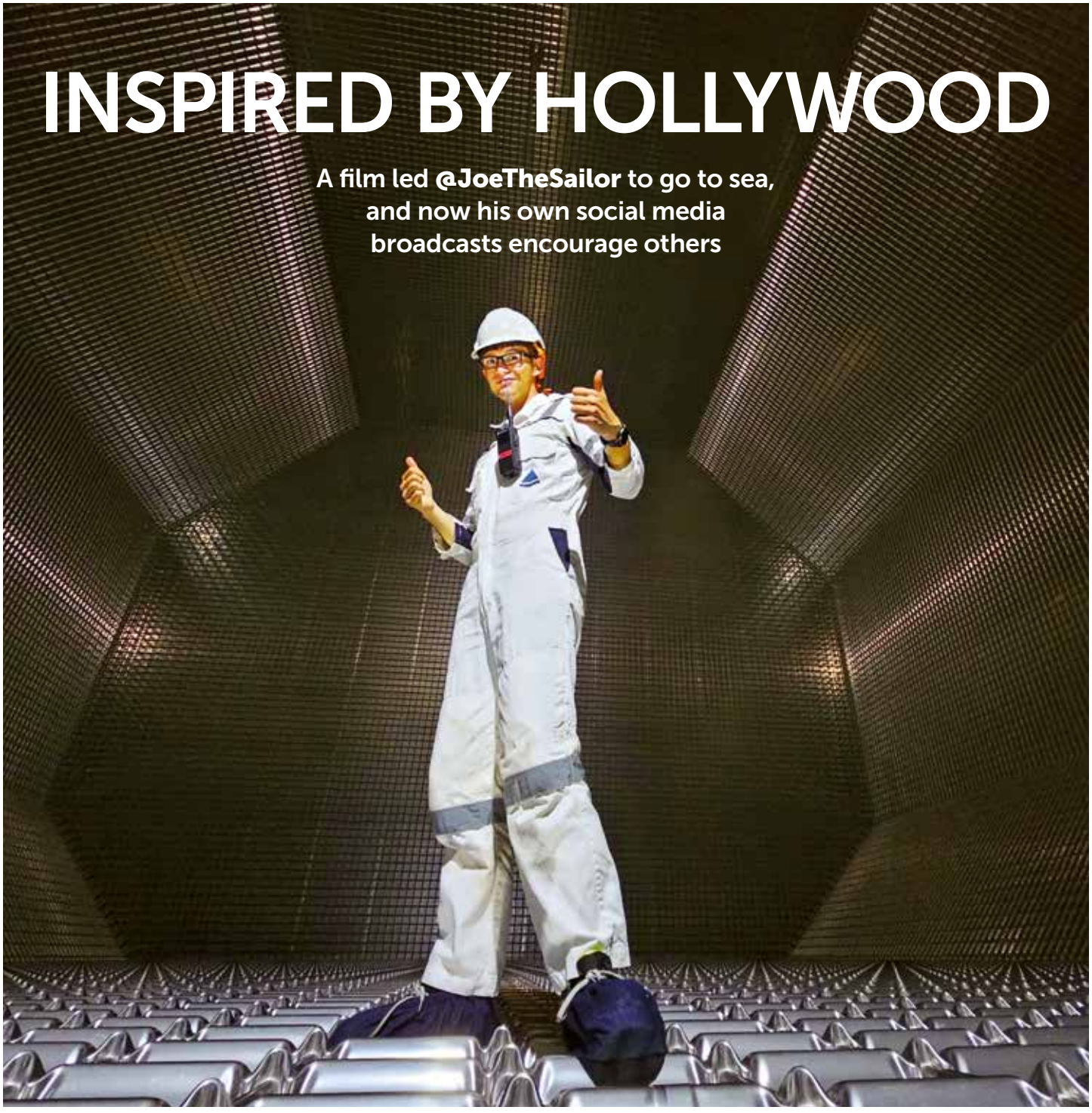

INSPIRED BY HOLLYWOOD

A film led **@JoeTheSailor** to go to sea, and now his own social media broadcasts encourage others

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OPINION

Fighting FOCs at home and abroad

Nautilus Federation coordinator
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Nautilus Federation coordinator **Danny McGowan** reviews the Union's involvement in a United States investigation into flags of convenience and the national security risks, poor labour standards, and seafarer abuse that they cause

During 2025, the USA's Federal Maritime Commission called for submissions to an investigation into the use of flags of convenience (FOCs). I was pleased to be able to respond on behalf of the Union, alongside Nautilus Federation affiliates based in America.

I drew the Commission's attention to the report commissioned by Nautilus and the International Organization of Masters, Mates and Pilots, detailing the impacts of the FOC system on domestic resilience and preparedness, urging the Commission to consider the recommendations made in the report as a 'key concern' relating to national security.

I also suggested that the Commission should examine (among other matters):

- labour standards and seafarer abuse
- safety deficiencies
- the increasing threat of 'dark fleet' operations enabled by FOC registries
- the growing crisis of seafarer abandonment

The investigation was delayed by the US government shutdown during 2025. As such, there is no timescale for the release of the report. As soon as the Federal Maritime Commission's report is released, I will be certain to share the details with our members.

In the meantime, Nautilus and our international partners will continue to highlight issues with the FOC system wherever possible, and to pursue the enforcement of the genuine link required under the United Nations Convention on the Law of the Sea (UNCLOS).

Read the Nautilus Federation report on the FOC system at bit.ly/FOC_report

Speaking up for seafarers' rights in the energy transition

Nautilus spoke up for seafarers' rights at a 17 September launch of industry-wide training frameworks for new maritime fuels.

Members were represented by Federation coordinator Danny McGowan at the LISW Human Capital Management Forum, which was held in London to celebrate the publication of training frameworks for seafarers onboard ships powered by ammonia, methanol, and hydrogen, and to discuss advancing seafarer training for alternative fuels.

The event included delegates from the International Transport Workers' Federation (ITF), International Chamber of Shipping (ICS), Lloyd's Register Maritime Decarbonisation Hub, and Lloyd's Register Foundation.

Opening the event, Kjersti Aass, who was at the time head of the UN Global Compact's Maritime Just Transition Task Force, said: 'Today marks the milestone launch of training frameworks to help maritime education and training organisations prepare crews for the new era of shipping, working onboard vessels fuelled by ammonia, methanol and hydrogen.

'This work has been done in parallel with the IMO STCW review, and a number of stakeholders have contributed to the work – thank you to them, including to the unions who bring the voice of seafarers to this work.

'Today's release is not the end of the project but the beginning of a journey. Success in this project means that seafarers will be able to work with these fuels more safely.'

Three panels were held, discussing the shortage of skilled seafarers – including talk of recruitment, retention, diversity, mental health and how the industry needs to change in future.

Participating in the second panel, Mr McGowan took the opportunity to urge shipowners, employers and other stakeholders to review the Nautilus Federation's **Mapping Our Maritime Future** report to help them gain a deep understanding of seafarers' views on technological change in the industry.

CREDIT: UN Global Compact

L-R: **James Forsdyke, Lloyd's Register Maritime Decarbonisation Hub; Nautilus Federation coordinator Danny McGowan; Ksenia Zakariyya, Yara Clean Ammonia; Matt Dunloy, Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping; Arul Arunachalam, Shell**

He laid out key findings – including the fact that while 76% of seafarers welcome decarbonisation, 60% of seafarers have not received any communication from their company about the decarbonisation strategy – and that many are concerned about their jobs due to automation rather than excited at the opportunities presented to reduce working hours and resolved fatigue/safety problems.

He also highlighted seafarer worries around the safety of new fuels and criminalisation when incidents occur involving the new technology, saying that the solution is to 'urge the world's most reputable shipowners to raise standards, strive for continuous improvement in safety and with seafarers' rights, and raise the ceiling rather than striving to match minimum standards that are barely followed by less reputable operators.'

To address the seafarer shortage, he told attendees that the industry must improve pay and terms and conditions in the industry. 'Maritime is the first industry to go through such a wholesale change. Without adequate recruitment and retention considerations during this transition, we will lose important skills to other industries and find ourselves having made a great deal of investment with little return,' he said.

He concluded by stating that the industry as a whole should encourage companies and unions in emerging maritime economies to get in touch with Nautilus and the ITF to ensure that appropriate terms, conditions and standards are being applied for all during this critical time.

IMO new fuels guidelines hailed as 'important step'

Nautilus has welcomed the International Maritime Organization's (IMO) new interim guidelines on training for seafarers on ships using alternative fuels and new technologies (STCW 7/Circ. 25), while stressing that this is only one step towards a truly Just Transition for maritime workers.

The launch comes as the Maritime Just Transition Task Force also launched training frameworks designed to facilitate the development of training programmes for seafarers for working on ships powered by ammonia, methanol and hydrogen.

The IMO guidelines set out an international framework for the development and approval of training of seafarers serving on all ships using alternative fuels and new technologies, with specific interim training guidelines on the way for vessels powered by methyl/ethyl alcohol, ammonia, hydrogen, liquefied petroleum gas (LPG), batteries and fuel cells.

They are expected to form the basis for mandatory requirements for seafarer training under the revised 1978 STCW Convention Code, currently under review to support decarbonisation, digitalisation and other developments.

Nautilus Federation coordinator Danny McGowan said: 'This is an important step towards a safer transition to alternative fuels and new energy sources as we move towards IMO net-zero goals.

'However, I would urge all shipowners, employers and stakeholders to reflect on the views of seafarers around the world on the topic of decarbonisation and technological change. Our members are broadly supportive, but that there remain justified fears and concerns. Nautilus calls on shipowners, governments and industry stakeholders to ensure these issues are addressed.'

CREDIT: Wikimedia commons

The Finnmaster roll-on/roll-off cargo vessel

MAIB calls for global fire safety overhaul after Finnmaster cargo vessel blaze

Investigations into a 2021 fire in the auxiliary engine room of Finland-registered roll on/roll off cargo vessel Finnmaster have sparked calls for international changes to maritime fire safety standards.

The incident occurred at 20:13 on 19 Septe\\mber 2021, shortly after the Finnmaster departed Hull in the UK. A mechanical failure led to fuel leaking from a flexible hose – installed during an unapproved modification – onto a hot surface, igniting a fire that knocked out the vessel's power. Tugboats assisted in safely re-berthing the ship. No injuries were reported, but the auxiliary engine room sustained significant damage.

Investigators at the UK Marine Accident Investigation Branch (MAIB) found multiple safety system failures. The emergency generator's circuit breaker malfunctioned, leaving critical systems offline. The fixed CO2 fire-extinguishing system also failed to fully operate due to defects, hampering the crew's response.

In the wake of the incident, 12 safety recommendations have been issued to the Finnish administration TRAFICOM. A key proposal urges TRAFICOM to advocate for amendments to International Maritime Organization regulations, specifically around testing emergency power sources, radio communication equipment, and fixed fire-extinguishing systems.

Finnlines, the vessel's owner, has been advised to strengthen crew training and defect reporting procedures. Classification society RINA has also been urged to review its fire protection maintenance protocols and improve guidance for surveyors and chief engineers.

The Finnmaster fire highlights the urgent need for robust fire safety systems and international collaboration to prevent similar incidents at sea, the MAIB report states.

The panel, L-R: **Simon Grainge, ISWAN; Györgyi Gurban, IMO; Pantelis Lamprianidis, EU representative to the IMO; Nusrat Ghani MP**

CREDIT: Nautilus International

Calling time on silence, injustice, and exploitation

Amy Field reports from the recent Unrest at Sea conference addressing efforts to tackle violence and harassment onboard

Powerful anonymous testimonies from seafarers highlighted the continuing gaps in the maritime industry's duty of care, at a conference hosted by the Seafarers' Guild of Benevolence on 3 July 2025.

Established in the wake of the Titanic disaster, the Guild has long championed seafarers' welfare, but as the event made clear, the need for reforms in safeguarding and accountability are more urgent than ever. The event brought together politicians, union representatives, international regulators and several current UK seafarers working within the cruise sector to discuss how seafarers can be better protected. Key concerns ranged from modern slavery to racism and misogyny, sexual harassment, and the precarious nature of seafaring contracts.

There were repeated calls at the conference for MLC amendments to translate to better enforcement

FEAR OF REPRISALS

Simon Grainge from the International Seafarers' Welfare and Assistance Network and Nusrat Ghani MP, Deputy Speaker of the House of Commons, were among the key speakers. Ms Ghani highlighted the challenge of enforcement in a fragmented international system where 'money trumps the law', calling for stronger penalties on employers and 'far more substantial structures' within the IMO to tackle abuse and harassment.

Seafarers testified to discriminatory practices and systemic barriers in the workplace, many of which were rooted in racism. One anonymous third engineer described a segregated pay system where salaries were determined by nationality rather than qualification or experience. Their testimony spoke of being denied promotions and excluded from decision-making, despite English being the official working language onboard. 'These are not isolated incidents, these are patterns,' they said.

Life at sea often intensifies workplace challenges due to its confined and isolated environment. Several testimonies described hostile conditions, including incidents of misogynistic and racist bullying. Attendees also heard accounts of seafarers who suffered abuse but were afraid to speak out for fear of retaliation or losing their jobs.

The role of short-term contracts also came under fire, with calls for longer contracts to better protect workers and reduce the incentive for companies to overlook rights abuses. Employment practices were identified as a barrier to justice, with seafarers often unsure who actually employed them and fearful of reprisals for making complaints.

BETTER ENFORCEMENT

In light of recent amendments to the Maritime Labour Convention aimed at protecting seafarers from violence and harassment onboard, there were repeated calls at the conference for these legislative changes to translate to better enforcement. Panellists questioned the overlapping oversight responsibilities of the International Maritime Organization (IMO) and International Labour Organization (ILO), highlighting the need for clearer accountability. They also stressed the urgent need for an effective complaints procedure and for accessible emergency support services, particularly in cases of sexual harassment.

'WHO IS GOING TO OWN IT?'

Representatives from the IMO spoke about the role of upcoming amendments to the STCW Convention, which will introduce training on dealing with harassment. But many attendees felt these responses lacked urgency and clear implementation plans. As one participant said: 'These points have been talked about for 40 years, so who is going to own it now?'

Ultimately, it became clear that leadership on these issues must come from seafarers, their representatives and their trade unions. Only seafarers themselves have the lived knowledge to understand the issues, and the resolve to lead the fight for fairer, safer conditions at sea.

Changes to the **MLC**

The Maritime Labour Convention (MLC) 2006 is a living document that is regularly amended to address problems at sea – whether they are new or have been resistant to change.

From January 2027, robust measures will be introduced under the MLC to prevent and address violence and harassment onboard, including sexual harassment and bullying. Member states will be required to implement laws and onboard procedures to protect seafarers and ensure safe reporting mechanisms.

Fresh safety concerns around carrying EVs

In the wake of the Felicity Ace disaster, concerns are mounting over the safety of transporting electric vehicles at sea, with experts warning of deadly risks from lithium-ion batteries. **Andrew Draper** reports

CREDIT: Wikimedia Commons

Fresh questions have emerged about the safety of carrying electric vehicles (EVs) at sea following several fires involving lithium-ion batteries. US cargo carrier Matson said in July it was suspending the transport of electric and plug-in hybrid vehicles on its vessels. It said growing safety concerns around lithium-ion batteries were at play, but it would accept them again when 'appropriate safety solutions that meet our requirements can be implemented.'

Professor Emeritus Paul Christensen of Newcastle University told Nautilus he supposed it was 'only a matter of time before a major shipowner like Matson moved to suspend the transport of EVs and plug-in EVs due to increasing concern for the safety of transporting vehicles powered by large lithium-ion batteries.'

He continued: 'The loss or major damage of the Felicity Ace, Fremantle Highway and Morning Midas may represent a tiny fraction of the sailings of such vessels life, as well as costing the owners hundreds of millions of pounds and contributing to the pollution of the oceans.'

'I'm concerned that the Panama investigation report authors aren't aware that using foam would switch the hazard from fire to explosion'

Professor Emeritus Paul Christensen of Newcastle University

CONCERNS RAISED

Mr Christensen flags up numerous concerns raised in the report into the Felicity Ace disaster by Panama Maritime Authority's General Directorate of Merchant Marine.

In February 2022 the 60,000gt car carrier, which was en route from Emden, Germany, to the US, caught fire , but the damage/loss of these giants has cost oneand burned for more than a week before recovery teams could board. It sank while being towed and is now on the bed of the Atlantic Ocean. The crew safely abandoned ship but the cargo – 3,965 luxury vehicles worth an estimated $330 million – was lost.

Professor Christensen, who runs a consultancy, Lithiumionsafety Ltd, said Panama's report raises 'more questions than answers.

'The report postulates that a Porsche Taycan was the cause of the fire but focuses on the failure of the foam firefighting system, and the authors are clearly unaware of the fact that using foam would switch the hazard from fire to explosion as it could not stop thermal propagation inside the case of the vehicle, hence the venting of the vapour cloud.'

The report stated: 'As per the SMS (Safety Management System) paragraph 5.01.4: Any member of crew who discovers a fire, no matter how small, must raise the alarm immediately and attempt to extinguish the fire with appropriate equipment, if it is safe to do so.' The able seaman (AB) who discovered the fire after the smoke alarm was triggered called the third officer while trying to pick up a fire extinguisher.

'Essentially, the AB was prepared to commit suicide, showing the urgent need for EV-specific training in the marine industry,' Professor Christensen said, pointing out the inadequacy of fire extinguishers for EV battery fires. He notes the report's statement that 'no specific training is compulsory for car carriers and/or electric vehicle carriage.'

He also points to the report referencing that the charging battery level of vehicles was unknown to the crew. He said: 'It is not clear that the importance of this is clear to the author of the report. State of charge could be a determining factor in whether the hazard is fire or explosion.

'I remain significantly concerned that mariners' lives are at risk due to the lack of investment in research, crew training, PPE and ship design with respect to the carriage of EVs onboard marine vessels.'

Safeguarding seafarers' rights in Scotland

Helen Meldrum, who recently began work as inspector for the International Transport Workers' Federation (ITF) with responsibility for Scotland, talks to **Rob Coston** about her early experiences helping seafarers get the money they are owed and helping with a serious case of abandonment

ROB COSTON (RC): **What area of the world do you cover and what do you do in the role?**

HELEN MELDRUM (HM): I'm the Scottish ITF inspector. It's a really large area – a lot of people don't realise how big Scotland is until they've got to drive around it for a living!

Essentially, my role is to carry out routine inspections, mostly on flag of convenience vessels, to make sure that seafarers are in receipt of the correct wages, terms of employment, living conditions onboard, safe drinking water, nutritious food, etc.

In addition to that, as ITF inspectors we also build relationships with lots of organisations which are involved in the wellbeing of seafarers, including government bodies and charities.

ITF inspector Helen Meldrum

CREDIT: Nautilus International

RC: **What kinds of seafarers are you helping in Scotland, and what common issues do you encounter?**

HM: The seafarers coming in on flag of convenience vessels are predominantly from the Philippines, though the number of Indian seafarers is increasing a lot as well.

Regarding the vessels, we also see a large number of offshore vessels from oil and gas and renewables operations, plus everything that everyone else sees coming into the ports.

One of the big jobs for me is making sure the UK National Minimum Wage is being paid on offshore vessels where it should apply. That's very difficult to manage because you have to check where they've been – what ports they've been into – because if they've stopped outside the UK then the National Minimum Wage might not apply. It's a tricky bit of legislation to get your head around.

I think it's actually quite shocking that these vessels aren't just routinely paying the National Minimum Wage or above, because you expect the pay to be higher, right?

RC: **One of the things that surprised me about this role is how much it involves understanding laws and paperwork. Is that something you expected?**

HM: A big part of my training was around how to deal with paperwork. There's a lot of obfuscation in the industry, deliberate attempts by some unscrupulous companies to try to make things difficult for people like us. For example, there are vessels where you've got a strong suspicion that there's double accounting going on, or if you talk to one of the seafarers then they might tell you they've actually got a different contract than the one you've been presented with, but they're too scared to speak up.

To try and deal with it, I have to build trust with the seafarers. If the master is also unhappy about wages, that makes life a lot easier for us because they are more than willing to provide us with the paperwork to point out exactly where things aren't going right. If there's complaints from the crew but the master and the chief officer aren't in agreement, things can be much more difficult with crew being afraid of the consequences of speaking up. We always do our best to keep things anonymous when it's sensitive.

RC: **Can you tell me about some of the cases you've worked on?**

HM: I'll always remember one of the very first vessels that I stepped on. I realised there was something not quite right on that vessel, I just couldn't put my finger on it.

One of the things I can do is take a copy of the paperwork away with me. I was able to do that and methodically go through all of it, and I found that a young man had been employed as a cadet when he should have been an AB. I got him a promotion and £2,500 in back pay.

I've had good results with a couple of abandonment cases, which inspectors pursue internationally. One of them [during my global training period] involved a vessel off the coast of Georgia. The crew hadn't been paid for two months, and they had no food, water or fuel. The ITF actually paid for them to get provisions – I arranged that with a local agent. I managed to get the crew a back payment for two months of £47,000.

In a lot of abandonment cases, the seafarers who are in contact with me are repaid and repatriated. What's amazing is they periodically message me, just to let me know how they're getting on, to say thank you, all those sorts of things. It lets me know this is really worthwhile work.

Watch Rob Coston's interview with Helen Meldrum on NautilusTV at **www.youtube.com/@nautilusint**

How to get in touch with Helen Meldrum or your nearest ITF inspector

Visit the ITF Seafarers website at **itfseafarers.org** look up the details in the ITF **Seafarers' Bulletin magazine** or download the **ITF Seafarers app** from the **Google Play** or **Apple stores**.

If you are a member of a trade union, please contact your union directly.

From boxships to tankers and everything inbetween with @JoeTheSailor

Joe Furness has been entertaining and educating a global audience of millions with his engaging TikTok and Instagram videos. **Helen Kelly** spoke with him for the Nautilus podcast **Off Course: a sideways look at life at sea**

CREDIT: Joe Furness

MEET JOE:
@JoeTheSailor boasts over **300,000 followers** on **TikTok** and around **150,000** on **Instagram**. His content offers a fascinating glimpse into the technical and everyday aspects of life at sea

At just shy of his 30th birthday, chief officer Joe Furness has already experienced more adventure than many will in a lifetime. It all started with a chance viewing of a Hollywood blockbuster, which sparked his seafaring ambitions.

'I was gearing up to study law in Manchester, where I'm from, when, during a gap year, I watched the film **Captain Phillips** with Tom Hanks,' Joe recalls. 'Seeing the hijacking of the Maersk Alabama container ship sparked an interest in maritime.'

Intrigued, he searched online and discovered that Maersk, the world's second largest containership operator, was running a UK sponsored cadet programme – a fully-funded opportunity too good to pass up.

Four years of training followed at South Shields Marine School, northeast England, where Joe learned about all things maritime, from navigation to cargo operations, at a college within spitting distance of the sea. 'It was great being so close to the water, watching these huge ships come and go,' he says.

Upon qualifying, a world of possibilities opened before him with Maersk, and it was not long before he set sail for the first of many international adventures.

SOCIAL IMPACT

Joe has turned his natural curiosity into a wildly successful social media presence, sharing the ins and outs of life onboard ultra large container ships with the world.

His social media journey began on a trip sailing with a Chinese second officer who was always on TikTok. Intrigued by the platform, especially after seeing his colleague's video garner a few thousand views overnight, Joe decided to give it a try. His first video featured both crew members on the bridge, wishing people a happy Chinese New Year. It did surprisingly well, sparking Joe's interest to continue creating content.

Fast forward to today, and Joe boasts over 300,000 followers on Tiktok and around 150,000 on Instagram. His content, which offers a fascinating glimpse into the technical and everyday aspects of life at sea, has resonated with a vast audience.

Some of Joe's most popular videos are highly informative and technical. For instance, his video on how containers are secured on a ship has amassed 6.1 million views, and another, answering a viewer's question on vessel stopping distances, has reached 7.1 million views. These figures are staggering and highlight the public's curiosity about maritime operations.

Joe believes that the allure of big ships and the mysteries of the ocean play a significant role in his content's popularity. 'People are naturally curious about how such massive vessels stay afloat and operate efficiently,' he says. By balancing technical details with accessible explanations, Joe manages to satisfy this curiosity in short, engaging videos.

The content that performs best tends to answer common questions about ships and sailing. While Joe enjoys diving deep into technical details, he acknowledges that the most successful videos are those that simplify complex

@JoeTheSailor's tips on moving from containerships to tankers

First, be prepared for a delay in your career progression. When you move to a new industry, you'll likely have to start at a lower rank than your experience level to gain hands-on experience in your new role. This is because no amount of learning can replace actually performing tasks onboard.

Second, it's also important to seek out cross-training programmes, if possible. These programmes allow you to gain supervised experience on full pay rather than taking a pay cut when starting over at a lower rank. Seapeak has a sponsored programme that takes this financial pressure off.

Third, really research the technical aspects of tankers to make the right choice for your career goals. Look for opportunities to get hands-on experience before fully committing to the switch. Cross-training programmes can help you make the transition more smoothly.

Watch the Nautilus pod on **YouTube!**

More people than ever are listening to the popular Nautilus podcast. You can even watch the 'vodcast' version on NautilusTV at: **www.youtube.com/@nautilusint**.

Give us a like and a follow both on YouTube and on your favourite podcast platform to get the full interview with @JoeTheSailor, and never miss another episode again!

www.nautilusint.org/off_course_series_3_podcast

Like and follow **@JoeTheSailor** on TikTok and Instagram

information for a general audience. He aims to provide clear and concise explanations without 'dumbing it down', ensuring that anyone can understand and appreciate the intricacies of maritime life.

TANKER TRAINING

After cutting his teeth on container ships, Joe set his sights on specialised liquefied natural gas (LNG) tankers and has embarked on a retraining programme with Seapeak, formerly Teekay Gas.

'Retraining wasn't easy – it meant delaying promotions and taking a pay cut. But I knew LNG was for me,' Joe says.

Seapeak supported Joe's goals through a rare, fully-funded cross-training programme. 'Learning to safely handle such a volatile cargo was like entering a new world,' he explains.

As chief officer on an LNG vessel, Joe oversees the loading and offloading of thousands of tons of fuel across the globe. It's a highly technical role with huge responsibility. LNG expands when it meets air and ends up as a vapour cloud, so crew must always maintain safety steps to avoid the gas being exposed to air. From ensuring zero leaks to emergency response drills, there's a lot of things to think about.

'There's no greater feeling than being in charge of the pumps,' Joe beams. 'Balancing all those tanks and starting those pumps is a roaring feeling, like you're in the NASA space centre. It's an exciting experience.'

PERSONAL SACRIFICE

The rewards of being at sea also come with sacrifices. Joe has missed weddings, births and other milestones while navigating the oceans for months at a stretch. But nothing prepared him for learning of his father's and later his mother's passing while halfway around the world. 'That was the worst thing that's happened to me out here,' he admits.

The deaths of his parents hit him hard. With support from Maersk, Joe managed to get back to Manchester for the funerals, and the experience has galvanised him to support other people working at sea.

Joe finds solace in his shipboard family and seafarer support networks such as the Liverpool Seafarers Centre, where he volunteers to help other seafarers find rest and respite whilst at the port. And of course, through sharing insider industry knowledge on social media, he's connected with hundreds of thousands of people worldwide.

After Joe spoke to Nautilus for this article and the podcast recorded in 2024, he was heading for a job between Australia and Asia on a new Seapeak LNG tanker on charter to Woodside Energy. The three-month rotation would see him taking gas onboard in Western Australia and carrying it north into China or Japan.

Joe promised that, once he finds his sea legs on the new vessel, he will release some more videos. His ability to explain technical aspects in an engaging manner has not only educated millions but also opened a window into a world that few get to see first-hand. If you're fascinated by life at sea or have burning questions about big ships, Joe's content is definitely worth a follow.

CREDIT: Joe Furness

New Off Course podcast: seafarers' role in shipping's green future

Third engineer Amilia Busby shares her insights on how seafarers are navigating the maritime industry's transition to sustainability in the latest Nautilus Off Course podcast.

Ms Busby, who recently completed her three-year cadetship with Heidelberg Materials, discusses her experience with environmental innovations onboard ships and the evolving role of marine engineers in decarbonisation efforts.

The episode explores practical questions facing today's seafarers: How are crews adapting to alternative fuels and new environmental technologies? What training and support do maritime professionals need as regulations tighten? And what recommendations does she have for those looking to break into the industry?

Seafarers' jobs are evolving as the industry moves to cleaner, greener practices, positioning maritime professionals at the frontline of shipping's environmental transformation.

Ms Busby, a Careers At Sea Ambassador and 2025 Nautilus Bevis Minter Award recipient, also reflects on her unconventional path to maritime — from a professional rugby career to earning her HND in marine engineering from Warsash Maritime School at Solent University.

Amilia Busby, right, speaks with Helen Kelly on the Nautilus Off Course podcast about sustainability and careers at sea

CREDIT: Nautilus International

Season 4 of the Off Course podcast is exploring Nautilus International's Just Transition campaign, which advocates for an environmentally sustainable maritime industry that ensures decent work, pay and conditions for all seafarers.

Watch the podcast episode on **NautilusTV** at **youtube.com/@nautilusint** or listen on your favourite podcast platform.

Seafarers must not be forgotten as IMO delays net-zero vote

Nautilus has backed calls for governments and industry to use the next 12 months to rebuild trust and agree on a fair, practical, and seafarer-focused approach to decarbonising shipping.

The statement comes in the wake of the International Maritime Organization's (IMO) decision on 17 October to delay a vote on its Net-Zero Framework for one year. The framework had been expected to outline key measures for implementing the IMO's 2023 greenhouse gas (GHG) strategy, including timelines and obligations for industry stakeholders.

'Seafarers are central to the success of any maritime decarbonisation strategy, yet all too often they are an afterthought in policymaking,' Nautilus Federation coordinator Danny McGowan said.

'Nautilus fully supports calls for a practical and fair path forward that puts the needs, safety, and expertise of seafarers at the heart of the process.'

AI: the turbulent tech that's here to stay

CREDIT: Getty Images

THE BIG ISSUE

Three or four years ago, we might have thought that artificial intelligence was going to be a flash in the pan. Not so in 2025. With ever more uses of the technology all around us, the maritime industry is grappling with the opportunities and threats it presents

In this *Big issue* feature, **Neil Nadkar** argues that shipping is very much up to the challenge, having successfully weathered huge technological changes over many centuries. But unions must remain vigilant and keep the focus on seafarer safety and training

For thousands of years, seafarers built wooden rafts, paddled canoes, and hoisted sails to navigate the world by sea. The introduction of steam engines in the early 19th century heralded rapid advances over the next two centuries, moving from wooden hulls to iron and then steel, and onto the internal combustion engine for propulsion.

Early maritime communication was via drum beats and smoke signals, moving on to horns and flags – with semaphore holding strong until the ship's telegraph was adopted in the mid-19th century.

In the late 20th century we saw the introduction of GMDSS, an electronic system which enhanced not just communication, but safety at sea.

As regards navigation, early seafarers found their way by keeping land in sight, then used the sun and the stars for further venturing, weather patterns, sea bird flights, and dead reckoning. The more reliable use of compass came in the 12th century, the chronometer in the 17th century and in the 20th century, radar.

With mapping of coast lines and further afield, navigational charts came into use. This has evolved to electronic charts, GPS and AIS today. Instead of the stars, it is the man-made satellites which enable both navigational accuracy and safety.

All these transitions altered working conditions, labour relations, and composition of crew. Traditional occupations such as deck hands and carpenters declined, while new roles such as engineers, electro-technical officers and hospitality staff increased.

This reminds us that seafarers are the beating heart of shipping, operating vessels to ensure all safety and environmental protection standards are upheld. Without them, shipping simply cannot function. Therefore, whenever technology changes, specialised training in all roles is vital, and this must be the responsibility of the shipowners who profit from seafarers' work.

AI – SHIPPING'S LATEST TECHNOLOGICAL TRANSITION

Here in the 21st century, the transitions we see are focused largely on decarbonisation and automation, with artificial intelligence (AI) set to play a major role in our adoption of greener fuels and minimally-crewed vessels.

Used in the right way, AI could also improve safety at sea by identifying risky behaviour and predicting likely incidents. Research indicates that 90% of marine casualties in shipping are due to human error – a statistic which reinforces the case for introducing a degree of automation.

However, the 'degree' is all-important here. It is worth looking at the impact AI can have on seafarer safety when used to different extents. My research indicates that the current thinking is as follows.

Vessel run by humans only – all decision-making and actions performed by crew. Vessel is safe and operational.

Vessel with low automation – humans take operative decisions and rectify issues but data is provided by systems onboard. Vessel is safe and operational.

Vessel run on partial automation – humans take limited decisions as AI data overrides and takes executive decisions. Vessel is not safe and only partially operational.

Vessel fully automated – no human interference and rarely supervised. AI takes decisions from CEFAX data and executes action. Vessel is not safe and risks catastrophic failure.

CONCERNS ABOUT AI IN MARITIME

A major limitation of AI is in responding to emergency situations onboard by carrying out distress communications via RT/VHF/DSC. AI would struggle to translate the dialects of international crew to initiate a decision.

It is also hard to see how AI would act in the interests of seafarers threatened by piracy and drone warfare. And the increased use of cameras and sensors onboard to collect data for AI systems could interfere with personal privacy and make seafarers fearful that the information could be used against them.

International Maritime Organisation (IMO) research has found that cyber security was the biggest disruption threat to operations. Cyber-attacks against AI-assisted navigation are on the rise, with the potential for ships to be rerouted, causing danger to crew and cargo. Also, a breach of confidential data can lead to financial losses, wreck port operations and attack supply chains.

These are worrying issues, but we must address them rather than ignoring them. History shows us that there's no going back once new technology is introduced. Deck officers, engineer officers and technicians, electrotechnical officers and shore-based

CREDIT: Getty Images

Nautilus member Neil Nadkar (above) is a former engineer on deepsea vessels who provides expertise on technical matters.

maritime professionals – all need to face the transition into the world of AI.

WORKING TOGETHER TO GET AI RIGHT

We can take heart from earlier technological revolutions, as unions have often fought successfully to introduce safety standards and ensure seafarers have the right training. Job losses have been averted and safe operations have largely been maintained.

However, when we hear talk of replacing seafarers with any new tech, we need to be highly vigilant.

Those willing to adapt, reskill and engage with technological changes will reap the rewards, but what happens to the less fortunate seafarers who struggle to cope? They too are entitled to tailored training that helps them retain their jobs.

This training must evolve integrating skills, mastering systems management and using AI as a tool to improve seafarers' working lives. It should create a balance between innovation and the continued use of maritime professionals' valuable skills and experience.

As Nautilus members, we need to pull together and get behind our Union's efforts to make this happen. Shipping can't run without seafarers, so let's raise our voices to make it clear that AI is there to help us, not replace us.

Are we empowered or sidelined by AI?

A new report by Thetius and Marcura reveals that while AI adoption in maritime is gaining momentum, significant challenges remain.

Titled Beyond the Hype: what the maritime industry really thinks about AI... and where they're making it work, the report is based on survey responses and multiple in-depth interviews from 130 people across the industry.

An overwhelming 82% of respondents see AI as a tool for improving efficiency and reducing manual workload, with 81% already trialling pilot projects. Adoption is no longer slow-paced – what once took a decade now happens in just a few years.

The report highlights that human, not technical, barriers are the main roadblocks. Perceptions of AI depend heavily on whether individuals feel empowered or sidelined by it. Where AI is seen to enhance agency and expertise, acceptance grows. Where it threatens control or job security, resistance builds.

Real concerns – such as cybersecurity and data privacy, cited by 61% of respondents – underscore the need for robust data frameworks. Meanwhile, 46% believe training is crucial for building trust, and 38% say lack of skills is preventing scale-up.

There is also doubt over AI's ability to understand maritime-specific complexities. Tailored, domain-trained systems, not generic tools, are seen as key, with intentional, human-centred adoption needed to unlock AI's full potential.

● Download the full report from **www.thetius.com**

THE BIG ISSUE

Why nations must urgently get to grips with **marine AI**

Graham Gosden argues that artificial intelligence in the maritime sector could expose critical vulnerabilities – threatening not just economies but also national security

THE BIG ISSUE

Whether we like it or not, artificial intelligence (AI) continues to evolve. This places the maritime industry – the backbone of global trade and defence – at a critical risk, and it's a vulnerability that could be exacerbated by rapid AI adoption without proper oversight.

Protecting our industry is not just a matter of economic importance but a core aspect of safeguarding national interests, wherever we live.

THE DANGERS

Cybersecurity vulnerabilities: AI-driven systems in marine operations, including autonomous vessels, port logistics and communication networks, are susceptible to cyberattacks.

Malicious actors could exploit AI to disrupt shipping routes, sabotage supply chains, or compromise national defence operations. For example, hacked AI systems on autonomous vessels could redirect military or commercial cargo, causing national and economic security threats.

AI systems could also face ransomware attacks, paralysing ports or naval fleets and disrupting operations.

Loss of human oversight: Over-reliance on AI systems may reduce human involvement in critical operations. In times of conflict or crisis, a lack of human oversight could lead to decisions or actions misaligned with national interests. For example, AI could misinterpret a routine naval manoeuvre as a threat, escalating tensions unnecessarily.

In high-stakes naval operations, human judgement is vital for de-escalation, and is something that AI can't replicate.

Dependence on foreign AI technology: Relying on AI systems developed by foreign entities can create vulnerabilities. Backdoors or intentional flaws in foreign-built systems could allow adversaries to monitor or disrupt critical operations. For example, foreign AI systems could have backdoors, letting adversaries access sensitive data or seize control of maritime infrastructure.

Economic warfare: AI could enable economic sabotage, such as manipulating global shipping markets or targeting maritime infrastructure. A coordinated attack on maritime logistics using AI could cripple national economies.

AI could manipulate shipping routes or disrupt supply chains, delaying essential goods like fuel or military equipment and weakening national resilience in countries like Australia and the UK.

THE POSITIVES

On the flip side, AI can also strengthen the industry when aligned with national security priorities. For example, AI can predict engine failures, keeping naval vessels mission-ready and reducing downtime.

Another positive is that AI-powered satellite imagery and drones can spot illegal fishing or smuggling in real time, securing our waters.

AI can improve the efficiency of naval supply chains, ensuring timely delivery of resources critical to defence operations. AI can also monitor marine ecosystems for pollution or illegal dumping, protecting fisheries vital to our economy.

MAKING AI WORK FOR US

If we are to meet these challenges and opportunities, we need to develop secure, national AI systems by investing in technology developed in our own nations. These can be tailored to marine applications, reducing reliance on foreign technology. To do this, we should establish partnerships between defence, academia and industry to create secure, purpose-built AI solutions.

We must maintain human oversight in critical operations by training marine personnel to work alongside AI, ensuring human judgement drives key decisions. As part of this, we must implement stringent protocols for AI deployment in military and commercial applications.

We should enhance cybersecurity measures by building robust defences against AI-driven cyber threats targeting the marine industry. Further, we should mandate regular cybersecurity audits for marine AI systems and develop AI-specific security protocols, as well as regularly testing AI systems to identify and mitigate vulnerabilities.

We must regulate AI in maritime applications by enacting policies that limit the deployment of high-risk AI systems in sensitive operations until thoroughly vetted for national security implications. National bodies should be created to oversee AI in the sector, enforcing strict safety and security standards.

It is also important that we adopt ethical guidelines focusing on transparency and accountability in marine AI systems. And we should incentivise the development of regenerative marine technologies, protecting natural ecosystems and aligning with long-term national interests.

A CALL TO ACTION

New legislation and updated standards must mandate the inclusion of manual override capabilities, often referred to in computing as an 'air gap', to ensure systems can be physically disconnected from networks in the event of a cybersecurity threat or AI malfunction or corruption. This is essential for protecting national security.

It should be a legislative requirement that key personnel are physically present onboard all vessels entering a country's national waters. These personnel must have the authority and capability to isolate and assume full manual control of the vessel, independent of any AI systems or remote command from the vessel's originating source or 'mothership'.

To protect national control and resilience, the adoption of AI in the maritime industry must be approached with caution, strategic planning, and robust safeguards. While AI offers transformative benefits, it also introduces critical risks. Many other industries are similarly grappling with how to balance the opportunities and control associated with AI, including the academic sector, where even our leading universities are currently navigating how best to teach and regulate AI responsibly. A proactive, security-focused approach will ensure AI enhances, rather than compromises, the maritime industry's critical role in national defence.

In summary, to safeguard national security, legislation must at the very least mandate manual override systems and onboard personnel capable of isolating vessels from AI and external control. As many industries struggle with AI's rapid advancement, a cautious, security-first approach is vital to ensure technological innovation strengthens, rather than undermines, national resilience.

CREDIT: Graham Gosden

Graham Gosden

Marine engineer Graham Gosden is an elected branch secretary of the Australian Institute of Marine and Power Engineers (AIMPE) – an affiliate union of the Nautilus Federation. His strong technical background and industry knowledge ensure effective representation and understanding of marine engineers across the state of South Australia. This article was originally written in response to issues raised by AIMPE members at a branch meeting.

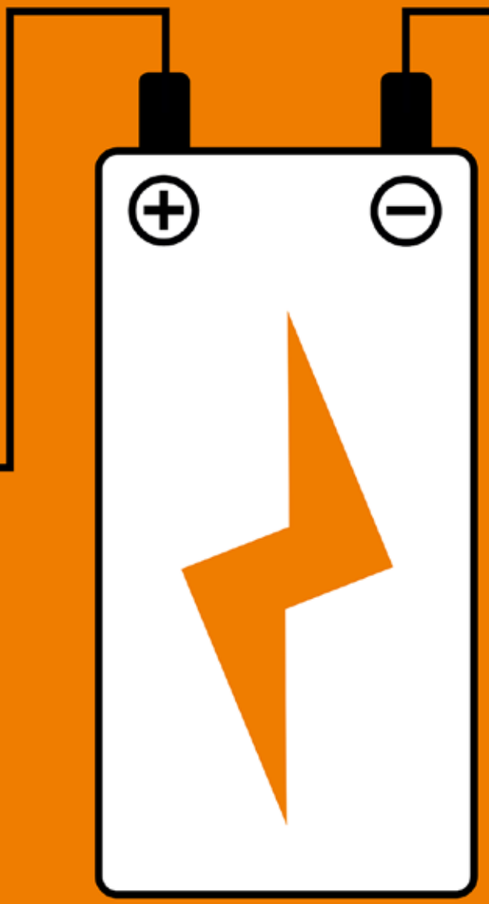
CREDIT: Getty Images

IS THE FUTURE ELECTRIC?

In a bid to improve local air quality, many European countries are looking to shore-charged batteries to power short-hop ferries and tour boats

But many of the planned new vessels are taking longer than expected to come into operation, and concerns remain about crew training and safety

Our special report investigates the current state of play with electric vessels, exploring successes and drawbacks in a sector that has more challenges than might be apparent at first sight



CREDIT: Pixabay/Ricinator

Norway leads the way

Due to the sensitive marine environment in Norway's fjords, the country was one of the first in the world to adopt battery-powered ferries. Now the government plans to tighten its emission laws even further, requiring more vessels to use batteries when visiting the fjords. **Andrew Draper** reports

The Norwegian Maritime Authority (NMA) is set to introduce a zero-emissions requirement for vessels visiting its five western UNESCO world heritage fjords from next year – a move which will see cruise ships following in the footsteps of the electrified local ferry fleet.

The plan will have a phased implementation, applying from 2026 to passenger vessels with capacity for over 12 people and under 10,000 GT. From 2032, the rules would apply to passenger ships of over 10,000 GT.

These changes originated back in 2018, when the Norwegian parliament decided there should be a zero-emissions requirement in the world heritage fjords by 2026.

In 2021, the government proposed the establishment of shore power in Flåm, southwestern Norway, in the heart of the fjords.

In 2023, there was a consultation on a zero-emission proposal for tourist vessels. A transitional arrangement was envisaged where biogas and non-biological fuel would be allowed under certain conditions as an alternative to zero emissions

The NMA said battery power is a good alternative for vessels under 10,000 GT and that access to shore power is crucial to meeting the zero-emissions requirement. 'Use of hydrogen and ammonia technology as an alternative to conventional fuel is not accessible by smaller passenger vessels,' the Authority noted.

Larger vessels can continue operating as now until 2032 and have more time to adjust to the net-zero emissions requirements, said the NMA. The phased approach recognises that the fuel technology for the largest ships is still being developed.

P&O Cruises, which operates cruises to Norway's fjords from the UK port of Southampton, said it complies with all laws and regulations that govern its business, including any future changes enacted by the Norwegian government.

The electric ferry Dragsvik in Sognefjord. Norway's ferry fleet is already prepared to meet zero-emission rules for World Heritage Site fjords

A spokesperson for the company said: 'We continue to make solid progress toward our ambition of achieving net carbon-neutral ship operations by 2050, investing in technologies and solutions to reduce our greenhouse gas footprint, including trialling maritime scale battery technology and methanol-powered fuel cells.'

Unions in Norway have noted that the upcoming changes would have little impact for union members, as they are already operating the battery-powered ferries in the fjords.

However, all unions, including Nautilus International, will be remaining vigilant over members' battery safety and training requirements as Norway's new rules are implemented.

CREDIT: Wikimedia Commons

Unions strive for **seafarer safety**

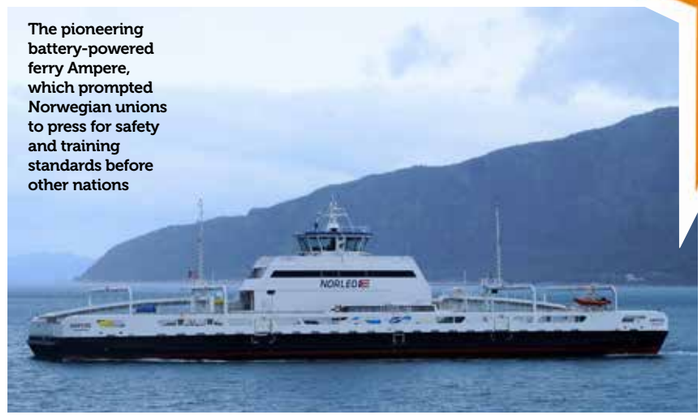
One of the leading experts on battery-powered ships is Odd Rune Malterud, assistant director and technical manager of the Norwegian Union of Marine Engineers. **Sarah Robinson** spoke to him about the technical challenges surrounding the operation of electric vessels

Sarah Robinson (SR): To start with, could you tell us about the risks to seafarers of operating battery technology, and what kind of training they need?

Odd Rune Malterud (ORM): The risks are, first, from the high voltage. The battery systems operate with a high voltage every second when they are onboard, and at the International Maritime Organization (IMO), we've been working on regulations and a training programme for that.

We've also seen accidents with cables, because when you connect them via a magnetic or direct connection, the cables can vibrate and break, so seafarers and passengers could get an electric shock.

Another training need is to operate the big cooling system needed for batteries, and to handle electrical fires. If you get a fire, the battery will self-ignite, and you get a thermal runaway. The temperature there could be above 1,100C and melt the steel. So the construction and design here is very important. Firefighters ashore also need the same competence as the personnel onboard, so in Norway we have developed training for them too.



The pioneering battery-powered ferry Ampere, which prompted Norwegian unions to press for safety and training standards before other nations

CREDIT: Wikimedia Commons

The worst danger from battery fires is that you get very, very toxic gases, and if even if you only breathe in the fumes once, you will die. So we need special personal protection equipment and training on how to check the fire temperature using infrared cameras.

Watchkeeping and crewing is an important issue. For example, battery-powered ferries often lay up at night with the crew sleeping onboard. During the night, their main charging system will be on, with enormous voltage and heat. If you don't have watchkeeping with engineers on that system, when every cooling pump and ventilation fan is running, it could lead to a fire, putting all the crew in danger.

One more thing is that the ship's alarm system must be totally different from the old-fashioned systems. Basically, you need to

Because of the toxic gases from a battery fire, seafarers need special personal protection equipment and training on how to check the fire temperature using infrared cameras

Marine battery expert Odd Rune Malterud addressing the Nautilus International General Meeting in 2023

CREDIT: Brad Wakefield/Nautilus International

be totally retrained to operate a battery ship system.

SR: As Norway has been working on national safety and training standards since the pioneering ferry Ampere was launched in 2011, are you satisfied that all the issues you mentioned above are covered in the standards?

ORM: Yes, we've developed training for seafarers and shore firefighters in conjunction with colleges, and these are good courses, which are also available in English in the UK.

The courses are mainly computer-based, but as part of the training it's very important for seafarers to do ship-specific training on their own vessel. There is no industry-wide design for battery systems or charging connections, so every vessel is different.

A lot of seafarers feel nervous about operating battery-powered vessels, but they're confident after the training. The problem is that these courses cost money. Our directives say the shipowners should pay for them, but they don't want to.

We also have guidelines for the offshore oil and gas industry, developed by the industry group Together for Safety, which I am a part of. It's because batteries are also used on drilling ships and offshore service ships. Here we have recommendations about where to place batteries – either under the deck in a specially-constructed room or in a container on deck, because of the danger.

SR: You mentioned that you have been working on standards for safety and training at the IMO as well as in Norway. How has that been progressing?

ORM: Yes, we do this through the International Transport Workers' Federation (ITF), which is a non-governmental organisation that speaks for seafarers at the IMO.

I am the chair of the ITF Maritime Safety Committee, and we've worked to see how we could apply the lessons learnt in Norway about lithium-ion batteries internationally through the IMO.

We produced interim battery guidelines at the IMO and circulated them globally, and we're working now on further standards for all alternative fuels. But it's up to every individual flag state to implement the guidelines, and that is the biggest challenge we have.

So we really need all the affiliate unions of the ITF to pick up on this and press their national governments to implement the guidelines. Unions can also help to make sure shipowners pay for the training.

There is no industry-wide design for battery systems or charging connections, so it's very important for seafarers to do ship-specific training on their own vessel

We produced interim battery vessel guidelines at the IMO, but we need all the affiliate unions of the ITF to press their national governments to implement them

One challenge with governments is to make sure they understand that battery-powered vessels are totally unsuitable for military use, because of the fire risks and lack of charging infrastructure, so they should not be requisitioning battery-powered merchant vessels in a war situation.

However, I think we can all agree that human safety is the most important thing, and it costs very little to give the competence training. It certainly costs a lot more money when your battery catches fire and the ship is lost.

SR: How can people find out the safety standards for battery-powered ships and their rights to receive training? What should you do if you feel you're unsafe onboard your vessel?

ORM: A lot of this comes under the International Safety Management (ISM) Code and the Maritime Labour Convention (MLC), and it should be clear in a seafarer's contract what their rights and duties are.

If you're not feeling good about operating a battery system or you know you need more training, you should first contact your union for support. Your union can also help if you're at risk of criminalisation (being arrested and charged) after a maritime incident involving batteries.

To get the ship-specific technical information for your vessel, you can contact the ITF Maritime Safety Committee via **itfmsc@itf.org.uk**.

If you feel unsafe on your ship for any reason, ITF inspectors and Port State Control can help you and make sure you are getting your rights under the MLC.

This article is based on Sarah Robinson's video interview with Odd Rune Malterud, which you can watch now on NautilusTV at **www.youtube.com/@nautilusint**. Watch to the end for bonus material!

CREDIT: Nautilus International

Lithuania's Port of Klaipėda, which has signed a contract for the installation of ro-ro port charging

Industry pledges training and infrastructure

An international maritime industry body has acknowledged the need for its corporate members to work together on the 'transformative shift' to battery powered vessels, setting the standard for employers throughout the world. **Andrew Draper** reports

As battery technology transforms the maritime sector, marine engineers must adapt to new skills in energy management, electric propulsion, and advanced diagnostics. Employers, too, are starting to realise that they need to organise training, according to Norway-based international industry body Maritime Battery Forum (MBF).

'The jobs onboard ships will change,' MBF managing director Syb ten Cate Hoedemaker says. 'We need more people with knowledge of electric systems, both electrical engineers but also people that have an automation background. Because it's not just the electrical system, it's the control systems that you need to understand and how those work.'

On the upside, engineers will get less dirty from working with this kind of system, Mr Hoedemaker says. 'They're less noisy, so it's more comfortable for sure.'

CREDIT: Wikimedia Commons

TEAMING UP FOR CREW TRAINING

The MBF counts 86 members, ranging from classification societies to shipping and shipbuilding companies, battery recyclers, as well as manufacturers of batteries and their components. It registered its 1,000th battery-powered ship in 2023. The number has now risen to 1,500, it says. The ship type and installed battery capacity per ship is also expanding.

The organisation says 20% of ships in its database are fully battery powered, though they may have a small back-up generator too.

An important part of MBF's work is education and training. It runs an online introduction to maritime batteries and battery safety. One of the organisation's members is Ocomp, a Norwegian training centre and research institute specialising in maritime safety. It has a particular focus on lithium-ion batteries and safety at sea.

Ocomp has trained over 3,000 seafarers in Norway on battery powered ships, according to Mr Hoedemaker. He points out Norway is the only country in the world with crew training requirements on battery powered ships.

UNDERSTANDING EMPLOYEES' NEEDS

Mr Hoedemaker acknowledges that seafarers might fear electrification and potential changes to their work it may bring. 'That's something that we as an industry really need to take seriously,' he says. MBF is raising these fears with ship designers, battery manufacturers, and electrical integrators.

'We need to take the seafarers on that journey with us. They need to be aware of the design choices that we make because it will affect their way of working, both for maintenance and operations, but also for safety. Seafarers must understand what they need to do in case of an incident with batteries, which is different than when there is an oil fire onboard, for example.'

GETTING CHARGING INFRASTRUCTURE IN PLACE

The UK's Faraday Institution, which undertakes battery research, skills development, market analysis and early-stage commercialisation, issued a report in February 2025 on batteries in the maritime industry. The report points out that battery charging is one of the biggest challenges, as there is a lack of shore-side charging facilities. Faraday is calling for more investment in port electrification infrastructure, as well as research and industry incentives to support the transition to battery powered shipping.

Examples of action taken in other countries could be seen at Singapore Maritime Week in March 2025, when the maritime and port authority of Singapore announced a new safety and technical standard for electric harbour craft charging infrastructure and battery swapping systems as part of Singapore's efforts to decarbonise the domestic maritime sector.

Meanwhile, Lithuania's Port of Klaipėda has signed a contract for the installation of ro-ro port charging infrastructure from next year. And the Brussels-based European Onshore Power Supply Association is promoting the widespread adoption of onshore power supply as a sustainable solution to reduce noise, vibration and air pollution from using fossil fuel engines in port and port city environments.

WHAT'S NEXT?

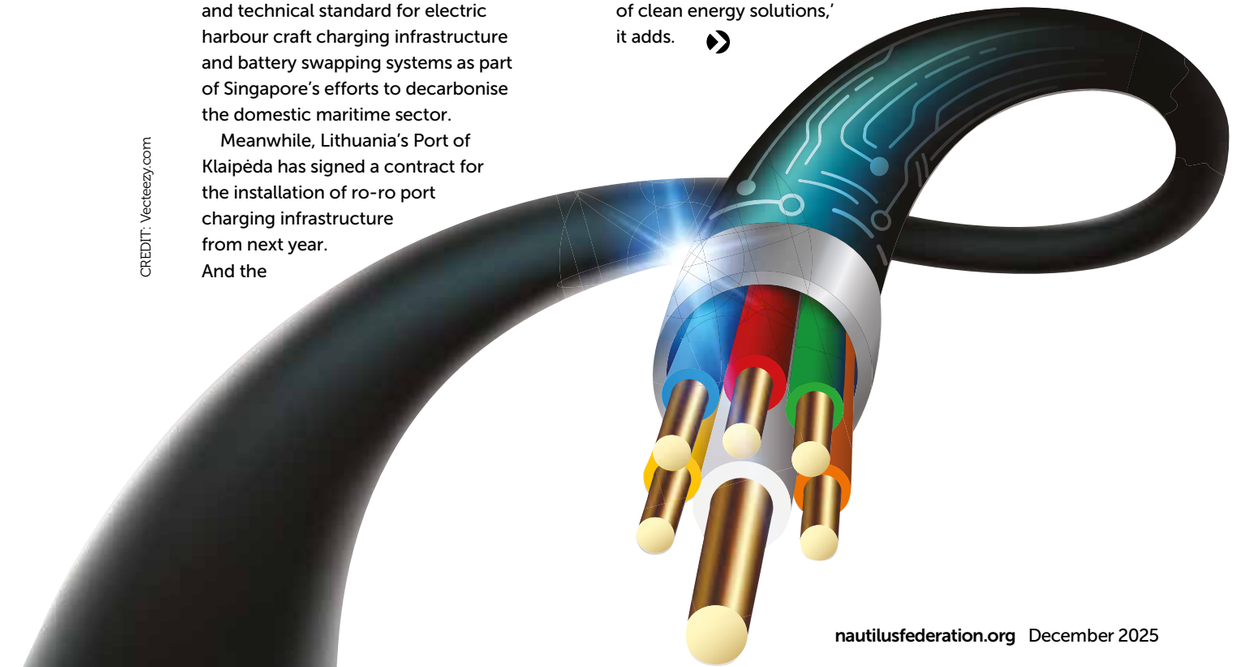
It is now time for more maritime employers to get training in place for their seafarers, and for more ports to provide charging facilities.

The Faraday report says the UK in particular is well placed to do this, given its established strength in global shipping, alongside advancements in battery technology and the creation of national innovation centres. 'Realising the full benefits of this transition will require coordinated investments in both vessel technology and port infrastructure to enable wide-scale adoption of clean energy solutions,' it adds.

'As employers, we need to take the seafarers on the electrification journey with us. They need to be aware of the design choices that we make because it will affect their way of working'

MBF managing director Syb ten Cate Hoedemaker

CREDIT: Vecteezy.com



Nautilus nations gear up for **electrification**

As other European countries follow Norway's lead, Union members based in the Netherlands, Switzerland and the UK are likely to see new job opportunities on battery-powered vessels. So what's in store? **Sarah Robinson, Andrew Draper, Amy Field** and **Deborah McPherson** find out

Short-hop ferries and tour boats aren't every seafarer's cup of tea, but they attract people who want to work close to home and have a more family-friendly job. And it's these crew members who will soon find themselves on the front line of the industry's transition to new fuels as their vessels switch to propulsion by shore-charged batteries.

Nautilus senior national secretary Marcel van Dam

Nautilus strategic organiser John Coppell

CREDIT: ZES

The Dutch cargo barge Den Bosch Max Groen, which is powered by swappable container-sized batteries developed by ZES

Nautilus supports the introduction of the new technology, which will improve local air quality for seafarers as well as the wider public, but the move to electrification must be part of a 'Just Transition' – with companies providing suitable training and safety standards, and avoiding job losses.

The Union's three national branches are all aware of companies in the Netherlands, Switzerland and the UK that are adopting battery technology, and are closely following developments to make sure Just Transition principles are followed.

In the UK, Nautilus has a strong membership base in companies operating lifeline island ferries, which will help the Union get a fair deal for crews operating electric vessels, strategic organiser John Coppell points out. 'We're also pleased to see jobs being created in our broader maritime sector, with companies using British boatbuilders such as Wight Shipyard to build their new battery-powered ferries.'

CREDIT: Wikimedia Commons

Swiss public transport operator Mouettes Genevoises is switching part of its fleet to battery and solar-powered vessels

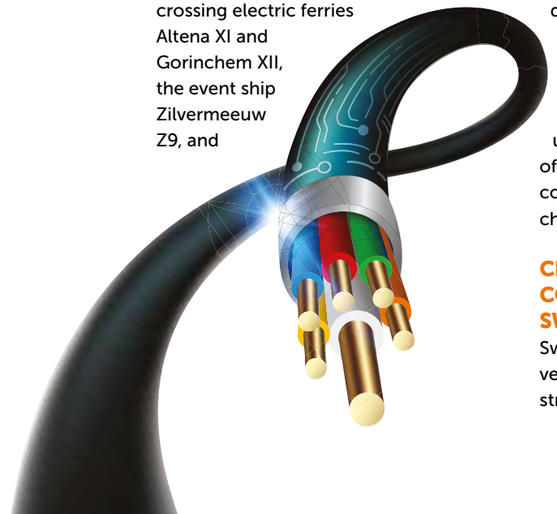
The Union's Netherlands and Switzerland branches currently have less of a presence on routes that are switching to battery propulsion, but the Union is working just as hard to ensure that electric vessels are safe for members to operate.

'Electrical education is just one part,' says Netherlands-based senior national secretary Marcel van Dam. 'The training model must change.' He points to the fierce fire on the car carrier Fremantle off the Dutch coast – exacerbated by electric cars – as a stark reminder of the need for specialised fire safety training. 'Electric fires are notoriously difficult to extinguish,' he warns.

So how is the shift to electrification going in the three Nautilus nations? We look below at the plans for battery-powered vessels that will be offering work to members in the coming years.

INNOVATION IN THE NETHERLANDS

According to Syb ten Cate Hoedemaker of the Maritime Battery Forum, the Netherlands has a wide variety of over 60 battery-powered vessels. There are fully battery-powered GVB ferries in Amsterdam, several ferries in Dordrecht, river-crossing electric ferries Altena XI and Gorinchem XII, the event ship Zilvermeeuw Z9, and some electric workboats.



As Amsterdam's public transport operator, GVB has launched the first of five planned electric ferries on the North Sea Canal, supported by fast-charging infrastructure. Although the full fleet was expected by 2023, GVB is still consulting with industry and public organisations to finalise the transition.

Meanwhile, Netherlands-based manufacturer Zero Emission Services (ZES) has developed a swappable container-sized battery and charging infrastructure for vessels on inland and shortsea routes. These units can be lifted on and off vessels using standard container ship cranes and charged separately.

CLEAN AIR COMMITMENTS IN SWITZERLAND

Switzerland's battery-powered vessels have some of the strongest green credentials around, due to the fact that they are charged from a national electricity grid dominated by renewable energy – particularly hydroelectric power.

Known for its iconic yellow shuttles on Lake Geneva, public transport operator Mouettes Genevoises has been expanding its fleet of electric and solar-powered vessels. The company now operates two 60-seat electric/solar-propelled boats that connect ports across the Swiss section of the lake. Introduced between 2019 and 2020, these vessels are equipped with solar panels and are also charged ashore.

Eco-friendly sightseeing tours are also operating on the lake, including the 25-person sightseeing boat Greta. Solar and battery-powered vessels have become increasingly popular in the tour boat sector, due to their ability to offer a quieter and more comfortable ride compared to traditional diesel-powered engines.

Looking ahead, the Compagnie

Générale de Navigation (CGN), which operates public transport across both the Swiss and French sections of the lake, has ordered two 700-passenger hybrid ferries. While these ferries will still be partially diesel-powered, they will feature state-of-the-art battery storage systems, aiming to reduce emissions by up to 40%.

TRANSITION PLANS AT MAJOR UK EMPLOYERS

Hundreds of Nautilus members work on ferry services around the UK, and many are bracing themselves for the shift to new fuels.

Operators in UK waters 'going electric' include DFDS and Brittany Ferries. DFDS announced in May 2024 an investment of €1 billion (£836 million) in six battery-powered ships sailing between Dover and Calais/Dunkirk. The first should be in operation in 2030, but the company said it will not be able to operate the vessels without sufficient power supply on land and infrastructure to accommodate charging facilities in ports.

Meanwhile, Caledonian MacBrayne (CalMac) has ordered seven new battery-powered vessels for its short routes around the Scottish islands. The vessels are due to start work in 2027, but concerns have been expressed in the Scottish parliament that some ports will not have sufficient charging power in time.

On the south coast of England, Isle of Wight ferry operator Red Funnel is hoping to introduce a fully-electric 'flying ferry' to its fast-crossing fleet, aiming for an ambitious zero-emissions target by charging using renewable energy.

However, the company that is closest to bringing a fully battery-powered vessel into operation in the UK is Uber Boat by Thames Clippers. Final tests and crew training are underway for the Orbit Clipper, a foot-passenger ferry which will operate between London's Canary Wharf on the north side of the Thames and Rotherhithe on the south. With capacity for 100 bicycles, the vessel features a roll-on/roll-off design that enables automated docking on both sides.

HELP YOUR UNION ACHIEVE A JUST TRANSITION

The pace of change towards battery-powered vessels underscores why joining a union matters, says Marcel van Dam. 'We're at the table nationally and internationally, ensuring safety and support for all maritime professionals navigating this electric future.'

The Orbit Clipper will be one of the first fully battery-powered ferries in the UK when it launches later this year

CREDIT: Uber Boat by Thames Clippers

THE MARITIME CHARITY COLUMN

Katie Higginbottom
Head of the
ITF Seafarers' Trust

Reversing the direction of travel on shore leave

Whilst retired old seadogs reminisce about their adventures in foreign ports, seafaring today is a very different proposition. With luck you earn a good salary and have a career path, but at a cost: long hours, long contracts and barely time to set foot on dry land. The Covid-19 pandemic certainly did not help matters. With this in mind, the ITF Seafarers' Trust launched a seafarer survey to get a sense of the current situation and the attitude of today's seafarers.

With almost 6,000 responses it was clear that the subject touched a nerve. The World Maritime University analysed the data, and the findings have been published in the report **Shore Leave: Rare, Brief and in Danger of Extinction**.

The results are telling:

- one in four seafarers do not get shore leave at all, and a third have only one or two incidents of shore leave during their contract
- 47% said their shore leave was less than three hours ashore
- seafarers on tankers and offshore vessels had less shore leave
- officers had less chance to go ashore than ratings and other ranks

The responses also reveal the depth of feeling amongst seafarers. This is not only about access to shore leave but about perceptions of neglect and injustice. For seafarers, the inability to take shore leave indicates a lack of respect for the profession. Reduced time in port, high workloads, increased bureaucracy and security restrictions have combined with multiple other factors to make shore leave a virtual impossibility.

The report concludes that nowadays 'being at sea means staying on ships', as access to shore leave has been eroded. It asks whether the current situation is leading towards the extinction of shore leave as a viable concept. The challenge now is to engage all stakeholders – from flag states to port states, agents to shipping companies, and seafarers themselves – to reverse the direction of travel.

- Read the full report at **bit.ly/shore_leave_report**

GET HELP

Nautilus 24/7
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ITF unites with major maritime organisations against **seafarer criminalisation**

CREDIT: Nautilus International/Jess Hurd

Four major international organisations — the International Transport Workers' Federation (ITF), the International Maritime Organization (IMO), International Labour Organization (ILO) and International Chamber of Shipping (ICS) – have united in calling for stronger protections for seafarers facing criminalisation.

The joint appeal came during a high-level event held at the IMO headquarters in London. The organisations emphasised that seafarers must be treated fairly, with dignity and full respect for their human rights. The unfair criminalisation of seafarers, they warned, continues to undermine morale and threatens the reliability of global maritime trade.

ITF general secretary Stephen Cotton stressed the urgency of enforcement, warning that 'too many governments are still falling short' in implementing existing guidelines.

IMO secretary-general Arsenio Dominguez said seafarers' well-being must remain a 'shared global priority', calling for stronger legal safeguards and wider collaboration. The ILO's Corinne Vargha highlighted the need for greater awareness among prosecutors and judges about the unique challenges faced by maritime workers.

ICS secretary general Thomas Kazakos pledged continued cooperation, noting that seafarers must not be made scapegoats and deserve better protection for the sake of global trade.

The event featured case studies reflecting a range of perspectives, from seafarers to shipowners. It also highlighted the recently adopted IMO/ILO **Guidelines on Fair Treatment of Seafarers Detained in Connection with Alleged Crimes**. These guidelines address due process, detention conditions, and the protection of wages and medical rights during legal proceedings.

Looking ahead, participants called for judicial training, stronger industry coordination, insurer involvement, and improved protections across supply chains. There was firm consensus that seafarers must not suffer the costs of legal uncertainty or abandonment, and that consistent global standards are essential to preserving maritime stability.

Nautilus director of legal services Charles Boyle, who took part in the event, said: 'It was encouraging to see the criminalisation of seafarers being seriously discussed by a diverse range of stakeholders, and proposed solutions gaining wide consensus, particularly the call for regulators and industry to act as one in combatting this scourge which is likely to have such a detrimental effect on recruitment. The IMO secretary-general indicated his willingness for more such seminars, but only on the basis that they will build on change and progress going forward, so it is hoped that concrete positive actions result from this event.'

Worried about **being criminalised?**

If you believe that you are at risk of being arrested and charged following a maritime incident or another work-related issue, then please contact your union immediately for assistance.

Early Union involvement is vital to protect your rights and ensure you receive the appropriate legal support as quickly as possible.

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