

# TANKER Operator

JUNE - JULY 2023

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# News from OCIMF

**OCIMF news from March and April include an anonymous hotline to report non-compliance; piracy situation improving; a study of tanker shore power requirements; a review of IMO legal discussions relating to dark tankers**

**O**CIMF has setup an anonymous reporting hotline for OCIMF programme participants to report issues relating to any non-compliance they observe.

The platform can be accessed at <http://ocimf.ethicspoint.com>.

The service should not be used where emergency assistance is required, and it should not be used to challenge the content of observations made by inspectors.

After a report is made, you will be given a unique code, which can be used a few days later to check if there is any feedback or follow-up questions.

OCIMF provided the following examples of times the service might be used: violence or threat of violence, unethical treatment of people, falsification of findings, breach of programme confidentiality, improper programme access, improper gifts or entertainment, improper payments, falsification of accreditation requirements, inappropriate behaviour, safety issues related to an inspection, inspector shopping, time abuse / failure to rest between inspections, fraud, violation of OCIMF policy or procedure, misconduct, attempts to influence or alter inspection findings.

## OCIMF code of conduct

OCIMF has introduced a Code of Conduct, which applies to all participants in OCIMF programmes. It includes commitments to OCIMF's vision and mission; health, safety, security and environment (HSSE); ethical treatment of people; anti-corruption; gifts and entertainment; and programme integrity.

The Code of Conduct is available to people with registered access in OCIMF's online document library.

## Reviewing its mission

OCIMF has undertaken a project to review its mission and scope of operation. "We have

offered interviews to member companies, to drive a deeper conversation around what we must do as an organisation to support our membership," said Karen Davis, director of OCIMF.

## 30 years of SIRE

The Ship Inspection Report (SIRE) programme is celebrating its 30th anniversary.

"I joined my first vessel, a VLCC, in 1993 when SIRE was in its infancy," wrote Aaron Cooper, OCIMF Programmes Director, in the OCIMF newsletter.

"At that time, we debated as to whether this new inspection programme would really make a difference to our vessel, our fleet or to the industry."

"Time has certainly shown that with the initial focus on machinery and equipment, then management systems following the introduction of the International Safety Management (ISM) Code and Tanker Management and Self Assessment (TMSA), the SIRE programme has been responsible for an unquestionable improvement in industry safety performance."

"Since the inception of SIRE, approximately 9,500 vessels have been inspected by a cadre of approximately 490 SIRE Cat-1 inspectors. Some 23,000 reports have been uploaded, and 166,000 reports downloaded."

"So, after 30 years, I am excited to lead the transition to SIRE 2.0 with the focus on human factors driving the next step-change in industry performance."

"The new digitalised and risk-based inspection programme will give the industry the ability to extract thousands of data points from the enhanced reports and will lead to a proactive rather than reactive approach to addressing industry trends."

## Ethnicity in maritime

OCIMF hosted the first meeting of the "Ethnicity in Maritime Network," part of a programme called Diversity in Maritime.

The network aims to create an inclusive UK maritime sector, which supports individuals and organisations in creating culturally diverse environments.

Attendees represented a variety of sectors in the maritime industry including ports, marine, leisure, commercial and charitable sectors.

Discussions focused on how to create inclusive workspaces, identify barriers to entry and progression through industry, and the availability of mentorship opportunities.

The next meeting is scheduled for 15 June 2023 in London and online. See Ethnicity in Maritime Network page at <https://www.maritimeuk.org/priorities/people/diversity-maritime/networks/ethnicity-network/>

## Piracy situation improving

OCIMF is pleased to note figures from the International Chamber of Commerce's International Maritime Bureau (IMB) showing the "lowest level of reported global piracy and armed robbery incidents since 1993", with 27 incidents reported in the first quarter of 2023, compared to 37 for the same period of 2022.

Of the 27 incidents, perpetrators boarded the victims' vessels in 24 cases, two vessels reported attempted incidents and one vessel was hijacked. There were six crew kidnapped, two taken hostage, two threatened and one assaulted. So, there is still a major threat.

## Asia security

OCIMF participated in the 17th Governing Council Meeting of the ReCAAP (The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia) Information Sharing Centre. It was held on 15-17 March 2023 in Singapore.

The council reported 84 incidents of piracy and armed robbery against ships in Asia for the year 2022, a 2 per cent increase in 2021.

Of these, 83 were armed robbery against ships and one was a piracy incident involving a fishing boat.

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The Onshore Power Supply Working Group meeting at the ExxonMobil campus in Houston

### International Maritime Exercise

Members of OCIMF’s Maritime Security Committee joined international stakeholders for the International Maritime Exercise 23, a naval training event involving 7,000 personnel from more than 50 nations and international organisations.

The participating international forces and organisations were divided into five operational task forces spanning across the Arabian Gulf, Arabian Sea, Gulf of Oman, Gulf of Aden, Red Sea, Indian Ocean and East African coastal regions.

As part of the event, the first ever escort of a tanker leaving a port using an unmanned surface vessel (USV) was conducted.

### Maritime Security Committee

OCIMF’s Maritime Security Committee (MSC) met in March. Among many threats facing the industry, members are especially exercised by the frequency of attacks from aerial drones in the Middle East and await the delivery of a recently commissioned study to develop guidelines.

### Onshore power supply working group

The fifth meeting of the Onshore Power Supply (OPS) Working Group was held in Houston at the ExxonMobil campus. Participants reviewed submissions to a questionnaire of tanker owners to find out the power requirements onboard tankers while in port. With the support of INTERTANKO, more than 400 tankers completed the questionnaire.

Based on this, the working group aims to make a recommendation on the voltage, the number of cables and electrical connections needed.

The group initiated a detailed risk and feasibility assessment of electrical connection at two positions onboard: close to the stern or midship.

### Engine power limitation working group

The Engine Power Limitation (EPL) working group explored safety issues associated with the risk of reduced engine / shaft power.

This included ensuring the vessel is designed

with sufficient power; having an overridable power reserve; a system designed for ease of operation; looking at the engine’s optimum operating condition.

There should be defined authority for officer of the watch to be able to override or request an override. There should be a well executed berth to berth passage plan and the skills to respond to emerging situations. Tugs should be used where required.

Other considerations are the potential impact of Overridable Power Limitation (OPL) on excessive ship motions; crew competency and drills.

### China’s barging industry

OCIMF visited members involved in the barging sector in Shanghai and Nanjing, China, including from CNOOC, UNIPPEC and Shell. Over 8,000 tank barges are operational in China, with 2,400 on the main channel of the Yangtze River.

OCIMF’s focus is to establish a Barge Inspection Questionnaire for China and to create the Global Barge Guide, which will cover this region.

### Tankers, barges and interfaces committee

The 6th meeting of the Tankers, Barges and Terminal interface committee was held at the bp offices in Singapore.

Participants declared renewed support for investigating safety considerations with future fuels.

They noted an increase in enclosed space fatalities from incidents data and tasked the Human Factors Committee and Nautical Expert Group to consider further steps to support raising awareness.

The noted an increase in unreported ship-to-ship activity in the Danish Straits, and agreed to investigate further to understand key risks and next steps, including supporting conversations at the IMO.

### IMO-IOPC Funds Workshop

OCIMF attended a joint IMO-IOPC Funds Workshop on the 2010 HNS Convention held on 3–4 April at the IMO in London.

The aim of this workshop was to encourage member states to support ratification of the HNS Convention on the transport of hazardous and noxious substances (HNS) by sea. Ratification would ensure that those who have suffered damage caused by HNS cargoes would have access to a comprehensive and international liability and compensation regime.

Other industry bodies representing all sides of the shipping industry, such as ICS, P&I Clubs, European Chemical Industry Council (CEFIC), Federation of European Tank Storage Associations (FETSA) and World LPG Association, were unanimous in wanting to see the HNS Convention enter into force.

### OCIMF and IMO

During IMO’s sub-committee on Human Element, Training and Watchkeeping in February, OCIMF successfully supported a proposal to develop new mandatory training standards to deal with personal safety, bullying and sexual harassment in the maritime industry.

At the sub-committee on Pollution Prevention and Response in April, OCIMF was invited to participate in discussions on managing volatile organic compound (VOC) emissions from the shipping value chain.

OCIMF has an interest in ensuring safety and training requirements for GHG emission reductions are at the forefront of technological innovation and the introduction of alternative fuels or energy sources for shipping.

OCIMF chairman Nick Potter, managing director Karen Davis and risk and regulatory affairs adviser Abhijit Aul met IMO secretary-general Kitack Lim and his leadership team at the IMO headquarters in London to discuss long term priorities of IMO and OCIMF. A particular focus was seafarer welfare and a desire to understand and target the root cause of high impact maritime incidents.

### IMO’s Legal Committee

OCIMF reported on the 110th session of IMO’s Legal Committee held on March 27-31. Issues relevant to tankers (and particularly the ‘dark Russian fleet’) are:

- Commencement of development of guidelines on fair treatment of seafarers detained on suspicion of committing maritime crimes.
- Adoption of guidelines for port state and flag state authorities on how to deal with seafarer abandonment cases.
- Calls for flag states to ensure that tankers under their respective flag adhere to the spirit of the safety requirements under the relevant IMO conventions to minimise the risk of oil pollution.
- Proposals for port states to ensure enforcement of the IMO safety and liability conventions.
- General push for member states to ratify and bring into force the 2010 HNS Protocol (on the carriage of hazardous and noxious substances by sea) as soon as possible.
- Need to establish a genuine link between a state and a ship flying its flag.
- An intersessional correspondence group has been tasked with defining elements of “due diligence” to be followed when registering ships with a flag state.
- Explore potential misuse of the IMO identification number schemes.

This article is a summary of OCIMF’s March and April newsletters. The full text is online at <https://www.ocimf.org/news-and-events/news/newsletter>

# Ardmore Shipping – E, S and Starlink

Product and chemical tanker operator Ardmore Shipping presented its approach to environmental and social factors – the ‘E’ and ‘S’ of ESG - and how it is excited to be using Starlink

**A**rdmore Shipping, an operator of MR product and chemical tankers ranging from 25,000 to 50,000 deadweight tonnes, has set up a ‘sustainability committee’ to support its board in environmental and social factors for the company. And CEO Anthony Gurnee is very excited about the company’s forthcoming use of Starlink satellite communications.

The company has 21 vessels in its fleet, according to its website.

The role of the Sustainability Committee is to give oversight to the company board. It will focus on ‘environmental’ and ‘social’ aspects of the business, both at sea and ashore.

It is chaired by Dr Kirsi Tikka, and has two members, Mats Berglund and Helen Tveitan de Jong. All three also serve as directors of Ardmore Shipping.

Helen Tveitan de Jong is CEO of Carisbrooke Shipping Holdings, which has a fleet of over 34 dry cargo and multi-purpose vessels, with offices in Cowes (UK) and Rotterdam (Netherlands).

Mats Berglund was formerly CEO of Pacific Basin, a Hong Kong dry bulk operator, which had 200 ships in its fleet at one time. Other past roles include head of crude transportation for Overseas Shipholding Group (OSG), and president of Stena Rederi.

Kirsi Tikka is a former Executive Vice President of the American Bureau of Shipping. She is currently a professor of naval architecture and a member of the US National Academy of Engineering.

The idea of forming committees to support the board in different areas is a common practise in “industrial America”, says Anthony Gurnee, CEO of Ardmore. “Whenever boards come up against things which are technical and complex in nature, you form a committee to address it.”

“The board is there to provide oversight and compliance, the committees make guidance, they are there to act as a sounding board for our ideas,” he says.

“When you talk about the energy transition and other energy related matters, as well as the social factors, this is all very complicated and very technical. It is not the kind of thing the whole board can spend time on,” he says.

These factors include new carbon regulations, the evolving mix of refined products and chemical cargoes being carried, the changing priorities of Ardmore’s customers, and their end customers’ drive towards decarbonisation.

“We’re lucky because we have a subset of our board who are very knowledgeable in this area. By forming a committee, we’re able to devote the time of a small group of experts. We hope to get better processes at the board level [as a result].”

This includes continuous technology innovation, implementing ESG best practises, and “ensuring that we are positioned to carry the cargoes of the future,” he says. And, of course, the company needs to continue to be profitable at the same time.

The focus will be divided roughly equally between environmental and social factors.

## Environmental factors

On the environmental side, Ardmore needs to comply with many new regulatory requirements. Not just those from the IMO (CII and EEXI) but also from financial regulators. The company is listed on the New York Stock Exchange. The US Securities and Exchange Commission (SEC), has “a raft of disclosure requirements,” relating to carbon, he says.

Improving fuel performance can be “fun and very profitable,” he says.

The company is already “arguably” saving Euro 1000 a day from its fuel efficiency measures on each vessel, calculated on a ‘time charter equivalent’ basis (daily revenues minus daily costs).

It conducts continuous experimentation into what works. “If we come across a bit of technology we can retrofit, we do a pilot project and measure the results,” he says.

“We have a fairly constant flow of new ideas, some of them are well talked about.” For example, air lubrication and wind assist.

The annual return on investment for implementing many energy saving devices on the market is “typically 30 per cent,” but can be 50 to 100 per cent, he says.

An investment option showing particularly good returns is a variable speed drive (VSD), Mr Gurnee says. These adjust the voltage or current going to electric motors in shipboard



Anthony Gurnee, CEO, Ardmore Shipping

equipment, so you only use the energy that you need. Without it, most motors just have an on-off setting, so you may be using much more energy than you need.

Ardmore is fitting VSDs on all of its ships. “That pretty much has a payback in less than a year,” he says.

Ardmore has technical staff who work out the complex matters of how something can work on one of its vessels and how to install it.

While any one energy saving device (ESD) may only make a small difference, you can have a big impact by fitting many ESDs on a ship, he says. “If you do all the seemingly small things really well, they add up to one big thing.”

Ardmore tries to engage its seafarers into the effort to reduce fuel consumption. “It’s an ongoing effort to better connect our sea staff with what we’re doing,” he says.

In terms of new fuels, Mr Gurnee has strong words for the regulators, including at IMO. “As an industry, we have a right to be disappointed in regulators. They are not providing us with clarity,” he says.

This lack of clarity from IMO could be attributed to the difficulty in getting a consensus from all of the country members as to the best way forward, with a highly technical subject matter and a wide range of opinion, he says.

For example, there are some countries in IMO very concerned about climate change, such as the Marshall Islands, where the

“average height above sea level is 2 feet.”

There are also countries with large numbers of vessels under their flag and who want to continue operations as they have done before.

“It makes it very difficult for the IMO to get to a point where they can recommend the adoption of regulations which provide the clarity that we need.”

But without these regulations, the returns from a low carbon ship are the same as a high carbon ship, although the costs are much greater, so the investment does not make sense. “We could build a methanol fuelled ship tomorrow but would never get a ROI available.”

### Social factors

Social factors being addressed at Ardmore

Shipping include seafarer wellbeing, diversity, and inclusion. “We like to think we are quite progressive already,” he said.

The company has staff with 13 different nationalities, and over half are female.

“At one point [in the past] we had all men on our senior management team,” he said. “We all had the same personality profile. We were all really impatient. We didn’t have anybody saying, ‘have you thought about x’”.

Now, “we’ve got a very diverse array ashore, which includes women. It makes for a much better working environment.”

The US Navy shows that it is possible to have high numbers of women onboard ships, he says. “I was in the US Navy in the late 1970s, we were just beginning to put women on ships. [Today] 25 - 30 per cent of the crew on any Navy ship is female, and it is working

just fine.”

“Having diversity onboard ships will result in better decision making and better teamwork.”

### Starlink

“One thing we’re doing which I’m quite excited about, a new broadband system called Starlink, which we’re now rolling out to the fleet,” he said.

“It’s an incredible system which provides you with high-speed internet onboard. We are trialling a couple of units.”

They “put up thousands of satellites, they are everywhere, it provides excellent coverage, I think it is global”.

It will be used “for the ships to communicate with each other to share knowledge.”

TU

# California’s shore power / emission control requirements

**The California Air Resources Board (CARB) is implementing regulations for ships to require a CO2 emission control system while at port**

**T**his can either be the use of shore-based electricity rather than onboard generators; using a CO2 capture and collection service connected to the generator’s exhaust; or using LNG as fuel for the generator.

The regulation is called “Control Measure for Ocean Going Vessels At Berth”. It was adopted in August 2020 but comes into force in 2025 or 2027.

The system will need to be deployed within two hours of the vessel arriving at berth and continue until 1 hour before the pilot boards the vessel for departure from the berth.

Industry was invited to give feedback on the proposals. CARB evaluated the feedback and then held a workshop online on February 14, 2023, to discuss its evaluation.

The following concerns had been raised by tanker operators and were presented in the workshop, according to a report by Benjamin Buonviri, Manager of Regulatory Affairs with ABS.

Lack of availability of CARB Approved Emission Control Systems (CAECS) other than shore power; limited timeline to adapt

existing CAECS for use on tanker vessels; safety concerns; availability and compatibility of shore power and associated equipment; logistical and operational constraints; utility construction delay.

CARB said it is not aware of any industry-wide limitations that prevent implementation of the regulation in California. If site specific restrictions are found to prevent implementation then these would be given due consideration. CARB will only agree to requests to delay the requirement if it is presented with “objective evidence” of a need to delay.

In the beginning of 2023, all tanker terminals were categorised as a “regulated terminal” or a “low activity terminal,” with their implementation date depending on their category.

Tankers calling at the Ports of Los Angeles or Long Beach will need to comply by Jan 1, 2025; all other tankers will need to comply by January 1, 2027.

The responsibility to provide a CAECS lies with the terminal, Mr Buonviri says.

If it is found that a vessel is incompatible with the CAECS in the terminal it is scheduled

to call at, then the vessel and terminal are responsible for finding another CAECS for the visit. Prior to the next visit the vessel should either modify itself to be compatible with the CAECS provided by the terminal or arrange a separate CAECS.

There is a rule exception for the first time a tanker visits a certain terminal since it may not be possible to determine in advance if the available systems will work with the tanker. This is called a “commissioning visit”. The vessel is expected to connect to shore power at some point during the visit unless the commissioning process cannot be completed during the visit.

Another requirement is that the vessels may not emit anything ‘visible’ through their exhausts for more than 3 minutes in any one hour.

To help tanker owners prepare for the transition, ABS plans to engage the terminals and compile information on the CAECS they will provide to support preparation.

More detail is available in an ABS document online, search for ABS REGULATORY NEWS No.05/2023

TU

# Tanker seafarer happiness best in shipping

The Mission to Seafarers' Seafarer Happiness Survey for Q1 2023 has shown happiness of tanker crew was the highest of all shipping sectors, with an average score of 7.6. In the fourth quarter of 2022, tanker respondents were the second most unhappy, reporting an average score of 7.3

**S**adly, there was a decline in satisfaction levels shown in the average for all ship sectors, from 7.69 in Q4 2022 to 7.1 for Q1 2023.

24 per cent of respondents were in the tanker sector; 34 per cent in bulk carriers; 18 per cent in containers; the remainder in offshore, general cargo, cruise and other sectors.

For the results for crew of all ship types, a decrease in happiness levels was seen in nine of the ten areas of seafarer life. Key areas for concern were shore leave and access to welfare services onshore.

The one exception was satellite connectivity, where satisfaction is improving, although there were still concerns about data allowances,

internet speed, and connectivity limitations.

Seafarers reported growing frustration with owners who attempt to make them sign on for longer periods than desired, as well as with the delays experienced in sign-off procedures.

The challenges of coping with extended periods on board have been made harder due to inadequate food provisions, bureaucratic and unnecessary paperwork demands, ineffective shipboard leadership, and a sense of social isolation adding to the stress of life onboard.

Other issues raised were that not all employers provide health and well-being programs; not all ports provide dental care; and there was limited access to mental health support, medical advisory services, and physical well-being consultations.

Seafarers expressed concerns about salaries, the cost of living, and potential obstacles to career advancement.

While seafarers recognise the importance of good social interactions onboard, there were comments that "insufficient entertainment options on board", and insufficient shared space, was making it harder for them to find a reason to come together.

The issue of relationships with shore management was mentioned repeatedly. It is strongly felt that those in offices managing vessels need a better understanding of the realities of life at sea, and also more empathy and prioritisation of seafarers in their interactions

## Some seafarer comments

<p>“ I used to be very happy before, but nowadays less and less. Lack of proper food, proper leadership, more and more paperwork are leading me to think I don't want to work at sea anymore. ”</p>	<p>“ A friend working for another company has access to proper mental health support, medical advisory and physical wellbeing consultation. Those are services we should have as well. ”</p>	<p>“ My data limit barely allows my phone to wake up. ”</p>	<p>“ Shore leave is impossible as we have constant inspections/surveys/audits in a short, crammed port stay with only a small crew. ”</p>	<p>“ The industry has barely revised salaries in over two decades. All other industries have had increments. Seafarers are still paid the same that they were being paid in the 2000s. ”</p>	
<p>“ \$10 per day per person [catering budget] is not enough to eat properly. ”</p>	<p>“ There isn't any equipment on board or any guidance to activities we can do to keep fit. ”</p>	<p>“ The training does not align with the demands of certificates. ”</p>	<p>“ We don't have control over who sails with us from the compatibility point of view. You just have to hope for the best and make do ”</p>	<p>“ Our real seafarer work is great, but company bureaucracy is bad. ”</p>	<p>“ A life at sea is akin to going to prison. ”</p>

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# Maintaining seafarer health

Experts from Bahamas Shipowners Association, Skuld, US Coast Guard and the Port of Antwerp discussed best practise in supporting seafarers' health, as ICS launches a (paper) International Medical Guide

**T**hese are some of the issues discussed in an International Chamber of Shipping webinar, "Seafarer Health and Wellbeing", held on March 23rd.

Covid made mental health problems onboard ships perhaps 100 times worse. But many shipping companies are now making big steps to support seafarer health, including mental health, nutrition, provision of fitness equipment and access to counselling.

All ships should have a well stocked medical 'chest' onboard, and seafarers should know the basics in stabilising a patient in a health emergency. They should also understand basic mental health needs and challenges.

A pre-employment medical is important but should not be too stringent, there are some health issues you can never test for or prevent.

The webinar was held to coincide with the launch of the first ICS International Medical Guide for Seafarers and Fishers, published in March 2023.

Guy Platten, Secretary General, International Chamber of Shipping, and moderator of the webinar, said he firmly believes that the guide "will end up saving lives".

The main guide is 608 pages, with 10 flash cards showing what to do in specific situations. There is an accompanying 60 page book, "The Ship's Medicine Chest".

## Bahamas Shipowners perspective

John Adams, Chairman, Bahamas Shipowners' Association, said he did some studies of seafarer mental health issues before the Covid pandemic. At the time, the main issues identified were isolation, disconnection, communication or no communication, fatigue, bullying, harassment, financial concerns, family worries, he said.

The stresses of Covid did not change the nature of the main issues, but magnified them all "by 10 or 100," he said. "We ended up in a completely new landscape."

Mr Adams is also a member of ICS board, chair of the ICS greenhouse gas reduction working group and senior advisor to V.Ships.

"As an ICS board member, I did have a preview of the ICS medical guide, it it's one of the most comprehensive guides that I've seen," he said.

At the Bahamas Shipowners' Association, he hears about experiences from 1500 ships under Bahamas flag, and at ICS gets perspective from the national shipping associations.

There have been many stories of the enormous stresses seafarers were under in the Covid period. Mr Adams presented another from a Bahamas flagged ship, where a crewmember onboard the vessel had died of natural causes.

"They were unable to disembark the body, no port or government would accept the remains for 3 months," he said. "The crewmembers were living onboard with the dead colleague. The family of the seafarer were waiting for closure. You can imagine the mental stress and trauma."

"The Bahamas flag state did all they could to support. It is an example of other governments which failed to uphold their Maritime Labour Convention (MLC) obligations."

At one stage there were 71,000 seafarers onboard idle cruise ships off the coast of the Bahamas unable to go home. "This was the most distressing and stressful situation."

A lot of counselling advice was provided. "The importance of investing in medical health and creating a supportive environment onboard cannot be overstated," he said.

Carnival Cruise Lines is an example of a Bahamas flag shipping company with a good approach, he said. The company has programs focussing on wellness and health food options. It has fitness trainers and fitness incentives for crew. There are medical teams onboard ships monitoring health as well as responding to emergencies and sickness, such as from blood pressure monitoring.

There is a support program including guidance

and counselling for seafarers suffering anxiety, stress, and depression. "When people are in an isolated environment, to have that is so important," he said.

Carnival has extended parental leave for seafarers, and also guarantees them work afterwards.

The company sets goals for diversity, which helps foster a feeling of belonging for crew from different backgrounds. "This is an important part of wellbeing," he said.

Tanker and ferry operator Stena is also a member of the Bahamas Shipowners Association. It participates in a program called "WellAtSea," and has a company welfare committee. Stena also works with a company called Marine Benefits, which provides global health insurance for seafarers and their families.

Ship management company V.Group has a comprehensive seafarer assistance program called "V.Care" providing free confidential advice, to support mental health and wellbeing.


The company has programs for nutrition, wellness training, supporting social interaction onboard, and supporting seafarers' families. There are leadership development programs, including with pathways from ship to shore, "so people know they have a sustainable future."

"Wellbeing should be answered in the same way as safety, but sadly it's not the case. There is a huge gulf in ethics, principles, standards across our global industry."



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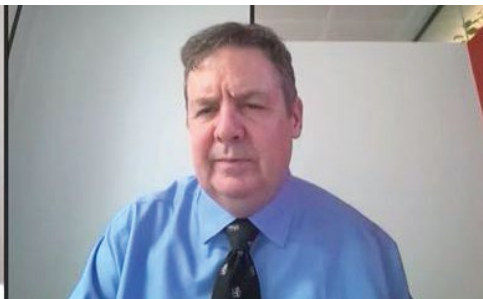


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**Welcome to B04-38**



**Speakers at the ICS webinar on March 23rd, “Seafarer Health and Wellbeing”.** Flavia Pompa-Mellilo, Skuld; Dr Adrienne Buggs, US Coastguard; John Adams, Bahamas Shipowners’ Association; Dr Rob Verbist, International Maritime Health Association; Guy Platten, International Chamber of Shipping.

## Insurance perspective

Many companies provide ‘wellness programs’ and various types of medical insurance for their shore staff, but not for their seafarers, said Flavia Pompa-Mellilo, VP, Global Head of Claims Processes with P+I insurance company Skuld.

“From a P+I insurance perspective, we know the crew has a significant impact on how a ship is run. When a crewmember falls ill that can potentially disrupt the whole operation. Unhappy, unhealthy, and fatigued crew are more prone to incidents at sea.”

“One of the important issues here is to remember that health and wellness start before they get onboard the ship,” she said.

That is where P+I clubs have worked together with pre-employment medical examinations. The seafarers have an opportunity to know how healthy they are before they go onboard.

For many seafarers, this medical examination is the only time they see a doctor before going onboard. They can have any known conditions checked, and the doctor can check they know how to take any medication, and which medication should not be taken with another.

Shipowners have legal obligation to seafarers. Under IMO’s Maritime Labour Convention 2006 (MLC), seafarers should ‘have access to medical care which is, as far as practicable, comparable to that which is available to workers ashore. Ships must carry a provision of medical stores and have crew on board who are trained in first aid and medical care.’

This means there should not be that much difference between sea workers and shore workers when it comes to health, she said.

Poor seafarer health can lead to many different kinds of risks – legal, financial, safety, reputational, and in attracting crewmembers, she said.

Low levels of crew retention mean you will have more people onboard who are less familiar with the vessel. Lack of familiarity with the vessel and its equipment has been a cause of a number of major incidents, she said.

Ms Pompa-Mello was asked about how the problem of fatigue can be improved.

“Fatigue is [a result of] the fact that it has been impossible for seafarers working onboard to respect the rest periods. You need to have that balance. You need to ensure seafarers are getting the rest they need,” she said.

It is not just about hours of sleep, it is also about comfort of the cabin, ventilation, temperature, and vibration.

To illustrate the seriousness of the issue, a study by the Norwegian maritime authority from 10 years ago found 140 incidents in Norwegian waters between 2001 and 2011 caused by seafarers falling asleep on the bridge, she said.

Some people do not believe the problem will ever be solved. “I had a former colleague who left the seafaring life 10 years ago [because] he didn’t like the way that many people address fatigue,” she said.

## Prepared for emergencies

Dr Adrienne Buggs, Medical Technical Advisor, United States Coast Guard’s Office of Merchant Mariner Credentialing was asked what are the best ways for seafarers to be prepared for medical emergencies.

You need someone onboard who is well trained and prepared to provide medical care, and an “appropriately stocked” medical chest with appropriate medications and equipment onboard. This should have been designed together with a medical advisor, or using medical guides, she said.

You should not expect crew to remember everything they have learned in their medical training, particularly when they are highly stressed, she said.

There should be access to telemedical support, both to get through the emergency, and then afterwards, when the patient is ‘stabilised.’

It is very important to have the support and involvement of the ship master and the company in managing the emergency, she said.

Training and preparation will improve the chances of a better outcome from an emergency. And it will probably need more than one person.

In an emergency, the key factors are airway, breathing and circulation (ABC). This applies both for cardiac arrests (heart stops beating) or for traumatic injuries such as a fall. You need someone who understands the possible interventions to get all those things working, she said.

“Make sure they understand airway breathing and circulation,” for example stabilising the cervical spine which supports the skull. “Those are the things I think everyone is used to being trained in.”

Seafarers could also be trained for mental health emergencies, not to the level of a psychiatrist, but being able to understand when someone is in trouble, recognising signs of distress, knowing what to do initially, and understanding how to get assistance.

There are short (1-2 day) training programs available on topics such as suicide prevention and psychological first aid.

Another possible problem on ships is sexual assault. “We’ve come to realise how big a problem that might be,” she said.

People can be taught how to care for someone who has been traumatised, interact with them in a non-judgemental way, allowing them to maintain some control. Also assessing injuries and using medications. Other issues could be medication for HIV, or pregnancy prevention. And of course, a patient may have both injuries and psychological stress.

There may need to be some consultation with telemedical support, but you need to talk to someone who understands the limitations of being on a vessel.

There is medical guidance available which provides accepted medical practise, although this may not be appropriate to the level of training a seafarer would have.

Discussions around mental health can be difficult because people feel there is a stigma attached to admitting they have a problem. Seafarers say, “if I bring up the issue that I’m struggling, people will think I’m weak, I’m not a

good worker. It may prevent me from being able to find a job later on’.”

All seafarers and officers should have training in mental health needs, Dr Buggs believes, including the main issues and people’s basic requirements.

### Dr Rob Verbist

Dr Rob Verbist, Acting President, International Maritime Health Association, emphasised that it is impossible to prevent emergencies. The challenge is reducing the likelihood and risk of them.

Dr Verbist has perhaps done more for seafarer health than anyone else. After medical studies he started a port clinic for seafarers in Antwerp in 1985, treating injured and sick seafarers, doing pre-employment medical examinations for companies and flag states, organising courses, and providing telemedical assistance. He also lectures at Antwerp Maritime Academy, training officers in medical care onboard.

The pre-employment medical is the first step in managing seafarer health. But do not rely on it too much or make it too stringent. “There are things you can never check and never prevent,” he said.

“I am not in favour of running a test of three days in a university hospital to find the smallest thing that could be wrong.”

The industry would benefit from more knowledge about what exactly is worth testing for. “I think it is our duty as maritime health professionals to gather as much data as possible to see what is useful [in testing], what can be added and what can be dropped from these tests to make them as appropriate as possible for what really happens onboard.”

Once a seafarer is onboard, the “medical chest,” the shipboard medical supplies, is central to the overall medical provision.

The ICS Medical Guide states in detail what should be included. “It is the most complete medical chest that has been assembled,” he said.

It would also be useful if all ships had the same medical supplies onboard, he said.

Nutrition and hydration onboard is very important. “Having a meal onboard together is the most important social event. A very important part of people’s health is to eat healthy,” he said.

Younger seafarers often ask for fitness (gym) equipment onboard he said.

It is useful to do safety drills and training onboard for health emergencies.

Good hygiene practises, with facemasks and gloves, is helpful.

It is useful in training for people to understand why things happen, not just be given instructions. “They memorise it much better,”

he said.

Dr Verbist recommends that future officers should be taught some elements of psychology, such as to understand how a certain bad event can affect an individual, and how others can recognise this.

“It is essential that seafarers are able, and have the possibility, to discuss any health or wellbeing concern with their colleagues, officers, with the company, without any fear of retribution or stigma,” he said. “It is so important that they bring their concerns early enough. This is something I cannot stress enough.”

There is an important role for maritime welfare organisations coming onboard ships, he said.

Wellbeing is also about quality of the working environment. This includes not having so much work that someone becomes too fatigued or burned out, he said.

Mr Verbist was asked if people are increasingly eating alone onboard. He replied that it is the same trend as we see on land. “Everyone has their own headphones, and music, to communicate [but] not necessarily with team members.”

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# Training topics discussed at OTG customer seminar event in London

Maritime industry speakers discussed making training fun, training for future fuels, training for SIRE 2.0, appropriateness of STCW, the shortage of trainers, understanding 'human error' and women on ships

**S**eafarers are more likely to do e-learning if you make it fun, said Captain Kuba Szymanski, Secretary General of ship management association InterManager.

He was speaking at the Ocean Technologies Group Customer Seminar, held in London on April 20.

As an example, in his previous role as general manager of MOL Tankship Management Europe, he found seafarers reluctant to take a training course and test. To encourage them, he took the course himself and scored 63 per cent, then asked the crew to try to beat his score, and many people tried it.

In another example, seafarers were reluctant to take a course and test in maritime English. A senior manager, a native English speaker, took the test and did not score very well, because native English is not the same as maritime English. This encouraged other seafarers to take the course and test to prove they could do better, he said.

Shipping companies should also encourage seafarers to recognise that they personally benefit from taking a course, not just the company. Perhaps they do not even need to share their test results with the company, just use it to get a better understanding of their own abilities, he said.

## Training future fuels

The range of options for future maritime fuels is narrowing, believes Captain John Lloyd, CEO of The Nautical Institute. But this means that we can start training seafarers to use them now, rather than wait until we know what fuels they will need to use.

For hydrogen, "I suspect the obstacles are insurmountable for mainstream shipping," he said. For nuclear powered ships, the obstacles are "probably more political than technical."

That narrows the options to methanol, ammonia and biofuels.

"We haven't had to train so many people on a global scale before. We need a common standard of training," he said.

## Training for SIRE 2.0

Tanker operators should be thinking carefully about how to train their staff to work with the upgraded Ship Inspection Report Programme from the Oil Companies International Maritime Forum (OCIMF), SIRE 2.0, said Frans Ubaghs, senior vetting manager and deputy marine director with tanker owners' association INTERTANKO.

Phase 1 of the roll-out starts in May 2023, and is only for tanker operators invited by OCIMF to participate. It will last about a

month, then there will be a month to evaluate. This will be followed by a larger Phase 2.

Phase 3 will start during after the summer, and all tanker operators participating in SIRE will be eligible to join. Mr Ubaghs urged tanker operators to consider this, and use the opportunity to train crew and superintendents to getting in depth knowledge of the new inspection scheme.

There are some new habits crew will need to learn, for example of taking photographs before an inspection takes place.

They are promised that the results from Phase 3 trials will not be used for making decisions to accept or decline the ship, it will be for training only. - The transition phase inspections will be fully anonymised and available for operators and submitting companies.

Phase 4 is planned for end of 2023, it will be mandatory for all SIRE participants, and the results will be used to screen ships for charter.

There is a published library of questions a vetting inspector may ask. It runs to 1294 pages, with an average of 3.5 pages for each question.

INTERTANKO is developing a simplified version which seafarers can use. OTG are in discussion with INTERTANKO regarding development of an electronic version.

When oil major vetting of ships first started in the late 1960s, after the Torrey Canyon disaster in 1967, there could be an oil industry inspection at every port call a tanker made, Mr Ubaghs said.

The aim of the SIRE scheme was to standardise inspections and enable the sharing of data between oil companies, so that ships did not need to be inspected so often.

The upgrade of the vetting scheme, SIRE 2.0, is different to the introduction of schemes in the past, in that it "was not dumped on ships", Mr Ubaghs said. OCIMF partnered with industry organisations like INTERTANKO to support them in 'streamlining' its introduction.

Examination of certificates and other vessel paperwork is now largely done remotely rather than from someone physically inspecting the documents onboard. This change is largely



Audience at the OTG customer seminar in London



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thanks to the pandemic, he said, which forced people to get comfortable with remote working.

Ships fill in a questionnaire before an inspection. This includes questions such as when the last visit to the ship by your superintendent company CEO, or class surveyor was, and when was the last safety drill.

Mr Ubaghs noted that some operators have already done trial inspections, where they went through the process but without the output affecting the chartering decision. He is aware of 3 trials, and in all three, there were 'negative observations' about the pre-inspection information provided by the operator.

Then there is an onboard inspection, where an inspector may look at the hardware (if it is working properly or not), do crew interviews, and review working processes.

There is a marking scheme with grades such as exceeding expectation, as expected, largely as expected, not as expected.

Example questions are "does the seafarer recognise the safety criticality of a task", "does the seafarer have an opportunity to practise doing a task."

The outcome of an assessment will not be presented simply as a number of observations, as it is often with the current system.

### Appropriateness of STCW

There was a discussion about the appropriateness of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) to the needs of today's industry.

"STCW is always going to set a minimum standard," said Captain Arvind Natrajan, Senior Marine Adviser (Crewing & Training) with the International Chamber of Shipping. "You've got to think about countries providing seafarers, the resources and finances they have."

Captain Natrajan represents the interests of shipowners at IMO and is also working with IMO in its review of SCTW.

Any additions to SCTW should be balanced with something else being removed, he said, so that the overall size of training stays the same.

IMO's process is to work with 179 governments, and this makes it slow, he said.

There is nothing stopping individual shipping companies training beyond the minimum. For example, for electronic charts use on ships, there is a minimum standard of training, but many shipping companies train to a higher standard, he said.

Neil Dulling, Manager Environmental Centre of Excellence Europe with MOL LNG Transport Europe noted that going above the minimum training can be hard for shipping companies to do for commercial reasons. They would be competing with other companies which do not spend so much on training.

Although he noted that MOL does differentiate itself from other companies by the



**Captain Kuba Szymanski, Secretary General of ship management association InterManager**

quality of its operations, partly coming from higher levels of training.

John Lloyd, chief executive of the Nautical Institute (NI) was asked if the NI can play a role in raising training standards. He replied that NI is only able to work with companies who want to raise standards, a "coalition of the willing".

"The question is how we deal with the unwilling," he said.

### Finding trainers and vetters

People doing maritime training and vetting would ideally have extensive maritime operations expertise, but maritime operations people are not easily recruited into these roles.

MOL's Mr Dulling noted that some oil company vetting departments have given vetting roles to personnel with no onboard experience.

Captain Natrajan noted that it can be hard for people in operational roles in shipping to move to shoreside training roles because they often have to accept a salary cut.

"For someone looking at training as a full-time career, the [payment] will never be on par to an operational role," he said. It "is linked to responsibility that you have."

"Perhaps think about a lecturer role part time in the holiday.

"You need to develop the passion to be a trainer."

### The "human error" label

MOL's Mr Dulling noted that statistics about accidents with a human element focus, which then attribute these accidents to "human error", are wrongly described. For example, when we hear that "50 per cent of accidents were caused by human error."

These 50 per cent of incidents happened because "we [management] put a person in a position where they had to make a choice, and they got the choice wrong."

Mr Dulling sees there is something of a hierarchy of safety measures, where wearing

of personal protective equipment (PPE) is at the bottom of the hierarchy. Higher up the hierarchy are measures to take people out of the way of risk, such as from eliminating the cause of the risk, or substituting one method with a less hazardous one.

Mr Dulling suggested that AI could be used to identify where people have to make choices where the wrong choice could result in an accident and provide advice in real time.

Mr Dulling noted that the shipping industry has adopted and entrenched 'procedure-based safety' under the ISM Code – the idea that the best way to be safe is to create procedures for seafarers to follow, and they follow them.

"But in the modern world - procedural based safety doesn't work. We still have accidents because procedures can't cover every situation that occurs

We have to do something quicker, faster and more effective," he said.

Frans Ubaghs of INTERTANKO noted that one of the most important metrics for safety is how many incidents crew have helped avoid. There is no way of capturing this in any data.

One audience member said that seafarers are trained to analyse and assess risks. Mr Dulling responded that while this is correct in an ideal world, on a ship people rarely have time to make a 'formal risk assessment' while doing a task that is not going to plan. "On a ship, things change rapidly," he said.

InterManager's Kuba Szymanski said that an important component of risk management must be giving people the power to 'terminate' or stop doing something they think is too dangerous.

Yet seafarers are still required by many oil majors to enter tanks and do a 'wall wash test' to test cleanliness of the tank walls. This is extremely dangerous because if the seafarer has a heart attack or other incident inside the tank, it can be impossible for someone else to carry them out quickly.

Yet crew are not empowered to decline

wall wash tests because they are required by oil companies. This means that someone may do a risk assessment and decide a task is too dangerous, yet have to do it anyway, he said.

**Women on ships**

The challenge of getting more female seafarers is more retention than recruitment, said Martha Selwyn, Manager, Ocean at United Nations Global Compact. In other words, many females are showing interest in working at sea, but often decide sooner than their male counterparts that a seagoing life is not for them.

She noted that if there is a rise in autonomous shipping, there should be more working roles operating vessels which can be undertaken from shore, and these may be more suitable for women.

Captain Arvind Natrajan of ICS said he believed there is a strong business case for women on ships. “We are taking our first steps,” he said.

The next version of STCW will include harassment and gender awareness training, which may help encourage female seafarers, he said.

“There’s going to need to be a huge change in attitude,” said MOL’s Mr Dulling.

Perhaps what is most discouraging for females is that being a seafarer requires spending a long time away from home and being the only woman onboard. The shipping industry could find other industries which have encouraged females to take roles involving time away from home or time working alone, and “see how they do it,” he said.

The industry could also be seeking more ‘cognitive diversity’, not just gender diversity, said Yvette de Klerk, Business Development Manager with Warsash Maritime School.

Cognitive diversity is a term for having people with a range of different thinking styles. This may include people with autism or Asperger syndrome.

OTG’s Raal Harris noted that some seafarers have said that “their happiest times on sea where on mixed sex crews,” and one reason for this is that it “normalised’ life at sea”. Men are used to having females around in their shore and home lives, so if there are women onboard, life onboard feels more normal.

MOL’s Mr Dulling added that in the past, seafarers were expected to spend their entire working lives at sea, from 18 to 55 years old, and shipping companies did not do much to encourage them to come ashore. But today, people typically change jobs after 5 years or less, and so might be expected to change their job as a seafarer after a similar period of time.

**Other comments**

There was a question about how today’s ‘analogue’ seafarers can adapt to digital technology. These are people from an older generation who did not grow up with digital tools.

“I’m a firm believer in our crews, we have one of the most adaptable workforces in the world,” said MOL’s Mr Dulling. One idea could be that younger crews mentor the older ones into digital skills.

Captain Natrajan of ICS noted that “sometime in the future there will be a new and modern workforce.” There will not be analogue seafarers forever.

MOL’s Mr Dulling noted that the industry is far behind in technology terms. For example, the capability of an electronic chart display and information system (ECDIS) today is still below what a 5-year-old car satellite navigation system can do.

An ECDIS today may be able to do a route plan and check it is safe. “In my 5-year-old car, I have a satnav that finds the fastest, shortest or most CO2 friendly route, it is updated automatically,” he said.

Ms de Klerk of Warsash noted that work on board ships can be very different to how people think it is. “There’s a big disconnect between’ work as is’ and ‘work as imagined,” she said.

Captain Kuba Szymanski of InterManager said he would like to see more training courses developed for senior office staff, in particular in how to handle very difficult situations onboard, how to share bad news with a seafarer’s family and show empathy.



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# OTG improving e-learning

Maritime e-learning & operational software company Ocean Technologies Group (OTG) is seeking ways to improve the efficiency of its training

**O**cean Technologies Group (OTG), the world's largest maritime e-learning company, is improving its products in a range of ways, including to improve efficiency of the learning, making products easier to use, and developing new modules.

We heard more at OTG's Customer Seminar in London on Apr 20.

## Learning efficiency

OTG is keen to improve the efficiency and effectiveness of its training.

Effectiveness is a measure of whether the person ended up learning what the course is designed to train.

Efficiency is a measure of the time taken to

do the course.

"Adaptive learning" can help here, ensuring people only learn things they do not know. It can be defined as ways to teach seafarers only the necessary steps they need to learn something.

For example, there may be fifteen different things a seafarer needs to learn to do a certain task. But if the seafarer already knows how to do ten of them, there is only a need to teach the missing five,



Thomas Zanzinger, CEO of OTG

OTG is aiming to make products which do not require any instructions, with user interfaces based on "recognised design principles," with continual thorough research into more user focussed design.

OTG is increasing the 'self serve capability' of its products, so seafarers can choose and download their own training tools, without waiting for their employers to install them first.

It wants to move to full 'digital delivery,' with training tools downloaded through the internet, no USB sticks required. It is in the process of releasing mobile apps which can be used without an internet connection at the time of use, so downloaded onto people's phones when a connection is available and then used later when it may not be.

In order to ensure collaboration with its stakeholders, OTG has put together an advisory board with twenty-three customer members, and recently had a full week of meetings with them, Mr Brown said.

## How much training?

OTG has done some analysis of how much its customers do training in different areas.

For lifeboat safety, it found that 32 per cent of its customers had a lifeboat related title in their library; 17 per cent of customers mandate that crew do training with it; and 10 per cent of seafarers working for its customers had done lifeboat training using OTG products (the others may have done training through other means).

For enclosed space safety, 62 per cent of its customers had a training course in their library; 37 per cent mandate it; and 47 per cent of seafarers had done some training on enclosed spaces. One audience member noted that the higher proportion of seafarers doing enclosed space training courses compared to lifeboat courses may be related to a higher number of incidents relating to enclosed spaces.

OTG is developing tools to support senior crew members who are making assessments of the behavioural skills of junior crew members. An important note here is that the software is not used to directly assess people's behavioural skills.

As an industry we like simple, objective pass/fail assessments, we are not used to making the kind of subjective judgement that is required to conduct a behavioural assessment. Like conducting appraisals it's something that is hard to do well and most people need support to get it right, said OTG's Raal Harris.

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If companies find they do not have the time to put seafarers through all the training they want them to do, then 'adaptive learning' is the only way to solve the problem, said Knut H. Mikalsen, Director Learning Solutions with OTG.

## Improving product

OTG wants to continually improve the usability of its products. The traditional way to support people to use software products is through training, 'onboarding' and support. But "it's not really scalable" and means that the software products are not becoming any easier to use, said William Brown, group of head of product at OTG.





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# BWMS: D-2 compliance, and considering power

The D-2 deadline for BWMS is approaching in September 2023; why and how to consider power consumption of a BWMS; and why you should choose a supplier with a portfolio of related offerings. Ecochlor shares its perspective *By Andrew Marshall, CEO, Ecochlor*

**A** significant deadline for the Ballast Water Management (BWM) Convention is quickly approaching in September 2023.

This is the deadline for ships to comply with the convention's D-2 discharge standards, which requires the installation of a type approved ballast water management system (BWMS) to achieve that.

Theoretically, shipowners have just a few months left to make the necessary preparations to meet these requirements.

Most observers believe that, as a practical matter because of the impact of Covid and other delaying factors, the actual end date is likely to be somewhat later.

Nevertheless, the heat is on, at a time when owners have their eyes fixed firmly on the requirements of MARPOL Annex VI (air pollution prevention requirements from ships).

The word from many shipowners is that ballast water management is 'dead in the water' – it's the issue of the previous decade and no longer open for discussion.

I disagree. The reality is that there are still thousands of ships that have not been fitted with a system, or are fitted with a non-compliant BWMS which must be replaced.

## Power requirements

Owners who have yet to decide on their BWMS, or who must replace non-compliant BWMS equipment, are in the fortunate position to be able to consider future environmental [carbon] regulations when making their decisions. Such as those in MARPOL Annex VI.

With the stringent reduction of CO<sub>2</sub> emissions from ships on the horizon, owners should be looking seriously at BWMS' power requirements, and the CO<sub>2</sub> emitted generating that power.

They should also look at any limitations that the treatment technology may have when ballasting in varying waters so that they can ensure the greatest energy efficiency for their vessel.

But how do you know if a ballast water management system has low power consumption? The answer lies in the fundamental operating principles of the treatment technology.

There is no "one-size-fits-all" BWMS solution for every vessel. All systems can work well under specific conditions.

It's how things function when operating away from their optimum conditions that the BWMS selection can cause problems.

Elsewhere, owners are increasingly looking for maximum energy efficiency on their vessels. Everything is under consideration from optimisation software to LED light bulbs. But for some reason the selection of the right BWMS seems to be off that energy efficiency list.

It is important to know the power requirements for each of the various BWMS technologies both under optimal and sub-optimal conditions.

For example, an electro chlorination (EC) system will typically use less power than ultraviolet (UV) systems when treating ballast water at the same flow rate.

However, under less-than-ideal conditions (low temperature, low salinity) the energy consumption for EC will increase substantially.

On the other hand, a typical chemical injection system has very low power requirements, regardless of the ambient conditions.

Other features that can add to a ship's energy usage during ballast operations are the BWMS filters, and the need to use power to neutralize or re-treat the ballast water before de-ballasting.

## No filters plus low power?

[My company] Ecochlor has a filterless BWMS, which utilises chlorine dioxide treatment. It is highly effective in all water types and conditions without the need for the crew to adjust the operation parameters.

The system's low power consumption provides low cold ironing [use of shore power] costs which offers the additional advantage of an overall lower carbon footprint.

We are talking about using 10kW per hour during ballasting operations, against a possible 600kW+ per hour demand from some of the competitor systems (EC and UV). That's a massive difference!

It is expected that an increasing number of ports will require vessels to draw power from shore cables rather than use on-board generators. This means that any BWMS that has high

electric consumption will add substantial costs to vessel operations while in port.

When the electric bills start to rack up, vessel managers will need to look for efficiencies in every aspect of their operations on board, including the BWMS.

## A broad portfolio

BWMS makers face dwindling opportunities in ballast water treatment, and several are already diversifying into the provision of other maritime green tech.

A red flag for any shipowner when researching systems to install would be a BWMS manufacturer who is not planning and adapting for the future by broadening their product and service portfolios and exploring other technologies.

Owners need to ask themselves, will the BWMS companies that are not transitioning into a broader based business model be viable with the very limited retrofit and newbuild opportunities available in the future?

Over the past few years, [my company] Ecochlor has partnered with two maritime environmental "up-and-coming" energy-efficient technologies: Armada Technologies' second generation passive air lubrication system (PALS) and Sinotech's carbon capture and storage (CCS).

With these, we can offer a one-stop Energy Efficiency Ship Index (EEXI) solution to ease the burden of CO<sub>2</sub> compliance for shipowners.

Each of our industry offerings are targeted to enhance the energy efficiency of the vessel and reduce its environmental impact.

## Air lubrication

The Armada passive air lubrication system (PALS) uses no air compressors in its operation.

This contrasts with the first-generation air lubrication systems that many owners are already familiar with.

The PALS system utilizes the forward motion of the ship to push water through a venturi nozzle which draws air from the deck to create a specific air/water mixture at the outlets.

This mix can be 'tuned' dynamically to a much broader range of operating conditions. Under ideal conditions, the system will provide its maximum benefits whilst consuming

negligible amounts of power. During sub optimal conditions, such as at slow speeds, the use of low power blowers plus some small capacity water pumps may be used to augment the process.

**Carbon capture and storage**

Sinotech brings years of carbon capture and storage (CCS) experience to the maritime sector through the successful operation of more than 50 land-based carbon capture facilities at power stations across China. Some of the systems have been operating for more than 20 years.

Sinotech’s technology offers a carbon capture rate of as much as 90 per cent. However, typical

recovery rates on board a vessel range between 20 to 35 per cent.

In a case study analysis for a 63,000-dwt bulk carrier, when combining just these three energy-efficient technologies — the Ecochlor BWMS, the Armada PALS and the Sinotech CCS system — shipowners could realize a reduction in CO2 emissions of up to 42 per cent.

In other words, you’ve just reached your 2030 emission reduction compliance goals!

By taking necessary steps to reduce carbon emissions and comply with environmental requirements, shipping companies can achieve long-term sustainability while also experiencing better operational and cost-effective outcomes.

With the help of advanced energy-efficient technologies and strong solution providers to assist shipowners, we can all work together to pave a smoother path towards a greener future for the shipping industry.

**Editor’s note:** the carbon saving of onboard CCS would only apply once shore-based CO2 reception facilities are available. So far there are many CO2 storage projects being built around the world which could potentially be adapted to receive CO2 from ships, including in Norway, UK, Australia, USA, Canada, and the Middle East. Carbon captured onboard is currently not accepted as a reduction to vessel emissions under CII.



**Fitting BWMS in an engine room**

**B**allast water management system (BWMS) company Techcross of Busan, South Korea, has installed a BWMS in the engine room of an existing tanker.

The vessel is a 50,400-dwt chemical tanker owned by Horizon Tankers Limited S.A., of Greece.

The installation method has been called the “Engine Room Solution”. It was patented by Techcross in 2016. Until now, it had only been applied to new ships.

The system installed was Techcross’ ECS

1000B model.

The advantage of installing the BWMS in the engine room is that it does not need to be explosion proof and does not need a new ‘room’ to be built. Otherwise, the options for tanker operators are to install a more expensive explosion proof system on deck or build a special room on the deck for the system.

An explosion proof system can cost 20 per cent more for purchasing and installation, and maintenance / operation costs are also higher.

There are plans to apply the same solution to the remaining seven vessels in Horizon’s fleet.

The installation was carried out in close collaboration with Techcross’ Greek engineering partner, Alpha Marine Consulting P.C. at a Chinese repair shipyard.

Alpha Marine is actively promoting similar projects based on this case.

Techcross says it expects this installation case to be a good opportunity for customers who own existing tankers. Techcross is striving to provide the optimal solution that can achieve both reasonable cost and operational efficiency, with a focus on Europe.



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# Alfa Laval's Marine Innovation Summit

**The right approach to technology; why we are better off today than a year ago; how green corridors simplify decarbonisation; high pressure water robotic hull cleaning. Reports from Alfa Laval's Marine Innovation Summit**

**W**e've never been in such an innovative and fastmoving environment as we are in today," said Tom Erixon, President and CEO of Alfa Laval in his introduction to Alfa Laval's Marine Innovation Summit 2023 held online on March 28.

"In Alfa Laval we are deeply involved in technology development related to transition of energy systems. We've spent the last 4-5 years trying to build a toolbox to meet the carbon emission reduction target that industry has," he said.

"We firmly believe there's not one big solution. There will have to be trial and error to (work out) capital efficient methods, and not rely on one single technology. A lot of collaboration is needed in order to generate data, understand efficiency. There will be a lot of need for learning."

Alfa Laval itself plans to be carbon neutral in Scope 1 and 2 by 2030. "We've come a long way in our blueprints and milestone planning - we think it is very achievable. [But] our biggest emissions issue is our scope 3."

"It is very urgent, maybe we should have started 10 years ago," he said. "We are late."

"[But] being late doesn't mean we are going to do stupid things. We need to verify capital efficiency in a structured fashion. Test, get data, get credibility. So when we put money into technology and solutions, it really works."

"We used to be more protective of our knowledge, our technology. [Now] we find that many of us are sharing and co-developing in a way which we have never done before."

Sameer Kalra, President Marine Division, and Executive Vice President of Alfa Laval Group, summed up the event at the end, drawing comparisons to the previous year.

At the previous summit held in Spring 2022, just after the Ukraine invasion, concerns had been raised that the need for energy security might "derail the climate agenda". But there is no indication that this has happened, he said.

Last year there had been talk about the need for more clarity around regulation. "This did

not come out so obviously today," he said.

But people had more specific requests for regulation at this event compared to the last one.

Last year people expressed concerns about shortage of crew after Covid. "This did not come up today".

All in all, "we are much better off today than we were a year ago," he said.

## Green corridors

Green corridors are "a way to simplify the overarching challenge," said Johannah Christensen, CEO of the Global Maritime Forum (GMF).

It is easier because we can "focus on specific trades, specific geographies, where it makes it most likely, most impactful for zero emission vessels to be deployed."

GMF published a green corridors progress report in late 2022, which identified 21 green corridors. Another was announced in March 2023, with mining, steel and energy companies transporting iron ore from iron mines in South Africa to steelmakers in Europe, she said.

## New approach to robotic cleaning

Hydro Hull Cleaning of Denmark has developed a robotic method of cleaning ship hulls and collecting fouling using high pressure water, without any brushes, called "Sea Badger".

Many shipping companies use softer coatings because it is harder for fouling to attach to them. But it is tricky cleaning them with brushes, because they can brush the soft coating away, said Allan Nygård Bertelsen, CEO, Hydro Hull Cleaning, speaking at the Alfa Laval Marine Summit.

The system is fully electric, no hydraulic fluids are involved. Water is used to lubricate the ROV's thruster, so there are no lubricating oils, which could pose a risk of pollution.

The cleaning is done from a tethered robotic device with its own underwater propulsion which swims around the vessel, rather than rolling on it with magnets and wheels. It is a

Remotely Operated Vehicle (ROV), something readers with a background in the offshore industry may know about.

The water pumps, generators, and fouling filtering system are positioned either on the deck of the ship being cleaned, or on a separate service vessel. The system can operate both in a harbour and outside it.

Fouling is collected and sent to the surface equipment. Regulations and restrictions about hull cleaning and capture of fouling are getting ever stricter, he said.

There is a sonar system which enables the pilot, operating the robot, to see the ship hull 30m in front of the vehicle in high detail. So the pilot can ensure the robot is not cleaning a part of the hull which does not have fouling.

Removing light fouling, or 'slime', which is hardly visible, can reduce fuel consumption by as much as 20 per cent, he says. Removing 'hard fouling' can improve fuel consumption by 40-50 per cent.



**Sameer Kalra, President Marine Division, and Executive Vice President of Alfa Laval Group (screenshot from webinar)**

TO

You can watch the Alfa Laval Marine Innovation Summit online here  
<https://www.alfalaval.com/industries/marine-transportation/marine/innovation-summit-2023/>

# SAVE OPEX SAVE EARTH

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# Is maritime digitalisation going too slow?

Speakers from (formerly) Clarkson Research, Hafnia and BIMCO shared perspectives about whether maritime digitalisation is going too slow, and what it really means, at an Alfa Laval webinar

**Y**ou need to see digitalisation as part of a long process,” said Martin Stopford, Economist & Industry Expert, Executive Director, Marecon Ltd, and former head of research with shipbroker Clarkson.

He was speaking at the Alfa Laval Marine Innovation Summit 2023 held online on March 28.



**Martin Stopford, Economist & Industry Expert, Executive Director, Marecon Ltd (screenshot from webinar)**

“The shipping industry started to digitalise in 1860 when they put the first cables under the sea. You could fix a ship in London and tell it where to [collect] a cargo in Calcutta.”

“I have been involved in digitalisation in shipbroking information management. It is a long slow process. 10 years is nothing in digitalisation.”

For the past 50 years of shipping, most industry focus has been on mechanical development, with ever bigger ships, improvements to port facilities, while reducing costs and staffing levels on ships and offices. This makes the industry very lean but also means digitalisation is much harder and more complex.

“We’re not just digitalising; we are trying to get different bits of the business to work together in synchronisation. That, I think, is a very challenging task. We have a long road to go down here,” he said.

Digitalisation would be easier in shipping if there was more standardisation. Consider that a ship can have as many as nine different electrical systems, which all need to be integrated. When one supplier rolls out upgrades it interferes with someone else’s function, he said.

Car manufacturing, when compared to shipbuilding, is much less fragmented. The car manufacturers have more power to “call the shots” with their suppliers. This means they can dictate the standards, and “motor cars have consistent systems.”

It would be great to see more standardisation in shipbuilding equipment, he said, so “you don’t get this problem that every single flowmeter has a different code on it.”

“We need to re-educate people at every level in the business about what goes on in the ship [with digital technology],” he said. “I think developing courses which incorporate carefully structured digital training would be a very good thing.”

People can learn about which technologies can be used for different tasks and get more comfortable with it.

## Hafnia

“When we talk about digitalization [it makes] a big difference what sector you are in,” said Mikael Skov, CEO of tanker operator Hafnia.

“In container [shipping] there’s a lot of push and involvement from the customer side.”



**Mikael Skov, CEO, Hafnia (screenshot from webinar)**

“On the tanker side we do not see a lot of push or willingness from the customer side to standardise and create digital solutions even around processes. We are facing big problems in getting standardisation of data and processes introduced.”

“A conclusion we have come to, after spending a lot of time on this, not to try to make it too complex, build it block by block. Identify a problem we agree on, build on slowly and surely, as opposed to build a complex solution from day one.”

## BIMCO

Stefan Bülow, Executive Board Director, BIMCO & Chairperson BIMCO Marine Environment Committee said, “the pace of digitalisation has picked up, but it must still develop faster.”

It would be useful to share more data between shipping companies and ports/terminals, so that ships could plan their arrival times more accurately. “We’re wasting a lot of energy on the ocean, coming up to port with speeds too high, and having to wait.”

Data sharing projects have been tried with some ports including Rotterdam. “We are on the way, but this is still a long way to go,” he said.

TO

# How to do decarbonisation retrofits

Decarbonisation retrofits can be easier if ships are built with space to fit them, and devices are provided in a service package. Speakers from Shell, Maersk, MAN and Hapag Lloyd shared perspectives

**T**here’s been some great work to retrofit energy efficiency technologies,” said James Helliwell, technology project engineer, Shell Shipping and Maritime. For example, new lubrication systems, cylindrical sails (“Flettner

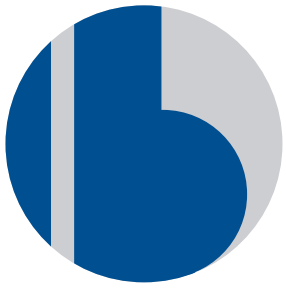
Rotors”), hydrogen and fuel cells.

He was speaking at the Alfa Laval Marine Innovation Summit on March 28, 2023.

Ships failing under CII will be required to have an “emissions improvement plan”, and

this “will start to accelerate adoption of retrofit technologies,” he said. Although “it will be several years before we start to see the impact of that.”

Pilot projects are “key to developing new



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## DECARBONISATION

technologies we need,” he said. And they also need funding.

Shell is involved in an EU funded pilot project to retrofit a compressed hydrogen storage and fuel cell system on a 20-year-old bitumen carrier in Shell’s chartered fleet. This will “prove how this technology will work on some of the older vessels in the industry that need support to decarbonise,” he said.

You would otherwise probably only consider a fuel cell for a vessel which already had an electrical propulsion system. “There aren’t that many ships existing today with electrical propulsion systems or shaft generators compatible with these new technologies. It’s a very big complex time-consuming job to retrofit a full electrical propulsion system,” he said.

“It is important [that] newbuilds coming out of shipyards can be compatible with new technologies, with additional space to run cables, piping, switchboard capacity,” he said. It means “it would be a lot easier to retrofit these new vessels in a few years a time.”

“Some [vessels] are relatively easy to retrofit, they’ve already got some spare switchboard capacity,” he said. “Some are very difficult, very space constrained, very crowded engine rooms.”

While the best option is different for every ship, you would always benefit from having the best possible coating and keeping the hull and propeller in “tip top condition.” This is “one of the best things you can do to reduce emissions today,” he said.

From the regulators, it would be useful to have a gas handling code for hydrogen fuels, he said.

### Maersk Tankers

Steen Sander Jacobsen, Technical Director NJORD, Maersk Tankers agreed that it would be useful to have “more focus on the retrofit side.”

“We have a lot of wonderful technologies that are not being adopted at a wide scale in the industry,” he said. “We need to accelerate the retrofit of existing vessels.”

An obstacle to investment is the fact that, for time-chartered vessels, the benefit from reducing fuel costs goes to the charterer, while the shipowner must pay for it. There could be a way to bridge this disconnect, such as asking charterers to contribute to the cost of retrofitting equipment, he said.

For its retrofitting projects, Maersk Tankers will install as many as nine new technologies at once, taking as ‘holistic’ a perspective as possible.

“You have to look at the specific vessel, where it is operated, where it is trading. You have to design the right package of retrofit, so [the systems] enable each other and it becomes a viable financial solution,” he said.

It takes a lot of expertise to plan these projects, working out what benefit they will

provide in advance, when you are combining equipment from different suppliers, he said. Smaller shipowners may not have access to this expertise.

“The [most] promising technology is very dependent on ship type, size, profile,” he said. For example, “carbon capture can be a super good idea on a CO2 vessel, where you have the facility to land CO2 that you are capturing. But it wouldn’t be really good for a tanker vessel on tramp trade at the moment.”

Future fuels will not make sense for ships unless they are sure of supply in the ports they visit. It “could make sense on container ships.”

Batteries are “already happening” for coastal vessels, but “a bit out in the future” for big container ships.

Sails are only useful if the ship trades in a windy place. “It’s very specific to vessels and the vessel trade.”

“Shipowners can make good use of contracting professional people who understand all these technologies and can put them together in a smart way,” he said.

From regulators, Mr Sander Jacobsen’s hopes are for “more strict guidelines that we can trust.” That will help “direct the industry towards the reductions required. My expectations are maybe not going to be met completely.”

It would be useful to have carbon regulation which is “more aggressive than we have today, such as higher carbon taxes, he said.

### Hapag Lloyd

Container line Hapag Lloyd set a goal of being carbon neutral in 2045 and reducing CO2 emissions by 30 per cent by 2030, compared to 2019. It invested a lot of money in its fleet to try to achieve this, said Christoph Thiem, Deputy Head of Strategic Asset Projects, Hapag Lloyd.

“We have started to retrofit propellers for new vessel speeds for 80 vessels. We are doing



**Speakers at Alfa Laval's Marine Innovation Summit on maritime retrofits. Top: moderator Helena Blomquist. Middle row: James Helliwell, Shell; Karsten Borneman, MAN. Bottom row: Steen Sander Jacobsen, Maersk Tankers; Christoph Thiem, Hapag Lloyd**

premium painting coats on almost every vessel which goes into dry dock.”

It is also installing pumps with seawater cooling, he said.

There is a shortage of yards able to take very large container vessels for retrofit projects. “If you would like to retrofit something in Europe, this would be the first bottleneck.”

Yards are also currently busy with newbuilding. “If you would like a major retrofit, like a dual fuel conversion, probably they don’t even have capacity during the next years to come, they are fully booked with new buildings.”

Also, “we are struggling with getting people to assist us with handling these projects. That’s the limit at the moment. The demands are so high.”

“We meet a lot of projects where the shipowner has a problem deciding which devices to install,” he said. “There’s a need to find strong partners with experience. Shipowners cannot do this on their own.”

Doing multiple retrofit projects at once can make it easier, because you can plan the space you need for cables and pipelines upfront. “If you do it as individual solutions you don’t get the full benefit,” he said.

For the upcoming IMO meetings, Mr Thiem hopes that the regulations will bring clarity to areas such as how to do well to wake calculations or calculate the emission reductions if you have carbon capture onboard.

To illustrate the complexity of the calculation, consider the question of a company capturing CO2 onboard and selling it to a greenhouse operator for fertiliser. How do you include the CO2 captured as part of the vessel’s emissions data, and how do the regulators ensure that the CO2 captured is not being double counted, such as with a greenhouse operator saying they are using ‘zero extra emissions’ CO2?

### MAN

Karsten Borneman, Head of Sales, Propeller and Aft ship, MAN Energy Solutions, said the company is now spending most of its research funds on developing new engines for future fuels.

To help shipowners with smaller technical departments, MAN is developing packaged solutions for retrofits, such as engine derating, propeller changes, and installation and verification of energy efficiency devices.

These solutions include all the calculations and project co-ordination.

“Some of the retrofit solutions pay themselves off with a very short ROI, others don’t,” he said.

You can watch the Alfa Laval Marine Innovation Summit online here <https://www.alfalaval.com/industries/marine-transportation/marine/innovation-summit-2023/>





# Stena Proman name fourth methanol tanker in Rotterdam

**Stena Proman held the naming ceremony for the fourth in a series of six methanol fuelled tankers in Rotterdam on April 26. We asked them what is needed to make methanol the fuel of the future**

**S**tena Proman held a naming ceremony for the Stena Promise, the fourth in its series of six methanol fuelled tankers, in Rotterdam on April 26.

Stena Proman is a joint venture between Proman, the second largest methanol producer in the world, and tanker operator Stena Bulk.

Stena oversees the technical and operational management while Proman does commercial management.

The tankers carry methanol from Proman's production plants in Trinidad, Oman and Texas, to customers, often in Europe and the Far East. They often also carry other chemicals from China to Europe as a backhaul.

The overall vessel performance is calculated as being 11 per cent below EEDI (Energy Efficiency Design Index) 2025 Phase 3 requirements. This is the energy efficiency standard required of newbuild vessels launched in 2025.

EEDI is calculated on the basis of CO<sub>2</sub> emitted through the vessel's exhaust, per transport work done by the ship. Methanol emits 10-15 per cent less CO<sub>2</sub> through the ship's exhaust compared to conventional oil based fuels.

The vessel's final EEDI is "seven per cent better than any other existing medium-range newbuild," says Jacob Norrby, Head of Newbuilds and Projects at Stena Teknik.

The vessels have other energy saving devices. They are fitted with a 1 MW shaft generator, to generate electrical power for the vessel from the propulsion shaft. This reduces the need for auxiliary generators, which can be less efficient at generating power than the main engine. Generators also cannot easily adjust their output to the changing power needs of the ship.

They have a waste heat recovery system on the scavenging air cooler, which takes air heated inside the engine cylinders. This provides a "few per cent extra" on the efficiency, Mr Norrby says.

## Lifecycle emissions

Methanol is not a simple solution to maritime CO<sub>2</sub> emissions. Nearly all methanol today is



**Captain Umang Gupta with senior officers of the 'Stena Promise'**

made from fossil gas, and CO<sub>2</sub> is emitted as part of production process. This can make it worse than conventional fuels when full lifecycle emissions are taken into account, according to some estimates. The European Union's "FuelEU" regulations calculate an increase in greenhouse gas emissions of 8-9 per cent from using methanol fuel if it is made from natural gas, compared to conventional fuels.

So it is very important that the methanol used by ships is gradually made greener, by avoiding atmospheric CO<sub>2</sub> emission from the production process, and ultimately, if the CO<sub>2</sub> emitted through the vessel exhaust can be balanced by emissions avoided elsewhere.

This can be done by using biofuels to make

the methanol, or sequestering CO<sub>2</sub> as part of the process ("blue fuels"), or ultimately fully "green" fuels which cause no net CO<sub>2</sub> addition to the atmosphere without any CO<sub>2</sub> sequestration involved, such as by making them from renewable electricity to make hydrogen combined with CO<sub>2</sub> which would otherwise be emitted.

For other types of emissions, SO<sub>x</sub>, particulates and NO<sub>x</sub>, it has a great performance. Proman says methanol fuel means a "virtual elimination" of SO<sub>x</sub> and particulate matter and the reduction of NO<sub>x</sub> emissions by 80 per cent.

## Making green methanol

"Green methanol is coming", says Anita Gajadhar, managing director of Proman Shipping.

The expectation is that "greater quantities of low-carbon and green methanol are blended into the fuel pool as production volumes ramp up," Proman Stena Bulk says. This includes blue methanol made using carbon capture and storage, expected to be available in "increasing quantities" over the next 5-10 years.

Proman is already making 'low carbon methanol' today, through using CO<sub>2</sub> captured from a separate ammonia production process



**Guests are shown the controls of the 'Stena Promise' by the master**



Guests at the 'Stena Promise' Naming ceremony

(which would otherwise be emitted to the atmosphere) as an input to the methanol production process, Ms Gajadhar says.

Proman signed an investment agreement in January 2021 for a waste to biofuels plant in Varennes, Québec, Canada, called Varennes Carbon Recycling. Partners are Shell, Suncor, the Government of Québec, and Enerkem. As part of the agreement, Proman is entitled to market methanol produced by the plant, which, it says, could make it “the largest marketer of bio-methanol globally.”

The feedstocks are solid waste, mixed plastic waste and wood waste. It is expected to eventually produce 100,000 tons of bio and ‘circular’ methanol per year made from waste. To put this number in perspective, each Stena Proman vessel will use around 11,500 tonnes of methanol per year.

The categorisation of ‘bio’ or ‘circular’ depends on whether the initial feedstock is ‘bio’ or not. Any wood based waste counts as ‘bio’.

It is scheduled to start operations in 2025, with an annual production capacity of 100,000 tonnes of methanol. It will also be connected to an 87 MW electrolysis plant, which will use available local hydropower to make hydrogen from water, and this hydrogen could also be used as a building block to make low carbon methanol.

### Methanol availability now

With methanol, “The biggest challenge now is availability,” says Erik Hånell, President and CEO of Stena Bulk. The current supply is “a very small piece of what shipping needs.”

From a business perspective, committing to methanol “is a challenge,” Mr Hånell says.

“That’s why we haven’t seen more orders.”

There is a chicken and egg situation with fuel, where tanker operators do not want to commit to methanol technology until the fuel is available.

“We are definitely putting a few cards on methanol, and looking at everything else as well,” he says. For example, “we are looking at biofuel.

However, “methanol is the only technical solution working today,” he says. Biofuel is proven to work but is not yet available in sufficient quantities to be the main fuel for ships. “Most biofuel plants are aiming for jet fuel,” he says.

The Proman Stena Bulk vessels are normally carrying methanol as a cargo, so sourcing it is not a problem.

### Methanol bunkering

The Port of Rotterdam was chosen as a location for the naming ceremony since it is Europe’s largest bunkering port, the largest methanol



'Stena Promise' Naming ceremony in Rotterdam

hub in northwest Europe, and the first port in the world where barge-to-ship bunkering of methanol took place.

Perhaps the attention attracted by the naming ceremony will help encourage other shipping companies to bunker methanol there.

At the naming ceremony, David Cassidy, chief executive of Proman, said, “It is fantastic to be able to use [Stena Promise] naming ceremony as a driver to convene with partners, friends and industry leaders in Rotterdam.”

Erik Hånell, President and CEO of Stena Bulk, added, “The naming ceremony for Stena Promise is another step on our cooperation between Stena Bulk and Proman to prove the viability of methanol as a marine fuel. By gathering in Rotterdam – one of the industry’s most important bunkering hubs – we are once again underlining that methanol operation is technically feasible today.”

Methanol has already been bunkered in “all major ports”, including Rotterdam, Ulsan, and Singapore, says Anita Gajadhar, managing director of Proman Shipping. It is currently available in 120 ports.

It is relatively easy to set up methanol bunkering services in a port because you do not need any special tanks. It does not need cooling to extremely low temperatures, as hydrogen and LNG fuel does. Ports just need to install conventional storage capacity, she says.

Methanol tankers can bunker methanol using the same procedures as for loading methanol cargo. “It doesn’t need specialised barges, they [just] need a tank coating which is methanol suitable,” she says.

### Series of vessels


The Stena Promise is the fourth vessel in a series of six. It was delivered in November 2022. It is also the first fully Proman-owned vessel in Stena Proman’s fleet.

The first vessels in the series were Stena Pro Patria (delivered in June 2022, named in Nov 2022 in Trinidad), Stena Pro Marine (delivered July 2022) and Stena Prosperous (delivered Dec 2022). The last two vessels are due to be completed in late 2023 or early 2024. They are all built by Guangzhou Shipyard International (GSI).

All vessels are 49,900 DWT medium range chemical tankers, with a cargo capacity of 54,000 m3.

The vessels have been operating full time on conventional methanol during commercial operations, although they are also able to run on conventional fuels (“dual fuel”). The methanol combustion process requires adding about three to five per cent of marine gas oil as pilot fuel.

Proman Stena Bulk says that methanol has been “generally 10 per cent cheaper” than marine gas oil over the past decade.



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# Weathernews – how ship weather routing is evolving

Weather routing can help companies find ways to reduce emissions and improve predictability of voyages, so vessels may be able to slow steam and arrive on time. But beware of fully automated routing, says Weathernews

**W**eathernews, one of the oldest established ship routing companies, finds itself competing today with a number of start-up companies offering weather routing.

They may be just as good as an experienced company in developing state of the art digital technology tools. But they do not have the many years' of experience doing vessel routing, or as much meteorological expertise among its staff, says Jesse Vecchione, head of regional sales and marketing, Americas, with Weathernews Inc, and also a meteorologist.

While AI tools can be very useful in weather routing, shipping companies should be wary of tools which provide a fully automated service, with no 'human in the loop', he says.

"There's a lot of automated systems out there. If you trust automated routing 100 per cent, there's going to be a lot of problems," he says.

"Operators say, 'the other system sent this to us, we don't think it looks right'. We say, 'there is a possibility the ship will sink if you follow that route'".

Weathernews uses AI itself, but uses its advice together with human expertise, he says.

Skilled meteorologists may have understanding that AI does not have, for example about low pressure systems in the Atlantic Ocean, or other regional weather 'effects'. While a digital system can have rich data about current weather, it does not understand how the weather systems actually work.

"It is hard to automate and systematise the nuances," he says.

Meteorologists may also be better at understanding the probabilities involved in a forecast. Weather forecasts are presented to consumers as 'deterministic', but actually created as a probability.

Although the accuracy of forecasting is much improved in recent years, it is still far from perfect, and so cannot be relied on completely.



**Jesse Vecchione, head of regional sales and marketing, Americas, with Weathernews Inc**

Mr Vecchione urges shipping companies to be careful about promises of forecasts with real time updates. "You often see flip flopping of weather patterns. So depending on when you click 'simulate', it says 'Go South' or 'Go North'."

For shipping companies, "in my mind, that's an absolute disaster," he says.

## ETA guarantees

Weathernews is developing a 'ETA guarantee' service working together with insurance companies, where it will pay compensation if a vessel misses its expected time of arrival by a certain amount. The service will be called "Voyage Protection and Planning (VPP)".

It will be conditional on the master following the recommended route, and no major diversions. The system will first be trialled on bulk vessels.

Offering the service is possible because the predictability of certain vessels, including container ships, is getting very good, he says.

Providing predictability for other vessel types can be more challenging, such as car carriers, which are "like giant shoe boxes" and more affected by wind. The service is planned to be available to these vessels, but with lower payouts in the case of delay, he says.

LNG tankers are also less predictable, because they may need to burn off evaporated gas (by making steam) before the cargo can be discharged.

## About Weathernews

Weathernews was founded in 1986, with a goal of not only gathering and reporting weather information, but helping vessels make better routing decisions, from a safety and fuel efficiency perspective.

In 1993 it acquired Oceanroutes, a company which had been providing weather routing services to vessels since the 1970s. Many ship charter parties had a standard clause requiring the vessel to use Oceanroutes.

Today, it employs over 400 certified meteorologists, and serves aviation, offshore and energy sectors, as well as shipping. The company is providing routing for around 10,000 vessels underway at any time.

It uses a mixture of advanced AI and human forecasting, with 14 in house developed

forecasting models.

The company has two of its own weather observation satellites, and gathers 10,000 reports a day from vessels, and 260,000 reports a day from aeroplanes.

Its customers are about half owners, half charterers. Sometimes there can be a conflict between the charterers' interests and the shipowners' interests, such as if a charterer wants to take the shortest route, but an owner would rather take a longer route if it avoids bad weather, Mr Vecchione says.

With its emphasis on vessel safety, it sometimes gets accused by charterers of taking a bias towards shipowners' interests, he said.

Weathernews partners with a number of other companies, including Navtor which provides systems onboard vessels; Vessel Performance Solutions of Denmark, which provides services for managing fuel consumption; and Veson of Boston, which provides tools for charterers. Its weather data is available in APIs so it can be shared with other tools.

## Weather and emissions

Should we expect more interest in weather data, as shipping companies seek to find ways to reduce carbon emissions, such as by slow steaming, if they are able to?

There was strong market driven interest in slow steaming in the times of high oil prices in the 2010s, Mr Vecchione says, with operators of big vessels with lower value cargo asking how slow they could go.

Mr Vecchione has observed that some shipping companies are taking CII planning very seriously, including putting vessels thought at risk of getting a lower score on 'easier' voyages. Other shipping companies are doing nothing, and planning to wait until they actually get a bad score, and see what the real implications of it are, before making plans and investments, he says.

Weathernews is exploring ways that vessels can make more use out of currents to reduce emissions. "You can position vessels going into the Caribbean so they get following currents [current which flows in the same direction as the vessel]," he says.

It is only applicable to vessels with more flexibility on their arrival time, he says.



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# Do decarbonisation initiatives work?

**Decarbonisation initiatives like Sea Cargo Charter get a lot of attention but cannot themselves reduce CO2 emissions or finance them. Is it any use? Views from DNB Bank, Trafigura, Stolt and Star Bulk Carriers**

**T**hree quarters of shipowners said that decarbonisation initiatives such as the Sea Cargo Charter had “influenced their business”. 500 shipping industry participants shared their views in a maritime sustainability survey for law firm Watson Farley Williams (WFW).

But what impact can these initiatives actually have, when they have no direct regulatory or spending power?

WFW put together a panel from banking, chartering, tanker and dry bulk operations, to discuss this question, and how else decarbonisation might be financed.

The participants were Christos Tsakonas, Global Head of Shipping at DNB Bank, one of the founding signatories to the Poseidon Principles; Rasmus Bach Nielsen, Global Head of Fuel Decarbonisation at Trafigura, which is heavily involved in the Sea Cargo Charter;

Giorgio Guadagna, Business Partner -

Sustainability & Decarbonization at Stolt Tankers, which is involved in the Mærsk McKinney Møller Center for Zero Carbon Shipping; and Charis Plakantonaki, Chief Strategy Officer at Star Bulk Carriers Corp, which is involved in the Global Maritime Forum’s “Getting to Zero Coalition”.

## DNB Bank

“To be honest, when we set up [Poseidon Principles], I’m not sure exactly what we expected,” said Christos Tsakonas, Global Head of Shipping at DNB Bank.

“We saw the world becoming much more conscious of ESG (environmental, social and governance issues), owners becoming more conscious about emissions of their ships. It was natural for banks to think about how we understand emissions in our portfolio.”

Poseidon Principles “proved to be an extremely ‘insightful initiative. It has helped us identify which areas we should

be focussing more on, helped us have very intelligent discussion with clients about emission plans [and] transition plans.”

DNB has set a very ambitious target. Having the target, and a means of pursuing it, has “helped differentiate shipping internally in the bank,” he said. “I have to say, we are being copied by many other segments within our organisation.”

The Poseidon Principles asks participant banks to measure the emissions of vessels in their loan book, and show whether or not they are on a trajectory to meet IMO’s targets of a 50 per cent cut in total emissions by 2050.

“It is very clear that when you start measuring something, you set trajectories, you have to be compliant with trajectories. Clients understand that,” he said. “It has helped shape clients’ thinking on how we tackle emissions.”

“Banks look at projects and finance projects which make good financial sense and make good returns [while] we have strict criteria on our environmental performance,” he said. “When a project comes, we have to look at the cashflow, the pay-out, the technology.”

If there is a vessel project with a charterer willing to take a long-term contract at good rates, it is much easier for a bank to consider, he said.

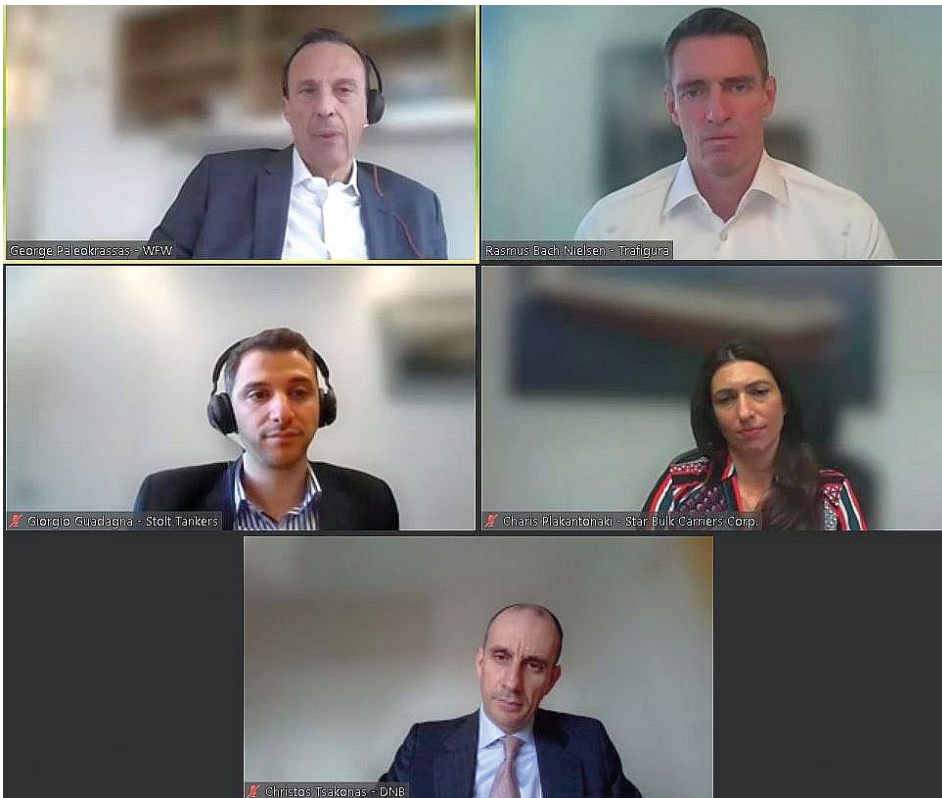
Banks are not able alone to cover the costs of decarbonisation. These must be paid by the entire industry, he said. Banks cannot take on all the risk “in an environment of such tremendous uncertainty.”

DNB wants to reduce the carbon intensity of its portfolio by a third in seven years, he said. “It will [become] extremely difficult for us to finance shipowners and vessels which are not doing these improvement initiatives.”

“If you choose not to follow these initiatives because they are expensive, financing will not be available from DNB and most probably from most of the western banks.”

“You either do what society perceives to be the right thing, or you choose not to do it, then it becomes extremely difficult.”

“There is always capital for good projects,” he said. “Banks, western banks at least, are heavily incentivised to follow trajectories which support green or transition type



**Top: George Paleokrassas, WFW (moderator); Rasmus Bach Nielsen, Trafigura. Middle: Giorgio Guadagna, Stolt Tankers; Charis Plakantonaki, Star Bulk Carriers. Bottom: Christos Tsakonas, DNB**

investments.”

“With a good charter, good employment, right types of engine, banks are definitely there to finance them.”

But this does not make the projects economically viable. “It will have to be some sort of regulation. Carbon pricing, carbon taxes,” he said.

### Trafigura

Sea Cargo Charter fixes the principal problem the industry has with decarbonisation, that “we hadn’t known what our emissions is or was,” said Rasmus Bach Nielsen, Global Head of Fuel Decarbonisation at charterer Trafigura.

It is “about establishing a baseline, together with likeminded people who are not afraid of being public.”

Then it provides a means to see if emissions are being reduced as required by decarbonisation trajectories.

Sea Cargo Charter allows one company to be compared to another one, because they are all using the same metrics. Otherwise, “when you read annual reports from shipowners, you don’t know if you’re comparing apples, pears, bananas,” he said.

“Sea Cargo Charter is a place you can go to gain a lot of knowledge,” he said. Smaller shipping companies can gain knowledge from organisations which have more resources.

Sea Carbon Charter does not try to influence policy, but instead focuses on building its database of emissions data from members and finding ways to grow knowledge and make better decisions.

Having said that, Mr Bach Nielsen would like to see CII changed so it also works on a voyage basis, as the Sea Cargo Charter does. Currently CII is based on annual numbers. “For us, it is an incredible difference,” he said.

Charterers may be the end customer of the shipping industry, but that does not mean they can cover all the costs of decarbonisation. “We can’t take it all that’s for sure,” he said. “We may have to take a little bit. We all need to sacrifice a little bit.”

Alternative fuels will “need to be price competitive,” he said. “They are not price competitive today.”

To illustrate, Mr Bach Nielsen has looked at the finances for a green ammonia project planned for Norway, which needs someone to commit to buying the output for 10 years, at a price nice enough to make the capital expenditure viable and give a bank confidence to provide funding. “It is absolutely not realistic in today’s environment,” he said.

Mr Bach Nielsen would like to see a net zero target from IMO for 2050, full life cycle assessment for fuels, and a global fuel standard. “If we get that I’m very optimistic

that shipping can be decarbonised,” he said.

“It is not a technology question any longer.”

### Stolt

“You often hear that shipping companies and key players are not that good at talking to each other and sharing knowledge,” said Giorgio Guadagna, Business Partner - Sustainability & Decarbonization at Stolt Tankers.

Stolt’s work with the Mærsk McKinney Møller Center for Zero Carbon Shipping provides a way to do that.

“The [decarbonisation] challenge is so large, it is really naive to think anyone can make it on their own,” he said.

“As far as I know, it’s one of the first experiments where [people from] different companies from shipping, shipowners, charterers, technology providers, are physically sharing an office space, day in, day out.”

“That gives better odds at addressing the challenge than the traditional conference that lasts 1 -2 days.”

Stolt plans to join Sea Cargo Charter “shortly,” he said. Initiatives such as Sea Cargo Charter “are the first step towards aiming for higher transparency. That’s something we need across the whole supply chain.”

For biofuels, “there is still a lot of lack of clarity about them in regulations,” he said. “Using biofuels is the easiest part. Everything that comes with them - regulations - is still a huge challenge.”

### Star Bulk Carriers

The Getting to Zero Coalition is “an alliance of organisations in the industry value chain - shipowners, charterers, banks, class societies,” said Charis Plakantonaki, Chief Strategy Officer at Star Bulk Carriers Corp.

The Coalition is managed by the Global Maritime Forum, and aims to have net zero, commercially viable, deep-sea vessels in operation by 2030.

The group aims to “inform and support policy action related to greenhouse gas strategy,” he said.

There are workstreams on ‘new tools and technologies,’ and how to motivate first movers. A consortium is looking at using green ammonia fuel.

In terms of influencing regulation, Mr Plakantonaki noted that decisions in IMO are made by member states, who will themselves often welcome guidance from people with shipping expertise.

“It’s easy to say that CII is not the perfect metric, but we need to [explain] why,” he said.

The business case for decarbonisation over the short-term is more related to energy efficiency, he said. “These types of investments pay back.”

Over the longer term we are talking about green fuels or technologies to remove CO2 from vessel exhausts, so higher capex and opex.

Having finance available at good terms is important but it cannot make these investments viable by itself. There will be a need for either subsidies or a means to pass the costs onto cargo owners, he said.

### Choice of fuels

In the 2021 Watson Farley Williams (WFW) report, 60 per cent of shipowners thought LNG and LPG were the clear favourites, said George Paleokrassas, Senior Partner, and Global Maritime Sector Co-Head at WFW, moderating the webinar.

But in the 2023 report, people seeing these fuels as the favourite had fallen to 35 per cent. Meanwhile biofuels are an increasingly popular choice.

“I’m not surprised,” said Trafigura’s Mr Bach Nielsen. People are looking much more at the full lifecycle of emissions, rather than just ‘tank to wake,’ which means LNG can look less attractive.

Mr Bach Nielsen sees that ‘blue’ fuels, made with fossil fuels and carbon capture, “will have a future for quite some years. We see in US blue ammonia being very competitive in price.”

Stolt’s Mr Guadagna agreed, “At this point we do not have the luxury to exclude options. So, any that we can take has to be welcome. Blue fuels will be part of the solution, probably a bridging solution, rather than a long term one. We need to start from somewhere. If we expect the perfect solution, we will be waiting a long time.”

Mr Guadagna added that biofuels “are one of the few options that are available here and now.”

“The sensible solution is to focus on pros and cons of the fuels and what we know about them,” he said. “It is in best interest of the whole industry to step away from this ‘what is the one fuel’ discussion.”

This webinar was organised by law firm Watson Farley & Williams. It was held to coincide with the publication of its report “The Sustainability Imperative - Part 2,” on March 23rd. The report is based on a survey of around five hundred industry participants.

The report can be downloaded here <https://www.wfw.com/reports/the-sustainability-imperative-part-2/>



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