

TANKEROperator

APRIL - MAY 2023

www.tankeroperator.com

"PARTICIPATING IN THE BLUE MBA PROGRAM HAS BEEN A TRANSFORMATIVE EXPERIENCE FOR ME. IT HAS EQUIPPED ME WITH A 360-DEGREE VIEW AND THE NECESSARY MANAGEMENT SKILLS TO NAVIGATE THE COMPLEX WATERS OF THE MARINE INDUSTRY. THROUGH THE PROGRAMME'S BROAD PERSPECTIVE, I HAVE ALSO GAINED A DEEPER UNDERSTANDING OF CUSTOMER-CENTRICITY AS WELL AS THE EXPERIENCE AND ABILITY TO LEAD AND MAKE A POSITIVE IMPACT ON THE INDUSTRY."

Morten Christian Larsen,
Service & Aftersales Director (CSO) at
Svanehøj Danmark A/S & current Blue MBA participant

Find out more details about the Blue MBA from Programme Director, Irene Rosberg
Visit cbs.dk/bluemba or email ir.mba@cbs.dk

CBS  EXECUTIVE MBA
IN SHIPPING & LOGISTICS
COPENHAGEN BUSINESS SCHOOL

 **EQUIS**
ACCREDITED

 **AACSB**
ACCREDITED

 **ASSOCIATION
AMBA**
ACCREDITED

Contents

OPENING

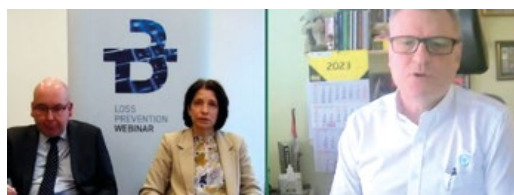
- 01 ■ **OCIMF's news from February** - a greenhouse gas emissions position paper, SIRE 2.0 training videos
- 02 ■ **Growth in STS transfers** - to disguise the origin of shipments, to help Russia move large cargoes of oil from Primorsk to India and China, to transfer LNG
- 04 ■ **Tsakos Energy Navigation investor update** - how it manages financial risk, and how it is modernising the fleet
- 05 ■ **Customer commitments sought for Kazakhstan tanker terminal** - to carry oil from Kazakh oilfields across the Caspian Sea to Baku.



- 06 ■ **Take bunker samples at the ship's end of the hose** - INTERTANKO says many suppliers wrongly insist on taking samples at the barge end
- 06 ■ **52 per cent of shipping fleet on track to fail CII** - according to an analysis by Bearing using digital models for fuel consumption and emissions.

MANNING

- 07 ■ **Being prepared for stowaways and refugees** - the number of individuals is slowly increasing. A Britannia P&I Club webinar discussed how to be best prepared



- 10 ■ **Handling a toxic leader on board** - the 'master under god', simply a bully, or even a pilot. A Nautical Institute webinar discussed the topic.

DECARBONISATION

- 14 ■ **Is the industry's growing interest in methanol and biofuels the right direction?** A DNV webinar explored the issues



- 16 ■ **The carbon footprint of methanol** - worse than conventional fuels on a lifecycle assessment basis, if made from fossil gas
- 17 ■ **The first 'net zero' trans-Atlantic voyage on bio-methanol blend** - with Methanex Corporation



- 18 ■ **How tanker pools help with CII** - if you can give 'easier' cargoes to vessels which are under higher risk of being downgraded.
- 19 ■ **Emissions data is making chartering more complex** - but data and software tools can help

TECHNOLOGY

- 20 ■ **Optimarin and the end of the BWTS retrofit wave** - some companies are so dissatisfied with their systems they are ripping them out and replacing them

News from OCIMF

OCIMF's news from February: it has published a "greenhouse gas emissions position paper", released SIRE 2.0 training videos, and a new version of the barges safety guide ISGINNT

OCIMF has published a 'position paper' showing where it stands on reducing greenhouse gas emissions and air pollution from tanker operations.

Its position is that industry should meet or exceed IMO goals on GHG emissions. "Within this position," it will focus on preventing harm to people and environment, developing best practise for risk management, exploring feasibility of design and operation of new technologies, developing performance measures and fuel initiatives.

OCIMF will provide and advocate best practice guidance to fuel suppliers, bunkering companies and vessel operators.

It will work with relevant industry stakeholders to advocate safe and practicable operations concerning the implementation of performance measures, new initiatives, technologies, and fuels to support the industry in meeting or exceeding IMO levels of ambition.

OCIMF encourages its members to measure, disclose and self-assess progress on environmental performance, continuously reflecting on how to improve it.

OCIMF will not make commercial viability assessments of measures to reduce GHG emissions and air pollution.

It supports flexibility of choice of technology and feedstock when determining solutions, while focusing on risk management and practicability of implementation.

OCIMF working groups are working on information papers on

best practice guidance for applying onshore power supply; best practice guidance for applying emission control technologies; risks associated with shaft/engine power limitation, minimum power guidelines and speed reduction zones.

It is strengthening controls related to GHG emissions and air pollution reduction on OCIMF's SIRE, BIRE, OVID and MTIS programmes.

It is mapping environmental issues against each industry organisation working on it to have a clear picture for resource allocation to deliver the highest impact.

It is sharing experience among OCIMF members via communities of practice on existing operational best practice to reduce GHG emissions from tankers, barges, terminals and offshore vessels.

It will advocate OCIMF best practice with the IMO in the further development of measures and technical and operational guidelines. Some examples are below.

Development of measures to reduce methane slip and Volatile Organic Compounds (VOCs) emissions

Discussions about incentivising the use of alternative fuels with lower GHG well-to-wake emissions than conventional marine fuels

Amendments to the IGF Code and development of guidelines for low-flashpoint fuels.

Development of guidelines for cold ironing of ships and amendments to SOLAS, if necessary

Revision of guidelines concerning the Energy Efficiency Design Index (EEDI), Energy Efficiency Existing Ship Index (EEXI), Carbon Intensity Indicator (CII) and Ship Energy Efficiency Management Plan (SEEMP), including minimum power guidelines.

Development of new IMO regulations and the revision of the Initial GHG Strategy.

SIRE 2.0 training videos

OCIMF has issued the first five of a series of short training videos on technical aspects of SIRE 2.0.

These videos will help stakeholders develop a clearer understanding of the inspection programme, and processes within a SIRE 2.0 inspection.

The videos are aimed at vetters in OCIMF member organisations, as well as staff based in operators' offices ashore. The videos can be downloaded and circulated to ships for viewing

by staff as part of a regular discussion and training programme onboard.

These videos can be accessed from <https://www.ocimf.org/programmes/sire-2-0/sire-2-0-technical-videos>

ISGINNT2 and barges

OCIMF launched the second edition of the International Safety Guide for Inland Navigation Tank-barges and Terminals (ISGINNT 2), produced in collaboration with the Central Commission for the Navigation of the Rhine (CCNR) in association with relevant European barging organisations.

A launch event was held in the Port of Antwerp harbour house on Feb 13.

OCIMF also recently agreed an action to develop a global barge guide to further its ambition to support the global barging industry.

Drone attacks

The increasing number of attacks by drones against merchant ships has not gone unnoticed, said Karen Davis, director of OCIMF.

OCIMF has commissioned work to investigate how these operations are conducted. "We hope the results will offer insights to mitigate this growing risk."

Committee highlights

Current goals of OCIMF's Environment Committee, discussed in a February 2023 meeting, are an information paper on the use of Onshore Power Supply; an information paper on the risks associated with shaft/engine power limitation, minimum power guidelines and speed reduction zones; a discussion about Volatile Organic Compounds (VOCs).

The Engine Power Limitation (EPL) Working Group discussed design, maintenance, and crew training to mitigate the risk from reduced engine or shaft power because of Energy Efficiency Regulations.

TO

TANKEROperator

Vol 21 No 2

Future Energy Publishing Ltd
39-41 North Road
London N7 9DP
www.tankeroperator.com

PUBLISHER / EDITOR / EVENTS

Karl Jeffery
Tel: +44 (0)20 8150 5292
jeffery@tankeroperator.com

ADVERTISING SALES

David Jeffries
Only Media Ltd
Tel: +44 (0)208 150 5293
djeffries@tankeroperator.com

PRODUCTION

Very Vermilion Ltd.
Tel: +44 (0)1253 812297
info@veryvermilion.co.uk

SUBSCRIPTION

1 year (7 issues) - £195
Subscription hotline:
Tel: +44 (0)20 8150 5292
sub@tankeroperator.com

The growth in STS transfers

Ship to ship transfers are increasing, to disguise the origin of shipments and help Russia move large cargoes of oil to India and China .. and in the LNG fuel sector

Ship to ship transfers are usually done for two reasons – to move the cargo into a different size vessel, or to disguise where it has come from.

According to broker Poten and partners, Iran has become a “master” at using ship to ship transfers to hide the origin of its oil. It ships oil on VLCCs to locations offshore Malaysia, where it is moved onto smaller vessels and taken to the final destination.

Russia is doing ship to ship transfers perhaps more to be able to use larger vessels for cargoes from Primorsk. Oil from the

Northwest of the country is piped to the port of Primorsk, near St Petersburg, which can only take vessels up to 150,000 dwt. So it is typically loaded into Aframaxes and then transferred to VLCCs later.

Most transfers are made either off the Strait of Gibraltar, opposite the Spanish enclave of Ceuta; or off the Greek Peloponnese, Kalamata or the Bay of Lakonikos.

Peloponnese STS

Bloomberg reported in February 2023 that according to its tanker tracking, “millions of

barrels” of crude and products from Russia have been detected being switched between tankers a few miles off the Bay of Lakonikos, in the South of the Peloponnese, Greece.

The transfers take place over 6 miles from the coastline, making them outside Greece’s territorial waters. The average age of the tankers involved is 18 years, with the oldest built in 1997, so 26 years old, Bloomberg said.

Under sanctions rules, European Union companies may only provide assistance or equipment, such as fenders, to the transfers if the cargo onboard

is purchased at a price below a stated ‘cap’, although it may be impossible for regulators to verify without having jurisdiction for those waters.

Costs paid by Russia

Broker Poten and partners calculated that at today’s standard rates, moving oil from Primorsk in Russia to Vadinar in India would cost \$6.42 per barrel with an Aframax for the whole distance, and \$5.06 per barrel if using three Aframaxes transferring the cargo to a VLCC in Ceuta (North Africa, opposite Gibraltar).

However, a recent Reuters article said that a shipowner had issued a \$10.5m invoice for an Aframax voyage from the Baltic to India – which would mean a rate of \$14.98 per barrel.

“If these rates are anywhere near representative of the premiums that can be achieved by moving Russian crude, it is no surprise that certain vessel owners are willing to take the reputational and/or sanctions risk. In a few voyages owners can earn their investment back,” Poten said.

Vortexa analysis

In January 2023, ship data company Vortexa reported that it was seeing an “increase in ship-to-ship transfer activity (STS), at previously uncommon locations.”

It cited Offshore Ceuta (Spain), and offshore Kalamata (South of Peloponnese) as emerging key hubs for STS transfers of Russian Urals oil, which is loaded onto a tanker in the Baltic port of Primorsk. This amounted to 9 per cent (Ceuta) and 11 per cent (Kalamata) of Russian Urals exports in December.

Before the war, half of the ship-to-ship transfers of Urals oil took place offshore Skaw, also known as Skagen, Denmark’s Northernmost town.

After the war started, many Urals ship to ship transfers were taking place near the Azores, in the Mid Atlantic, handling 60 per cent of Urals ship to ship transfers from May 2022 to August 2022. The oil was being transferred into VLCCs which



The Marshall Islands Registry
Leads the Way with Unrivalled
QUALITY and **INTEGRITY**



International Registries, Inc.
in affiliation with the Marshall Islands
Maritime & Corporate Administrators



piraeus@register-iri.com
www.register-iri.com

were discharged in China. But this became unfeasible in the Autumn and Winter due to high tides.

Vortexa has tracked that every Urals cargo transferred into a VLCC in Kalamata had an ultimate destination of India, which it could reach via the Suez Canal. Although fully laden VLCCs have too deep a draft to use the Suez Canal, so need to sail around the Cape of Good Hope, Vortexa says.

The Urals cargoes transhipped offshore Ceuta went to both China and India. Ceuta is closer to Primorsk, and it makes sense to tranship the Primorsk cargo as quickly as possible into a VLCC, which has a lower ton mile cost.

Vortexa also observed that many of the tankers moving to Russian trade had previously been carrying Iranian and Venezuelan oil, so were outside the 'western' system.

Chinese operators accounted for 65 per cent of the ship to ship transfer activity offshore Ceuta, and Dubai operators accounted for 60 per cent of the ship to ship activity offshore Kalamata, Vortexa said.

The average age of tankers involved in

transfers offshore Ceuta was 20 years, the oldest was 26 years. The average age of tankers doing transfers offshore Kalamata was 15 years, Vortexa said.

More from Vortexa is online here. <https://www.vortexa.com/insights/crude/new-key-locations-emerging-for-russian-urals-sts-activity/>

Maersk tanker rejected in Spain

In February 2023, Spanish authorities reported that a Maersk Tankers vessel "Maersk Magellan" had been banned from Spanish ports, because its cargo was found to have been previously carried in a vessel which had formerly gone under the Russian flag.

The cargo had been transhipped from a vessel named "Nobel", which was Cameroon flagged, but had been Russian flagged up to July 1, 2022. The rejection was under the terms of EU regulations prohibiting access to any vessel changed from Russian flag to another flag after February 24, 2022, or registered under the Russian flag after April 16, 2022.

The maritime authorities of Tarragona,

Spain, learned that the ship had done a ship to ship transfer from a vessel named "Elephant" in the Alboran Sea (just East of the Straits of Gibraltar). A certificate of origin for the cargo was found stating that it came from the vessel "Nobel".

First LNG STS transfers

Titan LNG of Amsterdam, Netherlands, reported that it was involved in its first ship to ship transfer on the anchorage of Skagen, between Denmark and Sweden, in February 2023. Its bunkering vessel Optimus took a cargo from Hoegh Norway's tanker Arctic Princess.

"Thank you Fendercare Marine, Höegh LNG, TB Marine Shipmanagement (Riga) and Equinor for your trust and cooperation for this operation," the company wrote on its LinkedIn page.

Meanwhile in Greece, the first LNG ship to ship transfer took place in November 2022, with 140,000 cubic meters of LNG was transferred, also from the Arctic Princess to GasLog Athens, a new Floating Storage Unit (FSU) currently anchored at Pachi, west of Athens.

TO

Safer & Easier

Brand New Line Throwing Appliance



RESTECH NORWAY

Tlf. +47 755 42 440 E-post: restech@restech.no www.restech.no

Tsakos Energy Navigation update to investors

Tsakos Energy Navigation revealed interesting details about the company in an investor presentation on January 2, including how it manages financial risk, and how it is modernising the fleet

We have learned to navigate the rough seas, being navigators and seafarers,” said Dr Nikolaos P Tsakos, Founder, President and CEO of Tsakos Energy Navigation (TEN). “We have been able to grow in difficult times. [But] “this year might be one of the best years in the company’s history.”

He was speaking in an investor presentation on January 12, organised by Capital Link, which can also be viewed on YouTube (see link below).

The company was founded in 1993 so celebrating its 30th year. The company began with 4 vessels, one Aframax, one Panamax, and two product carriers. The past 30 years included the 1997 Asian financial crisis, the 9/11 crisis of 2001 and collapse of trade which followed, the credit crisis of 2008, and since 2020 the Covid crisis and Ukraine crisis, Mr Tsakos said.

Today it has a fleet of 66 tankers on the water, with a further 6 newbuilds and a further newbuild on option. The fleet includes crude oil and oil product tankers, LNG tankers and shuttle tankers.

Financial risk management

TEN has 66 vessels “on the water” at the moment. Of these, 40 vessels (61 per cent) have ‘market exposure’, so they make more or less money based on the strength or weakness of the market. This is either due to a ‘profit sharing’ arrangement in a long term contract, or from actually being on the spot market.

George Saroglou, COO of Tsakos Energy Navigation, did not provide details about the profit sharing arrangement, but these agreements typically mean the charterer pays more money to the shipping company for a vessel on time charter when the spot rate is higher.

44 of the 66 vessels, or 67 per cent, have ‘secured revenue contracts’, such as a long term time charter. Some of these include a profit sharing element.

The idea is that the vessels with secured revenue provide TEN with a reliable source of funds which can be used for repaying loans, the vessel operating expenses, finance expenses, overheads, chartering costs and commissions. The vessels with exposure to the



Screenshot from webinar. Dr Nikolaos P Tsakos, Founder, President and CEO; Paul Durham, CFO; George Saroglou, COO; Harrys Kosmatos, Corporate Development Officer, all of Tsakos Energy Navigation (TEN)

market give TEN the ability to make a profit when the market is strong.

TEN aims to charter vessels for long periods when the market is strong and so good rates can be obtained, Dr Tsakos said.

Long term charters have been secured for all of the 6 vessels in newbuilding, which are to be delivered between Q3 2023 and Q2 of 2025. A further newbuilding is on option.

4 of these 6 vessels are dual fuel (LNG powered) Aframax tankers.

The company’s current and long term clients include Equinor, Chevron, ExxonMobil, TotalEnergies, BP, Shell, Sunoco, Petrobras, Vitol, Pemex, Trafigura, Gunvor Group, Koch Industries, Irving, Flopec, Cheniere, Mitsui, Glencore, PEMEX, Neste Oil, Uniper, Hyundai Glovis and Tesoro, he said. So, this includes oil and gas companies, refineries and traders.

Equinor is TEN’s largest charterer with 9 vessels on long term contracts and 4 newbuild vessels on long term contracts.

The company has an “almost 94 per cent” utilisation rate, which Mr Saroglou describes as “a very big number”.

It has achieved this utilisation rate despite bringing forward some vessel special surveys into the current period, in anticipation of a market upturn, he said.

Financial performance

At the time of the webinar TEN did not yet have its annual results for 2022, but it was already “clear that the annual number will be strong based on the quarterly results,” said Paul Durham, CFO.

“Cash reserves are in a far better position

than at the previous year end, increased by over \$200m. This will help us to reduce outstanding debt at an accelerated pace,” he said.

“Already, in the past six years, outstanding debt has fallen by about \$500m and it continues to shrink.” Having lower debt “will help us finance new vessel opportunities which may arise in future,” he said.

“We still expect our revenue to grow into 2023 as the market continues to remain firm.”

Modernising the fleet

Dr. Nikolas P. Tsakos noted that the prices for second hand vessels are some of the highest he has seen, and this is something Tsakos is able to take advantage of.

“Our aim is to modernise the fleet, taking advantage of situations. We are looking to sell 7 or 8 of our vessels - older generation ships. That would give us a very big capital gain for year 2023,” he said.

“These are deals that are progressing - things might happen, might not go through.”

90 per cent of the vessels in the fleet were originally built for TEN or its clients.

As a long term player, “the best time to buy a vessel is when nobody will lend you money because nobody is there to compete with you,” he said.

For example, in 2012-2013, when share prices were very low, “that was a way to buy cheap ships against long term contracts,” he said.

Asked which vessel class he is most ‘bullish’ about, Dr Tsakos replied that “Aframaxes have been a very good size of vessel, Suezmaxes have always played a big

role. We will be looking at those vessels, but looking for those vessel to be built with some kind of dual fuel arrangement.”

“We will not order ships on speculation with the existing technology.”

There is much interest from charterers for dual fuel vessels, although “a bit dampened by the huge price of gas.”

“Major oil companies are still looking for transactions like this. We’ve done Equinor. We are in discussion with other major companies, for transactions that would help build new quality ships.”

Broader market

Looking at the broader market, Harrys Kosmatos, Corporate Development Officer, noted that global oil demand had already recovered from pre-pandemic levels.

The Ukraine invasion had led to “elongation of routes” – because Russian oil is banned from Europe, it is replaced by oil travelling

longer distances to Europe, such as from the US, West Africa and the Arabian Gulf.

The longer routes reduces supply of tankers to the ‘Western’ market. “That’s an indicator of things to come over the next few years,” he said.

Another factor is that the tanker order book today is “one of the lowest order books in 25-30 years,” he said.

In 2010 and 2018, the number of tankers on order was 10-20 per cent of the number of vessels, he said. “Today the order book is just under 4 per cent.”

Vessels in the current order book will be the ones which replace the ‘departing vessels’.

And 10 per cent of the current global fleet is over 20 years old, and 24 per cent over 15 years old, he said.

Older tankers may be expected to find a market ‘on the other side’, carrying Russian oil to India and China, he said. These are vessels which, until recently, competed in the international commercial arena. We will

effectively see two separate tanker markets.

“It is very easy to imagine that over the next two quarters or year we could be faced with a situation where some sectors could experience a negative growth [in fleet size], against an increase in oil demand, China coming back to the fray, a prolonged war,” he said.

So for a tanker operator, “we are very optimistic on how things look,” he said.

Shuttle tanker market

TEN currently operates four shuttle tankers on “very long contracts,” of up to 15 years, Dr Tsakos said.

Because they are on long contracts, we can say that the lower the market rate is for shuttle tankers, the better the relative returns, he said.

The presentation can be viewed online here.

<https://www.youtube.com/watch?v=yZKsCkb4Y6M>

TO

Investment sought for Kazakhstan tanker terminal

Investment and customer commitments are being sought for a tanker terminal at the port of Kuryk, Kazakhstan to carry oil from Kazakh oilfields across the Caspian Sea to Baku.

From Baku, oil can reach international markets via the Baku–Tbilisi–Ceyhan (BTC) pipeline, which crosses Azerbaijan, Georgia and Turkey to the Mediterranean.

The BTC pipeline was built to carry oil from Azerbaijani oilfields, offshore but on the West of the Caspian Sea, to international markets.

Oil and gas companies in Kazakhstan are showing a reluctance to provide annual volume commitments, says Semurg Invest, the project developer and operator of Kuryk port. This includes Shell, Chevron, ExxonMobil, ENI and Inpex. The terminal could be built with under \$100m investment. If the companies would commit to using the terminal it would encourage others to invest.

Currently, about 80 per cent of Kazakh oil reaches international markets via the Caspian Consortium Pipeline, which runs through Russia to the Black Sea port of Novorossiysk, which is under 100 miles from Crimea. Oil and gas companies in Kazakhstan need to pay Russia to transport their oil. All Kazakh exports to the west go through Russia via various routes.

This exposes them to the possibility of war related disruption. During 2022, Russia began disrupting flows through the pipeline. It cited



Soon to see a tanker terminal? the port of Kuryk, Kazakstan

technical and regulatory issues. The disruption was interpreted by many experts as a warning from Russia that Kazakhstan should stay silent about the war or face economic disruption, according to news reports.

Oil sales account for 60 per cent of Kazakhstan’s export revenue and a fifth of the country’s GDP. Kazakhstan is keen to increase the country’s export capacity through the Caspian Sea to 400,000 barrels a day / 20m metric tons per year. The BTC pipeline has a capacity of 1.2m barrels a day.

The first part of the project at the Kuryk port is to build a grain terminal, expected to

be operational by early April 2023. This will provide a route for grain out of the region to Middle Eastern and African countries. The terminal already has rail links and power supplies.

In December 2022, UAE based port operator AD Ports Group signed an agreement to set up a joint venture with KMTF (Kazmortransflot), an offshore logistics and services subsidiary of the Kazakh National Oil Company (KazMunayGas). The joint venture will operate offshore vessels and tankers, including in the Caspian Sea. It will be 51 per cent owned by AD Ports Group.

TO

Take bunker samples at the ship's end of the hose

Tanker owner association INTERTANKO says its members are reporting that some bunker suppliers are insisting on taking samples at the barge end of the delivery hose, although IMO guidelines are clear that samples should be taken at the ship's inlet bunker manifold.

If the sample is taken from the barge end of the delivery hose, it makes it easier for fraud to take place, such as the sample being taken from a different batch of fuel to the fuel actually loaded on the ship.

IMO's guidelines are also clear that the sampling should be witnessed by personnel from both the ship crew and the bunker supplier.

There have been cases, according to INTERTANKO members' reports, where the fuel oil supplier just handed over a few bottles of samples to the ship after bunkering. How,

when and where the samples had been taken were not transparent to the ship's crew.

INTERTANKO is conducting a year long industry reporting exercise, running until January 2024, to assess the extent of the problem, together with industry associations ICS and Intercargo. It intends to gather information which can be used to make a case to IMO that regulations about fuel oil sampling should be strengthened.

Changes to standards

A complexity is that the ISO standard for how fuel should be sampled was revised in 2020, but many bunker suppliers are not aware of this.

The relevant standard is ISO 13739, Petroleum products - procedures for the transfer of bunkers to vessels.

The original version recommended that fuel can be sampled at either end of the bunkering

hose.

IMO's sampling guidelines, MEPC 182 (59), adopted in 2009, have always stated that the sampling location must be the ship's inlet bunker manifold.

ISO 13739 was revised in 2020 to be aligned with MEPC 182 (59).

There is another standard, ISO 8217, which requires that sampling of fuels for analysis "shall be carried out in accordance with the procedures given in ISO 13739 or an equivalent national standard." So this was effectively updated when ISO 13739 was updated.

INTERTANKO would like to see IMO make MEPC 182 (59) mandatory, so that bunker suppliers are required to follow it.

The EU Sulphur Directive 2016/802 stipulates that Member States shall "sample, analyse and inspect fuel oils in accordance with MEPC 182(59)."

TO

52 per cent of shipping fleet on track to fail CII - Bearing

An analysis by Bearing of Palo Alto, California, based on the company's digital models for fuel consumption and emissions, found that 52 percent of the global maritime commercial shipping fleet will fail CII for 2023 (D or E grade) if they keep operating in the current way.

However many vessels will be able to stay CII compliant through slow steaming and other methods.

Bearing's data analysis found that LNG tankers will receive the best initial rankings and general cargo carriers will receive the worst.

Bearing has developed an AI-powered CII solution that it says can predict the fuel performance of every maritime shipping vessel in the world. It employed this tool for its analysis of the world fleet.

The system does not have knowledge of any specific 'energy saving devices' or additional sensors the vessel may have installed. It makes

predictions based on knowledge of generic vessels and analysis of the vessel's previous voyages based on publicly available data.

To create its models, the company has business agreements with an undisclosed number of shipping companies, which provided fuel consumption data from noon reports and sensors.

It has data from "tens of thousands of voyages" and millions of data points that can predict the fuel performance of large vessels with up to 95 percent accuracy. Its partners include IINO Lines and K-Line.

Bearing combined this data with public data sets, including AIS and weather, to model the performance of different categories of vessels and drive AI-based analysis. The company incorporates over 25 variables into its model.

The company claims to be able to predict emissions for a voyage with an accuracy of up to 95 per cent, using just data from noon reports. If vessels with onboard sensors share their metrics with Bearing, it claims to be able to boost prediction accuracy to 98 per cent.

Additional info.: Using just noon reports, Bearing's model predicts emissions with up to 95 percent accuracy --- significantly higher than industry-standard physics-based models, which top out at 80 percent accuracy. Additionally, vessels with onboard sensors can share their metrics with Bearing to boost prediction accuracy to 98 percent.

This model can be used to create a profile of any specific vessel even if Bearing does not have noon reports or fuel consumption data from that specific ship available.

Users can improve Bearing's predictions by sharing data from a ship's noon reports, which Bearing analyzes alongside historic voyage data, seaway conditions, and other factors.

The tool is useful to shipping companies to predict the performance of their own ships.

Bearing has tested out its model by comparing its predictions of fuel consumption with actual consumption by the shipping companies it works with.

The tool also accounts for biofouling, enabling users to predict how often owners will want to clean the vessel's hull.

TO

Being prepared for stowaways and refugees

The number of individuals attempting to stowaway onboard vessels is slowly increasing. A Britannia P&I Club webinar discussed how to be prepared, what to do, and what is covered under P&I insurance

The nationalities with the most stowaways are Ghana, Nigeria and Tanzania, said Simon Rapley, Divisional Director - Loss Prevention with Britannia P&I, speaking at a Britannia P&I Club webinar on Feb 28.

There is a slow decline in the number of stowaways from many West African countries, including Ghana, Nigeria, Cameroon and Ivory Coast, he said. "IMO has done a number of workshops in West Africa to reduce the number of stowaway incidents and it's working to a degree."

Tanzanian nationality stowaways often board vessels in South Africa, in particular Durban, he said.

The International Group of P+I clubs collect figures on stowaways every four years, and the latest available is for 2017. These show that the number of incidents is gradually declining, although the number of individuals involved is going up, so more people per incident.

The IMO also collects data, but the International Group's figures are around 10x higher, showing that IMO must be missing many incidents, he said.

In data from Britannia customers, where it can access more detail, there are a high number of incidents in West Africa where Lagos and Port Harcourt have particular prominence. Also South Africa, Kenya, Morocco and Spain, he said.

Ports in Northern Europe are starting to

feature more prominently in the data of places where stowaways try to get onboard, including on ro-ro vessels.

In Britannia's data, the number of cases per year is "generally trending downwards", but still at 50-60 cases per year, and on average 2 to 2.5 people per case, he said.

Getting onboard and hiding

"A stowaway doesn't care if it is a container ship or tanker. If a vessel is going from Lagos they don't care where it is going, they just want a way out," Mr Rapley said.

The easiest way to board the vessel is up the gangway or ladder. Some climb mooring ropes and anchor chains, or get onboard inside box containers loaded by crane.

There have been cases of vessel security guards and stevedores themselves becoming stowaways.

Stowaways then need to hide, at least until the vessel departs and has gone too far to want to turn back. People may hide onboard in cargo holds on dry bulk vessels, or empty containers on container ships. They can hide inside cranes or inside lifeboats. "Now we have fully enclosed lifeboats, who is checking [if anyone is inside]? Not normally anyone," he said.

"One particularly favourable place to hide is the void space around the rudder trunk," he said. "You can get quite a considerable number of persons in that area."

Mr Rapley showed a video taken from

a vessel deck, looking at the water, where a small boat passed below the rudder of a ship and a number of men jumped out of the rudder space into the boat. The ship crew had been aware that they were there, so the men went to find another ship.

People have also hidden in store rooms, the engine room, inside the funnel, in crew accommodation, in chain lockers and rope storage bins, and behind panels in accommodation.

The chain locker storage room is a particularly dangerous space, because the rusting of the chain can deplete oxygen in the air, he said.

The largest number of stowaways Britannia P&I has seen on one vessel is 23.

Typically, stowaways will make themselves known to crew within a day of the vessel's departure, Mr Rapley said. They will not typically take food and drink with them, so will get hungry and thirsty. "

In one case, a product tanker departing from Lagos, a crew member heard a knocking sound coming from a space above the rudder. He opened a manhole, and 15 stowaways came out.

Preventative measures

Britannia recommends three security guards are employed at the wharf to guard the vessel, one by the bow, one by the stern, and one at the accommodation ladder. It can be useful to have your vessel security access controls at



Screenshot from webinar. From left to right: Simon Rapley, Divisional Director - Loss Prevention with Britannia P&I; Ilka Beck, associate director of the "People Risk" team at Britannia; Michael Robertson, senior marine consultant, Van Armeide McAuslands




MARINERSKILLS.COM

Online Maritime Training and Certification

Our Online Courses Are Accessible

- Anytime
- Anywhere
- Accredited
- Affordable

Flag State Approved Courses



Advanced Dangerous Liquids



Marine Environmental Awareness



Basic Training Polar Code



Tank Ship Liquefied Gases



Engine Room Resource Management



Vessel Personnel with Designated Security Duties

Let us help build your Training Matrix to meet ISO, ISM and QHSE requirements



Mariner Skills
43 Danbury Road
Wilton, CT 06897
+1 203 939 1514

ABS Approved Training Provider

the bottom of the accommodation ladder rather than at the top.

You should lift the accommodation ladder or gangway when it is not in use, and not leave rope ladders unattended, he said.

“We recommend you fit a metal grill around the rudder trunk, weld it in place,” he said. Although there have been cases of stowaways using battery powered angle grinders to cut through this grating.

You can fit rat guards on mooring ropes which prevent people climbing up them. These are very difficult to remove, he said. You can fit anchor hawse pipe covers, so they cannot get into the vessel after climbing the anchor chain.

Overside lighting will make it easier to see small boats coming to the side of the ship.

Onboard, you should only have one doorway providing access into the accommodation from the main deck, although ensure other doors can be opened from the inside.

Empty spaces, such as stores and chain lockers, can be locked.

You should do a thorough search for stowaways before departure. In one case, a vessel had 20 stowaways, who were moving around the ship to avoid being spotted by the crewmember looking for them. In some ports, including in South Africa, you can hire security guards with dogs, which prove very good at sniffing out stowaways, he said.

Regulations

At IMO, there are amendments to the stowaway regulations coming into force in 2024, covering limits to payments to stowaways, and spreading the word about attempts to board.

The regulation’s full name is The Convention on Facilitation of International Maritime Traffic” (the FAL Convention), originally from 1965 but with many amendments since.

The amendments coming into force in 2024 state that stowaways should not be given any financial payments or other benefits “beyond the minimal requirements to ensure the security, general health, welfare and safety of the stowaways while on board or on shore”, because “that might act as an incentive to reoffend or as an encouragement to other persons attempting to stow away onboard ships.”

Another amendment is a recommendation that all cases of stowaways detected in port attempting to join a ship should be reported to the appropriate port authorities, who should inform all nearby ships.

Refugees

Ships may also take on refugees, for example because you see them at sea on an unsafe vessel. You may need to pick up hundreds at once. This is a different situation, they don’t need to hide anything.

“Make sure boarding arrangements are safe, have life saving arrangements, board women and children first, and one at a time,” Mr Rapley said.

“Check their possessions, you don’t want people coming on with lighters or matches if it is a tanker. You don’t want knives or guns. Move them away from boarding to a safe area. Secure the bridge and the engine room. Several hundred people roaming around [can be] very difficult to control.”

“Keep authorities, managers, charterers fully informed,” he said.

“We recommend you don’t take photos or videos of refugees. There’s been cases where they take offence. If you are 25 crew and have 200 refugees, that’s a difficult situation to be in.”

“If conditions are too dangerous, speak to authorities. If you think the vessel is not safe to take them onboard, talk to authorities. Keep detailed records in the logbook.”

McAuslands perspective

Michael Robertson, senior marine consultant with Van Ameyde McAuslands, agreed that the biggest risk area in the world for stowaways is the African continent.

“Tanzanian and Kenyan nationals regularly seek passage to the Red Sea, Gulf and Far East,” he said.

Van Ameyde McAuslands is a marine surveying and consultancy firm which can assist to resolve stowaway and refugee cases, including working for insurers. Mr Robertson leads its “crew care” team, which handles a wide variety of claims.

The big challenge for the shipping company is working out how stowaways can be discharged, he said.

In Far East ports, cases “are notoriously difficult to resolve,” he said.

“There’s been little willingness to assist, authorities choose to look the other way, leaving the shipowner and [P&I] clubs members to fend for themselves.”

The UK is fining shipping companies £2000 per stowaway, and this is likely to increase in 2023, he said. The UK has also been refusing entry to stowaways. A similar picture is happening in other European ports.

This means that stowaways “spend extended time onboard vessels,” until reaching a port willing to accept them, he said. The vessel is blamed for having poor security.

“Stowaways can become so frustrated at their situation that they become aggressive,” he said.

Although people often have “rather high expectations” of the reception they are going to get in Europe.

If a consulate or embassy is willing to provide travel documents to enable them to leave the ship, then the next question is whether they are willing to do this on the basis of a phone interview, or insist on a face to face interview, which may be possible to arrange, he said.

You may need to hire security escorts to make sure the person leaving the ship goes where they are supposed to.

Many stowaways try to hide their nationality or use false documentation.

“Stowaways seek to assume a nationality in hope of gaining sympathy from an immigration official during the interview process,” he said.

Deterrence

The International Ship and Port Security (ISPS) code, introduced after the Sept 11 2001 attacks to prevent terrorism, “is adhered to quite closely in some parts of Europe,” he said. This will make it much harder for someone unauthorised to get to the vessel’s berth.

“In my opinion, the code has improved general security, but there remain areas where it appears that governments are not investing enough in security of ports, particularly on the African continent,” he said. “Stowaways take advantage of the lack of security, particularly during the night-time period.”

Mr Robertson recommends that security guards should wear high visibility clothing, so they can be easily seen by stowaways and act as a deterrent.

“On one ship, there was a board [on the berth] saying, ‘next port Vladivostok,’” he said.

Claims handling

Britannia is currently seeing about 22 stowaway insurance claims a year, and 8 claims for saving refugees at sea, from its members. The biggest refugee claim was for 300 people in a single case.

Insurers can pay expenses “necessarily incurred in maintaining, landing, deporting or repatriating stowaways or persons saved at sea, including diversion expenses,” said Ilka Beck, associate director of the “People Risk” team at Britannia.

Costs recoverable from insurers can include costs of vessel diversion, security guards, food, warmer clothes, personal hygiene products, medical attention, and fines.

Once stowaways have been discovered onboard, they pose a security risk to the crew. “They need to be put into secure accommodation to keep crew safe,” she said.

Ms Beck gave an example of a stowaway who was onboard one vessel for 7 months in the Covid period, from May 2020 to December 2020. The shipping company tried to disembark the person in 23 different countries. Covid travel restrictions and lack of flights added to the problem.

The person, a national of Central African Republic, boarded the vessel in Douala, Cameroon, disguised as a stevedore, and so was not found by security guards with dogs. At the next port, in Brazil, no-one was able to leave the ship at all.

The ship then went to Europe, and security guards were taken onboard in Gibraltar, who were themselves unable to leave the ship for 5 months. “They were not happy, and very costly,” she said.

The ultimate cost paid by insurer was “just under \$550k.”

There are many different authorities which need to be involved. As well as immigration and embassies, you involve airlines, airport authorities and health authorities.

It may be worthwhile for the shipowner to send the vessel back to the embarkation port. Despite the initial costs in ship time, it will save much trouble later, she suggested.

For refugees, the situation is different, because of obligations by countries to accept them under international agreements, and they do not need travel documents to claim asylum. The biggest spending made by the shipowner, and later claimed back from the insurer, could be for purchasing food.

T3

You can watch the webinar online here
<https://britanniapandi.com/2023/02/britannia-loss-prevention-webinar-stowaways-and-refugees/>



Tank Cleaning Equipment



Tank Level Gauging



Gas Freeing Fan



P/V Valves



Electropneumatic Gauging



scanjet
www.scanjet.se

Handling a toxic leader on board

Toxic leaders, who might otherwise be known as ‘master under god’, or simply a bully, are widely known to exist on ships, including pilots. Can anything be done about it? A Nautical Institute webinar discussed the topic.

Most people in the maritime industry are familiar with the idea of a toxic leader, who ‘manages’ people by making threats to scare them and occasionally carrying them out.

The challenge for the people responsible for placing this ‘toxic leader’ onboard is that toxic leadership can look very similar to someone pushing crewmembers for better results, if you cannot see the unhappiness and pain being caused, or perhaps even if you can.

In many cases toxic leaders are only removed when it becomes clear that the performance of their team is insufficient, because people are too scared to do their jobs properly. The toxic leader is essentially abusing power, rather than supporting the people they lead. But this can take a while to become evident to others.

Many ‘toxic leaders’ do not themselves realise what they are doing, or cannot be made to see it, because they are following patterns of behaviour taught to them, perhaps by their parents.

Some shipping companies offer routes to go over a leader’s head, so crewmembers can report on a troublesome leader to the office. But these routes are not always effective, particularly if the company has trust in the

toxic leader. Many times people stuck on a ship with a toxic leader feel that there is absolutely nothing they can do about it.

There have even been studies showing that toxic leadership can be “highly effective” for a certain period of time, although after that time “the wheels come off,” said Stephen Window, former training strategist with the UK Ministry of Defence, responsible for the strategic and operational development of the Nautical Institute Academy course portfolio. What is ‘toxic’ to one person may be good or beneficial to another.

But for crew members, “it is difficult to thrive, you are continually watching your back and trust isn’t there. That affects morale, it has an impact on safety, people are scared,” he said.

These were some themes discussed at a Nautical Institute webinar on February 21, including speakers with backgrounds in senior positions in the UK’s Royal Navy, but with experiences which will be relevant to many people working on tankers.

The audience were asked if they thought seafarers have adequate resources to deal with serious HR incidents. Only 29 per cent said yes.

A story from the Navy

Tom Sharpe OBE, a former commanding officer in the UK Royal Navy, told the story of an experience he had in 2004 on the HMS Somerset vessel, as third in command of the ship. An officer was appointed to the vessel who was already widely known to be a toxic leader. “It became clear to us shortly after he joined that his modus operandi [way of working] was fear and recrimination, rather than mentoring,” Mr Sharpe said.

“It was surprising how fast this toxicity took hold. He was very difficult to work with very quickly. Junior officers were particularly targeted. A few senior ratings were targeted. We spent most of our time trying to work out what to do about it.”

Mr Sharpe discussed this officer with the vessel’s captain on four different occasions, and each time seemed to be worse than the last. He tried to alert the Navy’s onshore sea training organisation, who should be able to identify toxic behaviour and act, but they failed to do anything. On the contrary, they endorsed the behaviour as appropriate, when the vessel was about to go to a ‘high threat theatre’ (the second Gulf War).

Mr Sharpe alerted the captain of the flotilla



Screenshot from the Nautical Institute's toxic leadership webinar.

Top row: Capt. Don Cockrill, former Port of London pilot; Tom Sharpe OBE, former commanding officer in the UK Royal Navy; Captain Les Hesketh; Dr Steve Price, a Consulting clinical hypnotherapist and Master Mariner.

Bottom row: Stephen Window, former training strategist with the UK Ministry of Defence; Wayne Kilby, Lead for Human Factors Strategy at Royal Navy Safety Centre; Captain John Wright, maritime trainer

(group of vessels). He also did not do anything, but instead reported on Mr Sharpe to his vessel's captain before leaving the ship. "We felt that we were on our own thoroughly in this eight-month period."

Eventually one officer on leave had a mental breakdown and another officer "was heading the same way".

"These people were my responsibility. It became apparent that the 'quiet word' wasn't working, something more drastic needed to be done," Mr Sharpe said. "I called the sea training legal advisor and took what I considered to be a personal risk, assuming the information would find its way out of the system."

"This set-in-train a series of processes, questions and interviews that ultimately provided his demise."

It had also come to the Navy's attention that sailors around this toxic officer had substandard performance. "People were becoming so scared to do their jobs, they were ineffective."

Reflecting on it now, the big question is how, when everybody in the Navy 'knew' about this person and their problem, "somehow nobody knew or was paying attention."

"He was referred to as 'a good man to go to war with' by people above him. Absolutely

incorrect," Mr Sharpe said.

Mr Sharpe said he did not think the wearing of uniform, or visible displays of rank encouraged toxic behaviour, as some others have suggested. "Rank can be used as an excuse. The issue is the person hiding behind the rank."

Pilotage

In the world of marine pilotage, both masters and pilots can be 'toxic', said Capt. Don Cockrill, former Port of London pilot and former secretary general of the United Kingdom Maritime Pilots' Association. Often it happens "without the guilty party realising they are doing it."

There are pilots which have an "almost dictatorial manner"; there are captains who do not make pilots feel welcome, he said.

It does not help that pilots and bridge teams often only have a few minutes to try to create a working relationship, he said.

It also does not help that the actual legal role of the pilot is not the same in every part of the world. In some places they are legally an advisor, in other places they have responsibility for navigation of the ship. And this legal status is often overlooked or misunderstood.

Pilots are not infallible individuals, and it is important that all other crewmembers feel able

to question the pilot or master if they have a doubt about the safety of their instructions, he said.

Psychological perspective

"A toxic leader is enjoying a kind of ego trip, a cloud cuckoo land of power," said Dr Steve Price, a Consulting clinical hypnotherapist and Master Mariner, who worked for many years on a Naval vessel with a toxic leader.

"They are skilled manipulators and skilled at drawing attention to themselves." But it "will leave a debt which has to be paid by others."

"The short-term effectiveness can lead to organisations tolerating toxic leadership. [But] there comes a crisis point, an HR problem or a serious accident."

Investigating or resolving toxic leadership needs "a lot of experience, a degree of compassion, both for victims and perpetrator," he said.

It involves creating a "solution space", for understanding the problem and seeing where the legal boundaries are.

It is very helpful if there is an effective 'back channel' for reporting problems to shore based management. This was absent in Mr Sharpe's Navy story, and needed to be created, he said.

"My advice to seafarers is they should keep a diary. Diaries are valuable as a source of



MUSASINO

Musasino Radar Level Gauging

Smart Measurement Technology

Easy Maintenance

Simple Installation



Musasino X-Radar

Head Office (Tokyo) +81-3-3726-4412 sales@musasino.co.jp

International Sales Office (Singapore) +65-6776-2827 limhl@musasino.com.sg

personal reflection and a source of evidence,” he said.

The toxic leader likes to feel they have power over a situation. Although in reality, not many people in any organisation have much power at all. In his own experience onboard vessels with a senior rank, “I had very little power. Something I might use as a last resort. In general, power of connection.”

Seafarers suffering under a toxic leader can reclaim some power by discussing the issue with other crew members, he said.

Dr Price recommended that seafarers should watch YouTube videos on “managing a toxic boss”. You may see suggestions such as to look your toxic boss in the eye and say, ‘I haven’t got time at the moment for that problem, I’ll get back to you,’ which might defuse tension without creating confrontation.

You can also learn methods to reduce painful emotions, such as guided meditation, he said.

Can you train good leadership?

One audience member suggested that toxic leaders are essentially narcissists, and so their behaviour can never be ‘unlearned’.

People start their working lives with an idea of what good leadership looks like, and it may be toxic, said Wayne Kilby, Lead for Human Factors Strategy at Royal Navy Safety Centre.

“People’s personality traits are their learned behaviours. If their parents have been toxic leaders, they influence that through their children. People have behaviours they’ve had all their lives,” he said.

Can we teach the opposite, ‘kind leadership’? It might be defined as considering people’s needs and motivations and understanding that they have a life away from the ship, said Captain John Wright, who ran a maritime training company after serving at sea.

STCW does not do much to teach kind leadership. Nautical Institute surveys of mariners into their views on STCW training found “pretty much unanimity” that people think STCW just covers the bare minimum, and does not provide any useful training about topics like this, he said.

Simulators can be useful in showing people their mistakes. But “its nowhere near enough,” he said. “If you do not convince the client shipping company that they need to mentor those behaviours in, the training dollars go down the toilet.”

“A master or chief will go back on the ship, subsumed by the prevailing culture on board. Six months after he felt so passionately about training he will have reverted to type.”

A better way is if the shipping company sends training mentors onboard, such as the ship superintendent, and this person watches behaviour on the bridge. If they see toxic leadership in action, they can tell the person

that their behaviour does not fit with company culture. This may be more likely to drive improvement, he said.

Capt. Don Cockrill, the former pilot, agreed that what people learn in Bridge Resource Management training often gets eroded away in time. As people are working, they adopt behaviour that fits with the culture they work in. “You throw your hands up and say, ‘what’s the point.’”

Standing up

There was a question about how people can be encouraged to stand up to toxic leaders. “The question is round the wrong way,” Captain Wright replied.

Organisations can have ingrained cultures of not questioning authority, which has led to some well-known aircraft accidents when a first officer was aware a pilot was doing something dangerous but did not question it.

Crew Resource Management (CRM) was designed to resolve this specific problem, initially in aviation, where co-pilots are encouraged to question captains if they observe them making mistakes. This idea transferred into shipping.

Captain Les Hesketh, who worked in the maritime industry for 46 years, recommended that if you need to speak directly to your own toxic leader about their behaviour, it is best to avoid confrontation.

“He’s the master, you might be a junior officer. Follow the master’s instructions, but drop hints or suggest another way of doing things. You have to be a diplomat at sea, and a lot of us are not.”

It may be better if someone else is asked to have a discussion with that person. In this case the discussion should be done in a neutral area (not in a cabin), and focus on facts, to try to avoid

making it an emotional confrontation. Toxic leaders are often not aware of what they are doing, he said.

A training simulator may help challenge someone’s thinking, if people are prompted to think about how they would respond in a certain situation and realise it might not be the best approach for the environment they are working in, he said.

Shore staff

And one of the best ways to improve toxic leadership might be for shore staff to be more aware of the issues, said Captain Wright.

“Ship crew say every time in their training courses, ‘I’m getting the message of what this is all about, why is our boss not sitting here with us?’”

“It is the most efficient way to improve your business that I’ve heard of,” he said. “So often you can drive a large bus between people onshore and people on the ship.”

You can watch the webinar online at <https://youtube.com/watch?v=xe5-001xztc>

**THE FOUNDATION FOR SAFETY OF NAVIGATION
AND ENVIRONMENT PROTECTION
SHIP HANDLING RESEARCH
AND TRAINING CENTRE
ILAWA**



**Our Training Centre offers you:
SPECIALIZED COURSES IN HANDLING OF
LARGE TANKERS!**

- Two fully equipped manned models representing tankers of capacity 150 000 DWT and 280 000 DWT are available;
- STS operations, approaching SBM and FPSO are included in the programme;
- Harbour manoeuvres are supported by manned models of large ASD and tractor tugs.

**For further information please contact:
Ship Handling Research and Training Centre,
Ilawa, Poland**
tel./fax: +48 89 648 74 90 or +48 58 341 59 19
e-mail: office@portilawa.com
www.ilawashiphandling.com.pl

**"OUR AMBITIOUS GOAL
IS TO HELP THE INDUSTRY
ACTIVELY IDENTIFY, GROOM
AND RECRUIT THE NEXT
GENERATION OF SHIPPING
LEADERS AND BUILD A
VIBRANT AND CREATIVE
BUSINESS COMMUNITY."**

**EXECUTIVE MBA
IN SHIPPING AND LOGISTICS
(THE BLUE MBA)**

A unique industry needs a unique MBA. Take your career to the very top international level by joining the world's premier Executive MBA designed specifically for shipping and logistics professionals.

Find out more details about the Blue MBA from Programme Director, Irene Rosberg
Visit cbs.dk/bluemba or email ir.mba@cbs.dk



**EXECUTIVE MBA
IN SHIPPING & LOGISTICS**
COPENHAGEN BUSINESS SCHOOL



Growing interest in methanol and biofuels – DNV's perspective

Interest in methanol fuel has grown a great deal. Is this the right direction? A DNV webinar explored the issues with methanol, biofuel and other future fuels, including regulations and lifecycle assessment

Over the past 10 months, since April 2022, “methanol has become part of the [ship fuel] picture for the first time,” said Christos Chryssakis, business development manager with DNV Maritime.

He was speaking at DNV's webinar on February 28, “Emerging alternative ship fuels – focus on methanol and biofuels.”

“Methanol is the fuel that has very big growth. That's something we see in new building discussions.”

Companies operating methanol fuelled tankers include MOL, NYK Bulkship, Westfal-Larsen, Marininvest, Waterfront Shipping, and Proman Stena Bulk.

DNV saw yet more orders for methanol vessels in February 2023, for all ship types, including container ships and bulk carriers, Mr Chryssakis said.

There is also a continued growth in newbuild vessels able to run on LNG fuel, he said.

For LNG, engine manufacturers are putting a lot of effort into solving the methane slip problem, where some methane passes through the engine and out of the exhaust un-combusted. “In the medium to long term this is not going to be a problem,” he said.



Christos Chryssakis, business development manager with DNV Maritime

Big change

“We are witnessing a historic moment in shipping. The fuel shift is happening as we speak,” he said.

“A fuel shift does not happen every generation. The last one happened a century ago when we went from coal to oil and took several decades. Now it's a move from oil to several different fuels. We expect this to happen even faster.”

The change is driven by investors, banks, charterers, pushing for greener shipping, and charterers sometimes even dictating the fuel choice. Sometimes companies are under pressure to reduce emissions faster than the IMO regulations demand, he said.

Newbuilds of larger vessels are choosing alternative fuels more than newbuilds of smaller ones, he said.

All vessels being planned to use alternative fuels so far are ‘dual fuel’ vessels, so can also run on conventional fuels, Mr Chryssakis noted. And even if operated solely on the alternative fuel, they will need some conventional fuel as pilot fuel to run the engine.

The webinar audience was asked, if they ordered a new building in the next 1-2 years, what would be their most likely choice.

20 per cent said conventional fuels / biodiesel; 25 per cent said LPG / LNG; 38 per cent said methanol; 12 per cent said ammonia or hydrogen; 4 per cent said onboard carbon capture.

Tightening regulations

At IMO, there will be a strategy review about tightening emission goals this year. IMO's current goal is to reduce absolute greenhouse gas emissions by 50 per cent by 2050, but “there's stronger pressure to go to zero.”

“It's very hard to predict what the outcome of these discussions is going to be. We expect to be somewhere between the current targets and zero. We should expect more clarity by July,” Mr Chryssakis said.

There are two sets of European regulations for maritime emissions coming into force in the next couple of years, the Emission Trading Scheme and FuelEU Maritime.

In 2024 we will see shipping being included in the Emissions Trading Scheme. Companies will have to buy carbon allowances equivalent to the CO2 they emit, for voyages between two EU ports. There is a transition period, so they don't have to buy the full amount from the start, and vessels with a voyage only calling at one EU port will only need to buy half as much.

The number of carbon allowances on the market is reducing every year, which pushes prices up. EU carbon prices were around Euro 20 per tonne up to the end of 2020, but have since passed Euro 100 as of the end of February 2023.

This represents a 50 per cent increase in fuel cost for vessels going between European ports. “This will incentivise energy efficiency for all ships,” Mr Chryssakis said.

It will also incentivise the use of biofuels, if this can avoid a requirement to pay ETS costs.

Another regulation coming in 2025 is FuelEU Maritime, which requires that the lifecycle emissions of fuels used by shipping is reduced every five years. All ships calling at European ports will have to comply with this from 2025.

“This is still under negotiation - we don't know the final form of it,” he said. It probably means they need to use “at least a certain amount of biodiesel.”

Methanol operations

The closest we have to regulations for how methanol fuelled tankers should be operated is IMO guidelines MSC.1/Circ.1621 (December 2020) on using ‘methyl/ethyl alcohol as fuel’ (methyl alcohol is another name for methanol).

As ‘guidelines’ they are not strictly mandatory. But DNV has contacted several flag administrations requesting that they accept this circular as a basis for giving approval

for methanol fuelled ships, since there is no other regulation available, said Øyvind Skåra, Principal Engineer with DNV.

IMO is in the process of developing guidelines for operating methanol fuelled vessels to be included the IGF Code (full name: International Code of Safety for Ship Using Gases or Other Low-flashpoint Fuels). The text is expected to be concluded in 2025, then come into force into 2028.

One regulatory question DNV has already had to consider is how methanol can be vented, such as when removing methanol vapour from a tank, or what happens when it is spilled.

Methanol is naturally found in the sea, being produced naturally by phytoplankton. It causes much less environmental impact when spilled than conventional hydrocarbon fuels. "It dissolves readily in water, and only high concentrations create lethal conditions or a changing effect on local marine life," Mr Skåra said.

Methanol vapour is heavier than oil however, so there can be higher explosion risks from a cloud.

Any fuel vapours left in tanks, or in enclosed spaces after a spill, are explosion risks.

All fuel tanks need to be inerted during normal operations, replacing the air above the tank with nitrogen, so it cannot ignite. "We recommend you have a nitrogen generator onboard," he said.

If it is a tanker, then it is important to have complete separation of the cargo and fuel system, so methanol cannot come into contact with other liquids.

Methanol also carries less energy per volume than conventional fuels, so you need tanks twice or 2.5 times the size. These tanks need cofferdams around them (a barrier to hold the fuel if there is any leak), which takes up more space.

Biofuels

There has also been a big growth in interest in biofuels for shipping over the past year. Several shipping companies have trialled them, with most trials initiated by cargo owners, said Øyvind Sekkesæter, consultant with DNV. Several owners of container vessels are "starting to use biofuels on a regular basis."

There were 300,000 tonnes of pure biofuel used in 2022 in the maritime sector, some of which was blended, so a total of 900,000 tonnes of fuel with some biofuel in it. This sounds like a big number but it was "only 0.1 per cent of the total maritime energy mix of 2022."

It is important to remember that there are many different types of biofuels, the only thing they have in common is that they are made by processing biomass. "Biofuels is a very generic term that covers a wide range of fuels with

very different properties," he said.

Interest in biofuels has grown despite the fact that, under legislation as it currently stands, the use of biofuels has no impact on the vessel's EEXI / EEDI calculation, because those calculations are based only on characteristics of the ship itself, he said.

The use of biofuels also does not impact your CII score according to how the calculation is defined in the regulations, although there have been some cases of reductions for specific companies using biofuels agreed by flag state regulators, he said. At the MEPC80 meeting in June this year "the use of biofuels under CII will be considered explicitly."

IMO will shortly start making lifecycle assessment of greenhouse gas emissions for biofuels (see next section). This will be different for different types of biofuels, such as whether it is made from a bio material which would otherwise be a waste product.

Companies using biofuels do get benefits under the EU ERV (Emissions Reporting and Verification) scheme, where ships using biofuels can reduce the amount of emissions they need to report, and the amount of Emission Trading Scheme (ETS) certificates they need to purchase, when ETS regulations for shipping come into force.

Some shipping companies using biofuels have seen challenges on board with material compatibility, such as fuel reacting with components in the fuel supply system, he said. There have also been problems with fuel filters.

You need to consider their combustion properties, lubrication properties, corrosive / acidic properties, potential for leaving deposits which block pipes, their range of operating temperatures, the fuel storage stability, and mixability. Also, you need to consider whether they can be used by other fuel consumers onboard, such as lifeboats, he said.

You may need to consider the NOx emissions, although use is normally permitted if the existing ship engine is able to use the fuel without changes to NOx critical components, and use is always permitted for biofuel blends of under 30 per cent, he said.

"We think biofuels is a real option especially on the short to medium term," he concluded. "We expect the uptake will be incentivised by greenhouse gas regulations and pressure from other stakeholders such as cargo owners."

"There is significant potential to increase supply of biofuels from today's very low level," he said.

Lifecycle emissions

A big question for methanol fuel, and for biofuel, is the lifecycle emissions, known as 'well to wake'. This is different to the 'tank to wake' emissions, which only address emissions in the vessel's exhaust.

So the 'lifecycle' emissions additionally take into consideration the CO2 emitted to, or removed, from the atmosphere, when the fuels are produced and transported. This would count as the 'well to tank' section of the lifecycle, if you follow the jargon.

The IMO regulations for CII and EEDI / EEXI currently only address the tank to wake emissions. The EU ETS is also based on tank to wake emissions, but with a carve-out for the use of biofuels based on the CO2 absorbed when growing the plants.

But lifecycle emission standards are coming, because everybody recognises that the emissions from producing the fuels should be taken into account.

IMO's lifecycle assessment (LCA) guidelines will be made available at the next MEPC meeting in July 2023. These will also cover biofuels, said DNV's Øyvind Sekkesæter.

These "are going to be essential for having a common standard, a common language, as to which fuels are low or carbon neutral fuels," he said. "This is an essential part of regulatory development."

The FuelEU Maritime regulations, coming into force in 2025, look specifically at lifecycle assessment of fuels (see next article).

A lifecycle assessment can make methanol made from fossil gas look much less attractive as a future fuel, because although it reduces emissions by 5 to 10 per cent on a tank to wake basis, some calculations show it increasing emissions by 10 per cent compared to conventional fuels on a lifecycle assessment basis, unless some of the fuel is made from biofuel. This topic is explored in more depth in the next article.

Biofuels and electro fuels also have emissions in their production, so the lifecycle assessment calculation will have an impact on their overall benefit.

Ethanol, LPG, ammonia, and hydrogen

Ethanol can also be used as a fuel, but so far the demand for it has been very low, DNV's Mr Chrysakakis said. This means that engine manufacturers do not have much interest in developing the technology.

LPG can be used as a fuel, and offers an up to 15 per cent reduction in carbon emissions. It has only been used as a fuel on LPG carriers so far.

LPG tanks can be used to store ammonia, so a vessel built to store LPG can be converted to ammonia fuel when fuel and engines become available.

Many shipping companies are getting ready to order ammonia fuelled vessels, when they, and the fuel, becomes available, Mr Chrysakakis said. Engine manufacturers plan to bring engines to the market at the end of 2024 or in

2025, with the first vessels on the water “some time in 2025”.

Classification societies like DNV are developing and updating class rules for ammonia, and also doing bunkering studies.

“Quite a few” people are interested in hydrogen fuel, although the size and cost of fuel tanks is a challenge. It is mostly relevant to vessels which can bunker frequently, he said.

Nuclear and onboard carbon capture

Mr Chryssakis provided an updated perspective on prospects for nuclear energy powered ships and shipboard carbon capture systems.

For nuclear powered ships, “we expect the first marinized reactors to be available around 2030, then first vessels around 2035,” he said. “This can be a promising technology, but we have to do something in the meantime.”

Shipboard carbon capture technology is something which is “discussed more and more,” he said.

The basic idea is that CO₂ is separated from a vessel exhaust on a ship, stored in a tank onboard, then discharged at a port, for later sequestration in the subsurface of the earth, or used in a chemical reaction to make a product, such as a fuel or plastic.

“Many people think this could be a better option than alternative fuels onboard,” he said.

“We see a lot of piloting on vessels. We are involved in some projects.”

Onboard the ship, you need equipment to separate the CO₂ from the flue gas, and a tank to store the CO₂ until you reach a port which can accept it. This port would need to be able to receive and store the CO₂, and then send it on for storage or utilisation.

“Regulatory development is important - discussion at IMO and EU has just started,” he said.

You can watch the webinar online here.
<https://www.dnv.com/maritime/webinars-and-videos/on-demand-webinars/access/emerging-alternative-ship-fuels.html>

The carbon footprint of methanol

Methanol has lower emission than conventional fuel on a tank to wake basis, but is actually worse than conventional fuels on a lifecycle assessment basis, if made from fossil gas

Shipping companies may be surprised to know that methanol is usually considered worse on lifecycle greenhouse gas emissions than conventional fuels, since it is being presented as a ‘green’ fuel.

This only matters for well to wake calculations. On a tank to wake approach (emissions from the vessel itself), methanol emits up to 10 per cent less CO₂ than conventional fuels. Its use will help companies with their CII scores, because these only cover the tank to wake section of the fuel’s lifecycle.

Shipping companies won’t get 10 per cent improvement in their CII number, because they also have to factor in the burden from carrying methanol as fuel, since it has a lower energy density, and so can increase the vessel’s deadweight.

Also, you will probably still be burning conventional fuel in auxiliary engines, because auxiliary engines which can run on methanol have only recently become available. The nitrogen generator will itself use more fuel, says Christos Chryssakis, maritime business development manager with DNV. So the final emissions saving tank to wake may be more like 5 per cent.

But if making a lifecycle assessment, you need to consider how much CO₂ emissions were released in the manufacturing process.

The process of making methanol involves reacting natural gas (methane) and steam to produce ‘synthesis gas’, a mixture of hydrogen and carbon monoxide. This gas mixture is further

processed in a chemical reaction known as the Fischer-Tropsch process to produce methanol.

During this process, it is common for CO₂ to be generated as a by-product as a result of the complex chemical reactions involved. This is usually captured and removed from the syngas, but some may escape.

If the methanol is made from coal, the increase is even worse.

We don’t yet know how IMO is going to calculate the lifecycle impact of fuels. But the European Union has already partly stated its methodology as part of the “FuelEU Maritime” proposal.

“We have an idea [but] still they have not decided on the exact methodology for the lifecycle. This is something they are doing now. Later this year we should get more clarity,” Mr Chryssakis says.

FuelEU regulations are separate to EU ETS; EU ETS does not take the lifecycle into account, but FuelEU is a separate rule about reducing the overall lifecycle greenhouse gas impact of fuel over time.

The FuelEU regulations currently calculate an increase in GHG emissions of 8-9 per cent from using methanol fuel if it is made from natural gas. The same figure has been arrived at in several studies, Mr Chryssakis says.

A report from the Methanol Institute recommended that default carbon footprint factors should not be used for methanol at all, due to differences between plants. “The carbon footprint of methanol should be measured and certified to account for individual plant-specific

differences – as is advised for any fuel,” it said.

But to comply with FuelEU Maritime, shipping companies using methanol fuel will need to blend in some methanol produced from biofuels.

The term ‘green methanol’ is being used, which is a confusing term. When the ‘green’ label is applied to hydrogen or ammonia fuel, it means fuel produced from renewable electricity. But the term ‘green methanol’ is applied to methanol from biofuels, as well as renewable electricity.

Methanol still contains carbon (the molecule is CH₃OH). Green methanol can be made with biogas (CH₄) reacted with “biogenic CO₂”. This is CO₂ produced from burning an organic material such as wood, on the basis that the same CO₂ was absorbed from the atmosphere when the wood was grown. So, it does not create any net addition of CO₂ in the atmosphere when combusted as part of a fuel.

There are a number of bodies which can certify biofuels for the amount of CO₂ emitted or removed in producing them.

There is not a great deal of “green methanol” currently produced. But fuel producers would make it if they could see the demand, Mr Chryssakis says. So shipowners wishing to buy it will probably need to sign longer term agreements with producers.

“I think that for the rest of this decade, if you want to get access to green methanol, you have to talk to a producer and get an agreement. You won’t find it available on the market,” he said.

First 'net zero' trans-Atlantic voyage on bio-methanol blend

Methanex Corporation, the world's largest producer and supplier of methanol, based in Vancouver, reports that a vessel carrying its cargo has completed a 'net zero' trans-Atlantic voyage using a bio-methanol blend. It says this is the first ever net zero trans-Atlantic voyage using methanol.

The 'net zero' calculation was made on the basis that the biomethanol in the blend was made from biogas from rotting animal manure. If this gas had not been captured, it would have been released to the atmosphere as methane, which is a much worse greenhouse gas than CO₂.

So this biomethanol can be considered 'carbon negative', on the basis of the large greenhouse gas emissions its production, and ultimate release of the carbon as CO₂ rather than methane, caused not to be made.

When this biomethanol is blended with fossil methanol, the 'negative' emissions of the biomethanol is cancelled out by the positive emissions from creating fossil methanol, and also from the combustion of the whole fuel at sea, making the whole fuel 'net zero'.

The blend was approximately 80 per cent bio-methanol and 20 per cent conventional methanol.

The auditor of the carbon intensity of the biomethanol was certified under the International Sustainability and Carbon Certification (ISCC) system. The fuel was produced at Methanex' facility in Geismar, Louisiana, which is certified under the



Cajun Sun arriving in Antwerp after the world's first 'net zero' trans Atlantic voyage on methanol fuel. Photo credit: Willem Jan Boer, DDC Smart Inspections

International Sustainability & Carbon Certification (ISCC) programme.

Bureau Veritas conducted an audit of the greenhouse gas emission calculations from the bio-methanol fuel blend, including the fossil methanol part of the blend, consumed during the voyage.

Climate Neutral Commodity, an independent certification party, validated the net-zero voyage against best practices as defined by the ISCC and issued the certification.

"We're proud to bring the marine industry a tangible solution to transition towards net-

zero emissions through our blended methanol product using bio-methanol produced from renewable natural gas at our facility in Geismar, US," said Mark Allard, Methanex's Senior Vice President, Low Carbon Solutions.

"As the world's largest methanol producer, we are establishing a network of relationships with leading renewable natural gas suppliers and assessing other pathways, including carbon capture and storage and e-methanol, to provide solutions for the marine industry and other customers."

The voyage

The tanker, the dual fuel Cajun Sun, was loaded in Geismar with methanol cargo, and supplied with methanol bunkers. It departed on January 17, 2023 and arrived in the Port of Antwerp on February 4.

The vessel is commercially operated by Methanex's subsidiary Waterfront Shipping. The vessel is owned and technically operated by Mitsui O.S.K. Lines, Ltd (MOL).

Waterfront operates the world's largest methanol ocean tanker fleet with 19 of its 30 vessels equipped with methanol dual fuel technology. MOL also owns 40 per cent of Waterfront Shipping.

TO



THE POWER OF WATER!

Onboard Water Blasting made easy

Den-Jet...There is no substitute!

+65 6268 1238
| denjetmarine@denjet.com
| www.denjet.com

How tanker pools help with CII

If you put your tankers in a pool, it may make it easier to manage the CII scores, for example you can give ‘easier’ cargoes to vessels which are under higher risk of being downgraded. The pool operator can help manage the data. Charlie Grey of pool operator Tankers International explains. *By Charlie Grey, Chief Operating Officer, Tankers International*

CII will push VLCC owners into new territory as they tackle shipping’s first true decarbonisation regulation.

Arguments between shipowners and their charterers are simmering, with BIMCO caught in the crossfire.

Regardless, CII is here now, and tanker shipping needs to comply. But how?

CII represents the first global carbon emissions regulations applied to the international shipping fleet. It is something the industry needs to implement to stand a chance at hitting IMO’s emissions targets.

Yet, CII is not perfect and has several well-documented flaws.

For instance, while installing low-carbon technologies will make a passing grade easier, a highly efficient vessel will not necessarily have a good rating. A highly efficient vessel that sits at anchor for several days will require bunker fuel to power its generators, emitting CO₂ yet travelling no distance. This means that an idle, efficient ship may have a worse score than an older, less efficient, but highly utilised ship.

VLCC owners have to tackle a difficult trade-off between CII ratings and commercial performance. CII-negative voyages may represent commercial benefits, while CII-specific contractual clauses may be considered negotiable by charterers.

CII concerns add a new dynamic to data analysis. Shipowners need to consider the potential impact of a voyage on the vessel’s CII ratings, alongside usual factors such as pricing and supply and demand side market trends.

Whilst this entered into force from 1 January 2023, CII scores will not be published next to vessels until January 2024. At the same time, those scores will be out of date for 364 days every year, and will only reflect the average performance up to the end of the last reporting period.

This lack of data means that vessels with falling ratings will not see that reflected

in their score for some time, while vessels with improving ratings will not have that reflected in their grade until the start of the next calendar year. These inconsistencies limit CII’s usefulness for charterers as an indication of the efficiency of a vessel.

Shipowners and operators are forced to find the right balance between some lucrative CII-negative fixtures and CII-positive voyages, and between cash flow and efficiency technologies. This can create a trade-off between CII scores and short-term profitability for any ship.

Shipowners must understand how to operate and trade their ships to tackle this, achieving a good CII rating, ensuring that they incorporate these requirements into charter party agreements.

They must adaptively manage their vessels speeds and idle days throughout the year, ensuring that vessels average a passing grade whilst maximising profits.

CII represents another stream of data that must be analysed and converted into insights and actions.

Pool participation

The volume of ships in a pool allows shipowners and operators to benefit from greater economies of scale, financial robustness and flexibility through greater utilisation across their fleets, helping them to mitigate any impact on CII ratings.

Pool partners can take profitable CII-negative fixtures while maintaining ratings across the fleet by spreading those voyages across the pool based on CII scores to date.

By doing so, the collective pool of ships can maximise earnings while the pain of CII-negative voyages is minimised for any individual vessel.

Providing a large pool of vessels to choose from can ensure that high-paying voyages that may incur a negative CII rating are shared out appropriately between vessels to ensure the best balance between profit

and CII impact for all.

At the same time, the cash flow and operational advantages that the pool represents mean that owners can be confidently profitable, CII-positive, and flexible in the face of shipping’s next challenge.

The pool simplifies a shipowner’s role, providing regular cash flow based on their vessel’s earning potential in the current market conditions and reducing the need for operational staff. Shipowners can allocate this resource elsewhere, including evaluating and implementing low or no-carbon technology across their fleet.

Choosing the right pool can help shipowners meet high CII standards for their vessels whilst improving their commercial performance.

Another issue is that cash flow can effectively bar small or cash-poor shipowners outside of a pool from longer routes, which are often the most profitable. This is because the shipowner must pay for bunkers before they receive freight payment from a charterer. These routes are inherently CII-positive, as they maximise constant-speed travel and minimise time at anchor.

This challenge is something that Tankers International is acutely aware of and can compensate for with the size and structure of its pool.

Tankers International has included indicative voyage CII scores in its Tankers International VLCC Fixture app, showing an estimated letter grade rating and comprehensive calculation for every VLCC voyage fixed.

Managing chartering complexity and emissions

Chartering is getting increasingly complex, with emissions data being a major factor driving the complexity. But digital tools and available data can do a great deal to make it easier. Veson and RightShip explained how

Chartering is getting more complex, with decarbonisation being one of the biggest factors driving the complexity, said Joshua Luby, Group Product Manager at Veson Nautical, speaking at a webinar on Feb 2, “Keeping up with contract complexity”.



Joshua Luby, Group Product Manager, Veson Nautical (screenshot from webinar)

In one poll, 70 per cent of maritime stakeholders said their workflow has changed as a result of regulations or internal emission policies. The EU Emission Trading Scheme adds a major complexity to contracts, if the

costs are being paid by charterers.

Checks need to be made about whether a voyage will impact a vessel's CII rating.

Other than emissions related complexity, there is also a rise in “index linked” contract terms, where payment for shipping is linked to the price of something else. These terms can often have caps and floors, limiting how high or how low the price can go.

Checks need to be made about whether a certain trade line is becoming subject to sanctions.

Every line of trade has its own complexities, and many charterers handle multiple lines of trade.

When it comes to making calculations, in the past it was often done with “back of napkin calculations”, or people having their own spreadsheets and making their own estimates, or just using knowledge they carried in their heads.

But there are limits to this, particularly when one person is out of the office and someone else has to understand what they were doing, he said.

So charterers do their work with an increasing number of digital systems. In an audience poll, 69 per cent said that the number of different chartering systems they need on a daily basis to

complete tasks has grown.

All these systems need different logins, and for someone to leave their work in one system to go into another one.

Minimum steps

To manage the complexity, we can start by understanding the minimum that charterers need to do, Mr Luby said.

Charterers need, as minimum, to understand the market conditions and find appropriate vessels in it; ensure vessels meet the organisation's standards, including vetting requirements and GHG requirements; be able to generate a shortlist of acceptable vessels which can actually meet the cargo need; propose a ‘market equivalent rate’ to the shipowner; and put together the contract.

Charterers would also rather do these tasks themselves, not rely on their broker to do them, he said.

Then you need a work process which enables all of this to be done with the minimum number of steps, he said. Software can assist here.

Software could make it easier to check whether a vessel you are considering has already been approved by your organisation, or check the vessel against your organisation's standards, he said.

Software could provide “contextual decision support,” providing data useful to your current decision, including data your company already has, or data available externally.

Software could automatically record the reasons the various decisions are being made, so you can later find out why you chose a certain vessel over another one.

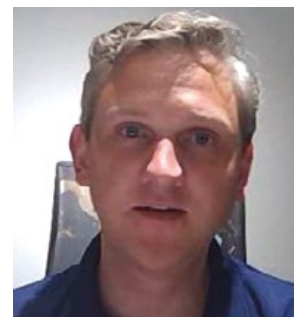
If you later find out that another choice of vessel would have been better, you can refine your decision processes for future decisions.

The webinar audience was asked, “which of these elements do you feel you are lacking the most today with day-to-day workflow?” 38 per cent said “data aggregation and accuracy,” 38 per cent said “efficiency and process automation,” and 25 per cent said “contextual decision support.”

RightShip

Veson partners with RightShip, an organisation which gathers data about every vessel in the world, like a credit rating agency.

RightShip calculates a ‘safety score’ for every vessel in the world, based on information it has available, said Chris Saunders, chief product officer with RightShip.



Chris Saunders, chief product officer with RightShip (screenshot from webinar)

The factors with the biggest impact on the score are actual incidents, and port state control deficiencies, he said. It also considers factors such as the record of the flag state you are using.

The data should be treated as an estimate rather than fact. Charterers might determine that they will not sanction any vessel with a safety score of 0/5; but for vessels with a score of 1/5 or 2/5, they put them under closer scrutiny before chartering.

RightShip also estimates a greenhouse gas rating for all vessels, based on its assessment of the vessel's emissions performance, using data it has available.

RightShip does not ‘approve’ vessels, but its vetting inspectors make recommendations to their charterer client about a ship's suitability for a certain voyage, based on the charterer's criteria, and all charterers can have different criteria.

Over 40 per cent of RightShip's vetting services are provided for tankers, including oil, gas and chemicals, Mr Saunders said, although all vessel types are covered. “Tanker vessels receive a safety score and GHG rating like any other vessel.”

You can watch the webinar online at <https://veson.com/webinar-recording/keeping-up-with-contract-complexity/>

Optimarin – and the end of the BWTS retrofit wave

Ballast water suppliers are not seeing the expected rush to install systems by the due date of Sept 2024, says Optimarin. But some companies are so dissatisfied with their systems they are ripping them out and replacing them

Still some extensions are given, mostly due to Covid and the Ukraine war, says Tore Andersen, executive VP sales and marketing with Norwegian BWTS supplier Optimarin.

The rush to fit systems before the deadline has not proven to be as big as many expected. “I believe we will drag on to 2025,” he said.

Many shipping companies were short of funds during the Covid pandemic, which made them reluctant to fit systems; but after the pandemic they were so busy they did not want to take ships out of service to fit systems, he says. So they are requesting extensions from their flag state and sometimes getting them.

Some other companies are seeking to avoid the requirement to install systems, by limiting the vessel to one nation’s waters. Ships do not need to have systems if they only operate in the waters of a single authority, or only in the local waters of a single authority and on the high seas.

As an example, in Norway, a few general cargo shipowners have chosen to trade only in Norwegian waters, and therefore avoid the need to install BWTS, he said.

After all existing ships have been required to fit systems, all further BWTS will only be installed when the ship is being built, which generally means that the shipyard decides which system to install. This means the decision may be much more about price, Mr Andersen said.

Optimarin is developing manufacturing partnerships with a number of Chinese suppliers, so its product can be made in China, to better support the Asian shipbuilding market, he said.

Does it work?

Shipping companies are taking an increasing interest in how well the system is running, he said, rather than just caring that it is legal to use. “Five years ago, an owner would say, ‘as long as there’s a stamp I’m happy’. Now they look at how many hours it is working.”

Optimarin has seen a number of shipping companies asking Optimarin to replace their existing systems, Mr Andersen said, without revealing details about the numbers, ship types and original manufacturers.

In one example, a shipping company had

fitted a system with one of the ‘first mover’ BWTS suppliers, but this system did not have an up to date approval from the US Coastguard, he said.

Another company had a system which was proving very unreliable. “Eventually customers say, ‘sorry pal we need something which works every day,’” Mr Andersen said.

There is growing interest from regulators around the world in testing systems once they are in operation, Mr Andersen said. At the moment, most systems are never tested for how well they work in operational use, only tested at the point of commissioning. But there is nothing preventing stopping regulators and port state authorities doing checks, he said.

Sometimes systems were installed and tested in a part of the world with very little marine life, so a not very challenging test for the systems.

The US is already getting quite strict about testing and untreated ballast water, he said. If your ship enters a US port with ballast in its tanks it is unable to treat, and needs to discharge in order to load cargo, there can be a \$50,000 fine, he said.

Norway is considering how operational testing could be done, he said. “The South of Norway has mussels from the Mediterranean, and they didn’t come from an aeroplane. We should take care of our deep fjords.”

OptiLink

Optimarin has developed a digital support system for its BWTS called OptiLink. The data from sensors on the BWTS is sent to cloud servers, and can be read and interpreted by Optimarin staff. The shipping company can also see it.

The data can be used to populate forms required by some port authorities, he said.

One use of the data is to track where in the world ships are seeing water with higher sediment levels, which are harder to treat with a UV-based BWTS, because the light cannot penetrate the water so easily. This is often a problem in a harbour which is connected to a river, which can carry muddy water.

The software is usually upgraded every 5 years, which will require a ship visit, or can be done ‘over the wire’ with OptiLink.

Optimarin works together with Kongsberg

Digital to manage the cloud data.

Reliability and muddy waters

A UV-based BTWS should be highly reliable when you are operating in normal (clear) waters, Mr Andersen says. But some understanding of how BWTS works is needed if you are loading muddier ballast waters.

The Optimarin system analyses how clear the water is, and for muddier water, it will automatically reduce the water flow across the lamp, so that there is more time for the UV rays to kill the organisms.

If the water is too muddy for even a slower flowrate to work, shipping companies can transfer the muddy water with clear seawater once they are in open seas. This is known as ballast water exchange.

Crew often do not have time to learn the details about how BWTS works, so shipping companies have been asking their suppliers to make it as easy for them as possible, including with software tools to assist onboard, Mr Andersen says.

About Optimarin

Optimarin has been involved in making ballast water treatment systems for 30 years, and has sold 1500 systems so far. It provides a filter and ultraviolet lamp-based system.

Today it has a revenue of NOK 400m per year, and 45 employees. The components are manufactured by different parts suppliers, with at least two different suppliers for each item. Optimarin owns the “brain” of the system and the software. It produces its own UV chambers and manifolds, and handles project management and logistics for installation and repairs.

It claims to have the first BWTS system in the world with US Coastguard approval.

Its system is designed to be easily installed on all types of vessels. It can be delivered both as individual components, for adaptability in tight spaces, or mounted on a skid.

Its UV chamber should be expected to last as long as the ship lasts for. A valve on a BWTS may need replacing after 5-10 years. A UV lamp and filter would normally need changing after 1000 hours or 2.5 years, whichever happens sooner, Mr Andersen said.

T

AN ALTERNATIVE BALLAST WATER TREATMENT SYSTEM

- NO FILTERS
- TREAT AT SEA
- CONTROL COMPLIANCE

InTank® = InVoyage™ + InControl™
Bringing the value of compliance.

NEW InTank®FITT®
= 0.5m² footprint!



Meet us at
MTB Marine Asia
12-15 April, 2023
Seoul, Korea

- **FILTERLESS.** Treat and neutralize at sea = operational and compliance benefits.
- **UNIQUE.** InTank allows rapid semi-sub flood and drain operation without treatment.
- **INSTALLED.** From Handy to Cape, MR to VLCC, semi-sub rigs & vessels.



Discover new ocean opportunities.



**Nor-
Shipping
2023**

Your Arena for
Ocean Solutions

And make a
new #PartnerShip



Buy tickets
Nor-Shipping 2023
Oslo, 6-9 June



Main Partners



Leading Partners



Leading Media Partners

